

College of Medicine

ANATOMY AND CELL BIOLOGY

Mailing Address:
Department of Anatomy and Cell Biology (MC 512)
Room 578 CME
808 South Wood Street
Chicago, IL 60612-7308

Campus Location: 578 CME
Program Codes: 20FS1024MS (MS)
20FS1024PHD (PhD)
Telephone: (312) 996-6791
E-mail: conwell@uic.edu
Web Site: <http://www.anatomy.uic.edu/index.html>
Head of the Department: Scott T. Brady
Director of Graduate Studies: Conwell Anderson

The Department of Anatomy and Cell Biology offers work leading to degrees in Anatomy and Cell Biology at both the master's and doctoral levels, but gives priority to doctoral applicants. The department also participates in the Medical Scientist Training Program (see the *Medical Scientist Training Program* section for more information). Areas of study include neurobiology, cell biology, and developmental biology. There is a strong emphasis on interdisciplinary studies that examine the relationship between structure and function. Research leading to a graduate degree is available in the following areas: neurobiology of the synapse, axonal transport, cytoskeleton, and response to stress; sensory systems; neuroplasticity; Alzheimer's disease, neuroblastoma, ion channel regulation, cell motility, connective tissue, and stem cell biology. The Interdepartmental Concentration in Neuroscience is available to doctoral students.

Admission Requirements

Applicants should apply to GEMS with a first choice of Anatomy and Cell Biology, and are considered on an individual basis. Transcripts of all undergraduate and any graduate work must be submitted. In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

Master of Science and Doctor of Philosophy

- **Baccalaureate Field** Biology or a closely related field. Students who have majored in other fields may be admitted if they show substantial evidence of ability to complete the program.
- **Grade Point Average** At least 2.75/4.00 for the final 60 semester (90 quarter) hours of undergraduate study.
- **Tests Required** GRE General.
- **Minimum TOEFL Score** 550 (paper-based); 213 (computer-based); 80, with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21 (new Internet-based TOEFL).
- **Letters of Recommendation** Three required.
- **Personal Statement** Required. The statement must address the applicant's research interests and career goals.
- **Other Requirements** Preference for admission is given to students who intend to complete a doctoral program.

Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

Master of Science

- **Minimum Semester Hours Required** 32.
- **Course Work** All students must take or show proficiency in three of four courses from GCLS 500, 501, 502, 503. They must also take or show proficiency in GCLS 504, 505, and 510. At least 3 additional semester hours must be in 500-level courses specifically related to the thesis research proposed.
- **Comprehensive Examination** None.
- **Thesis, Project, or Course-Work-Only Options** Thesis required. No other options are available.
- **Other Requirements** All graduate students must serve once as laboratory teaching assistants for one of the following: Tissue Biology, Neuroanatomy, or one section of Gross Human Anatomy.

Doctor of Philosophy

- **Minimum Semester Hours Required** 96 from the baccalaureate.
- **Course Work** All students must take or show proficiency in three of four courses from GCLS 500, 501, 502, 503. They must also take or show proficiency in GCLS 504, 505, 506, and 510. At least 6 additional semester hours must be in 500-level courses specifically related to the dissertation research proposed.
- **Preliminary Examination** Required; oral examination based on a proposal in the National Research Service Award format.
- **Dissertation** Required.
- **Other Requirements** All graduate students must serve once as laboratory teaching assistants for one of the following: Tissue Biology, Neuroanatomy, or one section of Gross Human Anatomy.

Interdepartmental Concentration in Neuroscience

Doctoral students may pursue the Interdepartmental Concentration in Neuroscience. Refer to *Interdepartmental Concentration in Neuroscience* in the *Graduate College* section for more information.

BIOCHEMISTRY AND MOLECULAR GENETICS

Mailing Address:
Department of Biochemistry and
Molecular Genetics (MC 669)
900 South Ashland Avenue
Chicago, IL 60607-7170

Campus Location: 2150 MBRB
Program Codes: 20FS1069MS (MS)
20FS4050PHD (PhD)
Telephone: (312) 996-6984
E-mail: mvclark@uic.edu

Web Site: <http://www.uic.edu/com/bcmg/>
Head of the Department: Jack Kaplan
Co-Directors of Graduate Studies: Alisa Katzen, Lester F. Lau

The Department of Biochemistry and Molecular Genetics offers work leading to the Master of Science degree in Biochemistry and Molecular Biology and the Doctor of Philosophy degree in Biochemistry and Molecular Genetics, and participates in the Medical Scientist Training Program (see the *Medical Scientist Training Program* section for more information). The department has active, well-funded research programs in the molecular biology of growth and development, oncogenesis, metabolic regulation, macromolecular structure and function, signal transduction, and the biochemical basis of diseases. The Interdepartmental Concentration in Neuroscience is available to doctoral students.

Admission Requirements

In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

Master of Science and Doctor of Philosophy

- **Baccalaureate Field** No restrictions. Prior academic work should include 16 semester hours of chemistry (including organic chemistry, physical chemistry, and quantitative analysis), and at least one advanced course in biology. An undergraduate course in biochemistry is highly recommended.
- **Grade Point Average** At least 2.90/4.00 for the final 60 semester (90 quarter) hours of undergraduate study.
- **Tests Required** GRE General.
- **Minimum TOEFL Score** 570 (paper-based); 230 (computer-based); 80, with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21 (new Internet-based TOEFL).
- **Letters of Recommendation** Required.
- **Personal Statement** Required.
- **Deadlines** The application deadline for this program is earlier than the Graduate College deadline; contact the program for information on current deadlines.
- **Other** The department only admits applicants who wish to be candidates for the PhD degree. Applicants are not admitted as candidates for a terminal master's degree.

Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

Master of Science

- **Minimum Semester Hours Required** 32.
- **Course Work** Two tracks (thesis and nonthesis) are available to students in this program.
- **Required Courses:** GCLS 501; 502 or 503; 504; 505; 2 semesters of BCMG 515; BCMG 598. Students enrolled in the nonthesis track must also take 3 semesters of BCMG 503 (or equivalent); both GCLS 502 and 503; and are not required to take BCMG 598.
- **Electives:** Students must take 9 hours of electives in the second semester of the first year choosing from BCMG 513, GCLS 500, GCLS 510, GCLS 511, or other 500-level courses. All elective courses are subject to the approval of the departmental graduate committee.
- **Comprehensive Examination** None.
- **Thesis, Project, or Course-Work-Only Options** Thesis or course work only. No other options are available.
- **Thesis:** Thesis students must earn at least 12 semester hours in BCMG 598.
- **Other Requirements** Supervised part-time teaching experiences during one term of each year are regularly assigned to students in the program.

Doctor of Philosophy

- **Minimum Semester Hours Required** 96 from the baccalaureate.
- **Course Work** *Required Core:* Of the four core GEMS courses (GCLS 500, 501, 502, and 503), all students must take or show proficiency in GCLS 501, 502, and 503. Students must also take or show

proficiency in GCLS 504 and 505; GCLS 506 or BCMG 503; 6 semesters of BCMG 515; BCMG 575; BCMG 595 every semester; BCMG 501.

- **Electives:** Three 500-level electives chosen from the following: GCLS 500, GCLS 510, GCLS 511, GCLS 515, BCMG 513, PHYB 586. Subject to approval by the director of graduate studies, an alternative 500-level course can be used to satisfy one of these electives.
- **Preliminary Examination** Required. Students take a preliminary qualifying examination for advancement to PhD candidacy at the end of their second year of study. This examination will test a student's ability to design and orally defend a scientific research plan as well as his/her general knowledge of biochemistry and molecular genetics.
- **Dissertation** Required. A defined research experience and completion of an approved thesis is required. The thesis will be presented in a public forum and defended in front of a faculty jury. The research presented in the thesis is expected to be of publishable quality.
- **Other Requirements** Supervised part-time teaching experiences during one term of each year are regularly assigned to students in the program. The department requires every degree candidate to fulfill teaching assignments, regardless of the source of financial support for the student.

Interdepartmental Concentration in Neuroscience

Doctoral students may pursue the Interdepartmental Concentration in Neuroscience. Refer to *Interdepartmental Concentration in Neuroscience* in the *Graduate College* section for more information.

GRADUATE EDUCATION IN MEDICAL SCIENCES

Mailing Address:

Graduate Education in Medical Sciences
College of Medicine (MC 784)
1853 West Polk Street
Chicago, IL 60612

Campus Location: CSN Suite 300, Rm 324

Program Code: 20FS8060PHD

Phone: (312) 355-0389

Fax: (312) 413-8221

E-mail: gemsinfo@uic.edu

Web Site: <http://gems.comd.uic.edu/>

Co-Directors: William Hendrickson and Buck Hales

Program Administrator: Laura King Price

The GEMS Program offers students integrated training in the biomedical sciences. PhD programs include the areas of Anatomy, Biochemistry, Biophysics, Cell and Molecular Biology, Genetics, Immunology, Microbiology, Neurosciences, Pathology, Pharmacology, and Physiology. Students have the flexibility to choose a mentor from among more than 150 funded research faculty in all departments and PhD programs of the College of Medicine. Areas of research excellence within the broader disciplines include stem cell biology; cancer; development; gene regulation; host-pathogen biology; lung biology; molecular and integrated cardiac and vascular biology; proteomics, genomics, and bioinformatics; reproductive biology; signal transduction and virology.

Admission Requirements

Students apply using the GEMS PhD program code (20FS8060PHD) and list in order of preference up to three of the participating departments as areas of interest.

Participating departments are the following: Anatomy and Cell Biology (20FS1024PHD), Biochemistry and Molecular Genetics (20FS4050PHD), Microbiology and Immunology (20FS1468PHD), Pathology (20FS1548PHD), Pharmacology (20FS1564PHD), Physiology and Biophysics (20FS1584PHD). Specific requirements are listed under each of these graduate programs.

In general, students should have the following:

- **Baccalaureate Field** No restrictions. However, applicants must have a satisfactory record of courses in biology, inorganic and organic chemistry, and at least one year of physics and of mathematics.
- **Grade Point Average** At least 2.75/4.00 for the final 60 semester hours of undergraduate study. Preference is given to applicants with a GPA greater than 3.00/4.00.
- **Tests Required** GRE General. This test should be taken prior to submission of the formal application. Preference is given to applicants with a combined verbal and quantitative score above 1200 and an analytical writing score above 4.0.
- **Minimum TOEFL Score** 550 (paper-based); 213 (computer-based); 80 (Internet-based TOEFL).
- **Letters of Recommendation** Required.
- **Personal Statement** Required.
- **Other Requirements** Preference is given to applicants with a documented record of research accomplishments.

