

# CAREERS

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WORK-LIFE BALANCE

## Lab life with kids

*Balancing research with raising children takes scheduling skills and organization.*

BY KENDALL POWELL

While she was in the middle of harvesting plates of cells at biotechnology company Genentech in South San Francisco, California, molecular oncologist Ingrid Wertz received a phone call. It was her childcare provider, telling her that her then-9-year-old daughter had a concussion after smacking heads with another child.

Wertz had been expecting to spend the next four hours processing cells as part of an experiment on cytokine signalling, but instead she found herself rushing to the childcare centre. Luckily, her work was not ruined — before she left, she managed to store it in a freezer so that she could pick up the experiment the next day.

Wertz's experience is familiar to early-career

researchers who are the parents of young children. Juggling the responsibilities of laboratory and home is difficult at best, especially because childbearing and child-rearing years tend to collide with the formative stages of a young researcher's career. The pressure to produce at the bench combined with the duties of childcare can push stress levels to breaking point.

To cope with the extra responsibilities of childcare, scientist parents must learn to partition their days and nights to accommodate work and family, and to structure experimental protocols so that they do not skimp on quality family time. For example, instead of scheduling 12-hour data-collection time points at 8 a.m. and 8 p.m., which are prime breakfast and dinner hours, they can shift them to 10 a.m. and 10 p.m., stopping back in the lab after the

children are in bed. Organizational skills are important, such as coordinating working days and nights with other people providing care. Family-friendly national or workplace policies, such as reduced teaching responsibilities and flexible hours, can ease the burden. But busy parents should also make time for themselves — whether that time is for a 20-minute jog or a date together.

### UNCERTAINTY EXPECTED

Lab work is inherently erratic: experiments can take twice as long as planned or cells may not grow, shifting schedules by a day or more. But the addition of children to a scientist's life adds unpredictability to the already unpredictable. Wertz learned the hard way that she has to plan for the unforeseen: her strategies ►

▶ include scheduling in lengthy buffer zones for large or crucial experiments.

She also builds in multiple back-up plans. In emergencies, such as when her son shoved an acorn up his nose at age three, the scientists in her group all lend a hand. But back-up planning also involves “knowing the non-critical times when you can stop in the middle of an experiment,” she says. Wertz works out ahead of time how to wind things down quickly without ruining data. That way, if the experiment starts to run behind schedule, it can literally be put on ice until the next day: stable DNA or proteins can be safely tucked away in a freezer.

When a dance recital or school art show waits at the other end of an experiment, Wertz's success depends on time micromanagement. “Plan every step a day ahead of time, locate all the reagents and schedule incubations during times when you are going to be called away to meetings,” she counsels.

If research has to interrupt family time, it is best to prepare the family in advance. As a clinical researcher at the University of Texas Southwestern Medical Center in Dallas, Jane Wigginton's work centres on testing interventions for patients suffering from trauma — who tend to come into the hospital late on weekend nights and during holiday celebrations. Once she was paged just before a Fourth of July fireworks display and had to leave her family.

But she and her ex-husband made sure that all six kids knew that even if an event such as Thanksgiving dinner had to be postponed, it would still happen. Looking back, she sees that the disruptions provided a good lesson for family members. “They learned that it does not have to be the exact hour or day to celebrate a family moment.”

Jens Schuster, a molecular biologist at Uppsala University in Sweden, and his wife, who works as a nurse supervisor, have also learned the art of über-organization. Recently, their 7-year-old daughter was too ill to attend school, prompting a shift in schedules. Schuster's wife stayed home with their daughter until her hospital shift started. By that point, their 17-year-old son was home from school and could watch his sister (and 12-year-old brother) for a couple of hours. Schuster swung home from the lab a bit early, picking up their 3-year-old daughter from day care on his way.

Research allows for flexible schedules, he says. “Cells don't care if you come in at midnight or at noon to take care of them.” But he constantly checks his and his wife's schedules to sidestep disasters as much as possible. Each week, on the family's shared Google calendar (an almost universal tool for researcher families), he reviews upcoming obligations, such as his work meetings, his wife's shifts and the children's dentist appointments.

He finds and resolves scheduling conflicts, then plans experiments for days that have at least four hours of uninterrupted time. By scheduling such blocks about every two weeks, he can stay on track with experiments such as coaxing stem cells into more-specialized types or analysing images on a sophisticated microscope, he says. “I wonder myself, quite often, how do I do all this?” he says.

