Foundations in Biomedical Sciences: A Core Curriculum for GMS Doctoral Students

Why should we consider a move to an integrated curriculum for first year students?

- Encourage students to think in a rigorous and interdisciplinary fashion
- Coordinate content across courses and programs
- Reduce redundancy in course content
- Decrease lecture hours
- Promote collegiality among participating doctoral students
- Compete with peer institutions to recruit prospective students

What are some important features of the proposed integrated curriculum?

- A critical thinking component will be integrated into each module. Example activities for critical thinking include paper discussions, structural workshops, bioinformatics sessions, etc.
- Critical thinking activities will be carried out in small (6-8 students + 1 faculty member) breakout groups.
- Each module will have a separate course number, exam(s), and grade.
- Each module will have a course director who sits on a curriculum steering committee with the other module course directors.
- The core curriculum will be coordinated to span 1.5 semesters; the second half of the spring semester will allow students to choose from optional related offerings including molecular metabolism, physiology of systems, stem cells & development, and translational genomics.
- Students will be able to take program-specific courses beginning with their first semester of study.
- A grant-writing course will be developed for the second year of doctoral study.
- Formalized, anonymous course evaluations will be made standard practice for all modules.
- This structure will provide more opportunities for students to teach.
- Individual programs can choose to opt into this curriculum.
- Existing courses in Biochemistry (755, 756), Molecular Biology (782), Cell Biology (753), and Advanced Genetics and Genomics (702) will no longer be offered in their current form.
- The general schedule will be as follows:
  Lectures – Tuesday, Thursday, and Friday mornings, 9:30 – 11:20 am
  Breakout sessions – Fridays, 12:15 – 1:45 pm
  Total contact time per week = 7 hours

SD 6/9/11
Foundations in Biomedical Sciences:  
Course directing team

Foundations curriculum co-directors:  
Shoumita Dasgupta, Medicine  
Karen Symes, Biochemistry

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<th>Module</th>
<th>Topic</th>
<th>Co-director 1</th>
<th>Co-director 2</th>
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<td>I</td>
<td>Protein Structure, Catalysis, and Interactions</td>
<td>Jamie McKnight, Physiology and Biophysics</td>
<td>Matt Nugent, Biochemistry</td>
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<td>II</td>
<td>Structure and Function of the Genome</td>
<td>Shoumita Dasgupta, Medicine</td>
<td>Greg Viglianti, Microbiology</td>
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<td>III</td>
<td>Architecture and Dynamics of the Cell</td>
<td>Vickery Trinkaus-Randall, Biochemistry</td>
<td>Andy Zoeller, Physiology and Biophysics</td>
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<td>IV</td>
<td>Mechanisms of Cell Communication</td>
<td>Karen Symes, Biochemistry</td>
<td>Tien Hsu, Medicine</td>
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<tr>
<td>Vd</td>
<td>Stem Cells and Development</td>
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<td>Vg</td>
<td>Translational Genomics</td>
<td>Marc Lenburg, Medicine</td>
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<td>Vm</td>
<td>Molecular Metabolism</td>
<td>Susan Fried, Medicine</td>
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<td>Vp</td>
<td>Physiology of Systems</td>
<td>Jeff Moore, Physiology and Biophysics</td>
<td>TBD</td>
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<tr>
<td>Small groups</td>
<td>Interdisciplinary topics throughout Modules I-IV</td>
<td>Vickery Trinkaus-Randall, Biochemistry</td>
<td>Andy Henderson, Medicine</td>
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