Degree Requirements

GEMS students, during their first semester of study, engage in a core curriculum that focuses on the fundamentals of biochemistry, cell biology, molecular biology, and physiology. Beginning with the second semester, students choose from a variety of courses with the goal of concentrating more on their chosen area of interest.

During the first year, students additionally engage in 3 or 4 laboratory rotations of 10 weeks each. The students select from among the GEMS faculty potential mentors for their thesis research. At the end of the first year, students select their mentor and department from within the College of Medicine. The PhD is granted by the degree-granting program that the student selects.

- **Minimum Semester Hours Required** 96 from the baccalaureate.
- **Course Work Required Courses:** All students must take or show proficiency in three out of the following four core courses: GCLS 500, 501, 502, 503. Students must take or show proficiency in Research Methods courses GCLS 504 and 505. Students must also take select 500-level courses as specified by their chosen PhD program.
- **Preliminary Examination** During the second year of graduate study, students must pass a preliminary examination in a format specified by their chosen department.
- **Dissertation** Required. Students must earn at least 52 hours in Research in their department (599).
- **Other Requirements:** Journal clubs and research seminars as specified by the student's chosen department.

HEALTH PROFESSIONS EDUCATION

Mailing Address:
Department of Medical Education (MC 591)
808 South Wood Street
Chicago, IL 60612-7309

Campus Location: 986 CME
Program Code: 20FS1306MHPE
20FS1306MHPU (Online program)

Telephone: (312) 996-3590

E-mail: ibharris@uic.edu

Web Site: <http://www.uic.edu/com/mcme/mhpeweb/Home.html>

Head of the Department: Leslie J. Sandlow
Director of Graduate Studies: Ilene Harris

The Department of Medical Education offers a program of studies leading to the Master of Health Professions Education (MHPE) degree. The purpose of the MHPE program is to provide the training necessary to produce effective leaders and scholars in health professions education. Disciplinary and interdisciplinary offerings are available on topics related to management and leadership in health professions education, scholarship methods, curriculum, instruction, competence assessment, program evaluation, quality assessment, primary care education, clinical decision making, and medical humanities and ethics. The Interdepartmental Concentration in Gender and Women's Studies is available to students in this program.

Admission Requirements

Applicants are considered on an individual basis. In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

Master of Health Professions Education

- **Baccalaureate Field** Applicants must hold a baccalaureate degree or an advanced professional degree in a health professions discipline.
- **Other Requirements** At least 3.00/4.00 for the final 60 semester hours (90 quarter hours) of undergraduate study.
- **Tests Required** None.
- **Minimum TOEFL Score** 550 (paper-based); 213 (computer-based); 80, with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21 (new Internet-based TOEFL).
- **Letters of Recommendation** Three required.
- **Personal Statement** Required. The statement should address the applicant's professional goals.

Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

Master of Health Professions Education

- **Minimum Semester Hours Required** 32.
- **Course Work Required Courses:** MHPE 501, 502, 503, 504, and 505. Students must also take 4 semester hours in a content area related to their thesis.
- **Comprehensive Examination** None.
- **Thesis, Project, or Course-Work-Only Options** Thesis. No other options available.
- **Thesis:** Students must earn at least 6 semester hours in MHPE 598; no more than 10 semester hours of MHPE 598 can be applied to the degree.

Interdepartmental Concentration in Gender and Women's Studies

Students earning an MHPE degree in the Department of Medical Education may complement their courses by enrolling for a concentration in Gender and Women's Studies after consulting with the director of graduate studies. See *Gender and Women's Studies* in the College of Liberal Arts and Sciences section for more information.

MEDICAL BIOTECHNOLOGY

Mailing Address:
1601 Parkview Avenue
Rockford, IL 61107

Campus Location: U of I College of Medicine at Rockford
Program Code: 20FS5020MS7
Telephone: (815) 395-5728
E-mail: jlss@uic.edu (Janet Stull-Snow)
Web Site: <http://rockford.medicine.uic.edu>
Director of Graduate Studies: Dr. Thomas M. Sutliff
Associate Director of Graduate Studies: Dr. Khalifah Sidik

The University of Illinois College of Medicine at Rockford offers work leading to the Master of Science in Medical Biotechnology. The program is administered by the Department of Biomedical Sciences.

The Master of Science in Medical Biotechnology will train students in the major techniques and disciplines commonly used in biotechnology. Course subjects may include recombinant DNA and genomics, protein production and proteomics, biological systems and physiology. In addition, students will receive direct experience with many of the analytical and testing techniques used in the biotechnology and healthcare industries along with an introduction to pertinent regulatory issues and practices and basic training in program management systems and product development processes.

A unique aspect of this program is the focus on biotechnology in medicine. Students are trained in the sciences and business practices important to biotechnology using medical applications. Scientists with industrial biotechnology experience, legal and regulatory professionals that serve the industry, and practicing physicians will participate as instructors in the experience-directed course work and research activities.

Classes will also be offered in the evenings or weekends, thereby allowing students to earn their MS degree while still working full or part-time.

Admissions Requirements

In addition to the Graduate College minimum requirements, applicants must meet the following admissions requirements:

Master of Science

- **Baccalaureate Field** A baccalaureate degree or its equivalent in a science- or engineering-related field from an accredited college or university will be required, except in special cases. Prior academic work should include college mathematics, general biology and biochemistry, general and organic chemistry, or the equivalent engineering courses.
- Generally, qualified candidates may be required by the department to remove specific course work deficiencies by completing selected undergraduate courses prior to matriculation or graduation.
- **Grade Point Average** At least 3.00/4.00 for the final 60 semester hours (90 quarter hours) of undergraduate study. The student's grade point average

for any postbaccalaureate course work must be 3.00/4.00 or greater.

