We must continue to make strategic investments in our future that have a wide-ranging benefit for the health and well-being of our patients and communities. At last year’s State of the School, I announced five Transformational Research Funding projects that will share a combined total $80 million over five years to establish scientific and clinical leadership in targeted areas. They are:

- The Data Driven Discovery and Decision Science Cores, which aims to build infrastructure, develop methods and establish implementation pathways to prepare for population health.
- The GI and Liver Innate Immune Program, which aims to diagnose, treat and understand gastrointestinal and liver disease in children and adults.
- The Human Immunology & Immunotherapy Initiative, which will build on existing strengths in immunology to capture the next wave of development in the field, treating, and in many cases curing, diseases by interventions that target immunological functions.
- The RNA Bioscience Initiative, which will focus on developments in understanding of RNA biology, including its biogenesis and structure, the identification of functions for various classes of RNAs, establishing the role of RNA in disease and exploring RNA-based and RNA-targeted therapies.
- The Consortium for Fibrosis Research and Translation, which will impact human health through discoveries of fundamental mechanisms of fibrosis, and use this knowledge as a platform for developing transformative therapies to treat fibrotic disease, covering multiple organs. The center will also address organ regeneration, inflammation and epigenetics.

The financial support for these initiatives is from generous philanthropic sources, notably $15 million from The Anschutz Foundation, and from investments by University Physicians, Inc. (UPI), the practice plan that handles the business operations for our faculty. There are no state tax or student tuition dollars paying for these investments.
UPI remains a point of pride for the School and an essential source of financial support. Our faculty practice plan ranks No. 1 nationally in Medicare quality measures as compared to a large cohort of academic practices. And the success of our practice plan allows for investments in scholarships for students and endowed chairs for faculty leadership.

To ensure a clear recognition for the excellence of UPI, the UPI board, based on a recommendation from a committee of department chairs, last year approved changing the practice name to University of Colorado Medicine. The new name, and its short form, CU Medicine, raises awareness of the outstanding work done every day by our faculty and staff.

This is not the first time that our organization has changed its name. Prior to 1982, our practice was known as Faculty Practice Fund. In June 1982, the CU Board of Regents approved the establishment of University of Colorado Medical Foundation, doing business as University Physicians, Inc. For 34 years, we’ve been known as UPI and now we will be University of Colorado Medicine.

One of the first acts by the rechristened practice plan was to create the University of Colorado Medicine Endowed Chair of Anesthesiology, held by Vesna Todorovic, MD, PhD, MBA.

We were fortunate this year to announce several endowed chairs made possible by generous philanthropic support:

- the Doni Solich Family Endowed Chair in Ocular Stem Cell Research, which helped us recruit M. Valeria Canto-Soler, PhD, from Johns Hopkins University School of Medicine;
- the Mats Wahlstrom Endowed Chair in Nephrology, held by Michel Chonchol, MD, director of the end stage renal disease program in the Division of Renal Diseases and Hypertension in the Department of Medicine;
- the Joyce Zeff Endowed Chair in Lung Cancer Research, held by Ross Camidge, MD, PhD, director of the Thoracic Oncology Clinical and Clinical Research Programs;
- the Daniel and Janet Mordecai Endowed Chair in Cancer Stem Cell Biology, held by Antonio Jimeno, MD, PhD, whose research has led to humanized animal models;
- the Nancy Anschutz Chair in Women’s Health Research, held by Wendy Kohrt, PhD, professor of medicine in the Division of Geriatric Medicine; and
- the D’Ambrosia Family Endowed Chair in Orthopedics, held by Robert D’Ambrosia, MD.
We are grateful for the generous philanthropic support that helps us achieve our goals. Last year, private support for CU reached a record $384.5 million for the fiscal year ending June 30, with the Anschutz Medical Campus leading the way, accounting for $203 million. Support from donors, alumni, charitable foundations and corporations is essential to the continued success of CU and the School of Medicine in particular.

Such support made many great achievements possible by our faculty this past year.

Under a new formula approved by the state legislature and signed into law by Gov. John Hickenlooper, the CU Cancer Center will receive $1.75 million annually for research. It is the first time the state is allocating such funding for cancer research at the CU Cancer Center.

The School of Medicine was selected to participate in a new national professional development program called Professionals Accelerating Clinical and Educational Redesign, which aims to build high-functioning interprofessional faculty teams working to transform clinical practices and educational programs to prepare a better trained primary care workforce.

An anonymous donor gave a $9 million gift to support our Head and Neck Cancer Research program.

Many achievements by our faculty were also noteworthy. Among them:

Nee-Kofi Mould-Millman, MD, assistant professor of emergency medicine, was selected to take part in the Carnegie African Diaspora Fellowship Program. He will work on shock care training at the University of Cape Town, South Africa.

Meryl Colton, a member of the medical school class of 2019, was featured in national news reports for her research on mortality rates among young Hispanic and black cancer patients. Working with Adam L. Green, MD, investigator at the CU Cancer Center and pediatric oncologist at Children’s Hospital Colorado, she found that those patients between ages 15 and 29 were more likely to die of their disease than white patients of the same age. Meryl presented her study at the American Society for Clinical Oncology annual meeting.

The Wilderness and Environmental Medicine Section in the School of Medicine’s Department of Emergency Medicine was selected by CH2M Hill Polar Services as the subcontract recipient of a grant from the U.S. National Science Foundation to provide field health care services at Summit Station in Greenland.

Roberta Capp, MD, assistant professor of emergency medicine, was named one of the 2016 Great Immigrants by the Carnegie Corporation of New York and she received the Vilcek Prize for Creative Promise in Biomedical Science. Roberta moved to the United States from Brazil when she was 14 years old. On our campus she has been active in uncovering barriers to health care access and delivery and exploring innovative methods to improve the accessibility and quality of health care.

Abigail Person, PhD, assistant professor of physiology and biophysics, who was one of six neuroscientists nationally selected to receive a 2016 McKnight Scholar Award for her work exploring how the brain makes movements precise. Such research offer clinicians insight into therapeutic strategies for people with cerebellar disease, and could potentially contribute to the class of technologies that use neural signals to control prosthetic limbs.

We are confident that our faculty, staff and students will continue to make significant contributions in clinical care, medical research and community service and we are thankful to all who support our efforts to make our School, community and world a better place.

John J. Reilly, Jr., MD
Richard Krugman Endowed Chair
Dean, University of Colorado School of Medicine
Vice Chancellor for Health Affairs
To see Faculty Awards and Accomplishments,
go to medschool.ucdenver.edu/factsfigures
# TABLE OF CONTENTS

Mission and Vision Statement ........................................................................................................... 8
Values Statement .............................................................................................................................. 9
Diversity Values Statement ................................................................................................................. 10
How We Are Organized ..................................................................................................................... 11
Administration and Business Affairs ............................................................................................... 15
Clinical Affairs ................................................................................................................................. 23
Diversity and Inclusion ....................................................................................................................... 27
Education ........................................................................................................................................ 31
  Academy of Medical Educators ..................................................................................................... 32
  Anesthesiology Program .................................................................................................................. 33
  Center for Advancing Professional Excellence .............................................................................. 36
  Child Health Associate/Physician Assistant Program ................................................................... 37
  Genetic Counseling Program .......................................................................................................... 39
  Graduate Medical Education ......................................................................................................... 40
  Office of Continuing Medical Education and Professional Development ............................... 54
  Physical Therapy Program .............................................................................................................. 54
  Undergraduate Medical Education ............................................................................................... 59
Faculty Affairs .................................................................................................................................. 77
Medical Scientist Training Program ................................................................................................. 81
Research ........................................................................................................................................... 83
Centers, Institutes and Programs ...................................................................................................... 103
Vice Chancellor for Health Affairs ................................................................................................... 127
Graduate School Programs .............................................................................................................. 137
Deceased Faculty .............................................................................................................................. 146
Mission Statement

Approved by the Executive Committee and Faculty Senate in January 1993

The mission of the University of Colorado School of Medicine is to provide Colorado, the nation and the world with programs of excellence in:

- **Education** - through the provision of educational programs to medical students, allied health students, graduate students and housestaff, practicing health professionals and the public at large;
- **Research** - through the development of new knowledge in the basic and clinical sciences, as well as in health policy and health care education;
- **Patient Care** - through state-of-the-art clinical programs which reflect the unique educational environment of the University, as well as the needs of the patients it serves; and,
- **Community Service** - through sharing the School’s expertise and knowledge to enhance the broader community, including our affiliated institutions, other healthcare professionals, alumni and other colleagues, and citizens of the state.

Vision Statement

Approved by the Executive Committee (October 2008) and Faculty Senate (November 2008)

The University of Colorado School of Medicine will accelerate its growth at the new Anschutz Medical Campus from its status as the premier medical school in Colorado and the western region to its place in the top ten percent of American medical schools by the year 2020.
The University of Colorado School of Medicine works actively to:

- Advance science through research on the biological mechanisms that underlie illness.
- Improve both the medical care and science of the uniquely human components of health and disease.
- Provide specialized and personalized medical care in an efficient environment.
- Support positive wellness and clinical prevention programs that promote health across the lifespan and lower early mortality.
- Transmit a high level of primary and specialty clinical expertise to the coming generations of health professionals.
- Provide a welcoming, challenging, and diverse atmosphere of growth for those who answer the call to careers in health science and service.
- Develop a diverse funding portfolio that provides the means to develop, attract, and retain nationally competitive research faculty members.
- Advance competitive medical research productivity through increased external support for innovative research ideas.
- Enhance the cooperative relationships with affiliate hospitals toward common goals in education, research, and clinical care.
- Develop a common infrastructure with the affiliate institutions on the new Anschutz Medical Campus to improve the efficient use of joint resources.
- Expand scholarly collaborations across disciplines within the School of Medicine that stimulate research innovation and increase competitive research funding.
- Support productive faculty and institutional collaborations with its sister Schools within the University of Colorado Denver to maximize bioscience research potential.
- Expand productive working relationships with local communities outside the University but within the state and region, whether for clinical, teaching, or research efforts.
- Pursue entrepreneurial development both in education and in research through collaborations with the private business communities in Colorado and the western region.
- Further improve working relationships with State and federal government entities to provide direct investment and support for research and education.
- Build collaborative relationships with medical schools and universities around the globe to enhance mutual growth in medical expertise, scholarship and stature.

Approved by the Executive Committee (October 2008) and Faculty Senate (November 2008)
The University of Colorado School of Medicine believes that diversity is a value that is central to its educational, research, service and health care missions. Therefore, the SOM is committed to recruiting and supporting a diverse student body, faculty and administrative staff. The SOM adopts a definition of diversity that embraces race, ethnicity, gender, religion, socioeconomic status, sexual orientation and disability. The definition of diversity also includes life experiences, record of service and employment and other talents and personal attributes that can enhance the scholarly and learning environment.

The SOM shall strive to admit qualified students and appoint qualified residents, fellows, faculty, staff and administrators who represent diversity.

The SOM also shall develop programs that are designed to: Promote the academic advancement and success of minority students, house officers and faculty; enhance cultural and diversity instruction throughout the curriculum; break down racial and ethnic stereotypes and promote cross-cultural understanding; and promote unexplored research agendas and new areas of scholarship.

The SOM’s diversity programs also seek to enhance diversity and cultural competency in the health care workforce, improve access to health care for poor, minority and underserved populations and, ultimately, eliminate racial, ethnic and socioeconomic disparities in health and health services.

The SOM will work with all departments and programs within the SOM, and with other University of Colorado campuses and their leaders, to achieve the goals outlined above and to promote a culture of inclusiveness, respect, communication and understanding.

The SOM will support the goals of the University’s Vision 2020, which seek to develop a University culture in which diversity and academic excellence are seen as interdependent.
How we are organized
John J. Reilly, Jr., MD
Dean
Vice Chancellor for Health Affairs

CLINICAL DEPARTMENTS

Anesthesiology
Vesna Todorovic, MD, PhD, MBA

Dermatology
David Norris, MD

Emergency Medicine
Richard Zane, MD

Family Medicine
Frank deGruy, MD, MSFM

Medicine
David Schwartz, MD

Neurology
Kenneth Tyler, MD

Neurosurgery
Kevin Litcher, MD

Obstetrics & Gynecology
Nanette Sambro, MD

Ophthalmology
Naveen Manandhar, MD

Orthopedics
Robert D’Ambrosia, MD

Pediatrics
Stephen Daniels, MD, PhD

Physical Medicine & Rehabilitation
Dennis Matthews, MD

Psychiatry
Alison Hum, MD (Interim)

Radiation Oncology
Brian Kavanagh, MD, MPH

Radiology
Gerald Dodd, MD

Surgery
Richard Schulick, MD, MBA

BASIC SCIENCE DEPARTMENTS

Biochemistry & Molecular Genetics
Mark Johnston, PhD

Cell and Developmental Biology
Wendy Macklin, PhD

Immunology/Microbiology
John Cambier, PhD

Pathology
Ann Thor, MD

Pharmacology
Andrew Thorburn, DPhil

Physiology & Biophysics
Angie Ribera, PhD

Pathway for Alzheimer’s Disease and Clinical Center
Huntington Potter, PhD

Anschutz Health and Wellness Center
Vacant

BARBARA DAVIS CENTER FOR CHILDHOOD DIABETES
Marian Rewers, MD

Cardiovascular Institute
Laelie Lainwand, PhD

ACCORDS (Adult & Child Congenital Heart Disease Research & Clinical Training)
Allison Kempe, MD, MPH

COHO (Cohort Health Outcomes)
Edward Havranek, MD

GATES REGENERATIVE MED & STEM CELL BIOLOGY PROGRAM
Dennis Roop, PhD

KEMPE CHILDREN’S CENTER
Desmond Runyan, MD, MPH, DPh

LINDA CRCM INSTITUTE FOR DOWN SYNDROME
Tom Blumenthal, PhD

WEBB-WARING CENTER
John Rapine, MD

CU CANCER CENTER
Dan Theodorescu, MD, PhD

Helen & Arthur E. Johnson Depression Center
Marshall Thomas, MD

CENTERS, INSTITUTES
(Part List)

* Center housed in home department

11-1-16
CU School of Medicine Trend in Revenue Sources

Trend in State Appropriation and Tobacco Settlement Funds
Fiscal Years 1995 - 2017

*FY 2015-16 Estimated
Academic Enrichment Fund Expenditures
Fiscal Years 1983 - 2016

Chair Recruitments 46.20%
Department Programs 24.32%
School-Wide Programs 28.72%
Renovations & Facilities 0.76%
Total AEF Expenditures: $422,961,277

Figures are based on expenditures through June 30, 2016

Academic Enrichment Fund Trend in Expenditures
Fiscal Years 1985 - 2016
Trend in Percentage of ICR Returned to the School of Medicine

Note: ARRA is included in FY10-14.

Trend in ICR Revenue Returned to the School of Medicine

Note: ARRA is included in FY10-14.
Sources of Faculty Compensation
Fiscal Year 2015-16

7.1% 10.5% 77.4% 5.0%
11.9% 45.6% 3.4% 40.8%
74.5%
6.4%
0%
100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0%
Percentage of Total Compensation

Clinical Science Faculty
Basic Science Faculty
Total Faculty

- Unrestricted State + Tuition
- Grants & Contracts
- Other Revenue
- UPI Clinical & Contract

*Pathology PhD/MS/BS is included in Basic Science Faculty

Source: Table I 2015-16 Data - Centers/Institutes excluded

Percentage of Total Compensation
Salary Comparison - Basic Science Faculty

Source: AAMC Faculty Salary Survey 2014-15

Salary Comparison - Clinical Science Faculty

Source: AAMC Faculty Salary Survey 2014-15
CU School of Medicine Endowed Chairs

<table>
<thead>
<tr>
<th>Department/Program</th>
<th>Number of Fully-Funded Endowed Chairs</th>
<th>Number of Partially-Funded Endowed Chairs</th>
<th>Total</th>
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<tr>
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<td>Barbara Davis Center for Diabetes</td>
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<td>5</td>
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<tr>
<td>Center for Women’s Health Research</td>
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<tr>
<td>Charles C. Gates Center for Regenerative Medicine and Stem Cell</td>
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<td>Colorado Prevention Center</td>
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</tr>
<tr>
<td>Dean’s Office</td>
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<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Linda Crnic Institute for Downs Syndrome</td>
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</tr>
<tr>
<td>Rocky Mountain Poison and Drug Center</td>
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<td>University of Colorado Cancer Center</td>
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<td>Webb-Waring Center for Cancer, Aging Antioxidant Research</td>
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<td>1</td>
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<tr>
<td>Department of Anesthesiology</td>
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<td>1</td>
</tr>
<tr>
<td>Department of Biochemistry and Molecular Genetics</td>
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<td>1</td>
</tr>
<tr>
<td>Department of Dermatology</td>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Department of Family Medicine</td>
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<td>Department of Neurology</td>
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<td>Department of Neurosurgery</td>
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<td>1</td>
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<tr>
<td>Department of Obstetrics and Gynecology</td>
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<tr>
<td>Department of Ophthalmology</td>
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<tr>
<td>Department of Orthopedics</td>
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<tr>
<td>Department of Pathology</td>
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<td>Department of Physical Medicine</td>
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<td>Department of Psychiatry</td>
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<td>Department of Radiation Oncology</td>
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<tr>
<td>Department of Surgery</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>78</strong></td>
<td><strong>10</strong></td>
<td><strong>88</strong></td>
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<td>Pediatrics- Children’s Hospital Colorado</td>
<td>36</td>
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<td>41</td>
</tr>
</tbody>
</table>

Source: The University of Colorado Foundation, The Children’s Hospital Foundation-Denver and the Kempe Center for the Prevention and Treatment of Child Abuse.

For purposes of this document, fully funded endowed chairs included those chairs whose current principal market value and reinvested distributions exceed $1.5 million.
Clinical Affairs
The Office of Clinical Affairs partners with clinical leaders to strengthen the clinical practice of the faculty in the CU School of Medicine. Program integration with the School’s affiliated partners promotes our collective ability to improve access to faculty expertise and provide safer, patient-centered care at the lowest possible cost. Our affiliated partners include: University of Colorado Hospital, Children’s Hospital Colorado, Denver Health, the Veterans Affairs Hospital, National Jewish Health and University of Colorado Health.

Anne Fuhlbrigge, MD, MS, serves as senior associate dean for clinical affairs, replacing M. Douglas Jones Jr., MD, who stepped down from this post after serving since 2010. Fuhlbrigge partners with Associate Deans Christina Finlayson, MD, Jeffrey Glasheen, MD, Benjamin Honigman, MD, and Michael Narkewicz, MD. Finlayson and Narkewicz serve dual roles with University Physicians, Inc., as associate medical directors of the adult- and child-health practices, respectively. Glasheen serves as a leader in quality and safety education while Honigman leads clinical outreach initiatives. Additional clinical leadership is provided through the School of Medicine vice chairs and associate center directors for clinical affairs, who make up the Clinical Leadership Council. Together, these physicians identify opportunities for clinical-quality and patient-safety improvements and help unify and drive projects across the Anschutz Medical Campus to benefit patient outcomes. Practice improvement initiatives focus on crucial areas, such as team-based care, development of quality ambulatory dashboards, refinement of primary care - referring-provider communications and timely consultations, as well as enhanced patient access to care, and interdisciplinary, systems-based clinical case review to improve patient outcomes and eliminate potential risks of harm.

The Institute for Healthcare Quality, Safety and Efficiency (IHQSE) resides in the Office of Clinical Affairs. It is in its fourth year of training unit- and service-based clinical teams through the Certificate Training Program, with 50 interdisciplinary adult- and child-health teams participating to date in this yearlong program. This training and practical project experience has led to significant improvements in outcomes, reductions in length of stay, enhanced clinic flow, and less medical and surgical harm. Since 2014, both a one-day Introductory Training Program and a two-day Clinical Leadership Development module has brought organizational leadership skills and process-improvement knowledge to almost 300 additional participants. It is anticipated that these programs will influence hundreds more faculty and staff committed to quality and safety across the campus in the next year.
University Physicians, Inc. (UPI), is a 501(c)(3) practice organization that supports the clinical practice of the School of Medicine by providing business infrastructure services. The President of UPI is John Reilly, Jr., MD, and the Executive Director is Jane Schumaker.

UPI services include managed care contracting, revenue cycle management, compliance, business development and financial services for physicians and advanced practice professionals, and infrastructure for population health. All faculty of the CU School of Medicine are members of UPI. The organization is governed by a Board of Directors chaired by the Dean of the CU School of Medicine. The Board is comprised of the chairs of clinical departments, a basic science chair, elected faculty representatives, and designees of the Children’s Hospital Colorado and University of Colorado Hospital.

In October 2016, the UPI board approved using University of Colorado Medicine as the name of the practice plan to recognize that the organization represents all faculty of the University of Colorado School of Medicine, including physicians and advanced practice providers.

On the following page is a current organization chart.
Office of Diversity and Inclusion
Office of Diversity and Inclusion

The School of Medicine’s Office of Diversity and Inclusion (SOMODI) is led by Associate Dean Shanta M. Zimmer, MD, and Director Regina Richards, MSW. Zimmer was recruited this year from the University of Pittsburgh where she served as the internal medicine residency program director and developed a national reputation in developing programs supporting URiM trainees in Graduate Medical Education. She joined the SOM in June 2016 and a link to her faculty profile for academy newsletter is here: http://www.ucdenver.edu/academics/colleges/medicalschool/education/academy/Newsletter/profiles/Pages/Shanta%20Zimmer,%20MD.aspx

The office serves as the central point of responsibility for coordinating, developing and evaluating the School’s diversity initiatives and programs. Our focus ranges from institutional climate, faculty and staff, graduate and undergraduate medical education and pipeline programs. The Dean-appointed School of Medicine Diversity Council serves as the guiding committee for the work of the office and is comprised of internal members from throughout the School and external community members. The council meets monthly and is charged with supporting implementation of the December 2015 Diversity Plan authored by Steven Lowenstein and Regina Richards. Diversity Council initiatives include developing strategies to continually measure and enhance the diversity, inclusiveness, and climate of the SOM, enhancing recruitment and retention efforts of students, residents, faculty, staff, administrative leadership, and fundraising. Future work will include development of metrics for departmental, training program and institute reports regarding diversity mission-appropriate goals and outcomes.

Pipeline Programs

Pipeline development and local, regional, and national recruitment continues through partnerships with the SOM Office of Admissions, the Anschutz Medical Campus Office of Inclusion and Outreach, and other CU System networks to recruit under-represented in medicine (URiM) students. http://www.ucdenver.edu/about/departments/DiversityAndInclusion/programs/Pages/default.aspx

The SOMODI in partnership with the SOM Office of Admissions continues to participate in the Four Corners Alliance (University of New Mexico, University of Arizona, University of Utah, University of Colorado, and the Association of American Indian Physicians) to provide American Indian and Alaskan Native students with information that will have a positive impact on their decisions to pursue a career as a physician or other health care professional.

Additional pipeline programs include the BA/BS-MD Program partnering the University of Colorado Denver and the SOM. This diversity pipeline program is designed to admit a group of highly qualified Colorado high school students from broadly diverse backgrounds to participate in a combined eight-year program that assists students in developing a commitment to serve the healthcare needs of Colorado in the future. Each year, ten high school students are admitted to the program. www.cudenver.edu/babsmd. The first matriculants from the program successfully entered the third phase of medical school this year.

Students

The Office of Diversity and Inclusion continues to collaborate closely with the holistic admissions process to matriculate a diverse and inclusive student body within the School of Medicine. Our medical students are representative and inclusive of all the various components of diversity such as race, ethnicity, first-generation students, and students from rural communities. For the past five years we have consistently matriculated 25-30 percent URiM students to our class. This year’s class was introduced to Zimmer during the first days of course work through a lecture on the importance of diversity to all physicians in training.

The CU Chapter of the Student National Medical Association (SNMA) is co-advised by Richards and Brandi Freeman, MD, Department of Pediatrics. SNMA’s national impact areas are: community outreach, engaging in pipeline programs and medical education. The Colorado chapter of SNMA provides an inclusive community of support for medical students from diverse backgrounds in addition to volunteer community service opportunities throughout Colorado. SOMODI continues to be engaged in the 2040 Partners in Health Community Advisory Network. A highlight of this collaboration continues to be the multi-year mentored scholarly activity project of CU-UNITE Track medical students exploring intervention strategies to help providers understand and reduce occurrences of discrimination in healthcare.
Graduate Medical Education
The Department of Pediatrics and the Department of Medicine continue to increase the pool of URiM medical students who interview and ultimately match into these highly competitive residency programs with hopes of ultimately meeting workforce needs in Colorado. The grassroots committee, Diversity in Pediatrics Committee, continues to support and recruit URiM fourth-year students who are interested in working with underserved populations through their one month 4th-year elective summer externship program. The Department of Medicine (DOM) has implemented several initiatives to continue to increase the diversity of its internal medicine residency program. The DOM has developed a five-year diversity plan and amassed a group of faculty members and residents to tackle the issue. The SOM Offices of Diversity along with Departments of Pediatrics and Emergency Medicine and the Department of Medicine’s Division of Internal Medicine attend the annual national SNMA meetings to increase the visibility of the entire School’s undergraduate and graduate medical programs.

A very successful GME second look day, led by the Department of Emergency Medicine with collaborations with Pediatrics, Surgery and Internal Medicine, was held in the spring. This event increased the visibility of all our GME programs and planning for the 2017 event is underway. An interactive review of holistic GME recruitment processes will be led by the SOMODI for all program directors this fall. SOMODI continues to provide guidance and support for multiple NIH T32 training grants within departments and programs to enhance their efforts to increase diversity and inclusion.

Faculty and Staff
Recruitment and retention of a highly skilled diverse faculty continues to be a priority within the School of Medicine. The Dean has continued to provide short-term salary support for multiple highly qualified URiM recruits to the School who have been successfully retained to further enhance our scholarship, academics and enhance our climate of inclusion and diversity.

Development of a community for faculty and staff continues with the University of Colorado Organization for Racial and Ethnic Support (UCOLORES) led by Amira Del Pin-Jones, Brandi Freeman and Renee King. For 2016, UCOLORES has developed a schedule of faculty development activities for members and a leadership book club to help build bridges and develop relationships by creating informal mentoring partnerships and supportive relationships among diverse faculty and staff.

This fall, Brenda J. Allen, PhD, Vice Chancellor for Diversity and Inclusion will lead a workshop on Unconscious Bias Training for Assistant and Associate Deans in the School of Medicine.

Community
Support of the growing community on and around the Anschutz Medical Campus is an important priority to the SOMODI. Students from schools of the health sciences, including Medicine, Pharmacy, Nursing, Dentistry, and Physical Therapy work side by side in Aurora’s DAWN clinic where they provide multidisciplinary care and serve as health care navigators to uninsured patients and learn the importance of team work and advocacy on the health of communities.

This summer, in partnership with the Campus ODI, the SOM hosted an event honoring the victims of violence around the country and the world, focusing on solidarity and support. [http://cuanschutztoday.org/cu_anschutz_supports_community/](http://cuanschutztoday.org/cu_anschutz_supports_community/)

August 26, 2016 marks the first annual Toast to Diversity and Call to Action, a celebratory event to build community among minority faculty, residents and students while highlighting the importance of diversity on the Anschutz campus and catalyzing efforts for continued engagement, mentorship and retention of our talented faculty, students and trainees.

The Office of Diversity and Inclusion continues to focus on service, coordination and collaboration with colleagues on the AMC and University of Colorado Denver campuses as we work toward an institutional climate of diversity and inclusiveness that appreciates what our talented students, trainees, faculty and staff bring to the University of Colorado School of Medicine. The SOM Diversity website [www.medschool.ucdenver.edu/diversity](http://www.medschool.ucdenver.edu/diversity) provides useful links for students, faculty, and staff regarding current programs, recruitment information, institutional policies and community collaborative events.
Education
The education programs at the School of Medicine are under the leadership of Robert J. Anderson, MD, Senior Associate Dean for Education. The University of Colorado School of Medicine is committed to lifelong and interdisciplinary learning for health care professionals. We have many programs to serve the needs of undergraduate, graduate and post-graduate students, beginning with pipeline programs in middle schools to attract and prepare a diverse and talented applicant pool. Students graduating from the MD program will be able to compete for positions in our Graduate Medical Education program that offers outstanding training for residents and fellows. Once graduates complete their training as physicians, physician assistants, physical therapists and anesthesia assistants, the office of Continuing Medical Education and Professional Development offers lifelong educational programs designed to improve competence, performance and health outcomes. Included in this section is information on the Academy of Medical Educators that was created to support and enhance all educational programs and teachers at the University of Colorado School of Medicine. The following pages reflect information on all of the school’s programs including Anesthesiology; Center for Advancing Professional Excellence; Child Health Associate/Physician Assistant; Genetic Counseling; Graduate Medical Education; Office of Continuing Medical Education and Professional Development; Physical Therapy and Undergraduate Medical Education.

Academy of Medical Educators

The Academy of Medical Educators (AME), under the leadership of Eva Aagaard, MD, seeks to create a community of dedicated educators who work together to promote excellence in teaching and curriculum throughout the health sciences community. To support this goal, AME inducted 18 new members for a total of 78 members who serve the campus through a series of programs that provide faculty development, coaching, recognition, small grant and other scholarship opportunities and advocacy in medical education.

In 2015-2016, the AME continued to provide regular faculty development opportunities through workshops, online education and a growing number of individual sessions to departments and programs. Under the leadership of Mona Abaza, MD, the new Teaching Certificate Program graduated 6 participants and enrolled its 4th cohort. This program provides participants with training in core teaching skills through a combination of online and in person workshops that are tailored to their individual needs. The longstanding and highly successful Teaching Scholars Program, under the leadership of Janet Corral, PhD, Chad Stickrath, MD, and Mary Jane Rapport, DPT, graduated 17 interprofessional participants who are now trained in curriculum development, program evaluation and medical education scholarship. The 2015 graduating class already has 30 peer-reviewed publications and conference presentations, 2 successful grant proposals, and 1 national grant submission in progress. The AME also graduated its inaugural class from the Leadership in Educational Administration Program with 8 scholars under the leadership of Rita Lee, MD, and Eva Aagaard, MD. This program trained these high potential leaders in the administrative and leadership skills necessary to thrive as they advance in their roles. Finally, with regard to faculty development, the AME continues to run the very popular bi-annual Residents and Fellows as Teachers Elective, led by Mel Anderson, MD, and the iTEACH coaching program. The latter program provides faculty with one on one direct observation and coaching on their teaching skills.

In addition to faculty development and career advancement for educators, the AME has worked hard to promote education and educators on campus. With the Office of Faculty Affairs, the AME published 6 newsletters to promote academic development of faculty; we hosted the Fourth Annual Educational Scholarship & Innovation Symposium; five awards were given for excellence in education; eight grants for a total of over $18,000 were awarded to improve educational innovation and scholarship on campus. Finally, the AME has markedly grown its role in supporting the scholarship of education. We are a Best Evidence Medical Education Review Site. In addition, we provide a core research infrastructure to provide advice, research assistant support and mentorship for medical education research projects.

Funding for the AME is provided through the School of Medicine Dean’s Office with additional support for the small grants programs from the Rymer Family and the Office of Faculty Affairs. Please visit the website for detailed information on each of the above: http://www.ucdenver.edu/academics/colleges/medicalschool/education/academy/Pages/default.aspx
The University of Colorado’s Master of Medical Science in Anesthesiology Program is an intense, 28-month graduate level program housed within the Department of Anesthesiology located at the Anschutz Medical Campus. When the first class was matriculated in the fall of 2013, it became only the ninth program of its kind in the United States. While there are currently 11 accredited Anesthesiologist Assistant programs offering similar education, the University of Colorado is the only school located in the western half of the country.

The program is divided into two phases: a 16-month integrated didactic and clinical curriculum, followed by a 12-month clinical phase. Prior to transitioning into the clinical program, students must have successfully completed four semesters of basic science, general and advanced anesthesia curriculum. Upon graduation students will have over 2,700 clinical training hours, not including simulation. Students sit for the national certifying exam provided by the National Commission of Certification of Anesthesiologist Assistants (NCCAA) prior to graduation. Students who successfully complete the program requirements are awarded a Master of Medical Science in Anesthesiology degree from the School of Medicine.

Mission

The mission of the MMSc Program is to educate and train highly skilled Anesthesiologist Assistants in the cognitive, psychomotor, and affective learning domains in order to work within the anesthesiologist-led Anesthesia Care Team to provide quality patient care.

Leadership

Vesna Jevtovic-Todorovic, MD, PhD, MBA – Chair of Anesthesiology  
Ferenc Puskas, MD, PhD – Director and Medical Director  
Elizabeth N. Block, CAA, MMSc – Program Director  
Ann-Michael Holland, CAA – Assistant Program Director  
Stacy Fairbanks, MD – Associate Medical Director  
Erik Nelson, MD – Assistant Medical Director  
Brian Heighington, CAA – Clinical Director  
Kirstin Runa, MA – Business Director  
Carlos Rodriguez – Program Coordinator

www.medschool.ucdenver.edu/aaprogram

Student Overview

When the fall 2016 Semester begins, the MMSc Program will have a total of 31 students enrolled. The program’s admissions process is extremely competitive, with the last application cycle producing 353 applicants. Of those applicants, 40 were interviewed, and only 14 were admitted. The MMSc Program had its first 6 graduates in December of 2015. Below are some student body statistics for the program.

<table>
<thead>
<tr>
<th>Current Student Demographics</th>
<th>Class of 2016</th>
<th>Class of 2017</th>
<th>Class of 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>7</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Average Age</td>
<td>32</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Male : Female</td>
<td>6 : 1</td>
<td>5 : 5</td>
<td>9 : 5</td>
</tr>
<tr>
<td>In-State</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>4</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Average GPA</td>
<td>3.3</td>
<td>3.7</td>
<td>3.6</td>
</tr>
<tr>
<td>Average MCAT</td>
<td>55th Percentile</td>
<td>67th Percentile</td>
<td>60th Percentile</td>
</tr>
</tbody>
</table>
Recent Accomplishments

Curriculum and Instruction

The MMSc program offers an intense 28-month didactic curriculum designed by expert faculty and complemented by clinical rotations. The program boasts a unique curriculum that features didactic courses taught almost primarily by attending anesthesiologists. This gives students the opportunity to formally interact with all members of the anesthesiology team from the very beginning of training. The MMSc program has also developed a one-of-a-kind collaboration with the Master of Modern Human Anatomy Program, which gives MMSc students access to an innovative and tailored anatomy curriculum including medical imaging labs, ultrasound training, and cadaver dissection. Senior year didactics include a senior project in research or quality improvement to supplement clinical requirements and an interactive Senior Seminar where students lead PBLD sessions covering interesting cases and subject matter.

In addition to classroom didactics, the students begin clinical hours within the first month of the program. MMSc students become very comfortable with the operating room environment even before completing the didactic portion of the program. This comfort transforms into self-sufficiency as the students rotate through a variety of clinical subspecialties including pediatrics, trauma, cardiothoracic, regional, neuroanesthesia, and obstetrics. While the university hospital provides fantastic learning opportunities, program officials have also established multiple affiliation agreements with outside clinical sites to enable students to rotate in clinical settings all along the Front Range and throughout the region. Students finish the program extremely well-rounded and comfortable in a variety of environments.

Simulation Lab

The Simulation Lab is an integral part of the overall curriculum during the first year. It is comprised of 3 semesters and is held weekly. The students are taught a variety of skills and concepts utilizing both low fidelity simulators for task training and a high fidelity simulator, the SimMan 3G, for scenario training. Task training exercises include basic and advanced airway management, anesthesia machine operation, setup and use of anesthetic agents, invasive monitor placement and regional anesthesia techniques. Crisis Resource Management skills are taught using the SimMan 3G and include ACLS protocols, local anesthetic toxicity management, difficult airway management and treatment of severe bronchospasm to name a few. The instructors for the Simulation Lab include an anesthesiologist and several CAA Faculty members.
Community Outreach

The MMSc students have completed community service projects every semester of the Program’s existence. Students have prepared a meal for Ronald McDonald House Charities of Denver, using all sponsored food items from area businesses; raised money by hand-making and selling scrub caps to benefit Lifebox, an organization that sends pulse oximeters to low-resource and lower-middle income countries at no or reduced cost; helped to collect used medical supplies for Project Cure, the largest provider of donated medical supplies and equipment to developing countries around the world; and staffed booths at local fundraising events, such as Strides for Epilepsy 5K and University health fairs. The students are currently organizing their third annual charity golf scramble at Arrowhead Golf course where all proceeds go to Lifebox and the Asthma and Allergy Foundation of America. In the past two years, the student-led golf scramble has raised over $10,000 for charities and brought students, faculty, staff and the community together for great causes.
The Center for Advancing Professional Excellence (CAPE) is a state-of-the-art standardized patient and simulation center under the leadership of Eva Aagaard, MD, Director, with Elshimaa Basha, MPH, serving as the Operations Manager, Carissa Smith, MBA, as Administrator and Larry Armstrong as IT Senior Professional. The CAPE promotes excellence in the health professions through education and assessment of clinical skills including communication, physical examination, clinical reasoning and teamwork.

**Annual Achievements Include:**

- Accreditation by the Society for Simulation in Healthcare. The accreditation duration is five years and further establishes CAPE as an international leader within the simulation community in the areas of Teaching, Assessment, Research and Education.

- Continued advanced training of standardized patients capable of providing a broad array of clinical portrayals, physical exam teaching, including training in sensitive exams, simulation technologist capabilities, and communication and remediation coaching. The CAPE now boasts 68 standardized patients with a goal of 75 for the coming year. In the past year, the standardized patients provided 21,794 hours of work. This is up from 16,000 in the previous year and CAPE provided over 42,000 learner contact hours for AMC schools.

