Principal Investigator Advisor

The monthly update on management and funding for researchers in all fields

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5 Tips to Help You Advance

Advice to the Newly Tenured: Managing 'Mid-Career' Status

The promotion from *tenure-track* assistant professor to *tenured* associate professor brings new opportunities and challenges. As tenured faculty, you may gain freedom to take more research risks but lose some of the supports afforded junior faculty.

Recent research from the Collaborative on Academic Careers in Higher Education (COACHE) finds many who move from assistant professor (junior faculty) to tenured associate professor (mid-career) do not climb the third and final step of the career ladder — to full professorship (senior faculty). Some stay at mid-career level by choice, but others seem to get stuck there, unable to move up.

Two experts share their insight and advice for the newly tenured. They are COACHE Research Director **Cathy A. Trower** and **Mary Deane Sorcinelli,** associate provost and head of the Office of Faculty Development for the University of Massachusetts at Amherst (U-Mass), one of COACHE's 160 member institutions.

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Study Section Insider

Using Percentiles and Paylines to Rate Your Funding Chances

by Christopher Francklyn, PhD

The study section has completed its review of your application. What are the chances you'll be funded? Is there any way to know?

Actually, there is — if you understand the basics of scoring, percentile rankings and the payline of the particular NIH institute or center (IC) to which your application is assigned. Those are part of the process that occurs after the panel's review, and they can help you evaluate whether your scored application:

- is highly likely to be funded;
- might be funded; or
- has little chance of being funded.

Other factors influencing your chances include whether you're a new or early stage investigator, the type of funding mechanism you're seeking, and whether your project addresses any defined institute priorities for which there may be special institute funds.

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Drawing upon insights gained from COACHE's Tenure-Track Faculty Job Satisfaction Survey and mid-career faculty focus group sessions at U-Mass, Trower and Sorcinelli offer five suggestions for the newly tenured:

1. Expect more on your plate.

Teaching and service expectations of associate professors ramp up. You'll likely be expected to teach more courses or higher-enrollment courses than you were. (Junior faculty obligations usually are limited and their time "protected" to allow for career development.) The number of students you advise probably will multiply. You'll get more committee assignments, while simultaneously trying to advance your own research agenda. And, you are now a mentor for incoming tenure-track (junior) faculty, while the institutional mentor you had may retreat.

Sorcinelli and Trower say many newly-minted associate professors are "shocked" by the workload that comes with tenure and must adopt strategies to balance service demands with productive research and writing time.

2. Use your sabbatical wisely.

The newly tenured get a sabbatical right away but many feel too exhausted to use it to its fullest potential as a professional development opportunity. The sabbatical should be treated as a gift of well-planned and productive time away from campus. The key is to have a well-developed plan in place at the start of your sabbatical, lest you waste the first few months of it figuring out what to do.

Sorcinelli recommends that, 12 to 18 months in advance, you set up a designated spot — an unused dining room table, a bookshelf, a file drawer — to collect articles and other resources or to put post-it notes that capture ideas that will become part of your sabbatical timeline and plan. Your guiding questions should be:

- What is the best target outcome for my sabbatical?
- How will this outcome advance my research career or prospects for full professorship?

Consider the breadth of the institutional mission on your campus to think creatively about your sabbatical project. If possible, think beyond data collection or publication to curricular development or some form of outreach activity that will benefit your institution. For example, does it make sense to use your sabbatical to improve courses offered by your department or the general education curriculum? Should you become a visiting scholar for the local school district, a community health service, or a government agency?

As you plan, don't ignore personal needs. Make sure your family knows your work plans so that they can help you stay focused on what you need to accomplish, while still taking time out for rejuvenation. "Don't feel you have to feel you have to spend every single minute working," says Sorcinelli. "Allow yourself to sit in a café and ruminate because often your best thinking comes from that. You have to take some breather; you can't go straight out for a year piling it all on and then come back renewed and refreshed."

3. Look for low-hanging fruit.

Sorcinelli advises mid-career faculty to look for "low-hanging fruit," i.e. small grants and services available to them without having to jump through a lot of hoops. "It doesn't have to be a lot of money," she says, "just small pots of money that support things like travel, creating new networks, building your mentoring network."

Most professional societies and associations offer small research fellowships and travel grants. Work with a research librarian to identify all groups related to your field or research interests.

Investigate internal funding opportunities, which vary by institution and may be surprising both in number and range.

