



# Cell Biology, Stem Cells and Development Program

GRADUATE SCHOOL

UNIVERSITY OF COLORADO  
**DENVER | ANSCHUTZ MEDICAL CAMPUS**

## **STUDENT HANDBOOK**

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<https://www.cuanschutz.edu/graduate-programs/cell-biology-stem-cells-and-development/home>

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## **I. Mission**

The primary goal of the **Graduate Program in Cell Biology, Stem Cells and Development (CSD)** is to train talented scientists in cell and developmental biology. The Program strives to attract outstanding students with the highest potential, and to provide them with quality training that stimulates independent and creative scientific thinking; ultimately helping students to develop their full potential in becoming independent investigators and leaders in biological science.

The CSD Program is committed to promoting an inclusive and equitable training environment that embraces diversity, eliminates structural biases from recruitment and training, and supports the identities and values of our students.

Program/Student Learning Outcomes: The CSD Program trains graduate students to become proficient and successful investigators who are able to:

1. Demonstrate a basic knowledge of central concepts in the biomedical sciences.
2. Understand the current concepts in Cell Biology, Stem Cell Biology and Development.
3. Read and critically evaluate the scientific literature.
4. Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
5. Present research results in peer-reviewed publications and in a dissertation.

6. Communicate research results effectively through oral presentations at scientific seminars, conferences, and other venues.
7. Write a competitive application for research funding.
8. Develop ancillary skills, where necessary, to obtain positions outside of scientific research.

The Program's emphasis is on the definition and resolution of biological problems rather than the application of technologies. Thematically, the program is focused on cell, stem cells and developmental biology and offers a wide range of research opportunities. The nature of this program will best serve those students who are interested in developing independent research careers and who wish to pursue problems in biomedical science from an interdisciplinary perspective.

After the initial period of coursework, students choose their specialty fields from a diverse list of topics, and proceed with research until the generation and defense of a thesis leads to the award of a Ph.D. in Cell Biology, Stem Cells and Development.

## **II. Graduate School Administration**

CSD is part of the Graduate School of the University of Colorado, which is an equal opportunity institution. The graduate programs at the Anschutz Medical Campus are part of the Graduate School.

The University of Colorado Denver Graduate School makes their "Graduate School Policies & Procedures Guide" available on their website. This guide includes general information and policies concerning graduate students, as well as specific information on Honor Code and Grievance Procedures. This information applies to students in all programs: (<https://graduateschool.ucdenver.edu/forms-resources>).

The purpose of this guide is to relay additional information specific to the CSD program.

### **Student Support.**

At present, students accepted in the Ph.D. program are provided full tuition, health insurance, and a stipend of \$31,000 per year for living expenses (for the academic year 2020-21). Continued support is contingent upon satisfactory academic and research performance by the student. When a student enters a thesis lab, the thesis mentor assumes complete responsibility for the student's stipend, tuition, fees, and associated research costs. In order to qualify for in-state tuition for the following year, **all out-of-state students must establish Colorado residency by the end of summer of the first year.** See the Registrar's website for complete details: <https://www.ucdenver.edu/anschutz/studentresources/Registrar/StudentServices/Residency/Pages/Residency.aspx>

### **Student Advising.**

During the first year, CSD students will meet with members of the Graduate Advisory Committee (GAC) on a rotating basis to discuss the student's progress in the CSD Program and any questions that may come up. Students will be expected and encouraged to seek advice from the GAC, Director, and/or other CSD faculty and student members prior to lab rotations, Comprehensive Examination, and any other situation requiring faculty consultation.

### **Transfer Credits.**

Please see the Graduate School's Policies & Procedures Guide for information about transferring credits towards your degree with the Cell Biology, Stem Cells & Development PhD program. That guide is available on the Graduate School website under the "Resources" tab: <https://graduateschool.ucdenver.edu/forms-resources>

### III. Program Components

I <sup>ST</sup> YEAR STUDENTS
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#### COURSEWORK, LABORATORY ROTATIONS, AND PRELIMINARY EXAMINATION

#### A. COURSES

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##### Fall Semester - Required Registration

Foundations in Biomedical Sciences – Section 001

**IDPT 7806** 6 units

**Course Director:** Drs. D. Jones, T. Evans, B. Appel, R. Prekeris, C. Pearson, J. Moore

This section of the course covers basic biochemistry, molecular biology, genetics, and cell biology.

Core topics in Biomedical Sciences

**IDPT 7810** Sections 001-011

First year students will register for two sections, one section in Core Topics A (Section 001-004) and one section in Core Topics B (Sections 005-011). Each section is a 3 week intensive special topics course, the Core Topic A sections start immediately after IDPT 7806 followed by Core Topic B sections. Course offerings vary by year but includes topics courses in immunology/microbiology, stem cell and regenerative medicine, developmental biology, cancer biology, and exploratory data analysis in R/R Studio. An updated list of the course offerings will be provided to students prior to registration in the fall. CSD are **strongly encouraged but not required** to take the section offered by the CSD program, “Stem Cell Biology to Regenerative Medicine” and the Molecular Biology offering “Protein Structure and Function”; see descriptions below.

Protein Structure and Function

**IDPT 7810 Sec. 001** 2 units

**Course Director:** Dr. R. Zhao

This course aims to teach students how to design experiments to discover the function and structure of a protein using a variety of genetic, biochemical, and structural approaches. Complete syllabus will be available in Canvas once you register.

Stem Cell Biology to Regenerative Medicine

**IDPT 7810 Sec. 005** 2 units

**Course Director:** Dr. H. Russ

Students will be introduced to the concept of stem cells with an emphasis on embryonic, pluripotent, and tissue stem cells. Besides their role in normal development of different organ systems, we will specifically address the use of stem cells in tissue engineering and disease modeling. We will then discuss new approaches using stem cells in regenerative medicine. Lastly, we will discuss ethical issues regarding the use of these cells (e.g. the creation of human/animal chimeras for research purposes).

Ethics in Research

**PHCL 7605** 1 unit

**Course Directors:** Drs. Paula Hoffman & Cecilia Caino

Course is designed to introduce issues around ethics of research, publication, and reviewing of manuscripts and grants.

Research in CSDV (Lab Rotations)

**CSDV 7650 (001 & 002)** 1 unit each

*(Register for both sections 001 and 002)*

**Coordinated by the GAC Chair, Dr. Joe Brzezinski**

Students will perform research in the laboratory of one of the members of the program.

The rotation will be followed by an oral presentation.

Cells, Development, and Cancer Seminar

**No registration required** 0 units

**Course Director:** Seminar Committee

Seminar series designed to present recent important findings in cell and developmental biology research. Different topics are presented weekly by CSD Training Program faculty, students and visiting faculty. **Attendance is required.** Seminar schedules will be distributed by the Program Administrator each fall semester and are also available on the program's website.

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### Spring Semester - Required Registration

Stem Cells and Development: An Integrated Approach

**CSDV 7605** 4 units

**Course Directors:** Drs. Joe Brzezinski

This course aims to familiarize students with fundamental principles in cell, developmental, and stem cell biology. Students will critically evaluate important scientific concepts and develop compelling new hypotheses through in class discussions, 'thought question' exercises and presentations. Finally, students will gain important grant writing and critiquing skills through instruction, practice, and peer evaluation. Completion of the course should facilitate successful pursuit of basic and translational research.