- Increase of CAPE Core Staff in order to meet increased client needs and to improve the quality of our services. This includes the addition of an Operations Manager and two new Project Managers.

- Assistance with expanding the simulation curriculum to the Colorado Springs Branch Campus.

- Acquisition of a cutting edge birthing simulator (Victoria) through a grant provided by COPIC. Victoria and her baby are capable of simulating many complex birthing scenarios including postpartum hemorrhage, breech/c-section and assisted deliveries, and much more.

- Partnership with the Office of Administration and Finance to streamline the costing structure in order to further improve transparency and pricing standardization across all of the health professions schools and colleges.

- Participation in various research endeavors including partnerships with the Centers for Disease Control and Prevention and Veterans Affairs. We also provided educational services for many pilot and small grant awards across the campus throughout the year.

- Partnership with the Colorado Department of Public Health and Environment to develop a competency-based skills assessment for patient navigators who serve a diverse population across the state of Colorado.

- Under the leadership of Kirsten Broadfoot, PhD, and in partnership with all health professions on campus, development of a Communication Toolbox for the purpose of improving and standardizing assessment of communication skills across all disciplines.

- Partnership with the Academy of Medical Educators and CUSOM to provide extensive faculty development in the areas of communication and professionalism.

Initiatives for this coming year include increasing our community engagement through connections with campus partners and groups such as the Colfax Community Network, the immigrant and refugee communities and many others. We will continue to grow our Standardized Patient population to be more representative of the diverse patient population and plan to increase the percentage of Standardized Patients with advanced training from 10% to 30%. We are also in the process of designing and implementing quantitative and qualitative metrics across all of CAPE’s operations.

Detailed information about our programs is available at: [http://medschool.ucdenver.edu/cape](http://medschool.ucdenver.edu/cape).
Child Health Associate/Physician Assistant Program

The University of Colorado Physician Assistant Program has gained national recognition for its curriculum in primary care medicine. The Program confers a Professional Master’s Degree (MPAS). In accordance with the mission of the program, the Child Health Associate/Physician Assistant (CHA/PA) Program curriculum provides comprehensive physician assistant education in primary medical care with additional training in pediatrics and the need for service to disadvantaged, at risk and medically underserved populations. Graduates are well prepared to perform in primary care practice with patients across the lifespan.

Mission Statement

The mission of the Child Health Associate/Physician Assistant Program is to provide comprehensive physician assistant education in primary care across the lifespan, with expanded training in pediatrics and care of the medically underserved.

Program Curriculum

The program curriculum aims to provide a strong foundation to equip students for a lifetime of learning, clinical care, and service. Students are expected to be self-directed, motivated, and responsible for their own learning using critical thinking and reasoning. Courses emphasize the integration of basic sciences and clinical medicine through the presentation of information in clinical context, employing the use of lectures, collaborative sessions, small group experiences, and case-based learning to build knowledge, skills, and attitudes important for physician assistants. Interdisciplinary training is woven throughout to facilitate the development of a collaborative approach to patient care.

Educational content is enhanced through the applications of family-centered care, behavioral and psychosocial perspectives as well as social and community initiatives for health and wellness. The program has integrated content in public health, oral health, professionalism, and interprofessional education. Students with a personal area of interest may also have the opportunity to participate in specialized tracks to enhance learning in Rural, Urban-underserved, Global Health, Pediatric Critical and Acute Care, and Leadership and Advocacy.

The curriculum includes a fully integrated clinical curriculum across all three years with clinical rotations in the hospital and community settings. During clinical experiences, students participate in history-taking, physical examination and assessment, development of a differential diagnosis and clinical decision-making and planning of treatments and interventions. Students work closely with preceptors and other members of the health care team and are evaluated on skills and competencies required for patient care.

As a part of the University of Colorado School of Medicine, the faculty of the entire school of medicine and affiliates contribute greatly to the quality of the learning experiences provided at the CHA/PA Program. Affiliations with the University of Colorado Hospital, Children’s Hospital Colorado, and Denver Health and Hospitals in addition to community centers and clinics provide a network of clinical rotations to enhance the training of students. The faculty within the departments of Pediatrics, Family Medicine, Internal Medicine, Surgery, and others regularly participate in both classroom and clinical training of the CHA/PA Program students.

Program Faculty and Leadership

The education, scholarship, and service roles of the principal faculty of the CHA/PA Program provide students with experienced faculty mentors with clinical practices in general pediatrics, family medicine, and pediatric subspecialties. Program faculty serve in national leadership roles in the Physician Assistant Education Association (PAEA).

PAEA is the only national organization representing PA educational programs in the US. The CHA/PA Program is highly respected nationally as a leader among PA programs. At present, our faculty serve their colleagues around the country in various roles within PAEA:

Jacqueline Sivahop has served for several years on the Committee on Clinical Education (CCE) and has developed a national reputation as a seasoned and knowledgeable clinical educator. The CCE provides resources and other support for clinical educators in PA programs around the country.
Joyce Nieman has served on the Ethics Council for the past several years. She was one of the authors of the PAEA Code of Ethics and works with this committee to review potential ethics violations and educate programs about the Code of Ethics.

David Eckhardt was selected this year to serve on the Assessment Council, charged with overseeing the development and implementation of student testing services (e.g. PACKRAT).

Jonathan Bowser serves as a Director-at-Large on the Board of Directors of PAEA. The Board consists of twelve elected individuals who are charged with overseeing all activities of the Association, including administration of the financial affairs and all other business of the Association.

Our faculty are also involved in teaching national workshops (Pando Workshops) for PAEA. These are attended by faculty from programs around the country. Jackie Sivahop and Joyce Nieman have led several workshops for clinical educators. Rebecca Maldonado has taught a workshop on remediation.

International Connections

The University of Colorado CHA/PA Program continues its partnership with the Trifinio Clinic in Guatemala. CHA/PA students engage in clinical experiences in this clinic site in rural northwestern Guatemala. Our global partnerships continues to offer us new perspectives on our educational program and the work we do here, helping us provide better care for our patients in the U.S. and abroad.

Student Overview

The CHA/PA Program has a very competitive admissions process and continues to attract top students from across the country. During the 2015-16 admission cycle, the program received 1,570 applications, of which 144 were interviewed to admit 44 students.

Program graduates are employed in all areas of primary and subspecialty areas of practice including pediatrics, family medicine, surgery, internal medicine, emergency medicine, dermatology, and many more. The program has a 98% five year average NCCPA board pass rate.

<table>
<thead>
<tr>
<th>Current Student Demographics</th>
<th>Class of 2017</th>
<th>Class of 2018</th>
<th>Class of 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Students</td>
<td>44</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>CO Resident</td>
<td>25</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>19</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Overall GPA</td>
<td>3.62</td>
<td>3.69</td>
<td>3.73</td>
</tr>
<tr>
<td>Science GPA</td>
<td>3.61</td>
<td>3.64</td>
<td>3.68</td>
</tr>
<tr>
<td>Diverse Students</td>
<td>6</td>
<td>7</td>
<td>4</td>
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<tr>
<td>Regular Track</td>
<td>36</td>
<td>30</td>
<td>Pending</td>
</tr>
<tr>
<td>Rural Track</td>
<td>4</td>
<td>4</td>
<td>Pending</td>
</tr>
<tr>
<td>CU UNITE Track</td>
<td>4</td>
<td>4</td>
<td>Pending</td>
</tr>
<tr>
<td>Global Health Track</td>
<td>2</td>
<td>2</td>
<td>Pending</td>
</tr>
<tr>
<td>LEADS</td>
<td>1</td>
<td>0</td>
<td>Pending</td>
</tr>
<tr>
<td>Pediatric Critical Care</td>
<td>-</td>
<td>4</td>
<td>Pending</td>
</tr>
<tr>
<td>Average Age</td>
<td>27</td>
<td>27</td>
<td>25</td>
</tr>
</tbody>
</table>

Program Information
Program Director: Jonathan Bowser MS, PA-C
Medical Director: Tai Lockspeiser MD, MHPE
Associate Director: Rebecca Maldonado MS, PA-C
Associate Director: Jacqueline Sivahop MS, PA-C
Program website: http://medschool.ucdenver.edu/paprogram
The Master of Science in Genetic Counseling Program prepares students for professional practice and board certification as genetic counselors. The program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC). Upon graduation, alumni are eligible to sit for the national certification exam administered by the American Board of Genetic Counseling (ABGC). Established in 1971, the CU Genetic Counseling Program is the third-oldest training program for genetic counselors in North America and one of only two such programs in the Rocky Mountain region.

**Program Curriculum**

The intensive 21 month curriculum integrates extensive coursework in human clinical and laboratory genetics, psychosocial and counseling theory, clinical research and ethical, legal, social and professional practice issues with more than 1,000 hours of direct, supervised clinical training in pediatric, metabolic, reproductive, oncology, adult and specialty genetics clinics. During the second year, students complete a scholarly capstone or thesis project addressing a current clinical practice, laboratory, educational, policy or service delivery issue in genetic counseling. Students are encouraged to submit abstracts for presentation of their projects at national meetings and to publish their findings in peer-reviewed journals.

**Professional Practice of Program Alumni**

Genetic counselors play a critical, expanding role in the healthcare system. They are at the forefront of personalized genomics and genomic medicine initiatives. Genetic testing is becoming an integral part of virtually all medical specialties. Genetic counselors help to ensure quality, client-centered provision of these services. CU Anschutz Genetic Counseling Program alumni practice throughout Colorado and the nation. Sixty percent of the genetic counselors currently in Colorado trained in the CU program. Practice settings of alumni include hospitals, academic and private genetics centers, clinical research programs, diagnostic laboratories, biotechnology companies, state public health departments and patient advocacy organizations.

As members of multidisciplinary healthcare teams, genetic counselors provide scientific expertise, education, risk assessment, non-directive support for decision making and psychosocial needs, and community resources central to quality, comprehensive care of individuals and families affected with or at risk for genetic conditions. Genetic counselors in clinical settings use a client-centered approach to ensure that patients and their medical providers can understand and appropriately utilize genetic information and laboratory tests to promote informed health care choices. Laboratory-based genetic counselors serve as professional liaisons to hospital systems, individual health care providers and their patients. They help providers and patients understand new testing modalities, identify the most informative and cost-effective testing strategies, and assist with individualized results interpretation. Genetic counselors in both clinical and laboratory roles utilize their scientific expertise to research genomic variant databases and published literature so that results are conveyed in an accurate manner and reflect a current understanding of often novel findings identified by rapidly evolving genetic testing methods. Many program alumni are faculty at their institutions, serving as educators and resource people for trainees, other healthcare professionals and the general public, and conducting clinical and translational research. Alumni also facilitate support and advocacy groups for genetic conditions, engage in health care policy development regarding genetic services, and provide consulting to biotechnology and other industries. It is an exciting time for the program’s graduates to be entering the genetic counseling field, as professional roles and opportunities continue to expand and evolve.

**Notable Accomplishments - 2015-2016 Academic Year**

100% of the program’s 2015 graduates taking the American Board of Genetic Counseling Certification Exam during the fall 2015 and spring 2016 exam cycles achieved certification on their first attempt (nationally, 83-85% of examinees achieved passing scores during this period).

Four students in the 2015 graduating class were selected to present their Capstone research at the 34th Annual National Society of Genetic Counselors Annual Education Conference in Pittsburgh, PA, in October 2015.

All students in the 2016 graduating class were employed prior to graduation and entered clinical practice in the specialties of pediatrics, oncology and reproductive medicine. Half of them remained in Colorado to practice.

**MS Genetic Counseling Program Information:**

Program Director: Carol Walton, MS, CGC
Assistant Director, Clinical Training: Kathleen Brown, MS, CGC
Medical Director: Peter Baker II, MD

Website: [www.ucdenver.edu/geneticcounseling](http://www.ucdenver.edu/geneticcounseling)
Graduate Medical Education

The Graduate Medical Education (GME) Office is under the leadership and direction of Carol M. Rumack, MD, Associate Dean for GME at the University of Colorado School of Medicine (CUSOM) and Designated Institutional Official (DIO) for the Accreditation Council for Graduate Medical Education (ACGME). Alicia Christensen, JD, MS, serves as Associate DIO and Director of Finance and Administration.

Rumack and staff are responsible for the oversight of ACGME accreditation and educational environment as well as payroll, benefits and administrative issues for all residency and fellowship training programs.

Mission: The GME Office will achieve the highest level of accreditation for the CUSOM institution and residency and fellowship programs, and provide leadership, education, and support to its residency and fellowship programs to educate residents and fellows to be outstanding physicians.

The GME Office implements policies of the Graduate Medical Education Committee (GMEC) of the School of Medicine. The ACGME charges the GMEC with responsibility for monitoring and advising on all aspects of residency education including compliance with ACGME duty hours, patient safety, and quality improvement requirements, and in maintaining a strong learning environment.

The GMEC is composed of program directors, designated representatives of the major teaching hospitals and officers of the Housestaff Association. GMEC reports to the Dean of the School of Medicine through the Associate Dean for GME and Senior Associate Dean for Education. The website is: www.medschool.ucdenver.edu/gme

2015-16 GME HIGHLIGHTS

The University of Colorado School of Medicine GME:

- Trains 76% of the total residents and fellows in CO
- Is the largest of 14 sponsoring institutions in the state of Colorado
- Is the 19th largest institution of 792 nationally *(increased from 26th of 676 nationally)*
- Oversees and provides support to approximately 150 Program Directors, 90 Program Coordinators, and 1,500 Faculty
- Has no Institutional ACGME citations
- Anticipates its ACGME Institutional Self-Study Date in October 2025

4th Annual GME Outstanding Program Coordinator Awards

The Graduate Medical Education Committee, in collaboration with the Program Coordinator Council (PCC), recognized two outstanding program coordinators.

Sheilah Jimenez is also the CUSOM GME Nominee for the National 2017 ACGME Program Coordinator Award.
Residents and Faculty of all ACGME accredited programs are required to complete this annual survey. Results of the surveys are utilized by ACGME as a key performance indicator for program quality and compliance with work and training environment requirements and for CUSOM institutional performance. 89 programs were surveyed.

Resident Survey Results: 93% response rate
- Duty Hours
- Educational Content
- Patient Safety/Teamwork

Faculty Survey Results: 86% response rate
- Faculty Supervision & Teaching
- Educational Content
- Patient Safety

Institution is at or above national mean for each survey category.

GMEC – OVERSIGHT & EDUCATION

### NEW ACGME PROGRAMS APPROVED

<table>
<thead>
<tr>
<th>Programs</th>
<th>Positions</th>
<th>Length of Training</th>
<th>Site Visit</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Congenital Heart Disease</td>
<td>1</td>
<td>2 years</td>
<td>2/1/2018</td>
<td>0</td>
</tr>
<tr>
<td>Critical Care Medicine (Anesthesiology)</td>
<td>3</td>
<td>1 year</td>
<td>10/1/2016</td>
<td>1</td>
</tr>
<tr>
<td>Family Medicine Rural Training Track</td>
<td>6</td>
<td>3 years</td>
<td>3/2/2016</td>
<td>3</td>
</tr>
<tr>
<td>Interventional Radiology (Integrated)</td>
<td>10</td>
<td>5 years</td>
<td>12/9/2015</td>
<td>1</td>
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<tr>
<td>Medical Biochemical Genetics</td>
<td>2</td>
<td>1 year</td>
<td>7/1/2018</td>
<td>1</td>
</tr>
<tr>
<td>Plastic Surgery – Integrated</td>
<td>12</td>
<td>2 years</td>
<td>3/3/2016</td>
<td>1</td>
</tr>
</tbody>
</table>

### ACGME PROGRAM SITE VISITS

<table>
<thead>
<tr>
<th>Programs</th>
<th>Site Visit Date</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergy &amp; Immunology (Peds @ CHCO)</td>
<td>7/7/2015</td>
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<tr>
<td>Neurological Surgery</td>
<td>8/11/2015 (Self Study Pilot)</td>
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<tr>
<td>Interventional Radiology (Integrated)</td>
<td>12/9/2015</td>
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</tr>
<tr>
<td>Family Medicine Rural Training Track</td>
<td>3/2/2016</td>
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<tr>
<td>General Surgery</td>
<td>3/1/2016</td>
<td>6</td>
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<tr>
<td>Plastic Surgery (Integrated)</td>
<td>3/3/2016</td>
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<tr>
<td>Advanced Heart Failure &amp; Transplant Cardiology</td>
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<td>Spinal Cord Injury Medicine</td>
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<tr>
<td>Vascular Surgery</td>
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### GMEC APPROVED NEW NON-ACGME PROGRAMS

<table>
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<tr>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesiology Critical Care Medicine Fellowship (Emergency Medicine Year)</td>
</tr>
<tr>
<td>Neuro-Ophthalmology Fellowship</td>
</tr>
<tr>
<td>Neurosurgery – Complex Spinal Surgery Fellowship</td>
</tr>
<tr>
<td>Orthopaedic – Adult Hip Preservation Fellowship</td>
</tr>
<tr>
<td>Pediatric Endocrinology Research Fellowship</td>
</tr>
<tr>
<td>Pediatric Heart Failure &amp; Transplant Fellowship</td>
</tr>
<tr>
<td>Radiology – Pediatric Neuroradiology Fellowship</td>
</tr>
<tr>
<td>Surgery – Endourology Fellowship</td>
</tr>
<tr>
<td>Surgery – International Pediatric Surgery Fellowship</td>
</tr>
<tr>
<td>Surgery – Pediatric Colorectal Surgery Fellowship</td>
</tr>
</tbody>
</table>
QUALITY IMPROVEMENT/PATIENT SAFETY SUCCESSES

Resident/Fellow Learning and Working Environment
Clinical Learning Environment Review (CLER) Visit - August 2014

Patient Safety

Resident Orientation is dedicated to training in QI, patient safety, risk management, and transition of care. All residents complete a Safety Event report into the UCH system.

2016 Resident Incentive Plan requires Safety Event Reporting & Hand Hygiene

COPIC RCA experience is an available opportunity for incoming fellows, as well as for all residents.

2015: Formed GMEC Housestaff Quality & Safety Council

UCH Clinical Effectiveness Patient Safety (CEPS) Small Grants funded 5 resident-led teams conducting quality or safety projects within UCH

Quality Improvement

Housestaff Quality & Safety Council collaborates works with the Institute for Healthcare Quality, Safety & Efficiency (IHQSE), including specific projects.

Transitions of Care (TOC)

2015 & 2016 Orientation – All residents receive specific education about effective patient hand-offs.

2015-2016 – some ACGME programs adopted the I-PASS hand off system

Create GMEC task force on Transition of Care

Supervision

UCH & CHCO intranets now include resident supervision policies for all training programs to inform hospital staff as to the levels of supervision required for defined procedures.

Duty Hours, Fatigue Management & Mitigation

Continue monitoring – Program action plans for GMEC review are required when a trend in violations is noted.

Professionalism

2015 & 2016 Orientation - Professionalism interactive lectures by behavior/legal experts

Office of Professionalism outreach to programs

2016-2017 GME ENROLLMENT DATA & TRENDS

179 residency and fellowship programs with 1143 residents and fellows:

28 ACGME residency programs - (810 residents)
70 ACGME fellowship programs - (274 fellows)
83 Non-ACGME fellowship programs - (59 fellows)

*Numbers reflect enrollment as of August 1st, 2016
International Medical Graduate Enrollment

2016-17 Primary Care Enrollment = 319
Family Medicine, Internal Medicine, IM/Peds, Pediatrics
Primary Care vs. Specialty Enrollment

% of Total Enrollment

2012 (1007) 2013 (1030) 2014 (1070) 2015 (1111) 2016 (1143)

Primary Care vs Specialty

Under-Represented Minority Enrollment

% of Total Enrollment (N=1143)

- Vietnamese (1)
- Mixed URM (11)
- Hawaiian/Pacific Native (0)
- Hispanic/Latino (47)
- American Indian/Alaskan Native (3)
- African American (32)

Total Enrollment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>59/1007</td>
<td>67/1030</td>
<td>76/1070</td>
<td>87/1111</td>
<td>94/1143</td>
</tr>
</tbody>
</table>
Graduate Satisfaction – GME 2016 Graduate Survey

Plastic & Reconstructive Surgery Residency

For the 2015-16 academic year 337 residents and fellows graduated from ACGME and Non-ACGME approved programs. All graduates completed the 2016 GME Graduate Survey.

164 residency and fellowship programs with 1111 residents and fellows:
- 28 ACGME residency programs - (791 residents)
- 65 ACGME fellowship programs - (268 fellows)
- 71 Non-ACGME fellowship programs - (52 fellows)

*Numbers reflect enrollment as of August 1st, 2015

2016 GME Graduate Survey
Overall Satisfaction with Training Program

![Bar chart showing overall satisfaction levels for 2012 to 2016]
Graduates Who Would Recommend Program

What are the Professional Plans of all 2016 Exiting Housestaff?
2016 Graduates Planning to Practice In Colorado

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>54%</td>
</tr>
<tr>
<td>2012-13</td>
<td>49%</td>
</tr>
<tr>
<td>2013-14</td>
<td>41%</td>
</tr>
<tr>
<td>2014-15</td>
<td>49%</td>
</tr>
<tr>
<td>2015-16</td>
<td>51%</td>
</tr>
</tbody>
</table>

Reasons for Leaving CO

<table>
<thead>
<tr>
<th>Reason</th>
<th>2014-15</th>
<th>2015-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan Repaymt</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Travel Opp</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Salary</td>
<td>7%</td>
<td>12%</td>
</tr>
<tr>
<td>No CO Job Opp</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>Family</td>
<td>21%</td>
<td>28%</td>
</tr>
<tr>
<td>Other</td>
<td>21%</td>
<td>27%</td>
</tr>
</tbody>
</table>
2016 Graduates Staying in Colorado Will Serve:

- Neither: 61%
- Urban Underserved: 38%
- Rural Colorado: 1%

2016 Primary Care Graduates Professional Plans (93/337) FM, IM, Peds

- Add'l Training: 31%
- CO - Pvt Pract: 15%
- CUSOM Fac: 16%
- Not CO - Pvt Pract & Fac: 7%
- Not CO - Fac: 10%
- Other: 9%
- Not CO - Pvt Pract & Fac: 11%
Where Will 2016 Primary Care Graduates Practice? (93/337)

- Colorado: 63%
- Denver Metro: 57%
- Other: 6%
- US - not CO: 2%
- Internat'l: 1%
- Other: 4%

2016 Specialty Graduates Professional Plans (244/337)

- Additional Training: 31%
- CO Pvt Pract: 18%
- CO Pvt Pract & Fac: 12%
- Not CO Fac: 11%
- Not CO Pvt Pract: 13%
- Industry: 5%
- Govt: 2%
- Other: 3%
Where will 2016 Specialty Graduates Practice?
(244/337)

- US - not CO: 45%
- Colorado: 49%
- Denver Metro: 42%
- Other: 7%

Resident/Fellow Financial Debt

<table>
<thead>
<tr>
<th>Year</th>
<th>&gt;$300K</th>
<th>&gt;$200K</th>
<th>$100-199K</th>
<th>&lt;$100K</th>
<th>No Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>23%</td>
<td>23%</td>
<td>45%</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>2012-13</td>
<td>23%</td>
<td>34%</td>
<td>32%</td>
<td>13%</td>
<td>21%</td>
</tr>
<tr>
<td>2013-14</td>
<td>45%</td>
<td>45%</td>
<td>28%</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>2014-15</td>
<td>39%</td>
<td>39%</td>
<td>27%</td>
<td>14%</td>
<td>20%</td>
</tr>
<tr>
<td>2015-16</td>
<td>18%</td>
<td>28%</td>
<td>26%</td>
<td>10%</td>
<td>18%</td>
</tr>
</tbody>
</table>
Office of Continuing Medical Education and Professional Development

The Office of Continuing Medical Education & Professional Development (OCME&PD) has a mission to improve knowledge, competence, performance and health outcomes using lifelong learning to integrate undergraduate, graduate and continuing medical education. **Brenda Bucklin, MD,** Professor of Anesthesiology, assumed the role of Associate Dean for Continuing Medical Education & Professional Development in July 2015. In addition, the OCME&PD office is staffed by Pam Welker (Administrator), Rose Kennedy (Conference Manager), Carolyn Wieber (Conference Manager), and Donna Jones (Faculty Liaison). The OCME&PD is funded by administrative fees, tuition, and minimal administrative support. For 2015, the OCME&PD office reached more than 20,000 MD/DO and non-MD learners. In addition, 2,450 hours of instruction were certified for AMA PRA Category 1 Credit™ via 100 certified activities. The Accreditation Council for Continuing Medical Education (ACCME) awarded Accreditation with Commendation to the OCME&PD in 2015. The new term will expire on July 31, 2021. Plans for the future include aligning CME activities even more with the quality improvement enterprise, increasing interprofessional education, expanding the role of “Learning from Teaching,” CME credit for faculty development activities, and continuous improvement of our CME process. For more information, visit our website at medschool.ucdenver.edu/cme or email Pam.Welker@ucdenver.edu or Brenda.Bucklin@ucdenver.edu.

Physical Therapy Program

The University of Colorado School of Medicine Physical Therapy Program prepares each student to become a doctor of physical therapy (DPT). Physical therapists are recognized as experts in movement and function and treat patients of all ages in many different settings. Graduates of the CU Physical Therapy Program are prepared to collaborate with other healthcare providers to meet the musculoskeletal, cardiovascular, and neuromuscular needs of patients through direct access to care.

The CU Physical Therapy Program is ranked 15 of 217 accredited Physical Therapy Programs in the United States and is one of the first 25 educational programs still in existence in the U.S. This program has been continuously accredited since its inception in 1947, receiving an unconditional ten-year accreditation in 2010. Students enter this program with high qualifications and graduates of the program pass a national licensure examination with scores well above the average for the US. The program is innovative and the faculty members are among the leaders in physical therapy education. Many of the faculty members are recognized both nationally and internationally for their scholarship. The faculty review and revise the curriculum annually in order for the content and emphasis are consistent with the ever-changing health care needs. In 2011, the CU Physical Therapy Program joined other leaders in physical therapy education to revise the curriculum substantially in order to accommodate a yearlong paid internship that begins in the pre-graduation phase of education and continues post-graduation.

The mission of the University of Colorado Physical Therapy Program leads discovery and innovation to improve movement, participation, health, and wellness for individuals and society through excellence in education, research, clinical care, and service. The vision is to transform health and foster wellness in individuals and society through education, discoveries, engagement and innovation. CU PT Program values serve to support our mission and vision, shape our culture, and reflect the physical therapy profession’s vision and core values.

Applicants to the CU Physical Therapy Program

Applicants to CU Physical Therapy Program come from a wide range of academic backgrounds. There are minimum prerequisites, similar to those for the MD Program that emphasize basic sciences, quantitative ability, and humanities. In addition, many of the applicants have substantial experience in healthcare-related professions. Some have advanced degrees and all have worked clinically as volunteers or in paid positions in preparation for application to CU Physical Therapy Program.

Applicant Data 2015-16

- Completed Applications: 886
- GPA: 3.72
- Interviewed: 154
- GRE Verbal: 155
- Admitted: 68
- GRE Quantitative: 155
- GRE Written: 4.1
This year’s entering class of students is exceptionally qualified academically. In addition, these students bring many unique experiences to the student body. Many students have published articles in scientific journals and have participated in research endeavors. The students have extensive domestic and international travel experiences. Students have participated in many overseas service projects including projects to help persecuted families in Africa, humanitarian work in Bosnia and Herzegovina and projects in Costa Rica and Belize. One student is the co-founder of an organization that provides scholarships to high school students in Kenya. Many students enter with expertise in yoga, Pilates and dance, one is developing a yoga program for musicians. Another student is a certified cancer exercise specialist and yet another a volunteer with the National Disabled Veterans Winter Sports clinic. Most are involved in more traditional sports and exercise such as soccer and running, but others excel in activities including hurdles, golf, deep sea diving and ultimate Frisbee. Approximately 65 students enter the Physical Therapy Program each year. While most students come from Colorado, students are accepted to the program from across the U.S. and from other countries, including Ethiopia, France and the Netherlands.

Demographics of Admitted Students

<table>
<thead>
<tr>
<th>Class</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>77%</td>
<td>79%</td>
<td>76%</td>
</tr>
<tr>
<td>Male</td>
<td>23%</td>
<td>21%</td>
<td>24%</td>
</tr>
<tr>
<td>CO Resident</td>
<td>55%</td>
<td>42%</td>
<td>47%</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>45%</td>
<td>58%</td>
<td>53%</td>
</tr>
<tr>
<td>Minority</td>
<td>12%</td>
<td>14%</td>
<td>10%</td>
</tr>
<tr>
<td>Average Age</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Cumulative GPA</td>
<td>3.70</td>
<td>3.73</td>
<td>3.72</td>
</tr>
<tr>
<td>Math/Science GPA</td>
<td>3.63</td>
<td>3.69</td>
<td>3.64</td>
</tr>
</tbody>
</table>

Graduates of the CU Physical Therapy Program

Graduates from the CU Physical Therapy Program perform exceptionally well on the national licensure examination, administered by the Federation of State Boards of Physical Therapy (FSBPT). Since 2011, over 97% of our graduates have passed the exam on their first attempt. Graduates are employed in a variety of settings, e.g. outpatient, inpatient, from Pediatrics to Geriatrics.

FEDERATION OF STATE BOARDS OF PHYSICAL THERAPY
Summary of scaled results based on FSBPT criterion-referenced passing score of 600.
National Licensure Exam for First Time Test Takers
2016 May Graduates

![Pass Rate Comparison](image1)

![Mean Score Comparison](image2)
Curriculum
The Class of 2018 was the third class to enter the new DPT curriculum that includes a paid yearlong internship. The new curriculum was designed to address four issues currently affecting entry-level physical therapy education:

Workforce readiness: In the current health care environment, clinical enterprises do not have the time and flexibility to assist the new graduate to develop those skills necessary to fulfill all the roles of a practicing clinician beyond those associated with direct day-to-day patient management. The internship includes time allocated for structured learning.

Mentoring time: Because of challenges in the current health care system, experienced clinicians have insufficient time to mentor the new graduate. The internship model provides a mechanism to adjust for unreimbursed time that experienced clinicians spend mentoring the new graduate.

Billing restrictions: In some settings, clinical enterprises are limited in their ability to bill for student provided services to patients with Medicare, and in some cases Medicaid insurance. In addition, the students in these settings are subject to more stringent supervision requirements when working with these individuals. The billing and supervision restrictions limit the ability of clinical sites with high Medicare census to educate students in their clinics, and prevent students from reaching independence, which is the goal of clinical education. Because the intern is a licensed clinician for three-quarters of the internship, this difficulty is obviated.

Student Debt: Education is increasingly expensive and salaries for new graduates are not commensurate. In this new model of education, the student will begin to receive a salary almost a year earlier than in the previous model, substantially reducing the time without income.

The curriculum is comprised of two-and-a-half years of pre-graduation didactic and clinical experiences followed by eight months of post-graduation clinical experience. The pre-graduation phase includes nine semesters of didactic coursework and 38 weeks of clinical experiences. Curricular content is divided into foundational and clinical sciences, patient management and clinical skills, professional topics, and clinical education experiences. Patient management includes orthopaedic, cardiovascular, and neurological physical therapies, as well as physical therapy for patients with a variety of other medical conditions. Professional topics include courses focused on professional skills and behavioral attributes as well as courses in evidence based practice, research design and methods, and clinical reasoning.
Curricular Threads
The curriculum is carefully designed to integrate five content areas that are threaded throughout the curriculum:
- Patient-Centered Care
- Clinical Reasoning and Evidence Based Practice
- Movement for Participation
- Teamwork and Collaboration
- Quality Improvement and Safety

Center for Advancing Professional Excellence
The Center for Advancing Professional Excellence (CAPE) provides an outstanding environment for our students to practice certain physical therapy examination, intervention, and communication skills. One experience focuses on learning in an ICU environment and two comprehensive examinations/assessments take place during the first and second years of the program. The Doctor of Physical Therapy Program is one of the few physical therapy programs in the U.S. in which students have the opportunity to work with standardized patients and mannequin simulation in conjunction with a full-service Center of Excellence.

Interprofessional Education
CU Physical Therapy Program participates in the longitudinal Interprofessional Education and Development (IPED) curriculum that is designed to develop competencies in teamwork and collaboration, values and ethics and quality and safety to prepare our students for interprofessional collaborative practice. Each student is assigned to a team of students, which includes students from some or all of the following schools/programs: School of Medicine (Physical Therapy, Medicine, Child Health Associate/Physician Assistant, Anesthesiologist Assistant), School of Pharmacy, College of Nursing, and School of Dental Medicine. The interprofessional team meets several times during in the three-year curriculum. Over the first two years of the curriculum, the teams meet to understand and apply fundamental content in team building, communication, quality and safety, and ethics. In their last year, students spend an afternoon in the Center for Advancing Professional Excellence (CAPE) to take part in two team simulations/standardized patient encounters. Additionally, physical therapy students build on existing interprofessional educational offerings through the Student Academic Communities and various didactic coursework.

Clinical Reasoning Capstone Project
The didactic curriculum culminates in a capstone project, which includes writing and presenting a case analysis based on evidence and clinical reasoning. This project serves to synthesize the didactic content and clinical experiences.

Research initiatives
Entry-level DPT students are encouraged to participate in research under the guidance of nationally recognized faculty mentors, and present their findings through national scientific conferences and peer-reviewed publications. A number of research facilities are available that enhance the ability of faculty to conduct rehabilitation research and to mentor students who seek to develop research skills while completing their physical therapy education. One facility, the Interdisciplinary Movement Science Laboratory, contains state-of-the-art equipment for motion analysis of gait and other functionally relevant tasks. A sister facility in the Geriatric Research, Education, and Clinical Center (GRECC) contains an instrumented treadmill with motion analysis system that allows intervention and outcome research for populations with walking dysfunction. These motion analysis facilities are also equipped for studies involving electromyography (EMG) and transcranial magnetic stimulation (TMS). Additionally, a third facility, the Human Performance Laboratory, is equipped to quantify fundamental daily tasks, balance, and strength.

The Gersten Education and Research Office houses graduate students, post-doctoral fellows, research assistants, and physical therapy students who assist with research projects.

Scholarships
CU Physical Therapy Program made a commitment to develop robust scholarship support to help to offset the cost of education to students. Three types of scholarships now are available, emphasizing general merit, commitment to working in rural Colorado and Wyoming, and service to medically underserved communities with health disparities. A Student Scholarship Endowment Advisory Board was formed in 2012 that has successfully increased both the PT Program endowments and current use funds from less than $300,000 in 2011 to $763,000 in 2015, with over $80,000 committed for annual disbursements. The Board, CU Physical Therapy Program leadership, and the Alumni Association are working together to increase the endowment and current use funds with a goal of being positioned to distribute over $200,000 in scholarships annually.

Faculty
Faculty of CU Physical Therapy Program are experienced with education, scholarship, and service roles and are members of the American Physical Therapy Program Association (APTA). They are involved in key organizations, such as Arthritis Foundation, Multiple Sclerosis Foundation, and also serve on national committees, including NIH grant review sections. The current research portfolio of Physical Therapy faculty members is $10 million.
Pediatric Physical Therapy Residency Program

The mission of the University of Colorado Pediatric Physical Therapy Residency Program is to provide a comprehensive program of didactic, clinical, and professional experiences to develop pediatric physical therapy specialists. Through clinical care experiences, educational excellence, exposure to research and active engagement in scholarship, teaching opportunities, professional and community service, and participation in collaborative teamwork, residents will become future leaders in the profession.

The University of Colorado Physical Therapy Pediatric Residency Program is one of only 18 accredited Pediatric PT Residency Programs nationally and consists of planned post-professional clinical and didactic education for licensed physical therapists who have graduated from an accredited DPT program. The program is designed to significantly advance preparation of the physical therapist as a pediatric board certified clinical specialist through experiences and mentorship in multiple pediatric clinical settings. Potential as a future leader in pediatric physical therapy is developed through coursework and clinical experiences during the 13-month Residency Program. In addition to clinical opportunities with structured mentorship, the program also includes participation in the Leadership and Education in Neurodevelopmental Disabilities (LEND) program through JFK Partners (www.jfkpartners.org) and access to the resources of the University of Colorado Physical Therapy Program. The American Board of Physical Therapy Residency and Fellowship Education accredits the program.

The fifth Pediatric PT Resident successfully completed the Residency in July 2016. The applicant pool continues to exceed expectations with over 30 applicants from across the U.S. vying for a single position in 2016-2017. During this past year, the 2015-2016 resident wrote and submitted a case report as first author for publication in Pediatric Physical Therapy.

The first four residents have taken and passed the clinical specialist examination to be recognized as Pediatric Clinical Specialists. The earliest this exam can be taken is the year following completion of the Residency. Clinical sites during the 2015-16 residency included the ENRICH Early Intervention team through JFK Partners, South Campus Specialty Care Clinic of Children’s Hospital Colorado, Rise School of Denver, Cherry Creek School District, acute care and inpatient rehabilitation in Children’s Hospital Colorado and Adam’s Camp.

