Agenda

• Special instructions for biochemistry
• What is research?
• How to find a lab
• How to enroll in MCB 290/BIOC 290
• Faculty perspective
• Student perspective
• Graduation with Distinction
Jeff Goldberg
Senior Coordinator of Student Academic Affairs

- Instructions for Biochemistry majors
  - BIOC 290, independent laboratory research
  - BIOC 492, senior thesis
  - Contact Jeff for additional information
    - jmgoldbe@illinois.edu
    - 417 Roger Adams Lab
What Is Undergraduate Research?

Undergraduate students participate in scientific research in a university lab under the direction of a faculty member (P.I.), post-doc or graduate student.

- Earn course credit (MCB 290 or BIOC 290)
  - Earn a grade for their contributions to the lab

- A few paid positions exist
  - Cannot earn money if earning credit
Why Research?

• Experience cutting edge science
• Get to know faculty on campus
• Hone skills in *analytical thinking* and *communication*
• Determine whether graduate studies may be a viable postgraduate goal
• Gain intensive practical knowledge using state-of-the-art technology
• Gain an understanding of how the techniques and procedures discussed in lecture and lab are used in the real world
• Practice problem solving
Eligibility for MCB 290/BIOC 290

- Declared major in Biology, MCB, MCB Honors or BIOC
- Research in an approved laboratory at UIUC
- Good academic standing, recommended GPA of 3.0 or higher
  - Cannot receive monetary payment or any other form of academic credit based on the research for which MCB 290 or BIOC 290 credit is earned.
  - Must enroll in the course by the university deadline to add a semester course using the appropriate forms.

http://mcb.illinois.edu/undergrad/opportunities/research/
Typical Workload

• 1 credit MCB 290 = approximately 5 hrs/week in lab (8 week summer sessions 1 credit = 10 hrs/week)

• Make sure that you have a clear understanding of the faculty expectations for credit and how your grade will be assessed.
Limits

• A limit of 10 credit hours of MCB 290 can be applied towards the 120 hours needed for graduation.

• HOWEVER, you are encouraged to continue your research for as many terms as you wish.

• All MCB 290/BIOC 290 semesters and their assigned letter grades will appear on your academic record and count in the calculation of your GPA.
How to Find a Lab

1. Review information on MCB web sites
2. Read about faculty research interests
3. Make a list of faculty with whom you would consider working.
4. Create an online Student Profile
5. Contact faculty via email
   a) Be professional and concise
   b) Follow up, if necessary
How to Find a Lab

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How to Find a Lab

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http://mcb.illinois.edu/people
Research Interests
Disease Research Interests
Video Interviews
**Stephanie Ceman**

**ASSOCIATE PROFESSOR OF CELL AND DEVELOPMENTAL BIOLOGY**

**Research Topics**
- Neurobiology, Protein-Nucleic Acid Interactions,
- Regulation of Gene Expression

**Education**
- B.S., University of Wisconsin-Madison (Bacteriology)
- Ph.D., University of Wisconsin-Madison (Genetics)
- Postdoctoral fellow, University of Chicago
- Postdoctoral fellow, Emory University

**Contact Information**
- sceman@illinois.edu
- 423 Medical Sciences Building
  Office: (217) 244-6793
  Lab: (217) 244-6749
  Fax: (217) 244-1648
- Mail to: Dept. of Cell and Developmental Biology
  University of Illinois
  B107 CLSL
  601 S. Goodwin Avenue
  Urbana, IL 61801
- Video Interview

**Representative Publications**

**Teaching Interests**
- **BMS 603 - Medical Genetics**
- **MCB 270 - Medical Genetics**

**Molecular basis of disease, post-translational modifications, regulation of RNA expression, RNA-protein interactions**

The fragile X mental retardation protein FMRP is required for normal cognition: when it is absent, the most common form of inherited mental retardation, fragile X syndrome (FXS) results. Thus, FMRP is a molecular entry point for understanding normal neuronal function. FMRP is an RNA binding protein that binds ~4% of brain mRNAs and regulates their expression—either enhancing or suppressing translation by an unknown mechanism. Many of the mRNAs that bind FMRP have been identified; however, it is still unknown how FMRP regulates their translation. Our long-term goal is to uncover the mechanism of FMRP-mediated translation regulation, exploring both associated proteins and microRNAs.
How to Find a Lab

4. Create an online Student Profile

Using the MCB 290 Student Profile Database

If you plan to contact MCB professors during your search for a research position, we recommend that you submit an electronic resume to the MCB 290 Student Profile Database. Your on-line resume may be completed at any time and will remain active in the database for six months. During your search, this allows you to provide uniform information to all MCB professors whose research is of interest to you. Non-MCB faculty will not have access to this database, so you will need to send them your information in a Word document. Questions regarding the MCB 290 Profile Database can be directed to mcb290help@life.illinois.edu.
Student Profile

> Select Terms

MCB 290 Undergraduate Research Student Application

For detailed information about the application process, please refer to: [http://www.mcb.uiuc.edu/undergrad/research.html](http://www.mcb.uiuc.edu/undergrad/research.html). Please contact [mcb290help@life.uiuc.edu](mailto:mcb290help@life.uiuc.edu) with any questions regarding this application.
MCB 290 Undergraduate Research Student Profile

For detailed information about the lab search process, please refer to: http://www.mcb.uiuc.edu/undergrad/research.html.