- **Transcripts Required** from all institutions where the applicant earned the last 60 semester hours (90 quarter hours) of credit toward the baccalaureate degree and from all institutions where postbaccalaureate work has been done.
- **Tests Required** GRE General or Subject Test in Biology or Chemistry is recommended. The GRE requirement may be waived for applicants with sufficient work experience in the biotechnology or science-related field on a case-by-case basis
- **Minimum TOEFL Score** 550 (paper-based); 213 (computer-based); 80, with sub-scores of Reading 20, Listening 18, Speaking 21, and Writing 21 (new Internet-based TOEFL). The TOEFL Internet-based Test (iBT) is the preferred test. **Note:** Exemptions to the TOEFL requirement are as stated in the UIC Graduate College Application Instructions, page 4.
- **Letters of Recommendation** Three required. If applicant is employed one of the letters of reference must come from the employer confirming employer commitment to student participation. The other letters should be from former professors, teachers or persons who can refer the candidate based on personal experience with the candidate's professional competence.
- **Personal Statement** Required statement of career goals.

Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

Master of Science

- **Minimum Semester Hours Required:** 34 for project option, 38 for thesis option.
- The research project option is directed toward students who wish to conduct their research in an industrial lab with the associated legal requirements.
- The thesis option is a more traditional master's research option which is conducted in university laboratories or a laboratory affiliated directly with the university and follows the university requirements for intellectual property.
- **Course Work Required Courses:** MBT 500, MBT 501, MBT 502, MBT 503, MBT 510, MBT 513, MBT 595, and BSTT 400.
- **Electives:** At least 5 hours.
- **Comprehensive Examination** Not required
- **Thesis, Project, or Course-Work-Only Options** Thesis research or project research are the only options. No other options are available.
- **Thesis:** In addition to required courses and electives, research thesis students must earn at least 12 hours in MBT 598. A maximum of 14 hours in MBT 598 may be used to meet degree requirements.
- **Project:** In addition to required courses and electives, research project students must earn at least 8 hours in MBT 597.
- Formal defense of either the research thesis or research project is required.

MEDICAL SCIENTIST TRAINING PROGRAM

Mailing Address:
Medical Scientist Training Program
College of Medicine c/o Office of the Dean (MC 784)
1853 West Polk Street
Chicago, IL 60612

Campus Location: Suite 300 CSN
Telephone: (312) 996-7473
E-mail: Roberta@uic.edu
Web Site: <http://www.uic.edu/com/mdphd/>
Program Director: Larry S. Tobacman
Program Assistant Director: Roberta L. Bernstein

The UIC College of Medicine offers a select number of students the opportunity to work toward both the MD and PhD degrees. The objective of the program is to train students for careers in academic medicine and research. Students admitted to this highly competitive program participate in the medical school curriculum and pursue original doctoral research projects in the laboratories of the university's graduate faculty.

The first two years of the program are used to complete the M-1 and M-2 years of the medical curriculum. Students enter "at large," that is, without affiliation to a particular graduate department. During this time, they may explore research opportunities in any academic department of the College of Medicine and selected graduate departments throughout the university. After admission, the students complete three rotations through the laboratories of various potential advisers before a choice is made. A series of lunchtime seminars designed for new MD/PhD students provides an overview of opportunities for research. An ongoing series of dinner seminars is presented to MD/PhD students in all stages of the program by the faculty and invited physician-scientists from other academic health science centers. These seminars enhance the students' general knowledge and help to develop new approaches toward the investigation of problems in biomedical research. The seminar series, along with the annual research day and other gatherings with faculty, serve to bring together trainees and preceptors and expose the students to the area of research being explored at UIC and the faculty doing the research.

Choice of a permanent thesis advisor and graduate department take place by the end of the second year. Students in the graduate phase of the program work side-by-side with PhD students in the basic sciences and meet all departmental requirements for the PhD degree. Original publications and presentations at national biomedical science meetings are often accomplished.

For the PhD phase of the program, students may associate with one of the five basic science departments of the College of Medicine (see descriptions in this section), with the Neuroscience program, or with one of many program-approved departments across the University. During the three to four years of PhD studies, MSTP students keep their clinical skills sharp by participating in a Clinical Connections component. In the final two years of the program, MD/PhD candidates rejoin other medical students to complete the remaining medical school requirements. Third- and fourth-year clerkships include medicine, surgery, pediatrics, obstetrics and gynecology, neurology, and psychiatry, among other disciplines.

Graduates of the program have routinely gained admission to the most competitive residency programs at many of the premier academic institutions in the country, including the ever-growing number of physician-scientist residency programs.

Admission Requirements

Application to the program requires the submission of three documents to the MSTP office: (1) the Medical Scientist Training Program application form, which is available on the program's Web site <http://www.uic.edu/com/mdphd>; (2) a copy of the AMCAS form which has already been submitted to the COM Admissions Office; and (3) a copy of the COM's supplemental form. The MSTP office will then obtain copies of the applicant's letters from the COM Admissions Office. However, it is recommended that applicants request 1 or 2 additional letters of recommendation to be sent directly to the program office which focus on the applicant's research experience. The MCAT examination, which is required for COM application, is accepted by the MD/PhD program in lieu of the GRE examination. Students should apply in the autumn of the year preceding admission to provide the fullest opportunity for consideration, since a rolling admissions procedure is used. A personal interview with the MSTP's own Admissions Committee will be scheduled for each applicant under final consideration for admission.