Critical Analysis of Research in Cell Biology, Stem Cells and Development

**CSDV 7606** 3 units

**Course Director:** Dr. Santos Franco

First-year students will learn to critically evaluate the scientific literature in preparation for conducting original research in their thesis labs and writing and critiquing research grant proposals. Primary literature will focus on cell and developmental biology topics related to CSDV 7605. The course consists of four blocks, each includes a lecture and 3 paper discussions. Each block session concludes with written mini-proposals and peer critiques.

Research in CSDV (Lab Rotation)

**CSDV 7650 (section 001)** 1 unit (for 3<sup>rd</sup> lab rotation)

**Coordinated by the GAC Chair, Dr. Joe Brzezinski**

Students will perform research in the laboratory of one of the members of the program. The rotation will be followed by an oral presentation.

Cells, Development, and Cancer Seminar  
**No registration required** 0 units

**Course Director:** Seminar Committee

Seminar series designed to present recent important findings in cell and developmental biology research. Different topics are presented weekly by CSD Training Program faculty, students and visiting faculty. **Attendance is required.** Seminar schedules will be distributed by the Program Administrator each fall semester and are also available on the program's website.

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## Summer Semester

Research in CSDV

**CSDV 8990** 1 unit

All students must be registered during the summer months to be maintain full-time status

### **B. LABORATORY ROTATIONS IN THE FIRST YEAR.**

Rotations serve several important purposes. First, they enable the student to explore and compare several areas of cell and developmental biology research and aid in the choice of a mentor and project for thesis work. Second, rotation seminars provide intense training in the craft and art of public presentation, an essential aspect of future career success. Third, they allow program faculty to evaluate the motivation and intellectual preparedness of students to undertake independent research

#### **ROTATION SCHEDULE FOR 2020-2021:**

Fall 1<sup>st</sup> Rotation: August 31, 2020 - November 20, 2020

Fall 2<sup>nd</sup> Rotation: November 23, 2020 - February 21, 2021

Spring 3<sup>rd</sup> Rotation: February 24, 2021 – May 21, 2021

### **Number of Rotations.**

***Students must perform 3 rotations before the start of their second year.*** Students should start their first rotation in the fall semester. Students must complete 3 rotations in 3 separate laboratories in order to advance to their second year. Register for the first 2 rotations (Sections 1 & 2) in the fall; register for your 3<sup>rd</sup> rotation (Section 3) in the spring. Official dates for rotations are set by the Graduate School. Medical Scientist Training Program (MSTP) students must complete two rotations (during the summers of the first and second year of Medical School Under exceptional circumstances and at the discretion of the GAC, a student may be allowed to perform an additional rotation during the summer following the first academic year, for the express purpose of enhancing the mentor selection process. CSD will make every effort to assist a student in finding a suitable thesis advisor.

### **Identifying Rotation Mentors**

CSD seeks to maintain a training environment that is supportive, rigorous and aligned with the



mission of the program. All CSD training faculty are eligible to serve as rotation mentors; however, opportunities in each lab may be limited by space, funds, etc. Students should discuss their interests with several potential faculty mentors, several weeks or more before the start of the rotation.

***The program strongly discourages rotations with mentors who are not training faculty in CSD.*** Such rotations will only be allowed if the faculty member has already applied to become training faculty in CSD, and the rotation is approved by the GAC chair and the Program Director.

### **Rotation Expectations.**

For professionals in training, it is not appropriate to require a minimum number of hours for rotation work. Strong self-motivation is an absolutely essential characteristic for an independent scientist, and we expect our students to demonstrate this quality throughout their training. In this regard, students should expect to be in the lab beyond the normal working hours, i.e. evenings, weekends, and possibly over vacation days during the term. This commitment of time is especially important when long, complex experiments are being done. A major part of the mentor's rotational assessment (as well as their willingness to accept a student) will be based on the degree and quality of lab effort. Students should always discuss time off and/or vacation days with their lab mentor in advance, both in their lab rotations and once they enter a thesis lab.

A short written evaluation of the student's rotation will be provided by the faculty mentor. Students are required to give an oral presentation of their rotation progress. After completing the requirements, rotation grades will be assigned by the first year advisor in consultation with the rotation mentor, and discussed with the student.

### **Rotation Seminar.**

At the end of each rotation the student will present a seminar. The purpose of the seminar is to provide intense training in the craft and art of public presentation, an essential aspect of future career success. Each seminar should be approximately 15 minutes in length (12 minute talk + 3 minutes for questions). The student must rehearse the seminar with his or her rotation mentor prior to the public presentation. The seminar is an essential component of the research rotation. Students are expected to present a well-organized, clear, and thoughtful seminar. Students should consider the following elements when designing their presentation (although the order need not be strictly followed):

*Introduction* - a short statement of the question or problem addressed by the rotation, and the hypothesis to be tested.

*Background* - describe the significance of the question in broad terms for a diverse audience. Describe previous work and its relationship to the project.

*Specific experimental aims* - what were the particular experimental goals proposed to test the hypothesis?

*Methods and Design* - explain briefly any unusual strategies or techniques employed.

*Results* – negative and positive results should be reported

*Conclusions and future directions* – what can you conclude from your results, and what would you pursue if you remained on the project?

## **Suggestions for Effective Seminars**

1. Avoid reading or memorizing your presentation “word-for-word”. Wooden, canned deliveries are dull and very hard for audiences to follow.
2. Prepare and use simple, effective visual aids. Remember that effective communication of data and ideas is your goal! Do not spend undue effort and expense on fancy multicolored slides (especially for text), if color is not required to simplify complex data or concepts. Colored visuals tend to require a darkened room and are often much harder to read than black on white line drawings or letters. Keep text very brief and do not read directly from the screen (audiences are much faster at reading silently!).
3. Use the marker board when appropriate. Diagramming or outlining while you are talking is a highly effective means of explaining concepts difficult to describe with the spoken word. Use of the marker board can also help answer spontaneous questions from the audience.
4. Consider audience questions carefully! Both faculty and students are encouraged to ask questions during and after rotation seminars. A few of these questions may be intended to probe your understanding of your research rather than illuminate an area of confusion. Part of your evaluation will concern your effectiveness in responding to questions. Thus, make sure that you understand the question before answering. Repeat the question or ask for a rephrasing if you need to. Second, relax and take a moment of silence if you must before answering to formulate a coherent answer. Third, if after contemplation you don't know the answer, don't be afraid to say so. We all get stumped from time to time!

For more guidance on effective seminars, students are strongly encouraged to attend a workshop on “How to Give a Scientific Talk” which will be run by Dr. Tom Evans during the Fall semester.

### **C. TRANSFER TO THE THESIS LAB AT END OF FIRST YEAR**

An important aim of the rotations is to enable the student to obtain a thesis mentor. After the completion of the three rotations for regular graduate students or two rotations for MSTPs, the student must come to a mutual agreement with a faculty member to act as their thesis mentor. The chair of the GAC and the Program Administrator must be notified on the choice of mentor **on or before June 15<sup>th</sup>** of the first year. Official transfer to the thesis lab takes place on July 1<sup>st</sup>. Under exceptional circumstances and at the discretion of the GAC, a student may be allowed to perform an additional rotation during the summer following the first academic year, for the express purpose of enhancing the mentor selection process.

