Low Stakes Networking and Engagement for Science Students

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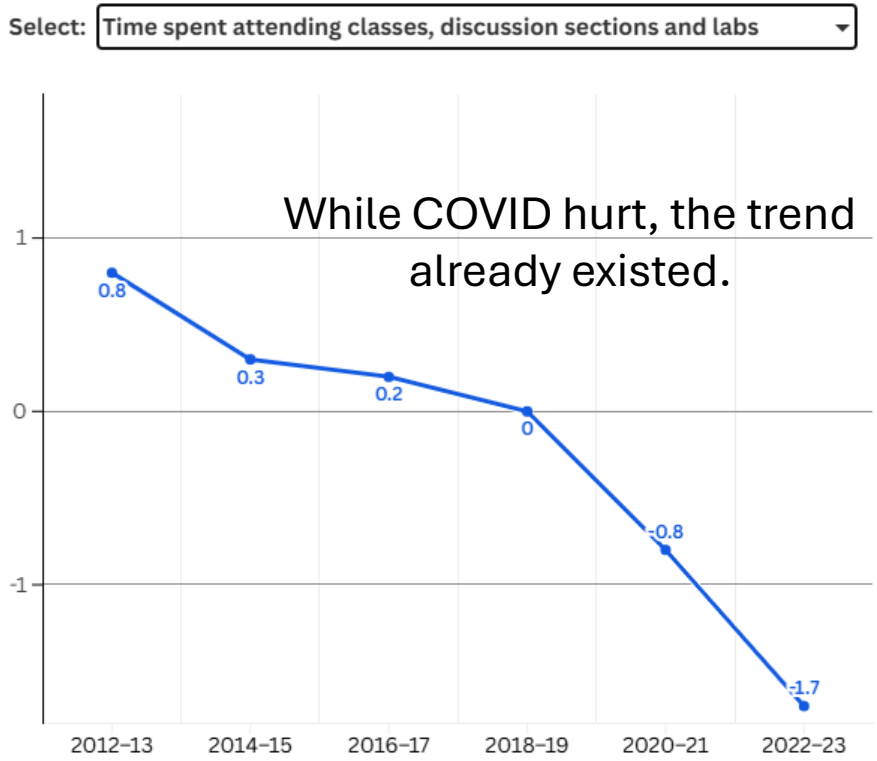
Fewer Students Engage in College Activities After COVID

https://www.insidehighered.com/news/student-success/college-experience/2025/04/11/fewer-students-engage-college-activities-after

Professionals (and students) have noted that today's students are less engaged than previous years.

Many experts attribute this shift to the lack of socialization caused by COVID-19 stay-at-home orders.

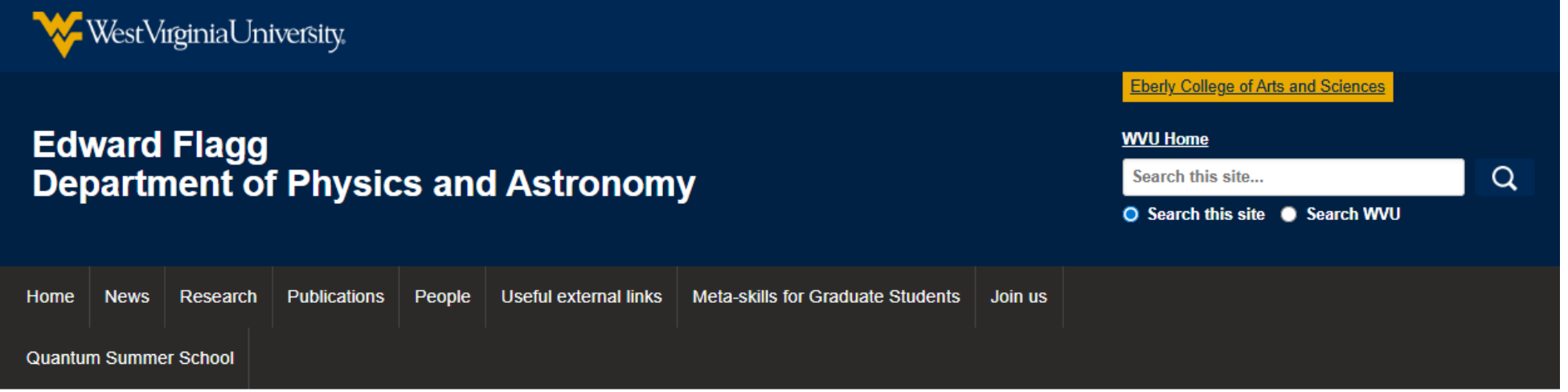
But according to a recently published study, students' participation rates have been declining for the past decade.



