IV. EDUCATION PROGRAM
IV. EDUCATION PROGRAM

IV.1 OVERVIEW

In 2012, the Anschutz Medical Campus had just over 9.6 million GSF in total between the CU Anschutz, UCH, and CHCO facilities. Of this total, the university occupies just over 3.8 million GSF located in 33 buildings, including one parking garage and some leased facilities. Many of the buildings have been constructed since 1999, and some remain from the former FAMG and are used by the university.

SCHOOLS AND COLLEGES

Located at the university are six schools and colleges plus some components of Central Services and Administration that serve the university. The remaining components of the Central Services and Administration are located at CU’s Denver Campus, located in downtown Denver, Colorado, approximately nine miles west of CU Anschutz. The six schools and colleges located at CU Anschutz are:

- School of Medicine (SOM)
- School of Dental Medicine (SDM)
- College of Nursing (CON)
- Skaggs School of Pharmacy and Pharmaceutical Sciences (SOP)
- Colorado School of Public Health (SPH)
- Graduate School (GS)

The following is a brief overview for each of the six schools and colleges with a listing of their programs and degrees offered at CU Anschutz.

College of Nursing students look on at a doctor’s demonstration.
SCHOOL OF MEDICINE

SOM offers programs recognized nationally and internationally for excellence in education, research, patient care, and community service. SOM offers degree and post-graduate education programs for medical students, residents, and fellows, PhD scientists, physical therapists, and physician assistants. SOM’s MD program is accredited by the Liaison Committee on Medical Education, and its faculty members serve as clinical experts and physicians at UCH, CHCO, National Jewish Health, Denver Health Medical Center, and the VAMC. SOM faculty rank 10th among public medical schools in the country for federal research grants and contracts and 26th among all public and private medical schools, according to the Blue Ridge Institute for Medical Research.

Five faculty are members of the National Academy of Sciences, and 11 are in the Institute of Medicine. SOM’s internationally recognized faculty offer exceptional clinical care, especially in surgery and the treatment of cancer, diabetes, and heart disease. In the 2013 U.S. News & World Report ranking of medical schools, these SOM specialties were ranked in the top 10: family medicine #3; pediatrics #5, and rural medicine #8.

Students at SOM collectively donate thousands of hours of community service every year, volunteering at free clinics for the homeless and poor. The Colorado Rural Health Scholars program attracts high school juniors from across the state for a three-week on-campus experience that inspires many to pursue medical careers.

Program Degrees

- MD - Medicine
- MSTP - Combined MD/PhD
- DPT - Physical Therapy
- MPAS - Master of Physician Assistant Studies
- MS - Genetic Counseling

Degrees Offered Through the Graduate School

- MSMHA - Master of Science in Modern Human Anatomy
- MSCS - Clinical Science

PhD

- Biochemistry and Molecular Genetics
- Structural Biology and Biophysics
- Cancer Biology
- Cell Biology
- Stem Cells and Development
- Reproductive Sciences
- Clinical Science
- Computational Bioscience
- Human Medical Genetics
- Immunology
- Microbiology
- Molecular Biology
- Neuroscience
- Pharmacology
- Physiology and Biophysics

Students of the School of Medicine work in a neurology lab.
SCHOOL OF DENTAL MEDICINE

Today, this research-intensive, comprehensive dental school increases access to innovative education programs, life-improving research, and excellent clinical care programs that enhance oral and systemic health. SDM is home to a DDS program, an international dental program, a general practice residency, and advanced dental education (residency) programs in periodontics and orthodontics in which enrollees may obtain postdoctoral master’s degrees. In addition, SDM is a collaborative partner in the pediatric dental residency offered at CHCO.

The school’s academic programs are among the most selective in the nation, and its student body is 400 strong. The education programs offered are evidence based, interprofessional, and teach students to treat patients of all ages as members of a health care team. In 2013, SDM received the ADEA Gies Award for Innovation in recognition of its comprehensive interprofessional curriculum. The school’s collaborative research programs have focus areas in cancer biology, craniofacial developmental biology, and dental materials and bioengineering. The dental scientists collaborate with the CU Cancer Center, SOM, and the CU-Boulder College of Engineering on funded research projects. This collaborative research ranks CU Denver 10th in overall funding from the National Institute of Dental and Craniofacial Research. SDM has a long commitment to increasing access to care for disadvantaged populations.

SDM’s community-based education program serves as a national model for service learning in dental education. Students provide care in clinics around the state as well as from the school’s Mobile Dental Clinic. Rural and global health tracks are available for student participation. The educational programs of the SDM are nationally recognized for their quality and are accredited by the American Dental Association.

Program Degrees

- DDS - Doctor of Dental Surgery
- MSD - Master of Science in Dentistry, awarded to Periodontics and Orthodontics residency program graduates

School of Dental Medicine students get hands-on experience.
COLLEGE OF NURSING

CON enrolls close to 1,000 students. Founded in 1898, the college began Colorado’s first baccalaureate program and has offered graduate education since 1950. The baccalaureate curriculum prepares transformational nurse clinicians who promote excellence in patient safety and quality health care through inquiry, reflection, and accountability. The college recently partnered with Community College of Aurora to create an integrated pathway program to increase access for community college students to the undergraduate program, the first such program in Colorado. The master’s program educates advanced practice nurses, specialists in health care informatics, and nursing leadership health systems, and administers a graduate-level post-master’s certificate program.

The college established the first nurse practitioner and first school nurse programs in the United States. The Doctor of Nursing Practice (DNP) program educates nurses for the highest level of nursing practice and is the terminal clinical degree in nursing. Graduates are clinical leaders who design models of health care delivery, evaluate clinical outcomes, identify and manage health care needs of populations, and use technology and information to transform health care systems. The research doctoral program (PhD) creates knowledge for reflective, theory-guided, and research-based nursing practice. The innovative, distance-accessible curriculum educates nurse scientists to lead research in health care delivery systems and biobehavioral science.

U.S. News & World Report (2013) has ranked CON’s master of science program in the top 15 for the past eight years. Other programs also received national ranking in 2013: The pediatric nurse practitioner specialty ranked 5th, nursing-midwifery ranked 13th, and nurse practitioner-family nursing ranked 16th.

CON has a more than 30-year history of providing distance education, especially serving the citizens of Colorado. The registered nurse (RN) to nursing bachelor of science degree, health care informatics, and innovation in leadership and administration in nursing and health care systems (i-LEAD) master’s specialty options can be completed completely online. The college has three endowed chairs and three endowed professorships. Eighteen fellows of the American Academy of Nursing hold faculty appointments in CON, and 10 faculty are in one or more other specialty and practice societies. CON is accredited by the Commission on Collegiate Nursing Education and the Higher Learning Commission of NCA. The nurse midwifery master’s specialty is further accredited by the American College of Nurse Midwives, Division of Accreditation.

Program Degrees

- BS - Nursing
- DNP - Doctor of Nursing Practice

Postmaster’s Certificates

- Pediatric Acute Care Nurse Practitioner
- Adult-Gerontology Acute Care Nurse Practitioner
- Certificates available in most MS specialty options listed below

Degrees Offered Through the Graduate School

**MS - Nursing**

- Adult-Gerontology Nurse Practitioner
- Adult-Gerontology Clinical Nurse Specialist
- Family Nurse Practitioner
- Family Psychiatric Mental Health Nurse Practitioner
- Health Care Informatics
- Nurse Midwifery
- Nursing Leadership and Health Care Systems
- Pediatric Nurse Practitioner
- Women’s Health Care Nurse Practitioner

**PhD**

- Nursing
SKAGGS SCHOOL OF PHARMACY AND PHARMACEUTICAL SCIENCES

SOP is one of the top-ranked pharmacy schools in the nation, enrolling more than 900 professional and graduate students through both on-campus and distance-degree programs. Committed to pharmaceutical education, research, and patient care, the school educates students in the properties of medicinal agents, the biology of disease, the pharmacological and toxicological actions of drugs, and the current best practices for clinical and therapeutic uses of drugs. Students engage in experiential learning at sites across Colorado. The Distance Degrees and Programs Office provides doctor of pharmacy degree education and continuing professional development for working pharmacists in Colorado and throughout the United States and Canada.