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Example: An education researcher might seek a grant from a fund managed by the school of government or law school; a computer scientist might find an opportunity in the sociology department or university-wide international research center.

Some universities maintain central listings but many do not. To learn what is available, go to the university-level faculty-development program, the office of research affairs, the provost's office, and your school-level academic-affairs office. Don't limit yourself to a one-stop visit. Ask everyone: Are there other people, offices, or resources for me to investigate?

Engage students to help manage your workload. Universities provide a host of career opportunities directly to students, including federal work-study awards, field placements, independent studies, and research internships. These are low cost/no cost options for you.

When you hire a work-study student, you or your department pays only 25 percent of the hourly wage. Other options are either fully funded or credit-based. Depending on the source of student support, a crackerjack undergraduate student can do a lot to lessen your administrative, research, or teaching burden.

Example: A tech-savvy work-study student might help you master course management software or build and maintain your course Web site; a research intern could do a literature review or set up and monitor a custom research profile on one of the university's funding opportunity databases.

Contact your student employment office (work-study positions), career-services office (internships), or undergraduate research office (research fellowships) to explore what's available on your campus.

4. 'Time-line' your service.

Many associate-level (mid-career) faculty — women in particular — are asked to take on leaderships roles. "They get asked to run a program, center, or department and they don't say No, in part because they are honored or don't feel they can say No," says Trower. " If they do that, they get off their research track, and if they get off their research track they are doomed for (achieving) full professorships."

Sorcinelli and Trower stress the need to explicitly "time-line" major service commitments and to negotiate terms that ensure research careers are not derailed.

Example: Negotiate for a term-limited assignment — two to four years — and tie acceptance to resources to keep a research program alive during that time.

Another option: Negotiate one day a week dedicated to your research only. Unless an administrative post — dean, head of university-wide center, etc. — is your ultimate career goal, always be cautious and ask: How do I protect myself and my own research career?"

Once you put in your stint on a particularly demanding service commitment, Sorcinelli says, don't allow yourself to be talked into continuing. Be unequivocal when opting out. "It's not bailing out of service to your department or the campus, it's time-lining it," she says. Tell your department chair, "If you want me to get to full, I need to be released from this level of service."

5. Don't wait for the 'tap.'

"One of the things we found in the focus groups is that some associate professors are completely unclear about the rules or guidelines to apply for full," says Trower. Many wait for the tap on the shoulder — an elusive invitation to stand for full professor. Don't wait. Instead, she advises, take these proactive steps:

- Use your annual review to fully understand and track your progress toward the promotion criteria. It will show you where you are and what you need to do to move up; if you're still not sure:
- Ask your department chair what you can do to accelerate the process and improve your chances for promotion. "Don't be afraid to seek advice; mentoring is something you need throughout your career," says Sorcinelli.
- Consider off-campus mentors who are full professors in your discipline. They may be more objective and can look at your CV and provide mentorship, guidance, and support that you might not get — or want — from colleagues.

Mid-career faculty must become the primary agents of their own career development. "The better you manage your PI status, the more your chances of full professorship go up," says Trower.

To learn more:

Collaborative on Academic Careers in Higher Education (COACHE)

http://isites.harvard.edu/icb/icb.do?keyword=coache&tabgroupid=icb.tabgroup104863 ■

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Scoring and percentiles

Before the full study section meets, three reviewers from it will be chosen to evaluate your proposal and give it a score of between 1 and 9. (If your average initial score from those three reviewers falls in the lower half, it will be reviewed but may not be discussed in open session at the meeting, will not receive an overall priority/impact score, and will not be percentiled.) A score of 1 goes to an essentially flawless application of exceptional impact, while highly flawed applications with virtually no redeeming features rate a 9. After the meeting, the Scientific Review Administrator (SRA) averages the overall impact/priority scores recorded by each reviewer and multiplies the number by 10 to produce a score of 10 to 90.

After your application receives its overall impact/score, it may be percentiled. That is a statistical treatment showing its relative position among all the scores assigned by that study section during its last three meetings.

The highly informative National Institute of Allergy and Infectious Diseases (NIAID) Web site describes exactly how percentiles are calculated and includes this useful working definition: *"Percentile is roughly the percentage of applications receiving a better overall impact score from the study section during one year."* **Note:** If the study section base is fewer than 25 applications or the study section has not been in existence for three meetings, an application may be percentiled against all applications in that particular institute or center (IC), or against those of the Center for Scientific Review as a whole.

