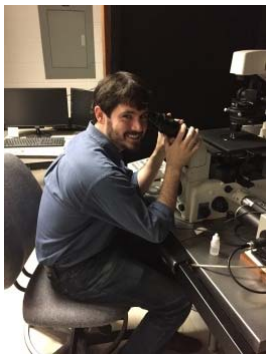
PhD in Basic Medical Sciences: Biomedical Engineering Track

University of South Alabama

Description:
The Biomedical Engineering (BME) Track allows students to develop an interdisciplinary training program that incorporates coursework, advising, and committee selection from both the Colleges of Medicine and Engineering. Students entering the track are encouraged to have a strong background in engineering, mathematics, physics, or other related discipline.



Areas of Expertise:
- *Biomedical and spectral imaging:* Development of novel spectral imaging, microscopy, and *in vivo* imaging approaches, including optical design and algorithm development for image analysis
- *Translational imaging devices:* Translating new optical imaging approaches to clinical imaging devices, such as endoscopes
- *Biosystems modeling:* Developing, validating, and applying mathematical models that incorporate cellular-, organ-, and whole animal-level data
- *Tissue engineering:* Designing and evaluating pulmonary and vascular tissue constructs
- *Biofluid mechanics:* Characterizing and modeling vascular and pulmonary hemodynamics

Track Requirements:
Students choosing the biomedical engineering track will be required to complete a set of advanced courses for the track, as well as other elements during their graduate training.



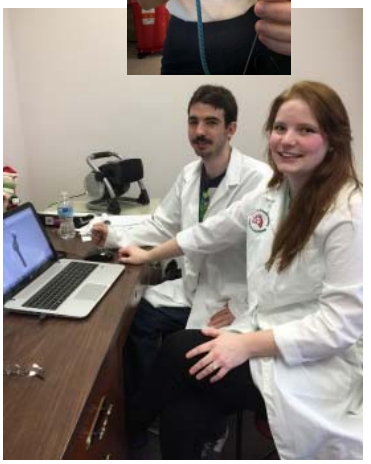
Required advanced courses (select at least two):

IDL 620/EG 620	Biomedical Instrumentation, Imaging, and Modeling
IDL 621/EG 621	Biomedical Transport, Mechanics, and Materials
IDL 622/EG 622	Principles of Microscopy, Imaging, and Image Analysis

Recommended electives:

IDL 676	Literature reports in lung biology (Research in Progress or RIP; presentation **required** once per year, years 2-5)
IDL 590	Special topics: Presentation skills; abstracts
IDL 641	Effective scientific writing (fall, year 2 or year 3)
IDL 656	Research seminar in lung biology (Pulmonary conference; years 3-5; note that registration requires attendance)
IDL 640	Biostatistics and experimental design (summer, year 1)
IDL 635	Advanced signal transduction (summer, year 1)





Other responsibilities:
- Academic performance: complete (B or better) didactic coursework
- Scholarship:
  - Develop an interdisciplinary research project, with elements from medicine and engineering
  - Establish an effective relationship with a mentor
  - Present data at national meetings
  - Submit scientific manuscripts for publication
  - Submit competitive pre-doctoral fellowship applications
  - Improve research knowledge base and scientific judgment
  - Develop and improve laboratory skills
  - Maintain commitment to continuing scholarship
  - Accrue novel scientific data
- Qualifying exam: should be scheduled no later than the end of fall semester in year 3
- Individual fellowship applications to extramural funding agencies are **strongly encouraged**

Contact Information:

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