SOP is consistently ranked in the top tier of U.S. pharmacy schools for federal research funding, and the school’s internationally renowned faculty conduct pioneering basic, translational, and clinical research in a variety of scientific fields such as pharmaceutical biotechnology, biophysics, drug discovery, pharmacokinetics, pharmacogenomics, molecular toxicology, clinical therapeutics, and health outcomes. Specialized focus areas include cancer, diabetes, cardiovascular disease, neurological disease, infectious diseases, HIV/AIDS, and critical care medicine. The school has garnered numerous milestones with the National Institutes of Health (NIH) and elsewhere:

- Seventh in the nation for total NIH funding according to the American Association of Colleges of Pharmacy
- Eighth out of 129 schools of pharmacy in the nation for sponsored research funding
- Ninth in the nation for NIH funding per principal investigator

An $11 million gift from The ALSAM Foundation enabled the construction of a clinical and research facility. The school was renamed the Skaggs School of Pharmacy and Pharmaceutical Sciences upon completion of the building in 2011.

Pharmacy postgraduate training offers residencies in general pharmacy practice, ambulatory care-family medicine, critical care, and oncology and fellowship programs in critical care/infectious diseases and neurology. All residencies are accredited by the American Society of Health-System Pharmacists. The school is accredited by the Accreditation Council for Pharmacy Education (ACPE).

**Program Degrees**

- PharmD - Pharmacy

**Degrees Offered Through the Graduate School**

*PhD*

- Pharmaceutical Sciences
- Toxicology
- Pharmaceutical Outcomes Research

*School of Pharmacy students learn about the current best practices for clinical and therapeutic use of drugs.*
COLORADO SCHOOL OF PUBLIC HEALTH

SPH is the first school of its kind in the Rocky Mountain West. SPH attracts top-tier faculty and students from across the country and provides a vital contribution toward ensuring the region’s health and well-being. Collaboratively formed by CU, Colorado State University (CSU), and the University of Northern Colorado, SPH is the only collaborative school of public health west of the Mississippi River. SPH enrolls nearly 400 graduate students in 15 public health academic and professional programs. Educational programs expose students to challenging curricula, practical methods, and innovative instruction.

Outside the classroom, SPH students work with faculty in national and international settings to integrate service learning and translate research to improve the health of people and their communities. After graduating, many SPH alumni join the growing field of health professionals trained in Colorado and placed throughout the world. Alumni include published authors, international malaria and HIV/AIDS researchers, health agency administrators, and faculty at leading medical campuses across the U.S..

Faculty at SPH are nationally recognized experts in a variety of fields, including biostatistics and clinical trials, diabetes prevention and control, injury control, genetic epidemiology, risk assessment, environmental health, maternal and child health, nutrition in schools, health services research, health equity, health education, and many other health-related specialties. SPH is also home to several local and national centers including:

- Centers for American Indian and Alaskan Native Health
- Center for Global Health
- Center for Public Health Practice
- Colorado Injury Control Research Center (CSU)
- High Plains Intermountain Center for Aquiculture Health and Safety (CSU)
- Latino/a Research and Policy Center
- Mountain and Plains Education and Research Center, funded by the National Institute of Occupational Health and Safety
- Rocky Mountain Prevention Research Center, funded by the Centers for Disease Control and Prevention

Working collaboratively with Colorado’s academic institutions, future professionals, and leading researchers, SPH is an example of Colorado’s continued commitment to ensuring all people and communities are healthy and their environment sustainable.

Program Degrees

MPH
- Animals, People, and the Environment
- Applied Biostatistics
- Community and Behavioral Health
- Community Health Education
- Environmental and Occupational Health
- Epidemiology
- Global Health and Health Disparities
- Health Services Research
- Health Systems, Management, and Policy
- Health and Exercise Science
- Health Communication
- Maternal and Child Health
- Physical Activity and Healthy Lifestyle
- Public Health Nutrition

MS
- Biostatistics
- Epidemiology

PhD
- Biostatistics
- Epidemiology
- Health Services Research

DrPH
- Community and Behavioral Health
- Epidemiology
- Residency Programs
- General Preventive Medicine
- Occupational and Environmental Medicine

Dual/Joint Degree
- MPH/DVM
- MPH/MD
- MPH/MURP

Certificate
- Public Health Science
- Global Public Health
**GRADUATE SCHOOL**

The university's GS encompasses programs on both the CU Denver and CU Anschutz Campuses. At the GS at CU Anschutz, students learn to expand the frontiers of human health and disease in more than a dozen basic scientific, analytical, clinical, and nursing disciplines. GS's emphasis on pairing a student with a mentor assures a distinctive learning experience. Graduate study is a historic strength of the Denver Campus, where graduate programs are offered in seven schools and colleges and serve more than a thousand working and full-time students. The constituent academic units of the University of Colorado Denver | Anschutz Medical Campus GS currently include the following degree-granting programs:

**Program Degrees**

**MS**
- Bioengineering (joint program with CU Denver)
- Biostatistics
- Epidemiology
- Genetic Counseling
- Health Services Research, Policy, and Administration
- Modern Human Anatomy
- Nursing

**MSCS**
- Clinical Science

**PhD**
- Bioengineering (joint program with CU Denver)
- Biostatistics
- Cancer Biology
- Cell Biology, Stem Cells, and Development
- Clinical Science
- Computational Bioscience
- Epidemiology
- Health Services Research
- Human Medical Genetics
- Immunology
- Microbiology
- Molecular Biology
- Neuroscience
- Nursing
- Pharmaceutical Sciences
- Pharmacology
- Physiology
- Rehabilitation Science
- Structural Biology and Biochemistry
- Toxicology
IV.2 SPACE GOALS FOR THE EDUCATION PROGRAMS

As the Anschutz Medical Campus pursues its vision, the built environment and infrastructure will need to grow and develop, as will the relationship of built space to place that makes the campus unique. As recommended in this facilities master plan, this growing collection of buildings should strengthen its organization around central elements that help identify buildings in the pursuit of education, research, and clinical care. This strength should derive from clear and identifiable relationships that support the high quality of work, education, and life that distinguishes the campus. Interaction patterns, opportunities for exploration, and respect for the environment should all contribute to this plan of buildings, pathways, vistas, and gathering areas.

The goal of the campus master plan is to identify the growth patterns of physical systems that can be strengthened through simplification, organization, or elaboration. Expanding the area of the pedestrian campus while simplifying roadway passages for easy wayfinding is one key element of the plan. Growing the organization of research, educational, and clinical facilities for collaboration opportunities is yet another element. And a third is the strengthening of community through the shared opportunities of personal and professional interaction, collaboration, and study.

Adding just over 650k GSF of new built space on campus as identified in this facilities master plan is a challenging undertaking, even over a 10-year time period, especially when considering all the systems of circulation, arrival and departure, and internal functions that need to be properly planned and coordinated. The plan includes concepts for developing multidisciplinary biomedical facilities, a vision for academic health care delivery, and the growth of professional schools and multipurpose learning environments. The Anschutz Medical Campus 2012 Facilities Master Plan is designed to accommodate future needs in a way that is thoughtful, that uses the university’s limited land effectively, and that creates a safe, attractive, and sustainable campus and neighboring urban community.

Goals of the master plan include strengthening systems of wayfinding, collaboration, and community like those that exist on the Art Walk.
CU Anschutz’s 33 buildings, parking structures, and leased facilities total just over 3.7 million GSF. A list and brief description of each building currently utilized by the university at CU Anschutz follows.

**ACADEMIC OFFICE 1**

The Academic Office 1 facility is sited immediately south of the Research 2 complex. The building mainly provides faculty offices and support spaces primarily for use by the SOM and GS. The project was completed in October 2007.

**THE BARBARA DAVIS CENTER**

The Barbara Davis Center for Childhood Diabetes is the largest diabetes and endocrine care research and training program in the Colorado community. The project involved the construction of a new 70,535 ASF facility. The final project phase was completed in December 2006.

**THE 400 SERIES BUILDINGS**

Buildings 400, 401, 402, 406, and 407 (also called the University Police building) are facilities formerly used by the army as part of the FAMG. These buildings were identified as having potential to house university programs and currently are used by the University Police, SOM, SPH, CU Foundation, and Central Services and Administration. The 400 Series Buildings together comprise just over 70,000 ASF of space and were constructed in the 1940s.
BUILDING 500 AND BUILDING 533 AND 534 ANNEX

Building 500 is the main iconic structure at CU Anschutz and was originally constructed as the Fitzsimons Army Hospital in 1941. At the time, it was the largest structure in the state of Colorado. Upon closure of the army hospital in 1999, the university occupied the building and has since remodeled portions of the facility to house offices and support space for Central Services AND Administration, SOM, SPH, Academic and Student Affairs, CU Foundation, and the Eisenhower Museum on the eighth floor. The main data center and OIT staff offices for CU Anschutz are housed in Building 500, along with some leased space for UCH Information Systems and Psychiatry Outpatient Services. Directly adjacent to Building 500 are Building 533 and 534 Annexes, which house research equipment and offices.

