

**PSS 301 Professional Skills Colloquium
Fall 2011**

Instructor: Deborah Neher, Jeffords 117B, Phone: 6-5390, email: deborah.neher@uvm.edu

Class is held every Friday: Jeffords 227, 12:50-2:15 pm, 1 credit

Office Hours: By appointment (schedule through Anne Marie Resnik, aresnik@uvm.edu)

Textbooks:

Bloomfield, V.A. and El-Fakahany, E. E. 2008. The Chicago Guide to Your Career in Science: A Toolkit for Students and Postdocs. University of Chicago Press.

Blackboard (bb.uvm.edu) will be used extensively in this course. Additional selected readings from related textbooks will be assigned in addition to a variety of articles published in the Chronicle for Higher Education, Science magazine, Nature, and professional society newsletters. Readings are grouped by category, whether required or optional (Supplemental Reading). I add a variety of supplemental materials for students who want to learn more about a particular topic. In addition, powerpoint presentations from class will be posted on the class blackboard page.

Course Concept/Operation

The course will be divided into three components:

1. I will make some brief presentations on topics suggested through correspondence with students and faculty during the past year including: communication skills, time management, mentorship, scientific integrity, peer review, and the job market.
2. Students will be expected to give a 10-12 minute Powerpoint presentation during class. Expectations will vary with where you are in your graduate career:
 - a. First year students: research proposal including 1) statement of problem or question, 2) background information with literature review, and 3) a description of methodology. The literature review should include at least six journal articles of which one is a review article on the topic.
 - b. Continuing or doctoral students: present research findings to date (or Master's research) as you would for a scientific meeting
3. Students will receive a peer review critique of their own writing. The topic will mirror the Powerpoint presentation (see part a. above). You will be expected to provide a writing sample (3-5 pages maximum) to each student and the instructor during class as peer reviewers one week before the date that your name is listed in the syllabus. Each peer reviewer is expected to make editorial suggestion on the writing sample and bring it to class the following week. During the designated discussion time, each peer reviewer should be prepared to return their edits to the writer and verbalize one aspect they liked and disliked about each text. Expectations will vary with where you are in your graduate career:
 - a. First year students: write a draft thesis introduction based on the papers read and presented orally in part 2 above.
 - b. Continuing students: write a results and discussion section of a portion of your thesis or dissertation research including at least one graph or table

Each week, I will aim to spend 20-40 minutes on the 'topic of the week' first and then follow with 20 minute for each presentation and writing critique session including questions and discussion.

Evaluating the Instructor

At the end of the semester you will have an opportunity to extensively evaluate the course and the instructor. However, you may also send me an e-mail with constructive criticism at any time.

Grading

Final grades are based solely on the quality of presentations, effort on writing assignments and participation in discussions. Attendance is expected.

Attendance and Participation	20%
Peer review of Powerpoint presentations	20%
Peer review of Writing samples	20%
Powerpoint presentation	20%
Writing sample	20%

Course Schedule

Week	Date	Assigned reading	Neher topic	Presentation	Writing critique
1	09/02/11	1	Introduction, Advisors & Mentors; Choosing & Conducting a Research Project		
2	09/9/11 Deb gone	2, 3, 4	Graduate School / PSS Handbook (Guest: Josef Gorres, PSS Graduate Coordinator)		
3	09/16/11 Deb gone	5, 6, 7, 8	Job Market - teaching, postdoc, industry, academia (Guest: Josef Gorres)		
4	09/23/11	16	Finding & Managing Information (Guest: Elizabeth Berman, Science librarian, Bailey Howe 123)		
5	9/30/11	10, 11	Meaning & Responsible Conduct of Research; Keeping a Notebook		
6	10/7/11	12, 13	Working with Others, Creativity & Problem Solving, Peer Review		
7	10/14/11	17, 18,19, 20	Communicating, Going to Scientific Meetings, Poster Presentations, Speaking		
8	10/21/11	21, 22	Writing, Tables and Graphics		
9	10/28/11	23	Writing & Defending your Thesis /Dissertation	Margarita Fernandez Annie White	
10	11/4/11	24	Writing a Journal Article	Peter Austin Meghan Knowles	
11	11/11/11 Deb gone	9	Job Search (Guest: Anna Smiles-Becker, Career Services)		
12	11/18/11 Deb gone	25	Writing Fellowship & Grant Proposals (Guest: Hilda Alajajian, Sponsored Research, Billings Basement Computer lab) - TBC	Distribute writing	
	11/25/11		THANKSGIVING HOLIDAY	NO CLASS	
13	12/2/11	14, 15	Staying Motivated & Managing Time		Margarita Fernandez Annie White
					Peter Austin Meghan Knowles

Critically Reading Selected Refereed Journal Articles

When you read papers for this course, try to understand what the authors were trying to do and how they went about accomplishing that. I especially want you to see/understand and critique how they interpret their results within the context of the objectives of the research.

