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## CPBS Faculty and Staff

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Computational Bioscience Educational Mission Statement

The Computational Bioscience Program of the University of Colorado School Of Medicine 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. Our curriculum integrates training in computation and biomedical sciences with student research and teaching activities that grow increasingly independent through the course of the program. Our graduates are able to do independent computational bioscience research, to collaborate effectively with other scientists, and to communicate their knowledge clearly to both students and the broader scientific community.

The Computational Bioscience Program is committed to continually reviewing and improving its curriculum as the science and practice of bioinformatics evolves. The following four goals represent the foundation of the computational bioscience graduate education program at the University of Colorado.

Educational Goals and Objectives

Knowledge Goals

Graduates demonstrate their knowledge of core concepts and principles of computational bioscience, and the ability to apply computation to gain insight into significant biomedical problems. This knowledge includes mastery of the fundamentals of biomedicine, statistics and computer science, as well as proficiency in the integration of these fields. Graduates contribute to the discovery and dissemination of new knowledge.

Knowledge Objectives

1. Demonstrate knowledge of the scientific principles that underlie the current understanding of molecular biology, statistics and computer science.
2. Demonstrate an ability to productively integrate knowledge from disparate fields to solve problems in biomedicine using computational methods.
3. Demonstrate knowledge of the types and sources of data most commonly used in computational bioscience, including knowledge of all major public data repositories.
4. Demonstrate the knowledge of the classes of algorithms most often applied in computational bioscience, and their domains of applicability.
5. Demonstrate an understanding of the principles and practice of the scientific method as applied in computational bioscience, including experimental design, hypothesis testing, and evaluation of computational systems.
Communication Skills Goals
Graduates demonstrate interpersonal, oral and written skills that enable them to interact productively with scientists from both biomedical and computational domains, to clearly communicate the results of their work in appropriate formats, and to teach others computational bioscience skills. Graduates are able to bridge the gap between biomedical and computational cultures.

Communication Skills Objectives

1. Communicate effectively, both orally and in writing, in an appropriate range of scientific formats, including formal presentations, collaborative interactions, and the critique of others' work.
2. Demonstrate familiarity with both biomedical and computational modes of expression, and be able to communicate clearly across disciplinary boundaries.
3. Demonstrate commitment and skill in teaching to and learning from students, colleagues, and other members of the scientific community.

Professional Behavior Goals
Graduates demonstrate the highest standards of professional integrity and exemplary behavior, as reflected by a commitment to the ethical conduct of research, continuous professional development, and thoughtfulness regarding the broader implications of their work.

Professional Behavior Objectives

1. Act in an ethically responsible manner, displaying integrity, honesty, and appropriate conduct at all times.
2. Recognize the limits of one’s knowledge, skills, and behavior through self-reflection and seek to overcome those limits.
3. Always consider the broad significance of one’s professional actions, including their implications for society and the living world.

Self-Directed and Life Long Learning Skills
Graduates demonstrate habits and skills for self-directed and life-long learning, and recognize that computational bioscience is a rapidly evolving discipline. Our focus is on the development of adaptive, flexible and curious scientists able to comfortably assimilate new ideas and technologies during the course of their professional development.

Self-Directed and Life Long Learning Skills Objectives

1. Recognize the need to engage in lifelong learning to stay abreast of new technologies and scientific advances in multiple disciplines.
2. Locate, evaluate and assimilate relevant new knowledge and techniques from a wide variety of sources.
The Graduate School
Directory
David Engelke, Ph.D., Dean.................................................................David.Engelke@ucdenver.edu
Lauren Field, Executive Asst. to the Dean...........................................Lauren.Field@ucdenver.edu
Inge Wefes, PhD., Associate Dean....................................................Inge.Wefes@ucdenver.edu
Shawna Cox, PhD., Assistant Dean...................................................Shawna.Cox@ucdenver.edu
Teresa Bauer-Sogi, Admissions & Student Progress Program Manager....
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Pat Goggans, Events Coordinator ....................................................Pat.Goggans@cuanschutz.edu
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Bruce Mandt, Ph.D., Director of Postdoctoral Office.........................Bruce.Mandt@cuanschutz.edu


Ph.D. Comprehensive Examination Packet information:
After completing or registering for all program-required non-dissertation coursework, and concurrently with applying for admission to candidacy for the Ph.D., students must take a comprehensive examination in their respective discipline. This examination (written or oral or both) will test a student’s mastery of a broad field of knowledge, not merely the formal coursework which he/she has completed. This examination must be completed no later than the end of the student’s third year. Students must complete 30 credit hours of didactic coursework to be eligible to schedule this exam. Additional instructions and deadlines for completion of the forms are provided on the graduate school website.

Ph.D. Dissertation Defense Packet information:
Once a student has completed their dissertation and before the degree is conferred, a final examination on the dissertation and related topics is conducted in two parts, an oral presentation of the dissertation research that is open to the public, and a closed examination conducted by the examining committee.
credit hours of doctoral thesis credit is required to schedule the thesis defense. This examination must be completed no later than the end of 7 years or sooner dependent on your mentor. Instructions and deadlines for completion of the forms are provided on the graduate school website.

**Policies**

Academic policies and procedures can be found in the Graduate School Policies and Procedures Document, located on their website. [http://www.ucdenver.edu/academics/colleges/Graduate-School/current/Documents/resources/Graduate-School-Policies-and-Procedures.pdf](http://www.ucdenver.edu/academics/colleges/Graduate-School/current/Documents/resources/Graduate-School-Policies-and-Procedures.pdf)

**Other Important Numbers**

Student Health Insurance/Services………………………………303-837-2127; studentinsurance@cuanschutz.edu

Registrar’s Office…………………………………………………303 724 800; registrar@cuanschutz.edu

Ombudsman’s Office………………………………………………..Building 500, Room C7005, 303 724 2950 melissa.connell@ucdenver.edu and lisa.neale@ucdenver.edu
Keeping In Touch

Email
Your university e-mail username and password formats will be mailed to you in a communication from your school or college. If you have paid your deposit and not received username and password information, contact your program administrator. You must Login to webmail to activate your username and change your password. The initial password is a formula; please insert your personal information. The change password page will look like this linked page. The new password and your username provide access to:

- campus e-mail
- the student portal, [http://www.ucdenver.edu/UCDAccess](http://www.ucdenver.edu/UCDAccess)
- computers in the library, labs, etc.
- student printing & other UNIVERSITY domain resources.

Detailed instructions regarding email activation are included

Mailboxes
Students share a mailbox in the Department of Pharmacology Mail Area. This mailbox is labeled Hunter Lab. Check this mailbox daily to avoid missing important announcements and other information.

Email Listserves
After receiving your firstname.lastname@cuanschutz.edu email account, you will be added to the CPBS mailing list. This list will keep you informed about seminars, meetings and let you send out messages to the entire CPBS group.

Department Website
[http://www.ucdenver.edu/academics/colleges/Graduate-School/academic-programs/computational-bioscience/Pages/home.aspx](http://www.ucdenver.edu/academics/colleges/Graduate-School/academic-programs/computational-bioscience/Pages/home.aspx)

Other Things You Should Know...