BUILDING 610

Building 610 is a one-story structure built in 1983 and currently used for campus support and temporary storage. Building 610 is planned to be demolished in the future to make better use of its property site. The site has been reviewed and is considered a good visual gateway entrance into the university campus. A future larger development on this site will help enhance the arrival experience to the university from 17th Place.

CAMPUS SERVICES BUILDING

The Campus Services Building houses facility operations and support services for CU Anschutz. It includes maintenance shops such as painting, carpentry, and mechanical works as well as offices for the various facilities departments and staff. The 42,000 ASF facility was completed in July 2007.
**CENTRAL UTILITY PLANT**

The CUP was officially completed in May of 2003. The facility was planned to allow expansions, as additional steam and chilled water service are required for the occupants of new buildings and expansion structures. An additional phase to increase the campus chilled water capacity was completed in October 2004. A second phase expansion for increased chilled water capacity to support the CUP-funded buildings was completed June 2007.

**EDUCATION 1**

The Education 1 facility, completed in 2007, includes space for multipurpose classrooms, lecture halls, specialized instructional and computer laboratories, student community space, program space for the Center for Advancing Professional Excellence (CAPE), and skills laboratories for programs in nursing, physical therapy, and pharmacy. The facility is located directly east of Building 500 on the Education Commons.

**EDUCATION 2 NORTH AND SOUTH (INCLUDING EDUCATION BRIDGE)**

This facility consists of two five-story structures that provide education space on the lower two floors and faculty offices on the upper floors, and they are connected by the education bridge. The two facilities provide over 172,000 ASF of space for academic education, consisting of classrooms of various sizes, lecture halls, computer stations, small group learning rooms, and student community space. The facility also provides 65,000 ASF for faculty offices. The facility is located east of the Education 1 facility and forms the eastern boundary of the Education Commons. The buildings were completed in August 2007.
ENVIRONMENTAL HEALTH AND SAFETY

The building houses the offices, support space, labs, and waste facilities for the Environmental Health and Safety (EH&S) department. This building is required to support the existing and growing CU Anschutz research programs, teaching educational labs, and facilities operations. The building has had several phases of expansion; the most recent addition was completed in 2007.

FIRE STATION

The original fire station constructed in 1942 for the FAMG no longer functions in this capacity for the university, but the University Police and Facilities Management use it for other facility support purposes. As part of this facilities master plan, the building will be demolished to accommodate the realignment of Uvalda Street to create a stronger connection between FRA and the Anschutz Medical Campus.

FULGINITI CENTER FOR BIOETHICS AND HUMANITIES

The Fulginiti pavilion was constructed for the Center for Bioethics and Humanities. This facility provides 9,850 ASF for exhibition, meeting, seminar, and program office space. The building was completed in early 2009. The building is sited at the north end of the Education Commons between the Education 1 and Education 2 buildings.
HEALTH AND WELLNESS CENTER

This innovative facility is the newest building at CU Anschutz and provides a unique combination of research space and health and wellness programs. The building provides an exercise facility and wellness center for university employees and the public to increase their awareness of positive health through new programs and innovation. Participants are often involved in research projects that they have volunteered to join as part of their own health and wellness education. This building is over 95,000 GSF and is located on the west side of campus at the corner of Montview Boulevard and Racine Street. The building was completed in early 2012.

HEALTH SCIENCES LIBRARY

This facility provides state-of-the-art library services to CU Anschutz and allows the university to provide technology and information services to meet the evolving needs of Colorado for education, research, patient care, community service, and economic development. The campus library consists of 76,972 ASF of collection, study, and computer access and administration space. It is located on a prominent site to the north side of Building 500. The project was completed in October 2007.

HENDERSON PARKING GARAGE

The university completed construction of its first parking structure to complement and help reduce the amount of surface parking. The structure consists of seven levels, including one level partially below grade, to accommodate a total of 1,540 vehicles. The project was completed in September 2007.
NIGHTHORS CAMPBELL NATIVE HEALTH BUILDING

The Nighthorse Campbell Native Health Center, with 24,195 ASF, houses the Division of American Indian and Alaska Native programs. The two-phased building project was completed in May 2002 and was one of the first newly constructed buildings at CU Anschutz.

PRESERVATION AND ACCESS SERVICE CENTER FOR COLORADO ACADEMIC LIBRARIES (PASCAL)

This 15,156 ASF central library storage facility, named PASCAL, was completed in January 2001. The state-of-the-art library storage facility provides climate-controlled housing for materials in the library collections of CU Denver, CU-Boulder, and the University of Denver. An expansion of 11,350 square feet was completed in 2009.

PERINATAL RESEARCH FACILITY

The Perinatal Research Facility is located in the northeast corner of the campus on the north side of Montview Boulevard. The building includes research laboratories, environmental chambers, and office space with a total of over 17,000 ASF. Two modular buildings support the Perinatal Research Facility. The original building was completed in January 2002.
SKAGGS PHARMACY AND PHARMACEUTICAL SCIENCES BUILDING

The construction of the new 171,000 GSF building for SOP was completed in 2011. This facility houses research laboratories, laboratory support, faculty and administrative offices for SOP.

RED CROSS BUILDING

This historic building, built in 1918 is located on the north side of Building 500, between the Health Sciences Library and the Skaggs Pharmacy and Pharmaceutical Sciences Building. It is currently vacant and not able to be occupied due to environmental conditions. Although this building has been investigated for reuse, prohibitive environmental cleanup and new building systems needed to bring it up to current building code compliance are not economically feasible.

RESEARCH 1 (NORTH AND SOUTH TOWERS)

Completed in 2004, this research building complex was the first comprehensive research presence for CU Anschutz on the former FAMG. The complex consists of two buildings located on the Research Commons, which is directly west and southwest of Building 500. Included in the Research 1 facilities are wet and dry research laboratories, core laboratories, lab support space (including space for linear equipment), researcher and program offices, conference rooms, a central vivarium, auditoriums, and building support space. Including both towers (North and South), this is the largest building at CU Anschutz with a combined 628,000 GSF.
RESEARCH 2

As the second major research building complex, Research 2 provides 479,000 GSF of additional space for the research enterprise on the Research Commons at the Anschutz Medical Campus. The project was completed in June 2008 and is located directly west of the Research 1 North Tower.

SCHOOL OF DENTAL MEDICINE BUILDING

The School of Dental Medicine Building is a 116,000 GSF facility located between the Nighthorse Campbell Native Health Building and the Education 2 South complex. It houses the clinical programs of the SDM, including a large amount of space for dental operatories for general dentistry, oral surgery, emergency dentistry, pediatric dentistry, and orthodontia. Other building occupancies include offices for the dean of the School of Dentistry and faculty offices. Since opening in August 2005, the facility has been fully occupied. SDM recently completed an addition on the fourth floor of 13,000 GSF to house 50 dental operatories, offices, and other clinical support functions. This addition was completed in 2010.

THE 700 SERIES BUILDINGS

Buildings known as the 700 Series (M06, M07, M08) are not considered part of the inventory or GSF calculations. These former FAMG buildings are now vacated, boarded up, and all utilities to the buildings have been terminated. These buildings are no longer usable and are scheduled for demolition during this master plan period.

