

An underwater photograph showing several sharks swimming in a blue, slightly hazy environment. There are many small fish scattered throughout the scene. The sharks are the primary focus, with one large shark in the center and others in the foreground and background.

Mental Resilience: How to Thrive in a Career in Science

Julia Baum
Department of Biology
University of Victoria

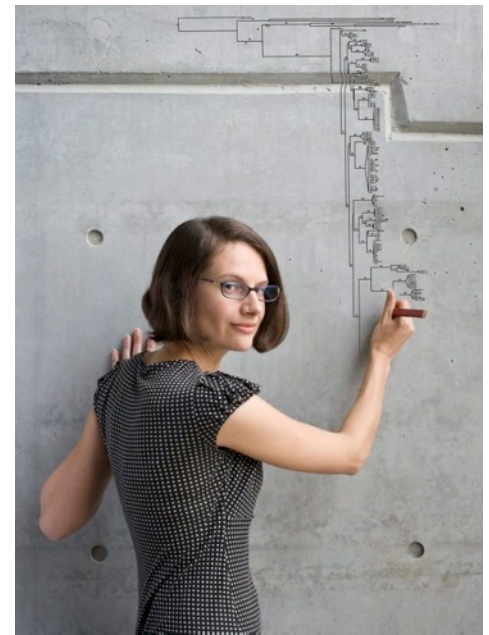
November 2013

Resilience

: the ability of something to return to its original shape after it has been pulled, stretched, pressed, bent, etc.

: the ability to become strong, healthy, or successful again after something bad happens

Mental Resilience



Dr. Nerida Wilson

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: the ability to become strong, healthy, or successful again after something bad happens

Why do we need mental resilience?



“Twice in my life I have spent two weary and scientifically profitless years seeking evidence to corroborate dearly loved hypotheses that later proved to be groundless; times such as these are hard for scientists – days of leaden gray skies bringing with them a miserable sense of oppression and inadequacy.”

Science is hard



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The importance of stupidity in scientific research

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I recently saw an old friend for the first time in many years. We had been Ph.D. students at the same time, both studying science, although in different areas. She later dropped out of graduate school, went to Harvard Law School and is now a senior lawyer for a major environmental organization. At some point, the conversation turned to why she had left graduate school. To my utter astonishment, she said it was because it made her feel stupid. After a couple of years of feeling stupid every day, she was ready to do something else.

I had thought of her as one of the brightest people I knew and her subsequent career supports that view. What she said bothered me. I kept thinking about it; sometime the next day, it hit me. Science makes me feel stupid too. It's just that I've gotten used to it. So used to it, in fact, that I actively seek out new opportunities to feel stupid. I wouldn't know what to do without that feeling. I even think it's supposed to be this way. Let me explain.

For almost all of us, one of the reasons that we liked science in high school and college is that we were good at it. That can't be the only reason – fascination with understanding the physical world and an emotional need to discover new things has to enter into it too. But high-school and college science means taking courses, and doing well in courses means getting the right answers on tests. If you know those answers, you do well and get to feel smart.

A Ph.D., in which you have to do a research project, is a whole different thing. For me, it was a daunting task. How could I possibly frame the questions that would lead to significant discoveries; design and interpret an experiment so that the conclusions were absolutely convincing; foresee difficulties and see ways around them, or, failing that, solve them when they occurred? My Ph.D. project was somewhat interdisciplinary and, for a while, whenever I ran into a problem, I pestered the faculty in my department who were experts in the various disciplines that I needed. I remember the day when Henry Taube (who won the Nobel Prize two years later) told me he didn't know how to solve the problem I was having in his area. I was a third-year graduate student and I figured that Taube knew about 1000 times more than I did (conservative estimate). If he didn't have the answer, nobody did.

That's when it hit me: nobody did. That's why it was a research problem. And being *my* research problem, it was up to me to solve. Once I faced that fact, I solved the problem in a couple of days. (It wasn't really very hard; I just had to try a few things.) The crucial lesson was that the scope of things I didn't know wasn't merely vast; it was, for all practical purposes, infinite. That realization, instead of being discouraging, was liberating. If our ignorance is infinite, the only possible course of action is to muddle through as best we can.

I'd like to suggest that our Ph.D. programs often do students a disservice in two ways. First, I don't think students are made to understand how hard it is to do research. And how very, very hard it is to do important research. It's a lot harder than taking even very demanding courses. What makes it difficult is that research is immersion in the unknown. We just don't know what we're doing. We can't be sure whether we're asking the right question or doing the right experiment until we get the answer or the result. Admittedly, science is made harder by competition for grants and space in top journals. But apart from all of that, doing significant research is intrinsically hard and changing departmental, institutional or national policies will not succeed in lessening its intrinsic difficulty.

fact, inherent in our efforts to push our way into the unknown. Preliminary and thesis exams have the right idea when the faculty committee pushes until the student starts getting the answers wrong or gives up and says, 'I don't know'. The point of the exam isn't to see if the student gets all the answers right. If they do, it's the faculty who failed the exam. The point is to identify the student's weaknesses, partly to see where they need to invest some effort and partly to see whether the student's knowledge fails at a sufficiently high level that they are ready to take on a research project.

Productive stupidity means being ignorant by choice. Focusing on important questions puts us in the awkward position of being ignorant. One of the beautiful things about science is that it allows us to bumble along, getting it wrong time after time, and feel perfectly fine as long as we learn something each time. No doubt, this can be difficult for students who are accustomed to getting the answers right. No doubt, reasonable levels of confidence and emotional resilience help, but I think scientific education might do more to ease what is a very big transition: from learning what other people once discovered to making your own discoveries. The more comfortable we become with being stupid, the deeper we will wade into the unknown and the more likely we are to make big discoveries.

Schwartz 2008

Scientists behaving badly

To protect the integrity of science, we must look beyond falsification, fabrication and plagiarism, to a wider range of questionable research practices, argue **Brian C. Martinson, Melissa S. Anderson and Raymond de Vries.**

Serious misbehaviour in research is important for many reasons, not least because it damages the reputation of, and undermines public support for, science. Historically, professionals and the public have focused on headline-grabbing cases of scientific misconduct, but we believe that researchers can no longer afford to ignore a wider range of questionable behaviour that threatens the integrity of science.