Weekly Events
Students are required to attend Monday Seminars and monthly Journal Club meetings. Seminars are scheduled on Monday’s in RC1 North 6107 from 10:30-11:30am. A list of events can be found on our website - just click on the events tab.

Mailing Address
Your Name
University of Colorado School of Medicine
Computational Bioscience Program
MS 8303
12801 E. 17th Ave.
Aurora, CO 80045
Travel instructions

1. First you must obtain approval from your advisor or Dr. Hunter (first year students) for any travel.
2. You must add Kathy Thomas & Caitlin Moloney as a delegate for both your financial and travel in Concur.
3. After your travel is approved by Dr. Hunter, notify Kathy Thomas of your detailed travel plans. Please specify name of conference or school you are visiting, purpose, dates of travel, destination, preferred departure times and frequent flyer accounts (if applicable).

- Booking flights and making hotel reservations is done in Concur via the CU Expense System. See directions below.
- Making hotel reservations is your responsibility. You will book and pay for your hotel, then be reimbursed after the travel is complete. You must present a detailed receipt to be reimbursed.
- Upon completion of your trip, you may be reimbursed for additional costs such as ground transportation and baggage. It is very important that you obtain an ITEMIZED receipt for any expenses you wish to claim. Please turn in all itemized receipts to Kathy Thomas promptly. More information on travel is available at https://www.cu.edu/psc/payables/travel.htm
- After returning from a conference you’ll be asked to give a brief presentation of the meeting highlights and your participation.

Tutoring

Tutoring is available on an individual basis. Dr. David Pollock (David.Pollock@ucdenver.edu) should be contacted immediately if you need assistance with any course work, English, or writing. Depending on your needs, some tutoring may be paid by the department or program to help ensure your success.

Advising

General academic advising is done by the program administrator, Caitlin Moloney. Be sure to meet with her prior to registration and before completion of program milestones (prelims, comps, etc.) to ensure you are adhering to the graduate school rules. Once students have passed their comprehensive exam, they are admitted to candidacy for their Ph.D. At this point, students are required to meet with their full thesis committee at least once per year, though twice per year meetings are advisable.

Priorites in the first few weeks

Orientation

All new students must attend the in-person and on-line orientation, as per the Graduate School.

Payroll

It is important to establish a checking account as soon as possible. The University issues all paychecks, including student fellowship and stipends, as direct deposits. Students should be sure to have a voided check available when filling out payroll forms. Each student is required to produce a driver’s license (or state ID) and a social security card for payroll purposes.

Establishing Residency

(The following pertains only to out-of-state/international students)

New non-resident students must immediately obtain documentation to support the Petition for State Residency. First-year students must make collecting this documentation a priority. Funding will be available, assuming satisfactory academic progress, only if the student qualifies as an in-state resident after the first year of study. To be awarded in-state tuition status at the beginning of your second year you must establish that you have resided in the state for a year and established several kinds of connections to the state. It is important that these “connections” be established as soon as you arrive in the state to
show the one-year history required by the University. Some things that can support these connections are a signed lease, rent receipts, utility bills in your name, a Colorado driver’s license and license plates, and voter registration.

Prior to the start of your second academic year you must fill out and have notarized the Petition for In-State tuition classification and submit this along with your supporting documentation to the office of Admissions. Petition forms are available in the Admissions office. Notaries can be found in the Financial Aid Office, the Chancellor’s office, and the Graduate Nursing office. Failure to complete the In-State tuition classification process could jeopardize your continued financial support in the Computational Bioscience Program.

For driver’s license offices, license plate offices and voter registration please consult the local city phone book. For complete directions on establishing Colorado in-state residency for tuition purposes please consult the Registrar’s website at:

http://www.ucdenver.edu/anschutz/studentresources/Registrar/StudentServices/Residency/Pages/Residency.aspx

Get Connected

Get your student ID card
UC Denver access control cards are issued to all students by the ID Badging Office located in Fitzsimons Building, 1st floor, north of the cafe, in room N1207. During orientation, photos are taken and ID cards and RTD College Passes are issued. Student ID/access cards are NOT made available until you have paid your matriculation fee AND attend orientation – all students are scheduled to have pictures taken and IDs distributed by your school/program. Access Control cards serve the dual purpose of identification on campus and after normal business hours access control at a number of exterior and interior locations. Your card can be programmed to allow after hours parking in all gated lots (6 p.m. – 6 a.m. MF, and all day Saturday/Sunday) on the Anschutz Medical Campus. If you choose to request parking after hours (6 a.m. – 6 p.m.), your ID will be programmed for that access as well – you must check in at the Parking Office in Fitzsimons Building, 1st Floor west side of the Food Court seating area, to have your card programmed for after hours parking. There is a $10 fee to activate your card for any parking service. Students who withdraw or graduate are required to return the access control card –access and therefore, access to buildings/labs/parking is removed from your card upon graduation. Lost cards are replaced at no charge the first time. Fees are charged for subsequent losses.

Activate your student email account
See Appendix C for detailed instructions.

Register for classes
The UCDAccess online Student Self-Service Portal allows you to apply for financial aid, search for your classes on various criteria, view real-time numbers of seats available, enroll and pay for your classes, order transcripts, and more. To log into the UCDAccess portal you will need your official University username and password (detailed on page 5). http://www.ucdenver.edu/UCDAccess Consult with your Program Administrator regarding your schedule of courses.

Enroll in Student Health Insurance
All degree and specific approved, certificate-seeking students enrolled in five or more credit hours must take the School of Medicine’s Student Health Insurance Plan unless they can prove enrollment in other comparable insurance. See the Student Health Insurance’s website for more details:
http://www.ucdenver.edu/life/services/student-health/insurance/Pages/Waiving-Health-Insurance.aspx
Log into the Employee Portal

As an employee of the University you have access to a portal that will allow you to view your pay advice/check, update your address and emergency contact information, print your W-2, open the expense system and request travel reimbursement, view the holiday schedule and a host of other vital announcements and resources. Go to http://my.cu.edu choose the Denver campus and enter your email login credentials.

Using the CU Expense System

The expense system is used to process travel authorizations and the subsequent reimbursements and is access from inside of the employee portal. To access the expense system, log into my.cu.edu, click on the “My Tools” tab, then click the “Open CU Expense System” button. A new screen will open and now you are logged into the expense system.

Set up your profile

The Profile area, located along the upper left of the screen, allows you to see personal information and control certain aspects of the Expense System. The EXPENSE PREFERENCES page allows you to designate whether you wish to receive specific system-generated emails, see Expense System prompts, or display certain items.

