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About the Author (at time of original publication):

Marjorie Olmstead will be promoted to Associate Professor of Physics and Adjunct Associate Professor of Chemistry at the University of Washington, Seattle, in September, 1993. She has been an Assistant Professor at the UW since January 1991, following four and a half years as an Assistant Professor of Physics at the University of California, Berkeley. She has thus gone through the "new faculty" experience at two research universities. She also has watched the process at an undergraduate institution, having received her physics B.A. in 1979 from Swarthmore College. Between receiving her Ph.D. in surface physics from UC Berkeley (1985) and joining the faculty there, she spent one and a half years as a Member of the Research Staff at the Xerox Corporation Palo Alto Research Center. Besides lecturing at the graduate and undergraduate level and assorted service activities, Prof. Olmstead works with her graduate students to perform experimental studies of interface formation between dissimilar materials and of the structural and electronic properties of ultra-thin ionic materials. The following paper was prepared for an invited talk at the 1993 AAPT conference of physics chairs on "Physics Departments in the 1990's", held in Arlington, VA, April 30-May 2, 1993.

## MENTORING NEW FACULTY: ADVICE TO DEPARTMENT CHAIRS

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### Introduction

The myriad new opportunities and responsibilities that burst upon a brand new faculty member can be both exhilarating and overwhelming. Almost overnight, a new faculty member is faced with brand new courses to teach, a laboratory empty of both equipment and students, implicit departmental taboos and traditions, insufficient funding, and demands for one's time coming in from all sides. On top of all this, there is considerable personal upheaval: finding a new home, adjusting to a new city, and having very few friends who won't also have a vote on one's tenure.

The above problems have always faced new faculty. However, the problems have been magnified recently. In many departments, it has been five to ten years since the last tenure-track hire in a given sub-field, and the old expectations may not be appropriate for current hires. In the intervening years, funding has become much more difficult to obtain and maintain, and the technical sophistication, capital funds, and time required to start a competitive research program from scratch have increased dramatically. In addition, pressure for improved teaching at research universities, and for improved research at four-year colleges, is changing the traditional balances. New faculty hear contradictory messages about expectations regarding teaching, research, service and funding, and have difficulty sorting out the priorities that will achieve tenure.

The problems of personal upheaval have changed in recent years due to the increase in dual-career relationships. While this affects roughly equal numbers of men and women in physics careers, it proportionately affects a much larger fraction of the women. The days are gone when an assistant professor could spend six years putting in 60-70 hours per week while a spouse took care of personal needs (housing, children, *etc.*). In their stead, departments (and institutions) need to address the issue of adjusting time-lines or standards of quantity while maintaining standards of quality.

When a department makes a new hire at the assistant professor level, it has invested one of its most valuable resources: a tenure-track faculty position. If the department does not nurture that new professor, it greatly reduces the probability of a good return on that investment. On the other hand, if the department facilitates access to the knowledge and resources required to develop a new faculty member's career, the payoff is likely to be a valued colleague for many years. If a new faculty member is successful, everyone benefits. If a new faculty member is unsuccessful, not only the faculty member suffers. If the physics community perceives that the department was at least partially responsible, then the department may suffer repercussions in future attempts to recruit faculty and students.

## Advice to Department Chairs

There are a number of relatively simple things that a department chair can do or facilitate which will greatly increase the chances of success for a new faculty member. What follows is a compilation from my own personal experience, plus more than a dozen replies to my request for help in preparing this presentation via the "wiphys" electronic mail network sponsored by the American Physical Society Committee on the Status of Women in Physics.<sup>§</sup> Another useful resource was the *Information Brochure for Incoming Women Faculty* produced at MIT.<sup>†</sup> Department chairs can (and should) augment this list by asking faculty in their own institutions for further suggestions. The comments below are biased towards my personal experience: a young, female, condensed matter experimentalist at a major research university; most of these suggestions, however, are widely applicable.

