General life/academic advice

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November 4, 2022

1 Goals and time management

Set everything from long-term goals to daily goals. Let long-term goals motivate you (like conserving biodiversity) but keep short-term goals manageable. Don't write your thesis, write a page. If you are falling behind in reaching those goals, ask yourself why, then do something about it.

You are working for yourself (and more broadly society and biodiversity, no pressure). The harder and more effectively you work, the better it is for you. But don't fall in the trap of just "putting in hours". Work hard and concentrate hard, and enjoy the work and concentration. But most importantly, stay happy and healthy. When we are happy our mindset and mood are positive: we are smarter, more motivated, and thus more successful. Happiness begets success, not the other way around. So make maintaining your happiness a priority, and productivity will follow.

Strategies I find effective for time management (from Deep Work, by Cal Newport, Getting things Done by David Allen)

1. Keep track of the number of hours of focused, deep work you do each day. Strive for four hours. Deep work includes something you cannot train someone to do in a few days. Examples include writing, coding, reading a manuscript, identifying specimens. Keeping track of the work helps you celebrate it! If you wait to celebrate your accomplishments until the culmination of the work (i.e., a grant is accepted, a paper is published), that's not enough celebration! Shallow work includes pinning/sorting/labeling specimens, filling out forms, meetings, most emails.

2. Ritualize your deep work : 1) Where you will work for and how long 2) How you will work once you start 3) How you will support your work

3. Don't let your percent of deep work fall below your shallow work. It will likely make you feel frustrated.

4. Have a bad day where you did not get much deep work done? Work out why, take come notes, and make plans to avoid this in the future.

5. Strategy: schedule your internet time, avoid it completely all other times if work requires quick responses to emails, schedule internet time

6. break tasks into actions (i.e., SMART goals), and have a sensible task manager. Transfer all of the tasks in your brain into that task manager (including things like buy batteries, etc.) and your calendar.

Each year will we will make a professional development plan, and discussion our plans and a group, and one-on-one with me.

2 Begin to imagine your research program

If you plan to stay in academia, begin to this of what your lab's theme/research mission will be. Cultivate answers to the following questions:

1. So, what do you do?
2. How does your work fit into the "big picture" – what major questions does it address?
3. How do you differentiate your work from your Ph.D or postdoctoral adviser's work?

3 Learn to talk science

From John Thompson, a highly respected evolutionary biologist:

You will spend much of the rest of your life trying to explain concepts, hypotheses, and results to others. The ability to do so will not develop miraculously. You must learn from experience how to get your point across in research seminars, in classrooms, and in meetings with people outside your discipline. If you want to convince colleagues that you have something important to say, you need to be able to keep them awake and interested during a seminar or a discussion. Think about how often you have been bored by having to listen to a speaker who wastes an hour of your time as he or she mumbles or reads to you — slide after slide — a disjointed talk that makes no important or interesting point. The same applies to giving lectures to students. With so many capable scientists competing for jobs, universities should be able to keep only those faculty who are both good researchers and good teachers. With the keen competition for jobs that now occurs, that is what will happen more often in the future.

So get all the experience you can get and learn from your mistakes. Watch carefully how others give seminars and lectures. Take the best from what you see in them and work out which of those techniques will work well for you. The structure of a good talk is completely different from the structure of a scientific paper. Your goal should be not only to convey information on your recent work but also to put that information into the kind of broader context that is not possible in a scientific paper. The most boring talks are those are nothing more than a description of the methods and an endless series of tables and graphs. Your audience deserves more than these details, as important as they are. The audience deserves to hear from you what these results mean in a broader sense and why they should care.

I will also add that finding your voice can be difficult. You will look at your colleagues confidently talk about their projects and wonder how they are so amazing. They are no more brilliant than you, they just play the part better. Find a way to instill confidence within yourself. Celebrate your successes! Stay away from people who are not your advocates. Don't compare yourself to others, just work as hard as you can toward your goals. Become comfortable with what you know, and what you do not know. Treat people like colleagues and you will be treated like a colleague. Never say the words "just" or "only" when introducing yourself or describing your work.

4 Begin to develop your mentoring, outreach and teaching philosophies and skills

As a scientist my goals are to promote biodiversity conservation (though research, teaching and outreach) and promote diversity in the sciences. Maybe you have similar goals?

As a graduate student/post-doc, you will continuously need to make decisions about what projects and outreach events to focus on. To help you prioritize, begin to assemble your general goals as a scientist and choose based on advancing those goals.