Set up your delegates

Before you can travel or be reimbursed for anything you must add Kathy Thomas and Elizabeth Wethington as prepare delegates in your expense system profile. A delegate is an individual authorized to act, in the Expense System, on behalf of another person. Delegates are identified on the EXPENSE DELEGATES page, which is located under Profile. Click Profile from your Expense System home page (upper left corner of your screen), then click Expense Delegates (left-side menu). To add them, click Add Delegate. Search for the employee you wish to add as your delegate. You can search by name, employee ID, or email address. Select your delegate from the resulting list. Check the Can Prepare checkbox. The Can View Receipts checkbox will automatically appear checked as this gives your delegate the ability to view receipt images. If you would like your delegate to receive emails from the Expense System regarding your Expense System tasks (such as status changes, reminder emails, etc.), also check the Receives Emails checkbox. Click Save; a message will appear confirming your delegate has been saved. Additional directions are located at https://www.cu.edu/psc/help/od/pdf/Identifying%20Delegates%20SbS.pdf.

Submit a report for reimbursement

After setting up your profile and assigning delegates you should familiar yourself with submitting an expense report.

1. Select the expense report ready for submission from the Active Work section of the Expense System home page.
2. The EXPENSE LIST page of the expense report will appear. Review the details entered for each transaction by selecting the transaction on the left side of the screen.
3. To review a transaction’s allocation, hover your mouse over the pie-chart icon for the Allocations pop-up to appear.
5. The certification statement appears in this window, as will all transactions requiring receipts. To review the certification statement, click the Certification Statement link. Close the separate window when finished.
6. Verify that all required documentation has been attached and are legible. Close the separate window that opens.
7. If you agree to the University's certification statements, click Accept & Submit.

If the Approval Flow page appears, review the approval path and click Submit Report. The Report Submit Status window will appear; click Close. You have now submitted your reimbursement expense.
report to your approver. Additional directions are located at https://www.cu.edu/psc/traininghelp/. Click on “online learning resources.”

Student Financial Support
As a Ph.D. student in the Computational Bioscience Program you are provided full tuition, health and dental insurance, and a stipend of $31,000 for living expenses (for the academic year 2019-2020). All future funding is dependent on satisfactory academic progress in the program (see research rotations) and selection of thesis advisor and at the end of the first-year. Once accepted into a thesis laboratory, your tuition, stipend, and benefits will be funded by your advisor. It is very important that you successfully complete the required research rotations during the first-year, in order to maintain funding. Students who perform exceptionally well in the first year may be awarded funding from our National Institutes of Health, NLM training grant. In addition to providing full tuition, health and dental insurance, and a stipend of $31,000 for living expenses, the training grant will cover the cost of travel to conferences and computer equipment for your research. The stipend is paid monthly via direct deposit, on the last working day of each month.

Each student is responsible for books, housing, and any other expenses not specifically mentioned above. The Program Administrator will obtain a copy of the students’ bills following registration for the current semester. The Program Administrator will ensure that all appropriate charges on the student bills are paid. It is only necessary to deliver a copy of your bill to the Student Coordinator if there is a problem or question. Each student is personally responsible for late fees and fines, so it is critical that all necessary paperwork arrive at the CPBS office in a timely fashion and that all necessary registrations are completed timely. Moreover, students registering past the semester registration deadline set by the office of Admissions & Records are assessed a $60 late registration fee, which is also the student’s responsibility by explicit policy of the Assistant Dean of the Graduate School.

Student expenses, including the stipend, will be paid until graduation as long as the following conditions are met:

1. Student maintains satisfactory academic progress (see above)
2. Student becomes eligible for in-state tuition after the first-year.
   a. Students who fail to qualify for in-state residency will be responsible for the difference between in-state and out-of-state/international tuition.
3. Student passes the Preliminary Examination at the end of the first year.
4. Student completes the University Comprehensive Examination by the end of the second academic year.
5. Student’s chosen dissertation advisor is able to provide support during the research phase of the Program.
   a. If the advisor can no longer fund the student, it is the student’s responsibility to make other arrangements. The program will assist in this effort to the best of its ability.
6. Student schedules the Dissertation Defense within approximately five years of entering the Program.

Degree Requirements and Coursework
**Required Courses**
The "required" credit hours in the Computational Bioscience Program, which must be completed at UCD-AMC, include a minimum of 30 semester credit hours of Computational Bioscience courses and 30 semester hours of doctoral thesis research. Students may transfer up to 20 semester hours from prior work. The required Computational Bioscience courses in the program are described below. Consequently, 20 credit hours of relevant graduate-level course work can be taken at AMC, other CU campuses or other universities within the United States and transferred into the program. Relevant course work must be distributed equally among Human Biology, Math/Statistics and Computer Science. In order to meet the requisite credit hour requirements, the student must successfully pass (B or better) selected
courses that fulfill the above conditions during the first four semesters of the program. If the student has coursework they wish to transfer into the program, they must discuss with the Program Director which credits would be acceptable, then fill out the necessary paperwork with the Program Administrator.

**Noncredit Library Tutorials:**

Students must complete the BITS and NCIB library tutorials described on page 28 in addition to credit coursework described below.

### Biomedical Sciences “Core” Courses

This is a set of interdisciplinary courses required for first year graduate students enrolled in basic science Ph.D. programs at UCD|AMC. The objective of the courses is to provide the basic science information and introduction to the skills required for a successful research career in all disciplines of modern biomedical sciences. Topics cover the fundamentals of biochemistry, molecular biology, cell biology, developmental biology, molecular genetics and biomolecular structure. Specialty topics required by individual programs are taken usually during the spring semester of the first year, and in some cases in the second year to round out the curriculum.

**Administrative Assistant/Office of the Dean of the Graduate School**

Pat Goggans, Events Coordinator in the Graduate School, is the administrative assistant for the IDPT Core Courses. Please contact Ms. Goggans (Graduate School contact information) for administrative matters including problems downloading course documents.

<table>
<thead>
<tr>
<th>Biomedical Sciences Core Course</th>
<th>Course Information</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations in Biomedical Sciences IDPT 7806</td>
<td>Foundations in Biomedical Sciences</td>
<td>6</td>
</tr>
<tr>
<td>Core Topics A in Biomedical Sciences IDPT 7810 (then appropriate section)</td>
<td>Held for 3 weeks-starting in November</td>
<td>1 to 2</td>
</tr>
<tr>
<td>Core Topics B in Biomedical Sciences IDPT 7810 (the appropriate section)</td>
<td>Held last 3 weeks of the semester starting after Thanksgiving</td>
<td>1 to 2</td>
</tr>
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</table>

**Computational Bioscience Required Coursework:**

**CPBS 7711 Methods and Tools in Biomedical Informatics (Taken in Fall of your First Year)**

Credits: 4 semester hours
An introduction to the theory and practice of bioinformatics and computational biology. Topics include: the analysis of macromolecular sequences, structures, gene expression arrays, proteomics, and management of the biological literature.

This is a team-taught course. You will get a chance to meet and interact with each of the core faculty in the computational bioscience program.

**CPBS 7712 Research Methods in Biomedical Informatics (Taken in Spring of your First Year)**

Credits: 4 semester hours  
Prerequisite: BIOI 7711

Status: Required  
How to plan, develop, execute and report on research in computational biology. In this course, each faculty member in the computational bioscience program will present a number of lectures on the research currently being conducted in his or her laboratory. Students will plan, execute and report on a research project of their own. This course is a stage in the transition from well-educated students to independent researchers.