PhD Program in Rehabilitation Science

Rehabilitation Science is an interdisciplinary and translational field of study that integrates knowledge from the basic and clinical sciences to improve our understanding of human movement, physical function, and disability across the lifespan. Students receive individual mentorship from nationally recognized rehabilitation scientists in state-of-the-art research facilities, with a customized curriculum to meet the unique interests of each student. Breadth of knowledge is acquired through foundational coursework in research design, biostatistics, and rehabilitation science, whereas depth of knowledge is gained through elective coursework in one of five areas of specialization: applied cellular physiology, exercise and cardiopulmonary physiology, motor control, biomechanics, and lifespan studies. This approach prepares students to become independent research scientists who integrate knowledge from multiple perspectives ranging from the molecular to the systems level to solve complex problems of physical disability that will advance clinical practice in the field of physical rehabilitation.

Our students are highly successful, as evidenced by many measures. In 2015-16, 18 students received grants or fellowships during their pre-doctoral studies. Five students have contributed as co-investigators to investigations, funded by foundations and NIH. Students regularly publish peer-reviewed manuscripts, either as first or contributing authors. In the five years since this Program began admitting students, three students have completed their doctoral work, all of whom are currently completing post-doctoral fellowship training.

Program Leadership

**Margaret Schenkman, PT, PhD, FAPTA**
Associate Dean for Physical Therapy Education  
Director, Physical Therapy Program  
Director, PhD Program in Rehabilitation Science

**Mary Jane Rapport, PT, DPT, PhD, FAPTA**  
Director, Pediatric PT Residency Program

Website: [http://medschool.ucdenver.edu/pt](http://medschool.ucdenver.edu/pt)
The Undergraduate Medical Education (UME) office oversees students entering medical school with the goal of earning the Doctor of Medicine degree. The students dedicate four or more years to an intensive period of study, clinical rotations, and personal growth. The Undergraduate Medical Education office is responsible for guiding the students throughout their journey to become a doctor of medicine. The process begins with selecting the students who are personally and academically prepared to make the journey. The students receive counseling, financial/career advising, a rigorous curriculum in basic and clinical sciences, state of the art experiences in simulation, evaluation of students and faculty, and technological support for both students and faculty throughout their medical school experience. This section of the Facts and Figures book will review some activities in each of these areas for the 2015-2016 academic year: (http://medschool.ucdenver.edu/MDDegree).

In addition to the regular work of the various divisions within UME, we have diligently been working on other initiatives throughout the 2015-2016 and early 2016-2017 academic years. In August 2015, the Colorado Springs Branch (CSB) welcomed its second cohort of 24 students from the class of 2019, and in April 2016 the CSB ushered into phase III its first ever cohort of 22 medical students from the class of 2018. Development of the CSB was made possible through a commitment of $120M over 40 years by Memorial Hospital in Colorado Springs and University of Colorado Health. The Colorado Springs Branch is under the leadership of Erik Wallace, MD, Associate Dean, Chad Stickrath, MD, Assistant Dean for Education, Christine Waasdorp-Hurtado, MD, Director for Didactics and Longitudinal Curriculum, and John Frerichs, MD, Director of Student Development. Working closely with the Office of Medical Education (OME), this team recruited and provided faculty development for over 200 new community-based volunteer faculty preceptors. In addition to receiving core clinical education and training in Phase III, CSB students rotate through a variety of other hospitals and clinics in Colorado Springs, Pueblo, and Canon City where they will develop long-term mentoring relationships with their preceptors. The CSB students will also be able to follow patients longitudinally over the course of the year in the Colorado Springs Mentored Integration Curriculum Model (COSMIC).

The Curriculum Mapping initiative, led by Michele Doucette, PhD, Assistant Dean of the Integrated Curriculum, has been in development since 2014 to identify gaps and redundancies that will enable faculty to ensure better horizontal and vertical integration of the curriculum. The curriculum mapping initiative underwent its most recent phase of review during the summer of 2016. Building upon the curriculum content already in the Ilios curriculum database, Essential Core Course Directors, Clinical Core Block Directors, Longitudinal Course Directors, Threads Directors and the required Sub-Internship Directors have reviewed all of their individual learning objectives and mapped each objective to one of the School of Medicine competencies. This level of detail will provide faculty and administration with information about how and where the CUSOM curriculum aligns with the Undergraduate Medical Education program competencies for graduating medical students. Slated for completion by the end of 2016, all assessments in the required UME curriculum will be linked to curriculum content in the curriculum map.

A two-day course called “First Course” has been delivered to newly matriculating medical students since 2013. It has been redesigned for the medical student class of 2020. The course emphasizes longitudinal curriculum on the concepts of health, disparities, health equity, diversity, and support of vulnerable populations. Additionally, this course provides an opportunity for students to reflect on what kind of physician they want to become, and on their hopes and fears for the years ahead.

Kristina Tocce, MD, Associate Professor in the department of Obstetrics, and Gynecology and Jeff Druck, MD, Associate Professor in the Department of Emergency Medicine, were selected as the new Assistant Deans in Student Affairs. Their combined wealth of knowledge and experiences will undoubtedly expand the horizon for the medical students.
UME Leadership:
Robert J. Anderson, MD, Senior Associate Dean for Education
Maureen Garrity, PhD, Associate Dean of Student Life
Eva Aagaard, MD, Associate Dean, Educational Strategy; Director, Advancing Professional Excellence and Director, Academy of Medical Educators
Erik Wallace, MD, FACP, Associate Dean of the Colorado Springs Branch
Andy Bradford, PhD, Assistant Dean, Essentials Core Curriculum
Brenda Bucklin, MD, Assistant Dean, Clinical Curriculum (Phases III & IV)
Marsha Anderson, MD, Assistant Dean, Longitudinal Curriculum
Kristina Tocce, MD, Interim Assistant Dean of Student Affairs
Jeffrey Druck, MD, Interim Assistant Dean of Student Affairs
Chad Stickrath, MD, Assistant Dean of the Colorado Springs Branch
Michele Doucette, PhD, Assistant Dean, Integrated Curriculum
Stuart Linas, MD, Chair, Curriculum Steering Committee
Jenny Soep, MD, Chair, Student Life Steering Committee
Nichole Zehnder, MD, Assistant Dean, Admissions
Tai Lockspeiser, MD, Director of Electives
Adam Trosterman, MD, Director of Sub-I's
Wendy Madigosky, MD, Director, Foundations of Doctoring and IPED
Jeffrey Druck, MD, Director, Integrated Curriculum; Interim Assistant Dean of Student Affairs
Randy Ross, MD, Director, Medical Student Research Track
Allen Prochazka, MD, Director, Mentored Scholarly Activity
Matthew Rustici, MD, Director, Problem-Based Learning
Helen Macfarlane, MA, Director, Educational Technology
Gretchen Guiton, PhD, Director, Evaluations
Stephen Newcomb, Director of Finance and Administration

Child Health Associate/Physician Assistant Program
Jon Bowser, MS, PA/C, Program Director, Associate Dean and Section Head

Genetic Counseling Program
Carol Walton, MS, Program Director

Anesthesiology Assistant Program
Ferenc Puskas, MD, PhD, Director and Medical Director

Graduate Medical Education
Carol Rumack, MD, FACP, Associate Dean, and Designated Institutional Official for ACGME

Continuing Medical Education and Professional Development
Brenda Bucklin, MD, Associate Dean

Physical Therapy Program
Margaret Schenkman, PT, PhD, FAPTA, Associate Dean
Medical students are elected/appointed/volunteer on all committees. Ask the Office of Student Life for additional information on participation.
Committees

The activities of the Undergraduate Educational Program at CUSOM are overseen by two committees; The Curriculum Steering Committee and the Student Life Steering Committee. The SharePoint® intranet houses information on all the UME education committees, at: https://mysom.ucdenver.edu/education/CurrComm/SitePages/Home.aspx. If you do not have access and would like to, please contact the Office of Educational Technology at SOM.IT@ucdenver.edu.

Curriculum Steering Committee Facts and Figures for FY 2015-2016 (July through June)

Chair: Stu Linas, MD

The mission of the Curriculum Steering Committee is outlined in the CUSOM School Rules and CSC charge. Specifically, the mission is to ensure that through the CSC’s efforts, the “medical school faculty is responsible for the design, implementation, review and revision of the medical school curriculum.” It accomplishes this by meeting on a monthly basis, prioritizing efforts, and engaging key stakeholders in discussions and reviews of critical issues involving curriculum, and delegating efforts to three curriculum subcommittees. CSC membership includes a diverse array of faculty leaders who make key decisions about the medical program curriculum. The Curriculum Steering Committee posts all of its materials on a SharePoint site available to its users.

CSC Accomplishments for FY 2015-2016

New Members
Faculty Senate Designee: Miriam Post, MD
MSTP Director Designee: Kristin Artinger, PhD
Clinical Block Director: Caroline LeClair, DO
Clinical Block Director: Jennifer Adams, MD
Research Track Director Designee: John Repine, MD
Colorado Springs Branch Designee: Chad Stickrath, MD
Class of 2019 representatives: Jake Gamboa, Wells Lariviere
Ex-Officio Members: Kristina Tocce, MD and Shanta Zimmer, MD

Reports & Presentations
Assessment and Program Review
Curriculum Review and Recommendations: five review sessions, including program-level assessment, competencies, and vertical and horizontal integration
Phase I and II Annual Report
Phase III and IV Annual Report

Continuous Quality Improvement Plans
Denver Health Longitudinal Integrated Clerkship
Integrated Longitudinal Medicine Clerkship
Phase IV Electives
Problem Based Learning
First Course
Musculoskeletal Care
Human Body
Nervous System
Digestive Endocrine Metabolic Systems
Molecules to Medicine
Culturally Effective Medicine
Interprofessional Education (IPED)
Required Clinical Conditions CQI in Phase III

Issues discussed
Curriculum Map
Response to Independent Student Analysis
Preceptor Recruitment
Recording Lectures and Attendance
UME Strategic Plan
Policy Workgroup Recommendations
Faculty Development
New Policies, Policy Reviews and Curriculum Changes
(new) Shadowing Guidelines
(new) Scholar’s Year
(new) Curriculum Change Policy
(new) Duty Hour Policy and Review for Phase III
Updated CSC Bylaws
Updated Foundations of Doctoring Preceptorship requirements, Phase III

Task Forces
‘Reflective Writing in the Curriculum’ task force, chaired by Jackie Glover, PhD, presented their final report. Recommendations approved.

For more information visit:  http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/administration/Pages/UMECommittees.aspx

Student Life Steering Committee Facts and Figures for FY 2015-2016 (July through June)

Chair: Jenny Soep, MD

Overview
The medical school faculty has responsibility for not only overseeing the medical school curriculum but also for contributing significant input and oversight into noncurricular aspects of medical student life. Constructive and systematic evaluation by faculty can be expected to result in thoughtful, consistent and constructive oversight of selected student life issues such as selection, promotion, and advising that includes financial counseling, mentoring, professionalism, health and well-being, record-keeping, and visiting students. Such oversight may also result in creativity and innovation in adapting to changing aspects of medical student life which will enhance medical student professional development. In view of a central role of the faculty and the dynamic nature of student life issues, the Student Life Steering Committee (SLSC) is charged with oversight of noncurricular student professional life policies and procedures. The SLSC will work closely with the Senior Associate Dean for Education (SADE), the Associate Dean for Student Life (ADSL), and the Committees of Undergraduate Medical Education to develop, guide, revise, adjudicate and implement policies and procedures relevant to medical student professional life. Actions of the SLSC will be reviewed by the SADE and the ADSL and reported annually to the Faculty Senate.

Charge
• To oversee, review, guide, evaluate, recommend changes, review new policies and procedures when appropriate and assure consistent implementation of established policies and procedures regarding noncurricular aspects of medical student professional life.
• Recommend to the Faculty Senate and Senior Associate Dean for Education changes in policies and procedures relevant to noncurricular aspects of medical student professional life.
• Assist with the development and implementation of policies and procedures that stimulate evolutionary change that optimize medical student professional life and professional development.
• Monitor and constructively respond to data obtained from evaluation and outcome instruments regarding medical student noncurricular professional life.
• Apply relevant Liaison Committee for Medical Education Standards and Elements to insure that medical student noncurricular issues are monitored, addressed and updated to insure standard compliance and to enhance medical student professional development and well-being.
• Address special student life and policy/procedure-related issues that arise that are relevant to medical students, and are outside the purview of established UME and School of medicine oversight committees.

Reporting Procedures
SLSC will receive timely reports and updates from the Student Promotions Committee (including the Sub-committee on Student Professionalism), the Scholarship Committee, the ADSL, the Clinical Requirements Committee, and the Admissions Committee.
SLSC will inform the SADE of ongoing issues and activities and report to the Faculty Senate.

**Voting Membership**
- A clinical and a basic science faculty member involved with medical student activities
- President, Medical Student Council
- A MTSP student
- One Medical student representing Phases I or II
- Faculty Senate representative (recommended by the President of the Faculty Senate)
- Director of Evaluation for Undergraduate Medical Education
- A community-based physician-educator faculty member
- A Faculty Advisor from one of the School of Medicine’s Advisory Colleges
- Associate Dean for Diversity & Inclusion

**Nonvoting Membership**
- Senior Associate Dean for Education
- Associate Dean for Student Life
- Associate Dean for Curriculum
- Assistant Dean for Student Affairs
- Assistant Dean for Admissions
- Director of Student Life
- Director of Finance & Administration, UME
- Director of Educational Technology
- Associate Dean for Colorado Springs Branch
- Other faculty, students or administrators with expertise as needed.

**Leadership**
The SLSC will be chaired by a senior faculty member with experience in student life activities and appointed by the Senior Associate Dean for Education.

**Terms of Appointment**
Faculty members to this committee are appointed for three-year terms. Terms are renewable for one additional cycle (3 additional years). Medical and MTSP students are appointed by Medical Student Council to a term of up to one to four years.

For more information visit: [http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/administration/Pages/UMECommittees.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/administration/Pages/UMECommittees.aspx)

**Clinical Block Directors Committee**
The Clinical Block Directors (CBD) Committee is responsible for the design and implementation of the Phase III medical student curriculum. The committee meets regularly to develop and implement the clinical core curriculum. It is also responsible for curricular innovation, assessment, and data-driven quality assurance. Jennifer Adams, MD, Alison Brainard, MD, Robert Davies, MD, Todd Guth, MD, Christopher King, MD, Pearce Korb, MD, Caroline Le-Clair, DO, Paul Montero, MD, Michael Overbeck, MD, Kelley Roswell, MD, Frank Scott, MD, Jennifer Soep, MD, William Sullivan, MD, Kristina Tocce, MD, and Kelly White, MD, served as block directors in 2015-2016. Assistant block directors included: Anthony Oliva, MD, PhD, Jane Limmer, MD, Joseph Sakai, MD, and Meghan Treitz, MD, and Davey Williams, MD. Several opportunities have been developed for third-year students to increase continuity and authenticity of clinical experiences. These include: the Longitudinal Integrated Clerkship at Denver Health, the Integrated Longitudinal Medical Clerkship (ILMC) in rural Colorado, and the VA Sequential Training (VAST) Program. In 2015, the Branch in Colorado Springs welcomed 22 students for their third-year training. These efforts are led by Erik Wallace, MD, Associate Dean for Colorado Springs Branch and Chad Stickrath, MD, Assistant Dean for Education, Colorado Springs Branch.

Tai Lockspeiser, MD, MHPE is Director of Electives for the Clinical Core Curriculum. Adam Trosterman, MD is Director of Sub-Internships. Brenda Bucklin, MD, Assistant Dean of the Clinical Core Curriculum is responsible for planning, management, and leadership of Phases III and IV.

For more information visit: [http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/administration/Pages/UMECommittees.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/administration/Pages/UMECommittees.aspx)
Essentials Core Block Directors Committee (ECBD)

The Essentials Core Block Directors (ECBD) committee meets on a monthly basis to review block evaluations and summaries along with Essential Core policies. All of the Phase I and Phase II blocks have been reviewed multiple times since the launch of the new curriculum and changes have been implemented when necessary. This past year, the ECBD introduced online exams for Phase II having successfully used this format in Phase I. This completes the transition from paper to paperless for the majority of learning resources. ECBD also updated extended academic calendars and implemented new reporting policies to identify and offer assistance to at-risk students as early as possible. Block Directors and staff also reviewed and updated Block and Session learning objectives, as part of the curriculum inventory and mapping project and linked learning objectives to the competencies. Continuing support for two ‘Content Stewards’, representing Pharmacology and Pathology, was approved with the goal of continuing to evaluate and improve content and assessments, in their respective disciplines, across the Essentials Core and the subsequent clinical curriculum. The ECBD also adopted a new Block report format and approval process, to include a review of previous and ongoing challenges and action plans for the coming year to address them, with the goal of continuous quality improvement. The ECBD committee continues to be an excellent venue for communication between block directors, faculty and students. In addition, regular meeting times have been established between the Essentials Core, Clinical Core, Advanced Studies, and Longitudinal Curriculum leadership to provide better communication, coordination and oversight of curriculum issues across all four phases of the curriculum.

For more information visit: [http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/administration/Pages/UMECommittees.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/administration/Pages/UMECommittees.aspx)

UME Curriculum

Essentials Core: Phase I and Phase II

The Essentials Core curriculum consists of nine integrated, interdisciplinary blocks that present basic science in a clinical context and are each directed by a basic scientist and a clinician. The Essentials Core is overseen by Andrew Bradford, PhD, Assistant Dean. Each block lasts approximately 8-10 weeks and consists of lectures, team-centered learning, problem-based learning sessions, laboratory exercises, and small group discussion sections, to prepare students for entry in the clinical blocks in their third year. Students also begin working on their Mentored Scholarly Activity (MSA) during Phases I and II and are able to choose from a variety of electives to personalize their curriculum, and explore interests outside the standard curriculum. They also begin to learn basic communication and physical exam skills during the Foundations of Doctoring course that provides early exposure to clinical practice and emphasizes a humanistic approach to medical care. Woven through the Essentials Core blocks, and the clinical blocks that follow them, are longitudinal elements or threads that integrate behavioral and social sciences, informatics, evidence-based medicine, healthcare policy, culturally effective medicine and ethics, and professionalism into the curriculum. The longitudinal elements are overseen by Marsha Anderson, MD, the Assistant Dean of Longitudinal Curriculum. The overarching goal of the Essentials Core is to provide the scientific foundation and critical thinking skills for our students’ future medical education and to equip them for a lifetime of learning, research, clinical care, and community service. (Website: [http://medschool.ucdenver.edu/essentialscore](http://medschool.ucdenver.edu/essentialscore)).

Clinical Core: Phase III

The Clinical Core Curriculum consists of competency-based clerkships and blocks* that provide opportunities for mastery of the core knowledge, skills, and attitudes required of physicians. Clinical Core block-specific goals and learning objectives have been developed by the CBDs and are mapped to ACGME competencies. Phase III provides intensive clinical experiences in the hospital, ambulatory clinics, emergency room, labor and delivery suite, and operating rooms. Integrated Clinician Courses (ICC) punctuate the clerkships and blocks with a focus on advanced clinical skills, translational clinical science, and communication. Students use learning logs to record conditions, diseases, and procedures. Students receive formative and summative feedback during each clerkship or block. Shelf exams or block-developed medical knowledge exams, clinical evaluations, mid- or end-of-block standardized patient exams and clinical practice exams provide additional opportunities for assessment of students’ clinical performance and opportunities for feedback. Clinical block directors monitor students’ clerkship experiences at all clinical sites. More information about Phase III can be found at: [http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/clinicalcore/Pages/default.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/clinicalcore/Pages/default.aspx)

*Clerkship: a course of clinical medical training in one specialty. Block: a course of clinical medical training within more than one specialty.
Clinical Core: Phase IV

The Phase IV (fourth-year) curriculum consists of 32 weeks of educational requirements, including a required four-week sub-internship, two Integrated Clinician Courses, 24 weeks of elective time, and a capstone presentation of students' Mentored Scholarly Activity projects. More than 180 electives are offered in Phase IV. Working with the Office of Student Life, Phase IV is designed to foster: 1) knowledge base development; 2) career preparation/development; and 3) vocational mentorship all while meeting the needs of students. More information about Phase IV can be found at: http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/advancedstudies/Pages/default.aspx

Longitudinal Curriculum:
Foundations of Doctoring Curriculum

The Foundations of Doctoring Curriculum (FDC) is a three-year longitudinal experience beginning in Phase I of medical school which teaches communication and physical examination skills, clinical reasoning, and professional development. The vision of FDC is to prepare medical students to be outstanding physicians who will care for our diverse society. Standardized patient encounters and regular clinical exposure in a physician preceptor’s practice are key components of this curriculum. Wendy Madigosky, MD, MSPH directs the curriculum. Associate Directors include: Deb Seymour, PsyD (Communication), Todd Guth, MD (Clinical Skills), Brandy Deffenbacher, MD (Physical Exam) and Kristin Furfari, MD (Preceptorship). Changes in 2015-2016 included development and implementation of Core Physical Exam instruction and assessment in Phase I, separation of physical exam techniques into the Core and Cluster structure, transition of the Comprehensive Note into Phase I, and development of Physical Exam videos. For more information visit our website at: http://medschool.ucdenver.edu/FDC

If you are interested in volunteering as a preceptor for the Foundations of Doctoring Curriculum, please email Foundations.Doctoring@ucdenver.edu. The table below provides data on the FDC preceptors for the academic year 2015-2016:

<table>
<thead>
<tr>
<th>Position Specialty</th>
<th>Private Practice</th>
<th>Clinics for Underserved plus Denver Health</th>
<th>Kaiser Permanente</th>
<th>UCH, CHCO, VA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Medicine</td>
<td>31</td>
<td>24</td>
<td>14</td>
<td>16</td>
<td>85</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>31</td>
<td>30</td>
<td>9</td>
<td>60</td>
<td>130</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>28</td>
<td>15</td>
<td>10</td>
<td>45</td>
<td>98</td>
</tr>
<tr>
<td>OB/GYN</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>39</td>
<td>19</td>
<td>2</td>
<td>30</td>
<td>90</td>
</tr>
<tr>
<td>Other*</td>
<td>15</td>
<td>17</td>
<td>4</td>
<td>102</td>
<td>138</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>108</td>
<td>42</td>
<td>261</td>
<td>562**</td>
</tr>
</tbody>
</table>

* Aerospace Medicine, Allergy & Immunology, Anesthesiology, Cardiology, Cardiothoracic Surgery, Child & Adolescent Psychiatry, Gastroenterology, Geriatrics, Gynecological Oncology, Infectious Diseases, Interventional Radiology, Lung Transplant, Movement Disorders, Neurology, Neuro Oncology, Neuro Surgery, Oncology, Ophthalmology, Orthopedic Surgery, Otolaryngology, Palliative Care, Pathology, Peds-Genetics/Neurodevelopmental Disabilities, Perinatology, Physical Medicine and Rehabilitation, Psychiatry, Pulmonary, Radiology, Rheumatology, Sports Medicine, Surgery, Urology, Vascular Surgery, Weight Management & Women’s Health

**105 Preceptors have 2 or more students

ICC

Integrated Clinicians Course (ICC) Students experience the Integrated Clinicians Course in one-to-two-week blocks of time throughout Phase III and Phase IV of the curriculum. The course is designed to integrate multiple concepts into students’ growing clinical experiences, such as advanced clinical and communication skills, translational basic science, medical-legal topics, medical errors and quality improvement, ethics and professionalism, scholarly activities, and career development and exploration. Led by ICC Director Jeff Druck, MD, the ICC curriculum was first implemented in May 2008. Feedback from the students has been positive. The course undergoes continued modifications to ensure content remains timely, valuable, and aligned with other curriculum. Hidden Curriculum sessions occur within the clinical blocks and ICC in Phase III and Phase IV. For more information visit the ICC website at http://medschool.ucdenver.edu/icc.
Medical Student Research Track  
www.coloradoresearchtrack.org

Leadership: Randy Ross, MD - Director of Medical Student Research Track, Director of Research and Research Training, Dept of Psychiatry, L McCarty Fairchild Professor of Child Psychiatry

The Research Track aims to foster development of an identity as a physician capable of being involved with and completing all aspects of a research project from the identification of a health care-related scientific question to the written dissemination of scientific information as a first author on a manuscript developed for submission. Since its inception in 2007, there are 68 students who have completed the track with 54 currently enrolled in the program. The 68 graduates have published 70 papers; 89% of Research Track graduates have published at least one paper.

Students work with an experienced faculty mentor through all four phases of the SOM curriculum, including two full-time research months in the summer after the first year, and two additional full-time research months during their fourth year. Preliminary and final results are presented locally, regionally and nationally. In addition, the track provides seminars related to research ethics, and teaches students how develop polished, professional research presentations and papers. Research Track students will be prepared to continue to work as researchers during their residencies and future medical careers.

The Research Track relies on the generous funding support of the following departments and endowments. Funding sources commit to support a student through their four years as a Research Track student, which includes four months of stipends for full time work, as well as travel to present at the Western Student Medical Research Forum and one national meeting in the student's area of specialty.

<table>
<thead>
<tr>
<th>Funding Department or Source</th>
<th>Students sponsored in 2015-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesiology</td>
<td>4</td>
</tr>
<tr>
<td>Cancer Center</td>
<td>8</td>
</tr>
<tr>
<td>Center for Regenerative Medicine and Stem Cell Biology</td>
<td>1</td>
</tr>
<tr>
<td>Coulter Grant</td>
<td>2</td>
</tr>
<tr>
<td>Dermatology</td>
<td>1</td>
</tr>
<tr>
<td>Immunology</td>
<td>1</td>
</tr>
<tr>
<td>Hamilton Grant</td>
<td>1</td>
</tr>
<tr>
<td>Medicine</td>
<td>8</td>
</tr>
<tr>
<td>Neurology</td>
<td>4.5</td>
</tr>
<tr>
<td>Ob/Gyn</td>
<td>2</td>
</tr>
<tr>
<td>Orthopedic</td>
<td>7</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>2</td>
</tr>
<tr>
<td>Pathology</td>
<td>3</td>
</tr>
<tr>
<td>Pediatrics (some partially funded by Pediatric Pulmonology Grant)</td>
<td>9</td>
</tr>
<tr>
<td>Radiation Oncology</td>
<td>1</td>
</tr>
<tr>
<td>Rheumatology Grant</td>
<td>3</td>
</tr>
<tr>
<td>Schwepp Endowment</td>
<td>8</td>
</tr>
<tr>
<td>Substance Abuse Grant</td>
<td>8</td>
</tr>
<tr>
<td>Surgery</td>
<td>2</td>
</tr>
<tr>
<td>Vision Grant</td>
<td>3</td>
</tr>
</tbody>
</table>
Health Sciences Student Research Forum
The 30th Annual Student Research Forum was held on February 4, 2016. The forum was organized and funded by the School of Medicine Dean’s Office and overseen by Randy Ross, MD, Director of the Medical Student Research Track. Over 90 students presented their research from across the AMC campus, representing the Schools of Medicine, Nursing, Pharmacy, Public Health, the Dental School, and the Graduate School. Over 70 faculty members volunteered their expertise to judge posters. Approximately 325 first-year and third-year medical students also evaluated posters as student judges. A total of $9,300 in award money was given to the 30 highest scoring presentations in the form of $310 monetary prizes. For a list of winners by category or award winner sponsors, contact coloradoresearchtrack@ucdenver.edu.

Research Track Student Awards and Honors
Western Student Medical Research Forum
18 Research Track Students from the Class of 2018 presented at WSRMF in late January 2015 in Carmel, CA, along with 460 other medical students and residents from western U.S. states. Three Research Track students were honored with the awards below:

<table>
<thead>
<tr>
<th>Katherine Lind</th>
<th>WAFMR/WAP Student Subspecialty Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amelie Peisl</td>
<td>Abbott Subspecialty Award</td>
</tr>
<tr>
<td>Brian Walsh</td>
<td>WSPR Abbott Nutrition Lowell Glasgow Student Research Award</td>
</tr>
</tbody>
</table>

Schweppe Outstanding Scholars
The Schweppe Scholars Program, funded by the Schweppe Foundation, is designed to support two outstanding CU School of Medicine students from each class cohort in the Research Track. Support continues through all four years at SOM. AY 2015-2016 Schweppe Scholars were:

<table>
<thead>
<tr>
<th>Hamza Pasha and Thad Vickery</th>
<th>Class of 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alyssa Blood</td>
<td>Class of 2017</td>
</tr>
<tr>
<td>Katherine Lind, Mario Perez, &amp; Kelli Robertson</td>
<td>Class of 2018</td>
</tr>
<tr>
<td>Amanda Glickman and Kaitlin Gorman</td>
<td>Class of 2019</td>
</tr>
</tbody>
</table>

Louse Coulter Fellowship Award Recipient
Awarded for basic research in Pulmonary Medicine by a senior medical student who shows unusual promise as a scientist.

| Alexander Metoxen | Class of 2016 |

Mentored Scholarly Activity Program
The Mentored Scholarly Activity program (MSA), is a required longitudinal curriculum across all phases for all School of Medicine students. The goal of the MSA curriculum is to foster self-directed, life-long learning over the course of the medical student career. The MSA requires students to identify and work with a mentor to complete their projects, which also prepares them for working with mentors in their careers and serving as mentors to others in the medical profession. The 2015-2016 MSA leadership team and their topic expertise consisted of Allan Prochazka, MD, Director (Clinical Research), Jennifer Bellows, MD, Associate Director (Global Health), Jackie Glover, PhD, Associate Director (Bioethics, Humanities, Arts and Education), Rita Lee, MD, Associate Director (Public Health and Epidemiology), and Robert Sclafani, PhD, Associate Director (Basic Biomedical Science). The MSA program has a broad definition of scholarship, and students can choose a project that represents their interests. The timing of the project work is also flexible, with some students doing most of the work the summer between the first and second year, other students working throughout all four years, and some doing the majority of the work during the fourth year. Over 350 CU faculty members currently serve as mentors. MSA has partnered with the Colorado School of Public Health to work with the Colorado Biostatistics Consortium to assist medical students with their study design and data analysis. Librarian liaisons at the Health Sciences Library provide expert consultations for literature reviews tailored to the student’s project topic. Projects culminate with a scholarly paper and a Capstone poster presentation in March of the students’ graduation year. 16% of MSA students have either published or had a manuscript accepted for publication. For the graduating Class of 2016 Capstone Poster Forum Event, faculty members volunteered to evaluate the posters of 131 student presenters, and each student evaluated posters of their peers.

For more information on becoming a volunteer faculty mentor, please contact the MSA program, at MSA.SOM@ucdenver.edu. (Website: http://medschool.ucdenver.edu/msa)
Figure 1: MSA Projects by Thematic Area, Class of 2016 N=131

Figure 2: MSA Projects by Methodological Approach, Class of 2016
Problem-Based Learning

Matthew Rustici, MD, is the director for Problem-Based Learning (PBL). The PBL curriculum runs over the first 2 years of medical school and groups of 8 students meet with one facilitator for 30 sessions that each last 2 hours. The PBL cases are designed to improve skills in clinical reasoning, communication of medical information, self-directed learning and research strategies to answer clinical questions. Groups also discuss how ethics, professionalism, cultural differences, and medical systems affect the care delivered to patients. PBL helps students develop skills in a safe and constructive environment where they are able to learn how to “walk and talk like a doctor” before they start their clerkships. Faculty and volunteer community clinicians facilitate the PBL group discussions and are recruited prior to the start of a new academic year. For further questions, please contact the PBL director Matt Rustici matthew.rustici@ucdenver.edu or visit our website at: http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/MDProgram/longitudinal/pbl/Pages/default.aspx.

Educational Technology

The Office of Educational Technology is responsible for the technology support of the MD program and the Offices of Medical Education, including Curriculum, Evaluation, and Student Life.

The Ed Tech Office collaborates closely with the SOM Dean’s office tech team and the technology support of the Center for Advancing Professional Excellence (CAPE) to form the Medical Education Technology Alliance (META). META’s goal is to provide outstanding tech support for medical students and MD curriculum.

The Education Technology office supports: the admissions process; the electronic curriculum; the applications and data infrastructure of UME; integrations between University, school and vendor systems; student technology use, including developing laptop requirements; implementation and ongoing support of electronic assessment system in Essentials Core; support and development of the UME website; and guidance on best practices, mobile device support and laptop troubleshooting and repair.

Major accomplishments of the office this year include:

- Student data warehouse development, process implementation to support the data integrity, and participation in governance of the data, development of data dictionary and data model, reporting and training for reporting
- Implementation of processes for data extraction, transformation and loading (ETL) of student data
- Leaders in the implementation of data visualization tools in UME
- Learning Management System support for Essentials Core, Clinical Core and Sub-Internship courses and development of standardization for optimized student experience
- Led the process to select a system for Phase IV scheduling, student tracking and CU SIS integration and synchronization
- Support of student Apple and Windows laptops and mobile devices, and the development of good digital practices
- Implementation of ExamSoft electronic assessment system and continued support of medical student use of system on personal devices
- Continued development and support of a home-grown clinical experience logger used in the Foundations of Doctoring Curriculum and in the Clinical Core
- Development of reports to track and report student use of clinical experience logger for student grade, Phase administration, and LCME purposes
- Curriculum Inventory and curriculum roadmap system development for program use and curriculum upload to the AAMC Curriculum Inventory
- Scheduling system development to provide personal calendar subscriptions for Essentials Core students

For more information on education technology go to medschool.ucdenver.edu/meta.
The mission of the UME Evaluation Office is to enhance the quality of medical education at the University of Colorado School of Medicine by providing comprehensive and systematic evaluation of the undergraduate medical education program and by contributing to the continuous quality improvement efforts of the School through participatory evaluation processes.

To accomplish its mission, the Evaluation Office (1) collects and provides quality information about the process and impact of educational experiences; (2) supports teaching faculty, curriculum developers and decision-makers to use data as they assess program results, identify ways to improve program quality, and test innovative endeavors; and (3) documents program activities and outcomes to assess the extent to which the educational program has met its objectives and the accreditation standards of the Liaison Committee on Medical Education. To support the continuous quality improvement of the educational program, the Evaluation Office involves faculty and students in identifying relevant questions, data collection and analysis methods, and interpretation of results for educational change.

The Evaluation Office collects data and reports results of analyses to course directors, teaching faculty, the three curriculum subcommittees and the Curriculum Steering Committee (CSC) on a regular basis. Working with the Phase IV Director, all elective courses are being evaluated using forms tailored to content. SOM members can be provided access to view stored reports by contacting Brooke.Parsons@ucdenver.edu

In 2015-2016 the Evaluation Office collected student evaluations and reported on required courses and faculty teaching in them for each program component. The number of evaluations collected and reports generated are shown in the table below.

<table>
<thead>
<tr>
<th>Program Component</th>
<th>Course Reports</th>
<th>Teaching Reports</th>
<th>Student Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essentials Core (Phases I &amp; II)</td>
<td>9</td>
<td>293 Lecturers, 421 Small group facilitators</td>
<td>1535 Course 10,379 Lecturer</td>
</tr>
<tr>
<td>Longitudinal Curriculum</td>
<td>17</td>
<td>165 Lecturers</td>
<td>3252 Course 4199 Lecturers</td>
</tr>
<tr>
<td>Electives (Phases I &amp; II)</td>
<td></td>
<td>539 Small group facilitators 378 Preceptors*</td>
<td>4701 Facilitators 764 Preceptors</td>
</tr>
<tr>
<td>Clinical Core (Phase III)</td>
<td>13</td>
<td>1266 Attendings** 1002 Residents or Fellows</td>
<td>2160 block &amp; Site 4347 Attendings</td>
</tr>
<tr>
<td>Sub-Internships (Phase IV)</td>
<td>22</td>
<td>Included in Clinical Core</td>
<td>1013 Course 438 Attending</td>
</tr>
<tr>
<td>Electives (Phase IV)</td>
<td>163</td>
<td>Included in Clinical Core</td>
<td>461 Attending 268 Residents</td>
</tr>
<tr>
<td>Phase Reports</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Phase I and II Preceptors **No. Attendings/Residents/Fellows Evaluated in Phases III and IV

The Evaluation Office collects outcome data annually from Program Directors of PGY-1s and PGY-1 Graduates. In 2014-2015, it investigated data on graduates’ specialties and practice locations from 1979 to 2008 were reported based on information from the AMA Physician Masterfile for CU graduates and Colorado-trained residents. This year the Evaluation Office updated data on student matches and provided information on clinical teaching sites and number of preceptors for legislative use.

The Evaluation Office supports innovative program development efforts and provides special analyses to assist educational activities and decision making. This past year, the Evaluation Office supported the review and evaluation of the UME Enhancing Educational Program Grants such as Ultrasound in Phases I & II and the Integrated Radiology Curriculum; it supplemented evalua-
tion of pipeline efforts (e.g., the BA/BS MD program, NIH Summer Research Program) with focus groups and ongoing evaluation; and, it provided evaluation planning and support for new CUSOM initiatives, such as the Colorado Springs Branch Campus and VAST, a “sequential training” program at the Veterans Administration, and participated in mapping UME competencies to student assessment and program evaluation. The Evaluation Office also conducted special studies to investigate concerns, such as an analysis identifying characteristics and course performance of students who struggle on Step 1 and an exploration of the relationship among Phase IV student course-taking, specialty choice, and advising.

Evaluation Office also takes an active role in strengthening UME’s overall educational infrastructure; developing and conducting a four-year curriculum review driven by data and using the newly developed curriculum map, implementing a process to standardize and manage CUSOM’s policies for medical students and faculty, designing and populating a data warehouse for UME, and supporting the use of test data for item development and the systematic review of the curriculum (Phase I & II).