Mentoring is at the core of being a scientist. And doing it effectively is hard. As a lab we will draft mentoring philosophies and plans for mentoring undergraduates (and graduate students, for post-docs). Each year we will revisit these plans and adapt them based on our experiences in the last year.

Some general guidelines I abide by:

1. Give positive feedback along.
2. Find ways to convey that you believe your students are capable, and that you believe they have the potential to build on their knowledge and skills.
3. Be a whole person, be a witness, but avoid becoming entangled in peoples' lives (i.e., set professional boundaries)
4. Set expectations of all kinds (for labwork, for the project, for the conversation)
5. Be accessible, but try to schedule the time you spend helping/giving advice to encourage independence

5 Seek additional mentors

Expose yourself to different ideas, methods, and mentoring strategies. Mentors can be faculty, post-docs and graduate students. Talk with successful people in your profession whenever you can. **Rarely will you find someone from which you cannot learn**. If you want to go into academia, begin now to understand what skills you need beyond research and teaching to be successful in the long term. If you want to use your skills to become a policy maker, start talking now with policy makers and engage in some policy-making activities when given the chance. These are just two examples. The general point is that you are not "just a graduate student". You are a professional who is in the process of developing and honing a wide range of skills and perspectives that will allow you to attain your goals in an ongoing and seamless way.

For graduate students in particular, start thinking about your committee dream team early and cultivate relationships with those faculty. You can take their classes, and if none are offered, send them a email. Ask them about the directions their lab is going, but do your research and be able to talk to them about their past work. **Faculty members are people too!** I will happily talk about our lab's future research plans for hours and I will be excited to meet an early career researcher like yourself! It took becoming a professor for me to stop being intimidated by talking to professors! You don't need to wait as long as I did!

To avoid adding to the email/logistical load most faculty face, however, check to see if they have open office hours before. If not, write, clear, easy to read emails that suggest a meeting time. Avoid back and forth on scheduling as much as possible. Write "process centric" emails:

- When sending or replying to an email, identify the goal this emerging email thread is trying to achieve. For example, perhaps its goal is to synchronize a plan for an upcoming meeting with a collaborator or to agree on a time to grab coffee.

- Next, come up with a process that gets you and your correspondent to this goal while minimizing the number of back and forth messages required.

- Explain this process in the email so that you and your recipient are on the same page.

See Cal Newport's blog for examples.

Professional meetings are also a great time to meet people you have academic crushes on. Email them ahead of time, ask to have lunch with time and discuss their future research directions.

For those thinking about a career in academia, this is particularly important for helping you design your future lab. I once asked a new faculty member what she learned most from her post-doc. She replied "I got to see a different way of running a lab and mentoring". Don't wait until your post-doc. Start now. How would you run things? Also, we adaptivly manage the Ponisio lab, so perhaps we can try out new strategies in our lab and see what happens.

5.1 How to get help

Though we are all in the same boat as far as trying to promote biodiversity conservation and science, the structure of academia means that helping people can feel like it is not helping you (in the sense that you are not spending time on your own projects). When encountering challenges with the science, lab work or computational challenges, first sit down and think about solutions yourself, then look for answers in the literature, then solicit advice from fellow lab-mates, students, and post-docs, then seek advice of the PI. Some tips for getting colleagues to help:

- make sure to thank people sincerely for their help! Like mentee relationships, positive feedback is important to colleagues and mentors.

- talk about the expectations of the help from the start. What level of comitment is the person able/willing to give, what were you hoping to receive. Lack of clear expectations can lead to frusteration from both parties.

- if the person you are asking help of can substantially contribute to the project, offer them coauthorship. It means she/he gets tangible credit for their help. Build a network of coauthors what compliment your skills.

- try not to interrupt people in their work days and instead schedule a time with them.

- if you want to bounce ideas off a person ask for general advise, invite them to lunch/coffee for a more social vibe.

- trade help explicitly (e.g., R help for lab help). You don't want to "keep score" but sometimes it helps when everyone feels like they are benefiting from an interaction (back to the clear expectations).

