

# IAP 2017

## For Credit

### 7.102 -- Laboratory in Molecular Biology

For Credit:

Level: U

6 units (0-5-1)

Can be repeated for credit.

See "[The Art of Microbiology](#)" from the MIT News office (IAP 2012).

Instructors: Prof. Dennis Kim, Dr. Mandana Sassanfar

This intensive 3-week "boot-camp" style course will provide hands-on instruction in basic molecular biology and microbiology techniques including isolation and quantification of nucleic acid (DNA) and protein, agarose and SDS-PAGE gel electrophoresis, PCR, DNA sequence analysis, and bioinformatics. In addition students will learn to classify bacteria based on their shape, membrane structure and metabolism. Emphasis will be on real-world application, experimentation and trouble shooting in preparation for a successful UROP experience. Priority will be given to 5-7 majors doing 5-7 lab track 1, and freshmen with no prior research experience. Interested students should email Dr. Sassanfar and [fill out this application](#) and pre-register on WebSIS. The class is limited to 24 students. No listeners.

7.102 will meet every afternoon for 15 days from **Jan 9 - Jan 30** in Building 68 Room 089. Students will be expected to spend every afternoon from 1-5pm in the lab. Labs may start earlier on some days.

Enter departmental lottery by December 15, 2017.

Prereq: 7.01x or AP Biology - *This course is not a substitute for 7.02*

Contacts:

- Professor Dennis Kim, [dhkim@mit.edu](mailto:dhkim@mit.edu), 68-430A
- Dr. Mandana Sassanfar, 68-270A, x2-4371, [mandana@mit.edu](mailto:mandana@mit.edu)

### 7.S390 – Pre-7.01 at MITx: Getting up to Speed in Biology

For Credit:

Level: U

1 unit

Graded P/F

Instructor: Prof. Hazel Sive

Pre-7.01 is a new short course (2.5 weeks) that provides background useful for 7.01 Introductory Biology. The course includes cell biology, biochemistry, molecular biology and genetics. Pre-7.01 is designed for students with little Biology background, including seniors who have not yet completed the 7.01 GIR, and need a refresher course.

To help a student assess whether s/he will learn new material in Pre-7.01, a set of “test Yourself” questions are posted at the following URL:

<http://stellar.mit.edu/S/course/7/ia17/7.S390/>

Students who find the material unfamiliar will benefit by taking Pre-7.01. Students who find the material familiar have sufficient background for 7.01 and will not benefit by taking the course.

Enrollment is limited! To prioritize enrollment, please complete the questionnaire at the above link. Click on “Materials” to access the questionnaire, and email the completed form to Professor Sive ([sive@wi.mit.edu](mailto:sive@wi.mit.edu)) by **the deadline**. If you are over your IAP credit limit but are still interested in taking this course, you should register as a listener.

You will be notified by **Dec 30, 2016, 5PM** whether you are enrolled in the class.

Seniors without AP or honors biology will get priority. For other undergraduate years, students with the least biology background will get priority.

Course starts: **Mon Jan 22, 2017**

Course ends: **Thu Feb 1, 2017**

Course meets: MWF Lectures + recitations (10:05–11:55AM).

Course location: 4-146

Contacts:

- Professor Hazel Sive, [sive@wi.mit.edu](mailto:sive@wi.mit.edu), Phone: X8-8242

## Non-Credit

### Quantitative Biology

#### "Precision and Plasticity in Animal Transcription"

Angela DePace

Associate Professor

Department of Systems Biology

Harvard Medical School

**Wednesday, January 18<sup>th</sup>, 11am, McGovern Auditorium, Whitehead Institute**

#### "On Growth and Form"

L Mahadevan

de Valpine Professor of Applied Mathematics,

Professor of Organismic and Evolutionary Biology,  
Professor of Physics,  
Harvard University  
**Monday, January 23<sup>rd</sup>, 11am, McGovern Auditorium, Whitehead Institute**

**"Quantitative Analysis of the Molecular Mechanism of Cytokinesis"**

Thomas Pollard  
Sterling Professor of Molecular Cellular & Developmental Biology  
Yale University  
**Monday, January 30<sup>th</sup>, 11am, McGovern Auditorium, Whitehead Institute**

**Taking the Next Step in Academic Science**

**Creating Scientific Figures with Adobe Illustrator**

Sera Thornton, Digital Learning Fellow, MITx Biology

Visual aids are one of the most important tools we have in communicating our research to others, be it in a publication, a talk, or a class. In the first hour, learn how to efficiently use Adobe Illustrator to make and edit figures, and work on your own figure during the second hour. Geared towards beginners, but all levels welcome – we may have some tricks you don't know yet! Please bring a laptop with Adobe Illustrator installed and working, and an idea or figure to work on.

**Tuesday, January 10<sup>th</sup>, 2:30pm-4:30pm, 68-181**

**Finding the Right Postdoctoral Position: Academia and Industry**

Kirk Donovan, Ph.D., Industry Postdoc, Pfizer  
Adam Martin, Ph.D., Associate Professor of Biology, MIT  
Caitlin R Ondracek, Ph.D., Research Postdoc, MIT for teaching  
Madeleine Julie Oudin, Ph.D., Research Postdoc, MIT for research

Heading toward a career in teaching or research? Come meet post-docs from academia and industry who will share their experience and advice.