Here are some guidelines-things you should know or do while you are reading the paper:

1. What is the overall problem that the investigators are studying?
2. What specific objective(s) or questions is the paper addressing?
3. What is the experimental approach to the question(s)? Here, it will be important to understand the methods that they use in order to be able to evaluate their results.
4. What are the results for each procedure/experiment that make a point? For each point, there will be data in the form of a figure or table, etc. Look at each one; understand what is being shown; make a judgment as to whether it is good data or weak data. If the data is a result of an experiment, determine if the controls are present. There should be positive and negative controls for good experiments. And the negative controls should rule out all other possible explanations for the results other than due to the variable that is being tested. Determine whether the experiment that was conducted actually addresses the question that is being asked. Make a judgment as to whether you think the data support the conclusions reached by the authors.
5. What do you think the next unanswered question is?
6. You should always note things you don't understand or think don't make sense.

Resources

Booth, V. 1993. *Communicating Science: writing a scientific paper and speaking at scientific meetings*. Second edition. Cambridge University.

Davis, M. 2004. *Scientific Papers and Presentations*. Second Edition. Academic Press.

Day, R.A. and Gastel, B. 2006. *How to Write and Publish a Scientific Paper*. 6th Edition, Greenwood Press.

Elliott, D. and Stern, J.E. 1997. *Research Ethics: A Reader*. University Press of New England, Hanover.

Katz, M.J. 1986. *Elements of the Scientific Paper: A Step-by-Step Guide for Students and Professionals*. Yale University Press.

Macrina, F. L. 2005. *Scientific Integrity. Text and Cases in Responsible Conduct of Research*. Third Edition. ASM Press, Washington, DC.

Yang, J. T. and Yang, J. T. 1995. *An Outline of Scientific Writing: For Researchers With English As a Foreign Language*. World Scientific Publishing.

You know that I write slowly. This is chiefly because I am never satisfied until I have said as much as possible in a few words, and writing briefly takes far more time than writing at length.

– Karl Friedrich Gauss



Week 1: Welcome, logistics, introduction, and review of plan (Chapters 1, 3, 4)

Show class textbook

1. Syllabus
2. Introductions – degree, advisor, background, how came to choose UVM, career goals
3. temperament test (know yourself to pick good mentor)

Advisors & Mentors (Ch. 3); Choosing & Conducting a Research Project (Ch. 4)

Selecting a mentor discussion (20 min)

1. Brigg's Meyer results (15 min): career choices, resulting conflicts, learning style, motivation

Personality results

- Myers-Briggs or Kersey Temperament Score
 - web sites with explanations
 - <http://www.personalitypathways.com/article/type-dynamics.html>
 - http://www.personalitypathways.com/type_inventory.html
 - <http://www.teamtechnology.co.uk/careers/what-career-is-right-for-me.html>
 - <http://www.keirsey.com/>
 - <http://www.advisorteam.org/>
 - http://www.advisorteam.org/the_four-temperaments/descriptions.html
 - <http://users.viawest.net/~keirsey/difference.html>
 - <http://www.typelogic.com/> [describes each of 16 types]
 - <http://www.personalitypage.com/high-level.html>
 - <http://www.capt.org/mbti-assessment/type-descriptions.htm>
 - <http://www.ibiblio.org/personality/faq-mbti.html> [resource materials]
 - activities
 - compare results in class with national averages [handout"Myers Briggs statistics.org]
 - <http://keirsey.com/scripts/stats.cgi>
medium of instruction preference
<http://www.educause.edu/ir/library/pdf/EQM02312.pdf#search=%22keirsey%20temperament%20class%20statistics%22>
 - learning styles
<http://www2.gsu.edu/~dschjb/wwwmbti.html>
 - Combining six of the functions yields four temperaments: Guardians (SJ), who value tradition and seek security; Artisans (SP), who are sensation-seekers and hands-on people, Idealists (NF), abstract and conceptual, and Rationals (NT), born scientists and engineers.
 - Uses: career choices, resolving conflicts, learning style, motivation