The cumulative existing space inventory from the facilities listed above was used as the base year (2011–2012) ASF used by the university to help determine the future space needs analysis listed in Section IV.5 of this report. The following table (Figure IV.1) shows the official facility GSF of the 33 buildings utilized on the CU Anschutz Medical Campus, not including leased facilities.
### Official Facility Gross Square Footage (Not Including Leased Facilities)

#### Anschutz Medical Campus

**August 2012**

<table>
<thead>
<tr>
<th>Building Name</th>
<th>Bldg. Tag</th>
<th>Address (1)</th>
<th>GSF</th>
<th>Note/Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Office 1</td>
<td>L15</td>
<td>12631 E. 17th Avenue</td>
<td>204,974</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Barbara Davis Center</td>
<td>M20</td>
<td>1775 N. Aurora Court</td>
<td>112,646</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Building 400</td>
<td>Q09</td>
<td>12469 E. 17th Place</td>
<td>31,331</td>
<td>Army - Includes 3 additions</td>
</tr>
<tr>
<td>Building 401</td>
<td>R09</td>
<td>1784 Racine Street</td>
<td>22,656</td>
<td>Army</td>
</tr>
<tr>
<td>Building 402</td>
<td>S09</td>
<td>12474 E. 19th Avenue</td>
<td>22,632</td>
<td>Army</td>
</tr>
<tr>
<td>Building 406</td>
<td>T09</td>
<td>12477 E. 19th Avenue</td>
<td>19,485</td>
<td>Army</td>
</tr>
<tr>
<td>Building 500</td>
<td>Q20</td>
<td>13001 E. 17th Place</td>
<td>479,660</td>
<td>Geographic Info. System - Incl. GSF of 2 emergency generator structures NW of 500. GSF of 500 is 478,211. S21 GSF is 974. S21A GSF is 475.</td>
</tr>
<tr>
<td>Building 533</td>
<td>R24</td>
<td>13001 E. 17th Place</td>
<td>5,080</td>
<td>Army</td>
</tr>
<tr>
<td>Building 534</td>
<td>S25</td>
<td>13001 E. 17th Place</td>
<td>3,299</td>
<td>Army</td>
</tr>
<tr>
<td>Building 610</td>
<td>Q34</td>
<td>13309 E. 17th Place</td>
<td>6,960</td>
<td>Army</td>
</tr>
<tr>
<td>Campus Services</td>
<td>T36</td>
<td>1945 N. Wheeling Street</td>
<td>68,333</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Central Utility Plant</td>
<td>S34</td>
<td>13350 E. 19th Avenue</td>
<td>82,156</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Education 1</td>
<td>P26</td>
<td>13070 E. 19th Avenue</td>
<td>115,251</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Education 2 - North</td>
<td>P28</td>
<td>13120 E. 19th Avenue</td>
<td>160,454</td>
<td>Per Building Code Plans - Combined with L28, GSF is 275,376</td>
</tr>
<tr>
<td>Education 2 - South</td>
<td>L28</td>
<td>13121 E.17th Avenue</td>
<td>114,922</td>
<td>Per Building Code Plans - Incl. bridge - combined with P28, GSF is 275,376</td>
</tr>
<tr>
<td>Environmental Health &amp; Safety</td>
<td>R30, R31</td>
<td>13178 E. 19th Avenue</td>
<td>21,002</td>
<td>Per Building Code Plans - Combined GSF - R30 is 13,646. R31 is 7,356 GSF.</td>
</tr>
<tr>
<td>Fire Station</td>
<td>X28</td>
<td>1997 Uvalda Court</td>
<td>4,829</td>
<td>Army</td>
</tr>
<tr>
<td>Fulginiti Center</td>
<td>R27</td>
<td>13080 E.19th Avenue</td>
<td>19,475</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Health and Wellness Ctr</td>
<td>V08</td>
<td>12348 E. Montview Blvd</td>
<td>95,141</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Health Sciences Library</td>
<td>V23</td>
<td>12950 E. Montview Blvd</td>
<td>113,005</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Henderson Parking Garage</td>
<td>V17</td>
<td>12706 E. Montview Blvd</td>
<td>495,499</td>
<td>Per Building Code Plans - 1540 spaces</td>
</tr>
<tr>
<td>Nighthorse Campbell</td>
<td>M24</td>
<td>13055 E. 17th Avenue</td>
<td>45,396</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Native Health Building</td>
<td>P30</td>
<td>13188 E. 19th Avenue</td>
<td>28,906</td>
<td>Per Building Code Plans - Includes addition</td>
</tr>
<tr>
<td>Perinatal Research Facility</td>
<td>AK32</td>
<td>13243 E. 23rd Avenue</td>
<td>24,128</td>
<td>Per Bldg. Code Plans - Incl. 2001 addition</td>
</tr>
<tr>
<td>Perinatal Research Facility</td>
<td>AL32B</td>
<td>-</td>
<td>4,014</td>
<td>Field Measurement</td>
</tr>
<tr>
<td>Perinatal Research Facility Modular East</td>
<td>AL32A</td>
<td>-</td>
<td>503</td>
<td>Field Measurement</td>
</tr>
<tr>
<td>Perinatal Research Facility Modular West</td>
<td>AL32A</td>
<td>-</td>
<td>503</td>
<td>Field Measurement</td>
</tr>
<tr>
<td>School of Pharmacy Bldg</td>
<td>V20</td>
<td>12850 E. Montview Blvd</td>
<td>171,416</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>Red Cross Building</td>
<td>X22</td>
<td>12862 E. Montview Blvd</td>
<td>13,176</td>
<td>Army</td>
</tr>
<tr>
<td>Research 1 - North</td>
<td>P18</td>
<td>12800 E. 19th Avenue</td>
<td>344,703</td>
<td>Per Building Code Plans - Incl. auditorium &amp; generator building - combined with L18, GSF is 628,423</td>
</tr>
<tr>
<td>Research 1 - South</td>
<td>L18</td>
<td>12801 E. 17th Avenue</td>
<td>283,720</td>
<td>Per Building Code Plans - Combined with P18 the GSF is 628,423</td>
</tr>
<tr>
<td>Research 2</td>
<td>P15</td>
<td>12700 E. 19th Avenue</td>
<td>479,085</td>
<td>Per Building Code Plans</td>
</tr>
<tr>
<td>School of Dental Medicine Bldg</td>
<td>L26</td>
<td>13065 E. 17th Avenue</td>
<td>116,060</td>
<td>Per Bldg. Code Plans - Incl. 2011 expansion</td>
</tr>
<tr>
<td>University Police</td>
<td>U09</td>
<td>12454 E. 19th Place</td>
<td>19,509</td>
<td>Army</td>
</tr>
<tr>
<td><strong>Building Count</strong></td>
<td><strong>33</strong></td>
<td><strong>Total GSF</strong></td>
<td><strong>3,729,406</strong></td>
<td></td>
</tr>
</tbody>
</table>

(1) All addresses are in Aurora, CO 80045. The 700 Series Buildings are inactive and are not included in the above.

---

*Figure IV.1 - Anschutz Medical Campus Building Inventory - Official Facility Gross Square Footage*
IV | EDUCATION PROGRAM

CAMPUS FACILITIES INVENTORY BY UNIT

The allocation of ASF across the campus for the six schools and colleges and Central Services and Administration is listed in the following table (Figure IV.2) and shows the total space and the portion of research space allocated to each.

As shown on Figure IV.2, SOM occupies the majority of university space, with SOP second. It should be noted that the space listed for the GS is their administrative office and support space. Since each of the graduates is enrolled in one of the respective schools/colleges, space is provided in that school/college for their academics, support, and services need.

The following sections of this report will reference the existing university ASF of 2,045,167 for overall total space and the 1,067,209 ASF for total research space that currently exists at CU Anschutz.

University Space Inventory by School
University of Colorado Anschutz Medical Campus
Finance Space Inventory System 2011–2012

<table>
<thead>
<tr>
<th>Description - Space Inventory</th>
<th>2011–2012 Actual Assignable SF</th>
<th>2011–2012 Research Assignable SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic and Student Affairs</td>
<td>247,872</td>
<td>-</td>
</tr>
<tr>
<td>Administration</td>
<td>396,870</td>
<td>-</td>
</tr>
<tr>
<td>School of Medicine</td>
<td>1,137,087</td>
<td>938,112</td>
</tr>
<tr>
<td>School of Dental Medicine</td>
<td>78,266</td>
<td>14,244</td>
</tr>
<tr>
<td>College of Nursing</td>
<td>29,026</td>
<td>8,746</td>
</tr>
<tr>
<td>School of Pharmacy</td>
<td>93,891</td>
<td>55,496</td>
</tr>
<tr>
<td>Colorado School of Public Health</td>
<td>59,266</td>
<td>50,611</td>
</tr>
<tr>
<td>Graduate School (1)</td>
<td>2,889</td>
<td>-</td>
</tr>
<tr>
<td>Overall Space Inventory Total</td>
<td>2,045,167</td>
<td>1,067,209</td>
</tr>
</tbody>
</table>

(1) The Graduate School ASF listed above is only administrative space for the school since their students are enrolled in the programs of one of the five schools or colleges.

