Graduate Studies Committee

January 20, 2015
1:00PM – 2:00PM
Dean’s Conference Room (4307, HPNP)

Members: Dr. Hendrik Luesch (MC), Dr. Ian Tebbett (Forensics), Dr. Jason Frazier (PD), Dr. Tony Palmieri (PC), Dr. Rich Segal (POP), Dr. Jatinder Lamba (PTR), Dr. Bill Millard (ORGS), Juan Hincapie Castillo (SP)

Guests: Debbie Stowell (Research), Dr. Robert Huigens (MC)

Absent:

AGENDA TOPICS

- **Accept Minutes** – from December 16th meeting

- Dr. Robert Huigens – New Course in Medicinal Chemistry

- Graduate School Fellowships and Grinter Fellowships

- Undergraduate Honors and Recruitment (Mark Law)

- **Research Showcase** – selection of finalists for the oral competition

- Board of Governors Academic Programs Review Update – see attached documents
Graduate Studies Committee

Minutes from January 20, 2015

Members: Dr. Hendrik Luesch (MC), Dr. Ian Tebbett (Forensics), Dr. Jason Frazier (PD), Dr. Tony Palmieri (PC), Dr. Rich Segal (POP), Dr. Jatinder Lambe (PTR), Dr. Bill Millard (ORGS), Juan Hincapie Castillo (SP)

Guests: Debbie Stowell (Research)

Absent:

Accept Minutes – The meeting began at 1:00 pm with the minutes from the December 16, 2014 meeting being accepted.

Dr. Robert Huigens – New Course in Medicinal Chemistry - Dr. Huigens presented to the committee a new course that will be taught for graduate level students in the future. The course has been approved by the Department of Medicinal Chemistry and the Department of Chemistry, and will incorporate those items that are not currently being emphasized in the current Medicinal Chemistry curriculum. After the presentation the committee approved the new course allowing for the final step of sending the materials to the University Curriculum Committee.

Graduate School Fellowships and Grinter Fellowships – The committee was reminded that departments will need to submit the names of three applicants to Dr. Millard by February 13, 2015 for consideration for the Graduate School and Grinter Fellowships. The group was also reminded that the selection process this year will be the same as in previous years.

Undergraduate Honors and Recruitment (Mark Law) - Dr. Mark Law, Professor within the Department of Electrical and Computer Engineering and the Director of the UF Honors Program, will be invited to speak to the committee about our future involvement with UF Honors students and the program. By participating in the listserv, it will allow the College of Pharmacy to target native US students studying general and pharmaceutical sciences early in their educational career to begin recruitment for the graduate programs.

Research Showcase – The committee was given a handout by Debbie Stowell regarding the current rankings of those signed up for the oral competition. The committee discussed the nominees for the Levitt Award, and how all of the students were ranked. Debbie pointed out the potential conflicts in scoring and asked the committee how they wanted to handle these when selecting the top abstracts. The committee voted to go with the original rank, versus one with the conflicts removed. Debbie will send out the notices as soon as possible to those who are oral competition finalists, and will encourage those who did not make it to submit posters instead.
Board of Governors Academic Programs Review Update – Linda Orr has begun compiling and reviewing information about the review, and will begin to share this information over the next few weeks.

- The committee will be asked to review the surveys that were used last time, which will be sent electronically to the members.
- Departments were asked to supply email addresses for their students who graduated in 2008 or later for the survey. Linda will send out a list of names to assist with this process.
- Departments were also asked to pull graduate level course syllabi and review the content. Once reviewed, the department is asked to forward the final product to Linda.
- The committee was given a handout regarding the current graduate students who are state-funded. The committee was tasked with finding ways of moving students off of state lines more quickly. Discussion will continue on this topic in the future.
- Dr. Millard clarified for the committee that the review will also encompass the online Masters program.

Dr. Millard stated that there will be additional meetings set up to focus on the review, and asked the Graduate Affairs team to schedule the first program review meeting for early February.

The meeting was adjourned at 1:46 pm.
Title: **Organic Synthesis of Drug Molecules (3 Credits)**

Instructor: Dr. Robert W. Huigens III, Medical Sciences Building P5-33;  
Email: *rhuigens@cop.ufl.edu*

Office Hours: MSB P5-33, by appointment only.

Prerequisites: CHM 5224 or permission by the instructor.

Recommended Text: This course will be largely based on primary literature.  
No texts are required for this course.

Class Time: TBA

Classroom: TBA

**Course Description:** This graduate-level medicinal chemistry course is aimed at teaching students how to use retrosynthetic analysis as a tool for planning chemical syntheses of drug molecules. This course is divided into three units to progressively build a foundation on retrosynthetic analysis principles and medicinal chemistry, from simple heterocyclic disconnections to total syntheses of complex drug molecules that are clinically used to treat various diseases.

