

# Graduate Program in Medicinal Chemistry

## Ph.D. Degree Learning Goals and Assessment

The doctoral program in Medicinal Chemistry trains students at the highest level to assume leadership roles in research, teaching, and service in industry, academia, and government.

### **Learning Goal 1 for Graduate Students: Attain marked ability, scholarship, and research skills in Medicinal Chemistry**

*Assessment of graduate student achievement of Goal 1:*

- Grades in graduate courses
- Independent Research Proposal assesses student's ability for original thinking and innovation, as well as depth and breadth of knowledge in the field
- Presentation of two seminars in areas of Medicinal Chemistry unrelated to student's research
- Presentation of research results at group meetings
- Review by faculty of student progress with close advising and mentoring
- Placement in positions and careers that require ability and scholarship in synthetic medicinal chemistry, natural products, or computational chemistry.

*Role of the program in helping students to achieve Goal 1:*

- Close advising to assure that students are being prepared in a coherent and academically rigorous fashion
- Effective monitoring of student progress
  - Includes annual reports on research progress from both the student and the student's committee chair
  - Hold regular group meetings to discuss research projects
  - Research meeting with student's dissertation committee to review progress and future plans for research project approximately one year prior to dissertation defense
- Evaluations of teaching effectiveness of instructors in graduate courses
  - If effectiveness is below expectations, work with instructors to improve effectiveness
- Periodic review of curricular offerings, degree requirements and assessment tools
  - By program faculty

### **Learning Goal 2 for Graduate Students: Engage in and conduct original research**

*Assessment of graduate student achievement of Goal 2:*

- Preparation of Ph.D. dissertation
- Assessment of quality of Ph.D. dissertation:
  - Public defense of dissertation
  - Critical reading of dissertation by committee of graduate faculty members and a committee member from outside of the Medicinal Chemistry graduate program.
  - Submission and acceptance of peer-reviewed articles and conference papers based on the dissertation
- Achievement of students as evidenced by professional placements, selection for conference presentations, peer-reviewed publications and individual grant attainment

*Role of the graduate program in helping students achieve Goal 2:*

- Provide early introduction to research methods and opportunities for research
- Provide opportunities to present research and receive feedback
- Maintain adequate funding levels through the research phase
- Provide adequate facilities, instrumentation, and research environment for research projects
- Provide comprehensive advising and assist in the identification of mentors

### **Learning Goal 3 for Graduate Students: Prepare to be professionals in the field of Medicinal Chemistry**

*Assessment of graduate student achievement of Goal 3:*

- Review evidence of papers presented, publications and professional networking
- Evaluations of teaching effectiveness of graduate student recitation instructors
- Collection of placement data
- Review by external advisory committees, both inside of and external to the academy.
- Survey alumni/ae

*Role of the program in helping students achieve Goal 3:*

- Provide students with ample opportunities to present research findings
- Provide opportunities for students to meet with guest speakers from industry, academia, and government laboratories
- Discuss with students strategies for effective teaching
- Encourage participation in professional development programs in such areas as interview skills, presentation skills, development of cvs, use of research tools, training in the responsible conduct of research, and proposal writing
- Encourage participation by qualified individuals from industry to serve as outside members of students dissertation committees
- Acquaint students with career opportunities in academia, industry, and government

The leadership of the Medicinal Chemistry graduate program will regularly review the structure and content of the program and the feedback received from assessments and surveys. These reviews will be used to provide the best possible education to students in order to meet the needs for highly trained individuals in the field of Medicinal Chemistry.