



Best Practices in Yale Graduate Programs

**A collection of examples of practices used to support the academic development of
graduate students in Yale doctoral programs**

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Overview

The 2010-11 analysis of graduate programs indicated that good practices beyond the one on one mentoring of graduate students by their thesis advisors contribute to good outcomes for students. Going forward, we will expect each program will want to provide a high level of academic support for their students. All programs can improve their practices.

Fortunately, we do not have to look far for examples of good practices, because many are widely used at Yale. This document is a sample of supportive practices from all three divisions.

Departments provided many of these good examples in response to our surveys. Others emerged from informative and constructive discussions with chairs and directors of graduate studies.

This is a working document that will expand as we collect more examples of program initiatives to help their students. **We invite any student or faculty member to submit to the Dean of the Graduate School additional material for this living document, which we will share with everyone concerned with graduate education by updating this report at regular intervals.**

We divided the material into 10 sections that parallel the recommendations in the report.

i. Examples of clearly stated program requirements

The 2-4 Project revealed that many programs failed to provide their students with enough information about requirements and/or sufficient detail about expectations for professional development. In response to that project, many programs improved their written and web-based materials about requirements since 2008. See individual departmental reports at <http://www.yale.edu/graduateschool/academics/2-4project.html>. Our study identified some excellent examples of more nuanced advice for graduate students. Some programs have found that simply stating at matriculation time that students are expected to finish their thesis in a certain number of years gives the students a concrete goal that improves their time to degree.

Recommendation: Every program should maintain a website with a current account of requirements and some written advice about what is expected of the students during each year in the program. This advice should include the program's expectation for the time that a high performing student will take to finish his or her dissertation. For example, Medieval Studies states that the "PhD program can and should be completed in five years, during which time the student will receive support from the University."

Examples of online information for PhD applicants and students

Excellent examples, among others, can be found on the websites for the Departments of Anthropology, Applied Physics, Cell Biology, Classics, Computer Science, Geology & Geophysics, Molecular Biophysics & Biochemistry and Nursing. These comprehensive documents discuss all aspects of program requirements and offerings. Many include descriptions of core courses, progress expectations year by year including flow charts, lists of advanced students, reading lists and detailed calendars.

**For a program seeking to improve their online program information the Nursing and Cell Biology documents provide extremely useful models of informative websites.*

Tracking student progress with checklists of expectations

Political Science will introduce a novel format to track fulfillment of program requirements: checklists with expectations at every step of the program. Students and advisors will review these criteria for the current term and use the forms as a roadmap for student goals. They will fill out these checklists twice during the first two years and annually questionnaire thereafter. Completed questionnaires will go to the DGS and faculty advisors. Below are examples of the first and second year questionnaires:

1st Year Checklist

Tasks (Things to do this year):

- Identify advisor: _____
- Select 3 fields: (1)_____, (2)_____, (3)_____
- Which field workshop(s) will you attend? _____
- Plan course schedule to accommodate field requirements and course prerequisites
Will you have sufficient courses to complete all of your fields?
If you are planning to “course out” of a field, will you have the 3 courses necessary to do so?
How will you satisfy the language requirement (see URL:) _____
If you are planning to apply for transfer credit, submit necessary forms (See URL:)
Have you signed up for Introduction to the Study of Politics?
- (If possible,) complete one field exam by the end of your 1st year summer:

- (If possible,) become involved in conducting research, perhaps as an RA and/or co-author.

In the Spring and Summer:

- Identify Research and Writing advisor for 2nd year paper and begin work on project :

- Acquire additional language or research skills via summer program
(See URL: for details on deadlines for funding, including easy to miss deadlines.)
- Work as an RA and/or co-author with faculty member
- Prepare for and take field examination: _____

Trouble spots to avoid:

- ** Failing to plan out two years of course offerings to prepare for three fields
- ** Falling behind with incompletes/etc.
- ** Not taking at least one exam after the first year
- ** Failing to regularly attend subfield workshop
- ** Not becoming involved with research in “spare” time

2nd Year Checklist

Background (Things you have already done/updates)

- Advisor: _____
- Which field workshop(s) do you attend? _____
- What is your certification status in each of your 3 fields?
(1) _____ (Completed via Exam or Coursework
(2) _____ (Completed via Exam or Coursework
(3) _____ (Completed via Exam or Coursework

Tasks:

- Complete certification (by exam or course) in three fields and all required coursework
Language requirement? , 16 courses? , 2 Honors grades? ,
Introduction to the Study of Politics? , Research and Writing?
- Prepare Research and Writing paper suitable for publication
Research and Writing Advisor: _____
- Work as an RA and/or co-author with faculty member
- Pass SPEAK test if required to be eligible for fall teaching

In the Spring and Summer:

- Prepare for and take final field examination
- Revise Research and Writing paper and send out for review
- Acquire additional language or research skills via summer program
(See URL: for details on deadlines for funding, including easy to miss deadlines.)
- Work as an RA and/or co-author with faculty member
- Begin prospectus research by thinking about committee and topic
- Fill out MA paperwork if wish to obtain degree

Trouble spots to avoid:

- ** Failing to complete required courses and certification in three fields
- ** Failing to regularly attend subfield workshop

Looking ahead:

What topic are you thinking of working on for your dissertation? Who are you thinking of working with? Apart from your dissertation project idea, do you have a stand-alone piece of research that you can consider working on and submitting for publication? Are there funding applications for dissertation research that will require you to have material ready to submit in the fall of the 3rd year?

ii. Examples of independent research in years 1 and 2

Early independent research allows students to have a taste of thesis research and allows them to learn if they enjoy and can handle this type of work. The independence and open-ended nature of this research is distinct from writing term papers in formal classes.

We recommend that programs require some form of independent research beginning no later than the summer after the first year.

Natural Sciences

In many experimental sciences students do research continuously during their first two years. First year courses called laboratory rotations are often employed and followed by research during the summer and the second year through qualifying exams.

Other science departments such as Physics and Astronomy expect students to develop their own data and complete a major analytic project using it by the end of their second year.

Humanities and Social Sciences

For programs without the equivalent of laboratory work (rotations), several options exist. Sociology requires students to begin a major research project no later than the summer between their first and second year. Then, through departmental workshops, a paper is developed and defended by the spring term of their second year. The student is then expected to refine the so-called “second year paper” and submit it for publication to a competitive journal in their field.