**Learning Objectives:**

After completing this course, successful students will be able to:

1.) Use retrosynthetic analysis as a problem solving tool for the synthesis of organic compounds.
2.) Plan logical chemical syntheses of simple to complex drug molecules using retrosynthetic analysis.
3.) Better understand the current chemical synthesis and medicinal chemistry literature.
4.) Understand the roles chemical synthesis plays in the development of drug molecules.
5.) Gain a better understanding of heterocyclic chemistry.

**Course Schedule Outline (Units 1-3):**

**Unit 1: The Basics of Retrosynthetic Analysis**
1st Week: organic reaction mechanisms (functional group transformations & heterocyclic chemistry)  
2nd Week: organic reaction mechanisms (C-C bond forming reactions)  
3rd Week: retrosynthetic analysis (C-C bond forming reactions)  
4th Week: retrosynthetic analysis (C-C bond forming reactions)  
5th Week: retrosynthetic analysis (asymmetric synthesis)  

*Exam 1*

**Unit 2: Synthetic Strategies for Drug Molecules Containing Stereochemically Complex Structural Elements**
6th Week: retrosynthetic analysis (asymmetric synthesis)  
7th Week: retrosynthetic analysis (asymmetric synthesis)  
8th Week: synthesis of biologically active compounds of medium complexity  
9th Week: synthesis of biologically active compounds of medium complexity  
10th Week: combinatorial synthesis & diversity-oriented synthesis  

*Exam 2*

**Unit 3: Synthetic Medicinal Chemistry Approaches in Drug Discovery & Comparative Complex Drug Molecule Synthesis**
11th Week: Penicillin: comparative syntheses and drug development (interactive; literature based)
12th Week: Morphine: comparative syntheses and drug development (interactive; literature based)
13th Week: Vancomycin: comparative syntheses and drug development (interactive; literature based)
14th Week: Taxol: comparative syntheses and drug development (interactive; literature based)
15th Week: Student Presentations

Exam 3

Student Evaluations: Students will be evaluated on 3 in-class exams and an individual 25 minute presentation.

- Exam 1: 100 points (25%)
- Exam 2: 100 points (25%)
- Exam 3: 100 points (25%)
- Class presentation: 100 points (25%)

Total class points: 400 points

Course letter grades will be assigned according to the following percentage scale (out of 400 possible points):
100-91.5% (A), 91.4-89.5% (A-), 89.4-87.5 (B+), 87.4-81.5% (B), 81.4-79.5 (B-), 79.4-69.5 (C), 69.4-59.5 (D), <59.4 (E).

Attendance: Attendance of lectures is not mandatory, but is however strongly encouraged.

Make-Up Exams: If necessary, make-up exams will be given at a time that is mutually convenient for the instructor and student(s).

Student Expectations: Students are expected to arrive before class is scheduled to begin. Students are expected to turn off cell phones before class begins and in general are expected to behave in a respectful, mature, courteous manner toward the instructor and fellow classmates.

Miscellaneous: Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Contact the Disability Resources Center (http://www.dso.ufl.edu/drc/) for information about available resources for students with disabilities.

Students are expected to complete exams & assignments with integrity. Academic dishonesty will not be tolerated. If a student commits academic dishonesty, the academic penalty will be a failing grade in the course. The UF policies and procedures on academic dishonesty will be followed. For University of Florida's honor code, see http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php.
Graduate Student State Funded Support

Graduated Students: 2009-present

<table>
<thead>
<tr>
<th>Years of State Support</th>
<th>6 yrs</th>
<th>5.5 yrs</th>
<th>5 yrs</th>
<th>4.5 yrs</th>
<th>4 yrs</th>
<th>3.5 yrs</th>
<th>3 yrs</th>
<th>2 yrs</th>
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<tbody>
<tr>
<td>MC</td>
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<td></td>
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<tr>
<td>PD</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
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<tr>
<td>POP</td>
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<td></td>
<td></td>
<td>3</td>
<td>1</td>
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<tr>
<td>PC</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
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<tr>
<td>PTR</td>
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Current Students

<table>
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<tr>
<th>Years of State Support</th>
<th>6 yrs</th>
<th>5 yrs</th>
<th>4 yrs</th>
<th>3 yrs</th>
<th>2 yrs</th>
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<tr>
<td>MC</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>POP</td>
<td></td>
<td>1</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PTR</td>
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<td>1</td>
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Average # Years of State Support