We surveyed several thousand early- and mid-career scientists, who are based in the United States and funded by the National Institutes of Health (NIH), and asked them to report their own behaviours. Our findings reveal a range of questionable practices that are striking in their breadth and prevalence (Table 1). This is the first time such behaviours have been analysed quantitatively, so we cannot know whether the current situation has always been the case or whether the challenges of doing science today create new stresses. Nevertheless, our evidence suggests that mundane 'regular' misbehaviours present greater threats to the scientific enterprise than those caused by high-profile misconduct cases such as fraud.

As recently as December 2000, the US

Table 1 | Percentage of scientists who say that they engaged in the behaviour listed within the previous three years (n = 3,247)

Top ten behaviours	All	Mid-career	Early-career
1. Falsifying or 'cooking' research data	0.3	0.2	0.5
2. Ignoring major aspects of human-subject requirements	0.3	0.3	0.4
3. Not properly disclosing involvement in firms whose products are based on one's own research	0.3	0.4	0.3
4. <u>Relationships with students, research subjects or clients that may be interpreted as questionable</u>	1.4	1.3	1.4
5. <u>Using another's ideas without obtaining permission or giving due credit</u>	1.4	1.7	1.0
6. Unauthorized use of confidential information in connection with one's own research	1.7	2.4	0.8 ***
7. Failing to present data that contradict one's own previous research	6.0	6.5	5.3
8. Circumventing certain minor aspects of human-subject requirements	7.6	9.0	6.0 **
9. Overlooking others' use of flawed data or questionable interpretation of data	12.5	12.2	12.8
10. Changing the design, methodology or results of a study in response to pressure from a funding source	15.5	20.6	9.5 ***
Other behaviours			
11. Publishing the same data or results in two or more publications	4.7	5.9	3.4 **
12. <u>Inappropriately assigning authorship credit</u>	10.0	12.3	7.4 ***
13. Withholding details of methodology or results in papers or proposals	10.8	12.4	8.9 **
14. Using inadequate or inappropriate research designs	13.5	14.6	12.2
15. Dropping observations or data points from analyses based on a gut feeling that they were inaccurate	15.3	14.3	16.5
16. Inadequate record keeping related to research projects	27.5	27.7	27.3

Note: significance of χ^2 tests of differences between mid- and early-career scientists are noted by ** ($P < 0.01$) and *** ($P < 0.001$).

Scientists behaving badly

Bullying in academia

From Wikipedia, the free encyclopedia

Several aspects of academia lend themselves to the practice and discourage its reporting and mitigation. Its leadership is usually drawn from the ranks of [faculty](#), most of whom have not received the management training that could enable an effective response to such situations.^[2] The perpetrators may possess [tenure](#) — a high-status and protected position —

Manifestations [\[edit\]](#)

The bullying in this workplace has been described as somewhat more subtle than usual.^[4] Its recipients may be the target of unwanted physical contact, violence, obscene or loud language during meetings, be disparaged among their colleagues in venues they are not aware of, and face difficulties when seeking promotion.^{[4][7]} It may also be manifested by undue demands for compliance with regulations.^[8]

The *Times Higher Education* commissioned a survey in 2005 and received 843 responses.^[7] Over 40% reported they had been bullied, with 33% reporting "unwanted physical contact" and 10% reporting physical violence; about 75% reported they were aware that co-workers had been bullied.^[7] The incidence rate found in this survey was higher than that usually found via internal polling (12 to 24 percent).^[7]

Scientists behaving badly

The Thesis Whisperer

Just like the horse whisperer – but with more pages

Academic assholes and the circle of niceness

February 13, 2013 · by [Thesis Whisperer](#)

As we talked we started to wonder: **do you get further in academia if you are a jerk?**

Teresa Amabile, who did a series of controlled experiments using fictitious book reviews. While the reviews themselves essentially made the same observations about the books, the tone in which the reviewers expressed their observations was tweaked to be either nice or nasty.

What Amabile found was:

“...negative or unkind people were seen as less likeable but more intelligent, competent, and expert than those who expressed the same messages in gentler ways”



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“...negative or unkind people were seen as less likeable but more intelligent, competent, and expert than those who expressed the same messages in gentler ways”

This sentence made me think about the nasty cleverness that some academics display when they comment on student work in front of their peers. Displaying cleverness during PhD seminars and during talks at conferences is a way academics show off their scholarly prowess to each other, sometimes at the expense of the student. **Cleverness is a form of currency in academia; or 'cultural capital' if you like.** If other academics think you are clever they will listen to you more; you will be invited to speak at other institutions, to sit on panels and join important committees and boards. Appearing clever is a route to power and promotion. If performing like an asshole in a public forum creates the perverse impression that you are more clever than others who do not, there is a clear incentive to behave this way.

[Inger Mewburn @thesiswhisperer](#)

Mental Resilience for Grad School



Emily Darling @emilysdarling

13h

@baumlab @ChrisDarimont @brettfavaro Cherish good friends/colleagues to work with, don't take yourself too seriously #gradschoolsuvival

[View conversation](#)



Brett Favaro @brettfavaro

14h

@baumlab Financial strain is stressor. Find ways to make cash while working on thesis, Eg. Thru @discovermitacs internship

[View conversation](#)



Gabrielle M Miller @GabiMMiller

12h

@baumlab Oh and remember your thesis isnt your last word.

[View conversation](#)