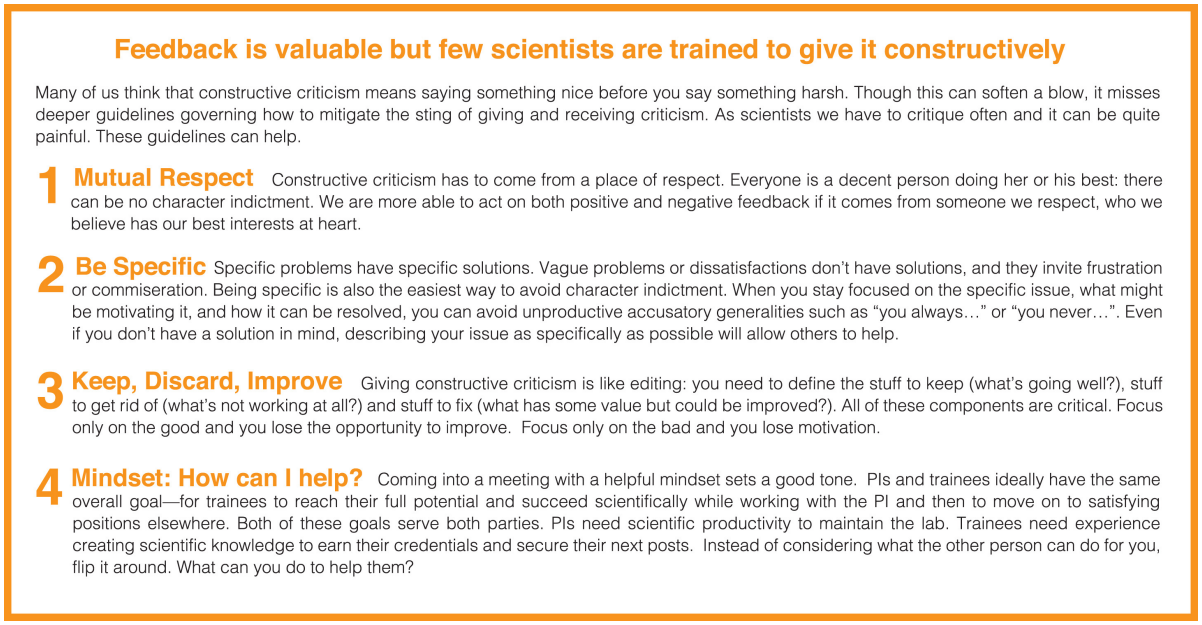

Figure 1: From Vincent et al. 2015

5.2 Giving and getting feedback

Summarized from Vincent et al. 2015:

Our profession requires us to evaluate one another's work rigorously, and in a wide variety of circumstances such as papers, grants and presentations. Devoting time and attention to give feedback is generous, but giving and receiving feedback can be emotionally difficult if it's perceived as aggressive or dismissive. We strive to give specific, productive feedback to each other and our colleagues — the type of feedback that you would most like to receive yourself. These guidelines are sometimes helpful: 1) describe something the author/presenter should keep; 2) describe something the author/presenter should throw away; 3) describe something the author/presenter should improve. It's also useful to think about separating your comments about the content of the work (the ideas and data), from the presentation of the work (how they were communicated, verbally or graphically).

5.2.1 Communication algorithm

Person A:

- Make a observation about a behavior/action "I have noticed that you tend to come late to our meetings"
- Describe how that behavior/action makes you feel using I statements "That makes me feel as though you do not value my time"
- Describe what those feelings make you want "I would appreciate it if you came on time to our meetings, or let me know in advance if you need to be late"

Person B:

- Start with validation! "I understand how you are feeling" "I hear you" "lo siento"

- Add in some empathy "That sounds really frustrating, and I want you to feel respected. I am sorry I made you feel this way"
- Can you give them what they want? "I will try to be on time for meetings in the future"

6 Establish your research network

Like mentoring, your research community will not just fall into your lap. You have to actively work for and cultivate it. This is particularly true of underrepresented groups in science who will tend to be peripheral nodes in the academic community which results in being less likely to be invited to participate in workshops, give talks, be on panels etc. Tips:

- Go to small conferences where your work will not be lost in the multitude
- Plan a workshop/symposium and invite yourself/people you want to engage with
- At conferences identify key people with which you wish to engage and invite them to chat over lunch/coffee.
- You can help others by being conscious of maintaining a gender balance when you are making invitations to a symposium/workshop/panel etc. Having a diverse group will make for a better discussion!