Summary of AY 2015 - 2016 Student Ratings of Courses and Faculty by Phase:

<table>
<thead>
<tr>
<th>Essentials Core Curriculum (Phases I &amp; II)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Rate the overall quality of the block”</td>
<td>4.07</td>
</tr>
<tr>
<td>“Overall teaching” rating for lecturers</td>
<td>4.11</td>
</tr>
<tr>
<td>“Overall teaching” rating for small group facilitators</td>
<td>4.43</td>
</tr>
</tbody>
</table>

(5-point scale, e.g., 1=Unacceptable; 5=excellent)

<table>
<thead>
<tr>
<th>Clinical Curriculum (Phases III &amp; IV)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Curriculum (Phase III)</td>
<td></td>
</tr>
<tr>
<td>“What was the quality of the clerkship as a whole?”</td>
<td>4.05</td>
</tr>
</tbody>
</table>

| Advanced Studies (Phase IV)          |      |
| “What was the quality of the sub-internship rotation as a whole?” | 4.41  |
| “Rate the quality of this elective as a whole.” (Clinical Electives) | 4.41  |
| Clinical Teaching Evaluations (combined Phase III and IV) | 4.43  |
| “Overall, how effective is this attending’s teaching?” | 4.40  |
| “Overall, how effective is this resident/fellow’s teaching?” | 4.32  |

(5-point scale, e.g. 1=poor; 5=excellent)

Evaluation Office staff include:

- Gretchen Guiton, PhD, Director of Evaluation
- Jennifer Gong, PhD, Assistant Director of Evaluation
- Brooke Parsons, MPA, Evaluator
- Traci Yamashita, MS, Evaluation Analyst
- Susan Peth, Senior Evaluation Specialist
- Susan Claxon, Evaluation Specialist

The Evaluation Office website can be found here: www.medschool.ucdenver.edu/evaluation
Office of Student Life

The Office of Student Life is led by Maureen Garrity, PhD, Associate Dean, and it encompasses both Student Affairs and Admission. Garrity has just completed over 10 years of service to the Student Affairs community as a regional officer, member and chair of the National Committee on Student Affairs and as a National Officer in the AAMC group on student affairs. She received the group’s highest honor, the national “Exemplary Service Award” at the national meeting in 2014. This year, Garrity is serving on a national task force, working with student affairs deans, medical school deans and program directors to revise the “Medical Student Performance Evaluation” aka the “Dean’s Letter.”

The mission of the office is to provide support for applicants and students throughout their cycle with the School of Medicine and to specifically provide multiple levels of support to a diverse group of students in order to help insure their academic success and to support their personal well-being. The office provides services for prospective students, current students and graduates over the entire spectrum of their time with the School of Medicine and beyond. This starts when a candidate expresses an interest in being considered for the MD program, continues through their matriculation and time as a student and into their careers as they need support for medical licensing. The office provides guidance, advice and administrative assistance to applicants and students. The office is responsible for the admissions interview and selection process, monitoring student registration, student progress and graduation. The office is responsible for organizing and managing the scholarship process, through the School’s Scholarship Committees. The office organizes and manages many events including the Second Look Day, the first year orientation, the white coat/stethoscope ceremony, Match Day and the hooding and oath ceremony at graduation.

The office provides organization and support for the Student Promotions Committee and the Data Warehouse Governance Committee. The Student Life Steering Committee (formed in 2014) provides faculty input and oversight of many of the functions related to the office.

For more information visit our website at: http://www.ucdenver.edu/academics/colleges/medicalschool/education/studentaffairs/Pages/studentaffairs.aspx

Scholarship Committees

During the 2015-2016 academic year, the office continued to manage the SOM Scholarship Committee and the Adler Scholarship Committee. They also took responsibility for the ARCS scholarship process and several other scholarships. In this year the School of Medicine provided scholarships to over 185 medical students, 43 were entering students and 144 continuing. The total amount of scholarship money awarded was $2,581,002.

- The President’s Medical Scholarship, a four-year scholarship, was awarded to 11 students who started in 2015 as members of the class of 2019. Scholarships were at the level of $20,000 to $30,000 per student per year, with the goal of increasing the educational benefit derived from a diverse student body.
- In addition, the President’s fund matched scholarships for an additional 4 entering students who received Distinguished Scholarships.
- Six first-year students were awarded Distinguished Scholarships ranging from $5,000-$20,000 per year for four years, totaling awards of $87,500. These were the Justina Ford Scholarship for Commitment to the Underserved, the Florence Sabin Scholarship for Commitment to Community Health, the COPIC Foundation Scholarship, the National Western Stock Show Scholarship, the Donald A. Bennallack Scholarship and the Girod Scholarship. An additional three students received a one-year $8,750 scholarship from the Colorado Medical Society.
- Each of the 24 students who entered the first class of the Colorado Springs Branch campus received a $5,000 renewable scholarship.
- Merit and Diversity scholarships were awarded to an additional 117 current students for a total of $850,000. Twenty-six of these students received scholarships because of a generous donation from UPI.
- Nine seniors from the class of 2016 received a total of $82,000 in Adler MSA Scholarship in recognition of excellence for their completed MSA projects.
- Eight students received ARCS Scholarships based on research excellence.

http://www.ucdenver.edu/academics/colleges/medicalschool/education/studentaffairs/Pages/studentaffairs.aspx
Student Affairs

Student Affairs had a transition at the end of the year with the departure of Terri Blevins, EdD, Assistant Dean for Student Affairs, who joined another medical school in a similar role. Recruitment was undertaken and for next academic year a new structure will be in place.

The position under the guidance of the Associate Dean for Student Life is responsible and oversees major student activities including the Advisory College program, student interest groups, orientation, the match process, including Match Day, graduation, visiting externs, and scholarships. The position also manages the process of departmental specialty-specific advising faculty for career development, and organizes and implements career exploration and development activities for all four phases of medical school.

In 2012, Student Affairs kicked off a student-led initiative to establish Advisory Colleges in the School of Medicine. Eight colleges were established, and were named after Colorado Fourteeners. The colleges were designed to develop and foster mentoring and advising relationships with peers and faculty throughout phases. In the current academic year, leadership in the colleges included 16 faculty mentors, over 70 resident advisors, 2 student directors and 32 fourth year student advisors. The program continues to expand; the content focuses on student wellness, mentoring, and career and academic advising. Faculty mentors participate in monthly faculty meetings and training sessions to share ideas and learn about available resources. The two largest events for the Advisory Colleges were the orientation dinners and the Spring Stampede. Many smaller, college specific events are also held throughout the year.

Areas of responsibilities and service include:

- Working with students having academic or personal struggles and making appropriate referrals
- Overseeing major events, including Orientation and Match Day
- Providing programming and support for students in the areas of personal and professional development, career exploration and planning, stress and burn-out, student wellness and study/time management skills, and preparation for the Match
- Providing programming and support for Advisory Colleges, and other faculty who are mentoring or advising students
- Working individually with students who are struggling academically, clinically, or personally; assisting them in identifying available resources
- Providing a part-time learning specialist to assist students with academic preparation
- Working with specialists in the financial aid office to support student debt management.
- Working with donors and departments to provide and administer scholarships and awards
- Scheduling Phase III and Phase IV students; confirming grades for all four phases
- Manage the visiting student (extern) process, both from the home school and the host school
- Tracking student data including grades, evaluations, absences, clinical requirements
- Advocating for students by sitting on the various curriculum committees at the School of Medicine
- Overseeing and providing support for student groups, visiting students and externs, AOA, and GHHS

In December 2015, three students were awarded MD degrees, and in May 2016, 138 students from the Class of 2016 were awarded MD degrees. Five of these graduates had also received PhD degrees.

On Match Day, March 18, 2016, 139 students matched into residency positions. The table on the following page shows a full list of specialty matches. 45.3% matched in Primary Care specialties (Family Medicine, Internal Medicine, Medicine – Primary track, Med-Peds and Pediatrics). The top residency choices included Internal Medicine (22 categorical matches), Family Medicine (16 matches), Pediatrics (15 matches), Orthopaedic Surgery (10 matches), Obstetrics-Gynecology (9 matches), Emergency Medicine (9 matches), Surgery (7 Categorical matches).

Colorado will retain 26.6% of the class. California will receive 13.7% of the class followed by Illinois with 5%, 4.3% will go to each Michigan, North Carolina and Washington. The remaining 41.8% of the class will be spread throughout 25 other states.

For more information visit our website at: [http://www.ucdenver.edu/academics/colleges/medicalschool/education/studentaffairs/Pages/studentaffairs.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/education/studentaffairs/Pages/studentaffairs.aspx)
<table>
<thead>
<tr>
<th>Number of Students</th>
<th>Specialty Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Anesthesiology</td>
</tr>
<tr>
<td>1</td>
<td>Dermatology</td>
</tr>
<tr>
<td>9</td>
<td>Emergency Medicine</td>
</tr>
<tr>
<td>16</td>
<td>Family Medicine</td>
</tr>
<tr>
<td>27</td>
<td>Internal Medicine</td>
</tr>
<tr>
<td>6</td>
<td>Med-Peds</td>
</tr>
<tr>
<td>4</td>
<td>Neurology &amp; Child Neuro</td>
</tr>
<tr>
<td>1</td>
<td>Neurosurgery</td>
</tr>
<tr>
<td>9</td>
<td>Obstetrics/Gynecology</td>
</tr>
<tr>
<td>3</td>
<td>Ophthalmology</td>
</tr>
<tr>
<td>10</td>
<td>Orthopaedics</td>
</tr>
<tr>
<td>1</td>
<td>Otolaryngology</td>
</tr>
<tr>
<td>2</td>
<td>Pathology</td>
</tr>
<tr>
<td>15</td>
<td>Pediatrics</td>
</tr>
<tr>
<td>1</td>
<td>Phys Medicine &amp; Rehab</td>
</tr>
<tr>
<td>3</td>
<td>Psychiatry</td>
</tr>
<tr>
<td>4</td>
<td>Radiology, Diagnostic</td>
</tr>
<tr>
<td>11</td>
<td>Surgery-Categorical/Prelim</td>
</tr>
<tr>
<td>1</td>
<td>Surgery-Plastic</td>
</tr>
<tr>
<td>2</td>
<td>Urology</td>
</tr>
</tbody>
</table>

2016 Residency Match Data
Admissions

The Office of Admissions team continues to be led by Nichole G. Zehnder, MD, Assistant Dean for Admissions and Associate Professor, Department of Medicine. During the 2015-2016 application cycle the School of Medicine received 7,324 primary applications for a class size of 184, including 24 students who were assigned to the Colorado Springs Branch (CSB). Additionally, the Office of Admissions recruited and interviewed applicants for multiple pipeline programs, accepting students into the University of Colorado Denver BA/BS-MD Program and the University of Colorado Denver Post-Baccalaureate Program.

The Office of Admissions continues to employ a holistic admission process. Grades and MCAT scores are significant variables in deciding who is invited for interviews, but greater emphasis is placed on the total application which includes letters of recommendation, both the primary and secondary essays, and the applicant’s experiences and attributes.

Demographics

<table>
<thead>
<tr>
<th>Class of</th>
<th>2018</th>
<th>2019</th>
<th>2020*</th>
<th>Applicant Data 2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Size</td>
<td>184</td>
<td>179</td>
<td>184</td>
<td>Primary AMCAS Applications: 7,324</td>
</tr>
<tr>
<td>Female</td>
<td>87</td>
<td>81</td>
<td>86</td>
<td>Completed Secondary Applications: 4,878</td>
</tr>
<tr>
<td>Male</td>
<td>97</td>
<td>98</td>
<td>98</td>
<td>Interviewed: 617</td>
</tr>
<tr>
<td>CO Resident</td>
<td>118</td>
<td>118</td>
<td>135</td>
<td>Offered Admission: 287</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>66</td>
<td>61</td>
<td>49</td>
<td>Cumulative GPA: 3.73</td>
</tr>
<tr>
<td>URM**</td>
<td>57</td>
<td>51</td>
<td>52</td>
<td>Math/Science GPA: 3.7</td>
</tr>
<tr>
<td>Average Age</td>
<td>27</td>
<td>25</td>
<td>24</td>
<td>MCAT (total): 32/511</td>
</tr>
<tr>
<td>Cumulative GPA</td>
<td>3.7</td>
<td>3.76</td>
<td>3.73</td>
<td></td>
</tr>
<tr>
<td>Math/Science GPA</td>
<td>3.67</td>
<td>3.74</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>MCAT (total)</td>
<td>32</td>
<td>34</td>
<td>32/511</td>
<td></td>
</tr>
</tbody>
</table>

*First time matriculating students.
** Under-represented in Medicine as defined by CUSOM Diversity Plan

Annual achievements include:
- Twenty-one successful interview days on campus. Each interview day includes two 30-minute, one-on-one interviews with Interview Subcommittee Members; presentations on curriculum, financial aid, and other relevant material; tours and the opportunity to interact with current medical students.
- Highly successful and well-received Second Look Day for accepted applicants featuring hands on bedside ultrasound simulation, interactive radiology sessions, and introduction to problem-based learning. We had 122 prospective students plus their guests in attendance.
- Partnership with the Offices of Diversity and Inclusion, Inclusion and Outreach, and the Alumni Association for ongoing student outreach and recruitment. The office continues to seek faculty for committee membership. If interested, please contact the Office of Admissions (303-724-8025) for an appointment.

Additional detailed information may be found at [http://www.ucdenver.edu/academics/colleges/medicalschool/education/studentaffairs/Pages/studentaffairs.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/education/studentaffairs/Pages/studentaffairs.aspx)

Senior Program Leadership

Nichole G. Zehnder, MD
Assistant Dean for Admissions

W. Vidal Dickerson, MS
Director of Student Life

Maureen Garrity, PhD
Associate Dean for Student Life
Faculty Affairs
The mission of the Office of Faculty Affairs is two-fold: to ensure fair and consistent treatment of faculty members, according to the rules of the University and the School of Medicine; and to assist the departments and divisions of the School of Medicine to recruit, develop, promote and retain outstanding clinicians, teachers and scholars.

The Office of Faculty Affairs provides administrative support for all faculty appointments, promotions, annual evaluations, requests for awards of tenure, post-tenure reviews, and sabbaticals. The Office also provides administrative support for the Faculty Senate, and provides interpretation and guidance regarding Regental and University laws and policies and the Rules of the School of Medicine. The Faculty Affairs team works collaboratively with the Academy of Medical Educators, Office of Professionalism, Offices of Diversity and Inclusion, University Counsel, Human Resources and other School of Medicine and campus leaders.

<table>
<thead>
<tr>
<th>FULL-TIME (≥50% FTE) FACULTY, LISTED BY DEPARTMENT (Instructor and Above)</th>
<th>July 1, 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University Paid</td>
</tr>
<tr>
<td>Total Full-Time Faculty Count</td>
<td>2,957</td>
</tr>
<tr>
<td><strong>Basic Science Departments</strong></td>
<td></td>
</tr>
<tr>
<td>Biochemistry &amp; Molecular Genetics</td>
<td>27</td>
</tr>
<tr>
<td>Cell &amp; Developmental Biology</td>
<td>29</td>
</tr>
<tr>
<td>Immunology and Microbiology</td>
<td>34</td>
</tr>
<tr>
<td>Pathology</td>
<td>64</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>31</td>
</tr>
<tr>
<td>Physiology &amp; Biophysics</td>
<td>12</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>197</td>
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<tr>
<td><strong>Clinical Science Departments</strong></td>
<td></td>
</tr>
<tr>
<td>Anesthesiology</td>
<td>254</td>
</tr>
<tr>
<td>Dermatology</td>
<td>37</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>64</td>
</tr>
<tr>
<td>Family Medicine</td>
<td>107</td>
</tr>
<tr>
<td>Medicine</td>
<td>622</td>
</tr>
<tr>
<td>Neurology</td>
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</tr>
<tr>
<td>Neurosurgery</td>
<td>53</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynecology</td>
<td>84</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>42</td>
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<tr>
<td>Orthopedics</td>
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<td>Otolaryngology</td>
<td>44</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>804</td>
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<tr>
<td>Physical Medicine &amp; Rehabilitation</td>
<td>64</td>
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<tr>
<td>Psychiatry</td>
<td>181</td>
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<tr>
<td>Radiation Oncology</td>
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<tr>
<td>Radiology</td>
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<tr>
<td>Surgery</td>
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<tr>
<td><strong>Subtotal</strong></td>
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<tr>
<td></td>
<td>University Paid</td>
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<tr>
<td>------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Instructor/Sr. Instructor</td>
<td>1,122</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>795</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>585</td>
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<tr>
<td>Professor</td>
<td>455</td>
</tr>
<tr>
<td><strong>Total Full-Time Faculty Count</strong></td>
<td><strong>2,957</strong></td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteer</td>
<td>2,678</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid (&lt;.5 FTE)</td>
<td>302</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Clinical Faculty Count</strong></td>
<td><strong>2,980</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MEDICAL SCIENTIST TRAINING PROGRAM
The Medical Scientist Training Program (MSTP) is a multidisciplinary, inter-institutional MD/PhD dual degree training program educating students in clinical medicine and biomedical research. Its mission is to provide students with the breadth and depth of training necessary to excel as physician scientists.

Post-baccalaureate students are recruited from a national pool of about 400 applicants, and those selected have proven exceptional talents in research science, a curiosity to solve mechanisms of disease, a drive for discovery, a well-thought-out motivation to pursue a career in medicine, and exceptional leadership.

The program was formed in 1983. In 1992, the program received MSTP status by successfully competing for National Institutes of Health (NIH) T32 funding. Currently, the program receives about $817,697 per year to support 16 trainees.

The program has strong leaders and mentors. Arthur Gutierrez-Hartmann, MD, has been the director of the MSTP since 1994 and selected for numerous local and national mentor awards, and national leadership roles in MD/PhD and graduate education. Kristin Artinger, PhD, serves as the Associate Director for pre-clinical training and provides individualized guidance to each student via regular meetings and interactions focused on their first two years in the program. Jorge DiPaola, MD, serves as the Associate Director for clinical years which focuses more on the last two years of medical school guidance for residency and career goals. The program has been competitively reviewed and funded by NIH for each of the past four cycles.

The program has been a campus and national leader in recruiting diverse students, and has received diversity awards from CU and commendations from the National Institute of General Medical Sciences, highlighting the Colorado MSTP on its diversity website.

There are more than 150 faculty mentors for students to choose in 17 PhD programs at the Anschutz Medical Campus, National Jewish Health and the CU Boulder campus. There are currently 75 students in the program: 10 in the first year (MS-I), 10 in the second year (MS-II), 40 in the PhD research years, and 15 in the School of Medicine clinical years (MS-III and MS-IV). Since 1983, 212 students have matriculated in the program.

Graduates of the MSTP obtain residencies at the nation’s elite programs, with about 75 percent of those completing all training now in academic medicine, government (NIH or Centers for Disease Control and Prevention), or industry, including starting biotech companies. Importantly, an increasing number of MSTP graduates are now faculty at the University of Colorado Anschutz Medical Campus, with hopes of recruiting more alumni “back home.” The Colorado MSTP and its leaders have been key in establishing the National Association of MD/PhD Directors and Administrators, the MD/PhD Section of the Association of American Medical Colleges’ Graduate Research, Education, and Training Group, and the Annual National MD/PhD Student Conference. Finally, the program has taken the initiative to bring together, via social and academic venues, all MD/PhDs on the Anschutz Medical Campus, across all stages of training, from student to faculty status, to establish an interactive, supportive cadre of physician-scientists, in order to optimize career success for this group. Additional details of the Medical Scientist Training Program can be found at: www.ucdenver.edu/mstp.
Research
The bridge funding program of the CU School of Medicine was established in 2006 when reductions in the National Institutes of Health (NIH) budget began to threaten the viability of faculty research projects. The program’s purpose is to provide support to principal investigators while they re-apply for funding. The Bridge Funding Committee is advisory to the Dean. Applications are reviewed in April and November.

From the first review in 2006 through April 2016, 171 awards have been made to 136 faculty members in a total amount of $8.287 million. From the start through April 2015, 124 of these awardees, who received $7.4 million in bridging awards, have gained $98.9 million in total research dollars, an over 13.4-fold return on investment of bridge-funding grants.

http://www.ucdenver.edu/academics/colleges/medicalschool/research/researchdevelopment/Pages/BridgeFunding.aspx

<table>
<thead>
<tr>
<th>Bridge Funding Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raphael Nemenoff, PhD – Committee Chair</td>
</tr>
<tr>
<td>Nancy Hadley-Miller, MD</td>
</tr>
<tr>
<td>Marvin Schwarz, MD</td>
</tr>
<tr>
<td>Robert Sclafani, PhD</td>
</tr>
<tr>
<td>Kurt Stenmark, MD</td>
</tr>
<tr>
<td>John Weil, MD</td>
</tr>
<tr>
<td>Peter Buttrick, MD</td>
</tr>
</tbody>
</table>

Strategic Infrastructure for Research Committee

The Strategic Infrastructure for Research Committee (SIRC), created in 2003, reviews proposals to fund research infrastructure that can be available as a core facility or program to all appropriate users on campus. One of the major benefits of the SIRC process is critical peer review and the return of constructive comments that have strengthened the quality and productivity of the School of Medicine’s research and have improved the cost-effectiveness of the Dean’s Academic Enrichment Fund (AEF). Applications for ongoing cores must include a plan for sustainability. This committee is advisory to the Dean.

SIRC applications are solicited quarterly. Through the June 2016 review the SIRC process has made 84 awards totaling $14.6 million in Dean’s funds, and 6 additional 2-to-5-year awards to projects from the 2009 research retreat totaling $7.3 million.

SIRC-approved research infrastructure includes:

- Core facilities in high-throughput genomics and metabolomics, biomedical informatics, advanced light microscopy, tissue banking, small-animal imaging, mouse behavior, and the Clinical-Translational Research Imaging Core.
- Core programs granting an MS or PhD in medical science for medical & graduate students and faculty, year-long mentorship in outcomes research, biostatistics support, patient databases in pregnancy & developmental disabilities, and a biorepository.
- In FY15-16, a total $657K was allocated for 5 awards, including support for a Mass Spectrometric Lipidomics Core and High-End Instrumentation (HEI) grant.

http://www.ucdenver.edu/academics/colleges/medicalschool/research/researchdevelopment/Pages/SIRC.aspx

<table>
<thead>
<tr>
<th>Strategic Infrastructure for Research Committee (SIRC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Davis, PhD - Chair</td>
</tr>
<tr>
<td>Tom Berl, MD</td>
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<tr>
<td>Glenn Furuta, MD</td>
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<tr>
<td>Paul Jedlicka, MD</td>
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<tr>
<td>Craig Jordan, PhD</td>
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<tr>
<td>Anne Libby, PhD</td>
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<tr>
<td>J. Mark Petrash, PhD</td>
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<tr>
<td>Tamim Shaikh, PhD</td>
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<tr>
<td>Peter Buttrick, MD</td>
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</tbody>
</table>
The Research Advisory Committee (RAC) was established by the Research Strategic Plan of 2003 as a way to advise the Dean of the School of Medicine on matters related to research, and it now also advises the Vice Chancellor for Research. The committee meets monthly. RAC has recommended in the past that a center for stem-cell biology and regenerative medicine should be established and that a campus child-care facility should be constructed as a means of retaining research faculty—and as the right thing to do. The RAC selected the six proposals to be presented at the research retreat of 2009 and collated faculty reviews submitted at the conclusion of the retreat, which was the basis for funding decisions. RAC deliberations over this past year included a comprehensive review of the current list of core facilities on campus. The RAC updated the core list and created a proposed definition of a core facility in order to help keep this list current. A recommendation regarding core support was provided to the Dean. The RAC also conducted a campuswide survey to collect projected animal space needs in order to help with space development plans in the coming years. A recommendation to reevaluate the master plan for campus development to address the expanding animal space needs was provided to the Dean.

http://www.ucdenver.edu/academics/colleges/medicalschool/research/researchdevelopment/Pages/RAC.aspx

<table>
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<tr>
<th>Research Advisory Committee (RAC)</th>
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<tbody>
<tr>
<td>Mary Weiser-Evans, PhD – Committee Chair</td>
</tr>
<tr>
<td>Steve Abman, MD</td>
</tr>
<tr>
<td>Kate Horwitz, PhD</td>
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<tr>
<td>Mark Johnston, PhD</td>
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<tr>
<td>David Jones, PhD</td>
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<tr>
<td>Jeff Kieft, PhD</td>
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<tr>
<td>Doug Novins, MD</td>
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<tr>
<td>Tom Purcell, MD</td>
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<tr>
<td>Hugo Rosen, MD</td>
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<tr>
<td>Suzann Ruedeman</td>
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<td>Peter Buttrick, MD</td>
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<tr>
<td>Spero Manson, PhD</td>
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<tr>
<td>Fred Suchy, MD</td>
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<tr>
<td>Richard Traystman, PhD</td>
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</tbody>
</table>

Clinical-Translational Research Advisory Committee

Clinical-Translational Research Advisory Committee (CTRAC) membership represents the research leadership of the entities that make up the Colorado Clinical and Translational Sciences Institute (CCTSI): School of Medicine, College of Nursing, Skaggs School of Pharmacy and Pharmaceutical Sciences, School of Dental Medicine, University of Colorado Denver (UCD) downtown campus, National Jewish, University of Colorado Hospital and Children’s Hospital Colorado, and the Regulatory Compliance/Clinical Research Support Center. It meets quarterly and advises the Dean and the Vice Chancellor for Research on matters related to the conduct of patient-related and community-based research. Its other major mission is to educate members and their constituencies about activities, opportunities, and needs across the programs of the CCTSI and the Anschutz Medical Campus (AMC) and to promote collaboration and exchange of ideas. Over the past academic year, CTRAC efforts have included framing possible responses to changes in National Institutes of Health funding of the CCTSI, priorities for strengthening campus infrastructure for patient- and population-directed research, and improved collaborations across all components of the AMC and UCD.

http://www.ucdenver.edu/academics/colleges/medicalschool/research/researchdevelopment/Pages/CTRAC.aspx
### Associate Dean for Research Education

**Arthur Gutierrez-Hartmann, MD**, was named Associate Dean for Research Education in 2014 to provide guidance, mentorship and best-practice experience to research-oriented pipeline trainees (MD, PhD, MD/PhD students and postdoctoral fellows) and young faculty in the basic and clinical departments, in order to optimize their academic and funding success. He works to continually improve the communication of the Dean’s Office with the junior faculty to nurture a strong commitment of the new faculty to the mission of the institution and the Dean’s Office. Gutierrez-Hartmann has been director of the Medical Scientist Training Program since 1994 and is the founding director of the Physician Scientist Training Program since 2012.

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**Clinical-Translational Research Advisory Committee (CTRAC) / Colorado Clinical and Translational Sciences Institute (CCTSI) Internal Advisory Committee**

<table>
<thead>
<tr>
<th>William Hiatt, MD – Committee Chair</th>
<th>Alison Lakin, RN, PhD</th>
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<tbody>
<tr>
<td>David Badesch, MD</td>
<td>Tim Lockie, MS, MBA</td>
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<tr>
<td>Peter Buttrick, MD</td>
<td>Meredith Mealer, PhD</td>
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<tr>
<td>Warren (Cappy) Capell, MD</td>
<td>Peter Mourani, MD</td>
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<tr>
<td>Bob Damrauer, PhD</td>
<td>Alex Polotsky, MD</td>
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<tr>
<td>Greg Downey, MD</td>
<td>Mary Reyland, PhD</td>
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<tr>
<td>Anthony Elias, MD</td>
<td>David Ross, PhD</td>
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<tr>
<td>Thomas Flaig, MD</td>
<td>Ron Sokol, MD</td>
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<tr>
<td>Amy Gannon</td>
<td>Karen Sousa, PhD</td>
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<tr>
<td>William Hay, MD</td>
<td>Fred Suchy, MD</td>
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<tr>
<td>Michael Kahn, MD, PhD</td>
<td>Richard Traystman, PhD</td>
</tr>
<tr>
<td>Allison Kempe, MD, MPH</td>
<td>Steve VanNurden</td>
</tr>
<tr>
<td>Wendy Kohrt, PhD</td>
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New Research Grants > $500,000
Awarded 2015-2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Funding Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard K. Albert, MD</td>
<td><em>Sigh Ventilation to Reduce the Incidence and/or the Severity of the Acute Respiratory Distress Syndrome</em></td>
<td>U.S. Army Medical Research Material Command</td>
</tr>
<tr>
<td>Steven M. Anderson, PhD</td>
<td><em>Functional Development of the Mammary Gland</em></td>
<td>Eunice Kennedy Shriver National Institute of Child Health and Human Development/NIH/DHHS</td>
</tr>
<tr>
<td>Kathleen Carole Barnes, PhD</td>
<td><em>New Approaches for Empowering Studies of Asthma in Populations of African Descent</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Kathleen Carole Barnes, PhD</td>
<td><em>Integrative Genomics in Asthmatics of African Descent</em></td>
<td>National Institute of Allergy and Infectious Diseases/NIH/DHHS</td>
</tr>
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<td>Kathleen Carole Barnes, PhD</td>
<td><em>Overall Atopic Dermatitis Research Network (ADRN2)</em></td>
<td>National Jewish Health</td>
</tr>
<tr>
<td>Kathleen Carole Barnes, PhD</td>
<td><em>LEAP Whole Genome Sequencing Project</em></td>
<td>Benaroya Research Institute at Virginia Mason</td>
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<tr>
<td>Kathleen Carole Barnes, PhD</td>
<td><em>Functional Impact of IL33 polymorphisms on asthma and other Th2-mediated diseases</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
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<td>Cathy Bodine, PhD</td>
<td><em>RERC for the Advancement of Cognitive Technologies</em></td>
<td>Administration for Community Living/DHHS</td>
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<tr>
<td>Angela Bonaguidi, LCSW</td>
<td><em>Project REACH - Risk Education for At-Risk Communities on HIV/AIDS TI025821-02</em></td>
<td>Substance Abuse and Mental Health Services Administration</td>
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<tr>
<td>Robert E. Booth, PhD</td>
<td><em>Life Course Investigation of People Who Inject Drugs</em></td>
<td>National Institute on Drug Abuse/NIH/DHHS</td>
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<td>Amy Brooks-Kayal, MD</td>
<td><em>GABA(A) Receptor Subunit Regulation in Epileptogenesis</em></td>
<td>National Institute of Neurological Disorders and Stroke/NIH/DHHS</td>
</tr>
<tr>
<td>Paul A. Bunn, MD</td>
<td><em>SPORE in Lung Cancer</em></td>
<td>National Cancer Institute/NIH/DHHS</td>
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<tr>
<td>Katherine L. Casillas, PhD</td>
<td><em>Colorado Prevention - Safecare</em></td>
<td>Colorado Department of Human Services</td>
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<tr>
<td>Victoria A. Catenacci, MD</td>
<td><em>Optimal Timing of Exercise Initiation Within a Lifestyle Weight Loss Program</em></td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
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<tr>
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<tr>
<td>Diana Marcela Cittelly, PhD</td>
<td><em>Role of IL13RA2 as a functional biomarker in breast cancer brain metastasis</em></td>
<td>Department of Defense</td>
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<tr>
<td>Richard E. Davis, PhD</td>
<td><em>Chromatin diminution in nematodes</em></td>
<td>National Institute of Allergy and Infectious Diseases/NIH/DHHS</td>
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<tr>
<td>Sarah Lindsey Davis, MD</td>
<td><em>GO29779 A Phase IB, Open-Label, Dose-Escalation Study of the Safety and Pharmacology of GDC-0919 Administered with MPDL3280A in Patients with Locally Advanced or Metastatic Solid Tumors</em></td>
<td>Genentech, Inc.</td>
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<tr>
<td>Kevin D. Deane, MD</td>
<td><em>Targeting Immune Responses for Prevention of Rheumatoid Arthritis (TIP-RA)</em></td>
<td>Janssen Pharmaceutical, Inc.</td>
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<tr>
<td>Kevin D. Deane, MD</td>
<td><em>Strategy to Prevent the Onset of Clinically-Apparent Rheumatoid Arthritis (StopRA) (ARA08)</em></td>
<td>University of California, San Francisco</td>
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<tr>
<td>Jennifer R. Diamond, MD</td>
<td><em>D419NC00001 Ph 1 Study of Durvalumab and IPH2201 in Adult Subjects with Select Advanced Solid Tumors</em></td>
<td>Astra Zeneca</td>
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<tr>
<td>W. Perry Dickinson, MD</td>
<td><em>State Innovation Model</em></td>
<td>State Of Colorado Office Of The Governor</td>
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<td>W. Perry Dickinson, MD</td>
<td><em>Transforming Clinical Practices initiative - PTN</em></td>
<td>State of Colorado</td>
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<tr>
<td>W. Perry Dickinson, MD</td>
<td><em>Comparing Strategies for Translating Self-management Support into Primary Care</em></td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
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<td>W. Perry Dickinson, MD</td>
<td><em>SIM: State Innovation Model</em></td>
<td>State Of Colorado Office Of The Governor</td>
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<tr>
<td>W. Perry Dickinson, MD</td>
<td><em>Evidence NOW Southwest</em></td>
<td>Agency for Healthcare Research and Quality/DHHS</td>
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<td>Sue G. Eckhardt, MD</td>
<td><em>GO29030 PH1b, Open-label, dose escalation study of the safety, tolerability, and pharmacokinetics</em></td>
<td>Genentech, Inc.</td>
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<tr>
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<tr>
<td>Anthony David Elias, MD</td>
<td><strong>NCI National Clinical Trials Network - Lead Academic Participant Sites</strong></td>
<td>National Cancer Institute/NIH/DHHS</td>
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<tr>
<td>Holger K. Eltzschig, MD</td>
<td><strong>Equilibrative Nucleoside Transporters during AKI - Project 2</strong></td>
<td>University of Texas, Houston</td>
</tr>
<tr>
<td>Thomas William Flaig, MD</td>
<td><strong>D419BC00001 Ph III, Randomized, Open-label, Controlled, Multi-Center, Global Study of First-Line MEDI4736 Monotherapy and MEDI4736 in Combination with Tremelimumab Versus Standard of Care Chemotherapy in Patients with Unresectable Stage IV Urothelial Bladder Cancer</strong></td>
<td>Astra Zeneca</td>
</tr>
<tr>
<td>Sonia Flores, PhD</td>
<td><strong>Genotypic and functional properties of HIV-1 Nef clinical isolates in PAH-HIV</strong></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
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<td>Andrew Paul Fontenot, MD</td>
<td><strong>RPPR for &quot;Interactions of smoking, PD-1 and IL-10 in HIV-associated lung disease&quot;</strong></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
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<td>Robert Freeman, MD</td>
<td><strong>Human Trial of Allosteric Modulator Alpha 7 Nicotinic Receptors in Schizophrenia</strong></td>
<td>National Institute of Mental Health/NIH/DHHS</td>
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<td>Jacob E. Friedman, PhD</td>
<td><strong>Interrupting the Vicious Cycle of Obesity and Metabolic Syndrome</strong></td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
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<tr>
<td>Sandra Lee Friedman, MD, MPH</td>
<td><strong>University Centers for Excellence in Developmental Disabilities (UCEDD)</strong></td>
<td>Administration for Community Living/DHHS</td>
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# New Research Grants > $500,000
## Awarded 2015-2016