Importantly, all fractions are rounded up, so a 12.1% is equal to a 13th percentile. Percentiling corrects for drifts in scoring trends over time in a particular study section (so-called "score compression") and the fact that some study sections are very tough graders.

As we will see, the critical fact is that, for most grants, funding decisions are based on the percentile rank — not the raw impact/priority score.

From percentile to payline and success rate

Once an application receives a percentile ranking, it — along with other potentially competitive awards — moves to the Council/Advisory Board. This panel oversees the work of individual study sections to ensure that the science to be funded is well aligned with the IC's mission.

For each application on the list, the council either will recommend for potential funding, not recommend for funding, or send the application back to the study section for re-review. However, the council's recommendations are merely advisory — not the final word on the award decision because the list of fundable grants has to be matched against the IC's available budget.

Each year Congress appropriates NIH's total budget, which dictates the budget for each IC. Based on their actual and/or projected budget, each IC either sets an explicit payline or less-defined budget strategy to alert applicants to its expected funding range. These are typically published on each institute's Web site. The blogger *Writedit* does a masterful job of keeping an updated compilation of paylines on her blog, which can be found here: http://writedit.wordpress.com/nih-paylines-resources/.

The clearest indicator of whether your application will be funded is how it ranks relative to your IC's payline. If your percentile rank is significantly less than the payline, you are virtually assured of funding; if it is significantly higher, chances of an award are quite slim. If your percentile rank is at or near the payline, you may be funded.

Also, the lower your percentile, the sooner you will receive your award notice. Particularly for grants addressed in the September council meeting (i.e., before NIH received its budget for the fiscal year), the IC will generally be quite conservative and employ "provisional paylines," funding only the very best grants that score significantly below what will be the year's payline.

For the many grants near the provisional payline, the institute likely will wait until its actual budget arrives from Congress and only then make a final decision about the number of R01s it will fund. This explains why it can take up to a year from the time a grant is submitted to get a final funding decision and a Notice of Grant Award.

During that time you should decide how good your funding chances are (based on what we've said here about percentiles) and whether you should be writing a revised application.

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Two other determining factors

As noted earlier, two additional factors (besides percentile) that influence an IC's decision on funding your application are the current stage of your career and how your project aligns with the IC's strategic priorities.

NIH has formal definitions for "new investigator" (NI) and "early stage investigator" (ESI) and in recent years has used these to counterbalance what was perceived to be prejudicial treatment by study sections. As a result, NIs and ESIs now receive from most institutes a "bump" of about 5 percentage points. Thus, if the "standard" payline for an R01 is 12th percentile, NIs or ESIs whose grants do better than the 17th percentile would have a definite chance of garnering an award, while an established PI might not. NIH contends this treatment is to help preserve the "pipeline" of scientific expertise.

Program officials can make funding decisions outside the strict payline for other reasons, not all of which are transparent. The "programmatic" reasons for funding a grant that's significantly above the payline can reflect such considerations as:

- Support for new and emerging areas of science;
- The application responds to a special RFA for which the IC has set aside dedicated funds;
- An IC's desire to maintain PIs in a particularly important research area.

To my knowledge I've never met a PI who, starting from a percentile ranking significantly above the payline, was able to lobby his or her way to a funded grant by claiming programmatic relevance. Even attempting this might risk sacrificing your credibility with your program officer (PO).

When close to the payline

If your grant scores close to the payline, in my opinion you should keep your PO apprised of your project's progress during the long interval after the study section has rendered its judgment and before the council meeting.

Don't call or e-mail your PO every week, but you do want to make sure that, when he/she goes to council, they are armed with data about any recent positive developments you've made. If they can point to specific discoveries, papers, etc., that show momentum in your research, it might help turn the funding decision in your favor. Don't be a pest, but do reach out to them as advocates who can argue on your behalf.

To summarize, make sure you understand how scoring and percentiling work so you can rapidly assess your chances of an award once your grant is scored. If your percentile comes in better than 5 points below the estimated payline, you'll have some confidence in an eventual award — but await news from your PO for the final confirmation.

If you're at least 10 points above the estimated payline, you should plan for a resubmission instead of hoping for a miracle (unless given reason to expect one by NIH staff).