Research Process - Powerpoint (researchprocess.ppt)

- Timeline
 - 12 steps to research, plan project, Conduct research, Leave as much time for statistics as conducting experiments, Thesis always takes longer than one could ever anticipate!
- 'realities of the research process'
 - Quite often the uninitiated think you make a plan, do it and it's done. Obviously that's not the usual case.
 - There are 10 failures for every success
 - Lots of repetition and drudgery; keep eye on goal
 - Enjoy periods of solitude
 - Supervising Your Graduate Assistants.pdf
 - Last year advice for graduate school experience.pdf
- Data collection, organization and statistics
- Graphical presentation

Week 2:

1. Review the Graduate Handbook (15 min)
 - a. Graduate Coordinator, Josef Gorres
 - b. Student Services, Mariann Steen
 - c. health form
 - i. register before July 31 in summer for fall, or your health benefits will cease; they are only effective if you are re-registered
 - d. research credit form
 - e. composing a committee
 - f. committee progress report – MS, PhD
2. Top 10 Reason's Graduate Students Don't Finish On Time"

Graduate Handbook: deadlines, contacts, committees, progress reports

- a. Graduate Degree
 - i. Graduate college, <http://www.uvm.edu/graduate>
 - ii. PSS Graduate Handbook, <http://www.uvm.edu/~pss/?Page=pssdeptweb/gradtoc.htm&SM=graduatemenu.htm>
 - iii. Core (effective fall 2007)
 1. Require PSS 301 Plant Science Graduate Colloquium of all incoming students
 2. Require participation in at least one colloquium each year for the duration of the graduate student's program (select from PSS 301 Plant Science Graduate Colloquium, PSS 302 Soil Science Colloquium) except when on Grad 900 continuous registration.
 3. Require all graduate students to attend Departmental seminars. Students on an assistantship should sign up for the course (PSS 296) for 1 credit offered as a P/NP option while those students that are self-funded or grant funded may sign up for credit at the discretion of their advisor and advisory committee but are not required to take the seminar for credit. Regardless, ALL graduate students will be expected to attend seminar, with the understanding that exceptions may occur and should be handled through the students committee.
 4. Require a minimum of 1 semester of graduate-level statistics for MS students and 2 semesters for Ph.D. students

Week 3 : Job Market – teaching, research, postdoc, industry, (Chapters 5, 6, 7, 8)

Supplemental Reading

- Sometimes you are the problem.pdf
- Interview Savvy for the Job Market.pdf
- When the right person doesn't get the job.pdf
- Who is Responsible for Preparing Science Teachers.pdf
- Science booklet for women.pdf
- women biologists.pdf
- Balancing Work and Home

- CV Doctor Returns - CHE.pdf (Chronicle of Higher Education)
 - Tyson Candidate's CV - Before CHE.pdf
 - Tyson Candidate's CV - After CHE 2010.pdf
 - Tyson G. Candidate's Résumé before CHE.pdf
 - Tyson Candidate's Résumé after CHE.pdf
 - Jane Candidate's CV - Before CHE.pdf
 - Jane Candidate's CV - After CHE.pdf

Academia

- Teaching at Community Colleges.pdf
- Getting a Job at a Community College.pdf
- Developing Research from a Teaching Perspective.pdf
- Your First Real Taste of Academic Culture.pdf
- Following a Cohort of Yale Graduates through Time
- Grad Students Think Twice about Jobs in Academe.pdf
- Changing Career Goals for Grad Student Table.pdf
- Tenure Criteria and the Job Search.pdf

Industry

- Industry Employer Advise to Grad Students.pdf
- Profile of an Industry Scientist.pdf
- Two Views on Career Choices.pdf
- The Truth about the Nonacademic Job Search.pdf
- Choosing a Job in Industry
- Industry Postdocs: Pros and Cons

- Policy & NGOs in 2007
 - AAAS
 - Science and Public Policy Fellowships, <http://fellowships.aaas.org/>
 - American Phytopathological Society
 - APS Public Policy Early Career Internship, <http://www.apsnet.org/members/ppb/internship.asp>
 - Soil Science Society of America
 - Congressional Science Fellow , <https://www.agronomy.org/awards/award/detail/?a=14>
 - Oxfam: http://www.oxfam.org.uk/get_involved/work_with_us/%20
 - Rodale, <http://www.rodaleinstitute.org/wanted/home.html%20>
 - Winrock, <http://www.winrock.org/>
 - Nature Conservancy, <http://www.nature.org/careers/%20>