7 Be an advocate, fight unconscious bias, empower others

Science is done by humans. Humans are social, power dynamics exist. Humans are biased. As a latina, female scientist who wears dresses, one of my primary (and ongoing) struggles has been learning to respond to and combat biases and empower myself and others. Some strategies:

7.1 The Buddy system

1. Designate a Bias Buddy (Strongest when different race, gender, religion, etc.)
2. Remind each other before meetings, events
3. Call out interruptions. Ex: "I want to hear what Sarah has to say."
4. Give credit where credit is due. Ex: "I think Julia mentioned that a few minutes ago.""
5. Give emotional support. Ex: "She was not an advocate to you in there."

7.2 Responding to unconscious biases

When faced with a micro-aggression (from the Unconsciousness Project):

1. Start with empathy. Useful starting place: "What do you mean by that?".
2. Don't need pitchforks; just cocktail forks (i.e., a casual, un-antagonistic conversation)
3. Use I statements, they cannot logic away your feelings and it makes people less defensive

4. Explain why you think it's a problem

5. Make explicit requests. This empowers the offending party with an action item

8 Maintain your emotional well-being

In graduate school you develop not only as a researcher, but as a person. Both types of growth are valuable, and will put you on a path to becoming an amazing scientist, communicator, mentor and teacher. All of this growth, however, can be overwhelming.

At the same time, the curse of academia is uncertainty. It is difficult to find funding for research and fellowships, and hard to find jobs. You spend a lot of time wondering what projects to work on, what questions are interesting. After your phd you generally have to move to a new place, leaving your friend network and lab, and start over again. The same thing happen after your post-doc when you get the job of your dreams.

Do what you need to stay healthy. If you are overworked, you will not be doing good science. Take a break, come back re-charged. **Take vacations**. Set a time during the week where you are not allowed to do work (Saturday perhaps?) and maximize the utility of that day (i.e., do something that makes you enjoy life and feel excited about the week ahead, not just chores and checking facebook).

If you need to talk to me about sometime in your life that is effecting your personal/academic well-being, please do so. I will be happy to listen.

But, I highly recommend that everyone sees a therapist. UO mental health services are amazing, and copays are $15/10 graduate/post-doc for unlimited sessions.

Here are some strategies for capitalizing on the "Happiness advantage" (from *The Happiness advantage* by Shawn Achor). Happiness begets productivity and success, not the other way around!

1. The Happiness Advantage

    - When we are happy—when our mindset and mood are positive — we are smarter, more motivated, and thus more successful. Happiness is the center, and success revolves around it.
    - Happiness boosters: meditation, looking forward to something, commit conscious acts of kindness, exercise, Spend money (but NOT on Stuff), exercise a skill or strength

2. The Fulcrum & The Lever: Changing your Performance by changing your Mindset

    - Happiness is not about lying to ourselves, or turning a blind eye to the negative, but about adjusting our brain so that we see the ways to rise above our circumstances.
    - The mental construction of our daily activities, more than the activity itself, defines our reality.
    - The heart of the challenge is to stop thinking of the world as fixed when reality is, in truth, relative.

3. The Tetris Effect: Training Your Brain to Capitalize on Possibility

    - Train your brain to scan the world for the opportunities and ideas that allow our success rate to grow.

- The best way to kick-start this is to start making a daily list of the good things in your job, your career, and your life.

4. Falling Up: Capitalizing on the downs to build Upward Momentum

   - Study after study shows that if we are able to conceive of a failure as an opportunity for growth, we are all the more likely to experience that growth
   - It's about using that downward momentum to propel ourselves in the opposite direction. It's about capitalizing on setbacks and adversity to become even happier, even more motivated, and even more successful. It's not falling down, it's falling up.

5. The Zorro Circle: How Limiting Your Focus to Small, Manageable Goals Can Expand Your Sphere of Power

   - Feeling that we are in control, that we are masters of our own fate at work and at home, is one of the strongest drivers of both well-being and performance.
   - Happiness, and health have less to do with how much control we actually have and more with how much control we think we have.
   - No matter what you may have heard from motivational speakers, coaches, and the like, reaching for the stars is a recipe for failure.
   - "Don't write a book, write a page".

6. The 20-Second Rule: How to Turn Bad Habits into Good Ones by minimizing Barriers to Change

   - Common sense is not common action. There any many behaviors we know are bad for us but we don't change our habits.
   - Our willpower weakens the more we use it (some mixed evidence here).
   - The key to creating these habits is ritual, repeated practice, until the actions become ingrained in your brain's neural chemistry. And the key to daily practice is to put your desired actions as close to the path of least resistance as humanly possible.

7. Social Investment:

   - social relationships are the single greatest investment you can make