The suggestions that follow fall into four basic categories:

- 1. Make the Expectations and Criteria for Promotion Clear**
- 2. Facilitate the Acquisition of Resources to Meet these Expectations**
- 3. Give Frequent and Accurate Feedback**
- 4. Reduce the Impediments to Progress towards Promotion**

Many of these suggestions can be implemented by the department chair; others require asking senior faculty in the department or related departments for help; others require keeping an eye out for potential problems. Some departments may find a formal mentoring program to be appropriate; others will function more informally. If all communications are informal, however, new faculty often end up isolated and out of the loop.

### **1. Expectations and Criteria for Promotion**

The criteria for promotion to tenure are varied and broad. Most departments evaluate progress based on some combination of excellence in research, teaching and service. Implicit in these categories are funding, publications, national and international recognition, awards, collaborations, independence, lecturing, curriculum development, involvement of students and post-docs, committee work, and so on. Depending on the character and local culture of a department, these criteria will have different weights in a tenure decision. It is vital that the new faculty member be aware of what the relative weights are.

- **Make sure the new faculty member understands what is required for tenure, both officially and unofficially.** Give all new faculty copies of the promotion and tenure guidelines for the department, college and university upon arrival. Include a copy of the

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<sup>§</sup> Contact person and chair in 1999: Prof. Marjorie Olmstead, Department of Physics, University of Washington, Seattle (206)685-3031, olmstead@phys.washington.edu. CSWP also publishes the CSWP Gazette and maintains a roster of women in physics, a colloquium/seminar speakers list and a site visit program. [For Current Information, see web site:](#)

<sup>†</sup> Prepared by the Women Faculty Network, Massachusetts Institute of Technology, June, 1992. Contact Person: Lorna Gibson, Associate Professor of Civil and Environmental Engineering and Mechanical Engineering, 1-274, MIT, Cambridge, MA (gibson@mit.edu).

"checklist" for a promotion case. Specify which records should be kept, or filed in the department office.

- **Make sure the new faculty member understands the time tables and deadlines.** If there is an intermediate re-appointment decision, inform the new faculty member about which criteria need to be met by then. Is there an implicit date by which the first grant proposal should be submitted or funded? The first paper accepted? The first thesis filed?
- **Be explicit about the way in which a new faculty member will be evaluated.** The new faculty member should be given the answers to these and related questions: What is the relative importance of student teaching evaluations, peer evaluations, and letters from inside or outside the institution? Will publications with former or new collaborators be considered, or only work with students in your department? What are the implications of starting a new research direction versus continuing in the same direction as his or her thesis or post-doc research? Are one or more NSF grants, Physical Review Letters, or invited talks at an international meeting implicitly required? In sub-fields with large collaborations and/or long lead times, such as high-energy physics, how will independent scholarship be assessed?
- **Arrange a lunch centered on a frank discussion of the tenure process.** Invite new faculty in your department and related departments (chemistry, geology, *etc.*), as well as the dean, a member of the college or university committee that considers promotions, the other department chairs, and one or two senior faculty. Encourage both probing questions and honest answers. The side benefits of these people meeting in an informal setting are also considerable.

## 2. Facilitation of Resource Acquisition

Once a new faculty member knows the rules and expectations for promotion to tenure, a major responsibility of the chair is ensure the physical and information resources to meet these expectations. Resources are broadly defined: they include the obvious ones of equipment startup packages and traditional mentoring about teaching, handling graduate students, and writing grant proposals; they also include nominations of the new faculty member for awards and invited talks, and introductions to others who can help.

### Mentoring Resources

The chair and other mentors should serve both as sources of information and as advocates for the new faculty member. It is vital that the new faculty member has a "safe" person to whom he or she can bring questions or problems without fear of impact on a promotion decision. In a small department, it might be appropriate to ask someone in a related department to serve as a mentor. Emeritus faculty are also a good resource. Other useful resources are the National Science Foundation program Visiting Professorships for Women,<sup>†</sup> and the rosters of

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<sup>†</sup> This program funds 6-36 month visits of women to academic institutions: the visitors can be junior-level women whom department is considering hiring; or senior-level women from industry, national labs or other academic institutions. In either case, the proposals include both research and "instructional, counseling or other interactive activities". Contact person: Dr. Margrete Klein, National Science Foundation (202)357-7456.

women and minority physicists and colloquium speakers maintained by the APS committees on the status of women (see prev. note) and minorities.<sup>†</sup> These visitors can serve as excellent mentors for new faculty and graduate students.