### **D. PRELIMINARY EXAM AT THE END OF THE FIRST YEAR**

1. The general format of a preliminary examination for the Cell Biology, Stem Cells and Development Graduate Program is a written grant proposal followed by an oral examination by a preliminary examination committee.
2. The preliminary examination committee will consist of five faculty members. Every year, following the first 2 years after initiation of this preliminary exam format, two committee members will be replaced with new faculty. Each member will serve a minimum of two consecutive years. The committee will also consist of faculty representing different aspects of the research within CSD, such as Development, Cell Biology and Stem Cell Biology.

3. Four weeks before the oral examination, students will be provided with five research topics; one topic from each committee member. Each topic will be represented by 2-3 papers that have been selected by the committee members. Each student will need to pick one topic for their proposal. While students can select the same topic, obviously, students are not allowed to work together on their proposals. The topic cannot have a significant overlap with student's research interests in their future lab, and will have to be approved by the committee.
4. Each student will have one committee member assigned as a preliminary examination mentor. The same committee member will also serve as a chair during examination of this student. The main role of the mentor will be to serve as a "go to" person for the student if they (the student) has questions regarding the written and oral portions of the examination. The mentor can advise the student regarding the expectations of the written and oral examinations. The mentor cannot, however, be directly involved in editing or re-writing the student's grant proposal. Mentor also cannot be directly involved in suggesting/designing the experiments or interpretations of potential outcomes that will be described in the proposal.
5. Students will complete the written proposal and deliver it to each member of the committee no later than 1 week before the date of the oral examination. This deadline is firm. The proposal is to follow the NIH pre-doctoral fellowship format and can be no longer than 7 pages (1 Specific Aims page plus a 6 page research plan; excluding references).
6. In addition to the written proposal, the student will be examined orally by the committee. The examination for each student will last approximately one hour, unless the committee decides additional time is needed.
7. The exam is designed to test each student's understanding of key concepts and ability to think through experimental design, both of which are important for research in biomedical sciences, with a focus on development, cell biology and stem cell biology. While the main focus of the questions will be related to the written proposal, students should expect questions outside the immediate scope of written proposal. All questions, however, will be limited to the material that the student was exposed to during courses and rotations that they had within the first year of a graduate program.
8. Students will be graded on a Pass or Fail basis, as decided by a majority of the committee. The final grading will incorporate a combined evaluation of the written proposal as well as of the oral examination. Both aspects of the examination will be weighted equally.
9. In the event of a failed exam, the situation will be referred to the Graduate Advising Committee (GAC) for CSD for a remediation and exam retake plan to be completed by the end of the summer semester.

## 2<sup>nd</sup> Year Students

### COURSEWORK, PRE-THESIS RESEARCH AND THE COMPREHENSIVE EXAMINATION

#### A. COURSES

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##### **Fall and Spring Semesters – Required Registration**

The fall and the spring semesters must each total at least 5 units. Students who are considering enrolling in more than 5 credit hours in either of these semesters should first discuss their enrollment with their faculty advisor, as the faculty advisor will be responsible for the additional expenses incurred.

Research in CSDV

**CSDV 7650 (Section OV1)** 1-5 unit\*

**Course Director:** Dr. Jeff Moore

Laboratory research with CSD Training Program faculty.

CSD: Advanced Topics Discussion (Journal Club)

**CSDV7000** 1 unit

All CSD students are required to complete a course in statistics by the end of the fourth year. Two options exist to meet this requirement (see below). MOLB7950 is offered in the fall semester. This is a new course for Fall 2020 offered to CSD and MOLB students. BIOS 6606 is also offered in the fall semester. CSD students are strongly encouraged to take MOLB 7950, and to take this course during their second year. Students who have already completed a similar course or have identified a different course they would like to take may request an exemption from the Program Director.

Informatics and Statistics for Molecular Biology

**MOLB 7950 (course number may change)** 4 units

**Course director:** Jay Hesselberth

This course teaches students to design and analyze experiments commonly used in molecular biology. The course is organized around the Central Dogma (DNA > RNA > Protein) wherein each block presents 2-3 experimental approaches. Each week, a new experiment is introduced with a discussion of appropriate design and statistical considerations. The remaining weeks' classes are devoted to digging into the analysis of a sample data set with hands-on programming.

Statistics for the Basic Sciences

**BIOS 6606** 3 units

**Course Director:** Kathleen Torkko

This course is designed for those wishing to obtain a basic understanding of statistics and its application in biological research. Students will develop statistical literacy and an ability to perform basic statistical analyses, basic graphical statistics, data summarizations, and estimation and

inference using statistical software.

### Elective or Advanced Topics Course

Students are required to take at least 2 elective or advanced topics courses during years 2-5, in addition to CSDV7000, CSDV7100 and MOLB7950/BIOS6606. Students may enroll in multiple elective or advanced topics courses during the same academic year, or take these courses across multiple years. See p. 24-25 for information about courses.

**NOTE:** Each fall semester, all students must complete the forms for insurance plan selection. Contact the Student Insurance Coordinator, 303-724-7674 with questions. These forms must be completed whether or not you plan to participate in a Student Health Insurance Plan.

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### Summer Semester – Required Registration

Doctoral Thesis

**CSDV 8990**

1 unit

All students must be registered during the summer months to be maintain full-time status

### B. UPDATE TALKS

Beginning in the second year, each student is required to give an annual update presentation to the program. The first update should be before May 31 of the 2<sup>nd</sup> year, and should be scheduled with the program administrator at least one month in advance, but ideally at the beginning of the academic year. Although the presentation can be scheduled at any time during the year, earlier is better. We also recommend that you form a committee and have one pre-comprehensive exam meeting at the time of your first update seminar. To schedule a committee meeting, you will need to be sure all your members can attend, and coordinating faculty schedules can be challenging. Again, we want to emphasize that arranging this update is your responsibility, and urge you to make plans with your committee, and schedule your presentation with the program administrator well in advance.

### C. COMPREHENSIVE EXAM

At the beginning of the second year of study CSD graduate students will begin preparing for the Comprehensive Exam. It is highly recommended that the student carefully read the Graduate School Policies & Procedures guide on Comprehensive Examination policies and deadlines, and pick up a packet of instructions and forms from the Graduate School well ahead of the planned examination so all required paperwork can be completed on time. Completed paperwork must be submitted to the Program Administrator no later than one month prior to the examination date:

(<https://graduateschool.ucdenver.edu/forms-resources>).

**Note:** A student must be registered at the time they take the Comprehensive Examination.

### Application to the Graduate School for Admission to Candidacy

Applications must be completed no later than one month before the exam. The *Application for Candidacy* form and the *Exam Request* form are available from the Graduate School and must be approved by the Program Director and returned to the Program Administrator. The date of the Comprehensive examination and the composition of the committee must be registered with the Graduate School. The student must have completed a minimum of 30 didactic credit hours prior to the exam date; Pass/Fail classes and CSDV 8990 credits do not count toward the 30 hour minimum.

