

## Helping New Faculty Get Off to a Good Start

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College teaching may be the only skilled profession that does not routinely provide training to its novice practitioners. New faculty members at most universities have traditionally had to learn by themselves how to plan research projects, identify and cultivate funding sources, write proposals and get them funded, attract and supervise graduate students, and present their research results in an effective manner. They have also had to teach themselves how to devise stimulating lectures and rigorous but fair assignments and tests, how to motivate students to want to learn and how to make them active participants in the learning process, and how to help them develop critical problem-solving, communication, and teamwork skills. Perhaps hardest of all, they have had to figure out how to balance the competing time demands of teaching, research, and other professional and personal responsibilities. Learning all these things by trial and error usually takes years. Some new faculty members eventually learn them; many others never do and either fail to earn tenure or spend their careers as unproductive researchers and/or ineffective teachers.

Both experience and common sense suggest that appropriate mentoring and support can cut years off the professorial learning curve. Mentoring is itself a skilled and complex craft, however, and when poorly done it may do more harm than good. This paper offers a model for effective faculty mentoring and support programs developed by the authors for the Southeastern University and College Coalition for Engineering Education (SUCCEED).

What is the typical situation for new faculty? Sorcinelli<sup>1</sup> reports on a variety of single-year and longitudinal studies in which untenured faculty in their first 3-4 years report higher stress levels than tenured faculty. She identifies five triggers for stress in new faculty: (1) not enough time, (2) inadequate feedback and recognition, (3) unrealistic self-expectations, (4) lack of collegiality, and (5) difficulty balancing work and life outside of work. Non-majority faculty (e.g. women in engineering) experience additional problems including a chilly professional climate, excessive committee assignments, and high levels of student demand.<sup>2</sup>

Typical behavior patterns of new faculty lead to increased stress levels, low scholarly productivity, and ineffective teaching. In studies spanning a number of institutions and disciplines, Boice<sup>3</sup> found that most new faculty

- give writing and research the highest verbal priority while spending relatively little time on them and having relatively little to show for the time they spend;
- equate good teaching with correct content and use lecturing as the exclusive mode of instruction;
- equate improving their teaching with improving their lecture notes;

- spend up to 27 hours a week preparing for classes, put so much material into their lectures that they must rush to cover it all, and leave little time for interaction and discussion with students;
- teach defensively to avoid student complaints but get low teaching evaluations anyway;
- express a sense of isolation from their colleagues.

The picture is not that gloomy for all new faculty. Boice<sup>3</sup> also observed that 9-13% of those he studied managed to beat the odds and get off to a good start in both their research and teaching within their first two years. These *quick starters* exhibited several pronounced differences from their colleagues. They

- scheduled regular time for writing (usually daily) and produced enough to meet or exceed their university's expectations;
- integrated their research into their lectures, conveying a sense of excitement about the field to their students;
- taught at a slower pace, leaving more time for student questions and interactions;
- limited course preparation time after the first offering to less than 1.5 hours of preparation for each hour of lecture, thereby freeing time for writing, research, and networking;
- networked with colleagues 2-4 hours each week, forming connections that helped them with both teaching and research and eased their integration into the academic community.

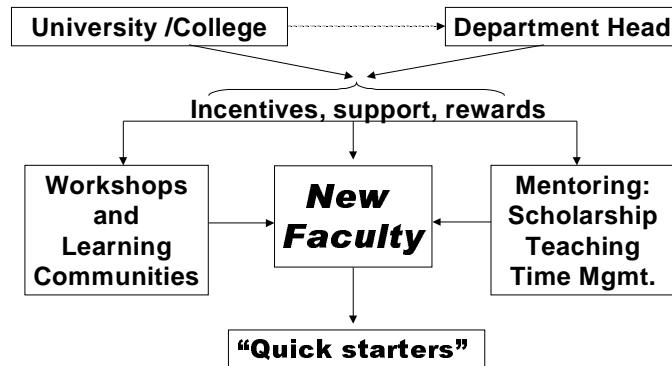
Boice developed a program to enable all new faculty members to do the things that came naturally to the quick starters. Individuals who followed this program showed clear improvement in attitudes and performance after 10–12 weeks.