<table>
<thead>
<tr>
<th></th>
<th>Graduated</th>
<th>Current</th>
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<tbody>
<tr>
<td>MC</td>
<td>4.13</td>
<td>2.78</td>
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<tr>
<td>PD</td>
<td>5.21</td>
<td>4.2</td>
</tr>
<tr>
<td>POP</td>
<td>3.62</td>
<td>2.78</td>
</tr>
<tr>
<td>PC</td>
<td>4.42</td>
<td>2.58</td>
</tr>
<tr>
<td>PTR</td>
<td>4.33</td>
<td>3.5</td>
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</table>

Graduate School Fellows

33 active since 2009
8 received additional 1-2 years state funding after GSF ended
Program: Pharmaceutical Sciences
College: Pharmacy
http://www.cop.ufl.edu/education/graduate-programs/

Cost of Education at UF: http://www.admissions.ufl.edu/annualcosts.html

Admissions
Ph.D. admissions averaged over last 5 years (UF master’s students entering a Ph.D. program are not included.)

<table>
<thead>
<tr>
<th>Applications</th>
<th>Admissions</th>
<th>Matriculations</th>
<th>Quantitative GRE</th>
<th>Verbal GRE</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>205.4</td>
<td>21.2</td>
<td>17.8</td>
<td>156.9</td>
<td>152.4</td>
<td>3.5</td>
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</tbody>
</table>

* GRE scores and GPAs for matriculated students

Average number of UF master’s or graduates admitted to Ph.D. program over last 5 years: 1.8


Enrolled Students Fall 2013
Ph.D. Program Demographics

<table>
<thead>
<tr>
<th>Total Enrollment</th>
<th>84</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Enrolled</td>
<td>50.0%</td>
</tr>
<tr>
<td>Minority Enrolled</td>
<td>2.4%</td>
</tr>
<tr>
<td>International Enrolled</td>
<td>65.5%</td>
</tr>
</tbody>
</table>

![Ph.D. Students On Appointments](image)

* Only includes Ph.D. students with university funding as a Teaching Assistant, Research Assistant, Graduate Assistant or Fellow (Tuition Waiver, Stipend, Health Insurance included)
* Funding is generally given to full-time students
* Some departments support students from UF Foundation funds
### Ph.D. Completion and Time-to-Degree Data

<table>
<thead>
<tr>
<th>Cohort Year</th>
<th>Matriculated</th>
<th>Registered in Fall 2013</th>
<th>Graduated as of Fall 2013</th>
<th>Completion Rate from This Cohort</th>
<th>Not Registered in Fall 2013 &amp; Not Yet Graduated</th>
<th>Median Time-to-Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>21</td>
<td>0</td>
<td>14</td>
<td>66.7%</td>
<td>7</td>
<td>4.9</td>
</tr>
<tr>
<td>2006</td>
<td>20</td>
<td>0</td>
<td>15</td>
<td>75.0%</td>
<td>5</td>
<td>5.0</td>
</tr>
<tr>
<td>2007</td>
<td>16</td>
<td>1</td>
<td>13</td>
<td>81.3%</td>
<td>2</td>
<td>5.0</td>
</tr>
<tr>
<td>2008</td>
<td>22</td>
<td>4</td>
<td>14</td>
<td>63.6%</td>
<td>4</td>
<td>4.3</td>
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<tr>
<td>2009</td>
<td>18</td>
<td>12</td>
<td>0</td>
<td>0.0%</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>19</td>
<td>16</td>
<td>0</td>
<td>0.0%</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>17</td>
<td>13</td>
<td>0</td>
<td>0.0%</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>2012</td>
<td>19</td>
<td>17</td>
<td>0</td>
<td>0.0%</td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>

Ph.D.s Awarded 2012-2013: 21
Post Graduation
Ph.D. Job Placement Information 2008-2013

<table>
<thead>
<tr>
<th>Job Placement</th>
<th>Student Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>Graduates with Loans</td>
</tr>
<tr>
<td>Non-Academic</td>
<td>Graduates without Loans</td>
</tr>
<tr>
<td>Post-Doc</td>
<td>76 %</td>
</tr>
<tr>
<td>No Data Available</td>
<td>24 %</td>
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<tr>
<td>36 %</td>
<td></td>
</tr>
<tr>
<td>42 %</td>
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<tr>
<td>10 %</td>
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<tr>
<td>12 %</td>
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</table>

- The majority of students receive Federal Stafford loans
- Includes private loans certified by UF
- Only includes loans assumed during Ph.D. Program

Average debt amount for students with loans: $47,804.00

Recent Reports on Student Loans and Debt:
http://chronicle.com/article/federal-loan-changes-may-curb/132665/