If you are in the "critical range" of plus or minus five percentile points, don't expect a swift decision from the NIH. Instead, work furiously to generate additional data to arm your PO for the eventual council meeting and for the possibility of potential R56 bridge support.

Even if these efforts are unsuccessful in the current year, you will have laid the foundation for an improved resubmission or new application.

Dr. Francklyn is a former study section chair and veteran reviewer for NIH and NSF study sections. He is a professor at the University of Vermont, where his scientific expertise is in protein synthesis and RNA-protein interactions. ■

Some percentiling exclusions

Some types of grants are *not* subject to percentiling. Among them are certain smaller ones, like the "exploratory" R03 and many types of training grants, including K awards and graduate or post-doctoral fellowships (e.g., F32 or T32).

Non-percentiled grants can include those submitted in response to a specific RFA (Request for Application).

For these, the potential success rate can be quite hard to predict because it depends on the number of applications submitted and amount of money available. ■

Industry vs. Academia: Weighing Pros, Cons of a Career Choice

For some new investigators, the choice of whether to build their scientific careers in industry or academia may be easy. But others struggle with it, especially in today's competitive funding environment. The choice also faces experienced PIs considering a career change.

Here are some considerations to weigh for each of the two pathways:

One of the most basic differences, experts say, is that a position in academia comes with more freedom to research what interests you and to develop your own study projects, while a career in industry affords you the opportunity for more collaboration across a broader range of disciplines. There's a strong upside to each; your personal goals, motivation, and personality all factor in to your choice.

Industry

A scientific career in industry can be extremely rewarding for someone who wants to have a meaningful impact on humanity within his or her lifetime, according to **Robert Copeland,** Chief Scientific Officer and Executive Vice President at Epizyme Inc., based in Cambridge, Mass.

Here are a few general points Copeland says PIs should know first:

• While academic researchers tend to ask questions of broad interest, the industrial researcher must take a more practical view, focusing attention almost exclusively on questions of pathobiology that have a direct clinical value.

For example, consider an academically trained scientist who is conducting research to determine whether targeting a particular protein will have a desired effect on a particular disease. If that scientist discovers the protein is not appropriate for drug discovery, he or she might try to learn more about the molecule itself. The industrial scientist, on the other hand, must immediately stop working on that target because the work isn't helping develop new medicines.

• The lifetime of a project in the industrial setting is limited either because a drug is developed and put on the market, or the project is suspended because of lack of progress. However, an academic scientist often pursues an elusive research target for much of his career.

• For young investigators in academic settings (assistant professors, for example), there usually is a strong incentive to be an independent researcher. That's because collaborating on projects makes it difficult for tenure committees to determine the significance of an individual investigator's contributions.

But basically all research in the industrial sector is done collaboratively. That's because of the highly complex nature of drug discovery, which requires the concerted efforts of talented scientists from multiple disciplines — from molecular biologists and biochemists to clinicians. So newcomers to the pharmaceutical industry must adapt to this style of interactive and interdependent science.

• In academia the ultimate research product usually is information that's typically disseminated in the form of scholarly publications and lectures. However, in industry the ultimate product of research is something that's very tangible, such as a new medicine. And, although industrial scientists share this information with the general scientific community in the form of scholarly publications, lectures and patents, the sharing of that information is just a by-product — albeit an important one — of industrial research.

If you're getting serious about a career in industry, Copeland offers these four tips:

1. Be a scientist, not a technologist. After their academic training, scientists will have honed their skills in specific types of technologies. Employers expect you to have mastered your craft. But don't market yourself on the basis of a collection of specific techniques that you've been trained in. Rather, represent yourself as someone with good scientific problem-solving abilities who can effectively communicate the conclusions of the impact of your research in the broader context of a drug discovery to fellow scientists and lay people.

2. Demonstrate quantitative skills. Researchers who can analyze and interpret data in quantitative terms, using appropriate mathematical models, are highly sought after by businesses in industrial science. The reason is that quantitative data is needed for discovery and development in the pharmaceutical industry.

3. Be a team player. Remember industrial science is a team sport. You'll be more successful in industry if you work well with others, but if you try to work alone because you need all the glory you'll be doomed to failure in an industrial setting. Drug discovery is just too complicated for any one person to master. It is only through team efforts that new medicines can be successfully discovered and developed.

