Research Expertise and Training Modules (RET)

Objectives of RET Module Instruction:
- Offer an efficient means of training graduate students in specialized laboratory and technical skills that 1) can be brought back to individual research groups and 2) serve as prerequisite training for safe and responsible use of core facilities (e.g., tissue culture) and shared instrumentation (e.g., confocal microscopy)
- Foster research collaborations and sharing of expertise and equipment within our School
- Increase efficiency of interdisciplinary graduate training
- Support high quality research at the interface of disciplines
- Integrate effectively as a key component of our new graduate curriculum

Proposed Strategy for Integration of RET Modules into Graduate Curriculum:
- Short, time-intensive RET modules (1 credit) offered during Fall Semester (5-week), Spring Semester (5-week) or Maymester that complement in-depth theory courses (2 or 3 credit)
- Application of “2+1” strategy for identification and approval of RET module (1 cr) + theory course (2 or 3 credit) combinations that satisfy graduate credit requirement
- Small class size for optimal individual training (6-12)
- Strategically offered at various times throughout the year (e.g., Fall, Spring, Maymester) so as to minimize conflict with other BME courses and individual student scheduling issues
- Aimed at first- and second- year graduate students as well as senior undergraduates participating in combined BS/MS degree program
- Predictable funding support for modules available to faculty participants through Request for Proposal (RFP) mechanism
- Assistance and maintenance of funding for these modules actively sought through educational grants, inter-department cost-sharing strategies, and other avenues
- Marketing strategy to educate faculty and students of RET Module Strategy
- Annual review of course evaluation, faculty/student survey, student enrollment, and module funding requirements to be conducted by subcommittee and provided to Head, Assistant Head, and Graduate Committee.

Details of RET Module Structure and Integration
Integration of RET modules into our current graduate program will be accomplished by approving various theory course (2 or 3-credit) and RET module (1-credit) combinations that satisfy core competency requirements at the 500-level. A student can use this strategy to satisfy up to two core requirements. NOTE: Students are permitted to enroll and receive credit for a RET module only if they can provide adequate evidence of sufficient theoretical background and receive approval from the module instructor and the BME Graduate Committee. In rare instances and with sufficient justification, students will be permitted to complete up to three RET modules to satisfy one 3-credit core requirement.
### Proposed BME RET Module Schedule:

<table>
<thead>
<tr>
<th>Offering</th>
<th>Fall 2008</th>
<th>Spring 2009</th>
<th>Maymester 2009</th>
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<tbody>
<tr>
<td>Theory Lecture (2)</td>
<td>Design of Cell and Tissue Systems (Harbin)</td>
<td>Polymer Hydrogel Synthesis and Characterization (Schmidt)</td>
<td>Pre-clinical and Clinical Evaluation (Breur and Freeman)</td>
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<tr>
<td>RET Module (1)</td>
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<td>Polymer Hydrogel Synthesis and Characterization (Schmidt)</td>
<td>Pre-clinical and Clinical Study Design and Statistical Analysis (Breur, Freeman, Kim)</td>
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<td>Stem Cells for Tissue Eng (Nauman)</td>
<td>Confocal Microscopy (Cheng)</td>
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<td>Theory Lecture (2)</td>
<td>Magnetic Resonance Imaging (Talavage)</td>
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<td>RET Module (1)</td>
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<td>Functional MRI applications (Talavage)</td>
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