

BE TA Training

Agi Stachowiak
John Essigmann
August 31 and
September 1, 2009



Today's Agenda: Introductions

- Background lecture (~9-10 am)
 - Doug: departmental vision, goals
 - Agi: TA responsibilities and teaching resources
 - John: Other resources -- Medical, Minority Education, Discipline, *MIT Policies and Procedures*, and general pointers on student-TA relationships
- Coffee break and teaching time sign-up
- Exercises (~10:15-11 am)
 - Respond to John's microteaching
 - Reflect on teaching and learning
- Interactive panel, then lunch (~11-12:30+)
 - Discussion and Q&A with former TAs

Tomorrow's Agenda: Microteaching

- Required for lecture subject TAs only
 - Lab class TAs please see us if interested
- 1-hr commitment (b/w 9 am and 1 pm)
- As presenter
 - 6 min recitation on given topic/problem
 - Listen to feedback
 - Receive DVD of your talk
- As audience
 - Act as if a student in class
 - Give *constructive* feedback

Group formation, responsibilities

- Groups of 3-5 people
 - Teaching similar class or student population
 - 4 lecture subject groups
 - 2 lab subject groups
- All groups will meet and discuss
 - Learning experiences
 - Teaching ideas
- Lecture subject groups must pick time for microteaching session
 - Sign up on wall during coffee break or lunch
 - For intractable scheduling conflicts, see us

Agenda for SoE-wide Training

September 4, from 9 am to 1 pm. School of Engineering-specific training MIT Room 10-105 (Bush Room)

Note: Please pre-register here: <http://web.mit.edu/engineering/ta>

- Interactive teaching techniques for TAs
- Effective TA communication with faculty and students
- What actors can teach you about teaching

Lunch is included



Arthur Mattuck



Sanjoy Mahajan

We shall not deal explicitly with these issues today, but they may come up. Show *The Torch or the Firehose* Book by Arthur Mattuck.

See Arthur

here: <http://web.media.mit.edu/~walter/mattuck.html>

Departmental Philosophy



- In BE, quality teaching is critically important
 - This is an SoE mandate
- Teaching experience via the TA mechanism is an important part of your education
- Instills a better understanding of our discipline
- Builds skills
 - Oral and written presentation
 - Leadership
 - Teamwork
- Puts you in contact with a faculty member who probably is not your advisor
 - Becomes part of your professional interactome
- Not to mention pragmatics
 - Tuition is \$38K



“Chancellor Philip L. Clay PhD '75 announced at Wednesday’s faculty meeting that tuition and fees will increase from \$36,390 to \$37,782 for the 2009-2010 academic year”

TA Assignments in BE

- Dept. needs ~ 35 TAs per year
- How are assignments made?
 - Doug does it, with some faculty input
 - Doug knows student and instructor personalities
 - Goal is good fit based on student interest and skills
- Most of you are 2nd year graduate students
 - Several undergraduate TAs and postdocs
- BE grad students required to TA one term
 - More in most other departments

Some Facts about TAing in BE

- Do advisors/department get reimbursed for the time you are a TA?
 - Department gets “TA Slots” from Institute
 - Used to support you in first year
 - Those slots pay-forward to reimburse your later RAship
- Do TAs get graded?
 - Graduate TAs register for 20.960 (12-units)
 - Remember, TAing is part of your education
- How much time does it take ... really? Later we'll review results from BE Board survey (hours per week)
 - SoE guidelines call for 20-24 hours per week

Official TA Duties

8.0 GRADUATE STUDENT APPOINTMENTS

8.2 Appointment Categories

8.2.2 Teaching Assistant

*The principal duties of a teaching assistant include **assisting** faculty members in classroom and laboratory instruction, **preparing apparatus** or material for demonstration, **conducting tutorials** and discussion sections, and **grading quizzes**. A full-time teaching assistant usually receives a scholarship to cover tuition costs, in addition to a stipend; a part-time teaching assistant may receive an appropriate partial tuition scholarship.*