4. Think holistically. Although you're expected to be a master of your specific discipline, a successful researcher in the pharmaceutical industry must also

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understand a project in its entirety. That means you must make a commitment to learning enough about each aspect of a project that you can be an effective collaborator with colleagues from different disciplines, and so you can put your own research in the correct context of the team's objectives.

Academia

If you are considering a career in academia, here are five points to consider, according to **Ronald Vale,** Professor and Chair of the Department of Cellular and Molecular Pharmacology and Investigator at Howard Hughes Medical Institute at the University of California, San Francisco:

1. You have the freedom to choose your direction. One of the biggest attractions and one of the most important parts of an academic scientist's job is to launch a research program. Unlike working in industry, academic research projects aren't dictated or handed down by a senior authority. Rather, it's up to you to decide what research to perform and how to pursue it. Freedom to do so is also protected by tenure. (*Editor's note:* But it will usually be your responsibility to round up the funding to support your self-chosen research.)

2. You can reinvent yourself throughout your career. In an academic position, your work is constantly changing and research projects constantly lead into new areas. The job is challenging and never dull — you're forced to think about new fields, and you have the opportunity to look for new intellectual adventures. In contrast, many types of industry jobs only change in limited ways over a similar time span.

3. You're part of an international community connected by common interests. Scientists working in different countries are connected through long-lasting intellectual bonds and not by corporate structures that hold individuals together one day and then might dissolve the next. Scientists connect through common interests, not through top-down partnerships.

4. Your daily schedule is flexible. Academic scientists typically do not have to adhere to work hours. The time you have to arrive at work isn't dictated by the opening bell of the stock market. And lunch breaks don't have to end at exactly 1 p.m. You have the luxury of planning your day, week, and month, as well as your work environment. Sometimes you might want to work on your manscript in a coffee shop instead of your office so you won't be interrupted. However, although your schedule is flexible, you still have to get the work done.

5. You can focus on the problems and activities you find interesting. Even if your research doesn't result in a new discovery or a new technology that leads to the creation of a new drug, the bulk of your scientific work will contribute to the understanding of the world. Knowledge, either pure or sometimes practical, is a good "product" and something that you can be proud of generating.

In general, experts say that industrial positions are generally better equipped than those in academia because a company that's trying to solve specific problems is more likely to invest in core facilities and equipment. That would be hard to do with grant funding.

Although a career in industry pays more and may provide broader opportunities, there's no tenure, so job security becomes a consideration. (*Editor's note:* Recent communications from readers indicate that tenure might be losing some of the financial underpinnings it used to carry.)

Finally, because industry puts a premium on collaboration, "people skills" are much more important there. Managers will be more concerned about your ability to communicate and collaborate than they are about your brilliance. ■

Watch for 5 Behaviors, Deflect Them

How to Recognize and Handle a 'Manipulator' on Your Staff

A PI is having difficulty getting a data report from a staff member. First, the staffer blames the custom software's reporting module. Next, he subtly implies that the PI doesn't understand the time required to debug it. Then he suggests the PI's time frame is unreasonable. Next up, he asks why the PI needs the report this week. Finally, the staffer gets angry.

Is this PI being "played?" If you can spot the warning signs of a manipulator, the answer's "Yes," according to **Jennifer Alfonso,** a consultant on workplace behavioral issues for angermanagement.org. She spoke recently on non-defensive communication at a *Principal Investigator Association* audio conference, "Powerful Lab Communication: How to Deal with Difficult Lab Staff and Create More Cohesive Lab Teams."

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5 'pretenses' manipulators use

Alfonso names five communication "pretenses" used by manipulators. All seem reasonable and normal, she says, until you begin to see a pattern and realize the person is trying to control you or hide their own failure or a rules infraction.

1. Changing the subject. Non-manipulative communicators will answer your question. Manipulators usually deflect: *"The problem is, the reporting module isn't working."*

Solution: Gently bring the conversation back on topic: *"The software seems a separate issue because I am getting timely data reports from others who use it. I don't want you to spend time debugging the software. Input the data and I'll have someone determine whether the modules are working properly."*

If your attempt to manage logistics sends you down a rabbit hole of more and more complications, you may have to go with a technique Alfonso calls "broken record." That's where you stay calm, stop explaining, and repeat yourself: *"Find a way to get me the data report by Friday. Figure it out — Friday is the deadline."*

2. Joking or making fun of the request. In a professional environment, few openly ridicule others. Therefore, this maneuver must be subtle and said with a smile: *"It takes a little while to debug this newfangled software report. I know back in (your) day this stuff used to be done with quill and pen but it's a little more complex now."* You're now manipulated into either seeming humorless or accepting the delay.