This is a team-taught course. You will get a chance to meet and interact with each of the core faculty in the computational bioscience program.

*Please note: during the upper years of the program it’s required that students serve as the Teaching Assistant for one of the above courses. This is a great resume builder and further solidifies your Bioinformatics knowledge.*

**CPBS 7605 Ethics in Bioinformatics**  
(Taken Fall of 1st or 2nd Year as indicated by Program Administrator)  
Credits: 1 semester hour  
Status: Required  
Discussion of professional conduct, social implications of research and questions raised by biomedical research with an emphasis on topics relevant to computational biologists. Active student participation in required.

**BIOS 7606 Statistics for the Basic Sciences**  
Credits: 3 semester hours  
Prerequisite: permission of instructor  
Status: Required  
This course provides an overview of fundamental concepts in statistics such as hypothesis testing and estimation and it provides an overview of statistical methods (for example, regression and analysis of variance) that apply to many areas of science.  
*Students may take an alternative statistics course if their background would benefit from a more upper level stats course.*

**CPBS 7650 Research Rotations (2-3 Required)**  
Credits: 1 semester hour  
Prerequisite: permission of instructor  
Status: Required  
This requirement is designed to give the student a better understanding of other sciences, promote collaboration between departments, and communicate effectively with biologists and scientists. The student must pick from Associated Faculty and ask permission to join their lab plus decide on a project, complete and submit the pre-rotation laboratory agreement, and deliver a short seminar at the time of completion. It is considered a tool for selecting a dissertation subject.

**CPBS 8990 Doctoral Thesis**  
Credits: 30 semester hours
Prerequisite: Successful completion of required Computational Bioscience courses.
Status: Required
Doctoral study for the Ph.D. degree by students in the Computational Bioscience program only.

Annual Grant Proposal Requirement
Upper level (post comprehensive exam students) are highly encouraged to work with their mentor and submit a grant proposal to pursue self-funding. At least one per academic year should be planned and submitted.

Elective Courses
The following courses are optional courses in the program that can be taken for credit and used to fulfill the necessary credit hour limits. It will be possible—and sometimes strongly encouraged—for students to take other graduate level courses (in biology, mathematics and computer science) at UC Denver or from any other UC campus to achieve the appropriate distribution of expertise that the program is seeking in its students. Students must obtain prior approval from their graduate adviser or program director before taking such courses. The following list summarizes some of the available courses in biology, mathematics and computer science that have been identified to fill in deficient content areas of study.

Computational Bioscience Electives

CPBS 7620 Genomics (taught by Dr. James Sikela)
Credits: 2+1 semester hours
Cross listed: STBB 7620, HMGP 7620, MOLB 7620

CPBS 7630 Computational Methods for Addressing Big Data Challenges in Biomedicine (taught by Dr. Tzu Phang & Dr. James Costello)
Credits: 3 semester hours

CPBS 7655 Statistical Methods in Genetic Association Studies
Credits: 3 semester hours
Cross listed: BIOS 6655
Prerequisites: BIOS 6612 or permission from instructor

BIOS 7659 Statistical Methods in Genomics (taught by Dr. Katerina Kechris)
Credits: 3 semester hours
Prerequisites: BIOS 6611 or equivalent graduate level statistics course, instructor consent

CPBS 7660 Analysis of Genomics Data Using R and Bioconductor (taught by Dr. Tzu Phang)
Credits: 2 semester hours
Cross listed: BIOS 6660
Prerequisites: BIOS 6611 or equivalent

CPBS 7785 Independent Study
Credits: 1 to 3 semester hours
Prerequisite: BIOI 7711, 7712 and permission of instructor
This course is listed for the benefit of the advanced student who desires to pursue one or more topics in considerable depth. Supervision by a full-time faculty member is necessary.

CPBS 7791 Readings in Computational Bioscience
Credits: 1 semester hour
Prerequisite: permission of instructor

CPBS 7792 Special Topics in Computational Bioscience
Credits: 1 to 3 semester hours
Prerequisite: permission of instructor

**Biostatistics Courses**

**BIOS 6611 Biostatistical Methods I**
Credits: 3 semester hours
Prerequisites: Differential Calculus

**BIOS 6612 Biostatistical Methods II**
Credits: 3 semester hours
Prerequisites: BIOS 6611

**BIOS 7711 Longitudinal Data Analysis**
Credits: 3 semester hours
Prerequisites: BIOS 6612

**BIOS 7712 Special Topics for Correlated Data**
Credits: 1 semester hour
Prerequisites: BIOS 7711

**Computer Science Electives**
CSCI courses are available on the Boulder Campus. See [http://www.cs.colorado.edu/courses/catalog/](http://www.cs.colorado.edu/courses/catalog/) for complete course descriptions.

**CSCI 5314 Algorithms for Molecular Biology**
Credits: 3 semester hours
Same as MCDB 5314.
Prerequisites: CSCI 2270 and one of CSCI 3104, CHEM 4711, IPHY 4200 or MCDB 3500.

**CSCI 5582 Artificial Intelligence**
Credits: 3 semester hours
Prerequisites: CSCI 3155 or equivalent

**CSCI 5622 Machine Learning**
Credits: 3 semester hours
Prerequisites: Graduate standing or consent of instructor

**CSCI 5817 Database Systems**
Credits: 3 semester hours
Prerequisites: CSCI 2270. Recommended: CSCI 3287 and CSCI 3753

**CSCI 5832 Natural Language Processing**
Credits: 3 semester hours
Same as LING 5832
Prerequisites: Graduate standing or consent of instructor

**CSCI 7000 Bioinformatics and Genomics**
Credits: 3 semester hours
Same as MCDB 5520
### Academic Planning

#### 1st Year Curriculum & Milestones

<table>
<thead>
<tr>
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<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
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<td>IDPT 7806 Foundations in Biomedical Sciences</td>
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<td>IDPT 7810 Core Topics in Biomedical Sciences A</td>
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<td>IDPT 7810</td>
<td>IDPT 7810 Core Topics in Biomedical Sciences A</td>
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<td>Methods and Tools in Biomedical Informatics</td>
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<td>CPBS 7605</td>
<td>Ethics (offered every other year)</td>
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<td>Research Methods in Biomedical Informatics</td>
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<tr>
<td>CPBS 7650</td>
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<td>Research Rotation #1 (required ~Jan.-March)</td>
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<tr>
<td>CPBS 7650</td>
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<td>Research Rotation #2 (required ~March-June)</td>
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Preliminary Examination (late June or early July)

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<tbody>
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<td>Doctoral Thesis or Research Rotation #3 (Optional ~July-August)</td>
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Choose mentor (mid-to-late August)

#### 2nd Year Curriculum & Milestones

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<td>Statistics for the Basic Sciences</td>
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<td>Dept Varies</td>
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#### Years 3-5 Curriculum & Milestones

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<tr>
<td>CPBS 8990</td>
<td>Doctoral Thesis*</td>
<td></td>
<td>5 credits/semester</td>
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</table>

Dissertation Committee meeting and Dissertation update talk – 1 per year each at ~ 6 month intervals
Dissertation Defense (You must complete 30 credits of CPBS 8990 before or in the semester you defend)

Total Credits = 60 (30 from coursework and 30 Doctoral Thesis)

*Do not take more than 10 credits of CPBS 8990 before taking the Comprehensive Exam.

