To: FREDERICK MEYERS, Designated Emphasis in Translational Research Chair

From: KYAW THA PAW U, Graduate Council Chair

Re: Designated Emphasis in Translational Research Degree Requirements

Enclosed is a copy of the Designated Emphasis in Translational Research graduate degree requirements as approved by Graduate Council on March 4, 2016. These degree requirements are now the official requirements for the Designated Emphasis in Translational Research and will be posted on the Office of Graduate Studies program webpage:

https://gradstudies.ucdavis.edu/programs/designated-emphases/gdtr

Thank you for your efforts on behalf of graduate education.

Sincerely,

Kyaw Tha Paw U, Chair
Graduate Council

c: Nicole Baumgarth, Graduate Council Vice Chair
Regan Scott-Chin, Graduate Studies Analyst
Stacy Hayashi, Program Coordinator
June 22, 2015

Dr. Kyaw Tha Paw U, Chair
Graduate Council

RE: Designated Emphasis in Translational Research, Proposed Changes

Dear Dr. Paw U:

Please find attached the proposed changes to the curricular requirements for the DE in Translational Research (DETR). Historically, the DETR has been very well received and acclaimed by participating students; however the DE was modeled around the Howard Hughes Integrating Medicine into Basic Science Training Program (HHMI) which has ended. Many of the courses and associated experiences are no longer offered, thus requiring us to revise some of the DETR curriculum. We now have an opportunity to revise the DETR in a manner that broadens the accessibility of this popular program for graduate students. We convened a group of invested DETR faculty to revise the DETR to suit the needs of a broader group of students in a more accessible format as outlined in the following attachment. The DETR is currently on hiatus, though we have been contacted by several students who are highly interested in applying. Our proposed changes will not affect the length of time to degree, and in fact, the students may be able to complete the DE in a shorter amount of time than in the previous iteration. In addition, we are submitting a proposal for a Graduate Academic Certificate in Translational Research to meet the needs of those students who wish the additional translational research training but who do not meet the QE requirements of the DE. We look forward to implementing these changes and bringing on additional students in the newly revised DETR program.

Sincerely,

Frederick J. Meyers, MD, MACP
Chair, Designated Emphasis in Translational Research
Vice Dean, School of Medicine
UC Davis Health System

cc: Lisa Marquez, Graduate Council Analyst
    Stacy Hayashi, DETR Program Coordinator
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 adviser.

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.
Description of the Academic Nature of the DETR

Admissions Criteria
Ph.D. graduate students in good standing in the affiliated programs must declare an interest in the DETR program after completing the first Ph.D. year, to have an optimal career impact, precisely when they are selecting dissertation mentors and formulating dissertation research proposals. They will have completed basic didactic instruction in their chosen discipline, instruction in essential laboratory techniques, and rotations through various faculty laboratories. Graduate students will be recruited based on: 1) academic credentials; 2) motivation for translational biomedical research; and 3) fit with the DETR goals. We will further increase the diversity of DETR trainees by including the following selection criteria: documented activities which have improved the health, education, or well-being of ethnic and racial minorities, gay and lesbian persons, disabled persons, and/or persons of low socioeconomic status. Students must be selected as DETR Trainees prior to taking the Ph.D. Qualifying Examination of their degree program.

Curriculum

1) Required Courses for the DETR
No changes are required in the curricular requirements for existing Ph.D. programs. The curriculum of the designated emphasis will consist of the following major components (11 required units):

   a) Integrating Medicine into Basic Science (CLH 250, approval pending, 6 units), a four-week DETR summer institute to acculturate trainees to the clinical environment, integrate medical principles into their research, and highlight high-impact clinical studies. The institute includes “Doctoring,” a small-group, case-based course where DETR trainees alongside medical students, learn patient communication, clinical problem solving, and applications of psychosocial, cultural, bioethical, and basic science concepts to patient case scenarios.

   b) Congestive Heart Failure, Molecular Mechanism of Disease (CLH 230, 3 units), a new course designed to introduce the molecular mechanisms of disease as related to cardiovascular health.

   c) General Clinical Research Center (GCRC) clinical study coupled with a rotation through the CTSC (Clinical and Translational Science Center) (CLH 231, submitted, 1 unit). Leaders of CRISP units will reinforce trainees’ appreciation of the GCRC clinical study by providing knowledge and skills in technical, logistical and regulatory requirements for conducting clinical research.
d) **Hot Topics in Clinical Research Seminar Series and Journal Club (CLH 290A, approval pending, 1 unit)**. A new DETR two-part seminar series for presenting landmark papers in vascular medicine and research plus discussions by “stakeholders” (legislators, state agency officials, community advocacy groups and underserved minority groups). Also attend other existing journal clubs and seminars, sponsored by clinical units and not typically attended by biological PhD students.

Individualized Electives:

e) **NIH K30 Mentored Clinical Research Training Program (MCRTP) menu of courses** including opportunities in clinical research, responsible research conduct, grant writing, team science, informatics, choosing appropriate animal models, regulations, entrepreneurship, and career development; this flexible enrollment will provide the added value of DETR trainees networking with junior clinical faculty and fellows.

f) **Clinical Clerkship/Rotation** for trainees to experience shoulder-to-shoulder training with medical students, residents, and fellows, in a carefully designated set of clinical venues relevant to their research in a half-day rotation, followed by a debriefing session.

g) **Clinical Medicine-Basic Science Learning Groups**, a core feature of the DETR, whereby small groups of DETR trainees, alumni and mentors will form new translational research teams. The learning groups will meet at least once quarterly.

h) **Research Facility Field Trips** for additional perspectives on translational research and advanced technologies through visits to UCD centers such as the Functional Imaging and Primate Research centers, biopharmaceutical companies, and a federal research laboratory.

i) **Quarterly Breakfast Meetings with the Deans** to reinforce the links between biology and medicine, emerging areas of mutual research interest, and career development.

j) **Kick-Off and Year-End Retreats** to foster interactions and track progress.

k) **Social events** to build social relationships and encourage interactions.

**Elective Courses**
Elective courses may be recommended by the Adviser. These courses would be recommended on an individual basis, after considering the student’s background and particular area of research.

**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.

**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 advise students, and the Program Coordinator will also serve as an adviser.