Please contact mcb290help@life.uiuc.edu with any questions regarding completion or use of this profile system. Once submitted, MCB 290 Student Profiles are fact-checked and approved by the MCB Advising Program on a weekly basis. Notification of approval or denial will be received by email. Denials will include instructions for correction or denial will be received by email. Denials will include instructions for correction or denial will be received by email. Denials will include instructions for correction or denial will be received by email. Denials will include instructions for correction or denial will be received by email. Denials will include instructions for correction. Once approved, your profile will remain active in the database for 6 months.

Completion of the profile is restricted to one hour. It is recommended that you save your responses in a word processing program, then enter the information into the profile.

Personal Information

First Name / Given name:

Last Name / Surname:

Gender: ☐ M ☐ F

Net ID: bahughe2

University ID Number (UIN):

Local Address:

Research Details

Semester Requesting: Summer 2015

Anticipated duration of research (in semesters):

Are you considering a senior thesis as part of your research experience? ☐ Yes ☐ No

Have you previously conducted laboratory research or relevant work experience? ☐ Yes ☐ No

Describe undergraduate research or relevant work experience already acquired:
How to Find a Lab

• Profile information is checked for accuracy by MCB Advising, typically takes 1 week.
• You will receive an email once your profile has been approved, *includes a link* that you can send to MCB faculty
• Profile is only active for 6 months
• Only available to MCB/BIOC students
• Only viewable by MCB/BIOC Faculty
How to Find a Lab

5. Contact Faculty
   – Send introductory email (88% prefer this method)
     • 0% want you to call them
   – Be professional (use salutation and signature)
   – Be specific to the lab
   – Be patient and persistent
     • may have to send more than one email – continue to be professional – wait at least 5 days between emails.
   – Work in Batches, contact up to 5 labs at a time
Faculty Feedback

- “prefer students in first or second year, so we can have them around at least one more year after spending a year training them…”
- “It’s more important to me to see how they think about our work in particular.”
- “I don’t answer emails that say “I’m really interested in what you do…” without showing that they really know.”
- “Nobody should be doing research for just a semester.”
- “If the student’s email is not specifically addressed to me, I delete it without further consideration.”
Faculty Feedback

- "We require minimum 12 hrs a week in the lab, preferably with 3 to 4-hr blocks of time."
- "Students with heavy coursework and/or many extracurricular activities are discouraged to apply."
- "Students interested in attending graduate school are strongly encouraged to apply."
- "GPA is not very important."
- "If you do not get a response from your first email, please send a follow up email ~ 1 week later."
- "Research positions are few and competitive. Do not be disappointed if you are not selective for particular lab."
How to Find a Lab

• Interview Tips
  – Dress nicely (business casual)
  – Come prepared (know about lab projects)
  – Ask about expectations!!!
    • How will they assign a grade?
    • When are you expected to be in lab?
  – Be honest about your availability
    • Academics should come first!
How to Enroll

• For MCB 290 credit you need to:
  – Fill out appropriate form (MCB or Non-MCB)
  – Get form signed by P.I. (faculty)
  – Bring to 252 Davenport for Processing
  – Pay attention to deadlines!

Fall and Spring Semester Forms

- MCB 290 Request Form for Research Experience in MCB labs (PDF)
- MCB 290 Request Form for Research Experience in NON-MCB Labs (PDF)
- MCB 492 Request Form for Senior Thesis in MCB or Non-MCB Labs (PDF)
How to Enroll

• Deadlines
  – 10th day of regular semester, 5 PM
  – 7th day of summer session II, 5 PM

• Renewing for additional semester
  – Must renew every semester by deadline
  – Online renewal form available on web site
# Non-MCB Labs

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<th>Integrative Biology</th>
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<td>Psychology</td>
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<td>Crop Sciences</td>
<td>Animal Sciences</td>
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<td>Beckman Institute</td>
<td>Institute for Genomic Biology (IGB)</td>
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Non-MCB Labs

• Must sign up under Melissa Michael’s section of MCB 290
  – Need approval of project
    • Short proposal of work YOU will do
• Strict deadlines! No late adds!
Faculty Perspective

• Dr. Steven Blanke
  – Professor of Microbiology
  – Studies infection biology, host-pathogen interactions, bacterial pathogenesis and bacterial toxins

• Dr. Daniel Llano
  – Assistant Professor in Molecular and Integrative Physiology (MIP) and the College of Medicine
  – Studies mechanisms by which complex sounds, such as speech are processed by the auditory system.
Student Perspective

- Diana Masolak
  - Junior, MCB
  - Dr. Dan Llano’s lab (MIP), 3 semesters
- Abby Gaffner
  - Junior, MCB Honors
  - Dr. Lori Raetzman’s lab (MIP), 3 semesters
- Thomas Bane
  - Junior, MCB Honors
  - Dr. Wheeler’s lab (Animal Sciences), 3 semesters
Graduation with Distinction

- Eligible if:
  - Spend at least 2 semesters in same lab, earning 2 credit hours or more.
  - Have support of P.I. (faculty)
  - Registered for final semester of degree program

Different levels and requirements
http://mcb.illinois.edu/undergrad/opportunities/distinction/
Take Home Points

• Earn course credit and a grade for research experience.
• Start early – Beware of deadlines.
• Be aware of faculty expectations.
• Treat this as a job, be professional and responsible.
• Have fun and learn as much as you can!