**Number of elective credits needed depends upon educational background (Comp Sci, Bio, Math, etc) and number of credits transferred into the CPBS program from other graduate programs.
**Research Rotations**

In addition to didactic training, research rotations constitute an important component of the first-year of the program, providing students with intensive introductions to experimental design and quantitative data analysis, as well as introducing them to available research opportunities. Each student will conduct rotations in the laboratory of a CPBS faculty member, prior to choosing a primary thesis advisor (at the end of the first year). Students should approach the research rotations with the primary goal of identifying their future thesis advisor. All students are required to complete at least two rotations. This can be supplemented with a third rotation in either the fall of the first year or the summer after prelims.

Because of the interdisciplinary nature of the CPBS Program and the students who enter the program, the laboratory rotations aim to provide students with the opportunity to broaden their scientific experience in Computational Bioscience and ultimately choose a laboratory for their thesis research. Students are expected to complete and submit a pre-rotation laboratory agreement (available at http://compbio.ucdenver.edu/pages/requiredcourses.html), at least two weeks prior to the start of the rotation and deliver a post-rotation talk at the end of the rotation.

**How to select a lab for rotation**

After reviewing the work being conducted in the lab of your interest, make an appointment to speak with the PI and have an idea ready for the type of work you are interested in. It is the student's responsibility to take the initiative to contact a rotation advisor and arrive at an agreement with the advisor in a timely manner.

**What happens during rotations?**

Students are expected to devote non-classroom time to the rotation. This works out to approximately 25 hours per week for 12 weeks. You will be given space and are expected to join in discussions with the group. Your project should be discussed with the PI or a senior member of the lab at the beginning of the rotation and when formulating your project you should focus on identifying a specific hypothesis or claim, explaining why the hypothesis is interesting to test, defining what method could be used to test it and defining the appropriate way to report results to be meaningful for your chosen research area. Although a fully completed project is desirable, the short rotation period may not allow this in which case you should end your rotation with an analysis of what has been learned to this point, and what steps would be necessary for this to be a fully completed project. The most important aspect of the rotation is familiarizing yourself with the work of the lab, participating in meetings, discussions, and seminars, and reporting on the project to the extent that it was completed.

Annual Rotation Schedule (approximate only):
- January – March (12 weeks @ 25+hr/wk)
- March- June (12 weeks @ 25+hr/wk)
- July – August - OPTIONAL (6 weeks @ 40+hr/wk)

Students are required to complete two rotations but are encouraged to do three rotations.

**Post-rotation talk**

Post-rotation talks are scheduled near the end of each semester (fall and spring) and are similar to 'lightning talks' at a conference or symposium. Unlike other presentations, lightning talks last only a few minutes and several will usually be delivered in a single period by different speakers. You should prepare a 4-6 slide presentation and include title, introduction, hypothesis, results, methods, conclusions, and acknowledgements. You should be prepared to speak for 10-15 minutes, including time for audience questions. Your talk should focus on a specific hypothesis or claim, and explain why the hypothesis is interesting to test, what method you chose to test it, what the outcome of the test was, and why the outcome is meaningful and significant for your chosen research area. If you have worked on the same project outside the rotation period, you must clearly distinguish what you did during the rotation period from your other work. You should review the content of your presentation with your rotation advisor prior
to giving the talk. Ideally, you will have been discussing your rotation with your advisor weekly, thus the contents of your talk will not be a surprise to anyone. Rotations are graded by the faculty at large, rather than by your rotation advisor, so your talk reflects on your advisor as much as it does on you.

**Preliminary Examination**

The preliminary examination is given at the end of the first year, is the departmentally administered preliminary examination. The preliminary examination is a broad-based written examination covering the didactic material presented during the CPBS 7711 and CPBS 7712, and the exam incorporates a week-long programming problem. The exact format of the examination, time and number of questions, may change on an annual basis but typically the layout is as follows:

- **Day One:** Short Answer Essays—several questions are presented and you must answer a certain number of them. These responses from you are due at the end of the day.
- **Day Two:** Long Answer Essay—you are given one question in which you must answer fully. This response from you is due at the end of the day.
- **Day Three:** Programming—a programming question is given and you will have approx. 1 week to develop your program and submit. Due be sure to include information for the grader on how to run the program.

A passing grade is required for continuation in the program. In the case of a failing grade, it is entirely at the discretion of the preliminary exam committee whether to permit re-examination on all or part of the requirement, or to terminate the student's matriculation. Assuming successful completion of the preliminary examination requirement, a student may immediately begin work in a dissertation laboratory and become eligible to take the University comprehensive examination.

The statement below clarifies the Graduate School policy on students who do not pass the preliminary exam. Passing the exam requires that a student earn a passing grade on all parts of the exam if the exam is separated into multiple days; failure on either part results in failure of the entire exam. From the Graduate School Rules:

> “Each program is responsible for ensuring that students are qualified for doctoral study through a preliminary examination. The results (Pass/Fail) must be reported to the Graduate School. A student who fails the examination is subject to immediate dismissal from the Graduate School upon the recommendation of the program and concurrence of the Dean. At the program’s discretion, a student who fails the examination may retake it once.”

In addition to the program having the discretion to allow a student to retake the preliminary examination, the program has full responsibility for designing the compensatory examination and for determining what constitutes a passing grade.

**Selecting A Thesis Advisor and Thesis Advisory Committee**

The selection of a thesis advisor is one of the most important decisions a student will make during the course of his or her graduate career. Each student must select a thesis advisor from among the Core Training Faculty. The first year of the training program is designed to provide each student with an opportunity to interact with the faculty so that he or she feels familiar with the faculty members and their respective research interests. The student should know which faculty member he or she wishes to work with before the date of the Preliminary Examination; however, a thesis advisor may be selected at any time during the first year. In the unlikely event that a student is unable to select a thesis advisor prior to the beginning of the Fall semester of the second year of graduate training, the Program reserves the right to dismiss the student from the program.

After a thesis advisor and project have been chosen, the student and advisor will request that three or four faculty members serve as the Thesis Advisory Committee (TAC). The TAC meets once annually (every 6 months is encouraged) with the student and his or her thesis advisor to monitor progress of the project and to provide additional input and suggestions. The student must take the initiative in scheduling TAC meetings. After each committee meeting, the student will complete the Thesis Advisory Committee Meeting Summary with his or her TAC chairman. This web form must be completed no later the two
weeks following the TAC meeting. If the TAC meeting is accompanied by an annual presentation, then both the presentation and the meeting forms must be completed at http://predocprogress.ucdenver.edu.