<table>
<thead>
<tr>
<th>Name</th>
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<tr>
<td>Sandra Lee Friedman, MD, MPH</td>
<td>CoLEND</td>
<td>Health Resources and Services Administration/DHHS</td>
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<tr>
<td>Mark W. Geraci, MD</td>
<td>Pulmonary Hypertension Breakthrough Initiative</td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
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<tr>
<td>Donald H. Gilden, MD</td>
<td>The Molecular Pathogenesis of Varicella Zoster Virus Infection</td>
<td>National Institute on Aging/NIH/DHHS</td>
</tr>
<tr>
<td>Peter Ashley Gottlieb, MD</td>
<td>TrialNet: Diabetes Type 1 Prevention</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
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<tr>
<td>Eva Nozik Grayck, MD</td>
<td>Impact of Insufficient Vascular EC-SOD in Pulmonary Hypertension</td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Eva Nozik Grayck, MD</td>
<td>miRNA Regulation of Vascular Permeability and Inflammation in the Lung Injury</td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Kathryn M. Haskins, PhD</td>
<td>Hybrid Peptides as Autoantigens for Diabetogenic CD4 T Cells</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
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<td>Teresa Lynn Hernandez, PhD</td>
<td>Randomized Trial of Diet in GDM: Metabolic Consequences to Mother and Offspring</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
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<tr>
<td>Fred Robert Hirsch, MD, PhD</td>
<td>Squamous Cell Carcinoma of the Lung: Validation of Prognostic and Predictive Signatures</td>
<td>National Cancer Institute/NIH/DHHS</td>
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<tr>
<td>Fred Robert Hirsch, MD, PhD</td>
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<td>National Cancer Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Vernon Michael Holers, MD</td>
<td>Evolving Adaptive and Effector Mechanisms From Pre-RA Through Established Disease (EMORA)</td>
<td>National Institute of Arthritis &amp; Musculoskeletal &amp; Skin Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Christian J. Hopfer, MD</td>
<td>Genetics and Progression of Early-onset Substance Dependence and HIV Risk</td>
<td>National Institute on Drug Abuse/NIH/DHHS</td>
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<td>Jason A. Hoppe, DO</td>
<td>A step-wise evaluation of a prescription drug-monitoring program electronic health record integration, decision support and mandated use</td>
<td>Colorado Dept of Regulatory Agencies</td>
</tr>
<tr>
<td>Lawrence E. Hunter, PhD</td>
<td>Colorado Biomedical Informatics Training Program</td>
<td>National Library of Medicine/NIH/DHHS</td>
</tr>
<tr>
<td>Lawrence E. Hunter, PhD</td>
<td>CBIT Progress Report</td>
<td>National Library of Medicine/NIH/DHHS</td>
</tr>
<tr>
<td>Lawrence E. Hunter, PhD</td>
<td>Bio Text NLP</td>
<td>National Library of Medicine/NIH/DHHS</td>
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<tr>
<td>Lawrence E. Hunter, PhD</td>
<td>Developing and applying information extraction resources and technology to create a knowledge base of molecular biology</td>
<td>National Library of Medicine/NIH/DHHS</td>
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<td>David C. Irwin, PhD</td>
<td>Development of perfluorocarbon based drug delivery strategies to inhibit the hypoxic pulmonary vasoconstrictive response</td>
<td>Office of Naval Research</td>
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<tr>
<td>Thomas Jansson, MD</td>
<td>A Novel Mouse Model of Obesity in Pregnancy</td>
<td>Office of the Director, National Institutes of Health/NIH/DHHS</td>
</tr>
<tr>
<td>Antonio Jimeno, MD</td>
<td>D419LC00001 Phase III Randomized, Open-label, Multi-center, Global Study of MEDI4736 in Combination with Tremelimumab versus Standard of Care in the Treatment of First-line Recurrent or Metastatic Squamous Cell Head and Neck Cancer subjects</td>
<td>Astra Zeneca</td>
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<tr>
<td>Antonio Jimeno, MD</td>
<td>MK 3475-040-0006 Ph III Randomized Trial of MK-3475 (Pembrolizumab) versus Standard Treatment in Subjects with Recurrent or Metastatic Head and Neck Cancer</td>
<td>Merck Sharp &amp; Dohme Corp</td>
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<td>Antonio Jimeno, MD</td>
<td>MK-1966-001-0005 A Ph 1/1b Trial of MK-1966 in Combination with SD-101 in Subjects with Advanced Malignancies</td>
<td>Merck Sharp &amp; Dohme Corp</td>
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<tr>
<td>David Thor Johnson, MD, PhD</td>
<td>A Phase III Clinical Trial Evaluating TheraSphere® in Patients with Metastatic Colorectal Carcinoma of the Liver who have Failed First Line Chemotherapy</td>
<td>Biocompatibles UK Limited</td>
</tr>
<tr>
<td>Manali K. Kadmar, MD</td>
<td>ACE-CL-007 Randomized, Multi-center, Open-Label, 3 Arm Phase 3 Study of Obinutuzumab in Combination with Chlorambucil, ACP-196 in Combination with Obinutuzumab, and ACP-196 Monotherapy in Subjects with Previously Untreated Chronic Lymphocytic Leukemia</td>
<td>Acerta Pharma LLC</td>
</tr>
<tr>
<td>Madeleine Kane, MD, PhD</td>
<td>K12CA086913 Renewal - Paul Calabresi Award in Clinical Oncology Research</td>
<td>National Cancer Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Allison Kempe, MD, MPH</td>
<td>Centralized IIS-Based Reminder-Recall to Increase Influenza Vaccination Rates</td>
<td>National Institute of Allergy and Infectious Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Benzi M. Kluger, MD</td>
<td>Does Outpatient Palliative Care Improve Patient-Centered Outcomes in Parkinson's Disease</td>
<td>Patient Centered Outcomes Research Institute</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Funding Agency</td>
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<tr>
<td>Wendy M. Kohrt, PhD</td>
<td>Bioenergetic and Metabolic Consequences of the Loss of Gonadal Function</td>
<td>Eunice Kennedy Shriver National Institute of Child Health and Human Development/NIH/DHHS</td>
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<tr>
<td>Nancy F. Krebs, MD</td>
<td>Maternal Preconception Nutrition</td>
<td>Bill and Melinda Gates Foundation</td>
</tr>
<tr>
<td>Nancy F. Krebs, MD</td>
<td>The Global Network and Preconception Maternal Nutrition U10 HD076474</td>
<td>Eunice Kennedy Shriver National Institute of Child Health and Human Development/NIH/DHHS</td>
</tr>
<tr>
<td>Jean S. Kutner, MD</td>
<td>Refinement and Expansion of the Palliative Care Research Cooperative Group (PCRC)</td>
<td>Duke University</td>
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<tr>
<td>Elaine Tat Lam, MD</td>
<td>B9991003 PH3, Multinational, Randomized, Open-Label, Parallel-Arm Study of Avelumab (MSB0010718C) in combination with Axitinib (INLYTA®) versus Sunitinib (SUTENT®) monotherapy in the first-line treatment of patients with advanced renal cell carcinoma</td>
<td>Pfizer, Inc</td>
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<tr>
<td>Elaine Tat Lam, MD</td>
<td>ADXS142-03/2 A Phase 1-2 Dose-Escalation and Safety Study of ADXS31-142 Alone and of ADXS31-142 in Combination with Pembrolizumab (MK-3475) in Patients with Previously Treated Metastatic Castration-Resistant Prostate Cancer</td>
<td>Advaxis, Inc.</td>
</tr>
<tr>
<td>Mark L. Laudenslager, PhD</td>
<td>Quality of life in allogeneic hematopoietic stem cell transplant patients is improved when their caregiver’s distress is reduced</td>
<td>Patient Centered Outcomes Research Institute</td>
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<tr>
<td>Karl Douglas Lewis, MD</td>
<td>EMR 100070-003 Ph 2, open-label, multicenter trial to investigate the clinical activity and safety of MSB0010718C . . .</td>
<td>Emd Serono, Inc.</td>
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<tr>
<td>Karl Douglas Lewis, MD</td>
<td>103A-301 Multicenter, Double-blind, Placebo-controlled, Adaptive Phase 3 Trial of POL-103A Polyvalent Melanoma Vaccine in Post-resection Melanoma Patients with a High Risk of Recurrence</td>
<td>Polynoma LLC</td>
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<tr>
<td>Myron J. Levin, MD</td>
<td>International and Domestic, Pediatric and Maternal HIV Studies Coordinating Center</td>
<td>Westat, Inc.</td>
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<tr>
<td>Myron J. Levin, MD</td>
<td>Ryan White HIV/AIDS Program Part D Grants for Coordinated HIV Services and Access to Research for Women, Infants, Children, and Youth (WICY) Existing Geographic Service Areas</td>
<td>Health Resources and Services Administration/DHHS</td>
</tr>
<tr>
<td>Myron J. Levin, MD</td>
<td>International &amp; Domestic, Pediatric &amp; Maternal HIV Studies Coordinating Center</td>
<td>Westat, Inc.</td>
</tr>
<tr>
<td>Christina Beth Little, PhD</td>
<td>Denver Initiative to Integrate Trauma-Informed and Trauma-Focused Practice in Child Welfare and Associated Systems to Benefit Children, Families and the Community</td>
<td>Administration for Children and Families/DHHS</td>
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<tr>
<td>M. Scott Lucia, MD</td>
<td>MAPP Research Network Tissue Analysis and Technology Core</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
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<tr>
<td>Wendy Macklin, PhD</td>
<td>The role of mTOR signaling in oligodendrocyte differentiation and CNS myelination</td>
<td>National Institute of Neurological Disorders and Stroke/NIH/DHHS</td>
</tr>
<tr>
<td>Elizabeth J. McFarland, MD</td>
<td>Adolescent Medicine Trails Network for HIV/AIDS Interventions</td>
<td>Westat, Inc.</td>
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<tr>
<td>Timothy A. McKinsey, PhD</td>
<td>Regulation of Chromatin Signaling in Heart Failure by BET Bromodomain Proteins</td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
</tbody>
</table>
New Research Grants > $500,000  
Awarded 2015-2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Funding Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maureen Ann Melonis, MS</td>
<td>Amendment - SWAAAC Assistive Technology Regional Pilot Project</td>
<td>Colorado Department of Education/COLO</td>
</tr>
<tr>
<td>Kerrie Moreau, PhD</td>
<td>Cardiovascular Consequences of Hypogonadism in Men</td>
<td>National Institute on Aging/NIH/DHHS</td>
</tr>
<tr>
<td>Peter Michael Mourani, MD</td>
<td>The Microbiome, Virome and Host Responses Preceding Ventilator-Associated Pneumonia</td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Kristen Jane Nadeau, MD</td>
<td>B-Cell Rescue in Youth with New Onset T2DM</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Kristen Jane Nadeau, MD</td>
<td>B-cell Rescue in Youth with New Onset T2DM</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Michael R. Narkewicz, MD</td>
<td>Longitudinal Study of Cystic Fibrosis Liver Disease (CFLD)</td>
<td>Cystic Fibrosis Foundation</td>
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<tr>
<td>David A. Norris, MD</td>
<td>Molecular Analysis, Modeling and Correction of Skin Diseases Core Center</td>
<td>National Institute of Arthritis &amp; Musculoskeletal &amp; Skin Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Scott Charles Newcomer Oliver, MD</td>
<td>Amendment 3 A Phase III, multicenter, randomized, double-masked, sham-controlled study to assess the efficacy and safety of Lampalizumab administered intravitreally to patients with geographic atrophy secondary to age-related macular degeneration</td>
<td>Genentech, Inc.</td>
</tr>
<tr>
<td>Scott Charles Newcomer Oliver, MD</td>
<td>A Phase III, multicenter, randomised, double-masked, sham-controlled study to assess the efficacy and safety of Lampalizumab administered intravitreally to patients with geographic atrophy secondary to age-related macular degeneration</td>
<td>Genentech, Inc.</td>
</tr>
<tr>
<td>Brent Elliot Palmer, PhD</td>
<td>Diet/gut Microbiome Interaction Influence Inflammatory Disease in HIV Patients</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
</tr>
</tbody>
</table>
### New Research Grants > $500,000
#### Awarded 2015-2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Funding Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric M. Poeschla, MD</td>
<td>Introducing restriction factors into the genome of an AIDS virus host species.</td>
<td>National Institute of Allergy and Infectious Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Eric M. Poeschla, MD</td>
<td>Introducing restriction factors into the genome of an AIDS virus host species</td>
<td>National Institute of Allergy and Infectious Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Eric M. Poeschla, MD</td>
<td>Dependency Factors in HIV-1 Cytoplasmic-Nuclear Transit and Integration</td>
<td>National Institute of Allergy and Infectious Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Daniel Aaron Pollyea, MD</td>
<td>A phase 1/2 study of Vadastuximab Talirine (SGN-CD33A) in combination with Azacitidine in patients with previously untreated international prognostic scoring system (IPSS) intermediate-2 or high risk myelodysplastic syndrome (MDS)</td>
<td>Seattle Genetics, Inc.</td>
</tr>
<tr>
<td>Daniel Aaron Pollyea, MD</td>
<td>A phase IB/II multi-arm study with Venetoclax in combination with Cobimetinib and Venetoclax in combination with Idasanutlin in patients aged ≥60 year</td>
<td>Genentech, Inc.</td>
</tr>
<tr>
<td>Daniel Aaron Pollyea, MD</td>
<td>A phase 1/2 study of Vadastuximab Talirine (SGN-CD33A) in combination with Azacitidine in patients with previously untreated international prognostic scoring system (IPSS) intermediate-2 or high risk myelodysplastic syndrome (MDS)</td>
<td>Seattle Genetics, Inc.</td>
</tr>
<tr>
<td>Martha C. Powell, PhD</td>
<td>QIS Operational Support and Analysis</td>
<td>Insight Policy Research</td>
</tr>
<tr>
<td>Diego Restrepo, PhD</td>
<td>Complex Odor Recognition by the Main Olfactory Bulb</td>
<td>National Institute on Deafness and Other Communication Disorders/NIH/DHHS</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Funding Agency</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Marian J. Rewers, MD, PhD</td>
<td>USF TEDDY Study.FP/FC (PBMC)</td>
<td>University of South Florida</td>
</tr>
<tr>
<td>Marian J. Rewers, MD, PhD</td>
<td>Autoimmunity Screening for Kids (ASK) Program</td>
<td>Juvenile Diabetes Foundation</td>
</tr>
<tr>
<td>Marian J. Rewers, MD, PhD</td>
<td>Natural History of Pre-diabetic Autoimmunity (DAISY)</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Angeles B. Ribera, PhD</td>
<td>Rocky Mtn Neurological Disorders Core Center</td>
<td>National Institute of Neurological Disorders and Stroke/NIH/DHHS</td>
</tr>
<tr>
<td>Jennifer Richer, PhD</td>
<td>Breakthrough Award</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Jennifer Richer, PhD</td>
<td>Trainee Award</td>
<td>NRSA</td>
</tr>
<tr>
<td>Robert Corwine Roach, Jr., PhD</td>
<td>Three New Ideas to Protect Special Forces from the Stress of High Altitude</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Paul J. Rochon, MD</td>
<td>Predicting the safety and effectiveness of inferior vena cava filters (preserve)</td>
<td>New England Research Institutes</td>
</tr>
<tr>
<td>Cordelia Robinson Rosenberg, PhD, RN</td>
<td>Caddre Seed Year 5</td>
<td>Centers for Disease Control and Prevention/DHHS</td>
</tr>
<tr>
<td>Paul J. Rozance, MD</td>
<td>Nutrient coordination of pancreatic vasculature and B-cells</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Desmond K. Runyan, DrPH</td>
<td>CWTS</td>
<td>Colorado Department of Human Services</td>
</tr>
<tr>
<td>Chad Rusthoven, MD</td>
<td>M13-813 Randomized, Placebo Controlled Phase 2b/3 Study of ABT-414 with Concurrent Chemoradiation and Adjuvant Temozolomide in Subjects with Newly Diagnosed Glioblastoma (GBM) with Epidermal Growth Factor Receptor (EGFR) Amplification (Intelligence 1)</td>
<td>AbbVie, Inc.</td>
</tr>
</tbody>
</table>
# New Research Grants > $500,000
## Awarded 2015-2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Funding Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel W. Sherbenou, MD, PhD</td>
<td><em>A phase III study of Pomalidomide and low dose Dexamethasone with or without Pembrolizumab (MK3475)</em> in refractory or relapsed and refractory Multiple Myeloma (rrMM). (KEYNOTE 183)</td>
<td>Merck Sharp &amp; Dohme Corp</td>
</tr>
<tr>
<td>Eric Schmidt, MD</td>
<td><em>Endothelial Glycocalyx Reconstitution During Sepsis</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>David A. Schwartz, MD</td>
<td><em>Functional Genetics in Idiopathic Pulmonary Fibrosis</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>David A. Schwartz, MD</td>
<td><em>MUC5B, a novel therapeutic target for Idiopathic Pulmonary Fibrosis (IPF)</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>David A. Schwartz, MD</td>
<td><em>Role of Genetics in Idiopathic Pulmonary Fibrosis (IPF)</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Marvin I. Schwarz, MD</td>
<td><em>Multidisciplinary Research Training in Respiratory Disease</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Robin Shandas, PhD</td>
<td><em>Functional and Biological Phenotyping of Pediatric PH</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Robin Shandas, PhD</td>
<td><em>Functional and Biological Phenotyping of Pediatric PH</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Sunita Sharma, MD, MPH</td>
<td><em>MicroRNAs and Early Life Exposures in the Developmental Origin of Asthma</em></td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
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<tr>
<td>Janet Kathleen Snell-Bergeon, PhD, MPH</td>
<td><em>Complications and Comorbidities of Type 1 Diabetes</em></td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Ronald J. Sokol, MD</td>
<td><em>Colorado Clinical and Translational Sciences Institute (KL2)</em></td>
<td>National Center for Advancing Translational Sciences/NIH</td>
</tr>
<tr>
<td>Ronald J. Sokol, MD</td>
<td><em>Colorado Clinical and Translational Sciences Institute (UL1)</em></td>
<td>National Center for Advancing Translational Sciences/NIH</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Funding Agency</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Richard Andrew Spritz, MD</td>
<td>VitGene International Consortium to Identify Susceptibility Genes for Generalized Vitiligo</td>
<td>National Institute of Arthritis &amp; Musculoskeletal &amp; Skin Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Richard Andrew Spritz, MD</td>
<td>Developing 3D Craniofacial Morphometry Date and Tools to Transform Dysmorphology</td>
<td>National Institute of Dental and Craniofacial Research/NIH/DHHS</td>
</tr>
<tr>
<td>Richard Andrew Spritz, MD</td>
<td>VitGene International Consortium to Identify Susceptibility Genes for Generalized Vitiligo</td>
<td>National Institute of Arthritis &amp; Musculoskeletal &amp; Skin Diseases/NIH/DHHS</td>
</tr>
<tr>
<td>Brian L. Stauffer, MD</td>
<td>Molecular and Functional Mechanisms of Pediatric Heart Failure</td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Kurt R. Stenmark, MD</td>
<td>Fibroblasts and Mononuclear Fibrogenic Cells Drive Right Ventricular Pulmonary Artery</td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Kurt R. Stenmark, MD</td>
<td>Adaptation to Hypoxia</td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Kurt R. Stenmark, MD</td>
<td>Adaptation to Hypoxia</td>
<td>National Heart, Lung, and Blood Institute/NIH/DHHS</td>
</tr>
<tr>
<td>Kurt R. Stenmark, MD</td>
<td>Metabolic and Epigenetic Interactions Regulate Vascular Phenotypic Change and Maintenance in Pulmonary Hypertension</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Emily J. Su, MD</td>
<td>Collection of samples from pregnant women for the evaluation of preeclampsia biomarkers</td>
<td>Progenity, Inc.</td>
</tr>
<tr>
<td>Stanley J. Szefler, MD</td>
<td>School-Centered Asthma Program for Colorado: The Colorado Step Up Asthma Program</td>
<td>Colorado Department of Public Health and Environment/COLO</td>
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<tr>
<td>Dan Theodorescu, MD, PhD</td>
<td>Cancer Center Support Grant</td>
<td>National Cancer Institute/NIH/DHHS</td>
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<tr>
<td>Livia A. Veress, MD</td>
<td>Advanced Development of Altephlase as a Medical Countermeasure for Pulmonary Injury Associated with Sulfur Mustard Inhalation - Proof of Concept in a Swine Model</td>
<td>Department of Health and Human Services</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Funding Agency</td>
</tr>
<tr>
<td>-----------------------------</td>
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<td>-----------------------------------------------------</td>
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<tr>
<td>Victor M. Villalobos, MD, PhD</td>
<td><em>5B-EW-JGDI Open-Label Study to Evaluate the Pharmacokinetics of Doxorubicin following the Concomitant Intravenous Administration of Olaratumab (IMC-3G3) to Patients with Advanced Soft Tissue Sarcoma</em></td>
<td>Eli Lilly and Company</td>
</tr>
<tr>
<td>Victor M. Villalobos, MD, PhD</td>
<td><em>M15-394 Multicenter, Phase 1, Open-Label, Dose-Escalation Study of ABBV-085, an Antibody Drug Conjugate, in Subjects with Advanced Solid Tumors</em></td>
<td>AbbVie, Inc.</td>
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<tr>
<td>Xiao-Jing Wang, PhD</td>
<td><em>Identifying Oral Cancer Stem Cell Properties Affected by Microenvironment</em></td>
<td>National Institute of Dental and Craniofacial Research/NIH/DHHS</td>
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<tr>
<td>Colin Dexter Weekes, MD, PhD</td>
<td><em>Perioperative Therapy for Resectable and Borderline Resectable Pancreatic</em></td>
<td>Celgene Corporation</td>
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<tr>
<td>Richard F. Weir, PhD</td>
<td><em>Clinical Demonstration of Implantable Myoelectric Sensors for Prosthesis Control</em></td>
<td>National Institute of Biomedical Imaging and Bioengineering/NIH/DHHS</td>
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<tr>
<td>Carl W. White</td>
<td><em>Novel therapeutics for vesicants and toxic inhaled chemicals (U54)</em></td>
<td>National Institute of Environmental Health Sciences/NIH/DHHS</td>
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<tr>
<td>Liping Yu, MD</td>
<td><em>TrailNet Core Autoantibody and HLA/DNA labs</em></td>
<td>University of South Florida</td>
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</table>
### Office of Grants and Contracts
**University of Colorado at Denver Awards by School**

**Award Trends - Fiscal Year to Date 2015 and 2016**

<table>
<thead>
<tr>
<th></th>
<th>FY2016 Direct</th>
<th>FY2016 F&amp;A</th>
<th>Total</th>
<th>% of FY 15 Funding</th>
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</thead>
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<tr>
<td><strong>Academic and Student Affairs (AMC)</strong></td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
</tr>
<tr>
<td><strong>Academic and Student Affairs (BCI)</strong></td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
</tr>
<tr>
<td><strong>Library (AMC)</strong></td>
<td>$ 4,242,205</td>
<td>$ 621,000</td>
<td>$ 4,863,205</td>
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<tr>
<td><strong>Library (BCI)</strong></td>
<td>$ 172,000</td>
<td>$ 56,000</td>
<td>$ 228,000</td>
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<td><strong>Libraries Services (AMC)</strong></td>
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<td>- $</td>
<td>$ 12,957</td>
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<td><strong>Libraries Services (BCI)</strong></td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
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<tr>
<td>Central Services Administration (AMC)</td>
<td>$ 645,470</td>
<td>$ 7,273</td>
<td>$ 652,743</td>
<td>$ 361,427</td>
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<tr>
<td>Central Services Administration (BCI)</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
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<tr>
<td><strong>CSA Centers and Institutes (AMC)</strong></td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
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<tr>
<td><strong>College of Architecture and Planning</strong></td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
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<tr>
<td><strong>College of Arts and Media</strong></td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
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<tr>
<td><strong>College of Engineering and Applied Sciences</strong></td>
<td>$ 3,051,314</td>
<td>$ 50,570</td>
<td>$ 3,101,884</td>
<td>$ 491,800</td>
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<td><strong>College of Liberal Arts and Sciences</strong></td>
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<td>$ 763,182</td>
<td>$ 4,010,683</td>
<td>$ 509,200</td>
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<tr>
<td><strong>College of Nursing</strong></td>
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<td>$ 382,796</td>
<td>$ 4,888,079</td>
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<tr>
<td><strong>The School of Business</strong></td>
<td>- $</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td><strong>School of Dentistry</strong></td>
<td>- $</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td><strong>School of Education and Human Development</strong></td>
<td>$ 5,990,505</td>
<td>$ 644,421</td>
<td>$ 6,634,926</td>
<td>$ 557,216</td>
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<tr>
<td><strong>School of Medicine</strong></td>
<td>- $</td>
<td>-</td>
<td>-</td>
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<tr>
<td><strong>School of Pharmacy</strong></td>
<td>- $</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td><strong>School of Public Affairs</strong></td>
<td>- $</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>School of Social Work</strong></td>
<td>- $</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td><strong>Total SOM</strong></td>
<td>$ 291,416,303</td>
<td>$ 60,086,000</td>
<td>$ 351,492,303</td>
<td>$ 218,310,800</td>
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<td><strong>Total SOM Centers</strong></td>
<td>$ 1,030,303</td>
<td>$ 20,000</td>
<td>$ 1,050,303</td>
<td>$ 650,000</td>
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</tbody>
</table>

**Note:** Award totals may change throughout the year depending upon sponsor milestones to funding.

**Sources:**
- Direct: Awarded from the University of Colorado.
- F&A: Funded by the Federal Government.
- Total: Combined Direct and F&A.

<table>
<thead>
<tr>
<th>July-2015</th>
<th>Direct</th>
<th>F&amp;A</th>
<th>Total</th>
<th>July-2016</th>
<th>Direct</th>
<th>F&amp;A</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>$ 363,725,686</td>
<td>$ 68,291,579</td>
<td>$ 431,017,265</td>
<td>$ 272,014,010</td>
<td>$ 346,407,760</td>
<td>$ 315,204,010</td>
<td>$ 627,610,020</td>
</tr>
</tbody>
</table>

**Grand Total:**
- Direct: $ 374,889,077
- F&A: $ 104,233,813
- Total: $ 479,122,890

**Note:** Fiscal Year 2015 data is not available for all schools.

**Schools:**
- **Denver Campus:** 19,733,762
- **Aurora Campus:** 359,169,062
- **Grand Total:** 374,889,077
2016-2017 Dean’s Distinguished Seminar Series Roster

Tuesday, October 18, 2016

Ronald L. Davis, PhD
Professor and Chair, Department of Neuroscience
Scripps Research Institute Florida

Tuesday, November 15, 2016

Jason Cyster, PhD
Investigator, Howard Hughes Medical Institute
Professor, Department of Microbiology and Immunology
University of California, San Francisco School of Medicine

Tuesday, January 17, 2017

Carl H. June, MD
Richard W. Vague Professor in Immunotherapy
Director, Center for Cellular Immunotherapies
Director, Translational Research Program
Perelman School of Medicine

Tuesday, February 21, 2017

Joan S. Brugge, PhD
Louis Foote Pfeiffer Professor of Cell Biology
Co-Director, Ludwig Cancer Research Center
Harvard Medical School

Tuesday, March 21, 2017

Jennifer A. Doudna, PhD
Investigator, Howard Hughes Medical Institute
La Ka Shing Chancellor’s Chair in Biomedical and Health Sciences
Professor, Depts. Of Molecular and Cell Biology and Chemistry
University of California, Berkeley

Tuesday, April 18, 2017

Erik M. Jorgenson, PhD
Investigator, Howard Hughes Medical Institute
Distinguished Professor, Department of Biology
University of Utah

Tuesday, May 9, 2017

Craig C. Mello, PhD
Distinguished Professor
Blais University Chair in Molecular Medicine
Co-Director, RNA Therapeutics Institute
University of Massachusetts Medical School
The University of Colorado School of Medicine is home to numerous centers, institutes, and programs. They range in categories from diabetes to cancer to surgical innovation. Also covered are women’s health research and health outcomes.

On the following pages, you can read a more detailed description of many of the centers and institutes. For a complete list, go to www.medschool.ucdenver.edu and click on the Department/Center/Institute link.
The Adult and Child Consortium for Health Outcomes Research and Delivery Science (ACCORDS) replaces the Colorado Health Outcomes center. The new name aligns the consortium with its key funding sources and highlights its focus on the entire life spectrum and on “delivery science,” encompassing comparative effectiveness, patient-centered outcomes and implementation and dissemination research. ACCORDS, under the leadership of Allison Kempe, MD, MPH, encompasses a children’s program, previously known as Children’s Outcome Research, which Kempe still leads, and an adult program, under the leadership of Edward P. Havranek, MD. These programs are fully integrated to share key administrative and research resources and thereby achieve economies of scale. Infrastructure support is provided jointly from the Children’s Hospital Colorado (CHC) and the Dean’s Office of the School of Medicine (SOM).

ACCORDS functions as both an actual and virtual program, with a group of investigators from multiple disciplines who have their primary offices on-site and a much larger group affiliating with ACCORDS personnel, programs and cores while maintaining off-site research homes. Currently, 64 investigators, 27 research assistants, 15 biostatisticians/analysts and nine administrative and information technology personnel have office space with ACCORDS. More than 100 additional investigators interface with the program, primarily for consultation or to attend educational offerings. Collaborating investigators represent all School of Medicine departments, as well the Colorado School of Public Health, the Skaggs School of Pharmacy and Pharmaceutical Sciences and the College of Nursing. ACCORDS serves as an incubator for research ideas and fosters interdisciplinary collaboration and the development of focused areas of research of national prominence.

The mission of ACCORDS is to improve health, both locally and nationally, by supporting state-of-the-art outcomes and community translational research to guide clinical practice and policy.

The objectives of ACCORDS are to:

- Increase competitiveness of the CHC/SOM for funding from multiple research and education or training program sponsors, especially Patient-Centered Outcomes Research Institute, Agency for Healthcare Research and Quality and the National Institutes of Health
- Strengthen affiliations with key external partners including Denver Health, Veterans Affairs, Kaiser Permanente and Colorado Department of Public Health and Environment to increase access to populations and collaborators necessary for certain grants
- Improve faculty development for both senior and junior faculty interested in outcomes and delivery research by providing an interdisciplinary home for developing research, a mentored training ground and substantial educational activities
- Improve the ability of the CHC/SOM to recruit both senior and junior faculty interested in health outcomes, health services research, dissemination and implementation science, comparative effectiveness and patient centered outcomes research
- Achieve greater national visibility of the CHC/SOM as leaders in the areas of outcomes, dissemination/implementation and comparative effectiveness research and training

ACCORDS is organized into the following programmatic areas: (1) Research; (2) Implementation and Dissemination Science; (3) Education; (4) Research Training; (5) Practice Transformation and (6) Community Engagement and Outreach.

ACCORDS also has methodological cores in qualitative science, practice-based research networks, biostatistics and analysis, shared decision-making and health informatics/mobile health. These cores provide support to the programmatic areas and consultative support to investigators. A major focus of these cores is to provide support for the development of new projects and grant proposals.

http://www.ucdenver.edu/academics/colleges/medicalschool/programs/accords/Pages/COHO.aspx
Altitude Research Center

The Altitude Research Center was established in 2003. Its mission is to improve life through research on how hypoxia affects human health and performance.

ARC’s research programs focus on four key areas:

- Integrative physiology
- Cell, molecular and genomic mechanisms of hypoxia
- Epidemiology of altitude problems in travelers
- Impact of hypoxia on common diseases in residents of altitude

Three major funded research projects currently in progress at the ARC are:

- The design of an easy-to-use cost-effective test that accurately predicts whether or not someone is likely to develop acute mountain sickness (AMS) when they travel to high altitudes.
- The advancement of high-altitude medical research by discovering the basic molecular mechanisms of acclimatization that protect soldiers from high-altitude illness.
- The advancement of high-altitude medical research by discovering novel preventive measures for acute mountain sickness.

The Center’s director is Robert Roach, PhD. More information about the Center can be found at http://www.altituderesearch.org.

Anschutz Health and Wellness Center

The Anschutz Health and Wellness Center (AHWC) was officially established within the School of Medicine and opened in April 2012 with the vision to create a world empowered by wellness. This world-class facility is a hub of innovation and collaboration for top researchers and practitioners in the fields of wellness, nutrition, weight loss, fitness and behavior change. The Center’s industry-leading team uses cutting-edge research to create science-based programs, which help transform the lives of individuals and communities in the Denver metro area and beyond. The Center’s experts also lead programs, in partnership with schools, worksites and community organizations throughout Colorado. The building, which is certified by the U.S. Green Building Council for Leadership in Energy & Environmental Design, houses:

- A state-of-the-art fitness center offering the most advanced equipment, results-based programming, personal training services, group exercise and motivational support for more than 3,600 members from campus and the surrounding community. More information about the Fitness Center can be found at http://anschutzwellness.com/fitness-performance/

- A Wellness Clinic offering results-oriented weight loss (including programs such as My New Weigh and State of Slim) and wellness services such as personalized physician-supervised wellness assessments, expert nutritional advising, psychological consultations, body composition testing, sports performance testing and mind-body treatments. Several other campus clinics housed within the Wellness Clinic complete a full range of care and services available to the public. More information about the Wellness Clinic can be found at http://anschutzwellness.com/wellness-services/offerings/

- A Human Performance Lab offering sports performance testing for recreational and elite athletes to help them reach their peak potential. More information about sports performance can be found at http://anschutzwellness.com/fitness-performance/sports-performance/

- Bistro Elaia, a fast and healthy food option on campus, offering healthy breakfast and lunch menus. Catering services are also available.

- Metabolic and demonstration kitchens offering research facilities and community cooking classes.

The Anschutz Health and Wellness Center collaborates with many groups on campus including the CU Cancer Center offering a research-based exercise program for cancer patients to support recovery, and Advanced Reproductive Medicine offering WIFI (Wellness Interdisciplinary Fertility Initiative).

Funding for the Center comes from a variety of sources, including federal and state government agencies, nonprofit organizations, commercial industries and fees for services and membership. It also includes the following research groups:
Clinical Trials Division, which conducts industry-sponsored research with a focus on nutrition. Areas of study include weight loss, weight maintenance, metabolic syndrome and diabetes. They specialize in behavioral approaches to weight loss, delivered through group classes and/or one-on-one counseling.

Look AHEAD (Action for Health in Diabetes; funded by NIH/NIDDK grant U01 DK057151) was recently re-funded through 2021. Look AHEAD is a multicenter, randomized clinical trial to examine the effects of a lifestyle intervention designed to achieve and maintain long-term weight loss.

The Colorado Nutrition Obesity Research Center (NORC) (funded by NIH/NIDDK grant P30 DK048520), was recently re-funded through 2020. The NORC has had an important impact with the University of Colorado School of Medicine by successfully fostering collaboration among members of its research base, promoting interdisciplinary research and fostering development of young investigators. NORC researchers continue to be successful in attracting funding and in publishing research results. The NORC maintains a research base, which is comprised of more than 115 researchers and principal investigators who use one of our core laboratories (Clinical Intervention and Translation; Energy Balance Assessment, Molecular and Cellular Analytic).

The Anschutz Health and Wellness Center is led by Martha Van Gelder, Executive Director for Operations and Commercialization; John Peters, PhD, Chief Strategy Officer; Holly Wyatt, MD, Associate Director; and Dan Bessesen, MD, Associate Director.

Website: www.anschutzwellness.com Phone: 303-724-9355.

Recently published studies include: A study published in the Journal of Women’s Health found that the novel bone marrow progenitor derived white adipocytes that a NORC investigator discovered in mice are present in humans. Future studies will be geared toward discovering whether these adipocytes of unique lineage contribute to the metabolic risks associated with regional fat distribution in humans.

A study published in Diabetes Care was the first to show that liberalizing complex carbohydrates and reducing fat-achieved glycemia below current treatment targets lowered postprandial free fatty acids in women with gestational diabetes. This has important implications for treating gestational diabetes mellitus and for preventing obesity in the next generation in infants born to obese women.

Barbara Davis Center for Diabetes

The Barbara Davis Center for Childhood Diabetes (BDC) is one of the largest centers in the world specializing in type 1 diabetes research and care for children and adults. Clinicians, clinical researchers, and basic biomedical scientists work at the BDC to find the most effective treatment, prevention, and cure for type 1 diabetes.

The center clinics provide state-of-the-art care for over 7,000 children and adults with diabetes. Barbara Davis Center clinics offer extensive education and support for patients and their families as well as specialized programs such as the Pregnancy and Diabetes Clinic, the Hispanic/Latino Diabetes Care Program, and a model Telemedicine program servicing residents in Wyoming and remote parts of Colorado.

BDC research goals include investigation of the causes of type 1 diabetes, the early detection of autoimmunity, prevention and early intervention. BDC clinical faculty members are developing new strategies and treatments for improved outcomes of care including prevention strategies for complications of both type 1 and type 2 diabetes. Investigators of the BDC receive more than $12 million in direct cost funding per year from federal, foundation and industry sponsors. Research areas resulting in over 120 publications in 2015 include:

- The evaluation of devices for continuous glucose monitoring insulin pump therapy, and their combination with computer algorithms designed to adjust insulin delivery as an artificial pancreas.
- The investigation of environmental and immunogenetic causes of type 1 diabetes and development of tests to predict the disease.
- The development of novel ideas and discoveries in the immunology, genetics, and cell biology of diabetes.

The BDC Research Division provides cytometry and islet preparation services for local clientele. The Molecular Biology Service center provides basic molecular biology support, DNA sequencing, cell line authentication and mycoplasma testing. The Autoantibody/HLA Service Center performs studies which include assays for islet autoantibodies and markers of other autoimmune disorders, including celiac and Addison’s disease. This laboratory serves as the core laboratory for numerous national and international trials for the pre-
vention of type 1 diabetes.

The BDC serves as a model for combining basic and clinical investigation and is an outstanding training environment for developing physician-scientists, clinicians and basic science researchers. Faculty members provide laboratory and clinical research training opportunities for young investigators from around the world including participants in the highly successful T32 Pediatric Endocrinology Fellowship Training Program and K12 Pediatric Endocrinologist Career Development Program. The annual Keystone Conference remains the Center’s flagship in the area of continuing medical education (CME) in Management of Diabetes, regularly selling out with over 600 participants.

The Barbara Davis Center is led by Marian Rewers, MD, PhD, Executive Director; Robert Slover, MD, Director of Pediatric Diabetes Division; Satish Garg, MD, Director of Adult Diabetes Division; and Lori Sussel, PhD, Director of Basic and Translational Research Division. Website: www.barbaradaviscenter.org

Cardiovascular Institute

The University of Colorado Cardiovascular Institute is co-directed by Peter M. Buttrick, MD, and Leslie Leinwand, PhD, with a focus on the integration of cardiovascular research, treatment, and discovery through a collaboration of the University of Colorado Anschutz Medical Campus and the University of Colorado Boulder.

The scientific goals of the institute are to understand the genetic basis and specific molecular mechanisms responsible for heart muscle disease and heart failure and to produce new diagnostic techniques and treatments for patients. By integrating the effort of those committed to curing heart muscle disease and heart failure, the collaborative nature of the institute encourages the sharing of findings and data, which ultimately translate into improved treatments and therapies for patients.

http://www.ucdenver.edu/academics/colleges/medicalschool/institutes/CardiovascularInstitute/Pages/CardiovascularInstitute.aspx

Center for Bioengineering

The Center for Bioengineering and the Department of Bioengineering represent the research and academic components of the bioengineering program at the University of Colorado Denver. Built from the ground up to fully integrate engineering, basic science and clinical aspects, the bioengineering program has generated double-digit annual growth in numbers of students and research expenditures since its founding in 2010. The graduate program enrolls approximately 80 masters and PhD students, and our undergraduate program has more than 110 students enrolled in fall 2015. New faculty include Associate Professor Jeffrey Jacot, PhD, who engineers placental fluid stem cells into cardiac cells to repair congenital heart defects, and Assistant Professor Bradford Smith, PhD, who studies ventilator-induced lung injury and who will be developing collaborations between the pediatric pulmonary program and bioengineering. Both are NIH funded. Additionally, Associate Clinical Professor Michael Yeager, PhD, and Clinical Instructor Cassandra Harn Howard will join our teaching faculty. The new Bioscience 2 building on the Anschutz Medical Campus provides a solid foundation for future growth of the program.