**Wednesday, January 11<sup>th</sup>, 1:30-3:00 p.m., 68-181**

**Alternative Careers in Academia**

Elizabeth Williams, Ph.D., Project and Data Manager, Harvard Program in Therapeutic Science  
William Rideout, Ph.D., Research Scientist in Jacks Lab, MIT  
Wendy Salmon, Microscopy Specialist, Keck Biological Imaging Facility, Whitehead Institute  
Mary Ellen Wiltrout, Ph.D., MITx Biology  
Nicolas Paquin, Ph.D, Deputy Director, EHS Biosafety Program, MIT

Interested in opportunities in academia other than a faculty position? Our panelists do exciting work as senior scientists, core facility management, in health and safety and in education. Come hear about the career paths that led them there!

**Thursday, January 12<sup>th</sup>, 12:00-1:30 p.m., 68-181**

### **Finding and Managing a Faculty Position**

Mary Gehring, Associate Professor of Biology; Member, Whitehead Institute. PhD, University of California, Berkeley

Victor Hatini, Associate Professor of Developmental, Molecular & Chemical Biology, Tufts University. PhD, Cornell University School of Medicine

Anupama Seshan, Assistant Professor of Biology, Emmanuel College. PhD, MIT

Eliezer Calo-Velazquez, Assistant Professor of Biology, Koch Institute. PhD, MIT

Hear from a diverse array of faculty members on their experience finding and thriving in a faculty position.

**Friday, February 3<sup>rd</sup>, 1:30-3:00 p.m., 68-180**

## **A Sampling of Careers in Science**

### **Intellectual Property and Patent Law Careers**

Shoji Takahashi, Ph.D., Associate Director of Intellectual Property, Whitehead Institute

Seema Basu, Ph.D., Director, Licensing and Strategic Collaborations, Innovation, Partners Healthcare

Adam Poulin-Kerstien, J.D., Ph.D., Patent Attorney, Novartis Institute for Biomedical Research

Fang Xie, Ph.D., Of Counsel, Greenberg Traurig, LLP

Interested in the intersection of science and law? Intellectual property and patent law are fields with growing opportunities for PhD holders. Meet professionals working at a wide range of institutions, from research institutes and pharmaceutical companies to private firms, who have moved away from the bench, into careers where they apply their scientific background in order to understand, communicate and protect new discoveries and cutting-edge technology in a legal framework.

**Tuesday, January 17<sup>th</sup>, 1:30-3:00 p.m., 68-181**

### **Science Policy**

Alison Leaf, PhD, Hellman Fellow in Science and Technology Policy at American Academy of Arts and Sciences

Julie McNamara, MSc, Energy Analyst with the Climate and Energy Program at the Union of Concerned Scientists.

Daniel Pomeroy, PhD, Program Manager for MIT's Policy Lab

If you enjoy thinking about how science can improve the world, come learn about careers in science policy. Panelists will explain how science policy affects allocation of laboratory

funding and how discoveries are translated into new technology and laws.

**Wednesday, January 18<sup>th</sup>, 1:30-3:00 p.m., 68-181**

### **Career in Consulting & Investment**

Maria Denslow: Healthcare Lead Analyst at BCG

Bigyan Bista: Life Sciences Strategy Consultant at Clarion Healthcare

Kate Moreau: Analyst at RA Capital Management, LLC

William C. Mills: Healthcare Equity Analyst at Camber Capital Management, LLC

Are you interested in careers that utilize your skills from grad school but take you away from bench science? Come hear about how our panelists made their transition from bench to consulting and investment roles.

**Monday, January 23<sup>rd</sup>, 1:30-3:00 p.m., 68-181**

### **Scientific Communication**

Joseph Caputo, MSc, Media Relations Manager, Cell Press

Julie Sollier, PhD, Scientific Editor, Cell Press

Megan Thielking, Reporter and Lead Writer, STAT

Lisa Welch, MSc, Medical Writing, DynaMed/EBSCO

If you enjoy talking about and explaining science, come learn about the diverse career paths in scientific communication including journal editors, medical writers, and journalists. Panelists will explain how a PhD can be advantageous in their field and how to transition from science to science writing.

**Tuesday, January 24<sup>th</sup>, 1:30-3:00 p.m., 68-181**

### **Path to Entrepreneurship**

Jacob Rubens: Associate at Flagship VentureLabs

Trish Cotter: Associate Managing Director Martin Trust Center for Entrepreneurship at MIT

Vyas Ramanan: Associate at Third Rock Ventures

Reshma Shetty: Co-founder at Ginkgo Bioworks

Andrew Warren: Founding Scientist and Product Development Lead at Glympse Bio

Interested in starting your own company, or learning the process for what it takes? Come hear about how different founders started their companies as well as resources at MIT and funding opportunities to take your venture further.

**Thursday, January 26<sup>th</sup>, 1:00-3:00 p.m., 68-181**

### **Biotechnology and Pharmaceutical Industry**

Eric Bell, Ph.D, Senior Scientist, Translational Biology, Mitobridge Inc.

Dan Denning, Ph. D., Investigator II in Cardiovascular and Metabolic Diseases, at the Novartis Institutes for BioMedical Research (NIBR).

Ann Marie Faust, Ph. D., Investigator II in the Synthetic Biology group, Global Discovery Chemistry department, NIBR.

Setu Roday, Ph. D., Senior Scientist in the Materials Discovery and Characterization department at Vertex Pharmaceuticals.

Are you considering a job in industry? Join us for an exciting Q&A session with a panel of scientists who belong to different areas of industry. Learn about their day-to-day life, how they transitioned from academia to industry, and find out whether industry is right for you.

**Tuesday, January 31<sup>st</sup>, 1:30-3:30 p.m., 68-181**