**Comprehensive Exam**

The University-based Comprehensive Examination is an orally defended Doctoral thesis proposal taken at or near the end of the second year. It is based on the student's doctoral thesis proposal, but can include other areas of study as well. This exam typically takes the format of presenting the problem, defending its innovation and demonstrating a workable knowledge of the field of study to assure that independent work is eminent.

The student's doctoral thesis committee judges the quality of the examination and makes recommendations for further academic advancement.

It is necessary that students complete all course work or finish all course work in the same semester as the exam, pass their preliminary examination and have a doctoral thesis topic before they can schedule their Comprehensive Examination. After successfully completing this examination and meeting all other Graduate School requirements, students are recognized as formal Ph.D. candidates who can proceed with their independent research work that will ultimately culminate in their Ph.D. dissertation.

You must be registered for at least one doctoral thesis credit hour (CPBS 8990) during the semester in which the examination is taken.

The Comprehensive Exam contains three major components:

1. The written Doctoral thesis proposal
2. The thesis presentation
3. The oral defense of the Doctoral thesis proposal

After completing or registering for all program-required non-doctoral thesis coursework, and concurrently with applying for admission to candidacy for the Ph.D., you must take a comprehensive examination in your field of concentration and related fields. This examination (written, oral, or both) will test your mastery of a broad field of knowledge, not merely the formal coursework which you have completed. The oral part of the comprehensive examination is open to members of the Graduate Faculty. This examination must be completed no later than the end of your third year. Under extenuating circumstances, and with the recommendation of the Program Director and concurrence of the Dean, the examination may be taken during the fourth year. A student cannot take the comprehensive examination with less than a 3.00 G.P.A. or before the Graduate School application is submitted and approved. The complete policy and procedure for taking the comprehensive exam is listed on the Graduate School website at [www.ucdenver.edu/academics/colleges/Graduate-School](http://www.ucdenver.edu/academics/colleges/Graduate-School) under the Students Services--Ph.D. Resources page.

The necessary steps to schedule and take the comprehensive exam are as follows:

1. Form a Comprehensive Exam Committee & Doctoral Thesis Advisory Committee
   Shortly after selecting a thesis advisor, you, in collaboration with your mentor, shall recommend a Doctoral Thesis Advisory Committee subject to approval of your Program Director. Inform the Program Administrator of the committee (5 persons, typically 4 inside program members and 1 outside) to ensure all members have appropriate graduate faculty status. Although it is recommended that the Doctoral Thesis Advisory Committee be the same as the Comprehensive Examination Committee, the two committees need not be identical. The Doctoral Thesis Advisory Committee will serve as an advisory function to you and your mentor, and shall also monitor your progress in generating and/or collecting data to be used in the writing of the doctoral thesis. The Doctoral Thesis Advisory Committee will give you formal permission to write the thesis once sufficient data have been collected and analyzed. The Doctoral Thesis Advisory Committee shall meet at least once each year, usually during the students thesis update talk. Records of the meetings and of your progress will be kept in your file in the Graduate Program office. If you fail to have a Doctoral Thesis Advisory Committee meeting in the preceding 12 months, you will not be permitted to register for Spring Semester, or for subsequent academic terms. Once you are in compliance with this rule, you will be permitted to register.
2. Submit a Doctoral Thesis Proposal
   Before taking the Comprehensive Examination, you must submit a doctoral thesis proposal to the
   Program Director and to the Doctoral Thesis Advisory Committee at least two weeks prior to the
   scheduled examination date, and schedule the examination with the Graduate School by filing all
   the required Graduate School forms.

   A doctoral thesis (written presentation of novel research) is based on original investigations and showing
   innovation in computational bioscience methodology. The doctoral thesis proposal should be in a format
   comparable to a National Institutes of Health (NIH) R03 grant submission and should be between 6 and
   12 pages long. (http://grants.nih.gov/grants/funding/r03.htm). It is recommended to follow the NIH
   guidelines to include sections on Significance, Innovation, and Approach.

3. Complete the Graduate School Comprehensive Examination Forms

   The Graduate School requires three forms be submitted in order to take the University Comprehensive
   Exam. All forms and information are located on their website at
   http://www.ucdenver.edu/academics/colleges/Graduate-School/student-services/academic-
   resources/Pages/PhDedDResources.aspx

   The following must be submitted to the graduate school at least 1 month prior to your exam:
   1. Application for admission to candidacy
   2. Request for scheduling exam
   3. Transfer of credit (if applicable)

   DO NOT WAIT TO FILL OUT FORMS—the 1 month deadline is hard and if something is amiss with your
   paperwork you will be required to reschedule your examination date.

Comprehensive Exam Format
In seminar format, students will present material from the Doctoral Thesis Proposal to their committee
members and the general public. The presentation should last 45-60 minutes and allow time for general
questions. Shortly after the presentation is complete, the public audience members will be dismissed and
the oral comprehensive exam will begin. This oral examination will test your mastery of a broad field of
knowledge, not merely information from your dissertation proposal or the formal coursework which you
have completed.

Funding Proposals
Students who have passed their Comprehensive exam must submit a project proposal to seek funding for
themselves at least one per year. Please speak to your thesis advisor to determine which sponsor would
be most appropriate for your project.

Doctoral Thesis Update Seminars
After completion of the comprehensive exam students are required to give a thesis update seminars on
an annual basis and TAC mandatory meetings annually as well. Update seminars provide a good
opportunity for the student’s TAC to review the student’s progress and to invite input from the faculty as a
whole, as well as afford the student opportunities to polish presentation skills. A student in consultation
with his or her advisor, and with the approval of the Program Director, should select an outside committee
member (see below) by the date of the first thesis update (i.e., on or around one year in thesis
laboratory). Following each committee meeting, regardless of whether the student gives a public
presentation, the student and TAC chair will complete the Thesis Advisory Committee Meeting Summary
web form (see above). Once annual meetings with the TAC are mandatory but six month meetings are
strongly encouraged. Failure to meet annually with your full committee will result in denial of registration
for the next academic semester.
Thesis Defense
The student's doctoral thesis advisory committee conducts the "Defense of Dissertation" after completion of the independent research. Arrangements for the final examination must be made through the Graduate School at least two weeks in advance. This doctoral thesis document must be written, approved by an examining committee authorized by the program, and in a final format approved by the Graduate School. A near final draft of the work is submitted to the examination committee at least two weeks prior to the final oral examination (Defense of Dissertation). The examination committee must formally approve the dissertation before the candidate submits a final and appropriately formatted version of the dissertation to the Graduate School. All Graduate School guidelines and specifications must be followed. Students must register for and complete 30 semester hours of doctoral thesis credit (CPBS 8990) to be eligible for the Ph.D. degree.

Upon successfully defending the innovation of the problem and student's independent research efforts, the Ph.D. candidate must complete all the contingencies and formal recommendations of the doctoral thesis advisory committee and the Program Director. A final grade for the 30 semester hours of thesis research is assigned only after the student submits the final, approved manuscript, documenting the completed, innovative and independent research work to the Dean of the Graduate School. If approved by the Graduate School, the Dean of the Graduate School makes a recommendation to the Chancellor, on behalf of the entire graduate school faculty, who then awards the Ph.D. degree to the candidate.

