Once back at work after parental leave, managing your time there is vital, and in your early career in general, time management helps you be more efficient at work, which in turn contributes to balance. The first strategy that helped me after returning to work was knowing where I was going to focus my effort. Before I went on maternity leave, I finished a project with a few colleagues, and I planned to start a follow-on project after my return. Having a problem lined up that I already knew how to attack was helpful for me, because I was still trying to adjust to being a new mom and not getting very much sleep. Another strategy that I used was closing my door at work so that I could focus. Since I was working only part-time, my work time was very precious. I caught up with coworkers the first couple of weeks after returning from leave, and then I put my head down and worked. I learned to make the most of my work hours during the day by planning my time. I thought about short-term research goals, long-term research goals, talks that I planned to give, paper due dates, conferences scheduled, et cetera, and sectioned off certain dates in my calendar to accomplish these tasks. I still employ this strategy; I get accomplished in 6 hours what used to take me 8 hours at work. For example, I started a new project at the beginning of the year and knew it was going to take a concentrated effort. So in the fall when I was planning my calendar for the next 6 months, I blocked off the whole of January and February for this project. I allowed time for a handful of non-negotiable meetings, but otherwise I said no to working on other things during these months.

It's also extremely important to stay connected to the mathematics community during this time. For me, that meant continuing to speak at conferences and seminars in the academic world, as well as speaking about my work in the intelligence community. My husband and I traveled together, along with our daughter, to several conferences the first two years after she was born. Various family members would often travel with us to watch our daughter while we worked. It was important for me to talk to collaborators and harness the collective energy that we generated and apply that energy to new projects.

Going Forward

Work-life balance is not static; it is a dynamic process. I think Albert Einstein said it best: "It is the same with people as it is with riding a bike. Only when moving can one comfortably maintain one's balance." I still have many things to work on as I strive for a balanced life. Before working part-time, I used to take a walk or go to the gym on-site at CCS every day. I have not done this since returning to work after maternity leave. I plan to incorporate exercise back into my life, as it is essential to being my best self and best mathematician. Also, I plan to continue working 30 hours a week for the foreseeable future, which will allow me to be the parent that I want to be. This schedule, for example, will allow me to meet my daughter, after she starts school, as she gets off the school bus. In making all these decisions, the goal is the same: to balance my time so that I can enjoy my family at home and make mathematical contributions that bring me pride.

Kelly B. Yancey

Credits

Author photo is courtesy of the author.

Congratulations! You Have Tenure! And Now What?

Jessica Sidman

In academia we talk a lot about issues that early-career mathematicians face, focusing on the support that people need navigating job applications and the tenure process. Those are both intense, high-stakes periods of time. We talk less about what happens after tenure, which usually is the longest period of an academic mathematician's career. However, I think that early-career folks making decisions about what kinds of jobs they want can benefit from knowing more about opportunities, expectations, and experiences post-tenure and that folks arriving at that moment can benefit from hearing voices of peers dealing with similar situations.

I invited four mathematicians—Rachelle DeCoste at Wheaton College (MA), Ravi Ramakrishna at Cornell, Will Traves at the US Naval Academy, and Julianna Tymoczko at Smith College—to talk about what life is like after tenure. Wheaton and Smith are both liberal arts colleges with small departments of 7 and 11, respectively. The math department at Cornell has roughly 40 faculty, and the department at the Naval Academy is even larger at 70.

I am extremely grateful to Rachelle, Ravi, Julianna, and Will for their time, candor, and advice. Please read on to hear what they had to say!

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What Changes…and What Stays the Same

When asked about what changes they expected after tenure, everyone mentioned a higher service expectation. However the specifics differed greatly depending on the size of the department and characteristics of the institution. For example, Ravi indicated that at Cornell the post-tenure service expectation increases, but service activities often remain centered on the department. At a doctoral-granting institution a faculty member at this stage will likely be mentoring graduate students and postdocs, and helping them with their job searches is a big responsibility.

Julianna noted that she naturally did a lot of service pre-tenure at Smith, so the change wasn't that great for her. She also mentioned that though we may feel a strong pull to serve the mathematics community, organizing conferences and workshops or serving in leadership roles in professional organizations, our institutions may value internal service (serving on committees, chairing a department, leading curricular initiatives) more. Rachelle also performed a lot of service and outreach pre-tenure, for example, founding the Career Mentoring Workshop (CaMeW), a 3-day workshop for women entering the final year of their doctoral studies, as a postdoc at West Point. Rachelle felt like she was ignoring others' advice not to take these things on until later.

We also talked about whether being tenured felt different. This is a moment that many of us work towards for a long time, so what happens after? Rachelle reported feeling "that post-tenure slump," which evolved into a period of questioning what she wanted to be doing, and then turning that into a productive moment. Julianna and Rachelle both spent time thinking about how they wanted to make their mark in the profession, and Julianna stated that this isn't something that she expects to figure out once, but rather a question that she expects to revisit over time.

For some, feelings of being judged by colleagues or pressure to publish didn't dissipate immediately. Will described still feeling pressured to publish and then realizing later that a lot of the pressure he felt was internally generated and not coming from senior colleagues. Rachelle said she now feels more free to do the outreach activities that mean a lot to her, whether starting a blog, continuing CaMeW, or initiating a STEM summit for women at Wheaton.