Specific TA Roles in BE

- Graduate lecture class TA
 - office hours, often some grading
- UG lecture class TA
 - office hours, grading exams, recitation
- In some lecture classes
 - run exam review sessions, pre-take exams, write extra practice problems, write homework solutions, clean blackboards
- Lab class TA
 - pre-run experiments, grading, high contact hours
 - safety is of utmost importance (moral, legal issues)
- Course development
 - on more *ad hoc* basis
- Ultimately, class- and instructor-dependent
 - Have expectations-setting meeting before classes begin

General duties in all roles

- Know your students
 - Get pictures from Stellar/WebSIS
- Know your material
- Attend lecture and periodic (weekly?) staff meetings
- Sundry help within reason
 - Help maintain course web page
 - Track grades, etc. of students in your section
 - Make photocopies, bring items to class, library assistance
- Help assign final grades
 - You are the student advocate
- Note: formal lecturing is the instructor's job

Resources Around the Institute



School of Engineering TA Site

- <http://web.mit.edu/engineering/ta/>
- Teaching resources
 - Concise tips plus reading list
- Info on e-administration
 - Creating web sites and mailing lists
- Micro-teaching workshops

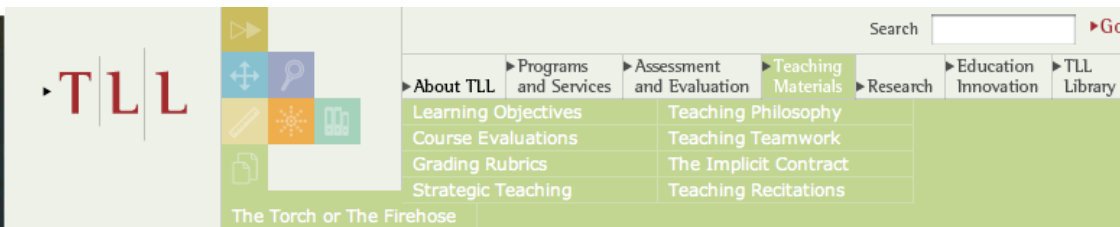


Teaching and Learning Laboratory

- <http://web.mit.edu/tll/>
- Useful web site and resource material
- Offer training workshops
 - Pedagogy experts
 - Emphasize “active learning” – may not be your style



Lori Breslow



Sanjoy Mahajan



OpenWetWare

- Biology/bioengineering public wiki
 - Wealth of information
- Some support, but more DIY than Stellar
- BE lab subjects hosted here
- Potential discussion space
 - Students post questions
 - Students try to answer each other
 - You check page periodically



TA Course Web Pages

- Stellar – Show 20.380 and 20.507 web sites

MIT Course Management System

- <http://stellar.mit.edu/>



- Blogs and Wikis

- http://scripts.mit.edu/~dcarpent/glioma/index.php?title=Main_Page

MIT Libraries

- They will set up a resource page for you
- Very cooperative
- An example:

[Ask Us!](#)

Electronic Resources for Biological and Chemical Engineering

[ChemBioDraw installation](#)

[Information Navigator](#)

[Going beyond Google™](#)

[Locate the full text](#)

[Evaluate information](#)

[Writing: Style/Usage Manuals](#)

[Course Pages](#) Fall 2007

10.28: Information Resources for Chemical- Biological Engineering Lab

Electronic (Online) Resources for Chemical-Biological Engineering

[Vera - Virtual Electronic Resource Access](#)

Access to all the MIT Libraries' electronic resources -- databases and ejournals.

Use [databases](#) to find articles and some property information.

[Electronic books](#), such as handbooks and encyclopedias, can be used as a starting point for your research.

Databases

[Medline/PubMed](#) (1966-present)

Covers over 3,500 journals in biomedical research, neurosciences, and clinical medicine from 1966-present and provides related references.

<http://libraries.mit.edu/guides/courses/fall2007/10.28/index.html>

Issues to Consider

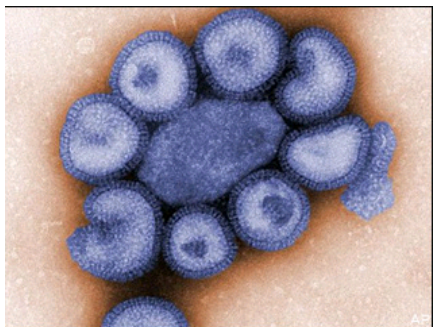
- Be consistent in your dealings with students
 - If there is more than one TA, be sure to communicate
- Disability issues
 - Kathleen Monagle
 - Section 504 of the Disabilities Act
 - Students must have a formal assessment
- Missed work ... what constitutes a reasonable penalty and what time lines are appropriate for make up?
- Illness – Make sure the student is OK first, then deal with make-up issues
 - H5N1 – A special case dealt with later
- Resources: Housemasters, Deans, Department Head, **Academic Advisors**, Medical Department, S^3, [REFS](#)
- Diversity
 - Race, gender, sexual orientation, age, socio-economic status, social skills