- Governmental Agencies
 - Natural Resource Conservation Service, <http://www.nrcs.usda.gov/about/employment.html>
 - Agricultural Research Service (state and federal levels), <http://www.ars.usda.gov/Careers/>
 - Environmental Protection Agency, <http://www.epa.gov/ohr/%20>

Job Application: Cover Letter and Curriculum Vitae Examples

- Assembling your Application materials (Preparing for an Academic Career in the Geosciences link)

Job interview

- Deb's questions for UVM (Vermont Interview Research and Questions.doc)
- <http://www.uvm.edu/~career/> (click on Students)
- asking the right questions.pdf
- Interview Savvy for the Job Market.pdf
- lessons for the academic introvert.pdf
- when candidates misbehave.pdf

Negotiations

- paid leave at public and private univ.pdf
- go ahead haggle.pdf
- Office Space: cramped quarters signal insignificance? (office space.pdf)
- womanly art of negotiation.pdf
- Investing in Retirement (Young Scientists Need Firm Plan.pdf)
- Summer Salary and Other Windfalls.pdf

Dual Careers

- Lessons of a Dual Hire CHE.pdf
- ready to give up on academe trailing spouse.pdf
- trailing spouse track.pdf

Class Presentation

- Job Interviewing.ppt

Next week: Literature Searches, Elizabeth Berman, meet at Bailey/Howe 123

Week 4: Finding and Managing Information (16) – Elizabeth Berman, Bailey-Howe 123

Primary, secondary and tertiary literature

- <http://www.csupomona.edu/~jcclark/classes/bio190/biolit.html>
- Illustrate example & benefits of a review article (Annual Reviews):
 - <http://www.annualreviews.org/>
 - contrast review from primary literature
- searching primary literature: Davis Ch. 4, Science and Engineering Librarian, Elizabeth Berman [meet in the instructional classroom in the back of the first floor]
 - library orientation, training
 - advanced reference and literature searches
 - copyright and fair use questions
 - bibliographic databases
 - JStor
 - Primary, secondary, review papers
- bibliographic databases: Endnote
- filing

Week 5: Meaning & Responsible Conduct of Research (Ch. 10); Keeping a Notebook (Ch. 11) –Required Reading

**We made good progress on lecture 1 but only got as far as Two Body Issues (did not cover material from that slide to end of job interview presentation).

Take lab notebooks for examples

- After making the difficult decision to turn in their adviser for scientific misconduct, a group of graduate students is trying to recover from the resulting damage to their careers,
- SCIENTIFIC MISCONDUCT Truth and Consequences.pdf
<http://www.sciencemag.org/cgi/reprint/313/5791/1222.pdf>
- New York Times, An Unwelcome discovery.doc
- UVM Resources
 - UVM Code of Academic Integrity passed March 2005:
www.uvm.edu/~uvmppg/ppg/student/acadintegrity.html
 - Graduate Student Hippocratic Oath.pdf (medical)
 - Overview of Student conduct Policies.doc
 - UVM Policy on research Misconduct.pdf
- Supplemental Reading
 - <http://www.cs.indiana.edu/how.2b/how.2b.research.html>
 - record keeping.pdf (Ch. 11 from Macrina)
 - laboratory notebook instructions.pdf (Appendix 1 from Macrina)
 - Principles of Effective Research.pdf (Nielson)
 - Dawson's "Piltdown Man"
 - Pons and Fleischmann 'cold fusion'
 - Summerlin felt-tip pen to change color of mice to illustrate successful grafting
 - Korean papers to lack truth.pdf
 - Research Who was found to have manipulated Scientifici....pdf
 - Chemist found with ethical breaches.pdf

Keeping a Notebook – examples to share

- Cardiff (good example)
- 'bad example'

Week 6: Working with Others (Chapter 12), Creativity & Problem Solving (Chapter 13) - October 7, 2011

handouts: peer review form for 1st presentation & scoring approach

Take to class: Science magazine (“computation improve” article) examples, handouts: JON reviewer instructions, Public review document

Background reading: Chapters 12, 13; ESA bulletin Position Statement on Scientific Peer Review.pdf
Supplemental Reading

- Value of peer review for grad students. pdf
- Reviewing peer review.pdf
- Peer review Search and Process.pdf
- Rewarding and rating peer reviewers.pdf
- Suggesting or Excluding Reviewers Can Help Get Your Paper Published.pdf (Science Sept 05)
- Chance & Consensus of peer reviewer.pdf (Science Magazine)
- Double blind review favors female authors 2008.pdf
- Privatizing peer review.pdf

Brief discussion on textbook reading

Chapter 12 Working with others: advisor, labmates, collaborations outside group, credit/priority/sharing, departmental staff, who owns a project? Can you take the project with you? Troubleshooting problem relationship, develop a leadership style

Chapter 13 Creativity and Problem Solving: the creative process, asking the right questions, creativity requires breadth, Optimizing the conditions for creativity, Creative Use of tools, Techniques for creative problem solving, Heuristic reasoning, Troubleshooting, Facing Success and Failure

Anything in the reading surprise you? Particularly resonate with you?