Figure IV.2 - University Space Inventory by School
IV.3 CLASSROOM UTILIZATION

With the move of UCHSC from the 9th Avenue and Colorado Boulevard location to the new campus in Aurora, most of the university’s existing academic programs were relocated to the CU Anschutz Medical Campus in January 2007. That milestone marked the completion of Education 1 and Education 2 North and South facilities. The majority of the educational learning at the university takes place in the Education 1 and 2 buildings. A planning principle from the 1998 facilities master plan was to develop shared general-use classrooms when possible to facilitate efficient scheduling and to locate them in shared academic facilities to encourage interdisciplinary education opportunities.

Shared general-use classrooms on the campus include 200-seat lecture halls, 75–80-seat lecture halls, and flat floor classrooms with reconfigurable furniture with capacities between 30 and 60 seats. There is also a 600-seat lecture hall, numerous 10–12-seat seminar rooms that are more often used as informal group study areas, and 16-seat multipurpose classrooms and teaching laboratories that are suited to specific courses, primarily in SOM. Additional group study rooms were also constructed in the Health Sciences Library. First priority for general classroom spaces is to accommodate scheduled instruction. However, once scheduled instruction is properly allocated, these rooms are used for other non–regularly scheduled activities, guest lectures, training seminars, continuing education, and other purposes.

Specific schools operate clinical skills laboratories. The teaching laboratories are made up of a wide variety of specialized spaces for instructional learning and include gross anatomy laboratory, nursing skills laboratory, physical therapy skills laboratory, pharmacy skills laboratory, simulation skills laboratory, a dental medicine skills laboratory, and the CAPE program.

In addition to these facilities, there are other meeting, study, and conference rooms located among numerous university departments on campus. Teaching may periodically occur in these spaces, but the primary purpose is not to hold scheduled classes or courses in these rooms.

In planning the academic buildings on the new campus, the university was to incorporate student community areas in the building projects that would provide both additional study space as well as daily collaborative interaction space. These types of spaces have proven to be useful and instrumental in learning activities and interaction in the student/faculty experiences at CU Anschutz. The Education 1 and 2 buildings have been successful in meeting this principle.

Students learn in a specialized teaching laboratory.

Students fill a 200-seat lecture hall.
The programming phase of this analysis studied current and projected utilization and the impact of student enrollment growth on general-use classrooms and teaching laboratories.

The shared general-use classrooms are currently functioning at a combined utilization rate of 48 percent for academic uses on a Monday–Friday 8 AM to 5 PM basis. Utilization by room type varies from 45 percent to 54 percent. When including the non-academic uses that occur in these classrooms along with the academic schedule, current combined shared general-use classroom utilization increases to 61 percent. University classroom utilization data does not currently allow for comparisons of actual class sizes related to room capacity in which these classes are scheduled. To better maximize the utilization of the general classroom spaces, it is recommended that the university incorporate software to track and analyze these metrics. This would allow the university to better accommodate and properly plan facilities for the increasing student enrollment.

Enrollment is projected to increase by more than 30 percent over the next 10 years. Program analysis conducted for this facilities master plan assumed a 15 percent increase at Year 5. Applying the enrollment projections to current utilization data, in five years the utilization will increase to 55 percent for academic classroom use and to 71 percent for all uses (academic and non-academic). In 10 years, the utilization is projected to increase to 62 percent for academic use and to 80 percent for all uses in the Monday–Friday 8 AM to 5 PM time period.

The table below (Figure IV.3) displays the current and projected utilization of the shared general-use classrooms described above.

Unknown factors could potentially affect future classroom utilization, like the increased use of distance learning. There is a trend of students viewing lectures on their personal computers in other environments and coming to academic facilities for group discussion purposes and laboratory experiences. There are also recognized opportunities for repurposing some academic spaces for classrooms. Another unknown factor is the degree to which enrollment growth may occur at sites other than the CU Anschutz Medical Campus such as UCCS, where SOM is establishing a satellite location along with the expansion of UCH affiliates and partners.

---

Table: Current and Projected Utilization of Shared General-Use Classrooms

<table>
<thead>
<tr>
<th>Classroom Type</th>
<th>Current Utilization (1)</th>
<th>5-Year Utilization (2)</th>
<th>10-Year Utilization (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Academic</td>
<td>Total</td>
<td>Academic</td>
</tr>
<tr>
<td>200-Seat Lecture Hall</td>
<td>45%</td>
<td>54%</td>
<td>52%</td>
</tr>
<tr>
<td>75–80-Seat Lecture Hall</td>
<td>44%</td>
<td>59%</td>
<td>51%</td>
</tr>
<tr>
<td>60-Seat Classroom</td>
<td>54%</td>
<td>72%</td>
<td>62%</td>
</tr>
<tr>
<td>30-Seat Classroom</td>
<td>49%</td>
<td>55%</td>
<td>56%</td>
</tr>
<tr>
<td>All Classroom Types</td>
<td>48%</td>
<td>61%</td>
<td>55%</td>
</tr>
</tbody>
</table>

(1) Current Usage Based on Spring 2012 Data  
(2) 5-Year Enrollment Growth Assumed at 15.3%  
(3) 10-Year Enrollment Growth Assumed at 31.8%
Some underutilized spaces may be considered for adaptive reuse for academic purposes, which could reduce classroom utilization results. Possible spaces may include lightly used student community areas and unused library stack space due to the decreasing need for hard texts. There is also the possibility of scheduling non-academic uses to meeting rooms in other facilities to allow for more scheduling flexibility of academic courses as enrollment grows.

The overall space programming exercise concluded that there is no immediate need to add shared general-use classroom space in the next several years, although utilization data and other trends and opportunities as identified will bear monitoring, especially toward the middle of the 10-year planning horizon. As class sizes increase, the university will need to plan for future classroom spaces to accommodate full cohort sizes. It is estimated that several of the 200-seat classroom spaces will need to accommodate as many as 220-student cohort sizes by the end of this planning period. It is also noted that the 10-year projected academic use rate is 62 percent, which is busy but not unreasonable, whereas the combined academic and non-academic use rate may climb to a very busy 80 percent. Utilization above 80 percent typically indicates scheduling difficulties and challenges for appropriate room prep and setup functions, indicating additional space may be needed.

Specialized clinical skills laboratories may need to be expanded on an individual basis. The areas that demand the most growth are the simulation labs. There is a further opportunity to collaborate among the programs through simulation offered by CON, CAPE, and UCH's Wells Center. Relocation of the nursing simulation center would also allow for expansion of the adjacent gross anatomy laboratory and minimally invasive surgery suite. Some square footage for expansion of specialized academic space is projected in the program square footage section of this report in recognition of these needs.
IV.4 ENROLLMENT AND POPULATION PROJECTIONS

In the academic year 2011–2012 the total headcount at CU Anschutz including faculty, staff (Central Services and Administration), residents, and students was 12,860. Figure IV.4 shows the five population categories separated by school/college: faculty, staff, PRAs, medical residents, and students. The table also shows the total anticipated increase in headcount over the 10-year master plan period with a new projection in 2022 of 15,997 people. This overall increase of 3,137 in headcount represents an annual growth of approximately 2.4 percent. The annual growth of students is estimated at 3.2 percent per year for a total increase of 1,314 student headcount over the planning period.