OCR
Office for Civil Rights

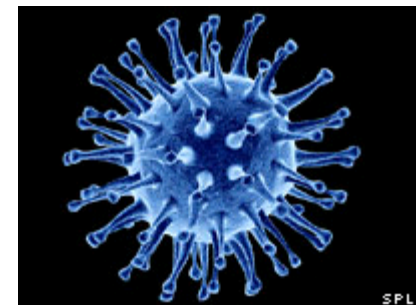


Issues to Consider

- Acting professionally
 - Teachers can be friendly (hopefully) but have a professional relationship with the class
 - Friday .. Note slide on “You are now in a position of authority – asymmetry in relationship with students – want to grab some dinner? – What if it is true love?”
- Get feedback from instructor on your teaching performance
 - How did you do, and how could you do better?
- Ask for feedback from students
 - Confidential questionnaires
- Think outside of the box – Have fun
 - E.g., office hours at 10 PM at 24-Hour Coffee House
 - Coffee with students before class
 - Movie “study break” relevant to class material
 - *And the Band Played On* (HIV/AIDS), *Glory Enough for All* (Insulin), *Race for the Double Helix* (Watson/Crick/Franklin)
 - MIT can provide resources for good ideas (\$\$\$)
 - Uh ... maybe not anymore (insert sad face here)



Issues to Consider



- **H5N1 – a special situation this year**
- The most recent facts from MIT are here:
<http://medweb.mit.edu/about/news/article/swineflu-faq-090428.html>
- But you are in BE ... you can understand the CDC/WHO data:
 - <http://www.cdc.gov/h1n1flu/updates/us/>
 - <http://www.bangkokpost.com/news/health/152956/h1n1-spreading-at-unbelievable-rate>
- MIT is deeply concerned
 - If 10% of our students come down with the flu, will they be welcome in the classroom?
 - 10% of the MIT people in Thailand this summer came down with H5N1
 - Can we teach them from a distance?
 - If a professor or TA is infected, should they come to work?
 - What is the trigger point for closing the Institute?

Office of Minority Education

- Undergraduate population is about 20% under-represented minorities
 - MITE2S and other programs give a pipeline of extraordinary quality
 - These folks are great ... please do everything you can aid retention ... encourage where appropriate academic careers
- OME builds a positive attitude using established pedagogical techniques
 - <http://www.efficacy.org/>
- They run the TSR (Tutorial Services Room)
 - Support for all students
 - <http://web.mit.edu/ome/programs-services/tsr/index.html>
- In a management transition
 - But they are always eager to help
 - Dean Dionetta Jones



Academic Dishonesty

- *Policies and Procedures* says:

10.0 ACADEMIC MISCONDUCT AND DISHONESTY

10.2 Procedures for Dealing with Student Academic Dishonesty

[MIT Policies and Procedures](#)

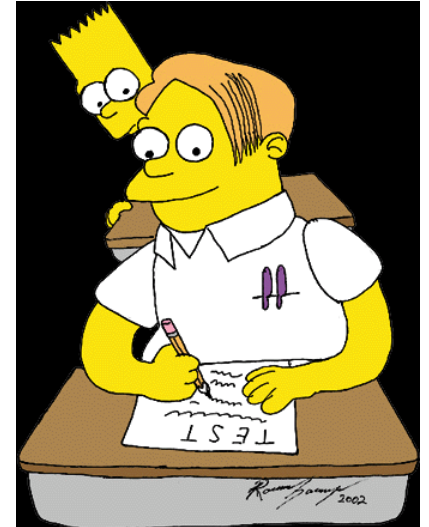
MIT assumes that all students come to the Institute for a serious purpose and expects them to be responsible individuals who demand of themselves high standards of honesty and personal conduct. Cheating, plagiarism, unauthorized collaboration, deliberate interference with the integrity of the work of others, fabrication or falsification of data, and other forms of academic dishonesty are considered serious offenses for which disciplinary penalties can be imposed.