Students must take the Graduate School Comprehensive Examination for admission to candidacy for the CSD Ph.D. **between June 1st of their second year and December 31<sup>st</sup> of the third year**. Any deviation to this requirement must have approval from the PI, Graduate Advisory Committee, and the Program Director. The Comprehensive Examination Committee shall consist of a minimum of five Graduate Faculty members. At least one of the members must be outside the Program's core training faculty. The thesis advisor may not serve as a member of the Comprehensive Exam Committee. The majority of the members, including the chair, must be from the training faculty of the CSD Program. Students should contact members of the Graduate Faculty whom they wish to be on their committee, in consultation with the Director of the Program and their thesis advisor. Students should inform the committee members of their background, the topic of their thesis research and their preliminary results. In addition, the student arranges the time and location of the exam, and informs the members of the committee that the examination requires three hours. The student should provide the names of the committee members to the GAC, and also submit to the Program Administrator; additional paperwork may be required for outside committee members.

The examination will have as its focus a thesis research proposal written by the student using the format of a NIH pre-doctoral fellowship. Although preliminary data collected by the student are helpful, it is not essential for the proposal. The written proposal must be distributed to the Comprehensive Exam Committee **at least two weeks prior** to the examination. The student must adequately demonstrate the scientific knowledge and ability to defend this proposal, as well as satisfying the overall requirements for the examination as set forth by the UCD-AMC Graduate School Policies & Procedures guide. The examination will consist of a 30-minute seminar by the student, with 10 minutes of general questions from the audience, and then detailed questions from the Thesis Committee. As stated in this Graduate School guide, the comprehensive examination "will test your mastery of a broad field of knowledge, not merely the formal course work completed." The student should consult with his or her committee members prior to the exam as to the subject areas each member expects the student to have mastered.

### **Written proposal (NRSA format)**

Listed below are **guidelines** for the proposal:

Title

Short Introduction and Specific Aims      1.0 page

Research Strategy      6.0 pages

*Significance and Background*

*Any preliminary data*

*Experimental Design & Methods*

*Expected Results & Interpretation*

*Alternative approaches*

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Total      7.0 pages

Literature citations are additional to the 7 pages. Full references with titles are required.

The written proposal **must** be given to all members of the committee **at least two weeks before** the comprehensive exam.

### **The Exam**

The candidate for the PhD should prepare a talk of 30 minutes on their thesis proposal and preliminary results. The talk will be open to the university community. After the talk, questions from those in attendance will be requested. After the questions have been addressed, all but the graduate faculty on the Comprehensive Examination Committee will be requested to leave. There will be two types of questions from the committee:

1. Questions on the written and oral proposal: ~ 1hr.
  2. General knowledge questions primarily from the course work of the candidate: ~ 1hr.
- After the questions the candidate will be asked to leave, and the committee will discuss the results of the different exam components and reach a recommendation. The committee chair will bring the recommendations of the committee back to the candidate and fill out the appropriate forms of the Graduate School.

### **Possible Results**

Pass (no conditions)

Conditional Pass (conditions must be detailed)

Fail (the student must leave the graduate program)

<p><b>NOTE:</b> After passing the comprehensive exam, all PhD students are required to register for Doctoral Thesis CSDV 8990 (instead of CSDV 7650 section OV1) each fall and each spring. Failure to do so can result in the student being required to retake the comprehensive exam. A student may register for up to 10 units of CSDV 8990 in the semesters before and the semester in which the comprehensive exam is taken and passed.</p>
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### **D. APPLYING FOR FELLOWSHIPS**

All students are encouraged to apply for fellowship support from outside agencies, e.g. NIH, NSF, Howard Hughes Medical Institute, March of Dimes, American Heart Association, etc. Many students work with their mentor to edit their comprehensive exam proposal, which utilizes a NIH F31 NRSA predoctoral fellowship format, for submission to external funding agencies. Students can prepare and submit a fellowship application prior to the comprehensive exam and are encouraged to do so. If students submit a predoctoral fellowship prior to the comprehensive exam, students can adapt a submitted fellowship application for use in the comprehensive exam written document. The plan to adapt the fellowship in this way must be communicated to the exam committee **at least one month before** the comprehensive exam.

**A. COURSES****Fall and Spring Semesters – Required Registration**

The fall and the spring semesters must each total at least 5 units. Students who are considering enrolling in more than 5 credit hours in either of these semesters should first discuss their enrollment with their faculty advisor, as the faculty advisor will be responsible for the additional expenses incurred.

**NOTE:** Comprehensive exam (see p. 12) must be taken by December of Year 03.

**Elective or Advanced Topics Course**

Students are required to take at least 2 elective or advance topics courses during years 2-5, in addition to CSDV7000, CSDV7100 and MOLB7950/BIOS6606. Students may enroll in multiple elective or advanced topics courses during the same academic year, or take these courses across multiple years. See p. 24-25 for information about courses.

All CSD students are required to enroll in either CSDV7000 or CSDV7100 during years 3-5. CSDV7100 is a new course for Fall and Spring 2020 (see below). Students may only enroll in CSDV7100 for two semesters during years 3-5.

**CSD: Advanced Topics Discussion (Journal Club)**

**CSDV 7000** 1 unit

**Advanced writing workshop**

**CSDV 7100** 1 unit

**Course Director:** Dr. Charles Sagerstrom

This course is a student-led writing workshop focusing on developing writing skills through the submission, editing and discussion of drafts. Document types will be chosen by the students enrolled and may include manuscripts, figures, theses, and documents related to career development.

**Doctoral Thesis**

**CSDV 8990** 1 – 5 units\*

Students will generate an original body of research that constitutes a significant contribution to the field of cell and developmental biology. Suitability of thesis research is judged by the Thesis Committee. Students write a PhD thesis and defend the document at an oral examination.

**NOTE:** Each Fall semester, all students must complete the forms for insurance plan selection. Contact the Student Health Insurance Office <https://www.ucdenver.edu/life/services/student-health/insurance/Pages/default.aspx> with questions. These forms must be completed whether or not you plan to participate in a Student Health Insurance Plan.



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## Summer Semester – Required Registration

Doctoral Thesis

**CSDV 8990**

1 unit

All students must be registered during the summer months to be maintain full-time status.

### **Continuous Registration Requirement.**

Students must register continuously following successful completion of the comprehensive examination, i.e., 5 credits for fall and spring semester and 1 hour of thesis research (CSDV 8990) during the summer. All students must register for both the fall and spring semesters. It is the student's responsibility to register for the correct courses in a timely manner – all late fees and finance charges will be the responsibility of the student.

### **B. UPDATE TALKS**

Third year students will not be required to give an update talk in the same academic year that they take their comprehensive exam.

Students in their 4<sup>th</sup> year and beyond are required to give an annual update presentation to the program. Update talks should be scheduled with the program administrator at least one month in advance. Although the presentation can be scheduled at any time during the year, earlier is better. Again, we want to emphasize that arranging this update is your responsibility, and urge you to make plans with your committee, and schedule your presentation with the program administrator well in advance.