Source: The Multi-Engagement Model: Understanding Diverse Pathways to Student Success at Research Universities by the Center for Studies in Higher Education at the University of California, Berkeley • Data includes survey and institutional data collected from 2012 to 2023 from students at R-1 institutions.

Is this a problem?

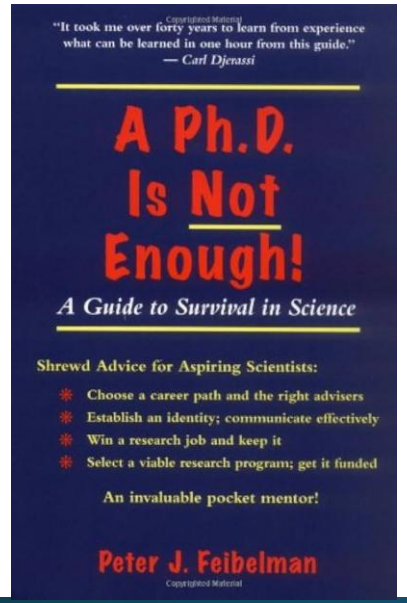
- Students are increasingly prioritizing work-life balance, with 76% of college students ranking it as a top priority in their job search, often over salary. That's not all bad! (I have a whole work-life workbook based on training by Elsevier.)
- But, we need to make sure you aren't cutting out activities that are critical for getting and keeping your future jobs!



Semiconductor Quantum Optics Lab

- Setting Goals
- Best Practices
- Stages of a Research Project

If you want more on "soft skills," please see Flagg's website: https://edwardflagg.faculty.wvu.edu/meta-skills



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Outline

What is networking?

Why should you care?

Practical examples

- Opportunities at your university
- 30 second elevator pitch (maybe even shorter)
- When giving a talk

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What Words Stick Out?

Networking is a mutually beneficial interaction that involves exchanging ideas and information between individuals who are connected by a common career, industry, or interest.

It refers to the act of building and maintaining relationships with other professionals in your industry or related fields.

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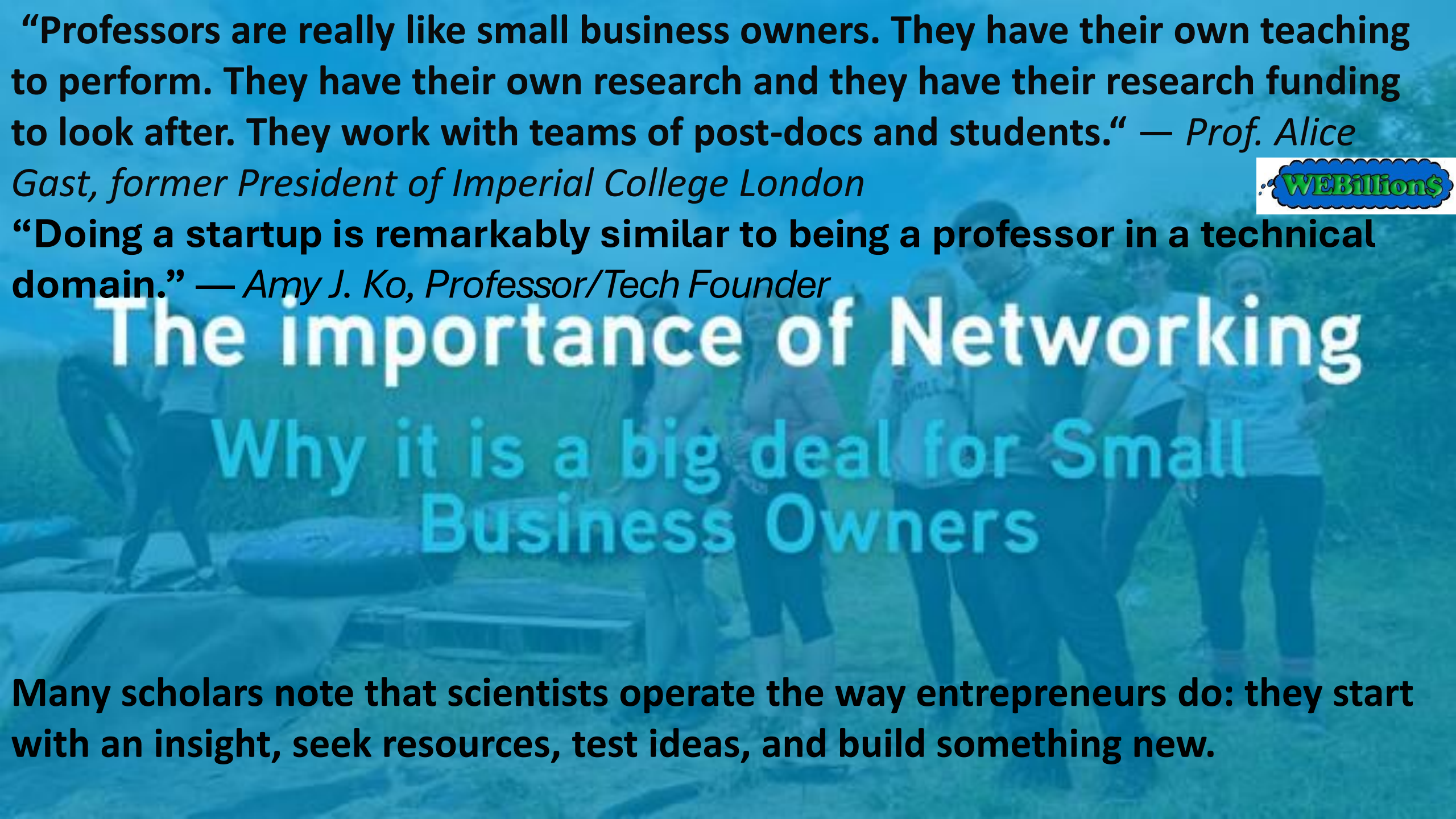
“Professors are really like small business owners. They have their own teaching to perform. They have their own research and they have their research funding to look after. They work with teams of post-docs and students.“ — *Prof. Alice Gast, former President of Imperial College London*

