Graduate Program in Biomedical Engineering
M.S. Degree Learning Goals and Assessment
November, 2011

The joint Rutgers University and UMDNJ masters program in Biomedical Engineering provides advanced training in critical areas of Biomedical Sciences that span research thrusts of Biomaterials and Tissue Engineering; Biomechanics and Rehabilitation Engineering; Computational Bioengineering and Biomedical Imaging; Molecular & Cellular Bioengineering; Nanomedicine; NeuroEngineering; and Physiological Systems and Bioinstrumentation.

Learning Goal 1 for Students: Attain mastery of the essential aspects of practice and research areas within Biomedical Engineering

Assessment of graduate student achievement of Goal 1:

- Grades in graduate courses
- Comprehensive examinations assessing depth and breadth of knowledge via a research thesis ("Plan A") or a capstone paper or project ("Plan B")
- Annual reviews by faculty advisors and/or committees to gauge student progress
- Continuation of graduate studies or placement in a professional position that hosts understanding to a Biomedical Engineering thrust

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

- Close tracking to assure that students are being prepared in a coherent and academically rigorous fashion
- Effective monitoring of student progress
- Evaluations of teaching effectiveness of instructors in graduate courses
    - If effectiveness is below program expectations, work with instructors to improve course content
- Periodic review of curricular offerings, degree requirements and assessment tools
    - By graduate program executive committees
    - At annual BME faculty retreat
    - In consultation with the Bioengineering Student Society (BESS)
    - In consultation with the Graduate Schools of Rutgers- New Brunswick and UMDNJ Graduate School of Biomedical Sciences

Learning Goal 2 for Students: Engage in and conduct original research (for Plan A Master's degrees (thesis option)

Assessment of graduate student achievement of Goal 2:

- Assessment of quality of Master's thesis
    - Public defense of thesis
    - Critical reading of thesis by committee of graduate faculty members
    - Submission and acceptance of peer-reviewed articles and conference papers
- Achievement of students as evidenced by continuation of graduate studies or professional placement.

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 through Journal Club and seminars
- Provide comprehensive advising and assist in the identification of mentors

Learning Goal 3 for Students: Prepare to be professionals in careers that require training at the highest levels in areas within Biomedical Engineering

Assessment of graduate student achievement of Goal 3:

- Participation in professional networking through department activities
- Availability of internships through the department
- Collection of placement data or continuation of graduate studies
- Review by external advisory committees, both inside of and external to the University.

Role of the program in helping students achieve Goal 3:

- Enrollment in the professional development course sequence, including Clinical Practicum, Ethics, Writing Seminar, Journal Club
- Host discipline-specific Seminars of external faculty in Biomedical Engineering
- Acquaint students with Industrial Internship Program in BME
- Recommended enrollment in Innovation & Entrepreneurship (125:629)

The leadership of the Biomedical Engineering 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 Biomedical Sciences fields.