

IAP 2016

For Credit

Pre-7.01: Getting up to Speed in Biology

(7.S390: Pre-7.01: Getting up to Speed in Biology)

For Credit:
Level: U
1 unit
Graded P/F

Instructors: Prof. Hazel Sive & Dr. Diviya Sinha

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/ia16/7.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 Dr. Sinha (dsinha@mit.edu) by **Dec 21, 2015, 5PM**.

You will be notified by **Dec 30, 2015, 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: **Tue Jan 12th, 2016**

Course ends: **Thu Jan 28th, 2016**

Course meets: T/Th Lectures + recitations (10.05–11.55AM).

Course location: 4-265

Contacts:

- Professor Hazel Sive, sive@wi.mit.edu, Phone: X8-8242
- Dr. Diviya Sinha, dsinha@mit.edu, 68-120D, x2-2557

Introduction to Molecular Biology Technique

(7.396: Independent Study in Experimental Biology)

For Credit:

Level: U

6 units (0-4-2)

Graded P/D/F

Can be repeated for credit. Fee: \$100.00

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

Instructors: Prof. Dennis Kim, Dr. Mandana Sassanfar

Topics of current or special interest. This intensive 3-week "boot-camp" style course will provide hands-on instruction in basic molecular biological techniques including isolation and quantification of nucleic acid and protein, agarose and SDS-PAGE gel electrophoresis, PCR, microbiology, and bioinformatics. In addition students will learn more elaborate techniques such as ultracentrifugation and electron microscopy to purify and view virus particles. Emphasis will be on real-world application, experimentation and trouble shooting in preparation for a successful UROP experience. Priority will be given to freshmen with no prior research experience. Interested students must fill out an application form (see below) and email it to Dr. Sassanfar. Deadline 12/05/15. You will be notified by 12/15/15 whether you are enrolled in the class.

Jan 10 - 31 1:00-5:00pm, 68-089

Enter departmental lottery by December 5, 2015

Do not preregister on Websis.

Limited to 24 participants. No listeners.

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

[Download Application](#) (linked .doc file)

Contacts:

- Professor Dennis Kim, dhkim@mit.edu, 68-430A
- Dr. Mandana Sassanfar, 68-270A, x2-4371, mandana@mit.edu

Non-Credit

A Sampling of Careers

Nonprofit and Policy

Thursday, January 7th, 1:30pm-3pm, Whitehead Auditorium

Would you like to do science whose profit is the betterment of our world? This panel will gather speakers with a diverse range of experience in the nonprofit and government sectors.

- Michael Hammerschmidt, Vice President for Development, Life Sciences Foundation
- Juli Klemm, PhD '95, Head of Cancer Biology and Genomics Section, National Cancer Institute
- Dr. Robert Lillianfeld, '03, Director of Corporate Relations, Seeding Labs
- Mark Smith, PhD '14, Co-Founder, OpenBiome

Scientific Communication

Tuesday, January 12th, 1:30-3pm, 68-181

Careers in scientific communication strive to deliver scientific content in engaging formats to academic and lay audiences. Come hear how the four professionals on this panel craft the form and content of diverse media to achieve this end.

- Lauren Aguirre - Director of Digital Media at NOVA PBS
- Diana Chien, PhD - Instructor/Manager at the MIT Biological Engineering Communication Lab
- Meghan Jendrysik, PhD - Managing Editor at Elsevier
- Nidhi Subbaraman, MS - Science and Technology Reporter at the Boston Globe

Intellectual Property & Patent Law

Wednesday, January 13th, 1:30pm -3pm, 68-181

Thinking about moving away from the bench? Come see what the field of intellectual property and patent law has to offer! Meet professionals that deal with the intersection between biology and law to protect new discoveries!

- Jennifer Che, Pronutria, VP, Intellectual property counsel
- David Olsen, Boston College Law School, Assistant professor

Education and Outreach

Friday, January 15th, 1:30 pm-3pm, 76-156

Careers in science education and outreach aim to improve public understanding of science across all fields and ages. Come hear how the four professionals on this panel apply diverse skill sets and knowledge to cultivate scientific literacy in their audiences.

- Lawrence Bell, MS - Senior Vice President for Strategic Initiatives at the Museum of Science, Boston
- David Form, PhD - Science Teacher at Nashoba Regional School District
- Alice Rushforth, PhD - Executive Director at Tufts Clinical and Translational Science Institute
- Charlotte Seid, PhD - Biorepository Manager at Ocean Genome Legacy

Biotechnology & Pharmaceutical Industry

Wednesday, January 20th, 12:00-1:30pm, 68-181

Interested in science outside of academia? Come to the biotechnology and big pharma panel! We have scientists from different backgrounds in all different industry positions. Come hear about their day-to-day life and how they got to where they are now.