Clarification of Graduate School Rules for Examination Results

Pass
You must receive the affirmative votes of a majority of the members of the committee in order to pass.

- You will need to pay attention to the rules regarding registration for the correct number of dissertation hours in the semester during which you will take the comprehensive exam in order to be eligible for it.

Pass with Conditions
The committee may feel that, although you have passed the examination, you should complete additional work. This may be in the form of rewriting submitted work, additional coursework, etc. These conditions must be satisfied within six months. You will be considered to have "passed" when these conditions are met. Failure to meet the conditions will result in failure of the examination.

- You should register for dissertation hours as if you had passed without conditions (see the notes under PASS above).

Fail
In the event that you fail the examination, you are subject to immediate dismissal from the Graduate School. At the discretion of your program, you may be allowed to retake the examination once. The remedial exam will be in a form designated by the committee and must be completed within six months.

- You will be required to meet registration requirements for the new examination.

Disciplinary Actions
The University of Colorado Anschutz Medical Campus, consistent with most other educational institutions, has a student honor code (see http://www.ucdenver.edu/academics/colleges/Graduate-School/current/Documents/resources/HonorCode.pdf). The Computational Bioscience Ph.D. Training Program endorses and enforces this honor code. A student who violates the honor code will be called before the Program Director who may assign disciplinary action, up to and including dismissal from the program.

Each student is expected to maintain satisfactory academic progress. A student whose grade point average drops below a 3.0 is placed on academic probation. To be removed from academic probation, a student must achieve a GPA of 3.0 or above for the academic semester following the semester for which the student was placed on probation, and must achieve a cumulative GPA of 3.0 or above within two
semesters of being placed on probation. A student who fails to be removed from academic probation within two semesters will be dismissed from the program.

The student requirements described in this handbook must be met by the deadlines stated. The Program Administrator & Director monitor the progress of each student. If they conclude that a student is not meeting the program’s requirements in a timely manner, they may request a meeting with that student. After review, the Program Administrator & Director may take any actions deemed appropriate, including placing conditions on the student’s continuance in the program or dismissing the student from the program. If a student is in jeopardy of missing a deadline or believes he or she is not achieving acceptable progress, the student should contact the Program Director immediately. Failure to notify the Program Director of problems in completing requirements can result in dismissal from the program.

Campus Resources

**AMC Bookstore**

The Anschutz Medical Center Bookstore provides the most complete inventory of Medical and Scientific books in the Rocky Mountain area. Over 3,000 titles are available for immediate shipment including an extensive selection of Medical titles in CD-ROM and PDA formats. Software is available at discounted education prices for faculty and students. Special orders for books and software are available for titles not in stock. The bookstore carries all books and products necessary for course work at the University of Colorado Denver Anschutz Medical Center.

**Health Sciences Library**
[http://hslibrary.ucdenver.edu/](http://hslibrary.ucdenver.edu/)

The UC Denver Health Sciences Library links people, reliable health sciences knowledge, and technology in support of effective learning, quality health care, vital research, and community service. The staff of the library strives for the highest quality services as they enhance access to the knowledge base of the health sciences, instruct users in information retrieval and management techniques, and acquire and organize a specialized collection of electronic, print and other resources in a cost-effective manner.

Location:

Health Sciences Library | University of Colorado Denver  
Mail Stop A003  
12950 E. Montview Blvd.  
Aurora, CO 80045 | USA  
Phone: 303-724-2152

**Parking and Transportation**

**Commuting to Campus**
[http://www.ucdenver.edu/life/getting-to-campus/Pages/driving-directions.aspx](http://www.ucdenver.edu/life/getting-to-campus/Pages/driving-directions.aspx)

Head to Parking and Maps for information on where to park, bike rack/bike locker locations, maps to get there, etc. The parking office is located in Fitzsimons Building on the 1st floor (west side of the food court eating area).

**Public Transportation**

The RTD College Pass is available to all active (enrolled) Anschutz Medical Campus degree seeking students (including the Dental ISP Program). The pass is supported by a mandatory, student use fee, this and other fees are covered by the program in concurrence with your tuition waiver.
The AMC RTD College Pass INCLUDES all regular fixed route service, including bus (local, express, regional), light rail, call-n-Ride, and skyRide service (free to AMC students with RTD College Pass).

Services NOT included in the RTD College Pass program are: access-a-Ride, BroncosRide, RockiesRide and other special event services.

For any term in which the degree-seeking student enrolls for academic credit at Anschutz Campus, the fee will be assessed. Waivers out of the College Pass Program will be allowed only for individual students who meet specific criteria which is outlined in the Fee Waiver Application form. Detailed information about the Waiver process may be found on the Student Assistance website.

For degree seeking students new to campus, the College Pass will not be available until the student completes orientation and receives their AMC ID Badge. For new students, the College Pass will be distributed by the Badging / Security Office during matriculation. Students will be scheduled for Anschutz Campus ID Pictures, and the RTD College Pass ID will be prepared and distributed at the same time.

**UC Denver Shuttle Service**

The University offers a bus service to the Faculty, Staff and Students that runs between the Anschutz Medical Campus (AMC) and the Lawrence Street Center Building downtown (LSC). Please visit Facilities’ website directly for up-to-date information:

http://www.ucdenver.edu/about/departments/FacilitiesManagement/ParkingMaps/Pages/ShuttleService.aspx
Student Services Office
http://www.ucdenver.edu/anschutz/studentresources/student-assistance/Pages/Student-Services.aspx

The Student Services Office’s mission is to enhance student life at the Anschutz Medical Campus of the University of Colorado Denver by providing excellence in specific non-academic and academic student services.

Location:

Anschutz Medical Campus
Education II North
3rd Floor #3200
Aurora, CO 80045
303-724-2866

The Student Service Suite includes several offices -

- Bursar/Cashier
- Diversity and Inclusion
- Financial Aid
- Registrar
- Student Health Services/Student Health Insurance

These offices are centrally located on the 3rd floor of Ed II North. The Student Services Office is responsible for maintaining smooth access to the variety of services utilized by students. In addition, they offer a variety of programming and services to all students at the Anschutz Medical Campus.

Honor Code

The Computational Bioscience Ph.D. Program, while housed in the School of Medicine is governed by the Graduate School, and follows guidelines, policies and calendars for the Basic Science departments. For clarification on specific policy questions you can contact the Graduate School at Graduate.School@ucdenver.edu or in the office (Fitzsimons Building, W5107, West Wing of 5th floor) or at 303-724-2915.

The student academic honor and conduct code and forms are located in Appendix A of this handbook or online at http://www.ucdenver.edu/academics/colleges/Graduate-School/current/Documents/resources/HonorCode.pdf.

Vacation and Holiday Policy

Students who receive full support stipends from the Computation Bioscience Ph.D. program are required to pursue their training on a full-time basis, devoting each day of the normal work week, plus any additional time required by their research projects and academic courses. Additionally, for a student to maintain full-time student status, the following guidelines for vacation and leave time have been established by the Graduate School. These represent the leave to which a graduate student is entitled; however, research demands and commitment to graduate studies often result in students using less than the allotted leave. The program does not have a formalized system for accounting for vacation and sick leave; therefore monitoring falls under the honor system and is the responsibility of the student.