### **C. THESIS COMMITTEE MEETINGS**

Students are required to meet at least once each year with the thesis committee although more frequent meetings can be scheduled at the discretion of the student or thesis committee. The candidate should provide the program with a 20-30 minute talk as well as a brief written summary of the progress made on the stated aims given to the committee at least one week prior to the meeting. A template for the progress report is provided in Appendix 1 of this handbook. The following documentation is required and copies must be submitted to the Program Administrator for inclusion into the student's file:

- date of meeting
- student's written report to the thesis committee. See Appendix 1 for template

## Ph.D. Thesis

After passing the Comprehensive Examination, the student enters Ph.D. candidacy. During the following years the students perform research towards a thesis defense. Students must give annual reports on the progress of their thesis research to the CSD faculty in the form of 30-minute seminars, and meet at least annually with their Thesis Committee. The Chair of the Thesis Committee will submit a report of the meeting and any resulting recommendations using the online evaluation system provided by the Graduate School (<https://gs.ucdenver.edu/gaia/splash.php>).

Upon completion of a body of original research that constitutes a significant contribution of new knowledge to the field of cell, developmental or stem cell biology, students will write a Ph.D. thesis containing this information, and defend this document at an oral examination scheduled by the Graduate School. Check with the Graduate School for current deadlines, thesis format requirements and required paperwork prior to writing the thesis and scheduling the defense.

### 1. Guidelines

All doctoral students are required to submit a thesis (or dissertation) to the Graduate School as partial fulfillment of the requirements of the degree of Doctor of Philosophy. The form and scope of this thesis is determined by the student, the thesis advisor, the Advisory Committee, and the Program. The thesis should be based upon original investigation and showing mature scholarship and critical judgment as well as familiarity with tools and methods of research. It must be essentially approved by the examining committee before the final examination can be taken.

The Graduate Program in Cell Biology, Stem Cells and Development amplifies the definition of the thesis as follows:

The successful thesis presents a problem-orientated, original and substantive investigation. The methodology and results contained in the thesis must be conclusive and of quality. The standards are to be those maintained by quality, peer-reviewed scientific journals. It is the expectation of the program that the student have 1 or more first author publications submitted prior to the thesis defense.

### 2. Thesis Committee

Once a student is admitted to candidacy, they should establish a Thesis Committee with the advice of the thesis advisor and the Director of the Graduate Program. The committee need not be the same as the Comprehensive Exam Committee but should be composed of five Graduate Faculty members; at least one member must be outside the program and the majority from within the program. The thesis advisor is a voting member of this committee. One faculty member of the program should be selected to serve as a chair of the Thesis Committee. This committee can be the same as the Comprehensive Exam Committee.

### 3. Graduate Advisor

The Chair of the Thesis Committee serves as the advisor to the student and will monitor their progress. The Chair must be a member of the Program. It cannot be emphasized enough, however, that each student is responsible for their own progress.

#### 4. Guidelines for Supervision of Thesis Work

1. Because all students present their work each year, all Graduate Faculty should follow the progress of all students. When concerns arise they should be discussed immediately with the student, the Thesis Advisor and/or the student's Thesis Committee.
2. Students are encouraged to meet every six months, but must meet at least once a year, with their Thesis Committees. Students must submit a written update on their progress to the Committee at least one week before the Committee meeting (see template in Appendix 1). Students are encouraged to schedule their committee meeting soon after their yearly update talk. The Chair of the Committee will file an evaluation and summary of the meeting and recommendations of the thesis Committee using the online student assessment portal provided by the Graduate School. The meetings should be documented (date of meeting, items discussed, committee recommendations, list of attendees, signatures of the student and committee chairperson) and a copy provided to the Program Administrator for inclusion into the student's file. The Thesis Committee can recommend more frequent meetings when the members feel more careful monitoring is warranted.
3. When the student and their thesis advisor agree the work for the thesis has been completed, the student must meet with the Thesis Committee and receive formal approval to begin writing the thesis.

#### 5. Preparation of Thesis and Thesis Defense

1. [Watch the Graduate School's instructional video](#) on how to format your thesis.
2. The Thesis Committee must formally approve the written thesis before the final examination can be taken. Written PhD thesis approval from the chair of the Thesis Committee is required prior to scheduling of the thesis with the Graduate School. The Thesis Approval Form may be obtained from the program administrator. Furthermore, the thesis advisor must find the thesis acceptable prior to submission to the rest of the committee. It is inexcusable for everyone concerned if the student reaches the point of their PhD thesis defense and encounters major difficulties with the thesis.
3. In addition to completing the thesis document, prior to the defense of the thesis, each CSD student must submit a minimum of one original research manuscript for publication in order to receive the PhD. The paper must be first-authored by the student, and represent a component of the student's overall thesis work. Second or middle authorship or authorship of a review article or chapter does not meet this requirement.
4. Arrangements for the thesis defense must be made with the Graduate School office at least one month in advance. Check the Graduate School's "Defense and Graduation Deadlines" form for relevant deadlines for paperwork submission, dissertation defense, and more. The student must be registered for a minimum of 5 credits at the time of the thesis defense (including during a summer semester). In addition, a copy of the thesis must be given to the Thesis Committee **at least two weeks** before the defense.
5. The thesis defense is the final examination of the thesis and related topics. It includes an oral presentation of the salient points of the research, its conclusions and its integration with the rest of the field. The oral presentation will be conducted by the Thesis Committee and only members of the Graduate Faculty may be present. The final decision regarding the result of the thesis defense is made by the Committee.
6. All corrections to the written thesis required by the Thesis Committee must be completed within

thirty days from the date of the thesis defense. The signed, written document must be submitted to the Graduate School at that time.

7. The student must receive affirmative votes from the majority of the committee. The examination may be attempted only once. Disqualification of the thesis examination results in dismissal from the Graduate Program without a degree.

#### **IV. Graduate School standards**

**A. Credits.** The Graduate School requires at least 30 semester hours in course work (rotations and Research CSDV 7650 count as course hours) and 30 semester hours of thesis research for the PhD. All work undertaken as a graduate student must be in compliance with the academic Code of Honor (see the Graduate School's website).

**B. Maintenance of a 3.0 GPA.** All students must maintain an average of "B" or better in their course work. Students are expected to earn a "B" or better in all required courses. Only in *exceptional* circumstances may a "B-" in a required course be acceptable, as determined by petition to the GAC. Required courses completed with a grade of below "B-" cannot be counted towards PhD requirements.

**C. Preliminary exam.** In order to continue in the program, a student must pass the Preliminary Exam at the end of the first year. If the Preliminary exam is failed, the student's record will be reviewed by the GAC. At this point the student may be asked to retake part of the exam, the entire exam, or leave the PhD training program.

**D. Remedial and Disciplinary Actions.** Students whose cumulative GPA falls below 3.0 will be placed on Academic Probation by the Graduate School. The student must earn a GPA of 3.0 in each of their next two semesters in order to be removed from Academic Probation. The Graduate School requires that after a student is put on academic probation, they must maintain a 3.0 in all subsequent semesters. Failing to meet either condition will lead to immediate dismissal from the Graduate School. A "B-" or below in any required course is considered unsatisfactory academic progress and more than one "B-" or below is grounds for immediate dismissal from the Program.