The lesson of Boice's work is that if we want our new faculty to become productive in research and effective at teaching within their first 1–2 years, we should be proactive in helping them rather than allowing their development to proceed entirely by trial and error. Most new faculty members are likely to be receptive to support measures. Common requests of new engineering faculty surveyed by PRISM magazine were for mentoring and assistance with networking,<sup>4</sup> and a recent study of faculty teaching practices within the SUCCEED Coalition found that newer faculty were more likely than their more experienced colleagues to attend faculty development workshops, seminars, and conferences.<sup>5</sup>

### **A Model Program for Support of New Engineering Faculty**

The SUCCEED Coalition has developed a model program designed to help new faculty integrate into the academic community, understand institutional expectations, and adopt the practices that lead to early research productivity and teaching effectiveness. The program calls for allocating some resources directly to the new faculty member and some to support workshops, learning communities, and mentoring programs. The components of the program are shown schematically in Figure 1 and described in the remainder of the paper.

## Supporting New Faculty Members



**Figure 1. Elements of a New Faculty Support Program.**

### Feedback to new faculty

The department chair plays a vital role in the orientation of new faculty, in effect serving as the first mentor. Beginning during the hiring process and continuing until tenure, the chair should be a primary source of feedback on the new faculty member's progress toward meeting institutional expectations. A useful practice is for the chair and new faculty member to meet together each semester, discussing what the new faculty member has accomplished, what is currently underway, and what is planned in research, teaching, and service.

Feedback to new faculty can also come from a mentoring committee made up of senior colleagues who will eventually make tenure and promotion decisions. The committee and new faculty member meet at least once each semester to discuss past, current, and planned activities, and the committee provides affirmation and guidance when each is appropriate.

### Mentoring

A critically important element of the support program is the assignment by the department head of one or two mentors to newly arrived faculty members. Mentoring has a long history as a technique for teaching new practitioners their craft. A mentor can help a new faculty member integrate into the academic community, offer guidance on getting started in research and teaching, transmit the Boice suggestions for new faculty and encourage their adoption, and serve as an advocate in the tenure and promotion process.

Only about a quarter of U.S. universities have formal mentoring programs.<sup>6</sup> Many departments instead rely on informal mentoring arrangements wherein new faculty seek out and find mentors on their own or are "taken under the wing" of senior faculty. Unfortunately, underrepresented minorities (such as women in engineering) tend to be left out of such arrangements.<sup>6</sup> Moreover,

identifying a good mentor usually takes time. Many new faculty flounder until they identify the right person to ask for help, and if they select faculty who are not good role models or who give them incomplete or incorrect information the results can be disastrous.

Boice found that meeting regularly is the most important requirement for a successful mentorship.<sup>7</sup> In many instances, mentor-mentee pairs meet once or twice and not much happens thereafter. Mentorships are most likely to succeed if someone in the college or department oversees them, reminding pairs to meet regularly and arranging a joint meeting of all pairs once a semester to broaden the networking.

One approach to mentoring is to assign one mentor to assist the new faculty member in all aspects of professional development in the first year. Another approach is to assign each new faculty member one mentor for research and another for teaching.<sup>8</sup> The research mentorship is built around joint projects. The mentor initially takes the lead, showing the mentee how to identify funding sources, write proposals, supervise graduate students and publish results, and the mentee gradually assumes an increasing amount of responsibility. After 1–2 years, the mentor encourages the mentee to go out on his or her own but continues to provide guidance and feedback.

In the first semester of a teaching mentorship, the mentor and mentee might co-teach a course with the mentor initially taking most of the responsibility. The pair meets weekly to debrief the class sessions. Gradually, the mentee takes on increasing responsibility for planning and delivering lectures and making up and grading homework assignments and tests. In the second semester, the mentee teaches a course on his or her own which the mentor occasionally observes and later debriefs. In a less time-consuming but somewhat less effective arrangement, the mentor and mentee teach separate courses in the first semester, exchange classroom visits at least once a week, and discuss their observations at weekly or biweekly debriefing meetings.

### **What can mentors do to help?**

Whichever mentoring approach is used, mentors should be proactive in helping new faculty deal with problems in research, teaching, and time management.

#### *Mentoring for effective research and scholarship*

- Encourage the mentee to set realistic goals and to prioritize activities.
- Show the mentee successful and unsuccessful proposals and articles and talk about the review process.
- Discuss possible sources of funding and encourage mentee to contact program directors.
- Get mentee involved in joint research projects with other faculty.
- Make sure mentee knows about research support available on campus such as a grants office or library staff.
- Ask to see work in progress and share your own.

#### *Mentoring for effective teaching*

- Visit mentee's class. Meet before class to discuss the mentee's plans and afterwards to debrief the class.