In History students must write at least 3 papers based on primary source research during years 1 and 2. In year 2, they take 2 classes to prepare for the requirements of year 3, which consist of a thesis prospectus (based on survey of secondary literature and primary sources) and 3 or 4 fields of oral examination.

In Political Science students must enroll in a research and writing course during their second year with the expectation that a major paper will be developed, refined with the instructors and their faculty advisor, and then presented to their annual internal academic conference (and possibly submitted for publication).

Alternatively, some humanities and social science programs expect first and second year students to identify one class paper to expand into a larger piece of independent scholarship with advice from a faculty member. Some programs have the goal that this research can be published as a journal article, but this is less important than the scholarship experience itself.

Such independent projects will have a greater impact on student development if they are a requirement and perhaps given course credit. An alternative is a summer research course combining research with the common practice of assigning reading, so the student not only reads but also does some independent research.

iii. Examples of helpful evaluations of progress prior to the qualifying exam

We recommend that the entire faculty of each graduate program review progress of each student every year and provide written assessments to the student when appropriate. Ideally the director of graduate studies leads a discussion of the entire faculty of a department or program on the progress of each student. Typically, the majority of students who are progressing well can be reviewed briefly. Students of concern deserve more detailed consideration, so that the faculty can make informed decisions as a group in a timely fashion, including recommendations for remedial actions, changes of advisor, probation or withdrawal from the program. Some programs provide each student with a written summary of his or her appraisal and recommendations for the coming year.

Humanities

In English written evaluations are collected for all students in all seminars from all instructors. The Graduate Studies Committee under the supervision of the DGS reviews these comments annually.

Natural Sciences

The Cell Biology faculty meets at least once per year to discuss each graduate student. All thesis advisors, whether members of the department or not, are invited to the meeting. The DGS shares a summary sheet with all students and advisors grouped by year in the program. The discussion focuses on the plans of advanced students to complete their theses in a timely fashion, as well as any students who encounter problems in earlier years. This process puts both the students and their advisers under the spotlight, so is a very effective strategy to help students in trouble and to encourage timely graduation.

Social Sciences

At the end of each term students in the Psychology program completes a progress report detailing his or her accomplishments for the past 6 months and goals for the next 6 months. The advisor completes a Faculty Evaluation Form providing written feedback on the student's progress and needs for improvement. The student and faculty member meet to discuss these forms; the forms are filed in the DGS office and become a part of the student's record. At the end of each semester a faculty meeting is held to evaluate all students using these progress reports as the basis for discussion.

iv. Strategies to place the qualifying exam early enough to gauge readiness for thesis research

Early assessment of a student's likelihood of completing the dissertation is crucial for avoiding the disappointment of late attrition. Scheduling one or more of a program's qualifying exams in early years can help inform this assessment. Waiting for qualifying exams until late in the third year or even the fourth year postpones decisions by students and faculty about plans to finish the program deep into a student's time in graduate school and contributes to late attrition.

Different views of the nature of the qualifying exam contribute to the wide variation in timing. One view is that a qualifying exam determines the student's capacity for doctoral research. In many programs holding this view, thesis research begins before and is a focus of the qualifying exam. The exam can expose areas of weakness and allow the student and program to take remedial action. Other programs view the qualifying exam as a comprehensive test of knowledge in the field, so they delay the exam until students complete up to 24 required courses. In some programs independent research begins only after meeting the qualifying exam requirement.

We recommend that qualifying exams be completed as early as possible, no later than the middle of the third year. Students deemed equipped and capable of thesis research by passing the exam(s) might complete some course work after the qualifying exam. If program requirements preclude completion of the qualifying exam until the end of the third year or later, the department should implement other means to assess each student's capacity for thesis research by the end of year 2. One approach would be to require completion of one component of the qualifying exam before the beginning of year 3 to provide objective feedback to the student and make a well-informed decision about whether it is in the student's best interest to continue to the qualifying exam in the third year.

Humanities

Film Studies has divided their required exams so that their canon exam, a one hour oral based on 75 essays and 100 films, is usually taken at the beginning of the third term. The remaining exams must be completed by the second term of the third year.

In most of the humanities and social sciences, the qualifying exam precedes the prospectus, and in these cases, the earlier the exam can be offered, the better. An alternative model used by the History department requires the prospectus first, and then the qualifying exam. The advantage of this order is that it identifies those students who will not be able to formulate a dissertation topic both earlier and more reliably than exams and therefore results in early decisions about continuing on to thesis research.

Natural Sciences

In Computer Science the exam is scheduled by the second term of the second year and typically includes the following: A written or oral test of in-depth knowledge of the research area; a test of the capacity to learn a topic from research literature; and presentation of the 690 report and fielding of questions about it.

Pharmacology students are encouraged to take the qualifying exam early in their third term so they may start their dissertation project as soon as possible while they finish any remaining course requirements. They must take their qualifying exam by the middle of their fourth term.

The Pharmacology qualifying exam is designed to test a student's ability to think as a scientist and his or her knowledge of the field. It is both a written and an oral exam. The written portion is modeled after a fellowship application to the National Institutes of Health. The goal of the exam is to develop an original research proposal and defend it before a small committee of faculty members. The subject area is open to the diverse breadth of modern pharmacology. However, students should not choose a topic that is too

closely related to a rotation project, a thesis project or ongoing research in the department, since this may be construed as a lack of originality. Students are encouraged to seek guidance from the faculty in locating appropriate references in a particular field of interest, but should ultimately select and design their own project.

Social Sciences

In Statistics students complete three exams by the fourth term. (i) A Practical Exam is held each September with most students taking it in their third term. Students analyze a data set and write a report presenting their conclusions. Students who do not perform well on the practical exam are sometimes allowed to redeem themselves with a strong performance in the Practical Work course the following semester. (ii) The Theory Exam is offered each January and consists of a written paper responding to approximately 12 questions covering a combination of advanced undergraduate material and first year graduate material. (iii) Within a few days an Oral Exam follows the Theory Exam. Well-prepared students can attempt the Theory and Oral Exams in the middle of their first year, but all students are expected to complete the qualifying exam by the middle of the second year. If unsuccessful, the student may retake an exam at the end of the second year. The exams are used with other information to decide if students should continue in the program.

v. Supportive thesis committees

Most graduate programs require thesis committees, but some do not. A standard thesis committee consists of the advisor and at least two other faculty members. Students without a thesis committee are highly dependent on their advisor. Thesis committees become active in the second year in some programs but not until the fourth or later years in others. Some departments are pleased with the effectiveness of variations of the standard thesis committee, such as having the entire faculty of a small program serve as a committee of the whole.