Vacation and Holidays

Graduate students shall receive no more than 14 calendar days (counting all days Monday through Sunday) of vacation per annum, with no year-to-year accrual. Students shall continue to receive stipends
during vacations. The times between academic terms, spring break, and the summers are considered active parts of the training period and are not free times. Students taking courses should not take vacations when classes or exams are scheduled. Vacation time must be arranged with the dissertation advisor or program director ahead of time.

**Sick Leave and Other Leave**

Graduate students may continue to receive stipends for up to 15 calendar days (counting all days Monday through Sunday) of sick leave per annum, with no year-to-year accrual. Under exceptional circumstances, additional sick days may be granted following a written request and approval by the student’s program director. Sick leave may be used for the medical conditions related to pregnancy and childbirth. **Note there is a separate parental leave policy for students indicating that 8 weeks may be taken by either parent either before or after the birth of a child.**
Disclaimer
This handbook, which includes parts of the Graduate School Policies & Procedures guide, does not constitute a contract with the University of Colorado Denver Graduate School nor with the Computational Bioscience Program, either expressed or implied. Both the Graduate School and the Computational Bioscience Ph.D. Training Program reserve the right at any time to change, delete, or add to any of the provisions or contents at their sole discretion. Furthermore, the provisions of this document are designed to serve as firm guidelines rather than absolute rules and exceptions may be made on the basis of extenuating circumstances.

Cover photo done by individuals at the University of Illinois.
Control of the selectivity of the aquaporin water channel family by global orientational tuning.
Appendix A: Honor Code
Honor Code and Forms

STUDENT ACADEMIC HONOR AND CONDUCT CODE
UNIVERSITY OF COLORADO DENVER
ANSCHUTZ MEDICAL CAMPUS

A. ACADEMIC HONOR AND CONDUCT CODE

Education at the Anschutz Medical Campus is conducted under the honor system. All students who have entered graduate and health professional programs should have developed the qualities of honesty and integrity, and each student should apply these principles to his or her academic and subsequent professional career. All students are expected also to have achieved a level of maturity reflected by appropriate conduct at all times.

Although it is not possible to list every situation that violates the UCDAMC academic honor and conduct code, the following examples will provide a reference point:

1. Academic Honesty

Students should adhere to the highest standards of academic honesty and integrity. Examples of behavior that violates these standards include: plagiarism (including the undocumented use of internet and web-based information), cheating, illegitimate possession and/or use of examinations, violation of the ethical standards for conducting research, and falsification of official records.

2. Professional Conduct

As future health professionals, students should also adhere to the highest standards of professionalism. Examples of unprofessional conduct include misrepresentation of effort, credentials, or achievement in either the academic or professional setting; any action which compromises the quality or safety of patient care; violation of patient confidentiality; and any other conduct unbefitting a professional health practitioner or biomedical researcher.

3. Alcohol and Drug Use

Alcohol and/or drug abuse compromises the student's ability to learn and to practice as a health provider or researcher and thus is considered unprofessional conduct. Students who have a problem with alcohol and/or drugs should seek assistance from services available on campus. The sale of drugs or the possession of narcotics is against the law. In order to minimize the potential for alcohol abuse at campus functions, students (as guests and/or hosts) must adhere to current University policy governing the consumption of alcohol on campus.

4. Respect for the Rights and Property of Others

Students should conduct themselves in a manner that recognizes the rights and property of others. Examples of inappropriate behavior include: theft, damages to University or personal property of others, disruption of educational or other activities on campus, illegal use of University facilities, sexual harassment, physical assault, and any conduct that threatens the health or safety of others. The primary responsibility for reporting violations of the student honor and conduct code rests with the individual student who has violated them.
However, fellow students and members of the faculty also share in this responsibility.

B. RELATIONSHIP OF HONOR AND CONDUCT CODE TO LOCAL, STATE AND FEDERAL LAWS

The University adheres to all appropriate local, state and federal laws, and cooperates with law officials in all matters. Any alleged violation of local, state or federal laws will be referred to the appropriate law enforcement agency and such laws have precedence over the provisions of this policy.

C. GRADUATE SCHOOL HONOR AND CONDUCT COMMITTEE

The committee generally consists of four faculty members and two student representatives. The primary focus of this advisory committee is to examine alleged violations of the honor and conduct code, to hear testimony, and to make recommendations to the Dean as appropriate.

D. PROCEDURES

1. Alleged violations by faculty or students of the student honor and conduct code are first reported to the Dean or Assistant Dean. Normally, disciplinary action should not be taken against the alleged violator until the Honor and Conduct Committee and Dean have reviewed the case and arrived at a decision. However, if the alleged violation threatens the welfare or safety of others or is against the law (see B above), appropriate action should be taken immediately.

2. The Dean or Assistant Dean will review the information submitted concerning the alleged violation. If the alleged violator has been confronted with the violation and admits having violated the honor code, the case may be referred immediately to the Dean for review and action. If there is no admission of wrongdoing, the case will be referred to the Honor and Conduct Committee for a hearing. The Assistant Dean will coordinate the hearing process. Legal counsel will not be present for either the student or the University parties. The hearing will adhere to the following minimum guidelines:
   a. Adequate notice to all concerned parties.
   b. An opportunity provided for the student accused of the violation to be heard and to question the person alleging the violation.
   c. A detailed confidential record of the proceedings.

3. Following its deliberations, the Honor and Conduct Committee will submit its findings and recommendations to the Dean. The Dean will make a decision on the case in a timely manner and will communicate the decision to the student and to the appropriate faculty members.
ACADEMIC HONOR AND CONDUCT CODE

Education at the Health Science Center is conducted under the honor system. All students who have entered graduate and health professional programs should have developed the qualities of honesty and integrity, and each student should apply these principles to his or her academic and subsequent professional career. All students are expected also to have achieved a level of maturity reflected by appropriate conduct at all times.

I, ________________________________, have received and reviewed a (Print name)
copy of the UCD-AMC Honor Code found on the Graduate School’s Website and pledge to abide by these rules, signed this date __________________________.
(Today’s date)

Signed: ______________________________________________

Please return to the Program Administrator, Caitlin Moloney, before September 1.
Appendix B New Student Checklist
New Student Checklist

- Submit required admissions paperwork to the Graduate School Office
- Submit payroll paperwork to CPBS Office
- Attend new student orientation
- Obtain your campus ID card
- Activate your UC Denver email address
- Register for classes
- Submit health insurance paperwork to Student Health Office
- (For non-residence) Establish Colorado Residency by obtaining:
  - Local checking account
  - Local driver’s license or State ID
  - Proof of Colorado domicile
- Return academic honor/code of conduct form and lab contact form to CPBS Office
- Become familiar with campus (parking, library, printing, etc.)
- Become familiar with the resources available from student services