Application to the program is normally made at the time of application to the College of Medicine. However, candidates will also be considered during their first two years of medical training. Admission to the program requires acceptance by the Admissions Committees of both of the MSTP and the College of Medicine. Criteria for admission to the program include academic excellence, prior research experience, potential for independent and creative research, and commitment to a career in academic medicine. Laboratory work concentrating in biology, chemistry, physics, biophysics, or behavioral sciences is helpful in preparing for study in the MSTP. The admissions policy is flexible enough to accommodate those students who have already identified the field in which they wish to carry out research as well as those who are still undecided about their areas of research specialization. Admission to the Medical Scientist Training Program is open to U.S. citizens or permanent residents.

Degree Requirements

Students in the program complete requirements of the College of Medicine for the MD degree and requirements of their chosen research department for the PhD degree. They must complete and submit their PhD dissertation and complete or schedule its defense before returning to the medical school for the M-3 and M-4 years.

MICROBIOLOGY AND IMMUNOLOGY

Mailing Address:
Department of Microbiology and Immunology (MC 790)
835 South Wolcott Avenue
Chicago, IL 60612-7344

Campus Location: E-704 MSB
Program Codes: 20FS1468MS (MS)
20FS1468PHD (PhD)
Telephone: (312) 996-9477
E-mail: mmorrone@uic.edu
Web Site: <http://www.uic.edu/depts/mcmmi/index2.html>
Head of the Department: Bellur Prabhakar
Director of Graduate Studies: Alan McLachlan

The Department of Microbiology and Immunology offers formal admission the Doctor of Philosophy degree program and participates in the Medical Scientist Training Program (see the *Medical Scientist Training Program* section of the catalog for more information). The department carries out basic research in the areas of immunology, virology, and microbial molecular biology. Research leading to

a graduate degree is available in the general areas of molecular, cellular, and tumor immunology; molecular biology and genetics of prokaryotes; and molecular biology of viruses.

Admission Requirements

In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

Master of Science and Doctor of Philosophy

- **Baccalaureate Field** No restrictions. Applicants must have a solid background in biological and inorganic and organic chemistry, and at least one year of physics and mathematics.
- **Other Requirements** At least 2.75/4.00 for the final 60 semester hours (90 quarter hours) of undergraduate study. Preference is given to those applicants who have a GPA greater than 3.00.
- **Tests Required** GRE General. This test should be taken prior to submission of the formal application. Preference is given to applicants with a combined verbal and quantitative score above 1200, and analytical writing above 4.0.
- **Minimum TOEFL Score** 550 (paper-based); 213 (computer-based); 80, with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21 (new Internet-based TOEFL).
- **Letters of Recommendation** Required.
- **Personal Statement** Required.
- **Other Requirements** Preference is given to applicants with a documented record of research accomplishment who intend to complete the doctoral program.

Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

Master of Science

- **Minimum Semester Hours Required** 34.
- **Course Work** *Required Courses:* All students must take or show proficiency in three of four courses from GCLS 500, 501, 502, 503. They must also take or show proficiency in GCLS 504, 505, 510, and 511.
- **Comprehensive Examination** None.
- **Thesis, Project, or Course-Work-Only Options** *Thesis:* Required. No other options are available. Students must register in MIM 598 for 9 semester hours.

Doctor of Philosophy

- **Minimum Semester Hours Required** 96 from the baccalaureate.
- **Course Work** *Required Courses:* Nine hours of MIM 455. All students must take or show proficiency in three of four courses from GCLS 500, 501, 502, 503. They must also take or show proficiency in GCLS 504, 505, 506, 510, and 511. In addition students must take MIM 594 for 1 hour, and 2 additional 500-level courses, MIM 551, MIM 553, and MIM 560 are recommended. Four additional hours of MIM 595 and 52 semester hours of MIM 599 are required.
- **Preliminary Examination** Required.
- **Dissertation** Required. Students must earn at least 52 hours in MIM 599.

- **Other Requirements** During the second year of graduate study, students must conduct a satisfactory oral defense of a written research proposal on their thesis subject. All graduate students, regardless of their means of financial support, must participate in the teaching programs of the department for one semester of each academic year. This requirement includes experiences in laboratory instruction, lecturing, and audiovisual presentations.

Medical Scientist Training Program

Students with an MD degree earned in the United States or who are working toward one at UIC may use medical science courses to fulfill the 500-level course requirements. Such students must take 3 semester hours of MIM 455; one credit of MIM 594; 6 semester hours of MIM 595; and 59 semester hours of MIM 599. Other courses required will be determined by the graduate committee based on the student's area of interest.