Thesis committee meetings assure that the student takes stock of progress at regular intervals and reports to a supportive committee of faculty members for their advice. The participation of faculty other than the advisor gives students a range of advice and protects them in cases where the student has differences with the advisor or where an advisor is taking advantage of a student.

Most programs with thesis committees require annual formal meetings, but this is not always enforced and some schedule meetings only “as needed”. Unfortunately those students who most need a thesis committee meeting often find excuses to avoid them. The solution is simply to require an annual thesis committee as a prerequisite for registration. Programs with this rule have no problems with compliance and the penalty of not being able to register essentially never has to be imposed.

In many programs with the good outcomes, the frequency of thesis committee meetings increases over time from once per year to twice per year after year 3. Meetings are scheduled more frequently if a student is having problems finishing his or her work.

In the past scheduling thesis committee meetings was difficult for students doing field research away from New Haven. Fortunately, videoconferencing is now available from many parts of the world, so that every student can benefit from a face-to-face or virtual thesis committee meeting.

Humanities

The English department convenes by the 3rd year an advisory committee of three thesis advisors, one of whom is designated to chair the committee. The committee and one outside reader hold chapter conferences with the student after the first and second chapters are completed. In addition, students meet individually as needed with members of their committees, and possibly also with outside mentor and field workshops.

Natural Sciences

Thesis committee meetings in Cell Biology begin after the qualifying exam before the end of the second year. This critical meeting is used to confirm the student’s ability to work effectively in the lab and evaluate him or her for admission to candidacy. An annual thesis committee meeting (and twice yearly meetings in years 4 and beyond) is required for registration in the following year. The student prepares a written report of his or her progress in advance of the meeting. Payment of stipends and university privileges depend on registration. The DGS has had to use this enforcement measure only once, refusing to approve the registration of a student until a thesis committee meeting was scheduled.

Social Sciences

In Psychology a committee of 2 faculty members (advisor and one other) must evaluate students' first year research papers. A committee of 3 faculty members (advisor and 2 others) evaluates the second-year pre-dissertation papers (i.e., master’s theses). The dissertation advising committee consisting of the advisor plus two faculty members is formalized during the third year with meetings planned at least twice a year. The dissertation prospectus must be submitted to this committee for approval by the spring term of year 3. Five faculty members (advisor and 4 others) must approve the full dissertation.

vi. Written feedback from thesis committee meetings

During the 2-4 project students raised concern about the lack of written feedback from thesis committee meetings in most programs. Those concerns motivated a growing number of departments to provide annual progress reports. We recommend that all students should receive written feedback from a thesis committee at least annually, in addition to the advice that they receive from their advisor on their work.

Narrative evaluations

A common approach is for the chair of the thesis committee to submit a written report of the meeting to the student and to the DGS for the student's permanent record. The annual online Dissertation Progress Report system is one way to provide this feedback to the student, providing adequate information is entered into the system after the review of the student's report has been completed.

Ideally, the DGS uses the results from the thesis committee meetings or the dissertation progress reports to report annually to the entire faculty on the progress of each student or at least those of concern, so that decisions can be made in a timely fashion about remedial action, probation or termination from the program. These reports from the DGS to the faculty at large are also important to guard students from advisors who fail to give their students enough support to be successful.

The Political Science faculty dedicates a spring meeting to a review student progress. The DGS and other faculty familiar with the student share information about each student's accomplishments. Following the meeting the DGS sends each student a letter with the program's understanding of progress made during the previous year and on what the student should focus in the upcoming year.

Computer Science conducts a similar student progress review every spring and has found it most efficient to review students by advisor rather than by year of study.

**Something new and novel:* The Astronomy program has implemented a comprehensive review process for all their students beyond their second year of study. It begins with a short survey completed by both the student and the advisor. A progress review committee composed of the Chair and two faculty members then interviews each student individually followed by his or her faculty advisor. The Chair prepares a written evaluation for each student and his or her advisor summarizing progress and future areas of focus. The following two-page questionnaire is used to capture status information prior to the interviews.

Astronomy Pre-Interview Question Sheet

1. How often do you meet with your advisor?

- student's answer:
- adviser's answer:

2. Who initiates this contact?

- student's answer:
- adviser's answer:

3. Is this often enough in your opinion?

- student's answer:
- adviser's answer:

4. Is there someone else you consult (or would like to consult)?

- student's answer:

- adviser's answer:

5. Do you feel that you have sufficient knowledge/understanding of the relevant literature?

- student's answer:
- adviser's answer:

6. How many papers do you read each week?

- student's answer:
- adviser's answer:

7. How many talks do you attend each week; which ones?

- student's answer:
- adviser's answer:

8. How many talks have you given; where?

- student's answer:
- adviser's answer:

9. How many conferences/ workshops/ summer-schools did you attend?

- student's answer:
- adviser's answer:

Do you consider your current time plan realistic?

What are the crucial steps/major hurdles for finishing your thesis?

What are your plans after your PhD?

Do you have any complaints about your advisor that you would like this committee to address?

Are there any other things that you wish to discuss with this committee?

Checklists

Some programs find it convenient to use a checklist to give students written feedback at the conclusion of each thesis committee meeting. Checklists include most of the factors deemed by the program to contribute to a student's success and tend to be more comprehensive than a narrative evaluation, which can also be included as part of the checklist. After the student's presentation, the committee decides whether the student is performing in each category above expectations, as expected or if there is a cause for concern. Then the committee discusses each of these criteria with the student. The student receives a copy of the checklist, which is also put into their permanent record and used for review at the next thesis committee meeting.

The 2010 Graduate School survey of more than 50 programs found that 20% were already using a checklist approach and another 30% were considering the practice.

The following three-page exhibit from Cell Biology provides a clear example of how a checklist model can be employed by a dissertation advisory committee

Cell Biology Thesis Committee Meeting Form

Instructions for the Student:

- 1) Prior to the meeting, you should have emailed to the committee and the DGS a progress report *no longer than 2 pages* describing a) major results since the last thesis committee meeting (or the qualifying exam if there was no prior such meeting), and b) plans for major experiments to accomplish before the next meeting.
- 2) Give this form to the committee chair and return it to the Registrar after it has been filled out at the end of the meeting.
- 3) Read the instructions for the committee chair below to make sure proper procedures are followed.