Solution: Either deflect back with humor or remain on track. **Examples:** *"Yes, I started with quill and pen, but there were also wooly mammoths hunting us when I was a cub PI and we still got our data reports in on time."* Or: *"The issue isn't my technological savvy with the new software. The issue is the data reports."*

Rule of thumb: Remain calm, ignore the joke, and stay on track with your request. Use "broken record" if necessary.

3. Criticizing or questioning the legitimacy of the request. This is a more direct effort to get you on the defensive. The person responds with, *"I don't think it's reasonable for you to want this in that time frame."* Now you have to decide if that's true, and a good manager may reassess it. But let's say you know that what you're asking is reasonable.

Solution: Find something to agree with, stay calm, avoid justifying yourself, and return to the subject. *"I agree that this is a tough timeframe and that we often have to get a lot of work done quickly. But it's important you get this done on time."* **Rule of thumb:** Don't take the bait. That could escalate the conflict, Alfonso says.

4. Asking you why you want what you asked for. This can be a masked attempt to assist you. It's only manipulation if you find you're constantly justifying yourself. Worse, the manipulator has follow-up questions and, before you know it, you look like the one with the problem.

Solution: Decide whether it's a pattern. If it is manipulation, don't change the message or embellish it. Any additional info will allow a manipulator to ask more follow-up questions. That in turn keeps the focus on you, not the issue at hand, says Alfonso.

Solution*:* Acknowledge the question and return to the issue: *"I appreciate your concern for my reasons. They've been explained before. Now it's time for you to deliver."*

Rule of thumb: From a management perspective, it's crucial you determine that the question is actual manipulation — not a legitimate need to understand — before you decide not to answer. That's because one of your most powerful motivational tools is to explain why something must get done. **How to tell the difference:** You've already explained personally why their role is important.

5. Outbursts of emotion. The person gets angry or upset. You're taken aback and may feel so uncomfortable you want the conversation to end.

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Solution: Remain calm, acknowledge the emotion, and inquire as to what's behind it. *"I can see you're upset with my request but I'd like to know why. Help me understand what is upsetting about this."*

For most people, says Alfonso, this is will often reveal the actual reason — e.g., *"I fell behind in the data input and thought I could catch up."* Or, *"I'm supposed to know how to use this reporting software but I'm confused and I didn't want to tell you."* Or *"I have conflicting priorities and have more trouble switching tasks than I should."*

That can start a productive discussion on how to solve the actual problem.

Caveat: This technique is also the last refuge of a hardened manipulator. **How to spot it:** You both come up with an agreed-upon plan to correct the real problem but you doubt the good faith of the response. Or you get another emotional "real reason" the next time. Rather than judge the person a hardened manipulator, exercise agreed-upon forms of discipline.

To order the full transcript of this audio conference in CD, MP3, or pdf format, go to http://www.principalinvestigators.org/Audio-Conferences/audio-conference-100831/ ■

'Mutual Mentoring': Expand Your Professional Network

"Mutual mentoring" is a recent innovation that goes beyond the top-down, one-to-one mentor-protégé model to a flexible, self-directed partnership model, according to **Mary Deane Sorcinelli**, associate provost and head of the Office of Faculty Development for the University of Massachusetts at Amherst (U-Mass).

Sorcinelli developed the university's *Mutual Mentoring Guide* to encourage the practice among U-Mass faculty at all career levels. It can be applied anywhere, she believes. In her view, this more expansive view of mentoring better promotes the long-term professional development and personal well-being of tenure track and mid-career faculty, especially underrepresented faculty.

In the mutual mentoring model, early and mid-career faculty build networks by engaging multiple "mentoring partners" in non-hierarchical, collaborative, cross-cultural partnerships to address specific areas of faculty activity, such as research, teaching, working toward tenure, and striking a balance between work and life.

Self-assessment is key

Sorcinelli advises faculty to do rigorous self-assessments to identify their own strengths and weaknesses so that they not only align themselves with people who can help them, but also offer something in return.

It is important to clarify your needs before you begin to identify or approach potential mentoring partners. Needs should be as specific as possible. For example, asking someone vaguely for "help with teaching" is different from a more focused request for "help establishing an excellent teaching record and identifying and accessing resources at the department/college university level to help me do so."