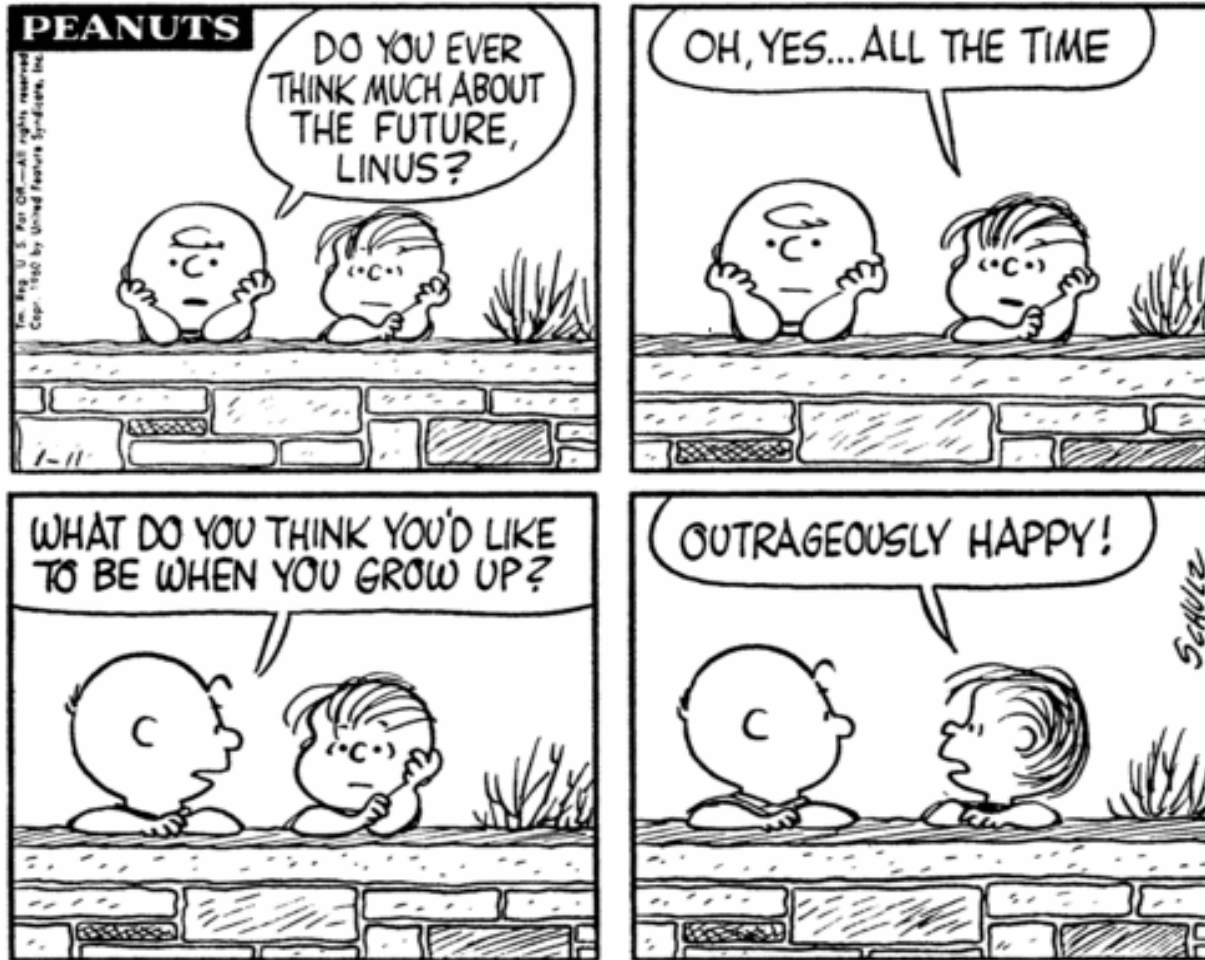
Gabrielle M Miller @GabiMMiller

12h

@baumlab Def have a hobby! Or 2. V easy to make your thesis your life.

[View conversation](#)

I. Do what you love



I. Do what you love

“Research is formalized curiosity”

– Zora Neale Hurston



Barbara Frei @barbalink

3h

@baumlab Keep in touch with what made you love science in the first place (as ecologist -> spend time outside!)

[View conversation](#)



Chris Darimont @ChrisDarimont

12h

@baumlab: 4 me, it's remembering why I do this (awe, passion) & doing things I'm not rewarded for. Oh - & 20% surfing too!

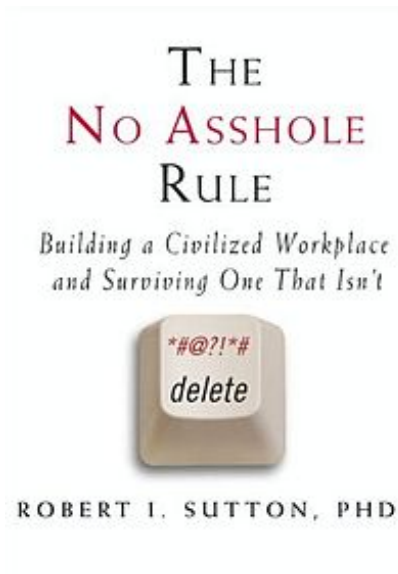
[View conversation](#)



I. Do what you love

and work with nice people while
you're doing it

Because life's too short to work with bullies, jerks, or ego-maniacs



2. Develop a support network

Most important support network is your family:
choose a partner who will support your career!

2. Develop a support network

of real friends who are at the same stage as you

and who understand what you're going through

2. Develop a support network

The care and maintenance of your adviser

Graduate students bear as much responsibility as their mentors for ensuring that they are well guided through their degrees, say **Hugh Kearns** and **Maria Gardiner**.

Ever since the advent of graduate school, students have complained about their advisers. It is almost an article of faith. The adviser is never available or is too available; gives too much feedback or not enough; is too critical or isn't providing enough direction; and so on. Exchanging horror stories with other students is a great way to bond. But advising goes both ways — and if, after careful reflection on their own studies and progress, students determine that they are not getting the guidance they require, they must address the deficiencies.

It is not surprising that advisers figure large in graduate students' conversations. In 2009, the US Council of Graduate Schools in Washington DC reported survey results showing that 65% of the 1,856 doctoral students who responded identified mentoring or advising as a main factor in PhD completion. Our own research at Flinders University in Adelaide, Australia, and our experience at graduate-student workshops across the world suggest that the adviser-student relationship has a big impact on completion time. It certainly influences whether students are still smiling at the end of their degrees!

Students often assume that once they call someone an adviser, he or she automatically acquires all the skills of advising. After all, if

candidate does this, the better. If you're not getting feedback, clear direction or the necessary resources, then you must do something about it. What does this mean in practice? Let us take some examples.

MEETINGS

A comment we often hear at our workshops is, "My adviser is lovely but he/she is just so busy that we never get to talk about my thesis". And our response is, "Yes, your adviser is busy. All advisers are busy and will continue to be busy. Regardless, you need to organize meetings where you can get real face time and talk about your thesis." We're not recommending a quick chat in the coffee room or a brief word in the lab. Nor do we mean a lab meeting.



do in the next two weeks; the next meeting.

This all sounds very straightforward. But if more students followed these steps, many adviser-student issues could be resolved.

FEEDBACK

Again, in an ideal world, your adviser would be skilled at providing supportive comments, delicate in pointing out areas for improvement and deft at intuitively knowing the level of feedback you seek. But this is a fantasy. One student described her feedback experience as similar to being a victim in a drive-by shooting — she handed over her work, it was riddled with bullets and she was left with a bloodied mess as the shooter drove off.