A graduate student who receives an unsatisfactory grade in a course (a B- or below) may repeat that course once or successfully complete an alternative assignment, upon written recommendation from the GAC and approval by the Graduate School Dean (provided the course has not been previously applied toward a degree). The two grades received will be averaged in calculating the grade point average, and all grades received will appear on the student's transcript. The course may be counted only once toward satisfying the unit requirement for the degree.

After two semesters, a GAC meeting will be held to determine the student's progress. If the student's cumulative GPA is 3.0 or above, the student will be removed from probation. If the student's cumulative GPA is below 3.0, the chair of the Thesis Committee, the thesis advisor and the student will meet with the CSD Steering Committee. The Steering Committee will make one of the following determinations:

1. The student is not in good academic standing and will be placed on probation again for not more than 30 days.
2. The student is not in good academic standing and will be released from the program.

All meetings will be thoroughly documented and given to the Program Administrator for placement into the student's file.

**E. Change in Thesis Lab.** If a student leaves a thesis lab for any reason, (but is still considered by the CSD GAC to be in good academic standing) the student has 1 current semester (but no more than 90 days) to relocate to another thesis lab and determine a new thesis advisor if necessary. It is the student's responsibility to locate another thesis lab and/or advisor. Within those 90 days, the student must rotate for a minimum of 6 weeks in a potential new advisor's lab, so that the final decision to join the new lab can be made within the 1 semester/90 day window.

**F. Time Limit of PhD Studies.** Students have eight years from the time they enter Graduate

School to complete all requirements for the degree. Continuation after eight years requires the approval of the student's Thesis Committee, the CSD Steering Committee & the Graduate School.

**G. Leave of absence.** It is the policy of the CSD program to grant leave of absences only under extreme circumstances. A formal letter must be submitted to the GAC and program director explaining the reasons a leave of absence is necessary. Before the leave is taken it must be approved by the GAC and the Graduate School. After a student joins a thesis lab, the PI must also approve the leave of absence. As per the policy of the Graduate School, only 15 days of paid leave is guaranteed, after that time period it is under the discretion of the program and the PI. Please see the Graduate School's website for additional information.

## **V. Obligations and Record Keeping**

**A. Attendance.** All graduate students are **required** to attend the weekly Cells, Development and Cancer (CDC) seminars (usually, but not always, held on Wednesdays at noon) and specialized research forums. These seminars are a mixture of talks by invited speakers and research reports from the faculty, students and postdoctoral fellows in laboratories of the Cell Biology, Stem Cells and Development Program faculty.

All graduate students are **required** to attend post-rotational seminars, comprehensive examinations, student update presentations, and Thesis Defense Seminars given by CSD program students.

All notebooks, original data and reagents from rotational and thesis work are the property of the advisor and must be left with the advisor at the completion of the work.

It is the student's responsibility to register for courses in a timely manner – all late fees and finance charges will be the responsibility of the student.

**B. Colorado Residency.** First-year students who are US citizens must obtain a Colorado Driver's License at the time of arrival at the University of Colorado School of Medicine to begin the process of establishing Colorado residency. If residency has not been established by the beginning of the second year, the student is responsible for the non-resident portion of tuition that exceeds the resident assessment. The paper work for establishing Colorado Residency must be filed with the Registrar prior to second year registration.

**C. Student's Files.** A file for each student will be kept by the Program Administrator. All relevant records should be given to the Program Administrator for the files, including published abstracts and papers, notifications of awards and honors, and copies of forms filed with the Graduate School. These files should reflect the total record of the student during their entire graduate career. Upon written request, the records may be examined by the student.

## VI. Other CSD Program events

### A. Annual Student Research Retreat.

Each fall, the students host an out-of-town retreat for the students and faculty in the Graduate Program in Cell Biology, Stem Cells and Development. The purpose of the retreat is twofold: 1) to provide everyone with the opportunity to get together and interact on a scientific/intellectual level so as to cultivate new interactions and strengthen existing ones; and 2) to provide an opportunity for incoming first year CSD and Biomedical Sciences Program (BSP) graduate students, and 1st and 2nd year MSTP students to become familiar with the research activities and faculty within the CSD Program. The retreat is usually held in September or October. Current senior students (2<sup>nd</sup> year and beyond) are expected to present their work either via a poster or a talk.

### B. Participation in Recruitment Functions.

During February/March each year, prospective student applicants visit our program for interviews. It is in the Program's best interest to attract and retain the best of these prospective students. To do this we need the help of current students and CSD faculty who can convince these individuals that our Program is the place to be! When asked, please be willing to spend some time with prospective students during dinners or other functions. Our CSD Program can and has flourished with your irreplaceable help.

### C. Description of committees.

Each committee within the program has a student representative. Below is a description of the duties for each position:

**Recruitment:** This committee reviews submitted applications to the graduate program, selects candidates to interview in person or by telephone, organizes recruitment weekend, and ultimately selects who will be admitted to the program. The student members participate fully in the entire process, and in particular are in charge of enlisting and organizing the student body to help with both academic and social recruitment efforts.

**Advising:** The Graduate Advisory Committee helps students maintain progress toward their Ph.D. degree. As a member of this committee, the student member helps discuss student progress and may be recruited to and/or advise the committee to tutor first year students in need. This committee requires that the student member be a doctoral candidate, i.e., has passed the Comprehensive Exam.

**Curriculum:** This committee discusses the current curriculum and suggests and implements changes in the best interest of the program and students, including but not limited to selection of Advanced Topics courses to be offered each academic year based on faculty availability and student interests.

**Membership:** This committee is responsible for faculty membership within the program. The student member participates in the establishment of guidelines for faculty membership, reviews current faculty participation, and makes recommendations concerning new faculty applicants.

**Retreat:** Every fall, the program has a retreat (typically overnight) in a mountain location. It is the role of the students (two) the postdoctoral representative on the Retreat Committee to organize



the retreat with the oversight of a CSD graduate program faculty representative. With a pre-determined budget in mind, the students have a role in selecting the location as well as an invited speaker.

**Steering Committee:** This committee consists of the chairs of each of the 6 graduate program committees plus additional members as deemed appropriate by the director of the program.

**Student Executive Committee:** Consists of the student members of the 5 Graduate Program Committees (Advising, Recruitment, Curriculum, Membership and Retreat) and additional members to represent each cohort in the student group, and is chaired by a student member of the Advising Committee. The goal of this committee is to organize student activities and provide a mechanism to discuss student issues that can be directed to the Steering Committee and/or program director.

#### **D. Advanced Topics and Electives.**

Advanced Topics in CSD (e.g. CSDV 7670 and 7675, content varies year to year) are special interest courses intended for 2<sup>nd</sup> year students and beyond. These are 1-2 credits and comprise 15-30 hrs of meeting time within a semester. Students are encouraged to submit ideas for CSDV Advanced Topics Courses to the Curriculum Committee.

Students are required to take at least 2 elective or advance topics courses during years 2-5. Students who are in the program for longer than five years are required to take one additional Advanced Topic per year until graduation. This requirement has been in effect since the 1991-92 academic year.