“Doing a startup is remarkably similar to being a professor in a technical domain.” — *Amy J. Ko, Professor/Tech Founder*

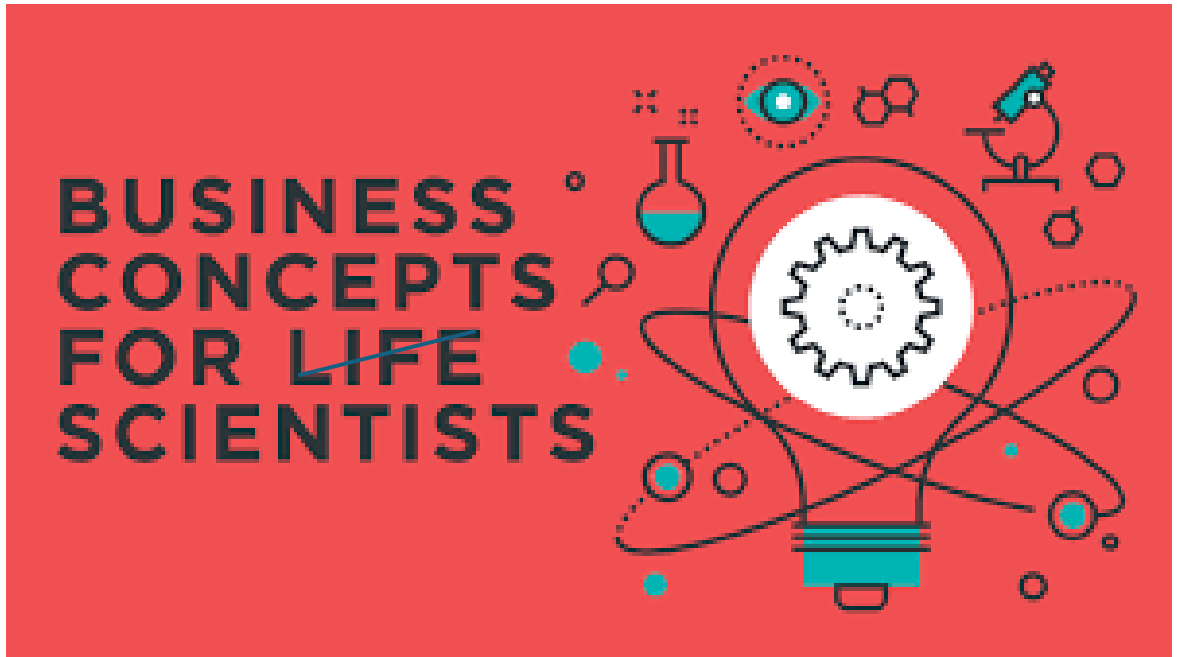


Many scholars note that scientists operate the way entrepreneurs do: they start with an insight, seek resources, test ideas, and build something new.