To be fair, e-mailing a chapter to an adviser and saying "Give me feedback" is like walking into a restaurant and saying "Give me food." You need to be a bit more specific. When handing over your work, identify the type of feedback you are looking for. You might say, "This is an early draft, so I just want feedback on the overall direction," or "Please focus on the discussion on page six." If the feedback you get isn't helpful, ask for more detail. Maintaining your adviser means asking for what you need rather than hoping

2. Develop a support network

Build a relationship with a mentor



LEAN IN

WOMEN, WORK, AND
THE WILL TO LEAD

SHERYL SANDBERG

- encourage you, make key introductions, and teach by example;
- ‘Excel and you will get a mentor’: mentors select protégés based on performance and potential. Be excellent, be prepared;
- Mentors continue to invest when mentees use their time well and are truly open to feedback
- Follow up

3. Be the best scientist you can be

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Focus on scientific discovery

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Productive stupidity means being ignorant by choice. Focusing on important questions puts us in the awkward position of being ignorant. One of the beautiful things about science is that it allows us to bumble along, getting it wrong time after time, and feel perfectly fine as long as we learn something each time. No doubt, this can be difficult for students who are accustomed to getting the answers right. No doubt, reasonable levels of confidence and emotional resilience help, but I think scientific education might do more to ease what is a very big transition: from learning what other people once discovered to making your own discoveries. The more comfortable we become with being stupid, the deeper we will wade into the unknown and the more likely we are to make big discoveries.

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Embrace the creativity in science



“The mere formulation of a problem is far more often essential than its solution, which may be merely a matter of mathematical or experimental skills. To raise new questions, new possibilities, to regard old problems from a new angle requires creative imagination and marks real advances in science.”

-Einstein

The path of creativity is strewn with the bones of those consumed by the vultures of mediocrity, accountability, and responsibility. One cannot schedule creative breakthroughs, budget for them, or prove them in advance to a review panel. An entirely different, flexible approach to science is necessary to encourage creativity.

Give yourself time to think

<p>Proposal of C. Darwin</p> <p>This proposal is for the P.I., a geologist by training, to solve the problem of speciation.</p> <p>Method: Collect every possible fact and formulate an all-inclusive theory.</p> <p>Duration: 20 years.</p>
<p>Proposal of A. Einstein</p> <p>This proposal is for the study of the nature of space and time.</p> <p>Method: Conduct thought experiments in armchair, supported by abstract mathematics.</p> <p>Duration: 1 lifetime.</p>

Figure 2. What would have happened if Darwin and Einstein as young men had needed to apply for government support? Their probability of getting past the grant reviewers would be similar to a snowball surviving in Hell.

Loehle 1990 A Guide to Increased Creativity in Research – inspiration or perspiration?



Figure 3. Charles Darwin engaged in the arcane and almost lost art that today we would label *thinking*. Illustration by Richard Loehle.

3. Be the best scientist you can be

Know your stuff

Focus on scientific discovery

by accepting 'stupidity', embracing creativity, giving yourself time to think
keeping an open mind

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Know your stuff

Focus on scientific discovery

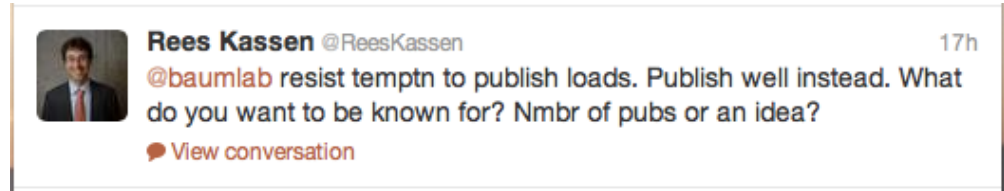
by accepting 'stupidity', embracing creativity, giving yourself time to think
keeping an open mind

Be persistent

even the best scientists are routinely rejected

Publish well

- Resist temptation for M.P.U.
- It's much better to produce high quality research that will stand the test of time
- Respect from peers (and those higher up) isn't earned by # of publications, but rather by depth of ideas and quality of work
- Authorship: discuss it early, be clear about expectations, keep lines of communication open



CONCEPTS AND QUESTIONS

Authorship in ecology: attribution, accountability, and responsibility

435

Jake F Weltzin^{1*}, R Travis Belote², Leigh T Williams¹, Jason K Keller³, and E Cayenne Engel¹

Quality and quantity of publications are among the most important measures determining the success of ecologists. The past 50 years have seen a steady rise in the number of researchers and collaborative manuscripts, and a corresponding increase in multi-authored articles. Despite these increases, there remains a shortage of useful and definitive guidelines to aid ecologists in addressing authorship issues, leading to a lack of consistency in what the term “author” really means. Deciding where to draw the line between those who have earned authorship and those who are more appropriately credited in the acknowledgments may be one of the more challenging aspects of authorship. Here, we borrow ideas from other scientific disciplines and

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Publish well

Guard your integrity

4. Treat your time as the precious commodity that it is

Figure out what the 'big rocks' are in your life



Don't confuse 'fixed times' with importance

4. Treat your time as the precious commodity that it is

Figure out what the 'big rocks' are in your life

Learn to say no.