PATHOLOGY

Mailing Address:

College of Medicine (MC 847)
840 South Wood Street, Room 130 CSN
Chicago, IL 60612

Campus Location: Room 130 CSN
Program Code: 20FS1548MS (MS)
20FS1548PHD (PhD)

Phone: (312) 996-6604

Fax: (312) 996-7589

E-mail: barbie@uic.edu

Web Site: <http://pathology.uic.edu/>

Head of Department: Robert Folberg

Director of Graduate Studies: Maarten C. Bosland

Program Administrator: Barbara Poltzer

The Department of Pathology offers studies leading to degrees at both the master's and doctoral levels, and participates in the Medical Scientist Training Program (see the *Medical Scientist Training Program* section for more information). The department is oriented toward the study of disease at the molecular, cellular, organ, whole organism, and population levels. Students are initially immersed in an integrated curriculum and later they complete specialized training in an area of pathology of their choice, including, but not limited to, cancer prevention, biomarkers of cancer, molecular epidemiology, tumor biology, and mechanisms of cancer development and progression. All areas focus on translational and transdisciplinary aspects of pathology and cancer research.

Admission Requirements

Students apply either via the GEMS PhD program (see GEMS program for details) or via the Department of Pathology on a competitive basis, meeting the following program requirements in addition to the Graduate College minimum requirements:

Master of Science and Doctor of Philosophy

- **Baccalaureate Field** No restrictions. Applicants must have a satisfactory record of courses in biology, inorganic and organic chemistry, and at least one year of physics and mathematics. In addition, courses in histology, anatomy, zoology and/or physiology are preferred (but not required).
- **Grade Point Average** At least 3.00/4.00 for the final 60 semester hours of undergraduate study. Preference is given to those applicants who have a GPA greater than 3.00.

- **Tests Required** GRE General. This test should be taken prior to submission of the formal application. Preference is given to applicants with a combined verbal and quantitative above 1200 and analytical writing above 4.0.
- **Minimum TOEFL Score** 550 (paper-based); 213 (computer-based); 80 with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21 (new Internet-based TOEFL).
- **Letters of Recommendation** Three letters required.
- **Personal Statement** Required.
- **Other Requirements** Preference is given to applicants with a documented record of research accomplishment.

Degree Requirements

Students (via GEMS and Pathology) engage, during their first year of study, in a core curriculum that focuses on the fundamentals of biochemistry and cell and molecular biology, and integrates these with topics in molecular medicine and cancer biology. Beginning in the second semester, students elect to take courses with the goal of concentrating more selectively within the area of pathology research.

Students initially pick three or four potential mentors in whose laboratories they spend 10-week rotations during the first year. At the end of their first year, students select a mentor with whom they will undertake their thesis research and the Department of Pathology which will grant the degree.

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

Master of Science

- **Minimum Semester Hours Required** 32.
- **Course Work** *Required Courses:* All students must take or show proficiency in GEMS core courses GCLS 501, 502, 503, 504, 505, 506, and GC 401. Students must also take the following: PATH 510 and PATH 511. Students must register in PATH 595 for one semester beyond the first year.
- *Selective-Elective Courses:* At most one additional 500-level course may be taken, subject to approval of the director of graduate studies.
- **Comprehensive Examination** None.
- **Thesis, Project, or Course-Work-Only Options** Thesis required. No other options are available.

Doctor of Philosophy

- **Minimum Semester Hours Required** 96 from the baccalaureate.
- **Course Work** *Required Courses:* All students must take or show proficiency in GEMS core courses GCLS 501, 502, 503, 504, 505, 506, and GC 401. Students must take the following: PATH 510, PATH 511, and PATH 512 and one of GCLS 510, 511, or 515 as a selective course requirement. Students must register in PATH 595 each semester beyond the first year.
- *Selective-Elective Courses:* At least two additional 500-level selective/elective courses are required, subject to approval of the director of graduate studies.
- **Preliminary Examination** Required.
- **Dissertation** Required.
- **Other Requirements** GC 470 is required for students engaged in research with animals.

PHARMACOLOGY

Mailing Address:
Department of Pharmacology (MC 868)
835 South Wolcott Avenue
Chicago, IL 60612-7343

Campus Location: E-403 MSB
Program Codes: 20FS1564MS (MS)
20FS1564PHD (PhD)

Telephone: (312) 355-3281

E-mail: pharmacology-gs@uic.edu

Web Site: <http://www.uic.edu/depts/mcph/>

Head of the Department: Asrar B. Malik

Directors of Graduate Studies: Randal A. Skidgel and Thomas M. Guenther

The Department of Pharmacology offers work leading to a degree in Pharmacology at the doctoral level and participates in the Medical Scientist Training Program (see the *Medical Scientist Training Program* section for more information). The Interdepartmental Concentration in Neuroscience is also available. The department is particularly strong in research on signal transduction, vascular biology, inflammation, and cardiovascular pharmacology. Research in these areas is pursued at the molecular, cellular, organ-system, and whole-animal levels of investigation.

Admission Requirements

Applicants are considered on an individual basis. In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

Master of Science and Doctor of Philosophy

- **Baccalaureate Field** No restrictions. Prior academic work should include chemistry, biology, physics, and math. Biochemistry, cell biology, molecular biology, and physiology are also helpful.
- **Other Requirements** At least 2.75/4.00 for the final 60 semester hours (90 quarter hours) of undergraduate study.
- **Tests Required** GRE General. Preference is given to applicants with a combined verbal and quantitative GRE score of at least 1100 and an analytical writing score of at least 4.5.
- **Minimum TOEFL Score** 550 (paper-based); 213 (computer-based); 80, with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21 (new Internet-based TOEFL).
- **Letters of Recommendation** Required.
- **Personal Statement** Required. One page summarizing past academic and research experience (if any) and motivation for pursuing a PhD in Pharmacology.
- **Nondegree Applicants** Nondegree applicants must show adequate preparation to enroll in desired courses and must obtain the permission of the director of graduate studies.
- **Master of Science Applicants** The department does not admit students to a master's program. A student in the PhD program may be awarded a terminal master's degree if he or she decides not to complete the PhD, provided enough research has been accomplished to write and defend a thesis.