- David Salim, ImmunoGen, QC analyst
- Peter Liu, Amgen, Engineer, Process development
- Alison Williams, Pronutria, Director of corporate development
- Darby Schmidt, Syros Pharmaceuticals, Principal scientist

Entrepreneurship Career Paths

Thursday, January 21st, 1:30pm – 3pm, Whitehead Auditorium

Hear how others have founded their own companies and from others who make company creation their career. All speakers have PhDs and have gone on to learn what it takes to take an idea beyond the lab bench.

- Will Adams, Founder and CSO of Riparian Pharmaceuticals.
- Brian Fiske, Senior Associate at Flagship VentureLabs
- Bernat Olle, VP and Venture Partner at Puretech Health and CEO of Vedanta Biosciences
- Armon Sharei, Founder and CEO of SQZ Biotech

Careers in Consulting and Finance

Thursday, January 28th, 1:30pm-3pm, Whitehead Auditorium

Speakers are from different types of companies with different goals and cultures, but all use their scientific training to help others make critical decisions. Learn about how their PhD training has helped them succeed outside of the lab.

- Zach Piccioli, Consultant, Clearview Healthcare Partners
- Kate Moreau, Senior Associate, RA Capital
- Arvind Govindarajan, Consultant, McKinsey & Co.
- Maria Denslow, Lead Knowledge Analyst, Boston Consulting Group

Next Step

Post-doctoral positions in Academia and Industry

Thursday, January 14th, 1:30pm-3pm, 68-181

The next step after graduate school - a post doc. It's not as intimidating as you think. What should you look for in a lab? Can you switch fields? How do you send out the first letter? Come meet post docs from academia and industry, and learn about how to get a post doc position!

- Zainab Jagani, Novartis, Industry post doc
- Jill Goldstein, Wager lab, Harvard, Academic post doc
- Sandhya Sanduja, Gupta lab, Head of post doc association at Whitehead Institute

The Path to Faculty: Careers at Primarily Undergraduate Institutions

Tuesday, January 19th, 1:30pm-3pm, 68-181

Are you planning to apply for an academic job? Are you considering a more teaching oriented career? Find out about career options at primarily undergraduate institutions, where professors dedicate much of their time to teaching yet also manage their own research programs and mentor students. Learn about this rewarding career path from a panel of faculty members at teaching colleges.

- Joanne C. Pratt, PhD - Associate Professor of Biological Sciences, Olin College
- Caroline Goutte, PhD - Professor of Biology, Amherst College
- Jason Pellettieri, PhD - Associate Professor of Biology, Keene State College
- Vanja Klepac-Ceraj, PhD - Assistant Professor of Biological Sciences, Wellesley College

Careers at Research Institutions

Wednesday, January 20th, 1:30pm to 3pm, 68-181

For those considering careers within academia, this panel will bring together speakers from a variety of research-oriented institutions.

- Jeffrey Chuang, PhD '01 – Associate Professor, Jackson Laboratory of Genomic Medicine
- Piyush Gupta, PhD '95 – Assistant Professor of Biology, MIT
- Megan C. King, PhD – Associate Professor of Cell Biology, Yale University
- Sallie Smith Schneider, PhD – Director of Biospecimen Resource and Molecular Analysis Facility, Pioneer Valley Life Sciences Institute

The next generation of AI and systems thinking in biology and medicine

Medicine and the targeted marketing problem

Friday, January 15th, 1pm, McGovern Auditorium, Whitehead Institute

Anthony Philippakis, MD PhD
Cardiologist, Brigham and Women's Hospital
Chief Data Officer, Broad Institute
Venture Partner, Google Ventures

Machine learning and computational pathology for data-driven cancer diagnostics

Friday, January 22nd, 1pm, McGovern Auditorium, Whitehead Institute

Andrew Beck, MD PhD
Assistant Professor
Director, Cancer Research Institute Bioinformatics
Director, Molecular Epidemiology Research Lab
Beth Israel Deaconess Medical Center
Harvard Medical School

A systems approach to innate immunity

Friday, January 29th, 1pm, McGovern Auditorium, Whitehead Institute

Sagi Shapira
Assistant Professor of Systems Biology
Department of Microbiology and Immunology
Columbia University

Creating Scientific Figures & Video with Adobe Tools (workshop)

with Sera Thornton and Mary Ellen Wiltrout, MITx Biology
Tuesday, Jan 5, 2:30-4:30, 68-121

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. From 2:30 to 3:30, join us to learn how to efficiently use Adobe Illustrator to make and edit figures. From 3:30 to 4:30, expand your horizons into video with an introduction to using Adobe Premiere Pro and Adobe After Effects to perform simple video editing and animation. Geared towards beginners, but all levels welcome – we may have some tricks you don't know yet! Please bring a laptop with Adobe Illustrator, Premiere Pro, and After Effects installed and working. (Free download from IS&T for faculty & staff. Download the day before as it can take a while.) For more information: serat@mit.edu