Robin Shandas, PhD, is the center’s director. Faculty membership is representative of the diverse and translational research projects that bridge engineering and medicine. Currently, our program collaborates with more than 75 faculty, and with research centers including the Colorado Translational Research Imaging Center, Neuroscience, Children’s Hospital Colorado Heart Institute, Children’s Hospital Colorado Breathing Institute, Children’s Hospital Colorado Gait Lab, and Cardiovascular Pulmonary Research Lab.

http://www.ucdenver.edu/academics/colleges/Engineering/Programs/bioengineering/Research/Pages/Research.aspx
The Center for Children’s Surgery (CCS) was created within the School of Medicine (SOM) in 2011 to develop a robust children’s surgical practice. The CCS leadership includes Timothy M. Crombleholme, MD, Director and Chrissy Roll, Director of Finance and Administration. The CCS Finance and Operations Committee is comprised of Division Chiefs across nine pediatric divisions/sections: Stephen Scott, MD – Adolescent and Pediatric Gynecology; James Jaggers, MD – Cardiothoracic Surgery; Michael Handler, MD – Neurosurgery; Robert Enzenauer, MD – Ophthalmology; Mark Erickson, MD – Orthopedics; Kenny Chan, MD – Otolaryngology; Fritz Karrer, MD – Pediatric Surgery; Fred Deleyiannis, MD – Plastic Surgery; and Duncan Wilcox, MD – Urology.

By agreement, the Surgeon-in-Chief at Children’s Hospital Colorado also holds the Director position of the CCS in the SOM. Timothy M. Crombleholme continues to oversee the goals of the CCS; research, teaching clinical programs and advocacy of CCS members in order to strengthen the SOM, University of Colorado, and Children’s Hospital Colorado as an academic medical center of national and international preeminence; to foster alignment between faculty that provide surgical care to children with the robust clinical practice in pediatric care at Children’s Hospital Colorado and its Network of Care; to further the development of an academic environment in collaboration with cognate surgical departments in the SOM, that supports the training of fellows, residents, and students; to promote expansion of programs that include both bench and translational research; to continue programs that embrace child advocacy; support and pre-serve the strengths and necessary structures of the SOM. The CCS continues to develop infrastructure to support clinical programs, basic and translation research, and the educational missions. The CCS currently supports the Pediatric National Surgical Quality Improvement (NSQIP) program. The CCS was successful in supporting recruitments of 8 surgeons and 9 advanced practice providers. The CCS members have successfully obtained over $12 million in grant awards for pediatric surgical research.

Center for Dependency, Addiction and Rehabilitation

The Center for Dependency, Addiction and Rehabilitation (CeDAR), provides comprehensive and compassionate care to help these individuals conquer addiction and kick-start a lifetime of good health and wellness. All patients at CeDAR benefit from a multidisciplinary approach that includes team members from addiction medicine, addiction psychiatry, counseling, psychology, spirituality, nutrition, fitness, recovery support and the family program.

Specific CeDAR services include alcohol and drug detoxification treatment, residential treatment, a consultation-liaison service for the University of Colorado Hospital, an intensive outpatient program, outpatient groups and counseling, addiction psychiatry and addiction medicine. Our services are provided in a trauma-informed manner and include both gender-specific and trauma-integrated care. Specialized addiction services are available for professionals in safety sensitive-positions, e.g., health care workers and pilots, other professionals, and athletes.

CeDAR’s leadership includes Interim Executive Director Gary Kushner, MA, LPC, CACIII and Manager of Outpatient Joshua Voigt MEd, LPC, CACIII, Clinical Program Manager Michael Barnes, PhD, LPC, Medical Director Laura Martin, MD, Addiction Medicine Director Patti Pade, MD, Senior Chaplain Leta Herrington, DMin, MDiv, LPC, Director of Professional Relations Ben Cort and Susan Dearing-Bond, CFRE, director of development to the leadership team. CeDAR’s alliance and integration with the University of Colorado Hospital, part of UCHealth, helps distinguish its program as one of the nation’s best. We are also a nationally distinguished addiction treatment center due to our emphasis on training the next generation of addiction care providers.

Over the last year, CeDAR has been a training site for 15 medical students, 10 psychiatry residents, a family medicine resident, an addiction psychiatry fellow, and 3 psychology doctoral interns. It boasts a highly sought after addiction medicine fellowship and remains as one of only sites in the nation for a chaplain residency in addiction. Additionally, CeDAR serves as a respected training site counseling students and nurses.
Center for NeuroScience

The mission of the Center for NeuroScience (CNS) is the growth of basic and translational neuroscience research by establishing solid interactive basic, bioengineering and clinical research bases within an environment that fosters interdisciplinary neuroscience research. The CNS is led by Director Diego Restrepo, PhD, and Associate Directors Jeffrey Bennett, MD, PhD, Angie Ribera, PhD, Ken Tyler, MD, and Sukumar Vijayaraghavan, PhD.

The Center for NeuroScience and its faculty are committed to raising community awareness of ongoing clinical and basic neuroscience projects and clinical trials at the School of Medicine through community and student activities as well as invited speakers. Currently the Center has 240 members, spanning 4 School and 18 departments across both basic and clinical sciences.

The Center continues to support pilot research grants, this year initiating new Basic Science Individual and Team Research awards, through a coordinated effort with the CCTSI. CNS also coordinated the renewal of the Rocky Mountain Neurological Disorders Core grant NINDS P30 (NS048154, A. RIBERA, PI, $400K TDC per year, funded by NINDS Council). The grant focused on cores providing investigators with powerful transformative tools that allow them to incorporate cutting edge approaches into their neuroscience research programs. These cores include: Optogenetics and Neural Engineering, Nanoscopy, and Behavioral and In Vivo Neurophysiology.

For more information on the CNS, please visit our website: www.medschool.ucdenver.edu/CNS

Center for Surgical Innovation

The mission of the Center for Surgical Innovation (CSI) is to provide cutting-edge surgical training courses aimed to train medical affiliates in the latest surgical techniques and technology locally, regionally, nationally and globally, and to study surgical and procedural educational methods to advance how surgical procedures are learned and taught.

CSI was created in 2007 and is supported and overseen by five surgical departments on the University of Colorado Anschutz Medical Campus. The participating departments are surgery, neurosurgery, orthopedics, obstetrics/gynecology and otolaryngology.

The CSI leadership team is Thomas Robinson, MD, medical director; Sarah Massena, MBA, business director; Peter Mouser, MS, lab manager; and Sharon Durlak, lab assistant manager.

CSI is located in Bioscience Park Center, 12635 E. Montview Blvd., Suite 170, and now has increased space, a dedicated auditorium and conference rooms and additional surgical equipment. For more information, please visit our website at www.ucdenver.edu/csi

FY15/16 Resident Courses by Specialty

2013-16 Resident Courses

Total Trainings per Fiscal Year

2013-2016 Resident Courses
The Center for Women’s Health Research (CWHR) was founded by Judy Regensteiner, PhD Lorna Moore, PhD and JoAnn Lindenfeld, MD. The CWHR Director is Judy Regensteiner, PhD, who leads along with Co-Associate Directors Wendy Kohrt, PhD, and Jane Reusch, MD. The Managing Director is David Samson, MBA.

Founded on the rationale that women’s health and sex differences have been significantly understudied, the CWHR has a 3-part mission:

**Research:** To perform cutting-edge research in women’s health and sex differences across the lifespan (with a focus on cardiovascular disease and diabetes).

**Mentoring:** To mentor and help fund the next generation of MD and PhD researchers to build careers in women’s health and sex difference research.

**Education:** To educate the public and health care providers so that our research findings are translated into improved care.

Four senior faculty scientists at the Center for Women’s Health Research provide mentoring to junior faculty scientists who have received a CWHR seed grant or who have been funded by the NIH K12 grant, Building Interdisciplinary Research Careers in Women’s Health (BIRCWH). In 2015-2016 the CWHR awarded nine new seed grants through a peer-reviewed process. These grants, combined with extensive mentorship, help junior scientists further their research questions in women’s health and sex differences with the goal of enabling them to obtain larger funding from organizations such as the NIH, American Heart Association and the American Diabetes Association. All types of research—from basic to clinical to epidemiologic to personalized medicine—are emphasized, and CWHR researchers also represent a number of areas including cardiology, geriatrics, internal medicine, emergency medicine, endocrinology, rheumatology, obstetrics and gynecology, personalized medicine and pediatrics. Since 2004, the CWHR has awarded over $1 million in seed grants to 45 scientists. These scientists have gone on to obtain over $50 million in external grant funding.

The CWHR is actively engaged with the community in its educational efforts, raising awareness of women’s health and sex-difference research through educational programs. This year the CWHR’s outreach efforts reached over 2,500 people at 21 programs and events.

Critically important to the CWHR, our Community Advisory Board is integrally woven into the fabric of the Center’s operations. The Board provides business advice and helps to define and spearhead connections to the community, including outreach, events, and fundraising efforts. Another indispensable community group is our Medicine Cabinet, comprised of community members, friends and associates who provide strategic support and advice for the CWHR’s leadership. Members are senior level executives who represent a broad cross-section of industries in the metropolitan Denver community. Our national research agenda is developed and furthered by the Scientific Council, comprised of internationally known scientists from around the country as well as our senior faculty.
### 2015-2016 Accomplishments:

<table>
<thead>
<tr>
<th>Research</th>
<th>Mentoring</th>
<th>Education</th>
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<tr>
<td>CWHR scientists have had a very strong year for external funding, bringing in over $15 million.</td>
<td>Junior faculty training sessions: “Writing a Specific Aims and Hypothesis” and “Professional Speaking Tips”</td>
<td>“Let’s Talk” programs for the community: 860 people attended 5 educational programs in 2015-16. Topics included: Staying Active as you Age, Palliative Care, Heart Disease and Stroke, Taboo Topics for Women, Career Day for High School Aged Girls</td>
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<td>CWHR is hosting its first National Conference on Sex Differences Research to showcase progress in the field – 100+ attendees expected.</td>
<td>Junior faculty researchers were invited to present their research to the annual meeting of the CWHR Scientific Council for feedback.</td>
<td>14th Annual Women’s Health Symposium. At capacity CME event for 135 health professionals from around the state. Six University of Colorado faculty presented.</td>
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<td>9 seed grants awarded to junior faculty researchers (bringing total number of researchers to 45 since 2004).</td>
<td>The Doris Duke Charitable Fund awarded the University of Colorado one of ten Doris Duke Charitable Foundation Funds to Retain Clinical Scientists awards nationwide (Judy Regensteiner, PI, Anne Libby, co PI).</td>
<td>Annual Community Luncheon: Keynote Speaker, JoAnn Manson, MD, DrPH, gave a talk on “Controversies in the Prevention of Cardiovascular Disease: Aspirin, Estrogen, and Vitamin D” to 700 attendees.</td>
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<td>Completion of the Nancy Anschutz Endowed Chair in Women’s Health Research (the second endowed chair for the Center).</td>
<td>The Building Interdisciplinary Research Careers in Women’s Health NIH K-12 has 100% external funding rate for its Scholars in 2015-2016</td>
<td>Other partnership events: Women’s Leadership Training Center for African American Health Fair Girls’ Career Day First young professionals’ event Many community presentations American Heart Association High School group Denver Health High School Scholars group</td>
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### Additional accomplishments:
- Development and completion of the CWHR 5 year strategic plan.

### Building Interdisciplinary Research Careers in Women’s Health (BIRCWH)

CWHR Director Regensteiner, and Nanette Santoro, MD, are Principal Investigators of the Building Interdisciplinary Research Careers in Women’s Health (BIRCWH), a NIH K-12 grant that supports the salaries of junior faculty while they develop a career in women’s health or sex differences research. Importantly, the CWHR has additional training programs for the BIRCWH Scholars and CWHR grant recipients which include training in speaking both to professional and lay audiences, grant writing and manuscript writing as well as participation in educational programs which teach the skills needed to successfully negotiate an academic career.

The CWHR will further develop its research, mentoring and educational programs and continue to support women’s health and sex difference research in multiple departments across the University of Colorado School of Medicine. Website: [www.cwhr.org](http://www.cwhr.org).
Colorado Prevention Center (CPC) was founded by the University of Colorado in 1989 as an affiliate of the University to serve in the role of a clinical trials research organization and prevention center. CPC has two divisions: CPC Clinical Research and CPC Community Health – both led by University faculty.

CPC Clinical Research is an academically led, non-profit, clinical research organization offering Phase 1 - 4 clinical research leadership and management services to sponsors around the world. CPC specializes in innovative research including a proprietary program, the Endpoint Quality Intervention Program (EQuIP) that helps reduce variability in the collection of endpoint data, allowing more definitive answers to address the study objectives.

In the last year, CPC Clinical Research has been involved in more than 35 multicenter clinical trials (many are international) bringing academic excellence combined with the efficiency to meet industry and NIH standards to achieve great science and assist with bringing effective new products to market. This includes ongoing scientific oversight, committee management, and data quality oversight. For example, CPC is providing academic leadership and trial management services in a large cardiovascular outcomes trial in the Peripheral Artery Disease population (over 550 clinical trial sites around the world and approximately 6,500 subjects to be enrolled). CPC Clinical Research has recently received a Data Coordinating Center award from NIH to manage a multicenter trial in antithrombotic therapy.

CPC Community Health is aimed at improving cardiovascular health in under-served communities of Colorado and is funded through state and private grants as well as financially supported by income from CPC Clinical Research. CPC Community Health has two primary programs which are Colorado Heart Healthy Solutions (CHHS) and Community Heart Health Actions for Latinos at Risk (CHARLAR). These efforts are led by Ray Estacio, MD, and Mori Krantz, MD, from Denver Health.

Colorado Heart Healthy Solutions (CHHS) is CPC’s statewide chronic disease prevention program which seeks to reduce the burden of cardiovascular disease. In partnership with local health and medical organizations, community health workers (CHW) provide health assessments to identify individuals who are at-risk for chronic diseases with a focus on heart disease and diabetes. CPC provides health education and navigation to local medical and healthy living resources, and ongoing support at no cost to at-risk individuals who are ready to improve their health.

CHHS (funded in part by the tobacco tax) continues to have a tremendous impact on underserved and rural populations in Colorado. This year we have screened 3,166 clients and have shown the following improvements in health:

- Mean Change in Total Cholesterol: -7.6 mg/dl
- Mean Change in HDL (good kind) Cholesterol: +2.6 mg/dl
- Mean Change in LDL (bad kind) Cholesterol: -9.6 mg/dl
- Mean Change in Systolic BP: -3.5 mm Hg
- Mean Change in Diastolic BP: -3.1 mm Hg
- Decreased consumption of high fat foods: 19.6%
- Increased consumption of high fiber foods: 16.1%
- Increased physical activity levels: 27.3%

Community Heart Health Actions for Latinos at Risk (CHARLAR) is a promotor(a)-led community program in partnership with Community Research Education Awareness (CREA). The goal is to build healthier lifestyles in adult Latinos in metro Denver by lowering risks and behaviors for cardiovascular disease and diabetes. CHARLAR, which means “to chat” in Spanish, provides an open environment that encourages ongoing dialogue and social support amongst participants as they work towards building skills, modifying lifestyle behaviors, and lowering their risks for heart disease and diabetes. The program includes 12 weeks of evidence-based skill building and education classes, cardiovascular disease and risk factor screenings, physician counseling, navigation to medical homes and services, and Zumba-inspired physical activity. Both programs have demonstrated significant improvements in cholesterol, blood pressure, glucose, weight, smoking and healthy behaviors including physical activity levels and healthy eating habits.

New for this year, CHARLAR is now being delivered outside of the Denver area via our collaboration with Northwest Colorado Health based in Steamboat Springs and Craig, Colorado. This is the first time that the organization is implementing such a program specifically for the region’s Latino community. We are well into the first iteration of the CHARLAR program, and we are very happy with the progress we’ve made fostering this new extension of CHARLAR.
Colorado Sickle Cell Treatment and Research Center

The Colorado Sickle Cell Treatment and Research Center is the region’s primary source of specialty expertise and coordination of comprehensive specialty care for both children and adults living with hemoglobinopathies. Established over 40 years ago by the State of Colorado, the Center faculty and staff support comprehensive care for all persons with sickle cell disease and other hemoglobinopathies. Basic, clinical and health services research, conducted by the Center and its collaborators serves to elucidate the pathophysiology of sickle cell disease, develop and implement treatments and systems of care that prevent or minimize complications and that prolong and improve the quality of life, are supported by funding from the NIH and other Federal agencies, industry, and foundations. The Center has a long-standing contract with the Colorado Department of Health to coordinate short-term follow-up of newborn screening for sickle cell disease. It also conducts and supports activities to promote education and awareness about sickle cell disease. Our Director Kathryn Hassell, MD, provides adult care and Associate Director Rachelle Nuss, MD, pediatric care for our sickle cell population. For more information about the Center and the Colorado Sickle Cell Care Network please visit: http://medschool.ucdenver.edu/sicklecell and www.sicklecellcareco.org

Gates Center for Regenerative Medicine

In 2010, the Gates Center for Regenerative Medicine received center status. Under the direction of Dennis Roop, PhD, the center has staked its claim at the forefront of innovation in the field, focusing on the biology of stem cells to develop new clinical therapies and collaborating with investigators and clinicians conducting research in regenerative medicine and stem cell biology.

As of the end of the 2015 calendar year, the center has received $135 million in peer-reviewed funding from the National Institutes of Health, the U.S. Department of Defense and various foundations. The Gates Center serves as a virtual hub — maintaining a website, seminar series and services designed to promote and support its members and accelerate discoveries and translational research to reach patients in the clinic as quickly as possible.

The center has also established four core facilities: Flow Cytometry, Morphology and Phenotyping, Bioengineering, and the Gates Biomanufacturing Facility. The biomanufacturing facility is one of six combined cell therapy and protein manufacturing facilities in the United States and the only one of its kind within an 800-mile radius where future cellular therapies and protein-based biologics are being manufactured for human trials under the strictest FDA standards.

Following the grand opening of the Gates Biomanufacturing Facility in April 2015, Gates Center personnel focused their efforts on process development and preparing the state-of-the-art Good Manufacturing Practice facility for the production of clinical-grade materials in 2016. In addition to being utilized by Gates Center members, these four core facilities are utilized by investigators in 15 departments and centers within the School of Medicine as well as in the CU Skaggs Schools of Pharmacy and Pharmaceutical Sciences, the CU School of Dental Medicine, National Jewish Heath, CU Boulder and Colorado State University.

Additionally, in 2014 the center established and continues to support a training program in stem cell biology for graduate students and fellows. Also, the Gates Summer Internship Program places highly qualified undergraduate students in center members’ labs to encourage them to incorporate regenerative medicine into their career plans. Center membership comprises 88 independent principal investigators from the CU Anschutz Medical Campus and CU Boulder, Colorado State University, Colorado School of Mines, National Jewish Health and private industry.

Finally, private philanthropy is an increasingly vital driver of innovative research and leading-edge education initiatives at the Gates Center. In 2015, generous gifts advanced the center’s progress in key areas, making possible the establishment of the Ocular Stem Cell and Regeneration Program at the UCHealth Eye Center, the creation of the Daniel and Janet Mordecai Chair in Cancer Stem Cell Biology, continued research on debilitating skin diseases and the continued success of the Gates Summer Internship Program. http://www.ucdenver.edu/academics/colleges/medicalschool/centers/StemCell/Pages/StemCell.aspx
The Helen and Arthur E. Johnson Depression Center continues to expand services anchored by a $10 million endowment gift in 2015 from the Helen K. and Arthur E. Johnson Foundation. The Center was able to hire additional clinical and administrative staff including a new Deputy Director and Director of Finance and Administration. A new Community Programs Manager position was also created and filled in 2016. This position was created to expand the Center’s free community outreach and education programs. Currently available programs include suicide prevention, anxiety and stress management, and mental health awareness.

The telehealth program is expanding especially for patients in communities with limited access to care. An integrated care program was initiated with an Internal Medicine clinic in Sterling, CO, for patients requiring management of their psychotropic medications. This program allows primary care providers to refer patients to one of the Center’s Psychiatric Nurse Practitioners. Rather than driving from Sterling to Aurora for care, the patients are able to meet with the provider from the primary care clinic via two-way audio-visual connections over a computer.

Clinical capacity to serve families expanded with the addition of two new providers; one psychologist and one psychiatrist. This expansion in personnel was accompanied by completed plans to build-out new space specifically designed for psychologists and psychiatrist to deliver team-based care to children, adolescents, and families. Overall, the Center had over 6,200 patient visits scheduled during the fiscal year.

The Center continues to participate in a variety of research efforts including a multi-site evaluation of the efficacy of family focused therapy for adolescents at elevated risk for developing bipolar disorder. The Center also received a grant from the Salah Foundation to expand suicide prevention efforts in the community.

LEADERSHIP TEAM:
Marshall Thomas, MD, Executive Director
Matt Mishkind, PhD, Deputy Director
Christopher Schneck, MD, Medical Director
Michael Jones, Director of Finance and Administration
Jay Shore, MD, Director of Telemedicine
Emily Reaser, Director of Development
Alex Weber, Community Programs Manager
Heather Mulvihill, Board of Directors Chair

Hemophilia & Thrombosis Center

The Hemophilia & Thrombosis Center (HTC) of the University of Colorado strives to provide unparalleled access to the highest quality care, education, research and pharmacy services for patients with bleeding and clotting disorders in the Rocky Mountain region through teamwork, partnership with patients and families, and focus on continuous improvement and research. The HTC is a world renowned coagulation center directed by Marilyn Manco-Johnson, MD. It was established in 1974 by the state of Colorado and soon became recognized as one of fewer than 20 centers in the United States, and is now part of a network that has grown to over 140 hemophilia treatment centers. The HTC provides care for more than 700 patients with bleeding disorders and more than 500 persons with congenital clotting disorders as well as 400 children and young adults with hemorrhagic, ischemic stroke or fetal brain injury. The HTC is comprised of a core clinical care staff consisting of adult and pediatric hematologists and neurologists, nurses, social workers, physical therapists and pharmacists. A stand-alone pharmacy, research laboratories, and clinical research staff are also a vital part of the center.

We have a decorated history of research extending back multiple generations. Fellows have been consistently awarded fellowships from the HTRS, NHF and other career development funding. Current projects and sources of funding for the combined clinical and basic/translational research program include: NIH R01, MCHB, CDC, ATHN, NIH VWD program project grant, numerous investigator-initiated grants with private and public funding, and sponsored research now focused on new anticoagulants and innovative technologies for hemostasis. In total we have over 40 active COMIRB-approved research protocols. The staff at the HTC developed and published the first randomized clinical trial ever conducted in hemophilia treatment, which established the national standard of care. Our laboratory research is focused on identifying molecular and functional defects associated with bleeding and clotting disorders, and developing the methods for diagnosing and treating them. The clinical research team conducts sponsored trials that bring novel treatments, quality improvement, and local, national and international cohort trials and registries to patients. An international standardization of physical exam scores for hemophilia is also an area of active research. The HTC collaborates with the American Hemostasis and Thrombosis Network in Centers of Disease Control and Prevention national surveillance studies as well as the Maternal Child Health Bureau initiatives for persons with bleeding and clotting disorders.
Since 1964, JFK Partners’ mission has been to promote the independence, inclusion, contribution, health, and well-being of people with developmental disabilities and their families through consumer, community, and university partnerships. Central to the mission is a commitment to family and person-centered, community-based, culturally competent programs and services. This mission is operationalized through interdisciplinary education and training, consultation, technical assistance, direct service, research, program development, policy analysis, and advocacy. In 1993, JFK Partners became an interdepartmental program under the School of Medicine, Departments of Pediatrics and Psychiatry. JFK Partners includes faculty and trainees in the disciplines of audiology, developmental behavioral pediatrics, family, nursing, nutrition, occupational therapy, physical therapy, psychology, public health, speech-language, spiritual care, and self-advocacy. Sandra Friedman, MD, MPH, assumed leadership of the interdisciplinary program in July 2015, directing the merger of JFK Partners with Section of Developmental Pediatrics. The merger included the integration of diagnostic assessment and treatment services with those of Developmental Pediatrics at Children’s Hospital Colorado. As a life-span program, JFK Partners continues to serve adults at the Anschutz Medical Campus.

JFK Partners’ programs are supported by federal training and research grants and clinical income, as well as annual funding from the State of Colorado. Two core grants include the competitively awarded Administration on Intellectual and Developmental Disabilities, University Center for Excellence in Developmental Disabilities (UCEDD) and the Maternal and Child Health Bureau, Leadership Education in Neurodevelopmental Disabilities (LEND) programs. In addition to numerous community and continuing education activities, JFK Partners hosts an annual Autism Spectrum Disorders conference and two quarterly webinar series throughout the state. For information about these and other JFK Partners programs please visit www.jfkpartners.org.

Kempe Center for the Prevention and Treatment of Child Abuse and Neglect

Founded in 1972 by C. Henry Kempe, MD, the Kempe Center has led the field in promoting understanding, knowledge and best practices to prevent and treat child abuse and neglect. Our mission is to improve the care and well-being of all children by strengthening families, communities, and the systems that support them. We believe that abuse and neglect are preventable, that children are resilient, and that supportive care can bring health and hope. Our expertise is sought locally, nationally and internationally. In addition to continuing the important work under our four CARE pillars – Clinical Care, Advocacy, Research and Education – we are part of a game-changing paradigm shift in the way we think about, talk about and treat child abuse and neglect as a public health crisis. The faculty and staff at Kempe number nearly 60 professionals.

Between Kempe’s medical and mental health clinical teams, we directly provided clinical care to 782 children and 984 caregivers. Another 1,149 siblings were served indirectly. We provided care to out-of-state children from Alaska, Wyoming, and Montana. Our child protection multi-disciplinary team provides forensic medical evaluations for children with suspected physical and sexual abuse, injuries, sexual assault, failure to thrive and neglect. The team participates in local and state child fatality review, provides expert consultation to law enforcement, child welfare agencies, and courts in the Rocky Mountain region.

The Kempe Center’s IMHOFF Clinic is our mental health service that provides behavioral health assessments and treatment for children and families who are dealing with the mental health consequences of child abuse or neglect. The clinic serves children and families who have experienced difficult life events, such as physical abuse, sexual abuse, neglect, or other traumatic losses. Children may need help with emotion regulation, coping skills and rebuilding trust. Our staff members have the experience and training to meet these challenges and restore hope to children and their families.

We educate CU medical students, graduate students, pediatric residents, and post-doctoral fellows as well as practicing physicians, social workers, and mental health professionals. Our training programs take place in Denver, across the state and across the nation. Kempe and the Children’s Hospital Colorado together support an accredited three-year American Board of Pediatrics (ABP) fellowship program to board-certified or board-eligible pediatricians. Over the past four years we have taken over and re-designed the core training for all new child protection workers in the state in the new Colorado Child Welfare Training System as well as providing advanced education for established child welfare employees and supervisors. Our faculty provided 4,390 hours of training within this system to more than 7,000 attendees. A conservative estimate is that Kempe faculty provided more than 54,000 people-hours of training. Kempe has also developed a superb on-line education in child abuse and neglect for mandated reporters that can be found at www.coloradoCWTS.com/mandated-reporter-training.

In 2015 Kempe merged two conferences that have led improvements in international child protection and child welfare practice since 2005 into a new International Conference on Innovations in Family Engagement. In 2015 Kempe sponsored the conference in Minneapolis with 450 professionals from child welfare, juvenile justice, and mental health agencies, as well as academics, policymakers, and advocates. The audience represented 35 states, numerous Tribes, many Canadian provinces, and six other countries. The 2016 Conference will occur in Ft. Worth, Texas, November 1-4, 2016.
The center is a national leader in research on child maltreatment. In the last academic year Kempe faculty published 32 peer-reviewed research papers, 7 chapters and 2 books. Our global reach includes 12 countries where faculty have consulted, led workshops or collaborated in research in a major way. The international impact of Kempe is even larger; tools (The ICAT instruments) developed at Kempe to help conduct population research in the epidemiology of child abuse are or have been used in more than 40 countries.

Kempe researchers developed the Fostering Healthy Futures® (FHF) program as a positive youth development program for preadolescent youth, ages 9 to 11, with a history of placement in out-of-home care. The program uses a combination of screening assessments, individual mentoring, and group-based skills training to promote healthy development. The FHF program is currently in Phase II, which includes program dissemination and implementation activities, as well as expanding the mentoring program to older teens. The US Administration on Children, Youth & Families (ACYF) and the California Evidence-Based Clearinghouse for Child Welfare have both designated FHF as an “evidence-based program.”

In a partnership between Kempe and the Denver Department of Human Services, Christina Little, PhD, and Evelin Gomez, PhD, lead implementation of the Trauma Informed Practice program with universal trauma screening of all cases in the county’s child welfare system; 267 staff were trained in trauma informed practices and they screened more than 1,700 children. To serve families and children with a positive screen, 40 mental health clinicians from 24 agencies around Denver County were trained in two evidence-based trauma-focused treatment models.

Kempe faculty are helping multiple states evaluate their child welfare systems. This work includes the No Place Like Home project evaluating Family Group Decision Making (FGDM) in South Dakota, Texas, and Colorado; the Found, Engaged and Connected project evaluating FGDM in Minnesota; the Enhanced Family Conferencing Initiative evaluating family meetings in New York City; and the Colorado Community Response project evaluating a prevention program for families at risk of child welfare involvement in 31 Colorado counties.

Prevention is one of our goals. For years Kempe has worked with Kohl’s and Children’s Hospital Colorado to reduce abusive head trauma in infants in Colorado. The Kempe Center has developed a second major prevention initiative, using the SafeCare® 20 week parent support program, for the State of Colorado. SafeCare Colorado® is an evidence-based, in-home parent support program for families with children ages 0-5 years that provides caregivers with skills to address home safety, parenting and children’s health needs. We are collaborating with more than ten community agencies in more than 40 counties to deliver this program.

International research activities focus on the development of national data systems, in epidemiological research and, in collaboration with Cardiff University in Wales, the development of systematic reviews. John Fluke, PhD, has been a consultant in the development of the national child abuse registry and data systems for the Kingdom of Saudi Arabia and Canada. Kempe has a memorandum of understanding with Cardiff University in Wales supports collaborate in systematic reviews with the Evidence-Based Practice Centre there. Cardiff professors Alison Kemp and Sabine Maguire have been appointed as adjoint professors at Kempe. Prior Kempe Center director Richard Krugman, MD, returned to the Kempe Center as his primary academic home after nearly 25 years as Dean of the School of Medicine. His research addresses international lessons on the organization of protective services for children by looking at the organization of care in Belgium and London.

Despite tremendous advances in the field, we know that children of color continue to be overrepresented in the child welfare system. We have developed a program of Equity Ambassadors to ensure that we attend to disparity issues in workforce and in service to children.

Kempe leadership activities and awards this past year continue to reflect the impact of the Kempe Center. Andy Sirotnak was elected head of the Section of Child Abuse and Neglect of the American Academy of Pediatrics. Donna Parrish received the University President’s Diversity Award. Gary Melton and Jill McLeigh are the founding editors of a new international journal in the field of child abuse to be published by the American Psychological Association: The Kempe-Haruv Global Journal on Child Abuse and Neglect. Desmond Runyan was the recipient of the Kempe Foundation’s Kempe Professional Award for 2016.

Desmond Runyan, MD, DrPH
Jack and Viki Thompson Professor of Pediatrics, University of Colorado School of Medicine
Executive Director, The Kempe Center

Andrew Sirotnak, MD
Professor and Vice Chair for Faculty Affairs
Department of Pediatrics, University of Colorado School of Medicine
Director, Child Protection Team | Children’s Hospital Colorado
Deputy Director, The Kempe Center
Website: www.thekempecenter.org
The Crnic Institute is the first medical and research institute in the nation with the mission to provide the best clinical care to people with Down syndrome, and to eradicate the medical and cognitive ill effects associated with the condition. The Crnic Institute was formed as a partnership between the University of Colorado School of Medicine, the University of Colorado Boulder, and Children’s Hospital Colorado. Based on the Anschutz Medical Campus (AMC), the institute partners both locally and globally to provide life-changing research and medical care for individuals with Down syndrome. The Crnic Institute is made possible by the generous support of the Anna and John J. Sie Foundation, and relies on the Global Down Syndrome Foundation for fundraising, education, awareness and government advocacy. Tom Blumenthal, PhD, the Anna and John J. Sie Professor in Genomics, joined the Crnic Institute in 2012 as Executive Director. Blumenthal, a specialist in mechanisms of gene expression, was formerly the Chair of Biochemistry and Molecular Genetics in the School of Medicine and then the Chair of Molecular, Cellular and Developmental Biology (MCDB) at the Boulder campus.

The institute is performing research into the molecular biology, genetics and genomics of Down syndrome in an effort to determine how an extra copy of chromosome 21 causes the many characteristics associated with the condition. Joaquin Espinosa, PhD, Professor of Pharmacology, is the Crnic Institute’s Associate Director for Science. The Crnic team also includes Huntington Potter, PhD, a specialist in Alzheimer’s disease, and Katheleen Gardiner, PhD, a longtime Down syndrome researcher. The Crnic Institute is providing grants of one million dollars each year for funding of Down syndrome research on the AMC and Boulder campuses. The Crnic Institute is building a strong community of researchers to tackle the most significant and tractable problems in the field. All grant recipients and member of their laboratories participate in monthly “supergroups” for in-depth discussion of Down syndrome research projects as well as an annual symposium on Down syndrome. The institute’s clinical and basic research is closely coordinated with the Sie Center at Children’s Hospital Colorado, the most comprehensive clinical care center for people with Down syndrome.

http://www.ucdenver.edu/academics/colleges/medicalschool/institutes/lindacronic/Pages/lindacronic.aspx
Laura D Brown, MD; Associate Professor of Pediatrics - Invited to give the Member Speaker lecture at the 2015 Perinatal Research Society meeting; invited to speak at the 2016 American Diabetes Association Meeting; served as a faculty member at the 39th Annual AAP Seminar for Neonatal-Perinatal Medicine; mentored a pediatric resident (Laura Zastoupil) who was awarded the Society for Pediatric Research Award (House Officer category); served on Council for the Western Society for Pediatric Research; served on the organizing committee for the 1st Annual National Conference on Women’s Health Research.

Cassidy Delaney, MD; Assistant Professor of Pediatrics - Has been awarded an NIH KO8 Career Development Award, and was elected to the Society for Pediatric Research, Western Society for Pediatric Research and the Perinatal Research Society.

William W. Hay, MD; an internationally recognized leader in fetal physiology, is the scientific director of the PRC. Hay has been NIH funded for his entire career, as well as other research organizations such as Bill & Melinda Gates Foundation Global Grand Challenges program, and is the PI for NIH-NICHD T32 Training Program in Perinatal Medicine and Biology. Paul Rozance, MD, is the Associate Director of the PRC and the T32 Training Program and provides oversight of the daily laboratory activities.

Paul J Rozance, MD; Associate Professor of Pediatrics - Has been awarded NIH K08 and R01 grants, and is a member of the Editorial Board of the Journal of Endocrinology and the Journal of Molecular Endocrinology. He also is Past President of the WSPR and Secretary Treasurer of the Perinatal Research Society. He has served as an ad hoc member of the NIH Pregnancy and Neonatology Study Section yearly for the last three year. He is organizing the 2016 Aspen/Snowmass Perinatal Biology Conference. He has been invited to give several lectures on the topics of intrauterine growth restriction and neonatal hypoglycemia.

Stephanie R. Wesolowski, PhD; Associate Professor of Pediatrics - Promoted to Associate Professor of Pediatrics; Funded by an NIH -NIDDK K01 Career Development Award and NIH-NIDDK R03 Award to study fetal glucose metabolism. Co-investigator on NIH-R24 Award. Member of Perinatal Research Society.

Clyde J. Wright, MD; Assistant Professor of Pediatrics - Completed an NIH-NHLBI K08 grant and Entelligence Young Investigator Award. Received a CTSI-CMH Pilot Award. Continues to serve on the Editorial Board of the Journal of Pediatrics and was elected to serve on the founding editorial board of the International Society of Evidence Based Neonatology. Received the Young Investigator Research Award from the Western Society of Pediatric Research. Received the Dan Hall Clinical Teaching Award for the Neonatology Fellows at the University of Colorado.

http://www.ucdenver.edu/academics/colleges/medicalschool/departments/pediatrics/research/programs/perinatal
The US Patent and Trademark Office awarded The Rocky Mountain Alzheimer’s Disease Center (RMADC) a trademark on its name in 2016. Its goal is to carry out research and provide expert standard and innovative clinical assessment and care related to Alzheimer’s disease and its environmental and genetic risk factors including Down syndrome. The Center also provides support and resources for carrying out clinical research on the diagnosis, treatment and prevention of Alzheimer’s disease and for carrying out basic, preclinical, and translational research directed at improving the diagnosis, treatment and prevention of Alzheimer’s disease including in individuals with Down syndrome.

The center’s director is Huntington Potter, PhD, Professor of Neurology and vice chair for basic research, and director of the Alzheimer’s Disease Program, Linda Crnic Institute for Down Syndrome. Jonathan Woodcock, MD, Assistant Professor of Neurology and Psychiatry and Christopher M. Filley, MD, Professor of Neurology and Psychiatry and neurology service chief at the Denver Veterans Affairs Medical Center, are co-leaders of the Center’s Clinical Core which sees over 1000 patients/year. Brianne Bettcher, PhD, Assistant Professor of Neurosurgery, is RMADC Chief Research Neuropsychologist. Assistant Professor Peter Pressman, MD, began Sept. 1, 2016.

