Welcome!

1st Year M.S. Student Orientation
Fall 2016
Professor Charles Roth
Agenda

• Introductions
• Curriculum
• Thesis adviser selection
• M.S. to Ph.D.
• Academic integrity
• Support
• 24 credits coursework
  – 5 core courses
    • Analy Methods (Engineering math)
    • Adv Transport I (Fluids)
    • Adv Thermo
    • Adv Transport II (Mass transport)
    • Kinetics and Reactor Design
  – 3 electives
    • Encouraged to take 1 “broadening” elective (explained later)
  – 155:601/602 Graduate Seminar (at least 2 semesters)
  – Must maintain 3.0 GPA overall with no more than 1 grade less than B in core courses

• 6 credits research
• M.S. thesis and defense
Advisor Selection

• You need a thesis advisor to support your studies, providing an intellectual climate and facilities for your research.

• Pizza with the Professors
  – Tuesdays/Fridays, 12:00-1:20, C-115.

• Lab Open House
  – Time/date to be announced

• Go talk to faculty and their students!

• Advisor selection choices due by end of classes in Dec.

• In the end, it is your responsibility to find an advisor. The Department does not guarantee that all students will find research advisors.
Faculty Research Areas

Asefa, Chundawat, Celik, Tsilomelekis, Zhang

Energy

Biotechnology & Bioengineering

Androulakis, Buettner, Moghe, Pedersen, Roth, Sofou

CONTROL (DOTAP/ODN)

Pharmaceutical Science and Engineering

Glasser, Ierapetritou, Muzzio, Ramachandran, Tomassone

Materials

Asefa, Chiew, Dutt, Hara, Neimark, Scheinbeim, Shapley, Tomassone

Process Systems & Reaction Engineering

Ierapetritou, Androulakis, Ramachandran, Celik, Chundawat

Identify and characterize active sites

Synthesize or select catalysts

Evaluate activity and selectivity for desired reactions

Propose and evaluate reaction mechanism
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<tr>
<th>Date</th>
<th>12:00pm</th>
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<tr>
<td>Sept. 13</td>
<td>Roth</td>
<td>Ierapetritiou</td>
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<td>Sept. 16</td>
<td>Neimark</td>
<td>Dutt</td>
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<td>Shojaei-Zadeh</td>
<td>Tsilomelekis</td>
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<td>Sept. 23</td>
<td>Androulakis</td>
<td>Tomassone</td>
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<td>Sept. 27</td>
<td>Ramachandran</td>
<td>Sofou</td>
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<td>Sept. 30</td>
<td>Chundawat</td>
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<td>Oct. 4</td>
<td>Hara</td>
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<td>Oct. 7</td>
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<td>Shapley</td>
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Degree Requirements – Non-thesis Option

- 30 credits coursework
  - 5 core courses
    - Analy Methods (Engineering math)
    - Adv Transport I (Fluids)
    - Adv Thermo
    - Adv Transport II (Mass transport)
    - Kinetics and Reactor Design
  - 5 electives
    - At least 2 must be chemical engineering electives (offered in our department)
    - Allowed/encouraged to take 1 “broadening” elective
  - Must maintain 3.0 GPA overall with no more than 1 grade less than B in core courses

Fall 2015

- Analy Methods (Engineering math)
- Adv Transport I (Fluids)
- Adv Thermo
- Adv Transport II (Mass transport)
- Kinetics and Reactor Design

Spring 2016

- Analy Methods (Engineering math)
- Adv Transport I (Fluids)
- Adv Thermo
- Adv Transport II (Mass transport)
- Kinetics and Reactor Design
Broadening Elective

• Research/independent study
  – Work on a one-term project under the guidance of a faculty mentor

• Industrial internship
  – Hands-on experience related to chemical engineering in industry
  – Note: we do not have pre-arranged internships available

• Business courses
  – Many in Business in Science program or Business School
  – See electives list published or available

• Pedagogy course
  – For Learning Assistants, provides background and tools for working with students
M.S. to Ph.D.

• The M.S. is considered a terminal degree
• Occasionally, a research project is going well and there is an opportunity for conversion to Ph.D., but this is not the norm
• If there may be an opportunity, application is made during the second year for entrance at conclusion of second year
  – Academic performance
  – Adviser’s recommendation
• All Ph.D. students are required to pass a Qualifying Exam based on core chemical engineering knowledge and ability to read/interpret a journal paper
Graduate Students May Never:

- Quote of paraphrase without complete citations;
- Cite a source that has been identified through a secondary source but has not been consulted;
- Copy from the internet;
- Collaborate with others without explicit permission from instructor;
- Use unauthorized materials during an examination or on an assignment;
- Look at or copy the work of another student during an exam;
- Submit the work completed in one class to fulfill the requirements of a second class with the consent of the instructor.
Graduate Students as Researchers must adhere to the ethical codes of their discipline/profession and cannot:

- Falsify/fabricate or selectively withhold data or results;
- Misuse or appropriate the data of others;
- Present data in a sloppy or deceptive manner;
- Fail to maintain accurate laboratory notebooks;
- Fail to credit all contributors and authors appropriately;
- Sabotage to research of others; Misuse research funds or institutional property for personal use;
- Develop inappropriate relationships for personal gain;
- Fail to comply with Federal Guidelines for the treatment of human or animal subjects.
Academic Integrity Policy


“Sanctions for a given violation may be imposed differently on those with more or with less experience as students. Thus violations of academic integrity by graduate students\(^2\) will normally be penalized more severely than the same violations y inexperienced undergraduate students. In particular, violations that would be considered nonseparable for an undergraduate student may be treated as separable for a graduate student.”

\(^2\) “In this policy, the term graduate student refers to post-baccalaureate students pursuing advanced degrees of any type or enrolled in a graduate course or courses. The term also includes students in the advanced stages of a professional program that leads to a master’s or doctoral degree without conferral of a baccalaureate degree.”
Support at Rutgers

• Graduate Program Administrative Assistant
  – Lynn DeCaprio, lynny@rci.rutgers.edu, 5-2228

• Graduate Program Director
  – Charlie Roth, cmroth@rutgers.edu, 5-6686

• Graduate School-New Brunswick staff
  – Associate Dean Barbara Bender, bbender@rutgers.edu, 2-7747

• CAPS: Rutgers Counseling, ADAP (alcohol and other drug assistance program) and Psychiatric Services
  – See brochure, contact tel:732-932-7884
Registration – typical

- 155:501  Advanced Transport Phenomena I (3)
- 155:507  Analytical Methods (3)
- 155:511  Advanced Chemical Engineering Thermodynamics (3)
- 155:601  Chemical Engineering Graduate Seminar (optional, primarily for thesis students) (0)

- Total 9 credits
- Optional: substitute an elective for a core course (which you would take next year) or add an elective for 12 credits