CU Anschutz students gather in informal study spaces.
## Headcount Detail

University of Colorado Anschutz Medical Campus  
Office of Institutional Research and Effectiveness, Rev. 7/16/2013

<table>
<thead>
<tr>
<th>Description</th>
<th>2011–2012</th>
<th>2021–2022</th>
<th>Total #</th>
<th>Annual %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>Projected</td>
<td>Total #</td>
<td>Annual %</td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Services &amp; Administration (1)</td>
<td>30</td>
<td>36</td>
<td>6</td>
<td>2.0%</td>
</tr>
<tr>
<td>School of Medicine</td>
<td>3,077</td>
<td>3,723</td>
<td>646</td>
<td>2.1%</td>
</tr>
<tr>
<td>School of Dental Medicine</td>
<td>139</td>
<td>168</td>
<td>29</td>
<td>2.1%</td>
</tr>
<tr>
<td>College of Nursing</td>
<td>183</td>
<td>222</td>
<td>39</td>
<td>2.1%</td>
</tr>
<tr>
<td>Skaggs School of Pharmacy</td>
<td>221</td>
<td>267</td>
<td>46</td>
<td>2.1%</td>
</tr>
<tr>
<td>Colorado School of Public Health</td>
<td>143</td>
<td>173</td>
<td>30</td>
<td>2.1%</td>
</tr>
<tr>
<td>College of Engineering and Applied Science</td>
<td>31</td>
<td>38</td>
<td>7</td>
<td>2.3%</td>
</tr>
<tr>
<td>Graduate School</td>
<td>12</td>
<td>14</td>
<td>2</td>
<td>1.7%</td>
</tr>
<tr>
<td><strong>Subtotal Faculty</strong></td>
<td><strong>3,836</strong></td>
<td><strong>4,641</strong></td>
<td><strong>805</strong></td>
<td><strong>2.1%</strong></td>
</tr>
<tr>
<td>Staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Services &amp; Administration (1)</td>
<td>731</td>
<td>870</td>
<td>139</td>
<td>1.9%</td>
</tr>
<tr>
<td>School of Medicine</td>
<td>1,338</td>
<td>1,592</td>
<td>254</td>
<td>1.9%</td>
</tr>
<tr>
<td>School of Dental Medicine</td>
<td>166</td>
<td>197</td>
<td>31</td>
<td>1.9%</td>
</tr>
<tr>
<td>College of Nursing</td>
<td>76</td>
<td>90</td>
<td>14</td>
<td>1.8%</td>
</tr>
<tr>
<td>Skaggs School of Pharmacy</td>
<td>103</td>
<td>123</td>
<td>20</td>
<td>1.9%</td>
</tr>
<tr>
<td>Colorado School of Public Health</td>
<td>111</td>
<td>132</td>
<td>21</td>
<td>1.9%</td>
</tr>
<tr>
<td>College of Engineering and Applied Science</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>1.9%</td>
</tr>
<tr>
<td>Graduate School</td>
<td>20</td>
<td>24</td>
<td>4</td>
<td>1.9%</td>
</tr>
<tr>
<td><strong>Subtotal Staff</strong></td>
<td><strong>2,549</strong></td>
<td><strong>3,033</strong></td>
<td><strong>484</strong></td>
<td><strong>1.9%</strong></td>
</tr>
<tr>
<td>Professional Research Assistants (PRA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Services &amp; Administration (1)</td>
<td>17</td>
<td>21</td>
<td>4</td>
<td>2.1%</td>
</tr>
<tr>
<td>School of Medicine</td>
<td>1,168</td>
<td>1,413</td>
<td>245</td>
<td>2.1%</td>
</tr>
<tr>
<td>School of Dental Medicine</td>
<td>12</td>
<td>15</td>
<td>3</td>
<td>2.1%</td>
</tr>
<tr>
<td>College of Nursing</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>2.1%</td>
</tr>
<tr>
<td>Skaggs School of Pharmacy</td>
<td>16</td>
<td>19</td>
<td>3</td>
<td>2.1%</td>
</tr>
<tr>
<td>Colorado School of Public Health</td>
<td>112</td>
<td>136</td>
<td>24</td>
<td>2.1%</td>
</tr>
<tr>
<td>College of Engineering and Applied Science</td>
<td>6</td>
<td>7</td>
<td>1</td>
<td>2.1%</td>
</tr>
<tr>
<td>Graduate School</td>
<td></td>
<td></td>
<td></td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Subtotal PRA</strong></td>
<td><strong>1,336</strong></td>
<td><strong>1,617</strong></td>
<td><strong>281</strong></td>
<td><strong>2.1%</strong></td>
</tr>
<tr>
<td>Residents</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School of Medicine (2)</td>
<td>1,349</td>
<td>1,703</td>
<td>354</td>
<td>2.6%</td>
</tr>
<tr>
<td>Affiliated with Graduate School</td>
<td>333</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School of Dental Medicine</td>
<td>363</td>
<td>458</td>
<td>95</td>
<td>2.6%</td>
</tr>
<tr>
<td>Affiliated with Graduate School</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College of Nursing</td>
<td>977</td>
<td>1,075</td>
<td>98</td>
<td>1.0%</td>
</tr>
<tr>
<td>Affiliated with Graduate School</td>
<td>371</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skaggs School of Pharmacy</td>
<td>908</td>
<td>973</td>
<td>65</td>
<td>0.7%</td>
</tr>
<tr>
<td>Affiliated with Graduate School</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorado School of Public Health (3)</td>
<td>493</td>
<td>1,015</td>
<td>522</td>
<td>10.6%</td>
</tr>
<tr>
<td>Affiliated with Graduate School</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College of Engineering and Applied Science (4)</td>
<td>39</td>
<td>219</td>
<td>180</td>
<td>46.2%</td>
</tr>
<tr>
<td>Affiliated with Graduate School</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal Students</strong></td>
<td><strong>4,129</strong></td>
<td><strong>5,443</strong></td>
<td><strong>1,314</strong></td>
<td><strong>3.2%</strong></td>
</tr>
<tr>
<td>Subtotal Affiliated with Graduate School</td>
<td>867</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12,860</strong></td>
<td><strong>15,997</strong></td>
<td><strong>3,137</strong></td>
<td><strong>2.4%</strong></td>
</tr>
</tbody>
</table>

(1) Includes Health Sciences Library and College of Liberal Arts and Sciences  
(2) Includes Anesthesiology Graduate Students  
(3) Includes Biomedical Informatics Graduate Students  
(4) Includes Bioengineering Graduate Students, projection includes 3rd & 4th year undergraduates starting Fall 2015

*Figure IV.4 - Headcount Detail*
IV.5 FUTURE SPACE Needs

To determine future space needs on the campus, the existing space was first documented as a base file. The source of the inventory data that was utilized in the facilities master plan is the 2011–2012 Web-space, which is a facilities space inventory system maintained by the university finance office. The space needs analysis projection utilized a current campus space total of 2,045,167 ASF. This total includes 122,575 ASF of leased program space located in the UPI Building, Leprino Building, Bioscience East, and Gary Pavilion. The university leases a total of 236,244 ASF, but only those facilities proximate to the CU Anschutz Medical Campus were included in the space needs analysis.

A. Space Projection for Current Programs

For current university programs, the space needs analysis projection for 2022 indicates an additional 406,274 ASF (650K GSF) of space needed to accommodate future growth and development during the 10-year master plan period. This represents an increase of 19.9 percent for current program expansion/development. This incremental need includes an estimated increase in research space of 273,006 ASF (25.6 percent) and an increase of 133,268 ASF (13.6 percent) space to meet non-research program growth for academic, clinical, and administrative support programs. Figure IV.5 shows the existing ASF and future growth projections along with the anticipated growth percentage.

When analyzed by space type, the additional 406,274 ASF needed over the 10-year master plan breaks down into space categories as shown in Figure IV.6 along with the percentage of growth in each.

<table>
<thead>
<tr>
<th>Description - Space Inventory</th>
<th>2011–2012 Actual Assignable SF</th>
<th>2021–2022 Projected Assignable SF</th>
<th>Increase/Decrease Assignable SF</th>
<th>Growth % Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Research/Clinical/Support</td>
<td>1,067,209</td>
<td>1,340,215</td>
<td>273,006</td>
<td>25.6%</td>
</tr>
<tr>
<td>Academic/Administrative/Other</td>
<td>977,958</td>
<td>1,111,226</td>
<td>133,268</td>
<td>13.6%</td>
</tr>
<tr>
<td>Overall Space Inventory Total</td>
<td>2,045,167</td>
<td>2,451,441</td>
<td>406,274</td>
<td>19.9%</td>
</tr>
</tbody>
</table>

*Figure IV.5 - Campus Space Inventory Summary*
10-Year Space Projection Increment by ASF by Space Type
University of Colorado Anschutz Medical Campus
Spring 2012