Once you have identified your needs, ask a few colleagues to recommend people to approach about your specific subjects of interest. As you consider them, ask yourself: Whose research methods are closest to mine? Who teaches classes similar in size to mine? Who uses a particular classroom technology that I'm interested in adopting? Who seems like the best overall personality match?

A well-developed mentoring network could include a wide variety of individuals—peers, near peers, tenured faculty, chairs, administrators, librarians, and even students.

- A peer mentoring partner might help you improve your teaching by visiting your classroom and providing constructive feedback and welcome the same from you.
- A grad student might offer a tutorial on how social media tools might aid your research in exchange for your comments on a paper.
- A trusted administrator might be your most valuable resource for insider information about "how things really work" at your institution, or what resources are available to help you maintain work-life balance.

Extend your mentoring network beyond your own institution. Consider: "If I go outside my world, my own campus, my own discipline, whose orbit will that put me into in terms of other scholars and research opportunities?"

Identify external scholars who have significant overlap with your academic specialization. They might serve as knowledgeable reviewers of your research and grant proposals, or could introduce you to a broader network of scholars and share information and other resources to advance your research.

"Most senior faculty, given a reasonable span of mentoring time, will be delighted to help somebody younger in the field," says Sorcinelli. She shares the example of a U-Mass faculty member who had

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been turned down for funds because she did not have expertise in a particular technique. She contacted one of the few experts in the country — a professor at another university whom she had never met — to ask if she could fly down to spend a day or two in his lab with him and graduate students to learn how to do the technique. She not only made a connection for herself but also for her departmental colleagues.

In Sorcinelli's view, faculty gain a sense of empowerment when they are not seen or treated solely as the recipients of mentoring, but as the primary agents of their own career development.

To learn more, see the *University of Massachusetts Mutual Mentoring Guide* at: http://www.umass.edu/ofd/mentoring/pguide.html ■

Maintaining a Close Watch on Outflow of Grant Dollars

While the financial offices at most institutions keep track of grant spending, there are plenty of reasons you should stay on top of your cash outflow yourself or at least be aware of it, experts say.

You can monitor grant spending right from your lab. The most basic step your can take, experts say, is assigning a trusted lab staffer to help.

Gregory Lanza, MD, PhD, a PI at the Washington University Medical School in St. Louis, advises "having a good accountant — or better yet a chief lab tech who knows at all times what is appropriate to purchase, what was already bought, or what's too expensive or not needed."

However, don't vest that person with *too much* budget responsibility, warns **Dr. Eric R. Bittner**, John and Rebecca Moores Professor of Chemistry at the University of Houston. "For sure, it's OK to say (to someone you appoint), 'You have a budget to make this work,' but at the end of the day, you as PI are responsible for how the funds are used."

Use institutional resources, but keep aware of spending

Forge good relations with your university money managers, too, Bittner says. His school's Office of Grants and Contracts (OGC) provides online tracking of all expenses charged to a given account. "That gives a good estimate of how much you actually have at a given time." That's especially useful when planning salaries over the summer, he says.

Still, he makes it a point to keep a basic watch on his cash flow himself so that no budget anomaly catches him by surprise. Indirect costs "can sometimes be tricky to compute accurately," Bittner notes, "so I try to estimate them using a spreadsheet provided by our OGC."

Wayne G. Whitehouse, PhD, a former PI and current project director for three National Institute of Mental Health (NIMH) R01 grants at Temple University, also advises maintaining strong digital links with university staff who can help with financial management.

"Our university uses the enterprise-wide Banner financial system," he explains, "which integrates modules from various organizational units, such as academics, human resources, accounting, purchasing, and grants administration. At any time during the budget period, you can run a cost center summary report that details all expenditures from the inception of the project." Because all the components are integrated, he points out, the reports are always up to date with respect to payroll and purchases.

Still, Whitehouse says, PIs should carefully review the reports such automation produces. "Our system is relatively new, and errors have occurred when importing records from the old accounting system into the new one," he explains.

"In addition, there are several individuals on the project who are authorized to make purchases, but they do so when compelled by research needs and without awareness of budget parameters." If you don't stay aware of what they are ordering and putting into the system, and when they are doing it, your grant budget can be compromised, he says.