Advanced Topics in Cell Biology Stem Cells and Development: Organoids

**CSDV 7670**            2 units

**Course Director:** Peter Dempsey

This 2 credit course is an introduction to concepts and practice of organ and tissue modeling using both adult and pluripotent stem cell organoid culture systems combined with bioengineering applications. Lectures/article reviews will be balanced with a significant, hands-on lab component to gain experience in organoid culture techniques. This course is offered in Fall or Spring semester, please contact course directors for information on when the class will be held during the academic year.

Practical teaching experience in Cell Biology, Stem Cells and Development

**CSDV 7675**            1 unit

**Course Director:** Julie Siegenthaler

Students will be paired with a CSD faculty mentor to develop a class session for IDPT 7801 courses directed by CSD faculty, CSDV 7605, CSDV 7606 or CSDV 7670 (depending on student interest and faculty availability). Each session will include a practice presentation and post-session critique.

#### **Electives offered by other departments/programs.**

A few electives are highlighted here, but courses change yearly. The best resource for course offerings will be found on the registrar's website when you register for each upcoming semester. Below we list several frequently offered electives for advanced graduate students. STA=subject to space availability.

- IMMU7630 (FALL) Overview of Immunology  
Instructor(s): J. Cohen
- MOLB7800 (SPRING) Advanced Topics in Molecular Biology (STA)  
Instructor(s): M. McMurray/O. Rissland
- MOLB7900 (SPRING) Practical Computational Biology for Biologists (Python)  
Instructor(s): Ramachandran/Taliaferro
- MOLB7950 (SPRING) Practical Computational Biology for Biologists (R)  
Instructor(s): Jagannathan/Mukherjee
- NRSC7615 (SPRING) Developmental Neurobiology  
Instructor(s): E. Bates/ S. Franco
- PHCL7606 (SPRING) Receptors and Cell Signaling  
Instructor(s): M. Dell'Acqua/ M.Caino
- PHCL or MOLB7801 (SPRING) Rigor and Reproducibility in Biomedical Research  
Instructor(s): R. Schweppe
- CANB7600 (SPRING) Cancer Biology  
Instructor(s): S. Nordeen

**Independent Studies in Cell and Developmental Biology (CSDV 7850)**

Independent Study is to accommodate students who wish to (1) take a Professional School Course for credit and (2) gain a defined expertise with a faculty mentor other than their thesis advisor. Consent of the faculty member offering the Independent Study and the Program Director are required.

## VII. CURRENT STUDENTS AS OF AUGUST 2020

STUDENT	START YEAR	THESIS ADVISOR
Diane Gumina	2011-2014; 2018	Su
Anthony Junker	2015	Pearson
Heather Brown	2015 (HMGP)	Niswander
Brenna Dennison	2016	Fantauzzo
Kayt Scott	2016	Appel
Michael Kaufman	2016	Brzezinski
Taylor Wallace	2016	Lyons
Adam Soh	2016	Pearson
Alexandra Theis	2016	Sussel
Adam Almeida	2017	Macklin
Nicole Moss	2017	Sussel
Madison Rogers	2017	Fantauzzo
Ali Shilleh	2017	Russ
Ian Stancil	2017	Schwartz
Zeke Thomas	2017	Moore
Elliott Brooks	2018	Sussel
John DeSisto	2018	Green
Hannah Jones	2018	Siegenthaler
Rachel Kilgore	2018	Vladar
David Villani	2018 (transfer)	Zuscik
Yunus Ozekin	2019 (BSP)	Bates
Kaitlin Alemany	2019	Moore
Amy Briggs	2019	DeGregori
Hannah Moran	2019	Mosimann
Kyle Northington	2019	Bates
Omar Ochoa Olmos	2019	Brzezinski
Samantha Payne Landgrave	2019	Zuscik
Christina Piarowski	2019	Barlow
Ian Purvis	2019	Brzezinski
Maria Hansen	2020	Rotating
Trevor Isner	2020	Rotating
Bryan Johnson	2020	Rotating
Sylvia Nunez	2020	Rotating
Christopher Schaaf	2020	Rotating
Wolfgang Schleicher	2020	Rotating
Shane Williams	2020	Rotating



## VIII. CSD FACULTY ROSTER JULY 2020

<b>Faculty</b>	<b>Primary Dept</b>	<b>CSD Students</b>
Bruce Appel	Pediatrics	Scott
Kristin Artinger	Craniofacial Biology	
Linda Barlow	Cell & Developmental Biology	Piarowski
Emily Bates	Pediatrics	Ozekin, Northington
Richard Benninger	Bioengineering	
Kristen Boyle	Pediatrics	
Joseph Brzezinski	Ophthalmology	Kaufman, Ochoa Olmos, Purvis
John Caldwell	Cell & Developmental Biology	
David Clouthier	Craniofacial Biology	
James DeGregori	Biochemistry & Molecular Genetics	Briggs
Peter Dempsey	Pediatrics	
Tobias Eckle	Anesthesiology	
Tom Evans	Cell & Developmental Biology	
Katie Fantauzzo	Craniofacial Biology	Dennison, Rogers
Tom Finger	Cell & Developmental Biology	
Santos Franco	Pediatrics	
Adam Green	Pediatrics	DeSisto
Joan Hooper	Cell & Developmental Biology	
Ethan Hughes	Cell & Developmental Biology	
Sujatha Jagannathan	Biochemistry & Molecular Genetics	
Amanda Law	Psychiatry	
Shi-long Lu	Otolaryngology	
Traci Lyons	Oncology	Wallace
Wendy Macklin	Cell & Developmental Biology	Almeida
Susan Majka	Medicine	
Jim McManaman	Obstetrics and Gynecology/Medicine	
Michael McMurray	Cell & Developmental Biology	
Jeffrey Moore	Cell & Developmental Biology	Thomas, Alemany
Christian Mosimann	Pediatrics	Moran
Jamie Nichols	Craniofacial Biology	
Lee Niswander	Molecular, Cellular & Developmental Bio	Brown
Karin Payne	Orthopedics	
Chad Pearson	Cell & Developmental Biology	Junker, Soh
Eric Pietras	Hematology/Medicine	
Rytis Prekeris	Cell & Developmental Biology	
Yosef Refaeli	Dermatology	
Tania Reis	Endocrinology, Metabolism, Diabetes	
Diego Restrepo	Cell & Developmental Biology	
Mary Reyland	Craniofacial Biology	
Olivia Rissland	Biochemistry & Molecular Genetics	
Dennis Roop	Dermatology	
Holger Russ	Barbara Davis Center	Shilleh
Charles Sagerstrom	Pediatrics	
Stephen Santoro	Pediatrics	
David Schwartz	Medicine	Stancil
Julie Siegenthaler	Pediatrics	Jones

Kunhua Song	Cardiology	
Emily Su	Obstetrics and Gynecology/Medicine	Gumina
Kelly Sullivan	Pediatrics	
Lori Sussel	Barbara Davis Center	Theis, Moss, Brooks
Matthew Taliaferro	Biochemistry & Molecular Genetics	
Arienne Theiss	Medicine	
Rajeev Vibhakar	Pediatrics	
Eszter Vadar	Pulmonary Sciences	Kilgore
Xiao-Jing Wang	Pathology	
Trevor Williams	Craniofacial Biology	
Michael Yeager	Bioengineering	
Michael Zuscik	Orthopedics	Villani, Payne Landgrave

58 active faculty members

## **IX. CSD 2020-2021 Committee Membership Roster**

Jeff Moore, Director

### **Recruitment Committee**

Santos Franco, Chair  
Katherine Fantauzzo  
Chad Pearson  
Ali Shilleh, Student Rep.  
Nicole Moss, Student Rep.  
Zeke Thomas, Student Rep.