#### PRIORITY CLASH

Researcher parents concede that work–life boundaries can blur when the demands of childcare and career advancement peak simultaneously. The average age at which US researchers gain tenure is 39, when women's



Grzegorz Wicher snaps a selfie with his family.

fertility has declined sharply. Most early-career academic scientists who also want to become parents pace themselves by the biological clock and have children before they earn tenure. Those who juggle tenure committees and babies say that a shift in perspective has helped them to cope with the tension.

Rebecca Richards-Kortum, a bioengineer at Rice University in Houston, Texas, found it stressful trying to figure out the optimal timing for her first child during her pre-tenure days at another institution. She realized after a couple of years that she would regret not having a family more than not making tenure. “That was a real clarifying moment,” she says. “It helped me let go of a lot of the stress.” She went on to earn tenure and become an award-winning scientist and mother of six.

But generous institutional services also smoothed the way for her to juggle lab life and childcare obligations. Subsidized, on-site day care was key, especially when she was breastfeeding (see ‘Tenure travail’). Some of her best impromptu discussions with colleagues about grant proposals happened in the day-care centre at pick-up times.

Generous family policies have also helped Grzegorz Wicher, who is a senior postdoctoral researcher at Uppsala University. For each child, the Swedish government guarantees 13 months of leave at 80% salary, with the time off work being split between parents as desired. Some academic departments chip in another 10%. Even so, research careers can suffer from long publication gaps and breaks in momentum, says Wicher, who is also in the middle of starting up a cell-culture company.

## TENURE TRAVAIL

### *The cost of motherhood*

It is a fact. Having children comes at a higher cost to a woman's academic science career than to a man's. That finding prompted all ten campuses of the University of California in 2003 to adopt family-friendly policy reforms, such as giving mothers two semesters and fathers one semester without teaching responsibilities and automatically extending the allowed time in which to gain tenure by one year after the birth of each child.

The policies were brought in after a report ([go.nature.com/pbhjyd](http://go.nature.com/pbhjyd)) produced for the university by Mary Ann Mason and her colleagues at the University of California, Berkeley, showed that although every academic researcher is busy, women with children were working the most, devoting more than 100 hours to work, domestic and child-care responsibilities each week

(compared with fewer than 80 hours per week for faculty members without children).

Mason's research showed that having children within five years of obtaining a PhD lowers the chances that women will enter a tenure-track position and earn tenure. Women who have children more than five years after finishing their PhD do as well as women without children, but there are far fewer of these “late babies”, says Mason, who is a lawyer and professor at Berkeley's graduate school.

For her book *Mothers on the Fast Track*, Mason interviewed successful mothers from many fields and found that the most important contributing factor to their success was a partner who felt that their spouse's career was as important as their own. “My advice in the book,” she says, “is don't marry a jerk.” **K.P.**

To maximize efficiency, he and his wife, who is also a senior postdoc at Uppsala, planned their research around their respective portions of parental leave after the birth of their daughter, now aged 8 months. They each arranged to finish laboratory projects before taking leave, and planned to use nap times and evenings at home to work on data analysis, manuscripts and grant proposals.

In their house, mornings at the breakfast table are sacrosanct family time; so are the hours after their 6-year-old daughter's school day and until the children's bedtime. The couple typically works side-by-side in their home office for three to four hours after that. "It is a little bit sad, but better than not seeing each other at all," Wicher says.

### WORKING LATE

In the absence of parental-leave or childcare policies, scientist parents turn to other strategies to accommodate lab obligations and family time. Many with young children split up their days and nights, returning to the lab during the late evening and working remotely when possible. Anthony Barry, an associate research fellow at Pfizer Biotherapeutics in Andover, Massachusetts, takes his laptop home every evening.

"I get incredibly frustrated if I get home so late that I'm not getting to see my kids," says Barry, whose sons are aged 7 and 10. Dividing his duties into work that must be done at Pfizer versus what can be done from home helps him to complete 8–10-hour workdays without missing prime family time. "Although people may say it's horrible to have to take work home with you, I've found that to be the most enabling," says Barry.

Others see the evening hours as the perfect time to head back to the lab. Amy Pandya-Jones, a postdoctoral researcher in RNA biology at the University of California, Los Angeles, splits her days to get quality time with her 5-year-old and 2-year-old. She goes to the lab early in the morning and comes home in the early afternoon. About three nights per week, after her husband gets home from work at around 7 p.m., she returns to the lab, working for another four hours.