Whitehouse also recommends the following:

- Simply compare entries in your current summary report with those of the preceding month's report. "Such a cursory review of charges to the grant can be accomplished with little effort," he says. "If you spot discrepancies that can't readily be explained, at least they don't go unnoticed. They often can be resolved by inspecting even earlier cost center summaries."
- Don't intermingle costs associated with academic duties, travel, consulting, and publishing with research-related activities unless they are allowable direct costs on your grant.
- If you have multiple grants, be sure you can justify which expenses are charged to each, using an

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accounting system that documents the appropriate allocation of personnel time and supplies.

The bottom line, of course, is always making sure you know what you've spent and how much you have left on the grant so you don't come up short of finances in the latter part of the grant period.

Many experts recommend front-loading critical costs, such as salaries, and then paying as you go for the rest — to be better prepared for changes in course.

"You need to have flexibility or the whole thing comes to a stop," says Lanza, who recommends buying items upfront only if there is a significant discount or long lead time. "Plans change and needs change as a result," he says. "Spending too much in advance can be wasteful." ■

Lower Stress, Raise Productivity With These Life-Balancning Steps

Do you ever feel you're being pulled in two directions — between your research career and other obligations? Can you achieve a reasonable balance that reduces this kind of tension?

Life coaches and other experts say you can — with a few self-improvement steps, time-management techniques, and by sharpening your management skills.

Miriam Reiss, a master-certified coach with the International Coach Federation, says the right life balance differs among people and doesn't necessarily mean dividing your time and attention 50-50 between your career and the rest of your life.

Make health a priority

Reiss tells every hard-working scientist to "make sure you are taking good care of yourself first (physically)." Ask yourself: Am I getting exercise and feeding myself properly, or have I neglected that because I put my research first? "Be sure you are not running on sugar and caffeine, and drink plenty of water," says Reiss.

While this advice may seem obvious, "I have known many professors and lab people who are in such a hurry that they habitually go to the vending machines." Hydration and nutrition affect your brain, and in science "your brain is your business," Reiss says. Don't skip eating lunch at the lab, she advises — even if you do not take a whole lunch hour.

She also recommends stepping out for a brisk 15- or 20-minute walk every day — twice a day when you can.

A morning jog before work is physically and mentally stimulating, too, she adds. Doing this or another form of exercise with one or more friends or colleagues provides needed social interaction at the same time.

Use 'down time' wisely

Sharon Good, a life, career, and creativity coach in New York City, offers these simple but proven time-saving tips for busy scientists:

- Keep a simple to-do list handy. "When you have 10 or 15 minutes, look at your list, pick something, and do it," Good says.
- Make productive use of time that otherwise would be lost, such as waiting for or riding a bus or train or waiting in a doctor's office. Use a laptop computer for some quick research or read something that's required in your lab work, thus lightening your workload. If you're driving, listen to a CD that teaches you something — perhaps related to your research or another aspect of your life, such as financial advice.
- Block out an hour or two for a specific need. "It might be, for example, that every Saturday morning from 9 to 11 you are going to work on your paper until it's finished," Good says. "Keep that time sacred."
- Don't wait for a big block of time to magically open up before you deal with household chores that pile up and overwhelm you. (Then when it seems you have some time, you're too exhausted

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or the task seems too large.) Instead, carve out small, regular blocks of time to handle these tasks as they come up. That keeps them small and manageable.

Improve managerial skills

A lab that depends on your presence as PI 99 percent of the time is a sure-fire recipe for burnout, Reiss says. "You really need to have people upon whom you can depend and trust, and to whom you can delegate responsibilities. The more research money you have, the more opportunity you have to bring in associates to help share the burden and relieve stress."

Reiss defines a good lab manager as one who not only gets his/her research done, but also communicates well with others, mentors them, and takes care of their own and their staff's needs for some personal time — in a sustainable way.

If you need help with managerial challenges, she suggests taking management classes — perhaps they're available at your own institution — or hiring a management coach. If you have a good relationship with your mentor or department chair, you can also call upon them for managerial guidance based on their experience. ■

Send in the form below to keep your issues coming each month!

Coming In Future Issues

- The Online Study Section Review
- Weighing the Severity of Workplace Threats
- Preventing and Correcting a Dysfunctional Lab
- Protect Yourself Against Unfounded Complaints
- How to Become a Better Communicator
- Avoiding and Settling Authorship Disputes