To emphasize this connection between small business and science, let's explore the question:

Why does business think networking is king?

and explore the parallels



1. Connections Lead to Opportunities

Think of networking like planting seeds. Every conversation or new contact is a seed that could grow into something awesome. It's not about making sales pitches every chance you get but about building genuine relationships. People prefer to do business with people they know and trust.

My personal experience

Also, many scientific careers start with a conversation after a talk or at a department lunch. Good reason to get to know our colloquia speakers better.

You need recommendation letters writers. (later partners/funding)

A solid letter is based on real interactions

- It’s hard to write strong letters when you don’t know the student beyond the classroom. Low-stakes engagement helps us write the strong letters you deserve.
- Letters aren’t just “they got an A”; committees want details.
- Attending events, engaging in conversations, or dropping by office hours gives faculty *context and stories* for letters.

2. Learning from Others

Running a small business can sometimes feel like you're on a deserted island, trying to figure everything out by yourself. Networking pulls you out of isolation and puts you in touch with others who've been there. You might share tips on avoiding common pitfalls or discover new tools and resources.

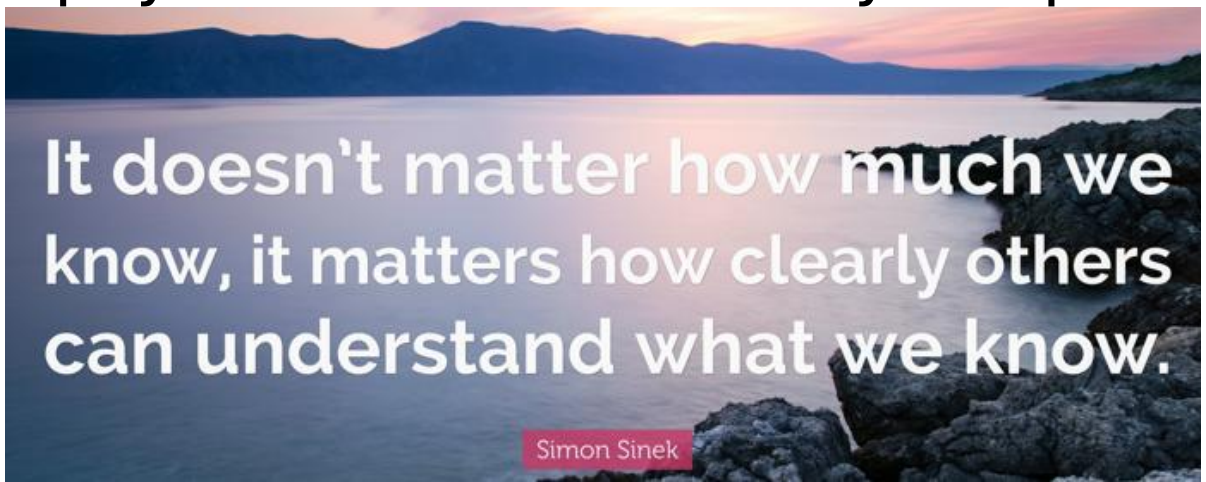
In science: Talking with faculty/visitors/peers exposes you to research areas, career paths, and problem-solving strategies you won't encounter in class. You learn the "hidden curriculum" of science: how to pick a project, how funding works, how grad school applications really get evaluated, etc.

Source: Valued | Why Networking is important for Small Business Owners

3. Boosting Your Confidence and Your Message

Talking about your business repeatedly helps you refine your pitch and build confidence. The more you talk about what you do, the better you get at articulating it clearly and concisely. Plus, receiving positive feedback from peers can be a great confidence booster. It's like getting a pat on the back that says, "You got this!"

In science: Explaining your research interests (or even that you're *looking* for a project) helps you develop your scientific voice. Repeating short conversations with visiting speakers or faculty helps you speak about physics more comfortably and professionally.



4. Finding Partners and Collaborators

Sometimes, you come across other business owners whose services complement yours perfectly. Networking can lead to collaborations that benefit both parties. Partnerships can help you reach new audiences and create more value for your customers.