<table>
<thead>
<tr>
<th>Description - Space Inventory</th>
<th>Estimated Increase inAssignable SF</th>
<th>Growth % of Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom/Laboratory/Service Space</td>
<td>19,170</td>
<td>13.4%</td>
</tr>
<tr>
<td>Library/Study/Media Production/Service</td>
<td>4,818</td>
<td>5.5%</td>
</tr>
<tr>
<td>Office/Office Service Space</td>
<td>160,124</td>
<td>23.0%</td>
</tr>
<tr>
<td>Conference Room/Conf Service Space</td>
<td>12,657</td>
<td>14.2%</td>
</tr>
<tr>
<td>Research Lab/Research Support/Service</td>
<td>162,518</td>
<td>24.8%</td>
</tr>
<tr>
<td>Animal Facilities/Support Services</td>
<td>16,943</td>
<td>20.7%</td>
</tr>
<tr>
<td>Assembly/Food/Lounge/Merchandising</td>
<td>7,561</td>
<td>13.8%</td>
</tr>
<tr>
<td>Central Computer/Telcom/Central Service</td>
<td>8,653</td>
<td>9.9%</td>
</tr>
<tr>
<td>Clinical Space/Service</td>
<td>12,625</td>
<td>19.6%</td>
</tr>
<tr>
<td>Building Services/Central Utility/Service</td>
<td>674</td>
<td>0.8%</td>
</tr>
<tr>
<td>Other/Renovation/PE/Recreation Space</td>
<td>531</td>
<td>9.7%</td>
</tr>
<tr>
<td><strong>10-Year Space Need Increase Total</strong></td>
<td><strong>406,274</strong></td>
<td><strong>19.9%</strong></td>
</tr>
</tbody>
</table>

Figure IV.6 - 10-Year Space Projection Increment by ASF by Space Type

**B. Research Space**

The total amount of university space allocated to wet and dry research in 2011–2012 was 1,067,209 ASF. That year, the total research expenditures as allocated in the general ledger were over $405 million not including financial aid. Over the 10-year master plan period, the research expenditures are expected to increase by $95 million. To accommodate this increase in funding and growth, an additional 273,006 ASF of research space is needed. This projection for increased funding was developed using the Facilities and Administration (F&A) model provided by the university Finance Office and applying the following estimates:

- Estimates for growth in federal off-campus and private research based on historical funding patterns and on projected future funding trends.

The growth projections are:
- Federal off-campus: 2 percent all years
- Private: 5 percent all years

- June 2012 Research Productivity Study: Each year the university Finance Office conducts a review of the total research space in comparison to the total research funding to develop productivity measurements. Each college and school is reviewed and provided a report of its research space allocation of wet and dry laboratory productivities. In 2011–2012 a small surplus of space was identified in the Research Productivity Study based upon the proposed implementation of a productivity target utilizing $330/ASF for ‘wet’ research and $500/ASF for ‘dry’ research space. The university has not yet determined how much of the surplus space might be captured for use to help increase the efficiency of existing research space allocations. Further analysis is taking place to better understand how a productivity metric can be applied and tracked.
C. Non-Research Academic/Clinical/Administrative Support Space

The university currently has 977,958 ASF of non-research academic, clinical, and administrative support space. In general, an overall growth projection of +20 percent (+2 percent/year) was used in the analysis for the non-research program space, excluding centralized classrooms and instructional laboratories.

The classroom and instructional laboratory space projection included an overall increase of 19,169 ASF (13.4 percent) in instructional space, from 143,359 ASF to a total of 162,528 ASF. This increase will accommodate the anticipated university needs for expanded centralized simulation and instructional laboratory needs as identified for the end of the planning horizon.

The programming analysis concluded that there is no immediate need to add shared general-use classroom square footage during the next several years. However, utilization data and other trends and opportunities will require monitoring toward the end of the second half of the 10-year period and are likely to necessitate planning for future classroom development at that time. There is an immediate need for additional small group study rooms and teaching lab space for medical students and future third- and fourth-year bioengineering students who will be matriculating on campus in fall 2015. The following section will describe these future needs in more detail.

In summary, the 10-year space projection of +406,273 ASF is shown in the following Figure IV.7, Future Space Projections by Space Type.

Future Space Projections by Space Type
University of Colorado Anschutz Medical Campus
Fall 2012

<table>
<thead>
<tr>
<th>Description - Space Inventory</th>
<th>Year 2011–2012 Actual Assignable SF</th>
<th>Estimated Increase in Assignable SF</th>
<th>Year 2021–2022 Projected Assignable SF</th>
<th>Growth % Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom/Laboratory/Service Space</td>
<td>143,358</td>
<td>19,170</td>
<td>162,528</td>
<td>13.4%</td>
</tr>
<tr>
<td>Library/Study/Media Production/Service</td>
<td>86,937</td>
<td>4,818</td>
<td>91,755</td>
<td>5.5%</td>
</tr>
<tr>
<td>Office/Office Service Space</td>
<td>696,797</td>
<td>160,124</td>
<td>856,921</td>
<td>23.0%</td>
</tr>
<tr>
<td>Conference Room/Conf Service Space</td>
<td>89,021</td>
<td>12,657</td>
<td>101,678</td>
<td>14.2%</td>
</tr>
<tr>
<td>Research Lab/Research Support/Service</td>
<td>655,305</td>
<td>162,518</td>
<td>817,823</td>
<td>24.8%</td>
</tr>
<tr>
<td>Animal Facilities/Support Services</td>
<td>82,017</td>
<td>16,943</td>
<td>98,960</td>
<td>20.7%</td>
</tr>
<tr>
<td>Assembly/Food/Lounge/Merchandising</td>
<td>54,635</td>
<td>7,561</td>
<td>62,196</td>
<td>13.8%</td>
</tr>
<tr>
<td>Central Computer/Telcom/Central Service</td>
<td>87,444</td>
<td>8,653</td>
<td>96,097</td>
<td>9.9%</td>
</tr>
<tr>
<td>Clinical Space/Service</td>
<td>64,477</td>
<td>12,625</td>
<td>77,102</td>
<td>19.6%</td>
</tr>
<tr>
<td>Building Services/Central Utility/Service</td>
<td>79,726</td>
<td>674</td>
<td>80,400</td>
<td>0.8%</td>
</tr>
<tr>
<td>Other/Renovation/PE/Recreation</td>
<td>5,450</td>
<td>531</td>
<td>5,981</td>
<td>9.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,045,167</strong></td>
<td><strong>406,274</strong></td>
<td><strong>2,451,441</strong></td>
<td><strong>19.9%</strong></td>
</tr>
</tbody>
</table>

*Figure IV.7 - Future Space Projections by Space Type*
D. New Program Initiative Space Needs

Several new initiatives and growth of existing programs drive immediate space needs on campus. The following items will require immediate proper planning to meet the space demands.

- The medical student cohort size is planned to increase from its current 160 to 184 students. Additional teaching lab space is required to accommodate this growth, as the current SOM teaching labs in Research 1 are too few and inappropriately sized to accommodate the new cohort quantity. Additional space in the gross anatomy labs will also be needed to accommodate 184 students. To replace the existing Research 1 SOM first-floor teaching labs and properly accommodate the new cohort size, approximately 27,000 GSF of new lab space would be needed. Constructing this new space near the academic quad would be preferable. The existing Research 1 SOM first-floor teaching labs would then be converted to accommodate growth in research programs.

- The new academic Bioengineering Program was approved in September of 2012. This interdisciplinary program spans both CU Denver campuses for the bachelor of science degree. Students in the bioengineering program will spend the first two years on the Denver Campus and then their 3rd and 4th years on the CU Anschutz Medical Campus. The first cohort of 3rd-year students will arrive on the CU Anschutz campus in August of 2015. This program requires approximately 30,000 GSF of educational and support space to address its academic needs. The future Bioscience 2 building is being planned immediately north of the Henderson Parking Garage along East Montview Boulevard to address this immediate space need. The space to be allocated to the Bioengineering Program in Bioscience 2 will include classrooms, teaching labs, open labs, faculty and staff offices, and other required support spaces for this growing program.

- The emerging field of biomedical informatics is rapidly growing at CU Anschutz and, in conjunction with UCH and CHCO, a joint effort is needed to address space needs for this program. A space centrally located equidistant between the university, UCH, and CHCO would be ideal, but approximately 10,000 GSF will be needed in the near future to address this emerging field of study/research. The next building project on the campus should consider including this program in the building to meet its space needs.

- Many research programs utilize opportunities to collaborate in team-based delivery models. As more focus is placed on clinical translational research, space will be needed to accommodate growth. The fields of genomics, stem cell research, and biomedical informatics will continue to grow and need appropriate space on campus. Space in Bioscience 2, a 120,000 GSF facility may provide opportunities for the university to accommodate more translational development of clinical research initiatives. Along with the new bioengineering program, several university entities like Clinimmune Labs and iC42 Clinical Research and Development might be considered potential tenants. As new initiatives are identified and as translational research increases, this building will provide spaces that are collaborative in nature and help foster the move toward team-based delivery models that have become quite successful.