Instructions for the Committee Chair:

- 1) Prior to this meeting, the committee should have received a 2-page progress report from the student describing past accomplishments and future plans. If requested, the DGS/Registrar will provide the committee with the student's earlier progress reports.
- 2) Fill out this form at the end of the meeting. Ask student to leave the room temporarily while you complete the evaluation form in consultation with the other committee members (student may remain in room at committee's discretion). Please be frank in evaluating the student's progress, strengths, and weaknesses.
- 3) Go over evaluation with student. Once the form is completed, *the thesis advisor should leave* (the other committee members may stay or leave). Discuss evaluation with student, who should have an opportunity to ask questions and to express any concerns. Give the form to the student for its return to the Registrar, who will distribute copies to the student, committee, thesis advisor, and DGS.

If you do not want to fill out the form, please email a report of the meeting to the DGS that addresses the main points on the form.

Cell Biology Thesis Committee Meeting Form

Student's name: _____ **Date of meeting:** _____

Thesis advisor: _____ **Year of Study:** _____

Committee members in attendance: _____

Please evaluate each of the areas below by circling the appropriate descriptor and provide comments where appropriate.

1. Progress since last thesis committee meeting (or qualifying exam if no prior meeting):
Acceptable Well above average Cause for concern to committee
If cause for concern, please explain:

2. Knowledge of the relevant scientific literature:
Acceptable Well above average Cause for concern to committee
If cause for concern, please explain:

3. Thinking critically about the project, seeing the "big picture":
Acceptable Well above average Cause for concern to committee
If cause for concern, please explain:

4. Demonstrating initiative and independence in experimental design and project directions:
Acceptable Well above average Cause for concern to committee
If cause for concern, please explain:

5. Motivation and work ethic:
Acceptable Well above average Cause for concern to committee
If cause for concern, please explain:

6. Technical competence at the bench, trouble-shooting ability:
Acceptable Well above average Cause for concern to committee
If cause for concern, please explain:

7. Quality of written and oral presentations:
Acceptable Well above average Cause for concern to committee
If cause for concern, please explain:

Note: If this is the first thesis committee meeting since the qualifying exam, an evaluation of at least Acceptable in all areas 1-7 above is required for the student to be admitted to candidacy.

Cell Biology Dissertation Progress Checklist – Page 3

8. Is the student on track to graduating in 5 years?
Yes Probably Maybe No Too soon to say
If no, how much further time might be required:
9. Does the student have a publishable story or at least the beginnings of one?
Yes Probably Maybe No Too soon to say
10. Should the student consider switching to a new project?
Yes Probably Maybe No Too soon to say
11. When should the student have another committee meeting?
3 months 6 months 9 months 12 months
(Note: Students are required to have at least 1 meeting per academic year; 4th and 5th year students are required to have 2/year.)
12. Does the committee agree with the student's future plans as stated in the student's progress report summary?
Yes No
If no, please explain:

If certain minimal goals must be achieved in order for the student to remain in good academic standing, please specify them and any deadline for meeting them:

13. Does the committee agree with the student's proposed thesis outline and plan for graduation (assuming it was presented)? Yes typically means that this is the last thesis committee meeting and the student is being given permission to write up the dissertation and to schedule a thesis seminar date.
Yes No
If no, please explain:

Committee chair's name _____
Committee chair's signature: _____

vii. Regular formal meetings with advisor individually or in groups

Regular formal meetings allow students to report on their current work and to ask peers and faculty for help with any problems they have encountered. Group meetings in the natural sciences are organized within one laboratory or among small groups of laboratories. In most cases these lab meetings are held every week throughout the calendar year, not just during the 26 weeks of the academic terms. In the social sciences and humanities, working groups of faculty and students organize around specific topics and students sometimes participate in more than one of these groups. Alternatively, or in addition, these group meetings can be used to host outside speakers or as journal clubs, where the participants report on current research papers that they have read. Regular presentation at group meetings and journal clubs is a valuable way for students to practice giving academic talks. Some programs require students to participate in working groups.

The following are several descriptions of how formal research group meetings and working groups can create valuable interactions in a wide range of fields.

Humanities

From Howard Bloch (French Department)

I am convinced of the value of research working groups in terms of intellectual and pedagogical development and could imagine faculty and graduate students in Humanities departments interacting around the issues of:

- The place of theory, methodology, both general and field specific.
- History of the field, and of sub-fields.
- Trends in the field. Important articles and books, places, and people.
- How to find a thesis topic and how to formulate the prospectus. Discussion of thesis on a regular basis--either chapter-by-chapter, or periodically according to a reasonable timetable. The thought of regular feedback not only from the thesis director, but from a body of the faculty and of fellow graduate students should, ultimately, have the effect of widening the scope of the thesis and of stopping bad ideas early.
- Feedback on student papers submitted for publication or for presentation at scholarly meetings.
- The relation of one's departmentally defined field to other fields, departments, and disciplines, whether in the Humanities, the Social Sciences, or even the Sciences.
- Regular reports on progress when students return from the field, i.e., study or research abroad, in other archives or even Yale collections. Reports from graduate students who return from job interviews and on-campus visits and who might share their experience with those who will one day find themselves in the same situation. Regular reports when faculty members return from leave.
- Faculty work-in-progress, including how one identifies a meaningful project and pursues it.
- Co-mentoring along with a faculty member of undergraduate senior theses.
- Employment. This is a perfect forum in which to introduce in a natural sustained way about how to negotiate the job market; this in distinction to the end-of-graduate-career rush in the fall of the sixth or seventh year to finish one's thesis and do all it takes to apply for jobs.

- Journal editing in so far as the department participates in a journal. This seems like a perfect forum to discuss future issues as well as specific articles submitted, offering as it does first-hand experience at journal editing from the inside.

These are only a few of the possible issues of significance and concern and would, of course, have to be tailored to each specific department or group within a larger department.