In science: Science is increasingly team-based. Many impactful projects start because two people discovered complementary skills—coding + instrumentation, theory + data, etc. Attending events helps you naturally find collaborators.

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Peer Networking Matters Too

Peers can become:

- Lab mates
- Collaborators
- Future colleagues in academia/industry
- People who recommend them for jobs or opportunities

Build relationships *horizontally*, not just with faculty or visitors.

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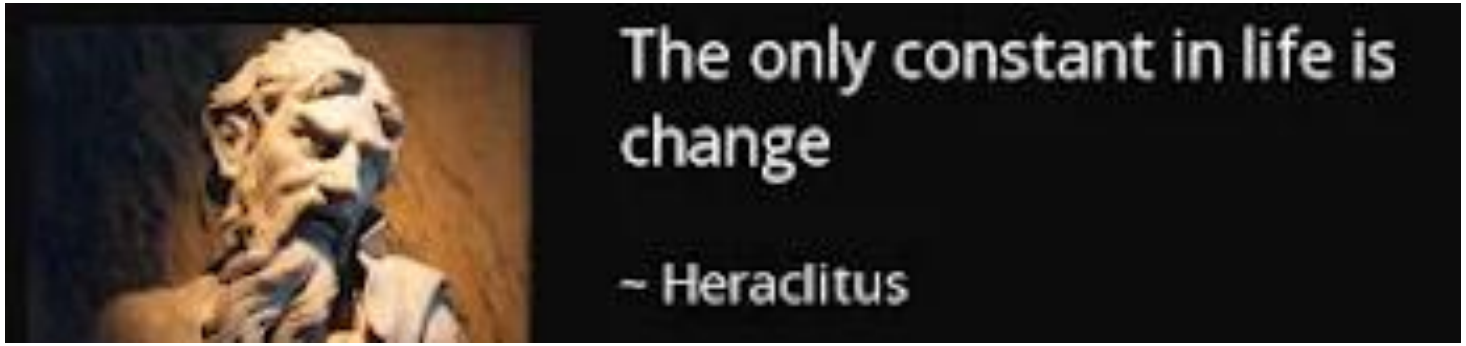
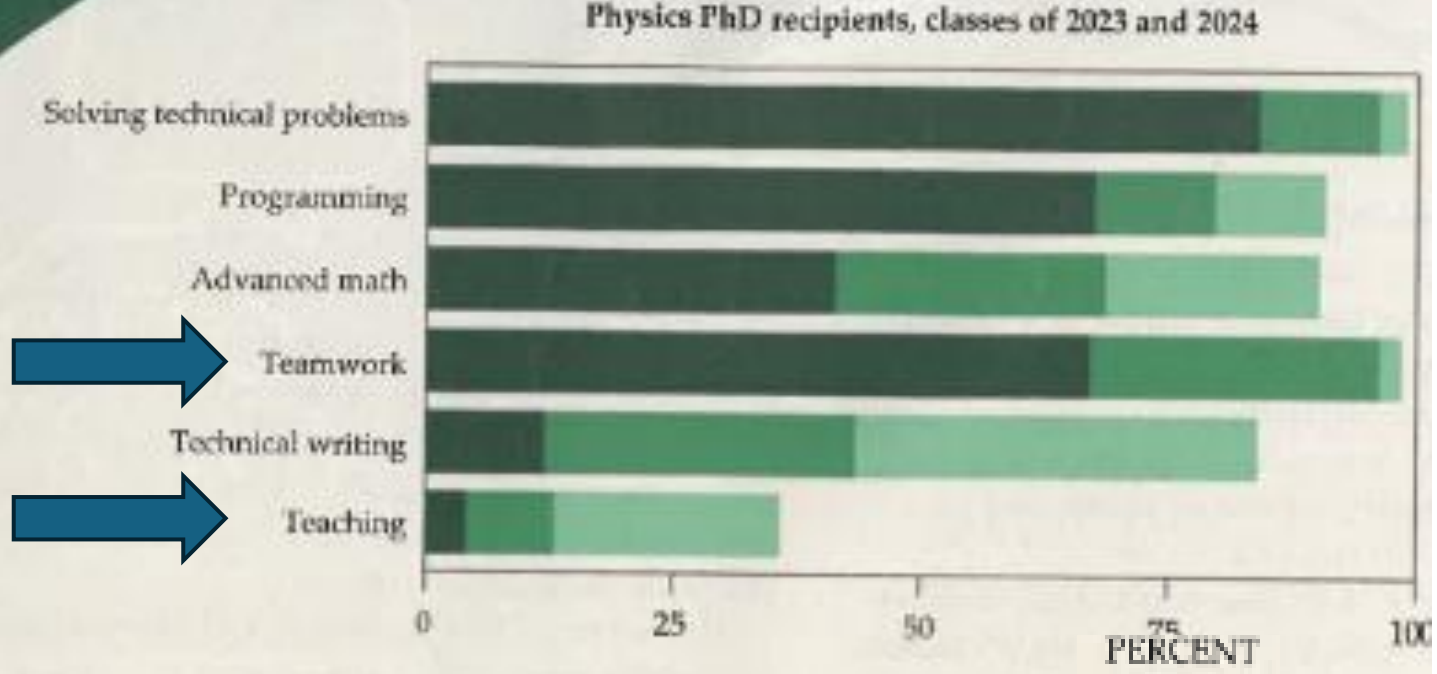
5. Staying Updated