Promotion to Full Professor

We talked about how promotion to full professor is structured at different institutions. The Naval Academy is an outlier in that external letters are required neither for tenure nor for promotion to full professor, and the candidates make the case for themselves, writing a document with support from the chair. The other participants' institutions have tenure processes that require external letters evaluating a candidate's research. At Wheaton 2–3 external letters are required for promotion, but these are chosen by the candidate and may be close colleagues, even collaborators (which is not the case at tenure). Both Smith and Cornell also require external letter writers for promotion to full professor, and at both institutions, the process mirrors the tenure process. Whether the expectations for full professor are made clear to candidates varied widely. Will mentioned that at the Naval Academy they receive guidelines with examples of activities that "count" each year. However, he added, "every year faculty show us new ways that they excel in these areas, and we try to celebrate those new directions too."

We also talked about how promotion is viewed by faculty. Will remarked that it was only much later that he realized that the tenure decision is forward-looking, whereas the promotion to full professor is more backward-looking. At tenure the institution asks if a faculty member has the potential to keep contributing to the profession in the decades to come, whereas the promotion decision is more about determining if that early promise has been fulfilled. Julianna noted that the institutional incentives are different, since the tenure decision is about whether to make a permanent commitment to a faculty member, and the promotion to full professor is within the context of this previously made commitment.

Promotion has different consequences at different places. At some institutions it comes with a significant pay raise and may also come with the expectation that full professors take on serious leadership roles. At an institution where full professors do not receive a salary bump and service expectations increase significantly, faculty may strategically delay promotion.

Chairing a Department

The size of a department affects not only the job of the chair but also who is expected to be chair and when. Will and Ravi reported that not all of their department members are expected to chair, and chairs are always full professors. In smaller departments it is often the case that every faculty member will chair eventually, and depending on departmental demographics, this may happen before promotion to full professor. Julianna is just finishing a 3-year term as chair and was promoted to full professor this year. Rachelle is an associate professor and will start her term as chair in the fall.

Ravi mentioned that our prior training as mathematicians is not focused on training us in the skills that a chair needs. Some institutions have nominal training for new chairs, but others do not.

Folks saw the role of the chair as supporting department members. For some this involved giving junior faculty the support they wish they had. In a smaller department this may include helping new faculty make connections to other departments on campus. Other people talked about paying forward the ways in which they were supported themselves. Will mentioned being grateful for the support of his department during a personally challenging time

and then realizing that in a big department there are always multiple people facing significant challenges each year, often in private. As chair, it was especially important to Will to find mechanisms to help people through these periods.

Changing Research Direction

I asked if the participants had any experience or advice for people who felt like they wanted to branch out into new areas after tenure. Rachelle said that since she has a good community of collaborators and there are publication requirements for promotion to full professor, she has not been interested in changing her research area.

Julianna and Will both described using teaching as a way to explore new research areas. Julianna coauthored two publications in biologically inspired combinatorics after developing a topics course for majors. As a part of this process, she started reading papers of a long-time friend from graduate school, and they ended up working together.

Will (whose training is in algebraic geometry) just received a grant to develop a data science curriculum at the Naval Academy. He talked about a gradual process of dipping his toe in the waters of data science by teaching new courses.

The group also enumerated several programs that support faculty wishing to change directions. Resources for faculty through PIC Math—Preparation for Industrial Careers in the Mathematical Sciences—include a 3-day summer workshop and their Spring Semester Research Course, which provides faculty with content for a course built around solving problems from industry in teams. REUF—Research Experiences for Undergraduate Faculty—holds workshops at AIM and ICERM to support faculty who want to do research with undergraduates or re-engage or change their own research program. At DIMACS Project Reconnect offers week-long themed workshops to introduce faculty to areas of current research that are appropriate for an undergraduate curriculum. Through Project NExT (New Experiences in Teaching) the MAA provides curricular development workshops for faculty traveling to the JMM or MathFest.

What Lies Ahead…

I chose these four mathematicians because I am familiar with some aspect of their work and admire what they have accomplished so far. So what is next for this group? Ravi described his future goals as "proving better theorems than I have proved so far." Rachelle is focused on making the mathematical community more inclusive, having seen some people turning away because they don't feel that they fit in. Will is interested in keeping up current research collaborations while at the same time getting more involved in interdisciplinary conversations around campus. Julianna knows that she will be continually re-evaluating what is on her bucket list and is looking forward to life as a new full professor and former department chair.

Jessica Sidman

Credits

Author photo is courtesy of Jordan Tirrell.

Anxiety Attacked Me, But I Survived[1]

Ken Millett

Coming from Oconomowoc High School, my undergraduate experience as a wannabe engineer at MIT was marked by some serious obstacles. I was not prepared for life in a large city, not aware of MIT's reputation or its intense academic environment, nor was I prepared for the intellectual level and preparation of my classmates. My parents drove me to my cooperative residence in Boston. There, I was greeted by classmates who questioned how many 800s I had on the SATs. I was paralyzed. Not only did I not imagine that a person could get an 800, but I was astounded that the measure of success was "how many." It was clearly impossible to get back into my parents' car and say, "Take me home. I've made a big mistake." It was like being on another planet with no hope of escape.

As I progressed in the pursuit of my bachelor's degree, I continued to be plagued by a feeling of inadequacy which had one highly unfortunate effect: it made taking exams nearly impossible. One of my more memorable experiences was a three-hour exam during which I only managed to put my name on the paper and sit terrorized by a giant ticking clock on the wall for the entire exam period. Fortunately, MIT was stronger than me and did not let me give up. With the encouragement of housemates and with many months of counseling and work, I learned enough to survive examinations, though often barely. I learned to have a meta-awareness of situations I'd find myself in—for example, becoming paralyzed during an exam. I learned how to stop, step back, breathe deeply, close my eyes, and imagine myself in a favorite place—such as hiking the peaks in New

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