The advantages of such regular meetings seem obvious:

- To provide a sense of community within the Department.
- To provide a sense of the on-going vitality and directions of the field.
- To make the Department more attractive in the recruitment of graduate students.
- To make the graduate students we produce more attractive on the job market. If we were to institute something like a graduate student working alongside a faculty member in the preparation of a senior undergraduate thesis, this could have an enormous appeal for the job candidate, who can say that he or she has already worked with undergraduates in this vital advising role.
- To make students more cognizant of the breadth of the field and to make them more adept at conversing both about their own work and about the field at large can only be attractive to prospective employers.
- To keep students informed of national trends and of important professional journals, meetings, sites and people doing interesting work.
- To improve departmental morale because of the regular discussion of intellectual and professional issues that are sometimes dealt with on an ad hoc and arbitrary basis and that are, for this reason, often the source of anxiety.

From David Kastan (English Department) (weekly; academic terms; no class credit)

Here is a quick rationale and description of what I have been doing with the grad students working in early modern English.

Every Wednesday from 6 to 8 pm I meet with all the grad students (presently about 12) who are working on literature written roughly between 1500 and 1700. It is optional, of course, but everyone comes. We set a schedule at the beginning of the term so each week we meet one student presents a paper and one responds formally. The work presented can be of various sorts: a paper being revised for publication, a dissertation or fellowship proposal, or materials being polished for the job market. The presenter gets 4 or 5 minutes to talk about what the work is, where it fits into what they are doing, what issues seem still problematic. The respondent gives a 4 or 5 minute response, with the presenter then given time to reply; and then it is open for discussion, the only ground rule being that no one may engage in the throat-clearing "I really loved your paper." We start by rule with the "but." It is good-natured but tough-minded, and everyone is expected to participate. Tone is no doubted shaped by two other "traditions": the respondent must bring food; I bring 3 or 4 bottles of wine.

It is incredible the difference this has made, as I think everyone involved will testify. The advantages are intellectual and professional. The students are much better than they were before about talking about their own work and responding to others. They have bonded as a cohort, supportive to one another and fully engaged with what each is working on. The younger students understand how the profession works much earlier than they did before. A further benefit: last year's group recruited the entering class: we admitted 4 students and all came, three of them having sat in on the seminar when they had visited. The seminar has countered the insularity that is possible post orals, and that was in fact usual in the department. Several

papers we workshopped last year have now been accepted for publication, several fellowships have been won, and I trust some jobs will follow this year (we had no one looking last year).

There are no obvious downsides, and a number of other subfields have begun to imitate this structure. I suppose it depends on faculty willingness to give some time (it is an add-on responsibility that gets no formal recognition) and the wine is out-of-pocket, but cheap at the price: the improved quality of work, of community morale, and of professional success speak eloquently for the benefits.

Natural Sciences

Research group meetings for Susan Baserga's laboratory (Molecular Biophysics and Biochemistry)

The members of Susan Baserga's laboratory benefit from several different research group meetings. She holds a group meeting weekly with members of her laboratory. In addition several MB&B laboratories have a joint weekly meeting to give students and postdocs a forum to present their work to an audience with more diverse interests. In addition all of the medical school RNA laboratories hold a "supergroup meeting" once per months where students and postdocs can present their work to others in their immediate field. Since she is also a member of the Genetics Department, students from that program also present at Research in Progress during the spring term.

David Schatz lab meetings (Immunobiology) (weekly; year round; no class credit)

The issue is how to give students helpful, constructive, regular feedback on their thesis research and writing. One on one meetings with the supervisor are fine and should take place at some regular interval, but equally (or more?) important would be regular meetings of the supervisor with a "small" group of students where each is allowed to present a very informal progress report describing ideas, progress, road blocks, etc. Students would be particularly encouraged to discuss the most challenging difficulties they face. The whole group would be encouraged to provide suggestions and feedback. Size, frequency, and organizational structure would be program and even mentor dependent, but certain guidelines could probably be constructed.

Size: one would want enough students to provide a group dynamic, but it should be small enough that every student speaks at every meeting (or at least at every other meeting). So, I suppose it could be as small as three or four students (or two fabulously connected students) and as big as 10 or a bit more. Might work well to have more than one faculty member there in some cases. Want to maximize the chance that someone in the room will have a useful idea or perspective for any problem that comes up, while keeping it small enough that everyone is invested in it each meeting. Seems desirable to cut across years so that more senior and more junior students are in the group.

Frequency: This would depend on how many other of circles of interaction and mentoring are going on simultaneously and to some extent on the culture of the department. I'd think that a minimum would be once a month.

Organization: Probably very discipline dependent. Would want some conceptual overlap in what the students are working on. Meeting must be mandatory.

If one thinks along the lines of the Venn diagram (a useful concept), then faculty or DGSs could be encouraged to set up two or more types of small meetings that cut across the students in different ways (year in program, research topic, tools or approaches being used, etc.), so as to maximize feedback and ideas and keep things fresh.

Tom Pollard lab meetings (MCDB) (weekly; year round; no class credit)

My research group consists of 5 graduate students, 6 postdoctoral fellows and 2-4 undergraduates – each working on a distinct project in a general field of biology. These individuals have a wide range of expertise: molecular genetics, chemical kinetics, x-ray crystallography, biochemistry, mathematical modeling and microscopy. We meet twice each week for 90 minutes year round. These group meetings build an intellectual community that provides support in real time and training in making presentations.

One of the weekly meetings is to discuss ongoing research. Each person presents what he or she accomplished during the previous week. Everyone is encouraged to bring their raw data to show to the group and to offer advice to their colleagues. These are real problem solving sessions, designed to help individuals with technical or conceptual problems. Presentations are short when the individual has done routine work such as preparing materials for future experiments. Presentations and discussions are longer when an individual has run into problems, when a project is ready to be written up for publication or presentation in a talk or poster or if the individual is making major decisions about their direction.

The other weekly meeting is a journal club. Everyone in the group (including undergrads) reads a different, recent research paper from a list that I compile each month. At the meeting, each person has 8 minutes to present a summary of their paper, including the key figures, which are projected from a pdf file. The journal club serves several purposes: it is a reading service for each participant so that they see most of the key data in our wide field; each person learns through weekly practice how to give a scientific talk; and each individual reads about 50 papers per year on the work closest to their own research interest.