- Invite the mentee to sit in on your class and discuss what went well and what could have been done differently.
- Arrange for the mentee to observe other good teachers.
- Share your class materials and talk about what you do to address a variety of teaching problems.
- Encourage mentee to use variety in class activities, including some active learning.<sup>9</sup>
- Suggest a visit to the campus teaching center.
- Direct mentee to good books about teaching such as McKeachie's *Teaching Tips*<sup>10</sup> or Wankat and Oreovicz's *Teaching Engineering*.<sup>11</sup>
- Suggest a mid-semester evaluation of the class.<sup>12</sup>

### *Mentoring for effective time management*

- Help the mentee establish realistic long- and short-term goals.
- Recommend books such as Covey's *First Things First*<sup>13</sup> that identify guiding principles and offer guidelines for setting goals.
- Encourage mentee to do the things Boice suggests to avoid overpreparing for class and to include time for writing.
- Teach mentee how (and when and to whom) to say no. One helpful suggestion is to never make a commitment on the spot, but to always take at least a day to consider a request that involves a substantial time commitment. This suggestion is particularly applicable to women and minority faculty, who are often asked to do more than their fair share of committee work.

*Boice*<sup>3</sup> *quick starter training plan*. The mentor should encourage new faculty to

- limit classroom preparation to a maximum of two hours per hour of lecture after the first offering of a course;
- spend 30-60 minutes a day on scholarly writing;
- spend at least two hours a week on discussions with colleagues focused on teaching and research;
- keep daily records of work time expenditure to help them self-monitor how well they are managing their time<sup>1-3</sup>;
- integrate research interests appropriately into lectures.

### **Orientation programs and other learning opportunities**

A number of activities besides mentoring can be valuable in helping new faculty get started effectively. Fink<sup>14</sup> offers several recommendations for orientation programs:

1. The scope of the program should be broad and include orientation to the university and campus resources, sessions on improving teaching, and sessions on establishing a research program.
2. Sessions should provide for active learning by participants, both to increase the session effectiveness and to model good teaching practices.
3. The program should be designed to foster participant interaction, since establishing contacts for future networking is one of the most important program outcomes.

4. Programs should not overload participants with responsibilities that will increase their feeling of being overwhelmed.

In our work with new faculty, we have found it vital to package teaching ideas in such a way that participants can use them in small increments without making a tremendous time investment. The Minute Paper,<sup>15</sup> for example, is a simple technique that can have a transforming effect on teaching. The instructor stops class with a few minutes to go and asks the students to respond to two questions anonymously: “What was the main point in today’s class?” “What was the muddiest point?” After class, the instructor reads the responses and looks for trends in the muddy points to provide a starting point for the next class period. Short in-class team assignments<sup>8</sup> (less than 5 minutes each) can break up lectures and provide opportunities for interaction with and among students and do not take much time to plan or implement.

In the SUCCEED Coalition, several campuses have instituted new faculty orientation sessions as part of more comprehensive faculty development programs.<sup>16</sup> At Clemson, a team consisting of engineering and science faculty, an education faculty member, and the director of the university teaching center conduct a series of half-day sessions for new faculty in the fall semester covering college expectations and a variety of teaching techniques. Colleges of Engineering at North Carolina State University and Florida A&M University-Florida State University conduct workshops for new faculty early in the fall semester. University of Florida engineering faculty take part in the university orientation program, but receive special materials specifically addressed to engineering. All the campuses regularly involve new faculty in learning communities, workshops, and seminars.

### **Incentives and rewards**

All faculty have limited time and must be strategic about how they spend it. Faculty incentives and rewards at most research universities (raises, promotion, travel funds and research assistance) are heavily oriented toward research achievement. Effective teaching, educational scholarship, writing textbooks and educational software, and mentoring also deserve a place in the reward structure because of their importance in the mission of all universities.

There are many ways to reward effective education-related activities, including stipends, summer support for course evaluation, travel funds for education conference and workshops, and additional teaching assistants. But the most powerful and lasting approach to rewarding education-related activities is to include performance in these activities explicitly in the evaluation criteria used for reappointment, tenure, promotion, and raises.

### **Summary**

Most new engineering faculty members take 4–5 years to meet departmental expectations of productivity in scholarship and effectiveness in teaching, and many experience high levels of stress as they attempt to manage the competing time demands of teaching, research, and personal lives. They also report feeling somewhat isolated and unsure about exactly what they are expected to do. These problems can be particularly severe in the case of women and minorities.

We have outlined a program being developed by the SUCCEED Coalition designed to ease the transition of new faculty members into academic life. The program involves a combination of

guidance and support from the department head, faculty development provided by the college or university, and mentoring provided by experienced colleagues. If it works as intended, it should equip most new faculty members to become what Robert Boice terms “Quick Starters”, meeting or exceeding departmental expectations for research productivity and teaching effectiveness in their first 1–2 years of faculty service.

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