Recognize the opportunity cost of each commitment

4. Treat your time as the precious commodity that it is

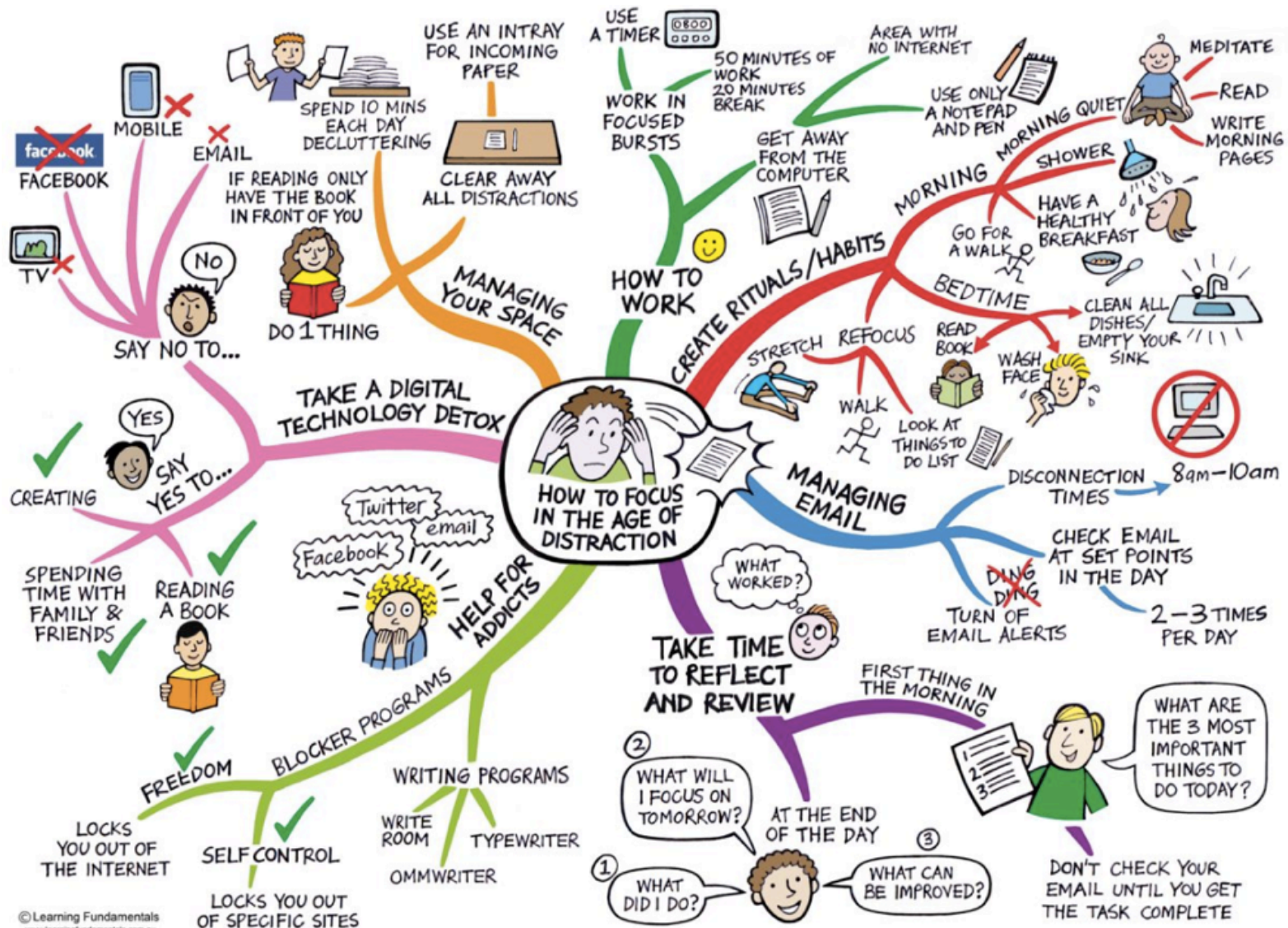
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Develop good work habits

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Develop good work habits

The pomodoro technique

According to wikipedia there are 5 steps:

1. Decide on the task to be done
2. Set the pomodoro (timer) to 25 minutes
3. Work on the task until the timer rings; record with an x
4. Take a short break (3-5 minutes)
5. Every four "pomodori" take a longer break (15–30 minutes)

Dr Inger Mewburn

Director of research training, ANU; Part of the Research Bites program



'Pomodoro' means 'tomato' in Italian. name comes from the shape of a time



TOPICS

The Thesis Whisperer

Just like the horse whisperer – but with more pages

Category Archives: Getting things done

Advice on boosting productivity and staying sane

Doing your dissertation with Microsoft Word: a book review

October 9, 2013 · by Thesis Whisperer | in Book Reviews, Getting things done | tagged formatting, microsoft word, thesis production | 14 Comments

As many regular readers of this blog will know, I am NOT a huge fan of Microsoft Word for writing. For writing journal articles and books I use

4. Treat your time as the precious commodity that it is

Figure out what the 'big rocks' are in your life

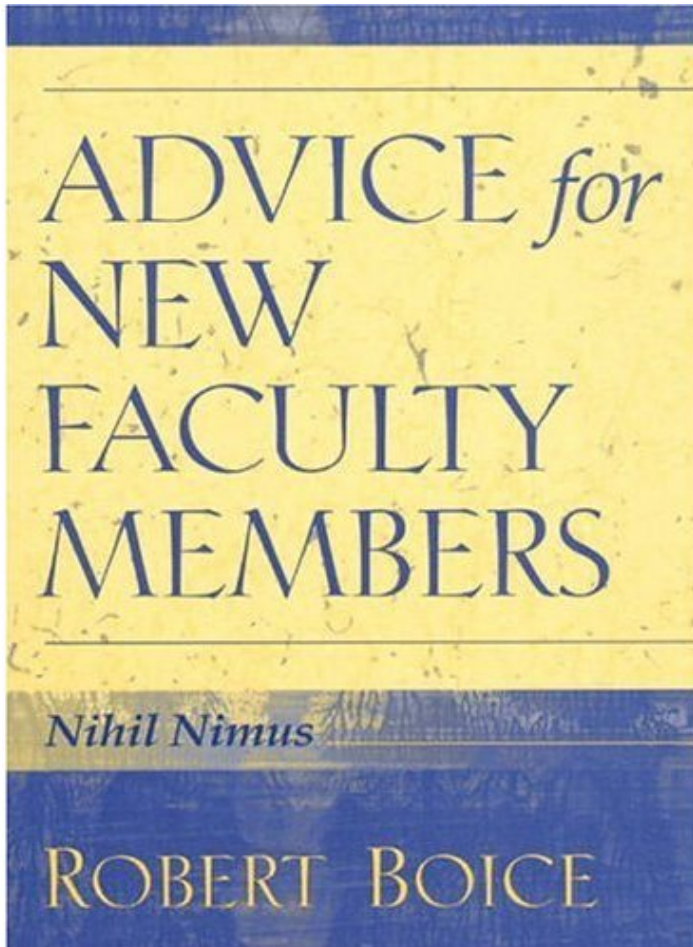
Learn to say no.