Social Sciences

From Susan Nolen-Hoeksema (Psychology)

Each of the five research areas in psychology (social, cognitive, clinical, developmental and behavioral neuroscience) has a weekly "lunch" meeting that is mandatory for all graduate students and faculty in the area. Presentations are made by a combination of graduate students or faculty talking about their work and outside speakers. We also discuss professional issues in the field about once a term in most of these area lunches (e.g., in clinical we have had discussions of alternatives to academic jobs, such as policy work, or how to apply for a job). The goals of these weekly meetings are to expose students to a range of work outside their lab but in their area of psychology and to socialize them in how psychologists think about various problems. Faculty participants informally evaluate how the students "perform" in terms of their willingness to share their thoughts and ideas and the quality of these thoughts and ideas (e.g., it is noticed when certain students never talk or seem disengaged).

In addition each faculty member holds a weekly lab meeting for their students, including undergrads, grads and postdocs, and any other interested students. My own lab meeting runs about 12-15 people a week, a typical number for many faculty members. Usually each student (particularly grads and postdocs) take responsibility for one week of lab meeting to present new ideas, ongoing research they want help with, drafts of papers they want feedback on, or dry runs of talks they are giving at conferences.

Some faculty members organize a lab meeting around a new paper that is pertinent to the interests of the lab. There is always more discussion than there is presentation, whatever the topic. When we have visitors to the lab, such as someone here on sabbatical, that person and his/her work is the focus of at least one meeting.

Some of my goals for lab meetings are:

- to model constructive criticism of students' work and give them opportunities to learn to give constructive criticism

- to give senior students the opportunity to mentor more junior students
- to provide opportunities for students to get ideas from each other to improve their research and thinking about their problems
- to help students learn to talk about their ideas in public
- to create a collaborative culture in the lab that extends beyond lab meetings
- to solve concrete problems in research design and materials

Jim Scott Weekly Incubator Breakfast (Political Science)

The premise: We train graduate students to be sharp critics of ideas. They learn, like predatory sharks, to smell blood in the water and close in for the kill. I actually applaud this skill; it is the intellectual selection pressure that eliminates unproductive ideas. It has, however, some unfortunate consequences. Students are reluctant to present promising but less-than fully-formed ideas for fear that they will become shark food. The risk-averse reaction to this state of affairs is for students to present ideas that have been carefully worked out and appear to offer no obvious wounds or exposed limbs. The result is often that their interlocutors have little to contribute to idea-formation and the originator of the idea is more or less committed to defending his or her well-constructed fortress.

My idea is to start with a contrary premise: a small, informal, experimental setting in which the objective is to incubate half-formulated but, hopefully promising, ideas. The purpose is not criticism per se but to give new/early/raw ideas a sympathetic hearing and to jointly see how they might be developed, elaborated, and applied.

The idea is to encourage intellectual risk-taking in a sympathetic atmosphere and, in the process, build the skills for collaborative idea-incubation. Exactly how this might work out can only be developed by experimentation but I have some preliminary suggestions about how we might at least begin.

1. The setting should be entirely informal and small. I suggest a weekly meeting around breakfast lasting, say, an hour and a quarter. It goes without saying that this will not be a course/seminar or anything of the kind; it is merely a breakfast conversation about ideas.
2. A student would offer a deliberately **raw** (but potentially fertile) idea, concept, approach in a few paragraphs (certainly less than a page) and talk about that idea for no more than 5 minutes or so. The self-assigned job of the rest of us is to incubate this idea, to put wings and feathers on it and get it airborne---to figure what's interesting and promising about this idea in the first instance.
3. A subsidiary premise is that ideas are like the petit-bourgeois shopkeepers. Most of them fail. A few succeed brilliantly, after major adjustments, usually. The trick, I think, is to create an atmosphere that nurtures the production of ideas in the full knowledge that most of them will not work out (at least not in their original form) and which playfully and sympathetically seeks out ways in which they might be illuminating and valuable.
4. My guess is that the group, especially at the outset, should be small, entirely voluntary, and interdisciplinary (making sense across disciplinary boundaries is important). I'm thinking of students in political science, history, anthropology, and sociology for a start. Adjustments could be made on the basis of experience.
5. At the end of a semester we would hopefully have a sense of how such pedagogical experiments could best work---or whether they work at all! It would not surprise me if we ended up with something quite different from the initial format. This would be the second year of the experiment. Last fall we tried it

out and I believe it proved valuable; perhaps the best sign is that the breakfast group continued voluntarily throughout the year although our formal existence ended last December.

Research discussion groups in Political Sciences from Elisabeth Wood

Brown lunch seminars: The department holds a brown lunch seminar for first-year students intended as an introduction to research issues and faculty members. We are currently experimenting with a different model (spreading it out over the entire year instead of just the fall) as students found it demanded more time their first semester than intended.

Field workshops: The Political Science Department runs or shares several field workshops. Students are expected to be active members in at least one workshop and are required to present a paper in at least one workshop before the end of the fourth year. Several faculty members as well as many graduate students attend the workshops, so discussions in the workshops are key mentoring opportunities for students. Typically, only quite polished work is presented, but some workshops invite students to present a draft of their prospectus. The workshops vary greatly in size from 10 to 40, which affects the quality of feedback to grad students on their work.

Individual research group meetings: A few faculty members meet regularly with their own advisees as a group to discuss ongoing work; most meet individually.

Professionalization events: The department holds a number of "professionalization" events every year, including how to give a job talk and how to write a prospectus. This is an opportunity for students to present a draft of their prospectus.

viii. Informal contact with advisor and others in program

To build a cohesive academic community, we recommend that students have an environment where they can mingle with other students and faculty on a regular basis. Providing student workspaces in good proximity to faculty offices is required to facilitate these interactions with peers and faculty.

These informal interactions benefit the students, who can ask for advice, and the advisor, who can keep track of the time and effort being invested by the students.

Humanities

Many humanities departments have no space for graduate students to work. A rough estimate based on department visits and interviews suggests that 35% of departments are without any workspace for students within their departments and another 50% have extremely limited access to work and meeting space. Students in these programs must work at home (which may be in another city), in the library or in coffee shops where regular encounters with faculty and peers are rare. This is further complicated for doctoral students in their teaching years when no location is designated for them to meet with undergraduate students. This lack of space to participate in an intellectual community contributes the well-known feeling of isolation that students reported in the 2-4 Project.