Over the last year, members of the Center have given over 60 presentations to scientific, medical and lay audiences. Over $1 million in philanthropic gifts and pledges and $500,000 from the State of Colorado have been received. The Center has continued its clinical trial to assess the safety and efficacy of Leukine as a treatment for Alzheimer’s disease and was recently awarded one of four $1 million grants by the Alzheimer’s Association Part the Cloud Program in Neuroinflammation to carry out the extended, 6 month Leukine trial and is preparing to participate in other multi-site clinical trials. Several FDA-approved drugs have been found to inhibit a critical step in the Alzheimer’s disease pathogenic pathway, in preparation for animal, and if those are successful, human trials. A mechanism by which Alzheimer’s is a type 3 diabetes has been discovered.

http://www.ucdenver.edu/academics/colleges/medicalschool/departments/neurology/clinical/AD%20Center/Pages/Alzheimer.aspx

Rocky Mountain Multiple Sclerosis Center

The Rocky Mountain Multiple Sclerosis Center is a patient- and family-centered nonprofit organization that provides a comprehensive and integrated wellness approach to MS and related diseases. Our mission is improve the quality of life of individuals and their families living with MS and related neurological diseases through care, support, education and research. Our focus of care is an integrated wellness approach aimed at maximizing lifelong brain health.

Founded in 1978, the MS Center was initially affiliated with the University of Colorado Health Sciences Center and the Denver Veterans Administration Medical Center. In 1992, the MS Center broadened its continuum of care by merging with MS Community Resources, and in 2008, partnered with the University of Colorado and the University of Colorado Hospital to create the Rocky Mountain MS Center at University of Colorado (RMMSC at CU). By bringing together the experience and exceptional work in patient care and cutting-edge research that have distinguished these organizations for many years, we created a world-class and comprehensive center for patient care and research that serves the Rocky Mountain region and has a national and international reach.

Recognizing that experts with diverse areas of expertise look at the same problems from different perspectives, the RMMSC at CU
features an interdisciplinary team of physicians and researchers. They are working together to offer adults and children alike excellent care, access to clinical trials, help in leading better and healthier lives, and hope that Anschutz Medical Campus laboratory research will translate into new approaches to treatment—and maybe prevention—of MS and other neurological diseases.

The neuroimmunologists at the RMMC at CU and their teams of clinical specialists and scientists are committed to four goals:

- Providing comprehensive care for MS and related neuroimmunological diseases
- Conducting clinical, translational and basic neuroscience research on the causes, outcomes and treatments of these diseases
- Training health professionals in complementary disciplines to be tomorrow’s leaders in neurological care and research for our patients
- Serving as an international educational resource for patients, families, physicians and investigators interested in MS and related disorders

The Rocky Mountain MS Center is uniquely positioned to successfully pursue these goals through relationships with the University of Colorado, University of Colorado Hospital, the Denver VA Medical Center, Denver Health, Metro Community Provider Network, Children’s Hospital Colorado, and countless other organizations serving our community.

Our scope of care also includes support services featuring counseling and legal disability guidance. The RMMC’s King Adult Day Enrichment Program (KADEP), located in Westminster, provides care and support every weekday for clients with diagnoses of MS, traumatic brain injuries, stroke and other neurological conditions. Our education programs feature introductory classes for newly-diagnosed MS patients, the informal Conversations on MS series with our physicians, regular educational seminars, monthly e-newsletter outreach, and InforMS, our quarterly magazine with an estimated readership of more than 75,000.

The Rocky Mountain MS Center leadership team includes Gina Berg, Chief Executive Officer; Timothy L. Vollmer, MD, Medical Director of the Rocky Mountain MS Center and Co-Director of the RMMC at CU; and John R. Corboy, MD, Professor of Neurology and Co-Director of the RMMC at CU.

Our unique, integrated approach allows us to meet and assist those who come to us no matter where they are at in their MS journey.

http://www.mscenter.org/

Rocky Mountain Taste and Smell Center

The Rocky Mountain Taste and Smell Center includes scientists from multiple disciplines who work together on studies of the chemical senses including taste and smell, and on chemical irritation of the oral and respiratory passageways. The overall goal of the center is to facilitate research by providing communal resources and by bringing together productive investigators in the chemical senses and allied senses of hearing and balance. The center, under the leadership of Diego Restrepo, PhD, and Thomas Finger, PhD, embraces work from 17 laboratories spread across five departments of the School of Medicine along with investigators from the School of Dental Medicine and the University of Denver. While the center provides direct support for infrastructure and multi-user research facilities, the underlying research is supported by more than 25 research and training grants from the National Institutes of Health totaling more than $5 million. Investigation of disorders of the senses of taste and smell is enhanced by cooperation and collaboration with the Sinus Clinic of University of Colorado Hospital and the Department of Otolaryngology.
Trauma is the leading cause of death for those under 44 years old. Civilian and military trauma cause more loss of productive years than cancer and heart disease combined. The Trauma Research Center is one of six national P50 centers, investigating death and complications after traumatic vehicular, weapons and industrial accidents. Starting in 1992 as the first such research center and in 2011, the National Institutes of Health renewed our $10 million Center for 5 years. The Center consists of investigators in the Departments of Surgery, Hematology/Oncology, Epidemiology, and Biochemistry and active partnerships between the University of Colorado, Denver Health and Hospital Authority and Bonfils Blood Center.

The program was initiated by Alden Harken MD, former Chairman of Surgery, in 1992. Since 2003, the Program Director is Anirban Banerjee PhD (co-founder, Professor of Surgery). The experienced leadership team consist of Ernest Moore, MD (co-founder, Professor of Surgery Vice Chairman for Research, Surgery), Christopher Silliman, MD, PhD (since 1995, Professor of Pediatrics and Surgery), Angela Sauaia MD, PhD (since 1998, Professor of Biometrics and Epidemiology), Kirk Hansen, PhD (since 2007, Professor of Biochemistry and Molecular Genetics).

By analyzing patterns of Omics in patients and outcomes from our clinical databases, we assess the mechanisms of post-traumatic death or morbidity. In the past decade we chronicled delayed death after trauma due to multiple organ failure and its virtual eradication by improved practices obtained from research (1990-2005). However, death within 24 hours still remains high (greater than 25 percent). In this cycle and beyond (years 2011 - 2016), we are assessing links between blood clotting and inflammation, the molecular protein and metabolite properties of stored blood products and ways of controlling systemic inflammation after traumatic injury. The Center has produced over 800 peer-reviewed publication to date.

We have been funded by NIGMS for 2016-2021 for $13.8 million. Our objective is to reduce acute mortality after severe traumatic injury, by focusing on induced coagulopathy.

The Center houses and administers a NIH T32 training program. Since 1992, this T32 program has produced over 100 surgical investigators, many now senior faculty at University of Colorado and other prestigious academic institutions.

In 2012 our Trauma Research Center was among three areas (Denver, Pittsburgh and Virginia) selected by the U.S. Department of Defense (DoD), for a $6.25 million contract, to evaluate early plasma resuscitation, within the entire Denver metropolitan area. After obtaining FDA approval and community consent in 2013, ambulances in the Denver citywide trial can offer plasma, enrolling 62 patients since April 2014. We developed the DoD support to install unique paramedic (DHHA) and research teams to assess blood clotting at the point of care to study and guide therapy. Above all, the 24/7 team can capture and store these precious and evolving human samples for in-depth analysis by our discovery engines. Our discovery engines use mass spectrometry proteomics, metabolomics, fluorescent imaging and dynamic viscoelastic measurements of blood clotting at the point of care, serially through field, emergency departments and operating rooms.

Expanding our in depth approach to patient Omics, the DoD partnered with National Heart, Lung, and Blood Institute to create a large consortium of national experts representing 26 universities and hospitals to study trauma-induced coagulopathy. We have been conferred a large share of responsibility with an award of $2.6 million over 5 years to provide clinical POC data, samples and scientific leadership.

Looking to the future, we must examine the current causes of patient death and what we can accomplish at the earliest. This includes tailored resuscitation to decrease early mortality as well as ling injury. We are conducting a clinical trial on whether inhaling salty air can be beneficial for controlling inflammation, in ventilated trauma patients.
The University of Colorado Cancer Center (CU Cancer Center) is the only National Cancer Institute (NCI)-designated comprehensive cancer center in Colorado and has the distinction of also being a consortium cancer center. Nearly all researchers who participate in cancer-related basic, translational, clinical, population and behavioral research in Colorado are CU Cancer Center members. This statewide inclusiveness of cancer researchers and academic institutions provides a scientific breadth and depth that strengthens the CU Cancer Center’s comprehensive cancer research and clinical care activities. The CU Cancer Center stands as a unique organization and resource in Colorado and surrounding region in cancer research, clinical care, prevention, and outreach.

The Vision of the CU Cancer Center is to prevent and cure cancer in Colorado and be a global model for patient care, interdisciplinary research and training.

The Mission of the CU Cancer Center is to discover, develop and deliver breakthroughs in cancer science to reduce the incidence and severity of cancer, to improve cancer outcomes, and to increase the quality of life for survivors and their caregivers through integration of basic, translational, clinical and population research and training.

The CU Cancer Center’s history begins with the award of an NCI Cancer Center Support Grant in 1987, resulting in a clinical cancer center designation. The CU Cancer Center achieved comprehensive status in 1997, and a formal consortium designation was conferred in 2005. The consortium comprises six organizations that include three academic institutions, and three affiliated hospitals. The institutions bring notable research strengths and diverse clinical populations that provide the tools and materials for the pursuit of the CU Cancer Center vision and mission.

The founding director, Paul A. Bunn, Jr., MD, led the CU Cancer Center until 2009. In 2010, Dan Theodorescu, MD, PhD, ushered the Cancer Center into a new era of discovery, development and delivery of cancer care. Under Theodorescu’s leadership the CU Cancer Center received its NCI re-designation as a Consortium Comprehensive Cancer Center for a five-year period beginning in 2012 and a grant award of approximately $18 million over that time period, was elected as a Member of the National Comprehensive Cancer Network (NCCN) and went from 44th to 15th ranked cancer center in the nation in 2015 according to U.S. News and World Report. Additional changes were the re-engineering of the leadership and management of the cancer service line and clinical trials unit to better synchronize, facilitate and integrate research with clinical operations at the University of Colorado Hospital. In February 2015, the CU Cancer Center joined the Oncology Research Information Exchange Network (ORIEN), a unique research partnership among U.S. top cancer centers that is designed to facilitate discoveries in precision medicine. Currently comprising 10 members, ORIEN institutions use a common, single protocol to consent patients for the donation of their tissue and clinical data. ORIEN members then share de-identified data to accelerate the development of precision medicine tools such as biomarkers that predict patient outcomes and new treatments. ORIEN also enables clinicians to more quickly match eligible patients to clinical trials thus accelerating the pace of research and the determination which new drugs and approaches are most effective.

**Cancer Center Senior Leadership**

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<tr>
<th><strong>Director</strong></th>
<th>Dan Theodorescu, MD, PhD</th>
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<td><strong>Associate Directors:</strong></td>
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<tr>
<td>Translational Research</td>
<td>S. Gail Eckhardt, MD</td>
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<td>Basic Research</td>
<td>James DeGregori, PhD</td>
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<tr>
<td>Clinical Research</td>
<td>Karyn Goodman, MD</td>
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<td>Clinical Services</td>
<td>W. Thomas Purcell, MBA, MD</td>
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<td>Cancer Prevention &amp; Control</td>
<td>Cathy Bradley, PhD</td>
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<td>Education</td>
<td>John Tentler, PhD</td>
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<td>International Programs</td>
<td>Fred Hirsch, MD, PhD</td>
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<tr>
<td>Administration &amp; Finance</td>
<td>Mark Kochevar, MBA</td>
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The center fosters cancer-focused research, in part through the creation of formal scientific research programs. A program comprises the activities of a group of investigators who share common scientific interests and goals and participate in competitively funded research. Programs are highly interactive and lead to exchange of information, experimental techniques, and ideas that enhance the individual productivity of scientists and often result in collaborations and joint publications. Ultimately, the success of a program is measured by scientific excellence and the emergence of productive collaborations.

### Cancer Center Program Leadership

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<thead>
<tr>
<th>Basic Sciences</th>
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<tr>
<td>Cancer Cell Biology</td>
<td>Robert Sclafani, PhD &amp; Antonio Jimeno, MD, PhD</td>
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<td>Molecular Oncology</td>
<td>James DeGregori, PhD &amp; Joaquin Espinosa, PhD</td>
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| Developmental Therapeutics | Wells Messersmith, MD & Dan Gustafson, PhD |
| Hematologic Malignancies | Lia Gore, MD & Craig Jordan, PhD |
| Lung, Head & Neck Cancers | York Miller, MD and Xiao-Jing Wang, MD, PhD |

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<th>Population Health</th>
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<tr>
<td>Cancer Prevention and Control</td>
<td>Myles Cockburn, PhD &amp; Rajesh Agarwal, PhD</td>
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### Cancer Center Consortium Organization (NCI-Defined)

#### Academic Institutions
- University of Colorado Denver (CU Denver)
- University of Colorado Boulder (CU Boulder)
- Colorado State University (CSU)

#### Affiliated Hospitals
- University of Colorado Hospital (UCH)
- Children’s Hospital Colorado (CHCO)
- Veterans Affairs Medical Center (VAMC)

#### Facts as of the June 2016 NCI Site Visit

#### Membership
- 193 Full members
- 159 Associate members
- 66% of members are in the School of Medicine (SOM)

#### Research Portfolio
- 615 cancer related publications
- $83M direct costs in annual cancer-relevant sponsored research funding
- $60M held by members in the SOM

#### Clinical Portfolio
- 2,154 accruals to all types of human subject protocols
- 685 accruals to intervention treatment protocols
- Opens more than half of all clinical trials in the School of Medicine
Investments by the CU Cancer Center $7.0M (January 2015 – June 2016)

Recruitment/Retention funding: $4.5M in support of 9 faculty recruitments
Strategic Development: $1.3M to support development of research programs and institutional shared resource infrastructure
Pilot Grant funding: $1.1M in support of 30 projects.

Beneficiaries:
- Schools: SOM 45% SPH 49% SOP 2% SOD 1% Grad School 1% Other 2%
- Departments within SOM: Medicine 57% Pathology 18%
  - Pharmacology 9% Linda Crnic Ctr 3% Biochem & Mol Genetics 3%
  - Pediatrics 2% Immunology & Microbiol 2% Otolaryngology 2%
  - Dermatology 1% Surgery 1% Radiation Oncology 1%

Creation of / Contribution to Endowed Chairs/Professorships:
- CancerCure/AMC Cancer Fund Endowed Fund for Cancer Prevention and Control (M. Cockburn)
- Morton and Sandra Saffer Professor in Cancer Research (D. Sherbenou)
- Morton and Sandra Saffer Professor in Cancer Research (E. Pietras)
- Courtenay C. and Lucy Patten Davis Endowed Chair in Lung Cancer Research (J. DeGregori)

### Distinguishing Characteristics

- Only NCI designated Comprehensive Cancer Center in Colorado
- NCCN member, one of 27 elite cancer centers
- ORIEN Personalized Medicine Network member
- Includes nearly all academic NCI-funded cancer researchers in the State of Colorado.
- Includes the top ranked adult cancer program in the US (UC Hospital)
- Includes the top ranked pediatric cancer program in the US (Children’s Hospital Colorado)
- Includes the second-ranked veterinary school with the top animal cancer center in the nation (CSU Flint Animal Cancer Center);

### Major Accomplishments 2015-2016

- Successfully submitted the competing renewal for the Cancer Center Support Grant (P30CA046934) and received a score of Excellent to Outstanding, the highest score received since NCI funding of the center.
- Successfully recruited Cathy Bradley, PhD as Associate Director for Population Sciences.
- Successfully recruited Myles Cockburn, PhD as Program Co-Leader for the Cancer Prevention and Control Program.
University of Colorado Hearing and Balance Center

The University of Colorado Hearing and Balance Center is a program of the University of Colorado Hospital (UCH) and the Department of Otolaryngology at the University of Colorado School of Medicine. A “cradle to grave” approach to hearing and balance health is the Centers focus as its providers work with the youngest of children, performing infant hearing and early intervention programs, to the oldest of adults. The Center also provides the following:

Clinical Services available at three sites: UCH, Boulder campus, and Lone Tree Health Center:
- Hearing assessment across the lifespan
- Otologic and neurotologic services
- Speech and language testing and therapy
- Vestibular (Balance) testing
- Vestibular rehabilitation (canalith reposition maneuver)
- Implantable hearing devices (cochlear implants, bone anchored hearing aids)
- Hearing aid and assistive listening devices
- Tinnitus evaluation and management
- Telehealth services

Consumer and Outreach Programs:
- Consumer seminars
- Continuing education seminars

Professional Conferences and Training Activities:
- Midwinter Otolaryngology Update Conference
- Distance learning
- Otolaryngology residency training
- International Scholar’s fellowship
- Medical student clerkship
- National and international presentations

Research Programs:
- NIH T-32 research training grant for physician and scientists
- Implantable hearing devices outcomes
- Blast injury to inner ear and its mitigation
- Development of new devices for assessing hearing and ossicular chain movement
- Cochlear implant candidacy and optimizing hearing outcomes
- Stem cells and regenerative therapies for hearing loss

Volunteer programs:
- Newborn Hearing Screening

Senior Leadership - University of Colorado Hearing and Balance Center:
- Herman Jenkins, MD
  Professor and Chair, Department of Otolaryngology
- Samuel Gubbels, MD
  Director, University of Colorado Hearing and Balance Center
  Associate Professor, Department of Otolaryngology
- Melinda Anderson, PhD, CCC-A
  Director of Audiology, UC Health

For additional information, please visit our website at: http://www.medschool.ucdenver.edu/otolaryngology

Webb-Waring Center

The Webb-Waring Center continues basic and translational investigations of inflammation and immunologic mechanisms of health and disease. The research projects are gaining a better understanding of the causes, diagnosis, treatment, and prevention of common disorders like the Acute Respiratory Distress Syndrome (ARDS), diabetes, multiple sclerosis, atherosclerosis, and macular degeneration. Many of the efforts are directed to learning about the importance and finding ways to combat the effect of aging on well-being and disease progression.

The Webb-Waring Center also has an active training program for undergraduate, graduate, and medical students who are interested in biomedical research. This summer, the Webb-Waring Center trained and hosted twenty-seven students who enthusiastically presented original “national meeting quality” research posters at a joint Graduation Ceremony. Thirteen first-time Colorado visiting, Pre-Med diversity undergraduates from Harvard, Yale, Stanford, Princeton, Notre Dame, Williams, Middlebury, North Carolina State, Southern California, Texas State, and Colorado universities presented research. These students trained in the NIH, Fitzgerald Foundation, and North Foundation supported Webb-Waring Center Colorado Undergraduate Summer Program (“CUSP”).

In addition, five NIEHS supported, CUSP trained, Colorado University diversity undergraduates from the Colorado Undergraduate Research in Environmental Health Sciences (“CUREHS”) Program of the School of Pharmacy and nine emerging second year Colorado diversity medical students supported by the Department of Medicine DREAM Program also presented novel investigations.
Vice Chancellor for Health Affairs
The University of Colorado’s Center for Bioethics and Humanities (CBH) offers an array of ethics, humanities, arts and health law programs that are integral parts of the academic life and work on the Anschutz Medical Campus (AMC) and that form important bridges to University and community-based programs across the state.

- CBH faculty are involved in teaching students in all professional schools and allied health programs on the AMC and in undergraduate and graduate programs on the Denver and Boulder campuses.
- The rapidly growing clinical ethics programs of the two campus hospitals have become integral aspects of clinical care on campus and provide critical support to affiliated hospitals and others across the state.
- Community outreach activities of the CBH extend beyond the University to health care professionals and citizens locally, regionally and nationwide.
- Scholarly and research activities of CBH faculty focus on innovations in inter-professional ethics and humanities education, exploring the ethical implications of advances in genomics and personalized medicine, using safety and quality methods to improve clinical ethics case consultation, developing novel health humanities curricula, and engaging the community to address ethical issues in health care.

Matthew Wynia, MD, MPH, FACP, moved from Chicago to assume full-time duties as director of the Center in July 2015. Wynia is a national leader in health care ethics, having served as the head of the Institute for Ethics at the American Medical Association, President of the American Society for Bioethics and Humanities, Chair of the Ethics Section of the American Public Health Association and Chair of the Ethics Committee at the Society for General Internal Medicine, among other elected and appointed positions. He is also recognized for his work in patient safety and quality after developing the AMA’s Center for Patient Safety and serving on several Institute of Medicine working groups on team-based care, transdisciplinary professionalism and catastrophic disaster response. Wynia’s research uses health services research methods to explore ethical issues in health care and policy. His training is in internal medicine, infectious diseases, public health and health services research. Since July 2015, Wynia helped develop a Dean’s Transformation Grant award and was named the lead for the stakeholder-engagement and governance core for the D4 program (a big data initiative that will deliver actionable answers to important clinical and operational questions). He has also sparked the development of several other new and expanded programs described below.

Therese Jones, PhD, is the Associate Director of the CBH, leading its educational and training programs. She is an Associate Professor in the Department of Medicine, Director of the Arts and Humanities in Healthcare Program, Editor of the Journal of Medical Humanities and, in 2015, she published a landmark textbook for those who teach health humanities, The Health Humanities Reader (Rutgers University Press). She teaches both required and elective humanities courses for health profession students and for undergraduate students who are enrolled in the Health Humanities Minor, a collaborative curriculum between the Anschutz Medical Campus and the Denver campus. She also serves as the lead on the development of our new 15-credit hour Graduate Certificate in Health Humanities and Ethics, which was approved in 2016 and will enroll its first students in 2017. Jackie Glover, PhD, is Professor in the Department of Pediatrics and leads the Center’s work on clinical ethics case consultation, serving as a consultant for both the University Hospital and Children’s Hospital Colorado and creating shared educational, outreach and research programs across the two hospitals and throughout their respective hospital networks. She is also Director of the Humanities, Ethics and Professionalism Thread in the School of Medicine, which integrates bioethics and humanities content throughout the four years, and she serves on the Director’s Council of the campus’ Inter-professional Education Program. Marilyn Coors, PhD, is Associate Professor in the Department of Psychiatry and leads the Center’s research programs. Her work focuses on research and teaching on advances in genetics and the implications of providing care in an emerging era of precision medicine. She directs the Clinical Research Ethics Core for the Colorado Clinical and Translational Sciences Institute. Heather Fitzgerald, MS, RN, is a Clinical Nurse Ethicist, co-chair of the Children’s Hospital Colorado Ethics Committee, and Chair of the hospital’s Ethics Liaisons Committee. Mark Bauer, PhD, is co-leading the development of our new Graduate Certificate in Health Humanities and Ethics and is a Research Assistant Professor in the Philosophy Department at University of Colorado Denver. He teaches courses in logic, informal reasoning, symbolic logic and scientific inference as well as advanced courses in Philosophy of Science, Philosophy of Language, and Philosophy of Mind.

2015-16 has seen the addition several new CBH faculty in clinical ethics. Brian Jackson, MD, and Dan Reirdan, MD, were appointed to clinical ethics leadership at Children’s Hospital Colorado, and Megan Prescott, LCSW, was appointed to ethics leadership at University Hospital.

The CBH maintains an Academic Leadership Council, with one representative from each of the health professional schools on the Anschutz Campus appointed at 0.2 FTE to help lead CBH programs. These individuals serve a liaison role for their respective programs, ensuring the relevance and reach of CBH activities across all Campus programs, and they lead CBH initiatives in their particular areas of interest and expertise. The members of the CBH Academic Leadership Council include Sara Horton-Deutsch, PhD, PMHCNS, RN, FAAN, ANEF, (College of Nursing), Inge Wefes, PhD (Graduate School), Tom Greany, DDS (School of Dental Medicine), Kristin Furfari, MD (School of Medicine) and Deb Glueck, PhD (School of Public Health).
Finally, the Center produces a number of programs to serve and engage key local, state and national communities.

In 2016 the CBH published the 9th volume of *The Human Touch*, an annual edited volume of literature and visual arts on the human aspects of health and healthcare from the local community.

The CBH Art Gallery hosted five major exhibitions in 2015-16 with more than 6,000 visitors.

The CBH received a $100,000 gift from William Silvers, MD, in 2015 that allowed the production of a set of inaugural events in our new Holocaust Genocide and Contemporary Bioethics program, including a spring 2016 visit by the noted bioethicist, Art Caplan, PhD, for a set of lectures on campus and in the local community, and also the stunning art gallery exhibition of Geoffrey Laurence’s *ISWASWILLBE*, with major support from the Mizel Museum and other donors.

The Center has collaborated with local NPR producer Elaine Grant and Charles Packard, Artistic Director for the Fox Theater, to create *Hard Call*, a live event and podcast series exploring some of the toughest decisions we’re forced to make about our health. The first *Hard Call* live event took place in late 2015 and the podcasts will begin airing in late 2016.

CBH faculty led efforts that resulted in passage of a new Colorado law, “HB 1101: Medical Decision Making for Unrepresented Patients,” that will help hospitals and other care facilities better meet the needs of patients who are unable to make medical decision and who don’t have a designated health care proxy.

**Center on Aging**

The University of Colorado Multi-disciplinary Center on Aging (CoA) was established in 1993 through an agreement between the Vice Chancellor for Health Affairs, the deans of the schools on the Anschutz Medical Campus and the leadership of the University of Colorado Hospital. The mission of the CoA is to promote improved health for older adults through the establishment and continuation of high quality/innovative clinical programs; the education of community professionals in geriatrics and gerontology; an emphasis on multidisciplinary team care and activity; and the promotion of collaborative efforts in basic, clinical and health services research that span the university community.

The CoA has been directed by Robert Schwartz, MD, since 2000. In addition to the director, the CoA is led co-led by associate directors from the School of Medicine, Jean Kutner, MD; Skaggs School of Pharmacy and Pharmaceutical Sciences Sunny Linnebur, PharmD; School of Dental Medicine Gerald R. Berg DDS; Colorado School of Public Health Lucinda Bryant, PhD; and the College of Nursing Jacqueline Jones, PhD.

Faculty development and trainee mentorship play a large role in the Center, which has played a central role in developing an outstanding pipeline of junior investigators interested in aging-related academic research careers. The CoA is the home for a very successful Institutional T32 grant focusing on the “applied physiology of aging,” now in its 16th year. It has also been the home to the Hartford Center of Excellence in Geriatric Medicine since 1998. While this entire Hartford Foundation program will be ending in 2016, the Chancellor, Dean of the School of Medicine and Chair of the Department of Medicine, have agreed to continue their $150,000 match to support the career development of post-doctoral fellows and junior faculty involved in aging-related work. This group has accounted for more than 160 non-Hartford extramural grants and over $80 million in direct cost support to the University of Colorado Anschutz Medical Campus. Our institution and its junior faculty are national leaders in receiving career development awards in the field of aging including ten Beeson Career Development Scholars as well as multiple other aging-related K awards.

Most recently, the Center on Aging was crucial in the successful funding of the new Eastern Colorado Geriatric Research Education and Clinical Center (GRECC), located at the Denver VA. This is the only GRECC to be funded in the over 17 years. Core GRECC faculty will have joint appointments between the VA and the University of Colorado School of Medicine. The GRECC is led by Robert Schwartz, MD (Director), Wendy Kohrt, PhD (Associate Director for Research), Susan Bray-Hall, MD (Associate Director for Clinical Models of care) and Laurence Robbins, MD (Associate Director for Education).

Aging-related research grants presently managed through the CoA include: 1) Applied Physiology of Aging T32 (R Schwartz, PI); 2) Specialized Center of Research (W. Kohrt, PI) and The Colorado Health Foundation grant for Advance Care Planning. Newly submitted grants through the CoA include: Molecular Transducers of Physical Activity (U01; W Kohrt PI, score 13); Hip Fractures in Older Women (Multi-centered R01, R Schwartz, Site PI, score 13); Applied Physiology of Aging T32 (renewal years 16-20 pending, R Schwartz, Director); AHA Strategically Focused Obesity Research Network Application (planned, LOI approved).
Colorado Area Health Education Center Program

The mission of the Colorado Area Health Education Center (AHEC) Program is to improve the quality and accessibility of education for health care professionals in Colorado in order to enhance the delivery of health care services throughout the state, with special emphasis on frontier, rural, urban underserved communities and underrepresented groups.

The vision of the Colorado AHEC Program is a healthy Colorado. We are committed to helping provide education and training to increase the number and quality of health care professionals working in underserved and rural communities throughout Colorado as well as providing community health programs that are responsive to the needs of Coloradans seeking to live a long and healthy life.

Today, the State of Colorado is divided into six regions (Centennial, Central, San Luis Valley, Southeastern Colorado, Southwestern Colorado and Western Colorado) with an AHEC office in each region. The six regional AHECs partner with the School of Medicine, School of Dental Medicine, College of Nursing and Skaggs School of Pharmacy and Pharmaceutical Sciences, as well as the School of Medicine’s Physical Therapy and Child Health Associate/Physician Assistant programs to meet the goals of the Health Resources and Services Administration model grant.

The Colorado AHEC Program works to build statewide network capacity and strengthen academic-community linkages in four core mission areas: Health Careers and Workforce Diversity, Health Professions Student Education, Health Professions Continuing Education and Public Health and Community Education. Specifically, the goals and aims of the Colorado AHEC Program are to:

- Increase the potential for minority/disadvantaged students in elementary and secondary schools from rural and medically underserved areas to pursue career pathways in the health professions;
- Increase the potential for health professions students enrolled in degree programs in medicine, dentistry, nursing, pharmacy and allied health to practice in rural and urban medically underserved areas in Colorado AHEC Program regions upon graduation;
- Increase access to evidenced-based health information and accredited, high-quality continuing education programs for health professionals serving in rural and urban medically underserved areas; and,
- Increase access to health education for community residents in rural and urban medically underserved areas in Colorado AHEC regions.

Mark Deutchman, MD, is a Professor in the Department of Family Medicine in the School of Medicine, Director of the Rural Track for the School of Medicine, Director for the Colorado AHEC Program Office and Associate Dean for Rural Health. His work emphasis is on preparation for rural practice, which is a main mission for the Colorado AHEC Program.

Jennifer L. Hellier, PhD, is an Assistant Professor in the Departments of Family Medicine and Cell & Developmental Biology, and the Director of Pre-Professional Education for the AHEC Program Office. Hellier earned her doctoral degree in Neuroscience from Colorado State University and completed her Baccalaureate of Science at the University of Southern California. Previous to her leadership and development of health career pipeline programs, Hellier performed peer-reviewed scientific research in schizophrenia, olfaction, and epilepsy in a neuroscience lab on the University of Colorado-Anschutz Medical Campus. Earlier in her career, Hellier was an instructor in the Neurology Department at Harvard Medical School, and a post-doctoral fellow at the University of Colorado Health Science Campus.

Cynthia Armstrong PT, DPT, CHT, CEAS joined the Colorado AHEC State Program office as the Associate Director of Professional Programs. Armstrong has more than 20 years of experience in physical therapy practice and teaching. She has been involved with Colorado AHEC for many years, serving as the AHEC liaison for the CU Physical Therapy program. She is committed to rural healthcare. She has volunteered as a faculty advisor for the National Western Stock Show. In addition, Armstrong has been planning and providing continuing education courses for the rural PT community through the CU PT Program and is a Certified Clinical Instructor Trainer through her parent organization the APTA, educating physical therapy preceptors in providing and developing effective clinical education programs.
Willa Buswell has more than fifteen years of experience in office administration and management, budget oversight and reconciliation, grant administration, and community programs. She has been the Administrator of the Colorado AHEC State Program office since August 2013. Prior to that, she was the administrator of the CU School of Medicine, Office of Admissions for eleven years and administered all aspects of the application process from pipeline programs through matriculation and served as the School of Medicine liaison to the national organization of the Association of American Medical Colleges’ online medical school application process (AMCAS). During the same period she was the CU School of Medicine grant administrator for all aspects of the pre-doctoral student, NIH Research Training Grant. From April 1998 to July 2013 she was the point-of-contact for medical student access to the Medical Student Advocacy program for students who have personal or academic problems or might be in crisis.

Accomplishments during 2015-16:

- Provided funding for the six regional AHEC offices across Colorado to run programming. This programming totaled 2,138 contact hours or nearly 90 days and reached more than 26,600 Coloradans in underserved populations.
- Provided 21,342 nights of housing for health professions students serving clinical rotations away from their central campuses.
- Conducted training events for 61 Colorado faculty and pre-health advisors who advise over 21,750 high school, two-year and four-year college students.
- Conducted community engagement events such as the health screenings at the National Western Stock Show during which over 1,400 adults and 350 children received health screenings and education.

Colorado Center for Personalized Medicine

Colorado Center for Personalized Medicine is a multi-institutional collaboration that links extensive electronic medical record data to ‘omics’ information to promote the development of tools and knowledge in biomedical informatics in order to expand prognostic and diagnostic capacity using molecular diagnostics. The initial focus is on fueling research on developing predictive, personalized, preventative and participatory medicine that can integrate into our existing health care delivery system through defining risk, identifying new treatments and improving drug efficacy. These efforts serve the center’s overarching goal to integrate these discoveries into our routine health care to improve the lives of our patients.

Key Components:

**Molecular Diagnostics** - Overview: Develop local and regional clinical genetic-testing expertise such that the majority of genetic tests requested by our providers for our patients are done through BIPM-supported laboratories. Current Plan:
- Expansion of molecular diagnostic capabilities in the Colorado Molecular Correlates (CMOCO) laboratory; relocation to new space in Biosciences 2 in 8/2015
- Development of NextGeneration DNA sequencing laboratory testing focused on germline following the hire of a Co-Director in September 2015

**DNA Bank** - Overview: DNA collection on ~all patients across UCHealth and Children’s Hospital Colorado. Goal: collect > 5,000 patient samples by end of 2016. Current Plan:
- Broad consent model and patient/community education materials approved by IRB in September 2015
- Electronic consent (e-consent) commenced through ‘MyHealthConnection’ in May 2016
- ‘Go Live’ broad recruitment across UCH in October 2016
- Opening of DNA bank/biorepository, housed in Biosciences 2, in 10/2015

**Health Data Compass** – Overview: Health Data Compass is a shared, multi-institutional resource of integrated data and analytic services designed to transform data-driven processes in clinical research, operational excellence, molecular discovery, and precision medicine. We achieve this by maintaining a comprehensive, scalable, data integration and management system, implementing priority use cases, providing analytic teams and services, and fostering forward-thinking approaches to technological solutions. Learn more here: https://prezi.com/y89mukcbhlcq/health-data-compass-introduction/
BIPM Division - Overview: Develop personalized medicine research and care across our campuses and health systems. Current Plan:
Develop patient facing components (a personalized medicine clinic) and recruit additional MDs and genetic counselors for this effort
Develop ethical, community and clinician involvement opportunities and stakeholder analyses.
Engage investigators and clinicians through scientific and clinical impact RFA project proposals.
Recruit clinician scientists and basic scientists with expertise in genetic epidemiology and genomics, and bioinformatics of ‘big data.’

Translational Informatics and Computational Resource - Overview: Multidisciplinary, robust computing resource to foster omics-based researching using dimensionality data, development and implementation of computational methods and tools for sequence analysis and systems biology. Current Plan:
Develop research computing infrastructure for having state-of-the-art computing facilities on campus.
Recruit and hire staff to provide consultation in study design, data analysis and data interpretation.
Develop tools to implement in the molecular diagnostics for point-of-care information delivery in the clinical setting.

Colorado Clinical and Translational Sciences Institute

The Colorado Clinical and Translational Sciences Institute (CCTSI) is a collaborative enterprise between University of Colorado Denver | Anschutz Medical Campus, University of Colorado Boulder, Colorado State University, six affiliated hospitals and health care organizations as well as multiple community organizations with a goal of accelerating the translation of research discoveries into improved patient care and public health. The CCTSI partner health care institutions include University of Colorado Hospital, Children’s Hospital Colorado, National Jewish Health, Denver Health, Denver Veterans Affairs Medical Center and Kaiser Permanente Colorado groups and the private sector.

The CCTSI is a National Institutes of Health (NIH)-funded research institute at CU Anschutz. It is part of the national consortium of 62 CTSA institutional hubs throughout the United States and is one of the largest federal research grants awarded to the state of Colorado. The CCTSI also receives considerable institutional support from CU Denver, CU Boulder, CSU and the affiliated institutions. The CCTSI has more than 4,200 individual members who benefit from its services, funding sources and programs. The CCTSI functions through its five pillar programs each with multiple cores and programs: 1) Translational Pilot Grant Program, 2) Enhanced Research Environment (regulatory knowledge and support), 3) Clinical and Translational Resources and Services, 4) Education, Training and Career Development and 5) Translational Informatics.

The vision of the CCTSI is to accelerate and catalyze the translation of innovative science into improved health and patient care. To reach this vision, the mission of the CCTSI is to further enrich and expand our integrated statewide academic home and research environment for clinical and translational science in order to enhance the quality, efficiency, safety and innovation of research and training across our institutions and communities.

Some of the goals of the CCTSI are to:
Expand the statewide academic home for clinical and translational research.
Implement new clinical research management strategies to improve quality, safety, efficiency, cost-effectiveness and innovative team science as well as introduce new software systems and workflows.
Centralize and enhance the delivery of resources, services, and technologies.
Incorporate key concepts of community engagement into the full spectrum of translational research.
Increase the translational research workforce capacity through a broad curriculum of education, training and career development opportunities along the career pipeline.
A rigorous tracking, assessment and evaluation program with a formal quality and process improvement component ensures the best use of resources while protecting the safety of research study participants. These programs are centralized at the CU Anschutz Medical Campus.

