Balancing act

Mounting responsibilities can swamp the newly independent scientist. **Kendall Powell** asks if it's possible to manage your time without losing your creativity.

Christina Hull rarely drops the ball. After two years as an assistant professor at the University of Wisconsin, Madison, she has her lab up and running, teaches undergraduate courses, serves on several committees and still manages to find time for the gym and for dinner every night with her six-year-old daughter, Madeline, and her husband, industry scientist Rob Brazas. But she's put one of her favourite leisure activities — playing the piano — on hold.

How does she do it all? She and her husband stick to a schedule that revolves around Madeline's school and daycare. That keeps everyone on track to be home for dinner and ensures that Hull works efficiently during the day. But, she admits, it isn't a perfect system.

"I did no time management when I was teaching a new course. I got in no workouts, cooked no dinners, and only slept from about 2 a.m. to 6 a.m. for those six weeks." Luckily, her family's schedule does allow for flexibility when one spouse needs it.

But as the responsibilities of being a new investigator pile up, forsaking sleep will only get you so far. Time management is a skill all academics have to master early in their careers. By year two, a new lab should be equipped and staffed to run smoothly on a daily basis, freeing up time to refocus mental energy on research goals and bench work.

But by year two, non-research responsibilities such as committee work and teaching have also ramped up. With only 24 hours in a day, it can be hard to carve out time to help lab workers, write grants and manuscripts, and just think about projects amid all the pressing but tenure-neutral matters you're also dealing with. No matter how well you serve on committees or advise undergraduates, by about year seven your career will depend on publishing and advancing deep science. Securing tenure takes an enormous investment of wisely managed hours early on.

Watching the clock

Administrative duties such as interviewing and grant-writing dominate the first year or so for most new investigators. But as the lab settles in, they find long stretches of time harder to come by — just as they are ramping up their experiments.

Joaquin Espinosa, a molecular cell biologist starting his second year at the University of Colorado, Boulder, says it can be difficult to switch from managing time in monthly blocks to managing it by the day or hour. "I'd better start learning how to do these big things in small chunks of time," he says.

Hull has made that transition. Every morning, she asks herself: "What do I have to do today to make my lab run?" and starts organizing her day while still in the shower or commuting to work.

She and her husband each keep a detailed calendar on their computers of all work and home commitments at least a few months ahead. Carol Thornber, a marine ecologist at the University of Rhode Island in Kingston, goes one step further, colour-coding her calendar into research, teaching, other work and home categories. This gives her an immediate picture of whether she has balanced her week and also tells her when she still has free time for writing or preparing lectures.

IMAGE UNAVAILABLE FOR COPYRIGHT REASONS

Both Carol Thornber (top) and Sandra Schmid divide their working weeks by categorizing their tasks.

Thornber asks her colleagues to bug her when manuscripts slip down her to-do list, so she can make them a priority. Both Thornber and Hull rely on their faculty mentors to guide them in weighing their campus and departmental duties against their research goals.

"Mine sat me down and while shaking his head 'No' told me: 'You need to practice this motion'," says Thornber. Hull sought guidance for how many papers she should peer-review in a semester, when to turn down reviews and how much time to spend on committee work.

"You have to be a little bit selfish at this stage," she notes. "Do the maths — how long does it take you to review a paper? Am I using my time during the week to move my lab forward?"

Sandra Schmid, a cell biologist at the Scripps Research Institute in La Jolla, California, suggests using a time-management matrix. Tasks are divided into two columns, important or not important, and two rows, urgent and not urgent.

IMAGE UNAVAILABLE FOR COPYRIGHT REASONS

"If you are focused on the tenure clock, that's what goes in the important, not urgent box — getting three papers published, giving seminars, getting funded," she says. "Focus towards accomplishing those things and then go home at six."

Inevitably, a young lab head will get caught up in immediate, seemingly urgent tasks such as purchasing or paperwork. Junior faculty members agree that it's only natural to attend to such matters when setting up — but they warn the new investigator to maintain focus on longer-term goals, or risk becoming a great lab manager and a poor planner of original research.

Not enough hours

Daily admin tasks, service work and teaching can eat up time. Paperwork and committee meetings may not be glamorous, but they come with the territory. To keep a lid on these potential time drains, you need to work out short cuts and self-imposed rules.

Bernard Golding, an organic chemist at the University of Newcastle upon Tyne, UK, says handle paperwork promptly to avoid "worrying about the nasty tasks you haven't done". He also urges committee members to rethink the habit of scheduling meetings in hour-long units. Can a quick agenda be covered in 15 minutes? Can a decision be trusted to a select few? Can a consensus be reached by e-mail?

Schmid approaches service opportunities as ways to advance her influence in both her department and field. She recalls being asked to serve on the editorial board of a respected journal after about four years as an assistant professor. She agreed — but immediately stopped reviewing papers for other journals. She saw the decision as 'trading up' in responsibilities. She also found that being a "fully engaged, participating member" of one committee helped her to decline invitations to join others without suffering any political fallout.

Likewise, junior faculty members should dedicate significant energy to their teaching responsibilities. After all, Golding points out, high-quality teaching can attract the best students to your group and can influence the direction of your research. Although preparing lectures for a first course can be daunting, it should not take inordinate amounts of time.

Sam Sia, a bioengineer at Columbia University in New York, found a simple way to ensure that his undergraduate thermodynamics course would not take over his first semester. "I use the chalkboard. No handouts and no fancy slide-show presentation," he says. He also advises "pick a good textbook and stick to it", using its standard problems and diagrams. Students, he notes, appreciate clear, organized lectures and do not need originality.

Creative juices

As Espinosa points out, once the lab is functioning, planning experiments and pondering projects gets squeezed into shorter, more frequent time slots. New investigators find this adjustment particularly tricky. Tap into when you do your best thinking and then talk to lab members and do other daily jobs outside those sacred times.

Dirk Schübeler, an epigenetics expert at the Friedrich Miescher Institute in Basel, Switzerland, says the hardest part of the pre-tenure position is maintaining creativity under time pressure. Coming out of a meeting and switching into creative mode doesn't come naturally to most people, he says, so you have to reserve time to get into the groove.

"Follow your biological clock and recognize which parts of the day you are more creative than others," he says. "Then keep those hours open for thinking." Thornber and Golding reserve one day a week or month to stay home and work on creative tasks.

As he grew busier, Golding began scheduling formal meetings with his trainees each week. Schmid urges investigators to keep lab workers informed of grant aims and timelines. Lab workers should be trained to be self-sufficient and goal-oriented, Schmid says. "Don't agonize about a person who is not producing," she warns. Instead, ask to see improvement in the next three months.

Schmid and Hull say that not all the ingredients of a successful career need to happen simultaneously in the first five years. But planning and organization help ensure they will come to fruition eventually.

As for leisure activities, some use the prospects of engaging in them again as a way to stay motivated in the lab. Hull expects to take up the piano once she catches up.

"I've got my eye on a baby grand that in a few years from now will make a great tenure present for myself," she says. ■

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Sam Sia (top) has tamed his lectures and Dirk Schübeler watches his biological clock to keep his research on track.

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