Degree Requirements

Master of Science

- **Minimum Semester Hours Required** 32.
- **Course Work** *Required Core:* Students must take or show proficiency in three out of the four core GEMS courses: GCLS 500, 501, 502, and 503. Course selections will be made in consultation with the director of graduate studies based on the student's background and interests. Students must also take or show proficiency in GCLS 504, 505, and 506. In addition, students must take GCLS 515 and PCOL 501 and 502. Students in their second year and beyond must also register for PCOL 595 and 598 each semester.
- **Electives:** At least 2 semester hours must be in 500-level didactic courses in the department.
- **Comprehensive Examination** None.
- **Thesis, Project, or Course-Work-Only Options** Thesis required. No other options are available.
- **Other Requirements** Students may be called upon to assist in aspects of teaching and research activities of the department. Students are expected to attend special seminars sponsored by the department.

Doctor of Philosophy

- **Minimum Semester Hours Required** 96 from the baccalaureate.
- **Course Work** *Required Core:* Students must take or show proficiency in three out of the four core GEMS courses: GCLS 500, 501, 502, and 503. Course selections will be made in consultation with the director of graduate studies based on the student's background and interests. Students must also take or show proficiency in GCLS 504, 505, and 506. In addition, students must take GCLS 515 and PCOL 501 and 502. Students in their second year and beyond must also register for PCOL 595 and 599 each semester.
- **Electives:** At least 2 semester hours must be in 500-level didactic courses in the department.
- **Preliminary Examination** Required.
- **Dissertation** Required.
- **Other Requirements** Students may be called upon to assist in aspects of the teaching and research activities of the department. Students are expected to attend special seminars sponsored by the department.

Interdepartmental Concentration in Neuroscience

Doctoral students may pursue the Interdepartmental Concentration in Neuroscience. Refer to *Interdepartmental Concentration in Neuroscience* in the *Graduate College* section for more information.

Medical Scientist Training Program

Students with an MD degree earned in the United States or who are working toward one at UIC may use medical science courses to fulfill most of the 500-level course requirements. Such students must take GCLS 515 and 2 semester hours of an elective 500-level didactic course in the department. Students must also register for PCOL 595 and 599 each semester. Other courses may be required as determined by the advisor and the graduate committee based on the student's area of interest.

PHYSIOLOGY AND BIOPHYSICS

Mailing Address:
Department of Physiology and Biophysics (MC 901)
835 South Wolcott Avenue
Chicago, IL 60612-7342

Campus Location: E202 MSB
Program Codes: 20FS1584MS (MS)
20FS1584PHD (PhD)
Telephone: (312) 996-7620
E-mail: phyb@uic.edu
Web Site: <http://www.uic.edu/depts/mcpb/index2.html>
Head of the Department: R. John Solaro
Director of Graduate Studies: Jesús García-Martínez

The Department of Physiology and Biophysics offers work leading to the Master of Science or Doctor of Philosophy degree, and participates in the Medical Scientist Training Program (see the *Medical Scientist Training Program* section for more information). The Interdepartmental Concentration in Neuroscience is available. The department is oriented toward the study of mammalian physiology. Students are initially immersed in an integrated curriculum and later they complete specialized training in an area of physiology of their choice: Cardiovascular Physiology and Metabolism, Cytoskeleton and Vascular Biology, Gastrointestinal Physiology, Neurosciences, Reproductive and Endocrine Sciences, Signal Transduction and Gene Regulation, Smooth and Skeletal Muscle Physiology. All areas focus on the integrative aspects of physiology, studying gene expression to the whole organism.

Admission Requirements

Applicants are considered on an individual basis. In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

Master of Science and Doctor of Philosophy

- **Baccalaureate Field** No restrictions. Prior academic work should include college mathematics through calculus, physics, biology, organic chemistry, and physical chemistry.
- **Other Requirements** At least 3.00/4.00 for the final 60 semester hours (90 quarter hours) of undergraduate study.
- **Tests Required** GRE General. Preference is given to applicants with a combined verbal and quantitative score above 1200, and analytical writing score above 4.5.
- **Minimum TOEFL Score** 550 (paper-based); 213 (computer-based); 80, with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21 (new Internet-based TOEFL).
- **Letters of Recommendation** Three required.
- **Personal Statement** Required. One page summarizing past academic and research experience (if any) and motivation for pursuing a PhD in Physiology.
- **Other Requirements** Preference is given to applicants with a documented record of research accomplishment who intend to complete the doctoral program.
- **Nondegree Applicants** Nondegree applicants must show adequate preparation to enroll in desired courses and must obtain the permission of the director of graduate studies.

Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

Master of Science

- **Minimum Semester Hours Required** 32.
- **Course Work** *Required Courses:* GC 470, GCLS 500, PHYB 552, PHYB 586, PHYB 595, and PHYB 598. Students must register for PHYB 591 each fall and spring semester after the first year they are enrolled in the graduate program. Students must take one of the following GCLS courses: 501, 502, or 503.
- **Comprehensive Examination** None.
- **Thesis, Project, or Course-Work-Only Options** Thesis required. No other options are available.
- **Other Requirements** All graduate students must participate in the teaching programs of the department.