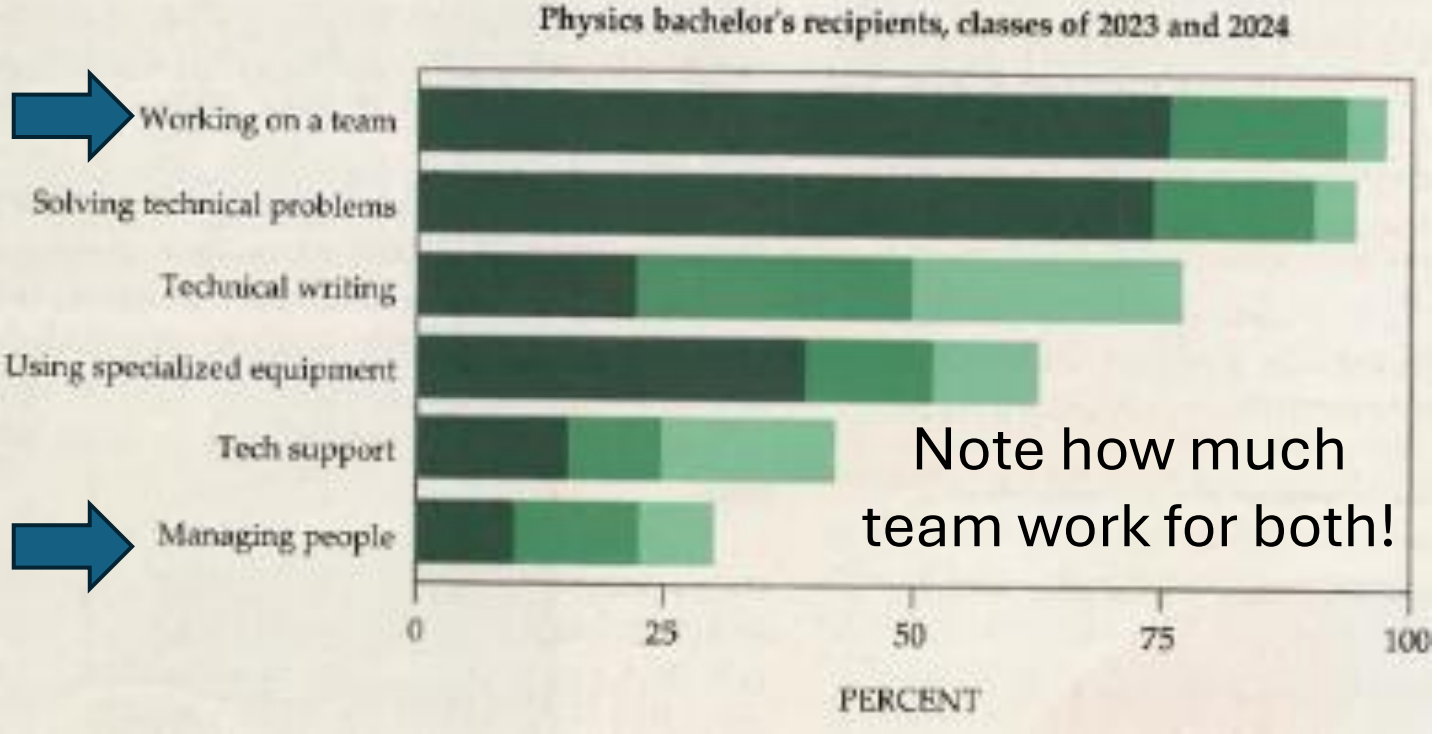
The business world is always changing. Networking keeps you in the loop about industry trends, new technologies, and shifts in the market. Staying informed helps you adapt and stay competitive.