PEER REVIEW – do you have any prior experience?

Show in class

- Instructions for reviewers.pdf (Journal of Nematology) -- computer
- Tutorial for Reviewers.pdf -- online system
- Instructions for Annotation of PDF Files

Class Presentation: Peer Review.ppt with first slide on email etiquette

Class activity: peer review and correspondence: Science 26 Aug Bacterial Diversity Article & subsequent commentary

- ‘public’ peer review; sort of like a letter to editor and rebuttals
- original paper out in 2005
- 2 comments & respective rebuttals one year later (2006)

Homework: find out which professional societies that your advisor has memberships, attends annually, or at least once every 5 years; which society benefits do they value most

Week 7: Communicating (17), Going to Scientific Meetings (18), Poster Presentations (19), Speaking (20)

- Background reading
 - networking at scientific meetings, professional society affiliations
 - benefits of memberships: bring examples of newsletters, journals, job placement
 - links to professional societies
 - Optional reading
 - Moving in the Right Direction.pdf (CSA Jan 06)
 - First timer socials
 - When First Impressions Matter.pdf (CSA March 06 article)
- Effective powerpoint presentation – Required reading – links on blackboard
 - How Real Scientists Give Talks (sometimes easier to know what NOT to do)
 - TipsforgivingaScientificPresentation.pdf
 - Effective posters and presentations.pdf
- effective poster presentation
 - ESA Bulletin article, Monetary and Ethical Costs of Poster Presentations
- handouts: society newsletters
- related scientific professions
 - advisor's important societies/ society benefits they value
 - APS, SSSA, ASA, SES, ESA

Presentations.pptx

Week 8: Writing (Chapter 21), Tables and Graphics (Chapter 22)

- How to write consistently boring scientific literature (Sand Jensen, Oikos 116: 723-727)
- [Scientific Writing Article.pdf](#) (Methods for Students, ESA Bulletin)
- <http://www.cdtl.nus.edu.sg/link/jul2001/tips1.htm> (how to write technical papers.pdf from CSA news)

Class Presentation

- [Scientific writing Part I.ppt](#) – all I could get through in 1 week (through slide 24 of graphs for the one posted online)
- Discussion of strengths & weaknesses of various graphic software

Week 9: Writing and defending your thesis (Chapter 23)

- [Scientific writing Part II.ppt](#) – save to week 2

Abstract Assignment

- [Writing an abstract](#) - save to week 2
- [Abstract assignment paper](#) - save to week 2
- Handout abstract worksheet.doc with assignment to write 200 word abstract
 - Writing peer review sheets abstracts for scientific meetings* review assignment
 - http://www.uaf.edu/csem/ashsss/abstract_writing.html
 - abstract worksheet.doc

Future ideas of abstract exercise

1. Monroy and van der putten (2009) *Soil Biology & Biochemistry* 41: 1689-1695 (Endnote) – has excellent examples of how to describe experimental design and significant 2-way interactions. Well written article

Supplemental reading

- Last year advice for graduate school experience.pdf
- Mastering your defense.pdf

Defending your thesis.pptx

UVM thesis

Useful web links

- UVM Graduate College, Continuous Graduate Registration

Week 10: Writing a Journal Article (Chapter 24), authorship, correspondence

Take to class: writing style guides, manuscripts, proofs, editorial information

- copy of manuscript compilation
- galleys to show order of figures, tables etc

Abstract discussion

Handouts:

- Guidelines for Authors
- P. 91 Case 1. Ending Co-authorship
- authorship
 - Guidelines for Authors
 - P. 91 Case 1. Ending Co-authorship
 - What is plagiarism.pdf
 - Mentor or Protégé.pdf
 - Painful publishing.pdf

Communication styles

- journal article
 - choosing a journal
 - journal impact factors.docx
 - text mentions www.sciencegateway.org/rank/index.html
 - editors, referees and revisions (peer review)