### General Facilitation

- **Give the new faculty a list of the right person to call for different needs.** This could include phone numbers for everything from the grants and contracts office, to whom to call to unlock a classroom, to the local emergency room. Including a list of the current committee and teaching assignments within the department is also quite useful, as is a listing of the responsibilities of the department staff.
- **Organize a reception for new faculty and university staff** in coordination with related departments. Invite staff from the offices supporting grants and contracts, instructional resources, teaching assessment, faculty governance and adjudication, *etc.* Also invite the person(s) in the administration to whom a new faculty member would report suspected harassment or discrimination. Encourage the new faculty member to get to know these people and to take advantage of these support services.
- **Introduce the new faculty member to the rest of the faculty.** Let him or her know which ones might be particularly helpful as mentors for teaching, dealing with graduate students, writing grants, etc. If there are no other recently hired faculty in your department, arrange for the new faculty member to meet ones from other departments. If the new faculty member is a woman or minority, introduce him or her to other women and minorities on campus.
- **Ask appropriate senior faculty to make a point of offering specific help** such as "Do you know anything about how the grant process works? Let's discuss it over lunch." or "I taught that course last year, would you like a copy of my notes and exams?" or "I'd like to read your grant proposal before you send it in: I found that quite helpful when I was starting out."
- **Make sure the new faculty member gets put on all the appropriate distribution lists.** These include announcements of faculty meetings, seminars, grants, fellowships, internal funding sources, industrial affiliate programs, seminars for developing skills in teaching and grant writing, etc. Make sure the new faculty member gets in the phone book, and gets an electronic mail account and phone. If there is an association of women or minority faculty, make sure it is told about a new hire in your department.
- **Nominate new faculty for every possible award:** Sloan, various Young Investigator awards, Packard, Goepfert-Mayer, Luce, etc. Ask the new faculty member if he or she is aware of other appropriate awards. Personalize your cover letter to each award.
- **Nominate new faculty for invited talks at major conferences.** Lean on senior faculty and other contacts in the new faculty member's sub-field to do the same.

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<sup>†</sup>American Physical Society Committee on Minorities. Among other things, this committee maintains a roster of minorities in physics and sponsors site visits. Contact Person and Chair: Andrew Johnson, AT&T Bell Laboratories. [For Current Information, see web site:](#)

- **Invite senior people in the new faculty member's sub-field to give a colloquium** at your department. Make sure the new faculty member meets with these speakers and is invited to a meal with them. These people can help introduce the sub-field to the rest of the department, and can later supply letters of reference for the tenure candidate.

#### Research Facilitation

- **Work to secure the best startup package you possibly can.** Remind the dean that a competitive research program is much more expensive to establish than it was even five years ago. The new faculty member may not know everything to ask for: request input from other faculty in that sub-field, and remember that theorists need support, too. Besides capital equipment requests, support is needed for summer and graduate student salaries, phone and computer access, extensive supplies and small equipment (an empty lab doesn't even have a screwdriver!), conference or summer school travel, building renovations and so on. Secure access to shared facilities (*e.g.*, toxic chemical storage, microscopes, *etc.*). Arrange for the ability to spread startup funds over the first couple of years: not all equipment needs are apparent right away, and the supply and salary needs will continue until the first grants arrive.
- **Make sure the startup package arrives as promised.** If renovations begin before the new faculty member arrives, ask someone to keep track of it. Stop by on a regular basis to see progress for yourself. Check if the distribution among capital, expense and salary accounts, or between fiscal years, is correct. Make sure the new faculty member knows about deadlines for spending the funds.
- **Steer promising, mature graduate students towards the new faculty member.** Ask faculty teaching graduate courses or working with teaching assistants to help. Warn the new faculty member to check carefully, through reading courses and talking to other faculty, before agreeing to be someone's thesis supervisor. Let him or her know there will be time later on to nurture less mature students: the first few students will be the ones who impact the tenure decision.
- **Suggest a faculty mentor for dealing with graduate (or senior thesis) students.** The motivation and supervision of individual graduate students are among the most difficult things to learn. New faculty feel alone in facing these problems; mentoring really helps.