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Develop good work habits

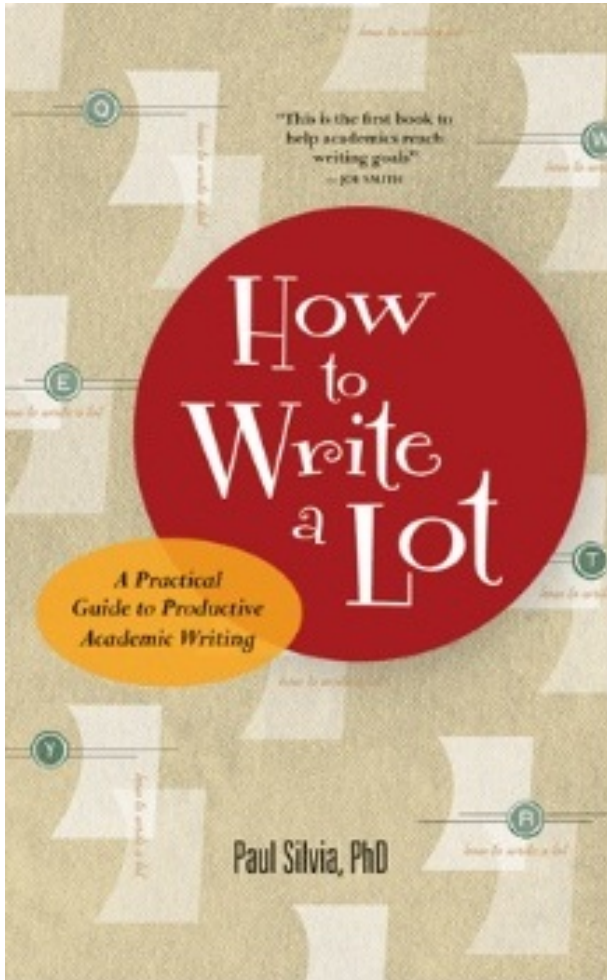
Set short-and long-term goals, Prioritize, Track your time, Turn off the internet

Develop good work habits: Write regularly



“Boice found that junior professors who developed regular writing habits, avoided procrastination, balanced teaching with other work activities, and sought help from colleagues early ended up publishing much more, received better teaching evaluations, and were much happier than their stressed-out peers.”

Develop good work habits: Write regularly



Want to Publish More? Then Train Like an Athlete.

For many years, I have observed new faculty members devote enormous time to their teaching, neglecting their research. When I recommend putting a greater priority on research, they listen appreciatively but postpone action until "things aren't so busy" — a time that never comes.

Then, in early 2008, I came across a short, punchy book by Tara Gray titled *Publish & Flourish* (Gray, 2005). It spells out a 12-step plan to become a prolific academic author and cites research to back up the plan. Gray's plan enabled me to support faculty and graduate students to become much more productive.

The foundation of Gray's 12-step program is quite simple: write for 15 to 30 minutes every day. Yes, that's it: the core requirement is daily writing, at least five days a week, preferably seven.

Gray draws heavily on the work of Robert Boice, who studied the habits of productive new academics (Boice 1990, 2000) and found that daily writing is the key to success. Should this be surprising? Coaches expect their athletes — swimmers, runners and so forth — to train daily. Junior athletes are expected to show up for training every day, at the same time. Swimmers put in the laps and runners put in the miles. This sort of training enables dedicated high school athletes to achieve times better than world champions a century ago.

Rick Reis, Tomorrow's Professor

4. Treat your time as the precious commodity that it is

Figure out what the 'big rocks' are in your life

Learn to say no.

Recognize the opportunity cost of each commitment

Develop good work habits

Set short-and long-term goals, Prioritize, Track your time, Turn off the internet

Write regularly

Invest in your own professional development

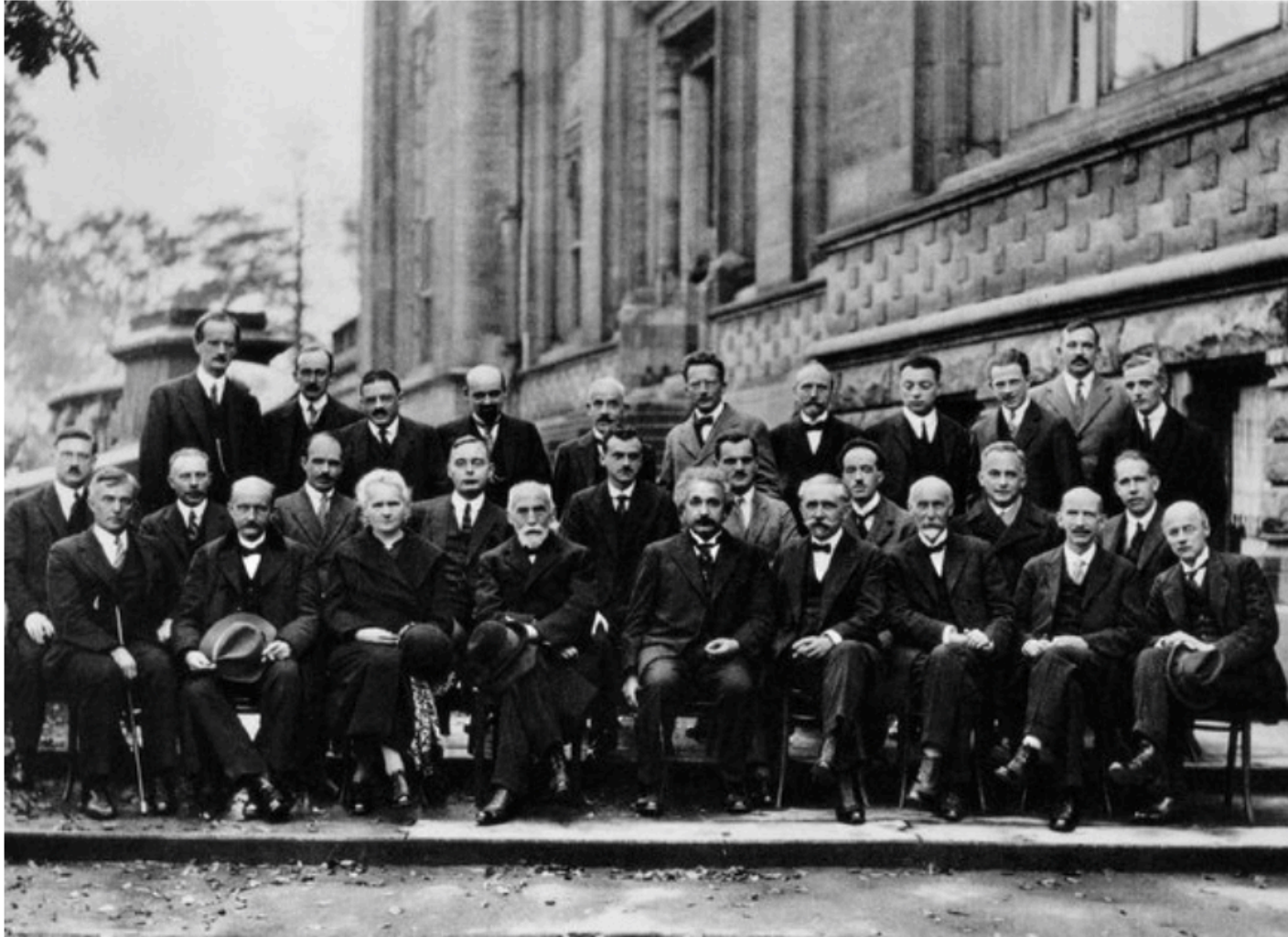
5. It's not all about you(!)