In science: Colloquia, seminars, lunches, and hallway conversations expose you to cutting-edge results long before they appear in textbooks. This broad awareness helps you choose research directions and makes you more competitive for fellowships.

It also gives you a broader perspective of topics from which you can discuss. The number of times I'm asking about science completely unrelated is very high. Being able to speak briefly about it is a plus.







Some of the skills used by employees in the private sector

While technical skills are important for science jobs, so are people skills. We get better at both with practice.

Note how much team work for both!

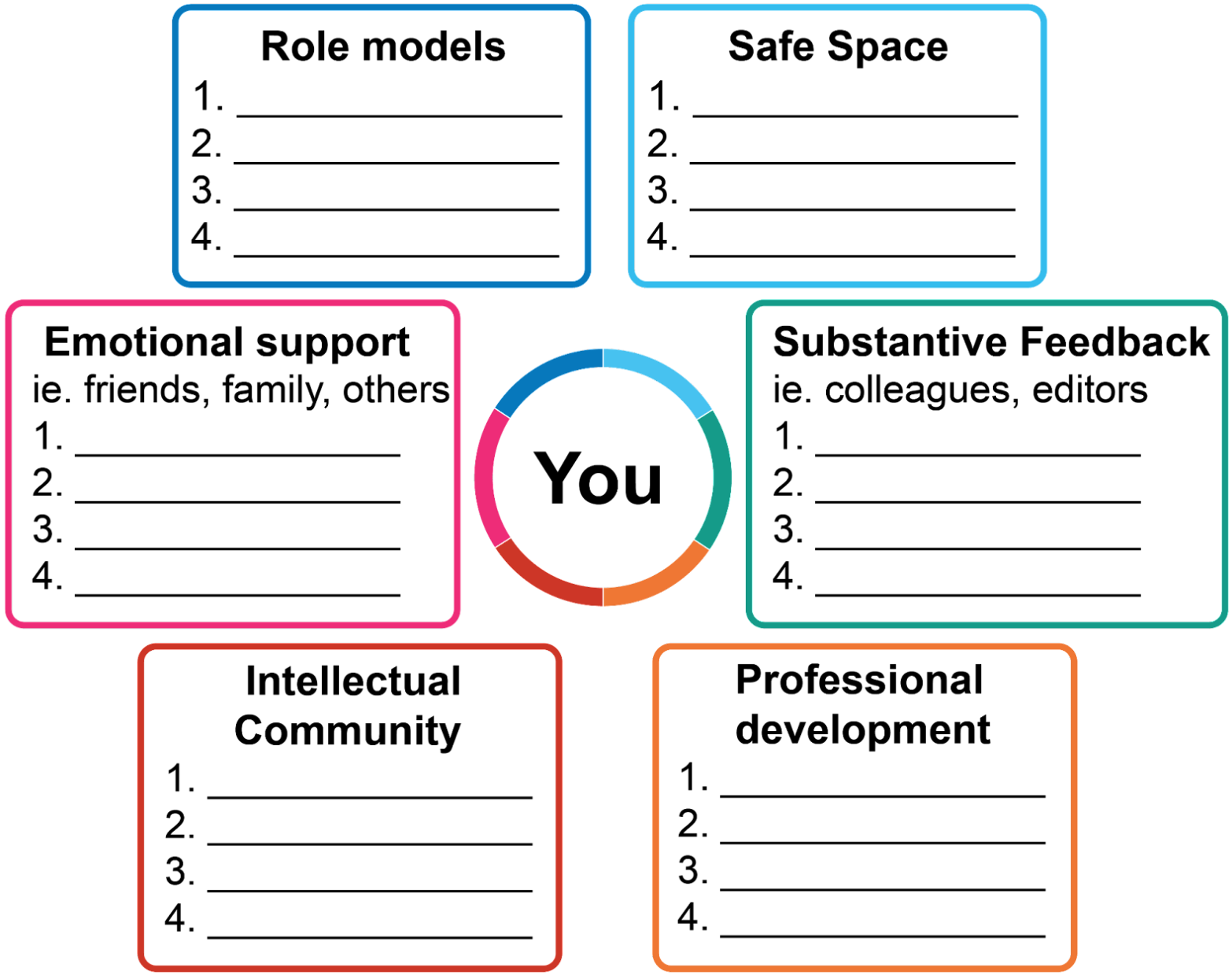
https://physicstoday.aip.org/issue/78/11

6. Building a Support System

Running a small business
owners means having a su
rough. Whether it's sharing
advice on a tricky situation
going through is priceless.