Since 2008, the CCTSI has:

- Established new infrastructure and improved resources and services for investigators.
- Tripled the number of training and education programs supporting the lifespan of an investigational career.
- Administratively centralized and expanded the breadth of clinical research capacity and expertise.
- Established system-wide informatics capabilities.
- Promoted team science and encouraged interdisciplinary research through pilot grant programs, educational opportunities and technology cores.
- Established an extensive community engagement program, from small towns to the inner city, from professors to farmers.
- Streamlined processes and reduced the regulatory burden for investigators.
- Partnered with the CU Cancer Center, Office of Regulatory Compliance and the Finance Office to implement critical new institutional software systems: 1) OnCore as a clinical research management system, 2) iLab Solutions as a core facilities management system, and Health Data COMPASS as an enterprise Data Warehouse.
- Created an academic home for clinical and translational scientists and trainees.

The CCTSI is currently funded from 2013-2018 to support the full range of T0.5 through T4 translational research in a disease-agnostic manner across the breadth of the life cycle. Through the new partnership with CSU, which is recognized for its world class school of veterinary medicine, the CCTSI has expanded the spectrum of translational research to include T0.5 research, translating promising pre-clinical discoveries into naturally occurring animal models (companion to domestic animals) of human disease.

# Interprofessional Education Program

As the complexity of health care has grown, the demand for new, cross-cutting interprofessional competencies from health care professionals has become increasingly recognized. The University of Colorado Anschutz Medical Campus is distinguished nationally for its investment, commitment and innovation in Interprofessional Education (IPE).

**IPE Program Goal**
The goal of our IPE program is to improve population health, quality of care, and reduce health care costs through the creation of a patient-centered, collaborative practice-ready workforce with competencies in: quality and safety, values and ethics, and teamwork and collaboration in the context of systems and systems-based practice.

**IPE Program Background**
From 1995 to 2013, this campus ran an interprofessional ethics course, bringing together students from all the health professions. This effort was expanded to include competencies in teamwork and collaboration from 2010-2013 through Josiah Macy Jr. Foundation and Colorado Health Foundation funding. At the termination of the grant, the program was reorganized and led by Founding IPE Director, Mark Earnest, MD, PhD, and an IPE Council with designees from each degree-granting school or program on campus. Members of the inaugural council in 2014 included: Wendy Madigosky MD, MSPH (School of Medicine), Kari Franson PharmD, PhD (Skaggs School of Pharmacy), Diane Brunson RDH, MPH (School of Dental Medicine), Amy Nordon-Craft PT, DSc (Physical Therapy Program), Amy Barton PhD, RN, FAAN (College of Nursing), Darcy Solanyk MS, PA-C (Physician Assistant Program) and Jackie Glover PhD (Center for Bioethics and Humanities).

**IPE Program Leadership 2015-2016**
- **Mark Earnest, MD, PhD**, Founding IPE Director, stepped down in December 2015
- **Wendy Madigosky, MD, MSPH**, served as Interim Director December 2015 through April 2016
- **Suzanne Brandenburg, MD**, was named the new IPE Director in May 2016
Interprofessional Education and Development (IPED) Director

Wendy Madigosky, MD, MSPH, continues to serve as IPED Director since September 2014

Clinical Integrations (CI) Director

Eric Gilliam, PharmD, BCPS, was selected as Director of Clinical Integrations in September 2015.

IPE Council Members

Jonathan Bowser, MS, PA-C - Physician Assistant Program
Diane Brunson, RDH, MPH - School of Dental Medicine
Kari Franson, PharmD, PhD, BCPP - Skaggs School of Pharmacy
Jackie Glover, PhD - Center for Bioethics and Humanities
Karen Gorton, PhD, RN, MS, ATC - College of Nursing
Wendy Madigosky, MD, MSPH - School of Medicine
Amy Nordon-Craft, PT, DSc - Physical Therapy Program

IPE Program Components

The IPE Program currently consists of 3 curricular components (IPED, CT, CI) and provides support for interprofessional student involvement on campus through the Student Academic Communities.

Interprofessional Education and Development (IPED), an introductory course developed by the IPE Council, was launched in 2014 and involves first- and second-year students (over 700 in each class) from six health professions in a 16-week, team-based learning experience. Beginning in 2015, Anesthesia Assistant students and Public Health students (on an elective basis) were also included in the course.

As part of their Clinical Transformations (CT) IPE Program experience, students spend a half-day in the campus’ Center for Advancing Professional Excellence (CAPE) simulation center participating in simulated interprofessional clinical experiences.

The long-term goal is to provide each student with interprofessional learning experiences as a part of their clinical requirements in the Clinical Integrations (CI) aspect of the IPE Program. CI will have an emphasis on patient centered interprofessional experiences in both community-based and healthcare settings across campus and around the state of Colorado.

Faculty Involvement

Dozens of full time and many volunteer faculty members contribute to building and implementing these innovative programs, demonstrating this university’s deep commitment to prepare a health care workforce ready to collaborate, practice and lead in an increasingly complex health care environment.

Program Accomplishments 2015-2016

The impact of IPE is broad, reaching over 1,900 AMC students during the 2015-16 academic year.

To improve the IPE Program’s ability to assure competence and demonstrate adequate outcomes, we are building a data warehouse to capture all IPE-related data. The project is funded by a three-year, $240,000 grant from the Doctor’s Company Foundation which runs through most of 2017.

Funding from the National Center for Interprofessional Practice and Education as one of their founding “Nexus Incubator Sites” supported the development of important collaborations to advance the state of the art in interprofessional education and practice at the clinical level. This project has led to the development of an interprofessional experience that integrates students into quality and safety activities at the University of Colorado Hospital in partnership with the Institute for Healthcare Quality, Safety, and Efficiency (IHQSE).

The 7-minute film, “Interprofessional Education at AMC,” featured on our website http://www.ucdenver.edu/anschutz/education/ipe/Pages/Default.aspx was a 2016 Telly Award winner. The Telly Awards recognize excellence in non-broadcast video production. This film, which was selected from among nearly 12,000 entries, features students and faculty sharing their experiences and insights about interprofessional education at the AMC.
The CU Medical Alumni Association’s mission is to advance and influence the interest in the School of Medicine, to support current students on their journey to become physicians, and to provide programs and opportunities for alumni to connect with one another and the CU School of Medicine. We accomplish this shared vision by achieving the following goals:

- Supporting the School and extending its name and reputation as an institution dedicated to the highest standards in educating physicians and other medical professionals;
- Developing and implementing networking opportunities among alumni and students that will be mutually beneficial;
- Promoting activities and programs designed to elevate the support and awareness for the School;
- Engaging in activities promoting the art and science of medicine;
- Encouraging the highest ethical standards within the education and practice of medical care;
- Participating in resource development activities that support, advance, or enhance the quality of student services, curriculum, and infrastructure of the School;
- Supporting a diverse, inclusive academic setting; and
- Serving as steadfast ambassadors for the School of Medicine as well as its students, faculty, staff, and fellow alumni.

Accomplishments

- We welcomed 184 first-year medical students and presented each of them with a new stethoscope branded with the Medical Alumni Association seal.
- In partnership with the Office of Student Life, we provided free breakfasts to current medical students—an added bonus to a busy, rigorous week of coursework.
- The Association awarded a $5,000 Medical Alumni Association Scholarship to Jessica Rice (MD Class of 2016) and recognized her for her outstanding academic performance and commitment to creating a better community.
- Through the HOST (Help Our Students Travel) program, alumni from across the United States provided travel and housing accommodations to fourth-year medical students as they interviewed with some of the country’s best residency programs.
- We were joined by more than 1,000 alumni at various School of Medicine Alumni events including A Night at the Opera, the Humanitarian Awards at the Denver Botanic Gardens, and Reunion Weekend.
- We secured more than $150,000 in support for programs directly benefiting our student population, including the Stethoscope Sponsorship Program and the Medical Alumni Association Scholarship Fund.
- 736 Medical Alumni Association members contributed more than 1,000 times to various programs, scholarships, and other alumni initiatives.
- Honored six alumni for their excellence in humanitarianism, citizenship and professionalism, and for outstanding contributions to the science and art of medicine: William Krissoff, MD ’72; Clara Winter, MD ’66; Randall Prust, MD ’82, Christopher Goss, MD ’92; Warren Johnson, MD ’79; Randall Rottman, MD ’85.

Senior Leadership

Wagner Schorr, MD (Class of 1963)
President, Medical Alumni Association

Jan Kief, MD (Class of 1982)
Vice President, Medical Alumni Association

Dennis Battock, MD (Class of 1964)
Secretary/Treasurer, Medical Alumni Association

Travis Leiker, MPA
Associate Director, Alumni Relations and Advancement

CU School of Medicine
Georgette Vigil, MA
Director, Alumni Relations

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Student Mental Health (SMH) on the Anschutz Medical Campus exists to facilitate evaluation and treatment of mental health issues for students of the Anschutz Medical Campus. By minimizing barriers to care, the center aims to reach as many students as possible. The faculty at SMH specialize in treating the issues students encounter and strive to provide them with optimal mental health treatment.

SMH was established in 2009 in the Department of Psychiatry and has expanded over the past 7 years to meet the needs of the students on campus. This past year, a second SMH clinic site was opened via collaboration with the College of Nursing in the Campus Health Center. This has allowed SMH to offer walk-in appointments and has increased provider availability and ease of access. SMH accepts many insurance plans through University Physicians Inc. Students with the student-sponsored insurance have access to an unlimited number of visits with zero copay for covered diagnoses. Services offered at SMH include:

- Diagnostic evaluation
- Medication management
- Psychotherapy
- Psychoeducational testing

SMH collaborates with a network of community providers and will refer to this network if preferred by the student or if covered by certain insurance plans.

Issues addressed include but are not limited to: acute stress management, test and performance anxiety, relationship difficulties, time management, ADHD, anxiety, depression, bipolar disorder, psychotic illnesses, substance use disorders, eating disorders, obsessive-compulsive disorder (OCD), post-traumatic stress disorder, personality disorders, and domestic violence.

SMH offers several ongoing and brief group including a cognitive behavioral therapy group for students with OCD, a skills-based ADHD group, an experiential group for students with social anxiety, and a cognitive behavioral therapy group for insomnia. SMH faculty train and support a group of student peer counselors who lead weekly support groups on campus. 24/7 crisis coverage is provided by the Department of Psychiatry faculty, fellows, and resident call system.

Current Providers and Staff
Student Mental Health Building 500 (Department of Psychiatry)
Rachel Davis, MD, Medical Director
Juan DeJesus, MD
Robert Rosenthal, PsyD
Janice Shire, APNP, CNS
Margaret Roath, LCSW
Sandi Riedel, clinic coordinator

Student Mental Health Campus Health Clinic (College of Nursing)
Elizabeth Waggoner, PMHNP-BC
Leslie Geer, LCSW

SMH faculty collaborate with other faculty and departments on campus to provide education, outreach, and other events aimed at reducing stigma and providing education about mental health issues. SMH was recently awarded two grants through the Academic Support Advisory Committee (ASAC). In the 2016-2017 year, the funds will be used to train two Mental Health First Aid (MHFA) trainers so that SMH can offer this training to students and faculty on an ongoing basis. In addition, SMH received funds to host a “De-stress Fest.” This will be a half-day event on campus for students and faculty. SMH providers will collaborate with community providers to teach self-care skills and offer relaxing activities such as massage, meditation, and mindfulness.
Graduate school programs partnered with the School of Medicine
Biomedical Sciences

The Biomedical Sciences Program (BSP) was formed at the University of Colorado Anschutz Medical Campus in 1997. The BSP serves as an umbrella program, providing incoming students with the ability to rotate with faculty across numerous disciplines and graduate programs. This provides significant flexibility for students to choose from different research areas in which to pursue their graduate degrees. Heide Ford, PhD, has been the director of the BSP since 2010, with Kristin Artinger, PhD, serving as associate director since 2014. Students who matriculate in the BSP will perform coursework and laboratory rotations in their first year. For rotations, students can choose to rotate in the labs of any of the over 130 faculty in the program. Upon successful completion of the first year of graduate school, the students will then join their laboratory of choice, as well as one of the 11 different graduate programs housed at the University of Colorado Anschutz Medical Campus. It is our goal at BSP to expose incoming graduate students to a variety of biomedical science related disciplines, train students to evaluate scientific literature, think critically, develop testable hypotheses and guide them in their search for a biomedical discipline in which to perform thesis research.

Biomedical Science and Biotechnology

The Professional Science Master’s Program in Biomedical Sciences and Biotechnology (BSBT) at the University of Colorado Denver|Anschutz Medical Campus is a new two-year Master’s degree program, which accepted its first class in fall 2015. This interdisciplinary and cross-campus program is an offering of the Graduate School that utilizes partnerships with colleges throughout the university as well as local industries. BSBT is designed to provide broad training in the biomedical sciences as well as in technical and business aspects of biotechnology, such as regulations, intellectual property, and entrepreneurship. These topics combined create a strong foundation for graduating students to be competitive entering the biotechnology workforce or continuing on toward other endeavors. The program has therefore earned the recognition as Professional Science Master’s Program (PSM). Graduation with a Master’s degree in Biomedical Sciences & Biotechnology requires 36 credits, including an internship that students will select according to their career plans.

Cancer Biology

The interdepartmental program leading to the PhD in Cancer Biology emerged in 2006 as a result of re-organization the Department of Pathology’s graduate program in Experimental Pathology. The Program has been under the direction of Mary E. Reyland, PhD, since 2010 and combines training in the basic biomedical sciences with opportunities to apply clinical and translational research to studies on human cancer.

The Cancer Biology Program is committed to educating PhD students in the fundamentals of modern biomedical research, but differs from more traditional programs in that we also provide opportunities for students to learn about clinical and translational aspects of cancer biology. We believe that understanding cancer from multiple perspectives will better prepare our students to compete in a biomedical research environment increasingly focused on translational applications of basic research. The goal of the Cancer Biology Program is to attract outstanding students with the highest potential and to stimulate in them the independent and creative scientific thinking necessary to develop future leaders in the multifaceted field of cancer research. The Program’s highly accomplished training faculty includes over 40 basic and clinical scientists drawn from various fields of biomedical and clinical sciences. Areas of emphasis include lung, breast, head and neck, prostate, bladder and blood cancer. Our curriculum is rigorous, yet flexible, and provides opportunities for advanced study in cellular and molecular oncology, as well as the translational medical sciences.

The University of Colorado Anschutz Medical Campus is home to an NIH-designated Comprehensive Cancer Center, an acknowledgment of its role as a leader in both clinical cancer treatment and basic cancer research. Our research community brings together scientists with diverse research approaches to focus on the problem of cancer. Graduate students are a vital part of this community and as a program we strive to build a vibrant and supportive learning environment. The program facilitates multiple events to build this community including journal clubs, a seminar series, poster sessions and an annual retreat in the Rocky Mountains.
Clinical Science

The Clinical Science Graduate Program (CLSC) is the primary degree-granting program for advanced training in clinical-translational research for the University of Colorado Denver and for the Colorado Clinical and Translational Sciences Institute (CCTSI). The overall goal of the University of Colorado Denver | Anschutz Medical Campus Graduate Program in Clinical Science (CLSC) is to train nationally competitive clinician/clinical translational scientists by providing a formal, structured, and rigorous educational program in the clinical and translational sciences. The Clinical Science Graduate Program was designed in response to the demand for well-qualified clinical researchers in academia and industry. The critical need for individuals capable of conducting rigorous, credible and relevant patient-based research within stringent ethical and regulatory guidelines, and translating the evidence for community application, is expected to continue to grow.

The Clinical Science program was one of the first clinical science training programs to be offered in the country and received a NIH K30 award to operate the program starting in 1999. The program offers both doctoral and master’s programs. For doctoral students, there is a selected emphasis of study in one of the following three areas: Clinical Investigation and Outcomes, Health Information Technology, or Health Services Research. These three areas of clinical science represent general directions of study for translational research activities in the evolving health care environment. The Health Services PhD is a collaborative program with the Colorado School of Public Health. Our training programs are designed to be multi-disciplinary and achieve proficiency in the areas of clinical science and translation, and include courses in biostatistics, clinical epidemiology, clinical studies design, critical appraisal, ethics and responsible conduct of research, team science, and grant writing. In addition, formal mentoring with interdisciplinary clinical and translational faculty complements the rigorous training.

The Clinical Science Program has over 80 students and approximately 140 faculty members involved in the teaching, career development and mentoring of our students. Our students and faculty are diverse and multi-disciplinary. Our environment is conducive to supporting team science approaches to address the complexity of conducting rigorous and responsive science to meet societal needs and priorities. Currently, over 70% of CLSC alumni hold grant support of which about 45% is NIH funding and have published over 1,000 peer-review manuscripts in journals such as Pediatrics, JAMA, Circulation, and Cancer.

Cell Biology, Stem Cells and Development

The newly reorganized Graduate Program in Cell Biology, Stem Cells and Development (CSD) emerged in 2007, as the natural merger between an historically successful graduate program in Cell and Developmental Biology, and the training program of Gates Center of Stem Cell Biology and Regenerative Medicine. Since that time, Linda A. Barlow, PhD, has served as the Director of the program.

Overall, our CSD program provides graduate training for doctoral students in hypothesis-driven experimental approaches and cutting-edge technology to allow students to pursue important questions at the juncture between the fields of cell, developmental, and stem cell biology. CSD students and faculty alike have common interests in understanding how cells function and signal in development, regeneration and disease. This common curiosity promotes extensive collaboration and interaction among labs, and creates a fantastic intellectual environment.

Our students consistently say that the prime reason for selecting the CSD program is the collaborative and open nature of interactions among members of the Program. One of the fundamental goals of the CSD program faculty is to train students to be our future peers. Thus, expectations of student performance are high, yet members of our faculty are approachable and readily willing to take time to meet with students.

The University of Colorado Anschutz Medical Campus is a state-of-the-art biomedical research campus with numerous cutting-edge core facilities, all of which are available for student use toward the PhD. The design of the office and lab space is open, prompting more cooperation and collaboration.

The program currently comprises an interactive group of 24 students and 38 training faculty, which is sufficiently small to provide a close-knit, supportive yet rigorous, training environment, while large enough to provide a scientifically varied set of labs and mentors with which to interact.
Computational Bioscience

The Computational Bioscience Program of the University of Colorado-Denver, located on the Anschutz Medical Campus is dedicated to training computational biologists who aspire to achieve excellence in research, education and service, and who will apply the skills they learn toward improving human health and deepening our understanding of the living world. The Computational Bioscience program provides graduates with the foundation for a lifetime of continual learning.

CPBS creates professionals prepared to conduct novel interdisciplinary research in the fields of translational bioinformatics, clinical research informatics and computational molecular biology. Graduates have the expertise to join faculty programs in bioinformatics, medicine or computer science, or to assume high-level research positions in government or industry.

Our curriculum integrates training with computation and biomedical sciences with student research and teaching activities that grow increasingly independent through the course of the program. Our students begin supervised research immediately, collaborating with top scientists, working with the latest high-throughput instruments on critical biomedical problems.

Genetic Counseling

The Master of Science Program in Genetic Counseling integrates extensive coursework in human and clinical genetics, psychosocial and counseling theory, clinical research and ethical, legal, social and professional practice issues with over 1,000 hours of direct, supervised clinical work with patients in pediatric, prenatal, cancer, adult and specialty genetics clinics.

During the second year, students complete a capstone project or thesis addressing a current research, policy or clinical practice issue in genetic counseling. The program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC) and its graduates are eligible to apply for certification from the American Board of Genetic Counseling (ABGC). Program alumni practice in hospitals, academic and private genetics centers, clinical research programs, diagnostic laboratories, biotechnology companies, and public health departments, among other settings.

As members of multidisciplinary health care teams, genetic counselors provide information, risk assessment and support for individuals and families affected with or at risk for genetic conditions hereditary predispositions to disease so that they can understand and appropriately utilize genetic information and testing to promote informed health care choices. They serve as professional liaisons for laboratories to ensure that health care providers order and interpret genetic tests appropriately. They serve as educators and resource people for other health care professionals and for the general public, facilitate support groups, and engage in health care policy development regarding genetic services and issues. Many engage in research activities related to the field of medical genetics and genetic counseling.

Human Medical Genetics and Genomics

The Human Medical Genetics and Genomics Program at the University of Colorado School of Medicine provides PhD training in a field that has seen an unprecedented explosion of knowledge and innovative technologies. DNA sequencing of genomes of humans and other species, discovery of genes and variations that underlie development and disease, and rapid application of these discoveries to medical practice is revolutionizing medicine by precise diagnostic tests, targeted treatments, and even disease prevention. It is anticipated that “Personalized” or “Precision” medicine will thereby dramatically improve human health, longevity, and quality of life.

Founded in 1997, the Human Medical Genetics and Genomics PhD program teaches our students modern genetics and genomics theory and methodology, critical reading and assessment of the literature, formulation and testing of research hypotheses, advanced experimental techniques, and interpretation of results to answer key scientific questions. Our faculty includes over 50 laboratory scientists and clinicians, providing an exceptionally interactive and collaborative environment that enables quick translation of the latest genetic and genomic discoveries from the bench to the bedside. Our PhD students have thus been highly successful in their subsequent careers, including academia, industry, teaching, and other settings.
The Graduate Program in Immunology at the University of Colorado Denver was formed in 1989 as an interdepartmental immunology training program and whose success was a factor motivating the establishment of the Department of Immunology within the School of Medicine in 1993. While the majority of the Immunology training faculty are members of the Department of Immunology and Microbiology within the School of Medicine at the University of Colorado, faculty trainers come from an additional 12 Departments and Divisions within the School of Medicine as well as National Jewish Health and the Barbara Davis Center for Childhood Diabetes. Raul Torres, PhD, has been the Director of the Graduate Program in Immunology since 2006 and Ross Kedl, PhD, has served as Associate Director since 2010.

Colorado has a rich history of seminal discoveries in immunology and a primary mission of our nationally recognized Graduate Program in Immunology is to educate and train the next generation of top immunologists to direct competitive independent research programs. However, in appreciation that not all of our graduates wish to to develop the skills to lead academic or industry research programs, we further strive to provide the immunological expertise to our graduates to inform areas of public health, science policy and education. To accomplish this, we offer our program students rigorous didactic courses in immunology and related fields and foster intellectual development and experimental competence via faculty evaluation throughout their didactic and experimental studies and at multiple levels. As many of our major current national and global health issues result from immunological-based diseases, our graduate program further is committed to educating and exposing our basic science doctoral students to translational settings.

Integrated Physiology

The Integrated Physiology graduate program offers multidisciplinary PhD training in biomedical systems biology. Students have opportunities to study how cells, organ systems, and organisms regulate complex physiological functions, with emphasis on cardiac and vascular biology, molecular nutrition and metabolism, reproductive biology and single cell systems. Research Tracks are Cellular Physiology, Molecular Nutrition and Metabolic Systems, Reproductive Sciences, and Cardiac and Vascular Systems Biology. With more than 30 training faculty, representing 11 academic disciplines and including internationally recognized experts, each of these research tracks provides students with diverse research and learning experiences, and unique opportunities to develop thesis projects that incorporate multidisciplinary approaches and translational applications.

Medical Scientist Training Program

The Medical Scientist Training Program is a multidisciplinary, inter-institutional MD/PhD dual degree training program educating students in clinical medicine and biomedical research. Its mission is to provide students with the breadth and depth of training necessary to excel as a physician scientist. Post-baccalaureate students are recruited from a national pool of ~450 applicants, and those selected have proven exceptional talents in research science, a curiosity to solve mechanisms of disease, a drive for discovery, a well-thought-out motivation to pursue a career in medicine, and exceptional leadership.

The program was formed in 1983 and in 1992 it received MSTP status by successfully competing for NIH T32 funding (currently ~$795K/year to support 16 trainees per year). The Program has strong leaders and mentors, with Arthur Gutierrez-Hartmann, MD, directing the MSTP since 1994 and selected for numerous local and national mentor awards, and national leadership roles in MD/PhD and graduate education, and Angie Ribera, PhD, serving as the Associate Director, and providing individualized guidance to each student via regular meetings and interactions. The Program has been competitively reviewed and funded by NIH for each of the past four cycles. The MST Program has been a campus and national leader in recruiting diversity students, and has received Diversity Awards from CU and commendations from NIGMS, highlighting the Colorado MSTP on their Diversity website. There are over 150 faculty mentors for students to choose from in 17 different PhD Programs at the Anschutz Medical Campus, National Jewish and the CU-Boulder Campus. There are currently 69 students in the program: 9 in the first year (MSI), 9 in the second year (MSII), 38 in the PhD research years, and 13 in the Medical School Clinical years (MSIII and MSIV).

Since 1983, 191 students have matriculated in the MST Program. Graduates of the MSTP obtain residencies at the nation’s elite programs, with ~75% of those completing all training now in academic medicine, government (NIH or CDC), or industry, including starting up their own biotech companies. Importantly, we have an increasing number of MSTP graduates who are now faculty at UC/AMC, with hopes of recruiting more alums “back home.” The Colorado MSTP and its leaders have been key in establishing the National Association of MD/PhD Directors and Administrators, the MD/PhD Section of the AAMC GREAT Group, and the Annual National MD/PhD Student Conference. Finally, we have taken the initiative to bring together, via social and academic venues, all MD/PhDs on the AMC campus, across all stages of training, from student to faculty status, to establish an interactive, supportive cadre of physician-scientists, in order to optimize career success for this group. Additional details of the Medical Scientist Training Program can be found at: http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/mstp/Pages/MSTP.aspx
Microbiology

The Graduate Program in Microbiology at the University of Colorado Anschutz Medical Campus is a PhD granting education and training program designed to prepare students for outstanding careers in science. Through rigorous didactic courses and mentored experimental studies, the program trains students in diverse areas of microbiology, including molecular pathogenesis of viral, bacterial, and parasitic diseases and the role of the microbiome in human health and disease. Our program strives to provide students with the scientific expertise to become leaders in competitive independent research programs, science education, science policy, and industry.

Although based within the Department of Immunology and Microbiology, the program faculty includes members of the Departments of Medicine, Neurology, Pediatrics and Biochemistry and Molecular Genetics. Tem Morrison, PhD, serves as the Program Director and is supported by committees comprised of faculty and student representatives to facilitate advising, admissions and recruitment, evaluations and promotion, and student enrichment and governance.

The research interests of the faculty that participate in the Graduate Program in Microbiology are diverse and include molecular mechanisms of infectious disease pathogenesis, effects of the microbiome on human health and disease, innate and adaptive immune responses to infection, pathogen immune invasion strategies, products and metabolites associated with infectious disease outcomes, regulation of gene expression of both host and pathogen, and identification of potential vaccines and therapeutics to prevent or mitigate infectious diseases. With recent appreciation for emerging infections, human risk factors for infectious diseases, and the complexity of the microbiome, the topics of microbiology and pathogenesis of infectious disease are important fields in biomedical research.

Modern Human Anatomy

The Master of Science in Modern Human Anatomy (MSMHA) at the University Of Colorado Anschutz Medical Campus is a newly developed two-year Master’s degree program introduced by the Department of Cell and Developmental Biology in the spring of 2012. Under the leadership of the Executive Director, Thomas Finger, PhD, the inaugural class of four students received their degrees in May 2014, and the program will host a total of 51 students in fall 2016.

The Master of Science in Modern Human Anatomy (MSMHA) Program at the University of Colorado Anschutz Medical Campus is innovative and unique, bridging an established anatomy/developmental biology curriculum with the foundations of digital imaging technologies now in use in medical care, biomedical research, medical illustration, and teaching. This program blends modern and classical approaches to anatomical study, with a goal of producing a new generation of anatomical professionals prepared for diverse careers. The program emphasizes an individualized, flexible approach to professional growth and career development through a student-designed Capstone Project.

Extensions of the virtual 3-D human body are at the forefront of diagnostic imaging and surgical interventions that are increasingly commonplace in the medical setting. Virtual human anatomy and advanced imaging technology have also become a platform for the development of new instructional venues as well as the design of simulators and protocols for advanced procedural training. This two-year program will prepare graduates to work in a broad spectrum of educational and biomedical sub-specialties where creativity and innovation abound and knowledge of human anatomy is highly valued.

The Master of Science in Modern Human Anatomy provides this graduate level training and teaching experience in the physical and virtual anatomical sciences through human cadaver dissection, neuroanatomy, histology and embryology; all addressed from a modern perspective stressing quantitative imaging, modeling, informatics and clinical applications. The curriculum is translational in integrating computer and engineering technologies into the domains of anatomy and developmental biology through a project oriented curriculum.

In the 2015-2016 academic year, 10 students traveled to five regional, national, and international conferences, delivering three platform presentations and 11 poster presentations.
The Molecular Biology Program at the University of Colorado – Anschutz Medical Campus is dedicated to providing rigorous training to its students in a supportive environment. The Molecular Biology faculty are members of eleven different departments who are applying the techniques of molecular biology to answer questions in diverse areas at the forefront of modern biology and medicine. The Program offers a unique opportunity to study a wide variety of research areas in a student-centered environment, all in the inviting setting of Aurora, Colorado, located along the Front Range of the Rocky Mountains.

Molecular biology, the science of how living organisms function at the molecular and cellular level, has spearheaded the recent revolution in our understanding of human disease and led to the birth of the biotechnology industry. The goal of the Molecular Biology Program at CU Anschutz Medical Campus is simple: to equip students for careers at the cutting edge of biological research. The faculty is committed to providing students with the training they need to carry out the highest quality research using state-of-the-art techniques. The teaching philosophy here is to instill the theoretical knowledge and practical experience that enables our students to identify important questions in science, to design experiments that address those questions and to critically evaluate results. Special emphasis is placed on learning to communicate research results to others effectively by participating as featured speakers in the program’s excellent seminar series. We believe that training students to become scientists prepares them for careers in many areas. Previous graduates of the program are now working in academic, government, and industrial biotechnology research, teaching and public policy positions.

Molecular Biology Program faculty include members of the Departments of Biochemistry and Molecular Genetics, Cell and Developmental Biology, Medicine, Immunology and Microbiology, Pathology, Pharmacology, Pharmacy, Pediatrics, Craniofacial Biology, Rheumatology, and Obstetrics/Gynecology and include internationally recognized experts in bioinformatics, cancer, cell biology, development, gene expression, genomics, microbiology, molecular structure, and virology. Their diverse interests provide students with an enormous choice of areas in which to pursue their thesis research. An annual retreat to the Rocky Mountains encourages interaction between students and faculty and also familiarizes the students with the research goals and progress of each faculty member.

The Molecular Biology Program has been recognized as a Center of Excellence at the CU Anschutz Medical Campus. The Program has been continuously funded by a highly competitive NIH pre-doctoral T32 training grant to support and train students for almost 20 years. The Program was honored by a ~$2M private endowment, the Victor and Earleen Bolie Fund.

The Neuroscience Program (NSP) was formed in the late 1980s as a PhD graduate training program within the Graduate School, that was based at that time within the School of Medicine at the University of Colorado. The UC Regents awarded the NSP PhD granting status in 1992. The current NSP Director is Sukumar Vijayaraghavan, PhD.

The Neuroscience PhD training program at the University of Colorado Denver provides multidisciplinary training covering the breadth of neurobiology, from neuronal gene regulation to the development, structure, and function of the nervous system. Students receive training in cellular and molecular neurobiology, neural development, neuropharmacology, and biochemistry, as well as hands-on training in a variety of state-of-the-art laboratory techniques. Since 2001, the program has been the recipient of the prestigious Jointly Sponsored Predoctoral Training Program in Neuroscience. This is sponsored by 9 NIH institutes and there are only 28 such awards across the nation.

The program’s goal is to provide a broad and solid foundation of understanding in neuroscience, and to train critical thinkers who identify important problems, generate experimentally testable hypotheses, and who draw significant conclusions from the results of their ongoing research in a specific area of neuroscience. Students completing the requirements for the Neuroscience PhD will be independent investigators prepared to make important contributions to research and to the education of future generations of neuroscientists.

The program is closely allied with other departments at the Anschutz Medical Campus, giving students the opportunity to interact and learn from researchers and teachers of many backgrounds. NSP is also a component of the Center for Neuroscience (CNS), which brings together researchers, physicians and community members with a common interest in neuroscience to collaborate and share valuable resources.
The Department of Pharmacology and the Pharmacology Training Program have a long and well-established history of training biomedical sciences PhD students, medical students, and postdoctoral fellows in the School of Medicine. The NIH-funded pharmacology pre-doctoral training grant (T32) is one of the longest-standing grants of its type in existence. Students enter the training program either directly, via the Biomedical Sciences (umbrella) program, or via the Medical Scientist Training Program. Pharmacology Training Program faculty members come from a number of departments including pharmacology, medicine, psychiatry, immunology, and biochemistry. Departmental and training program faculty are nationally and internationally renowned in the areas of neuroscience, drugs of abuse, cancer biology, signal transduction, structural biology, and bioinformatics.

One of the key defining features of the Pharmacology training faculty is the highly collaborative and interdisciplinary approach to their work. Laboratories, singularly or in collaboration, frequently use multiple parallel approaches including molecular biology, structural biology, genomics, and informatics and cutting-edge methodologies employing high-powered imaging techniques including optogenetics. Another defining feature of the program is the focus on personalized medicine and translating fundamental benchtop discoveries to clinical practice.

Rehabilitation Science

Rehabilitation Science is translational field of study that integrates knowledge from the basic and clinical sciences to improve our understanding of human movement, physical function, and disability across the lifespan. Students receive individual mentorship from nationally recognized rehabilitation scientists in state-of-the-art research facilities, with a customized curriculum to meet the unique interests of each student. Breadth of knowledge is acquired through foundational coursework in research design, biostatistics, and rehabilitation science, whereas depth of knowledge is gained through elective coursework in one of five areas of specialization: applied cellular physiology, exercise and cardiopulmonary physiology, motor control, biomechanics, and lifespan studies. This approach prepares students to become independent research scientists who integrate knowledge from multiple perspectives ranging from the molecular to the systems level to solve complex problems of physical disablement that will advance clinical practice in the field of physical rehabilitation.

Structural Biology and Biochemistry

The Structural Biology and Biochemistry Program is interdisciplinary, involving all aspects of biomedical research, particularly in the area of macromolecular structure/function, biophysics, lipidomics, and proteomics. It aims to provide students with specialized skills and a solid foundation in biomedical, biophysical, and structural sciences through course work and research training. To support the research needs of faculty and students of the Structural Biology and Biochemistry Program, the Program makes use of six well-developed core facilities, each specializing in an important facet of biomedical research and essential for the advancement of research and training in Structural Biology and Biochemistry.

These five core facilities consist of Nuclear Magnetic Resonance spectroscopy (NMR), X-ray crystallography, mass spectrometry/proteomics, biophysics, and peptide/protein chemistry, and the new CryoEM. These facilities are readily accessible to faculty, graduate students, postdoctoral fellows and other research staff, and are supported independently of the Graduate Program.

The focus and interdisciplinary nature of the Program in Structural Biology and Biochemistry positively influences many other instructional and research programs at the UC Denver School of Medicine. The Program’s educational components support the research in many of the laboratories that require knowledge of the highly technical and specialized structural biology research tools, and this enhances the overall effectiveness and quality of the research and overall effectiveness and quality of the research and overall research productivity to the campus.
2015-2016 Deceased Faculty

Richard Bakemeier, MD  
Professor Emeritus  
Medicine

Geoffrey Heron, MD  
Associate Clinical Professor  
Psychiatry

Claire Purcell, PhD, MA  
Clinical Professor  
Psychiatry

Elise Brown, MD  
Assistant Clinical Professor  
Pediatrics

Martha Illige, MD  
Associate Professor  
Family Medicine

James Tulloch, MD  
Assistant Clinical Professor  
Psychiatry

Reuben Cherniack, MD  
Distinguished Professor  
Medicine

Oliver Jones, MD  
Associate Clinical Professor  
Obstetrics and Gynecology

Yuan (Rose) Wang  
Professional Research Assistant  
Pediatrics

Henry Claman, MD  
Distinguished Professor Emeritus  
Medicine

Bruce Kolberg, MD  
Assistant Clinical Professor  
Obstetrics and Gynecology

Richard Warner, DPM, MD  
Clinical Professor  
Psychiatry

John Candler Cobb II, MD  
Chairman and Professor  
Preventive Medicine

Virgilio Licona, MD  
Assistant Clinical Professor  
Family Medicine

Sidney Werkman, MD  
Professor  
Psychiatry

Richard Crager, PhD, MA  
Associate Clinical Professor  
Psychiatry

Harlan Lubin, MD  
Assistant Professor  
Psychiatry

Richard Wright, PhD  
Associate Professor  
Medicine

Kathy Fortune, MD  
Clinical Instructor  
Psychiatry

Gary Martin, MD  
Associate Clinical Professor  
Psychiatry

Nancy Zahniser, PhD  
Professor Emerita  
Pharmacology

Donald Gilden, MD  
Professor  
Neurology

Paul McCaffrey, DO  
Assistant Clinical Professor  
Family Medicine

Qinghong Zhang, PhD  
Associate Professor  
Dermatology

Julius Gordon, MD  
Professor  
Biochemistry and Pathology

Homer Olsen, MD  
Clinical Professor Emeritus  
Psychiatry

Carl Zimet, PhD  
Professor Emeritus  
Psychiatry

Our condolences to the families and friends of our former colleagues.