Some academic offenses by students may be handled directly between the faculty member and student, possibly with the assistance of the head of the faculty member's department.

Academic Dishonesty

Cheating happens

- What to look for
 - Session with past TAs will be informative
- How to deal with it?
 - Several paths, but the following is typical
 - TA -> Instructor -> Department Head -> ODSUE/ODGE -> Triage -> Committee on Discipline
 - Check *Policies and Procedures*
 - <http://web.mit.edu/policies/10.2.html>
- Medical issues may click in when the student is confronted – advise student to seek help
 - Discuss how Linda Griffith sends e-mail to students at risk or in trouble
- MIT procedures regarding citations (plagiarism)
 - <http://libguides.mit.edu/content.php?pid=37801>



ODSUE/DUE Contact:
Dean Barbara Baker

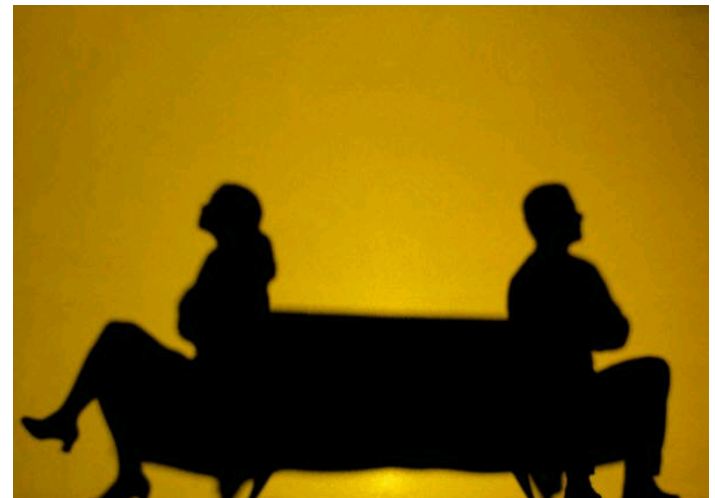
Cheating (Cont.)

- Last year there were some problems that, upon reflection, were based some students not understanding the standards of permissible collaboration
- There needs to be better dialogue between the students and course staff
- In fairness to the instructors, some students do not go to class, or show up late, and do not get important messages

Mediation and Conflict Resolution Resources

- <http://web.mit.edu/mediation/refsprogram.html>
- <http://web.mit.edu/chemistry/www/links/mediation.html>
- <http://web.mit.edu/chemistry/www/academic/life.html>
- <http://web.mit.edu/ombud/index.html>
- <http://web.mit.edu/policies/>

In 20.440, some years ago, a serious dispute arose between the TA and a student. Things escalated quickly.



Workload and Time Commitment

- What if the workload is too much?
 - On students
 - On you
 - What is reasonable for a TA?
 - The “book” says ~20-24 h/week
 - Including preparation time
 - If more than 25 h, talk with instructor
 - A student group size of ~25 is reasonable; you can get to know them reasonably well



Know the Rules

- MIT Policies and Procedures
 - <http://web.mit.edu/policies/>
- MIT Chair of the Faculty Guidelines
 - <http://web.mit.edu/faculty/teaching/termregs.pdf>
- No academic exercises between 5-7 PM
- No night exams before 7:30 PM
- No Monday evening exams

Want to TA Professionally?