A class at SPH.
• Properly designed and constructed data center space is required to address the growing need to support campus programs, individual computational servers, and overall IT services for the campus. The current data center is located in Building 500 and was installed to support the university as it was constructed. Currently operating in less than ideal space, the data center has minimal space for growth and lacks the proper utility services required for system redundancy to meet the institution’s large computing demands. New data center space is currently being investigated for potential solutions. Due to the high construction cost of data center space, the economy of scale of combining data center efforts between CU Anschutz and UCH could have a cost reduction benefit. This specific project will be further analyzed during the Programming Phase to determine specific space need requirements, but is estimated to be over 28,000 GSF for the university’s portion of the data center and IT support office functions.

• Imaging is a critical area of research, clinical, and strategic growth for SOM and its programs. The continuing growth in demand and research applicability for imaging equipment requires additional space, can be better coordinated in a single, centralized site, and would benefit from being located near the existing vivarium spaces. A central imaging center would benefit research programs, researchers, and research subjects, and the west side of Research 2 is currently being investigated as a potential location. The Colorado Translational Research Imaging Center (CTRIC) would house animal and human research imaging equipment and its estimated size would be approximately 48,000 GSF to meet growing need.

• New centers and the growth of existing centers at the university will continue to evolve. Growth of existing centers can happen rapidly, and their needs for spaces will continue to be monitored so the university can provide facilities to meet their goals and aspirations. As new building projects are planned, incorporation of centers may be appropriate for consideration in the new facility if the location, program, and building type warrant a good fit.

The program initiatives listed will be further analyzed as the master plan study continues, and each new building will be reviewed for potential program/occupant opportunities to meet the academic and research need commitments of the university. Additional partnerships in other locations will also be analyzed to determine the space and programmatic needs on the campus, as well as additional space need for more clinical programs and their support networks on and off campus. Space needs for each of these future commitments will be analyzed with each new project and reviewed within the context of this master plan for optimal fit and configuration on the campus.
E. Emerging Trends

As new facilities are planned to address university expansion and development on the campus, the following emerging trends should be reviewed and incorporated into each program plan when applicable.

COLLABORATION

Creating collaborative learning environments in academic and research buildings helps build a stronger relationship between the learner and others (student and instructor/researcher) that reaches beyond the classroom or laboratory. Spaces that are conducive to fostering these types of interaction and collaboration are important to incorporate into buildings. Building program plans should review and potentially include the following:

- Comfortable gathering spaces with moveable seating in close proximity to teaching rooms (classrooms and laboratories). Non-programmed spaces are often oversized niche areas just outside teaching spaces or hallways, or are adjacent to main circulation areas where dialogue can take place. These spaces also help build community between disciplines and can show shared interest between professionals and students. Informal, comfortable gathering spaces are often successful near bustling activity areas in a building where interested parties can easily move from the main flow of circulation to an informal area to continue a conversation one on one or with multiple people.

- Technology-supported informal spaces. Appropriate, small, adaptable, accessible settings in a variety of sizes should be provided to allow for team or solo student work. These spaces should be available 24/7 and have a high level of connectivity for group projects or student project work. Incorporating whiteboards, flat screen panels, and interactive media that is IT-supported for the students to display or share projects helps develop social interaction and enhance the learning experience. These spaces can be designed as small group study rooms or be adjacent to building circulation areas that are easily accessible and convenient to use. It is best to have these spaces designed around patterns of student and faculty interaction. Crossroads in buildings are great places to incorporate these types of spaces to encourage serendipitous interactions and places to linger.

- Multifunctional space with moveable furniture and high levels of audiovisual/IT infrastructure. Environments for active learning (simulation) that incorporate media and IT infrastructure to enhance virtual learning can be positive environments for interprofessional exploration and lifelong learning. These spaces create blended learning that can be activated anytime and broadcast anywhere, which facilitates online, virtual face-to-face interaction in a hybrid instructional setting.

TEAM SCIENCE

Scientific collaboration on research projects and team-based approaches are becoming necessary to solve complex issues that are out of the grasp of an independent researcher. Modern technology, video conferencing, and real-time data transfer have allowed collaborative research to take place between many disciplines in a collaborative effort. A report recently prepared by Leadership for Innovation in Team Science (LITeS) mentions several physical building recommendations that will help promote the team science concept at CU Anschutz. Space and physical environment recommendations listed in the report are:

- Spatial proximity of team member offices and laboratories to encourage frequent contact
- Availability of comfortable meeting areas for group discussion and brainstorming
- Access to distraction-free workspaces for tasks requiring concentration and/or confidentiality
- Physical environments that support members' efforts to regulate interpersonal privacy and accessibility to others
The integrated approach of team science and building spaces that can help promote this collaborative environment should be reviewed as part of any building physical layout or design for meeting rooms, lab space, and other communal spaces. Appropriate building spaces that support these efforts should be planned into the building program plans. For more information, refer to the original Promoting Team Science at University of Colorado Denver report dated April 5, 2013.

**SIMULATION**

Simulation has rapidly enhanced the learning process and allowed for better training/retention of learned concepts. By implementing the simulation of a real-life event or creating active learning environments with simulated on-the-job training, students and instructors are able to improve the quality of learning as well as foster more interprofessional exploration between disciplines. Creating academic and research environments that embrace simulation will lead the future of the learning experience on university campuses. Simulation centers are emerging as a collaborative environment for interprofessional learning that is well beyond just a single discipline of study.

**TECHNOLOGY**

Technology has allowed information to be available at all times. Designing spaces to utilize and help support the learning environment with available technology is a key component to students’ learning experience and the level of knowledge they will acquire. However, spaces should be viewed as a venue for lifelong learning and should incorporate an environment that can be used by the student of today but also as an evolving place to showcase new methods, procedures, and practices that are leading the way in health sciences and wellness.

**F. Other Program Assumptions**

Other planning assumptions that guide the program and space projection development include:

**STAFFING**

For space program analysis, the following percentages of growth were used in the analysis for faculty and staff.

- Projected faculty headcount growth (10-year): +1,071 (+21 percent), from 5,157 to 6,228
- Projected staff headcount growth (10-year): +499 (+19 percent), from 2,596 to 3,095

For a detailed breakdown of the faculty and staffing headcount projections over the master plan, see Section IV.4, Enrollment and Population Projections.

**ENROLLMENT**

For this future space program analysis, the following growth in student enrollments was utilized.

- Projected enrollment headcount increase (10-year): +1,314 (+32 percent), from 4,129 to 5,443

For a detailed breakdown of the student enrollment growth by school/college, see Section IV.4, Enrollment and Population Projections.
**NO-GROWTH ELEMENTS**

There are certain types of university space that do not require growth and will continue to function during this planning period. For the future program analysis, these items were excluded from the projected growth analysis. The no-growth program elements total 261,570 ASF and include:

- Health Sciences Library and PASCAL (97,763 ASF)
- Building mail center space (various) (3,188 ASF)
- Campus leases to other institutions (UCH/audit/benefits/etc.) (38,587 ASF)
- Building maintenance space (various) – excluding campus services facility (16,557 ASF)
- EH&S building space (various) – excluding EH&S facility and Building 401 (2,851 ASF)
- Building Service/Mechanical/Circulation/Central Plant (various) (82,034 ASF)
- Building environmental service space (various) (17,757 ASF)

The university space inventory includes 122,000 ASF of leased space in facilities proximate to CU Anschutz and National Jewish Hospital SOM Immunology. Although no additional lease space was figured into the future space needs analysis, it is anticipated that the university will continue to lease space and potentially increase the amount of nearby leased space to help address immediate and appropriate space needs as programs start, develop, and continue to grow.

**SPACE/FACILITIES**

The buildings known as the Series 400 buildings (400, 401, 402, 406, and 407) will continue to be utilized over this master plan period (2012–2022). However, these facilities are not comparable to the state and functionality of modern buildings. Toward the end of this 10-year planning period, studies should be conducted to determine their usefulness and the best option for the university.

The perinatal research program will remain in the current Perinatal Research Facility location northeast of the Anschutz Medical Campus.

It is anticipated that over the 10-year master plan period, the university will maintain its current lease inventory of 236,000 ASF. However, as each lease expires, the associated program space of each lease should be reviewed to determine if a more applicable function and location in a future project would be a better option for the university.