Do unto others as you would have done to you

- Be the best colleague, mentor, teacher, collaborator you can be

Recognize that gender and racial bias is still a significant problem

Why Are There Still So Few Women in Science?



Mondadori Portfolio, via Getty Images

At the Solvay Conference on Physics in 1927, the only woman in attendance was Marie Curie (bottom row, third from left).

By EILEEN POLLACK

Published: October 3, 2013 |  1006 Comments

<http://www.nytimes.com>

Recognize that gender and racial bias is still a significant problem

Science faculty's subtle gender biases favor male students

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Despite efforts to recruit and retain more women, a stark gender disparity persists within academic science. Abundant research has demonstrated gender bias in many demographic groups, but has yet to experimentally investigate whether science faculty exhibit a bias against female students that could contribute to the gender disparity in academic science. In a randomized double-blind study ($n = 127$), science faculty from research-intensive universities rated the application materials of a student—who was randomly assigned either a male or female name—for a laboratory manager position. Faculty participants rated the male applicant as significantly more competent and hireable than the (identical) female applicant. These participants also selected a higher starting salary and offered more career mentoring to the male applicant. The gender of the faculty participants did not affect responses, such that female and male faculty were equally likely to exhibit bias against the female student. Mediation analyses indicated that the female student was less likely to be hired because she was viewed as less competent. We also assessed faculty participants' preexisting subtle bias against women using a standard instrument and found that preexisting subtle bias against women played a moderating role, such that subtle bias against women was associated with less support for the female student, but was unrelated to reactions to the male student. These results suggest that interventions addressing faculty gender bias might advance the goal of increasing the participation of women in science.

Gender schemas / mental models

It really is a mountain out of a molehill:

Martell, Lane, and Emrich's (1996) model assumed a tiny bias in favor of men, which accounted for only 1% of variance in promotion.

Operating at a systematic minute disadvantage can have substantial long term effects.

After many iterations the top level was 65% male.

Invest time in helping to level the playing field

Why?

- It's the right thing to do
- You should want the best person on “your team” (either as your colleague, or student etc.)

How?

- Become informed
- Stand up for what's right. Be vocal. Is everyone being treated fairly?

Gender Bias Learning Project
A zany brainy look at a serious subject

A project of the Center for WorkLife Law UC Hastings College of the Law

HOME GENDER BIAS **BIAS PATTERNS** STRATEGIES GENDER BIAS BINGO ABOUT US CONTACT

Patterns of Gender Bias

Gender bias falls into four basic patterns. Naming them makes it easier to spot them, and having a common language to describe the different types of bias makes it harder for others to shrug off or ignore complaints.

Four Distinct Patterns

Learn about the four main gender bias patterns listed below. Does one of these ring a bell with you? Or has someone you know run up against one? Learn to play the game of gender equality—and win.

PROVE IT AGAIN! When women have to work twice as hard to get half as far.		MATERNAL WALL When mothers are assumed to be incompetent and uncommitted.	
DOUBLE BIND When women must choose between being liked and being respected.		GENDER WARS When gender bias turns into conflicts among women.	

www.genderbiasbingo.com/index.html

Gender Equity Project: www.hunter.cuny.edu/genderequity/

Share your science and your love of science the moral imperative to communicate science to the public

Government of Canada Must Act to Protect Atlantic

The western population of Atlantic bluefin tuna has declined by 64% since 1970. Bluefin tuna are considered an iconic ocean species, not just in Canada, but globally. As part of addressing this decline, the government of Canada has conducted public consultations on the consequences of listing bluefin tuna as endangered under the Species at Risk Act (SARA) and a recommendation on listing is expected in early 2015.

In 2011, the esteemed group of scientists that make up the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) concluded that the giant Atlantic bluefin tuna that visit Canadian waters be considered endangered. The primary threat to the tuna population, and indeed the primary reason for its decline in the first place, is overfishing. Species that are designated under the Species at Risk Act must, by law, have a recovery plan and associated action plan, which entails no directed harm to the species.

Unfortunately in 2012, Canada requested an increase in fishing quotas for this very same species at the International Commission for the Conservation of Atlantic Tunas (ICCAT). This not only serves to undermine the SARA process, but is also confusing to fishermen and the Canadian public. The solution cannot be more overfishing; it has to be limiting the catch to a level based on precautionary scientific principles, which Canada first introduced into the ICCAT process.

The Atlantic Canadian bluefin tuna fishery is, in many ways, one of Canada's most well-regulated. The majority of the quota is caught using low impact fishing gear: one hook and one line, or a "rod and reel," and the annual fishery is critical to many coastal communities in Atlantic Canada. According to the Fisheries Act, fisheries resources are managed by the Canadian government for the public good. What good is

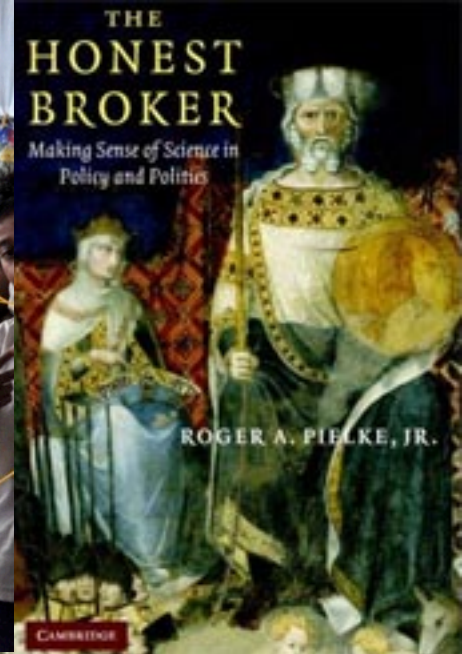
served in risking potential future species?

Canada has yet to publicize its position. The management recovery remains the same, for a total catch. No new scientific advice will be a stock assessment in 2015. As such, maintaining catch at current levels is expected to allow the spawning base to allow scientists to develop a clear population growth and recovery trajectory suggest that recovery of West may be beginning, and as such, in at such a critical time may undermine management and conservation efforts.