#### Teaching Facilitation

- **Give the new faculty member a list of department teaching policies.** Specific policies might address issues of grade distributions for lower and upper division classes, student cheating, syllabi, independent study courses, office hours, regulations on keeping exams or changing grades, student and peer evaluations, *etc.*
- **Facilitate getting help in learning to teach well.** Ask a master teacher to be a teaching mentor for the new faculty member. If there is a course with two sections, or which is co-taught, assign the master teacher together with the new faculty member. Give the new faculty member a list of the last few people who have taught the course assigned to him or her, and specify who would be most helpful. If there is a physics education group in

your department, encourage the new faculty member to interact with them. Steer the new faculty member towards workshops on teaching.

- **Consider the new faculty member's needs when making teaching assignments.** Ask if there is a course he or she would particularly like to teach; an upper division or graduate course is an excellent way to screen possible research students. If reappointment will be based more on research than on teaching, assign a reduced teaching load over the first two years. If the faculty member needs to participate in an experimental run off-site, arrange a co-teaching assignment or a flexible seminar course. If high-statistics student evaluations from a large lecture course are required for advancement, make sure he or she gets to teach such a course. Before then, however, give some advice and background on how to keep a diverse class of reluctant biology or engineering students interested in Newtonian mechanics.
- **Don't give the new faculty member a new course every term.** Remember that the time commitment in teaching a course for the first time is double or triple that of teaching a course again. Over time, however, make sure he or she teaches courses at a variety of levels, especially if required for promotion.

#### Service Facilitation

- **Don't overload new faculty with departmental committee assignments.** Unless your department is too small to function without the new faculty member's participation, don't give any committee assignments in the first year or two. Then, give assignments that will help to introduce him or her to the senior faculty and to the way in which the department functions. Try to pick ones where there is a visible payoff for the time invested (*e.g.*, student recruiting or comprehensive exams). Don't put brand new faculty on committees that are extremely time consuming, such as budget or admissions.
- **Suggest appropriate college or university committees.** Steer the new faculty, when ready, to committees that don't take up too much time, but which will give him or her a chance to impress those deans, *etc.*, who will later make a tenure decision.

### 3. Frequent and Accurate Feedback

A new faculty member undergoes considerable stress due to a lack of feedback about how he or she is doing with respect to the myriad criteria in the department. Junior faculty often perceive different strengths and weaknesses than does the department, and communication on these issues is essential.

To promote this communication, **formally evaluate junior faculty at least once each year, preferably twice.** For each of these evaluations:

- **Appoint an ad-hoc committee to meet with the new faculty member.** Rotate the membership on these committees to introduce the senior faculty to the new faculty member: by the end of six years most of the department will have served at least once. In small departments, it may be appropriate to have related departments participate. The ad-hoc committee should address all the issues that will be important for promotion to

tenure. The committee should also ask the reviewed faculty member for questions or suggestions about the whole process.

- **Ask about short-term and long-term goals as well as accomplishments.** A major goal of these semi-annual meetings is to make sure the new faculty member isn't following unproductive tangents. Should the new faculty member spend the next quarter writing a paper, a grant proposal or a new course syllabus? Should a research direction be chosen to optimize independent student input, secure funding, or a high-visibility (and high-risk) result. Check to make sure the new faculty member's goals coincide with those of the department.
- **Discuss the committee report at a meeting of the tenured faculty.** Make note of opposition, doubts and support within the department. Ask the doubters for specific suggestions you can pass on to the new faculty member.
- **Discuss the evaluations with the new faculty member.** Arrange a formal meeting to go over progress, to discuss the report, and to hear the new faculty member's point of view. Discuss specifically how the candidate is doing on a standard time scale for promotion and accomplishments, and note any strengths and weaknesses.
- **Send the new faculty member a written summary of your discussion.** Ask for feedback if the faculty member doesn't agree with or understand what was written.

#### 4. Reduced Impediments

Demands on a new faculty member's time from a multitude of sources can seriously detract from his or her ability to pursue the activities that are most relevant for promotion. In addition, new faculty are particularly vulnerable to the manipulation and demands of senior people in the department or the research field at large. A department chair or mentor can do a great deal to protect a new faculty member from these extraneous demands.