The Graduate School is aggressively taking the lead to find more and better office space for students who lack places to work. We are receiving excellent cooperation from the Provost's office, Yale College, the Office of Facilities, the Library and Student Financial and Administrative Services and several academic departments. We expect to see some space available to graduate students to work starting this fall with more substantial space in the future.

The following describes how several of the fortunate humanities departments have been able to provide space for graduate students and promote a sense of academic community.

- Religious Studies and Comparative Literature share a building that has a large graduate student workroom on the lower floor and a spacious faculty and student lounge and kitchen on the top floor. While space limitations do not allow the assignment of space to individuals, these spaces promote informal discussions and chance meetings.
- Classics provided assigned study carrels to their students in their library on the top floor of the building where their faculty offices are located. They have also created a graduate student lounge area on another floor with comfortable seating, a kitchenette, drop in computers and bank of small lockers for the secure storage of personal items.
- As part of Music's building renovation, part of the basement area was dedicated to graduate students with lockers for personal items, a lounge area with drop in computers and a large practice and meeting room for non-scheduled uses. Small meeting rooms are available for Teaching Fellows to meet with their students.

Natural Sciences

Students generally see their advisor daily throughout (five days a week around) the year in laboratory environments in the sciences, engineering and laboratory-based social sciences. Each student has a small desk, often located adjacent to his or her laboratory bench, but sometimes in a separate room nearby.

Social Sciences

Following are a few examples of departments able to provide space to their graduate students in such a manner that informal discussion between faculty and students and among students is encouraged.

However, it should be also noted that several social science departments share the same space deficiencies as most of the humanities departments.

- Political science was fortunate to have space for dedicated carrels included in the design for their new building. Located on a middle floor of the building with a glass wall to the interior atrium, it is easy to see who is coming and going. The design also provided a number of conference and meeting rooms for those in their teaching years to use.
- Linguistics was able to include in their renovated office plan a graduate student workroom that includes comfortable seating, drop in computers, mailboxes and a small meeting room for student teacher conversations. While this space is not large enough for all their students to be present, it is located on one of the main faculty office floors and provides good visibility and informal contact opportunities.

ix. Regular opportunities for students to present their work

Presenting material and addressing questions are essential skills best developed through practice. The number of required formal presentations of research work (outside of regular research group meetings) varies widely from two talks per year after the third year to none. Some programs have presentations only near the completion of the thesis, rather than along the way. Some programs have formal thesis defenses with a public presentation, but some have none. Students benefit from preparing these presentations, which build incrementally to their final thesis presentation, from the opportunity to give public talks and from the questions and criticism that they receive during these presentations.

We recommend that every program should require all students in their research years to present a progress report on their work to colleagues in a formal setting at least once a year.

Humanities

Music sponsors weekly work-in-progress meetings where both students and faculty present their research. Also, starting in the third year, students are required to present one chapter per year of their dissertation.

Philosophy provides a work-in-progress course led by two faculty members that includes the development of presentation related skills. Students are required to make oral presentations, practice responding to criticism and develop skills for giving criticism. Also, apart from the work-in-progress class, students are required to defend their prospectus and eventually their dissertation.

English requires that every student who has written two or more chapters make a conference-length presentation at the end of each year to the entire department--faculty and students--with a Q & A period.

Natural Sciences

Departmental research talks (Cell Biology, Genetics, Molecular Biophysics and Biochemistry, Molecular Cellular & Developmental Biology, other science departments)

Most science departments sponsor multiple monthly special interest research groups with participants from multiple laboratories at the medical school and science hill. The typical format is a monthly meeting with a pair of 20 minute talks by graduate students or postdocs on their own research with time for questions. Most departments require their graduate students to make annual presentations. Examples of topics include RNA, physics & biology, biophysics, structural biology, flies, worms and plants.

Departmental retreats (Cell Biology, Genetics, Molecular Biophysics and Biochemistry, Molecular Cellular & Developmental Biology, other science departments)

Annual retreats are held off campus for 1 to 2 days. Recent budget constraints have made West Campus a favorite location, but others are held in Woods Hole on Cape Cod, at Jiminy Peak in Vermont or at Waters Edge in CT. All of these retreats involve faculty, graduate students (including those who have just arrived and are looking for laboratories to join) and postdocs. All include lots of interesting talks by faculty, students or postdocs, poster presentations by students and postdocs and two to six meals that allow for many informal conversations. Longer retreats include some recreation and parties with community-building skits and contests. This is expensive for 130+ people, but well worth it.

Social Sciences

In Psychology all students usually present their research to their lab groups at least once per year, beginning from the first year. Lab groups also hear students' practice job talks and conference

presentations on an as needed basis. Students are required to present their masters thesis work to their full area group at the end of the second year, and present their dissertation work to the full area group when completed (usually in the fourth or fifth year). The full department is invited to these area talks. All students can and do use the weekly area meetings to practice conference presentations.

Political science requires a second year research and writing course, which includes intensive draft review with faculty and presentation practice. Each year the department also sponsors a mock academic conference complete with formal presentations by students.

x. Student placement

Placing graduates in good jobs should be a priority for all of our programs. Historically, this has meant academic positions at top-rated institutions, but with few jobs available in some fields, the focus is broadening to include research, leadership and policy positions at non-academic research institutes, think tanks and government. In fields with limited academic employment opportunities, students often delay completion of their dissertations while waiting for a good job to open up. This is not ideal for the student or the program.

The Graduate School's Career Services Office is one resource for students seeking employment. They provide free access to a dossier service and organize numerous workshops throughout the academic year on topics relevant to job seekers. The Graduate School plans to strengthen Career Services and is working on ways to support postdoctoral fellowships to bridge between timely completion of the PhD and an attractive position in academics or with other employers.

The graduate programs must also take responsibility for helping students find employment. Directors of graduate studies and faculty advisors have always played a pivotal role in a student's placement and a number of programs continue to invest time and resources in this area. The following are a few examples of program initiatives to help students seeking employment.

Humanities

This year a faculty member from English and Comparative Literature will serve as a shared Placement Coordinator for both programs. They will maintain support materials for students on a Classes*v2 project site along with event calendars with a signup capability. Internal workshops and meetings throughout the fall will cover a variety of topics including dossiers, conferences to attend and handling offers. Students may also make individual appointments for advice, reviewing materials, consulting on dossier presentation and review of writing samples. The Placement Coordinator will closely track each student's job search and schedule mock interviews at the appropriate time. Post-graduates are welcome to continue participating in these support activities.

