Designated Emphasis in Translational Research
Degree Requirements
Revised: May 25, 2018
Approved by Graduate Council: April 16, 2019

Requirements of the Designated Emphasis in Translational Research (DETR)

A. DETR Admissions Criteria

Students interested in participating in the DETR must be enrolled in the Ph.D. program of one of the participating graduate programs or groups. The student’s mentor/ major professor should be a member of the DETR faculty. It is recommended that a student enroll during the first two years of their Ph.D. program. For a current list of affiliated graduate programs and groups, please consult https://grad.ucdavis.edu/programs/designated-emphases/gdtr. The DETR program welcomes the addition of new graduate programs and graduate groups, as well as applications for membership by faculty.

B. Curriculum

The curriculum of the designated emphasis will consist of the following major components:

1. Required Courses
   The core courses will introduce PhD students to the clinical and translational environment and is intended to acculturate trainees to the clinical environment, integrate medical principles into their research, and highlight high-impact clinical studies. It also includes aspects of study design and reproducible research.

   Integrating Medicine into Basic Science (CLH 250) – 4 units (Summer – Sacramento)
   Summer institute consisting of clinical rotations to acculturate students to the human medical environment; integrate medical principles, physiology and pathophysiology into basic research; introduce high-impact clinical studies related to medicine and health.

   Critical Assessment of the Biomedical Literature (CLH 211) – 1 unit (F, W or S – Sacramento)
   This course has a journal club format, and exposes students to topical issues and controversies in the design of interdisciplinary translational research, with an emphasis on critical assessment of the biomedical and health sciences literature.

   Team Science (CLH 207) – 1 unit (Spring – Sacramento)
   This course offers guidance on how best to engage in team science to pursue complex questions, work effectively with team members, and produce high impact research that meets society's needs.

   Elective courses: Choose from approved elective list. – 6 units (F, W or S)
   TOTAL REQUIRED UNITS: 12

2. Elective Courses
   Students should take 6 units of elective courses from the approved elective course list. Elective choices should be outside the requirements of the PhD program in which the student is enrolled and should provide additional competency in translational aspects of research. Other courses may be considered by the Chair upon request with justification.
• CLH 240: Research Integration (1 unit)
• CLH 210Y: Principles and Methods of Comparative Effectiveness Research (4 units)
• CLH 298: Precision Medicine in Cardiovascular Disease (2 units)
• GGG 296 - Scientific Professionalism and Integrity (2 units)
• NSC 225: Translational Research in the Neurobiology of Disease (2 units)
• NSC 261C: Topics in Vision: Clinical Vision Science (2 units)
• PTX 277: Molecular Mechanisms in Cancer and Other Diseases (3 units)
• PHA 207: Drug Discovery and Development (3 units)
• PHA 225: Gene Therapy (3 units)
• PHA 250: Functional Genomics: From Bench to Bedside (3 units)

3. Qualifying Examination
The Ph.D. qualifying examination shall include an examination of knowledge within the designated emphasis. At least one faculty member of the designated emphasis program shall participate in the qualifying examination. Satisfactory performance on the qualifying examination for the Ph.D. will be judged independently from the performance on the designated emphasis.
In the event that a student passes the PhD qualifying exam, but receives a “not pass” for the DE, the Executive Committee of the DE will define a plan for remediation. The plan may include, but is not limited to re-examination by the DE Executive Committee, coursework, teaching, or preparation of a paper. If the student is re-examined, the outcome is limited to “pass” or “fail”. If the student receives a “fail”, the student is disqualified from the DE.

4. Dissertation Requirements
The dissertation topic shall incorporate study within the designated emphasis. The dissertation committee shall include at least one faculty member of the designated emphasis. The major professor must be a member of the DETR faculty.

5. Degree Conferral Process
The designated emphasis will be awarded solely in conjunction with the Ph.D. and will be signified by the degree designation “Ph.D. in X with Emphasis in Translational Research.”

C. Student Advising
The DE Chair will serve as Graduate Advisor, and the Program Coordinator will also serve as an advisor. Working with the graduate advisors in the affiliated PhD programs, the Graduate Advisor will oversee students’ academic progress towards fulfilling the DE requirements. Students will meet with the Advisor regularly to consult about their selection of courses.