### **Graduate Advisory Committee (GAC)**

Joe Brzezinski, Chair  
Charles Sagerstrom  
Ethan Hughes  
Katie Fantauzzo  
Sujatha Jagannathan  
Madison Rogers, Student Rep  
Alex Theis, Student Rep

### **Curriculum Committee**

Julie Siegenthaler, Chair  
Rytis Prekeris  
Olivia Rissland  
Chad Pearson  
Kayt Scott, Student Rep.

### **Membership Committee**

David Clouthier, Chair  
Peter Dempsey  
Eszter Vladar  
Joan Hooper  
Matt Taliaferro  
Michael Kaufman, Student Rep.

### **CSD 2020 Retreat Committee**

Kyle Northington, Student Rep  
Alex Theis, Student Rep

### **CDC Seminar Series**

Michael McMurray  
Jamie Nichols  
Julie Siegenthaler  
Heather Brown, Student Rep  
Kayt Scott, Student Rep

### **Steering Committee**

Joe Brzezinski  
Santos Franco  
David Clouthier  
Julie Siegenthaler  
Michael McMurray  
Jeff Moore

## **Appendix 1: Template for Thesis Committee Meeting Progress Report**

*Written progress reports can be useful tools for structuring your committee meetings. It is recommended that you send your committee members a brief progress report ~1 week before your committee meeting. The goals of the progress report are to update your committee on your progress and accomplishments, identify any needs or concerns, and identify goals for the future. Below is a suggested format for your progress report.*

**Student Name:**

**Year started graduate school:**

**Year of comps:**

**Meeting date:**

**Last meeting date:**

**Committee members:**

**Thesis mentor:**

**Title of project:**

**Summary of progress since last meeting:**

Thesis project:

Supporting projects/collaborations/pending publications:

**Manuscripts:**



**Meetings, abstracts and form of presentation (poster/talk):**

**Fellowships/ Grants:**

**Other experience, accomplishments:**

**Potential timeline for the upcoming year and graduation:**

## Appendix 2: COVID-19 Information

### CORONAVIRUS (COVID-19) UNIVERSITY RESOURCES AND GUIDELINES

The most up-to-date resources from the University can be found using the following link:

[cuanschultz.edu/coronavirus](https://cuanschultz.edu/coronavirus). Please bookmark this page in order to stay apprised of the latest University updates, resources and guidelines, throughout this pandemic. The below information was accurate as of August 2020; however, this is a constantly evolving situation so please use the above link to ascertain the most up-to-date information.

*Please note that all of guidelines, information, and links provided below, were resourced from various webpages from the University, as well as the CDC.*

#### COVID-19 SYMPTOMS

Per the [CDC](#), people with the following symptoms, may have COVID-19:

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

These symptoms may appear 2-14 days after exposure to the virus. The CDC will continue to update the symptoms on their website. We would advise that you bookmark their webpage in order to stay informed on the latest information.

#### SELF-REPORTING

Per the following [University guidelines](#), it is required that you complete the [online self-report](#), if you fall in any of the following groups below:

- You have had prolonged contact of 10 or more minutes, in close proximity of 6 feet or less, with someone who has a confirmed case of COVID-19.

- You are under quarantine by direction of a public health agency or medical provider, and/or awaiting test results for COVID-19.
- You have been informed by a public health agency or a medical provider that you have tested positive or are presumptively positive for COVID-19.
- You believe you are experiencing coronavirus symptoms.

If you fall into any of the above groups, then we are asking that you follow the three steps below:

1. Let your professor or mentor know
2. Follow the recommendations of the public health agency or medical provider.
  - You must follow [CDPHE guidance](#) and self-quarantine for 2 weeks if you have had prolonged contact of 10 or more minutes, in close proximity of 6 feet or less, with someone who has a confirmed case of COVID-19.
3. [Submit your self-report](#)

## CAMPUS SAFETY MEASURES AND PROTOCOLS

At this time, the University has implemented the following [safety measures](#), to all students, faculty and staff who have been invited and approved to return to campus. Any updates to these measures can be found on the above linked webpage.

### How to Return to Campus

*Before Returning:*

- Be invited and approved to return by leadership
- Take the required, one-time Skillssoft training “[CU: COVID-19 Return to Campus - CU Denver | Anschutz](#)”

### **3 Daily Steps Once Approved to Return:**

1. Complete the health questionnaire before arriving on campus, and bring your confirmation email to a designated check-in point
  - Access the questionnaire through [this new, easy-access link](#) daily prior to arrival on campus
  - Or scan the QR code posted at check-in locations to access
2. Bring & wear your CU Anschutz badge and a [face covering](#) at all times, indoors and outdoors
  - Only exception if working alone in a closed workspace
3. At the designated check-in point (listed below):
  - Show your confirmation email
  - Get your temperature taken
  - Pick up your wristband in a specific color for each day

### How to Stay Safe

- From the check-in point, go directly to your workspace
- Follow donning and doffing protocols for scrubs, uniforms and PPE in healthcare settings
- Stay 6 feet away from others at all times

- Do not gather, meet or congregate at any time, inside or outside
- Follow all posted signage, floor markings and schedules
- Disinfect your workspace and practice [hand hygiene](#)
- Use only the closest restrooms or break rooms during the day
- Hold all [meetings remotely](#) rather than in person
- Direct questions to your COVID official or supervisor/unit head. [Research COVID officials listed here](#). Officials for education, administration, and other areas to be identified.
- Leave campus immediately [if you feel sick](#), inform your supervisor and [self-report](#)

## LEARNING REMOTELY

Students should plan and prepare for remote learning, for most of their courses, throughout fall semester of 2020 and tentatively throughout the spring semester of 2021. Below are some helpful resources on how to prepare for remote learning and how to be successful while learning remotely.

**REMOTE LEARNING:** <https://www1.ucdenver.edu/offices/office-of-information-technology/get-help/learning-remotely>

**NAVIGATING CANVAS:** <https://www1.ucdenver.edu/offices/office-of-information-technology/get-help/learning-remotely/accessing-course-content>

**SUCCESS AS A REMOTE LEARNER:** <https://www1.ucdenver.edu/offices/office-of-information-technology/get-help/learning-remotely/how-to-succeed-as-a-remote-learner>

## STUDENT SUPPORT

Student Resources: <https://www.cuanschutz.edu/education/student-resources>

The University encourages any student experiencing stress, anxiety and fear to contact the Campus Health Center (303-724-4716) for a free and brief consult regarding the coronavirus pandemic.