- Consider using your soon-to-be perfected TAing skills to help the next generation of MIT students
 - http://web.mit.edu/mites/www/applications/tutor_apply.html
 - <http://web.mit.edu/seed/>
 - <http://web.mit.edu/stem/>
 - <http://web.mit.edu/chemistry/www/outreach/>

Your First Meeting with Class Instructors

- Show my check list from this year for 5.07
- Go over the 5.07 Stellar site
- Discuss Wiki uses
- Again, if your Instructor does not approach you, be proactive

BE-Board TA Survey by Scott Carlson

- Academic dishonesty mentioned often
- Workload varies greatly from course to course – but no one was really complaining
 - 14-20 h/wk average

“We encountered a number of issues with academic misconduct among the undergraduates. One student was obviously cheating on exams, although we did not have proof sufficient to charge academic misconduct. We also had problem sets being stolen from the box where they were submitted. In both cases it would have been helpful if we had known to have implemented more secure procedures from the beginning. We also had situations a student failed despite significant efforts on the part of the student and TAs to bring them up to passing level. I did not feel like I had the teaching skills to instruct this student.” Anon., 2008

We Need a Way to Create Institutional Memory

- Ask instructor or former TA of course if you can look at his/her **course evaluations**
 - There may be useful suggestions
 - Avoid reinventing the wheel
 - But not all instructors will want to share these data ... sadly
- Other ideas??
 - IAP retreat of past and upcoming TAs

Typical Situations I Have Encountered

- I want a re-grade.
- I felt sick so I missed the exam. When is the makeup test?
- My roommate is despondent. I have been staying up with her to keep her from hurting herself. I was unable to do the problem set.
- The workload is too much. I am exhausted. Can I have an extension?

TA Assignments, 2009-2010

FALL 2009

5.07 – John Essigmann

20.102 – Bill Thilly

20.109 – Natalie Kuldell, Bevin Engelward, Angie Belcher + Agi Stachowiak

•Tyler DeWitt (Micro), Michelle Jackson*, Bridget Wall

20.110 – Kim Hamad-Schifferli, Mark Bathe + Agi Stachowiak

•Miles Miller, Chris Ng, Emily Onufer#, Jessica Ho#

20.200 – Pete Wishnok

20.201 – Steve Tannenbaum, Pete Dedon

20.215 – Bill Thilly

20.309 – Steve Wasserman, Scott Manalis, Peter So

•Clarissa Zimmerman (EECS)*, Amneet Gulati, Christian Wentz (EECS)*, Jeremy Chang (EECS)*

20.320 – Forest White, Ernest Fraenkel + Neda Bagheri

•Tiffany Chen, Jim Abshire, Kyle Atmore#

20.420 – Dane Wittrup, Bruce Tidor

•David Hagan, Tim Curran

20.430 – Roger Kamm, Nate Tedford, Doug Lauffenburger

•Josh Alper (ME)*, Sangwon Byun (EECS)

20.450 – Ed DeLong, Jacquin Niles

•Jessica Thompson (Micro)

20.445– Leona Samson, Martin Polz

20.446 – Eric Alm, Alan Grossman

TA Assignments, 2009-2010

SPRING 2009

20.020/920 – Natalie Kuldell, Ron Weiss

20.104 – Bill Thilly

20.109 – Agi Stachowiak, Alan Jasanoff, Jacquin Niles

•Christina Birch, Xiaosai Yao, Nicole Casasnovas

20.111 – Eric Alm, Michael Yaffe

•TBA [Biol], Johnny Rameseder (CSB), Jeff Quinn#, Kerry Weinberg#?

20.200 – Pete Wishnok

20.213 – Bevin Engelward

20.309 – Steve Wasserman, Ed Boyden, Fatih Yanik

•Clarissa Zimmerman (EECS)*, Nathan Klapoetke, TBA [EECS], TBA [EECS]

20.310 – Roger Kamm, Jan Lammerding

•Yvonne Yamanaka, Hsu-Yi Lee (EECS)

20.330 – Jay Han, Scott Manalis

•Leon Li (EECS)*, Yang Li, Marelise Cieslewicz#, Kerry Weinberg#?

20.361 – Harvey Lodish, Doug Lauffenburger

20.380 – John Essigmann, Darrell Irvine

•Peter DeMuth, Jesse Shapiro (CSB)*

20.390/490 – Chris Burge, Amy Keating, Ernest Fraenkel

20.415 – Mark Bathe

20.440 – Pete Dedon, Bevin Engelward and/or Forest White

•Brandon Russell

20.486 – Steve Tannenbaum

Microteaching Example

- Describe the role of Hif-1a in the mechanism by which metabolic networks adapt at the gene expression level to varying pO_2 . Consider cells that are near a source of oxygen (e.g., a blood vessel; call this situation zone A) and cells that are remote from it (call this zone B).