She is careful to waste not a second, and estimates that she squeezes what would normally be a full 8–10-hour workload into about 6–8 hours. "You cannot underestimate the planning," she says: she slots in time on the weekly calendar even for a trip to the supermarket.

Parents who manage to carve out minutes for themselves and their partners relieve some of the stress. One practice that helped Wigginton to stay sane was stealing an hour or two for herself, sometimes for a manicure or a pedicure. "I needed just a moment away, with nobody sitting in my lap and no pager going off."

Wicher and Pandya-Jones both reserve

one night a week for dates with their spouses — even if it is just a dinner of tacos and beer. Wicher and his wife also take it in turns to go running on alternate days. "It helps to wash the brain," he says. Jaelyn Eberle, a palaeontologist at the University of Colorado, Boulder, recently finished a series of exercise sessions that started at 5:15 a.m. in the mornings. "I realize that if I don't get some me time — exercise or pottery lessons — then I'm not as creative at work," she says.

On Sunday evenings when the kids are asleep, Wertz and her husband serve themselves ice cream and sit down to look over their family calendar, plan, organize and talk. "We make a fun time of it — we get different Ben and Jerry's flavours and sample the new ones."

Some researchers hire house cleaners and sitters, ask neighbours to drive kids to activities or order groceries online to allocate their limited hours at home to family time rather than chores. It pays to ask for help from friends, relatives and even employers — especially for single-parent scientists who have less support at home. That could mean asking grandparents to babysit for a weekend so that the researcher can finish up a grant application or asking a boss for a month's notice before scheduling a business trip.

But it is not all about nappy duty, day care and drudgery. Researchers see benefits

**"Cells don't care if you come in at midnight or at noon to take care of them."**

for themselves and for their children from their work. When the children were older, Wigginton took one or two of them (and

her mother) on conference trips to Paris or Hawaii. Wertz enjoys "watching the joy and fascination, through the eyes of a child, of ice melting and water pouring" as her kids play in her lab on weekend visits.

Richards-Kortum believes that blending research and parenting strengthens both endeavours. Her experience as a mother has helped to shape her research agenda on life-saving technologies for premature newborns. And her work in Malawi influenced her decision to adopt her two youngest daughters from Ethiopia.

"You look at the world through very different glasses than before you were a parent," says Wigginton, a mother of six. "My children have greatly contributed to any success I've had and to my motivation and drive."

Both she and Richards-Kortum have evidence that the hours devoted to research did not leave their children feeling resentful towards their scientific research careers — all of their university-aged children are following in their mothers' footsteps, studying engineering, bioengineering or medicine. ■

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### CAREER PROGRESSION

## Consider all options

Research institutions should provide broader career guidance to their PhD students, and students should proactively assess their skills and options, according to a report by the Royal Society, an influential group of scientists based in London.

"Students must not be regarded as mere 'bench monkeys', but nor should they themselves be passive in seeking out what they need," wrote Athene Donald, who chaired the group that put together the report, in an accompanying opinion piece.

The Royal Society is certainly not the first science organization to highlight the grim chances of newly minted graduates and postdocs finding faculty positions in scientific research and to call for universities to provide better career preparation (see *Nature* 516, 7–8; 2014). A report from the US National Academies in Washington DC, for example, says that postdoctoral positions, often seen as the default step after a PhD programme, do not always help researchers to advance their careers, and that research institutions should inform PhD students that other types of work experience may be more beneficial (see [go.nature.com/cxli6t](http://go.nature.com/cxli6t)).

Donald, a theoretical physicist at the University of Cambridge, says that the report, entitled *Doctoral Students' Career Expectations: Principles and Responsibilities*, aims to raise awareness of viable career options among students and their supervisors, and to bolster efforts by university career-guidance offices. Improving career awareness may require students and schools to arrange mentorships beyond a trainee's lab, department or institution. And PhD advisers should not imply that a future in academia is the only desirable career path (see [go.nature.com/h9872d](http://go.nature.com/h9872d)).

Lack of information is a serious issue, but merely highlighting careers beyond academia may not do much to help people to find optimal positions, says Sally Hancock, a higher-education researcher at the University of York, UK, who studied science PhD students at Imperial College London. Those who had been exposed only to academic research were likely to be purists who saw their programme as "a zero-sum game in which the objective is to achieve an academic position". Those who had already worked outside academia were more likely to view non-academic options favourably, be proactive about exploring other choices and feel less stigma about pursuing them. PhD programmes might serve students best by incorporating work outside the university, she says: "Experience is imperative."