- **Protect women and minority faculty from the demands of "tokenism"** and the assumption that they are the only appropriate person around to deal with the problems of women and minority students. Warn new assistant professors from these under-represented groups that they are likely to be offered all sorts of interesting committee assignments on a local or national level in the interest of expanding representation on these committees; they will also be requested to participate in role-model activities. Be blunt about how your department will view time invested in these activities that takes away from their other activities, and note that there will be plenty of time to become more involved once a career is established. Tell them that if they feel awkward about turning down such requests, they can "blame it on their chair."
- **Keep an eye on the faculty who opposed the initial appointment.** Very few faculty appointment decisions are unanimous. Don't assume that the opposition will evaporate overnight, or that the new faculty member is unaware of this opposition. Talk with the opposing faculty members; if you can't get their support or suggestions for improvement, at least work to neutralize their opposition. Don't put more than one on any *ad hoc* committee, and don't put any on a promotion committee.

- **Protect new faculty from "Catch-22" situations** designed to exploit their combination of enthusiasm, under-utilized equipment and vulnerability. Senior faculty often ask junior faculty to do something for them: from refereeing a paper to performing an experiment to organizing a conference. The new faculty member must then choose between alienating the senior faculty member by saying "no" or reducing time for their own efforts by saying "yes". The senior faculty making the requests may not always be at your institution (but may be obvious choices for tenure letters). As with the affirmative action issues above, tell them to feel free to ask the chair to intercede.
- **Make sure junior faculty are not exploited in group grants or facilities.** Plugging into joint facilities or block grants (materials research groups, shared equipment facilities, *etc.*) can be a very good way for a new faculty member to get started. However, it can also be a vulnerable position with the new faculty member having little control over the distribution of funds or equipment access, and a fear of losing what little he or she has by asking for a fair share.
- **Don't let a grant monitor make a tenure decision for your department.** If a new faculty member's grant proposal is turned down, have someone else in your department read it critically. Chances are, it is as good or better than one which that senior faculty member had funded ten years ago. Help the junior faculty repackage the proposal for that agency and suggest others; encourage persistence.
- **Facilitate access to non-academic resources** such as medical care, child care, housing, *etc.* Introduce the new faculty member to a realtor; recommend a good housekeeper. Check with other departments about child-care issues: if there is enough demand, free up a room in which the faculty member(s) can pay someone to baby-sit.
- **Inform new hires about maternity and parental leave policies.** If your college doesn't have such policies, lean on it to create them. Can the tenure clock be adjusted for health, maternity or paternity reasons? What are the criteria?
- **Be aware of dual-career issues.** If a new faculty member's spouse or significant other has a non-permanent job, offer assistance in researching opportunities for permanent employment. Watch out for antagonism or feelings of insecurity due to perceptions that either hire was based more on "affirmative action" than on ability.

### Summary

The suggestions above all reduce to a simple, common thread. From the point of view of an assistant professor: tell us what we are supposed to do, give us enough information and resources to get the job done, tell us how we are doing in time to fix any problems, and do a reasonable job as a "blocker" so we can make it across the finish line without getting too badly hurt along the way. The rewards will include both a valued colleague and an improved reputation for your department.

Finally, I would like to acknowledge and thank all those who have mentored me through the past seven years, especially my three department chairs, at two institutions, who pioneered, rather than followed, most of the above suggestions.

Creating Mentoring Relationships and Fostering Collegiality. The Department Chair's Role in Developing New Faculty Into Teachers and Scholars (chapter 10). Bolton, MA: Anker Publishing Co. Bickel, J., Croft, K. & Marshall, R. (1996, October). Mentoring New Faculty: Advice to Department Chairs. Seattle, WA: University of Washington, AAPT Conference Talk "Physics Departments in the 1990s." <http://faculty.washington.edu/olmstd/research/Mentoring.html> Preston, A. (2003). Leaving Science: Occupational Exit of Scientists and Engineers, Haverford College, PowerPoint Presentation. [http://www.agu.org/sci\\_soc/education/jsc/preston.ppt](http://www.agu.org/sci_soc/education/jsc/preston.ppt) Rackham Graduate School (2002).