D. Impact on Time to Degree
Because the DE requires 12 units, it is estimated that the impact of completing the DE in Translational Research on the student’s time to degree will be minimal.
Requirements of the Designated Emphasis in Translational Research (DETR)

Admissions Criteria
Students interested in participating in the DETR must be enrolled in the Ph.D. program of one of the participating graduate programs or groups. The student’s mentor should be a member of the DETR faculty. It is recommended that a student enroll during the first two years of their Ph.D. program. For a current list of affiliated graduate programs and groups, please consult the web site. The DETR program welcomes the addition of new graduate programs and graduate groups, as well as applications for membership by faculty. Students must be selected as DETR Trainees prior to taking the Ph.D. Qualifying Examination of their degree program.

Curriculum

Required Courses:
- Introduction to Clinical Research CLH 200 – 3 units
- Methods in Clinical Research CLH 203 – 3 units
- One (1) ethics course, chosen from the provided list – 2-3 units
- One (1) elective course which must be approved by the graduate advisor. It should be outside the requirements of the PhD program in which the student is enrolled and provide additional competency in translational aspects of research. – 3-4 units

TOTAL REQUIRED UNITS: 12

Core Requirement: This two-course sequence introduces PhD students to the clinical and translational environment and is intended to acculturate trainees to the clinical environment, integrate medical principles into their research, and highlight high-impact clinical studies. It also includes aspects of study design and reproducible research.

- **Introduction to Clinical Research (CLH 200) – 3 units**
  Overview of major clinical research topics that will combine didactic lectures and presentations by successful clinical researchers describing practical experiences. A team capstone project is completed, focusing on current topics in clinical research.

- **Methods in Clinical Research (CLH 203) – 3 units**
  Overview of major approaches to clinical and translational research. Laboratory, pre-clinical, and clinical methods will be discussed, as well as methods in health services research and health informatics.
**Bioethics Requirement:** DETR students must complete one ethics course such as the following (substitution allowed with approval of the graduate advisor, should be completed before QE):

- ABG 401 Ethics and Professionalism in Animal Biology (2 units)
- BIM 209 Scientific Ethics and Inquiry (2 units)
- CLH 204 Responsible Conduct of Research (3 units)
- ECL 290 Responsible Conduct of Research for Environmental Scientists (2 units)
- GGG 296 Scientific Professionalism and Integrity (2 units)
- PLP 298 Scientific Ethics in Biotech Research (2 units)

**Elective Course(s):** DETR students must complete at least one elective course which must be approved by the graduate advisor. It should be outside the requirements of the PhD program in which the student is enrolled and provide additional competency in translational aspects of research. Allowable elective courses (but not limited to) are:

- NSC 225 Translational Research in the Neurobiology of Disease (2 units)
- NSC 261C Topics in Vision: Clinical Vision Science (2 units)
- PHA 207 Drug Discovery and Development (3 units)
- PHA 255 Gene Therapy (3 units)
- EPI 240 Principles of Injury Epidemiology (3 units)
- PMD 440 (200 level course equivalent): Surgery/Pathology/Radiology Translational Research Laboratory Course (2 units)

**Qualifying Examination**
The Ph.D. qualifying examination shall include an examination of knowledge within the designated emphasis. At least one faculty member of the designated emphasis program shall participate in the qualifying examination. Satisfactory performance on the qualifying examination for the Ph.D. will be judged independently from the performance on the designated emphasis.

**Dissertation Requirements**
The dissertation topic shall incorporate study within the designated emphasis. The dissertation committee shall include at least one faculty member of the designated emphasis. The major professor must be a member of the DETR faculty.

**Degree Conferral Process**
The designated emphasis will be awarded solely in conjunction with the Ph.D. and will be signified by the degree designation “Ph.D. in X with Emphasis in Translational Research.”

**Student Advising**
The Chair will serve as graduate advisor, and the Program Coordinator will also serve as an advisor.

**Impact on Time to Degree**
Because the DE requires only four graduate courses, one of which may be in the student’s home program, it is estimated that the impact of completing the DE in Translational Research on the student’s time to degree will be minimal.