In History the DGS provides career advice meetings starting in the fall along with additional sessions provided by History's Andrews Society alumni group. Full dress mock interviews are also encouraged with the expectation that candidates provide a full cover letter, CV and potential job description. Since real interview committees often include those from unrelated fields, unfamiliar faculty members are asked to participate. When students are invited for on campus interviews, the program also organizes a mock job talk on campus and invites students and faculty from the program to attend.

Natural Sciences

Given that many graduates find employment outside the academy, Cell Biology has actively engaged alumni from their own and other BBS departments to provide workshops and informal discussions with students on non-academic options and placement strategies. In addition, advisors are expected to include in their formal discussions with students an ongoing dialog about the most common career models for the field and about individual career goals.

Social Sciences

Psychology Professional Development Series

The Psychology Department holds frequent panel discussions on topics relevant to career development,

such as setting priorities and getting things done, how to apply for a job, handling rejections (e.g., papers, grants), promoting oneself and grant writing.

Economics (Edited from material submitted to the graduate school by Ben Polak (chair) and Truman Bewley (DGS) of the Department of Economics, January 2011.)

Students: Economics admits about 20 students per year. They have a huge applicant pool (831 in 2010), but have to battle other top programs for the best students. They admit the best-qualified students regardless of their fields of interest.

Program: Training starts with rigorous first year courses in micro, macro and econometrics and in the second year with courses in at least two specialized fields, leading to qualifying examinations in those fields. Most programs aim for students to transition to research in their third year and have a dissertation prospectus approved by two advisors before the start of their fourth year. Most dissertations consist of two to three independent research papers approved by three advisors, but there is no formal defense.

Outcomes: The time to job-market placement is between 5-6 years (median 5.7) in spite of two full years of class work and a heavy quantitative component, requiring a math boot camp before matriculation and extra math course the first year. From each class 1.3 students fail along the way for academic reasons, a few take highly desirable positions that do not require a PhD and 2.5 become ABDs.

Placements: Over the past five years every student with a PhD found a job: 65 in academic jobs, 9 in government institutions, and 6 in the private sector. Among the academic jobs, in 2009/10, they placed students at Princeton, Chicago, Columbia, Oxford, Wisconsin, Toronto and Duke. In 2008/9, they placed students at Chicago, Penn (one in econ and two in Wharton), MIT-Sloan, Michigan, Oxford, and UCSD.

How does Economics avoid students who hang on unproductively and become ABDs?

The answer is not that econ students are better than other Yale graduate students. Part of the answer is that there are many job opportunities for PhD economists. Another part, however, may be that the economics department has adopted practices to help their students finish their PhD's in a timely fashion and to secure desirable placements.

Mentoring:

Beyond the first two years, most students have a primary advisor, but an important part of advising takes place within a working group of faculty and graduate students in the same field. At the center are the various 'prospectus workshops', brown-bag lunches and reading groups run within each field. These workshops are similar in design and intent to 'lab meetings' in the natural sciences.

Most students start to attend these sessions in their second-year while doing field courses. Third-year students are required to present work each semester in these workshops, and students continue to attend and present regularly as they progress in their research. It is not uncommon for research that eventually becomes a student's job-market paper to be presented five or six times in various stages of completion. Attendance is high; for example, typical attendance at the theory 'lunch' is about 20 about half of whom are students and about half either Yale faculty or visitors.

Advisors must submit dissertation progress reports every semester to ensure timely progress.

Placement:

Typical students go on the job market in their fifth or sixth year. Placement is a collective effort, taken very seriously by the whole Department, and spearheaded by two faculty members, who serve as Placement Officers, and by the Graduate Registrar. The process is continuously reviewed and improved year after year. Feedback from colleagues elsewhere indicates that Yale candidates are among the best

prepared for the job market.

The economics job market centers on annual professional meetings. A key element is the job-market paper, typically the best chapter the dissertation, along with a CV and at least 3 letters of recommendation from the student's advisors. Interviews take place at the annual meetings, and fly-outs where students present their job-market paper.

Preparation begins with an organizational meeting in May of the fourth or fifth year where candidates are walked through a placement timeline. All must meet their advisors for frank conversations about his or her prospects; set up a personal webpage; and give a presentation of their job-market papers in the summer graduate student workshop, followed by at least one full 90-minute presentation in their field's formal workshop in the fall.

At the end of the summer, advisors certify in writing to the Placement Officers that the candidate is ready. A group of candidates is formed. In September, each of them, with the help of the advisor(s), writes their CV and a two-page dissertation abstract for review by the Placement Officers and approved after one or more rounds of revision, for web posting and mailing.

Between early September and early December Placement Officers and candidates meet as a group 5 or 6 times, for about 2 hours each time, to discuss the logistics of the process and to try out short presentations. These give an opportunity to gauge each candidate's preparedness, in terms of both substantive research and presentation skills, and to point out pros and cons of each presentation strategy. In November, a faculty meeting discusses student placement, where every advisor presents and every faculty member is present so everyone knows about each candidate.

Between mid-October and mid-December candidates also meet with professional speaking coaches from a private company, hired by the department, and each gives more (sometimes several more) presentations of his or her job-market research to the informal field workshops and lunches. In December, each student gives at least one mock job-market interview with two faculty members from other fields, who are not familiar with the details of the research. Most students are also given mock interviews within their field group. Truly problematic (and increasingly rare) cases of foreign students with poor command of spoken English are referred to Yale University's English Language Institute for help.

Doing even better:

In spite of this stellar record, the Economics Department is not satisfied. They worry about the 10% of students who finish as ABDs, and would like to do better. They have the following plans to improve:

The most important challenges are to improve students' transition from taking courses to doing research, and to reduce students' average time to market. We will re-examine all our requirements with this especially in mind. Among ideas are: requiring the qualifying exams in the second year; simplifying the form of those exams; re-examining the econometrics requirement; ensuring that the econometrics and history requirements do not drag into the third year; tightening up and possibly changing what is required in the third year concerning, for example, the prospectus, presentations, and perhaps papers; tighter enforcement of rules to advance to candidacy; and introducing requirements into the upper years so that a student cannot drift. The reason to tighten rules and deadlines is not to fail students out of the program but to set expectations. That said, it is much better for students to fail out early than to fail to progress later, so we will also examine if we are being tough enough in our first and second year exams.