Class Presentation: Journal Publication and Authorship.pptx

Other Materials for Peer Review of Writing Samples

- WRITING SAMPLE EVALUATION FORM.doc

Technical Editing Notation.pdf

Next two weeks: Anna Smiles-Becker from Career Services, Hilda Alajajian from Sponsored Research.
Announce alternative meeting locations

Week 11: Career Services (9)

- Career services representative, Anna Smiles-Becker
 - <http://www.uvm.edu/~career/>
 - Focus on search skills in 2010! Databases (not resumes or career philosophy)
 - Job search strategy
 - Job hunting advice site: <http://www.cse.psu.edu/~yuanxie/advice.htm#job>
 - Job Search Strategies.doc
 - Common Job-Hunting Blunders
 - The Drama Behind the Job Ad
 - Applications
 - Choosing your references (The Unrecommendation.pdf)

Display items

- Chronicle of Higher Education (<http://chronicle.com/>)
- Science magazine
- Professional society newsletters

**Week 12: Writing Fellowship & Grant Proposals (25) –Hilda Alajajian
- Learning Services Computer Lab which is in the basement of Billings**

- Supplemental reading
 - Becoming a Successful PI on grants.pdf
- Grant writing tips
 - Ecological Bulletin (skelly 2003.pdf) – advice for DDIG
 - Hall and Moyle DDIG perspectives.pdf
 - Sigma Xi Research in Aid Grants
 - UVM Sponsored Research Office
 - Database searches
- Funding Sources
 - Government Agencies
 - Industry
 - Playing well with industry.pdf
 - Business financing for research.pdf
 - Finding industry funding.pdf

Week 13: Staying Motivated (14); Managing Time (15) – Dec 2, 2011

Peer evaluations of writing samples – 20 minutes

Abstract exercise – 15 minutes

Time management – read and make note of tips that you already use and find useful, and ones that are tempting and you'd like to try

- Who has time to read this? (CSA Aug 06) - PDF
- Time Management for Graduate Students, <http://gradschool.about.com/cs/timemanagement/a/time.htm>
- Study Tips for Graduate Students, <http://gradschool.about.com/cs/studytips1/a/studytips.htm>
- Time Management Tips for Graduate Students, <http://gradschool.about.com/cs/timemanagement/a/tme.htm>
- Graduate School: It's About Time, <http://www.princetonreview.com/grad/research/articles/life/aboutTime.asp>
- The Working Student: Combining work and school, <http://www.graduatingengineer.com/gradschools/articles/02-14-02a.html>
- Time Management Techniques, <http://www.tsuccess.dircon.co.uk/timemanagementskills.htm>
- Manage yourself, not your time, <http://www.tsuccess.dircon.co.uk/timemanagementtips.htm>
- Time Management http://projects.edtech.sandi.net/staffdev/tpss99/processguides/time_manage.html
- Time for non-science activities.ppt

INTRINSIC MOTIVATION

Text topics – Chapter 14

1. Motivation and “flow”
2. Motivational difficulties and distractions
3. *Keys to high motivation*: build and maintain self-confidence, set goals & priorities, break down the tasks (salami principle), identify the next action, get more information, get small results early and often, establish a routine, vary your activities, take a break, get enough exercise and enough sleep, build and use your support group, communicate informally, publish, be engaged in your department, become a professional, get recognition from senior figures, be alert to job possibilities
4. *Take home messages*: keep a positive attitude, be prepared for challenges as well as success in research, prioritize your goals and streamline different tasks, divide large tasks into segments that can later be reassembled, maintain focus (avoid distractions while you are working), take breaks and allow yourself to enjoy life away from the research environment, get enough exercise and sleep (maintain a healthy diet)

Time management discussion (15 min)

1. read and make note of tips that you already use and find useful, and ones that are tempting and you'd like to try
2. Deb examples: take example of calendar type: annual scale, weekly schedule, and daily schedule, PDA

Text- Chapter 15 *Take-home messages*: define clear & realistic goals, short- and long-term, personal and professional; prioritize your goals; make a list of the smaller steps you need to complete to reach each goal; establish a reasonable timeline for achieving your objectives; plant daily, weekly and monthly schedules but allow some flexibility to accommodate the unexpected; learn to multitask and to juggle multiple responsibilities; periodically review your goals, objectives and accomplishments; maintain a focus on finishing tasks in a timely fashion. This will allow you time for your personal needs & goals

Class evaluation