At the upcoming ICCAT meeting in government of Canada to ensure the trained at 1750 metric tonnes, with any scientific recommendation. A endangered by Canadian scientists amount of protection.

Frank Suter
Dr. Paul Beaman
Professor of Biology
Dalhousie University

Dr. Ryan
Dr. Ryan Wiersma
Professor of Marine
British Columbia



Sponsored by the Ecology Action Centre



Brett Favaro

Conservation biologist

GET UPDATES FROM BRETT FAVARO



The Science We Can Trust on Climate Change

Posted: 10/03/2013 6:35 pm

The summary of the fifth Intergovernmental Panel on Climate Change (IPCC) report has been released, and it confirms that climate change is real, dangerous, and caused by us. More than 97% of science papers that take a position on climate change support this conclusion.

This unprecedented level of scientific certainty has not stopped legions of pundits from rejecting evidence, questioning scientists' motives and qualifications, and proposing ever-



6. Go forth and be happy!

You're off to Great Places!
Today is your day!
Your mountain
is waiting.
So...
get on your way!



Create a 'feelgood' email folder

I created a "feelgood" email folder

I have an email folder named "feelgood". It's a little silly, but effective. Every time I tell my colleagues about this one, they first laugh, and then seriously consider making one for themselves. Here's what's in it:

The eloquent and touching email my MIT advisor wrote to our group about how proud he was to see one of his students choose to go into academia. The email from the Harvard faculty member who offered me the job, and then went on and on saying how excited she was that I was joining. The first paper acceptance I got. The first award I got. The random email I got from a famous professor who I totally idolize (oh my god, they know my name!). The junior faculty member who said they'd save sent me to cheer me up. Basically pointers to moments when I felt happy.

One of the hardest things for me about this job is that there are so many ways to get rejected, and those linger a lot longer than the feeling of success when something good happens. Grant rejections, harsh paper reviews, bad teaching reviews — all

do it? And I can't blame them for asking, because I am scared by those



Emily Darling @emilysdarling

12h

@baumlab @ChrisDarimont @brettfavaro And @redlipblenny taught me (among many things) to keep a 'nice emails' folder for dreary days

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Celebrate Successes Big and Small

 **Brett Favaro** @brettfavaro 13h
@baumlab Science is highly critical by nature - this can be draining.
Build positivity by taking time to recognize small successes.
Expand

 **Chris Darimont** @ChrisDarimont 12h
@brettfavaro @baumlab agreed. Especially the success of others.
And if criticism warranted, being gentle(wo)manly about it
Hide conversation Reply Retweet Favorite More

You Can Do It



*The superwoman
myth
-Isabelle Côté, SFU*

JULY/AUGUST 2012

Why Women Still Can't Have It All

It's time to stop fooling ourselves, says a woman who left a position of power: the women who have managed to be both mothers and top professionals are superhuman, rich, or self-employed. If we truly believe in equal opportunity for all women, here's what has to change.

ANNE-MARIE SLAUGHTER | JUN 13 2012, 10:15 AM ET

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Phillip Toledano

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EIGHTEEN MONTHS INTO my job as the first woman director of policy planning at the State Department, a foreign-policy dream job that traces its origins back to George Kennan, I found myself in New York, at the United Nations' annual assemblage of every foreign minister and head of state in the world. On a Wednesday evening, President and Mrs. Obama hosted a glamorous reception at the American Museum of Natural History. I sipped champagne, greeted foreign dignitaries, and mingled. But I could not stop thinking about my 14-year-old son, who had started eighth grade three weeks earlier and was already resuming what had become his pattern of skipping homework, disrupting classes, failing math, and tuning out any adult who tried to reach him. Over the summer, we had barely spoken to each other—or, more accurately, he had barely spoken to me. And the previous spring I had received

Recognize that **no one** – man or woman – has ever ‘had it all’

There simply are not enough hours in the day

Be the Best Whole Person You Can Be

And in that moment it suddenly dawned on me what was taking me down. We (myself included) admire the obsessively dedicated. At work we hail the person for whom science and teaching is above all else, who forgets to eat and drink while working feverously on getting the right answer, who is always there to have dinner and discussion with eager undergrads. At home we admire the parent who sacrificed everything for the sake of a better life for their children, even at great personal expense. The best scientists. The best parents. Anything less is not giving it your best.

And then I had an even more depressing epiphany. That in such a world I was destined to suck at both.

Needless to say it took a lot of time, and a lot of tears, for me to dig myself out of that hole. And when I finally did, it came in the form of another epiphany. That what I can do, is try to be the best whole person that I can be. And that is *not* a compromise. That *is* me giving it my very best. I'm pretty sure that the best scientists by the above definition are not in the running for most dedicated parent or most supportive spouse, and vice versa. And I'm not interested in either of those one-sided lives. I am obsessively dedicated to being the best whole person I can be. It is possible that my best whole is not good enough for Harvard, or for my marriage; I have to accept that both may choose to find someone else who is a better fit. But even if I don't rank amongst the best junior faculty list, or the best spouses list, I am sure there is a place in the world where I can bring value.

Because frankly, my best whole person is pretty damn good.

-Radhika Nagpal, Harvard School of Engineering and Applied Sciences

Have fun and maintain your sense of humour

“If I’m not having fun, I will quit and do something else. There are lots of ways to live a meaningful life.....at all levels of academia, almost regardless of field and university, we are suffering from a similar myth: that this profession demands – even deserves – unmitigated dedication at the expense of self and family. This myth is more than about tenure-track, it is the very myth of being a “real” scholar. By my confession, I hope to at least make some chinks in the armor of that myth.”

*-Radhika Nagpal,
Harvard School of Engineering and Applied Sciences*



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Baum Lab @ Uvic

Applied Ecology for Impacted Oceans

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<http://web.uvic.ca/~ecol/index.html>



Isabelle M Côté @redlipblenny

3h

@baumlab 'Mental resilience' tactics: Work with nice people. Don't be afraid to say no. Never lose sight of the big picture (ie LIFE!)

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Amanda Vincent @AmandaVincent1

19h

@baumlab Mental resilience. Seek solutions. Pointing out problems generates nothing. Show courage. Share your knowledge. Take weekends off.

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Steven J. Cooke @SJC_fishy

16h

@AmandaVincent1 @baumlab Collaborate with fun & creative people; Protect your thinking & writing time; Smile; Be curious; Solve problems.

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Barbara Frei @barbalink

3h

@baumlab Have a healthy, happy life (friends, family, hobbies, sports, etc.) Sacrifice is inevitable, but be careful how much #balance

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