Doctor of Philosophy

- **Minimum Semester Hours Required** 96 from the baccalaureate.
- **Course Work** *Required Courses:* GC 470, GCLS 500, PHYB 552, PHYB 586, PHYB 595, PHYB 599, and 2 additional 400- or 500-level courses in consultation with the advisor. All students must take or show proficiency in GCLS 501, 502, 503, 504, 505, 506, and 510. Students must also register for PHYB 591 each fall and spring semester after the first year they are enrolled in the graduate program.
- **Preliminary Examination** Required.
- **Dissertation** Required.
- **Other Requirements** All graduate students must participate in the teaching programs of the department. Candidates must present a mid-thesis seminar as a scheduled departmental seminar.

Interdepartmental Concentration in Neuroscience

Doctoral students may pursue the Interdepartmental Concentration in Neuroscience. Refer to *Interdepartmental Concentration in Neuroscience* in the *Graduate College* section for more information.

Medical Scientist Training Program

Students with an MD degree earned in the United States or who are working toward one at UIC may use medical science courses to fulfill the 500-level course requirements. Such students must take GCLS 510, PHYB 586, and 5 semester hours of elective 500-level didactic courses. The elective courses are chosen in consultation with the advisor. Students must also register for PHYB 591 and PHYB 599 each semester. Other courses may be required as determined by the advisor and the graduate committee based on the student's area of interest.

SURGERY

Mailing Address:
Jose Oberholzer, MD
Department of Surgery (MC 958)
840 South Wood Street
Chicago, IL 60612-7322

Campus Location: 402 CSB
Program Code: 20FS1721MS
Telephone: (312) 996-6771
E-mail: jober@uic.edu
Web Site: <http://www.uic.edu/com/surgery/>
Head of the Department: Enrico Benedetti, MD, FACS
Director of Graduate Studies: Jose Oberholzer, MD

The Department of Surgery offers work leading to the Master of Science in Surgery. The aim of the program is to introduce the surgeon-in-training to the methods of scientific research in preparation for a career as a research physician. While pursuing a specific research project in depth, the student is expected to maintain contact with clinical science as a participant in the activities of the Department of Surgery.

Admission Requirements

In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

Master of Science

- **Prior Degrees** Applicants must have an MD.
- **Other Requirements** At least 3.75/4.00 for the final 60 semester (90 quarter) hours of undergraduate study.
- **Tests Required** GRE General. Recent graduates may substitute the MCAT.
- **Minimum TOEFL Score** 550 (paper-based); 213 (computer-based); 80, with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21 (new Internet-based TOEFL).
- **Letters of Recommendation** Contact the director of graduate studies for information.
- **Personal Statement** Contact the director of graduate studies for information.
- **Other Requirements** Applicants must be enrolled in or have completed an approved general surgery residency program and have a faculty sponsor from the Department of Surgery at UIC. Contact the director of graduate studies before submitting an application.

Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

Master of Science

- **Minimum Semester Hours Required** 32.
- **Course Work** At least 9 hours must be at the 500-level. Students must take at least three graduate-level courses other than SURG 597 or 598, including a course in statistical methods.
- **Comprehensive Examination** None.
- **Thesis, Project, or Course-Work-Only Options** Thesis or project required. No other options are available.

PROFESSIONAL PROGRAM MEDICINE

Mailing Address:

College of Medicine
Admissions (MC 783)
808 South Wood Street
Chicago, IL Zip 60612

Campus Location: 165 CME

Telephone: (312) 996-5635

Fax: (312) 996-6693

E-mail: medadmit@uic.edu

Web Site: <http://www.medicine.uic.edu/>

Associate Dean and Director of Admissions: Dr. Jorge A
Girotti

Associate Director of Admissions: Linda A. Singleton

The University of Illinois MD program is conducted at four geographic sites across Illinois: Chicago, Peoria, Rockford, and Urbana. The college offers a generalist curriculum whose goal is to graduate physicians who are well grounded in basic and clinical sciences, oriented and competent as beginning general physicians, capable of entering graduate training in either generalist specialties or subspecialties, and able to function in an ever changing health care environment. The college offers several special programs that allow students to combine medicine with doctoral degrees, business and public health, and independent study options to carry out in-depth studies of topics of their choosing.

The Chicago and Urbana campuses offer programs for M1–M4 students. The first-year basic science program at Urbana also serves students who will complete their last three years at Peoria or Rockford. All four campuses offer residency programs.

Students at all sites enjoy a superb scientific education and extensive clinical training. The college's distinguished faculty and its groundbreaking research have earned it a reputation as one of the best schools for both undergraduate and graduate medical education.

The college selects applicants with the best combination of academic and extracurricular achievement, maturity, integrity, and motivation. Selection of students is based on an individualized evaluation of all available data and a personal interview. We consider the quality of work in all subject areas, breadth of education, and experiences that demonstrate initiative and creativity.

For more information about the University of Illinois MD program, please consult the following Web sites:

Admissions: <http://www.uic.edu/depts/mcam/admissions>

Financial Aid: <http://www.uic.edu/depts/mcam/finaid>

Chicago MD Program: http://chicago.medicine.uic.edu/departments__programs/programs/

Peoria MD Program: http://uicpeoria.sharpschool.com/departments__programs/academic_affairs/students/

Rockford MD Program: http://rockford.medicine.uic.edu/Departments__Programs/programs/md_program/

Urbana MD Program: <http://www.med.uiuc.edu/students/index.php>