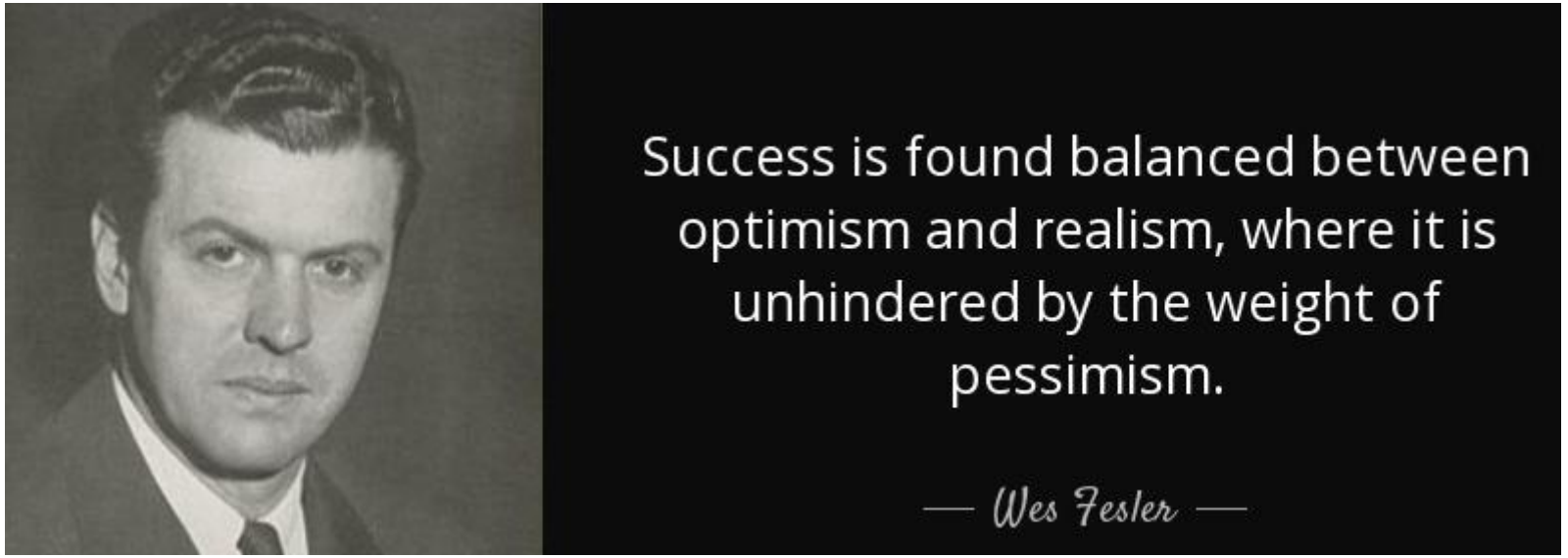
In science: Science can al
helps you navigate difficu
coursework, imposter fe
Community smooths out

You NEED more
than one mentor!
The more the better!



I debated whether to include this:
"You should make yourself worthwhile to be mentored." – Sara Majetich, Carnegie Mellon

What do you think she means?



R.E.S.P.E.C.T.: How to Be a Great Mentee

R — *Ready & Prepared.* Come with questions, goals, or topics you want to cover. Even 2–3 minutes of preparation makes mentoring time far more useful.

E — *Engage Actively.* Show up, participate, follow through. Mentorship works best when you're present and involved in your own progress.

S — *Share Responsibility.* No single mentor can do everything. Build a *team* of mentors—faculty, peers, postdocs, staff—who can support different parts of your development.

P — *Perspective Matters.* If you ask for advice, be open to hearing it—even when it's not what you expected or wanted. You don't have to take every suggestion, but listening respectfully is essential.

E — *Effort Counts.* Take initiative: look up background info, try things yourself, and bring updates. Mentoring is a partnership, not a service.

C — *Communicate Clearly.* Let mentors know what you hope to achieve and what support you need. Communicate challenges early; silence is not the solution.

T — *Take Responsibility.* Own your deadlines, your progress, and your mistakes. Responsibility signals maturity—and earns trust.

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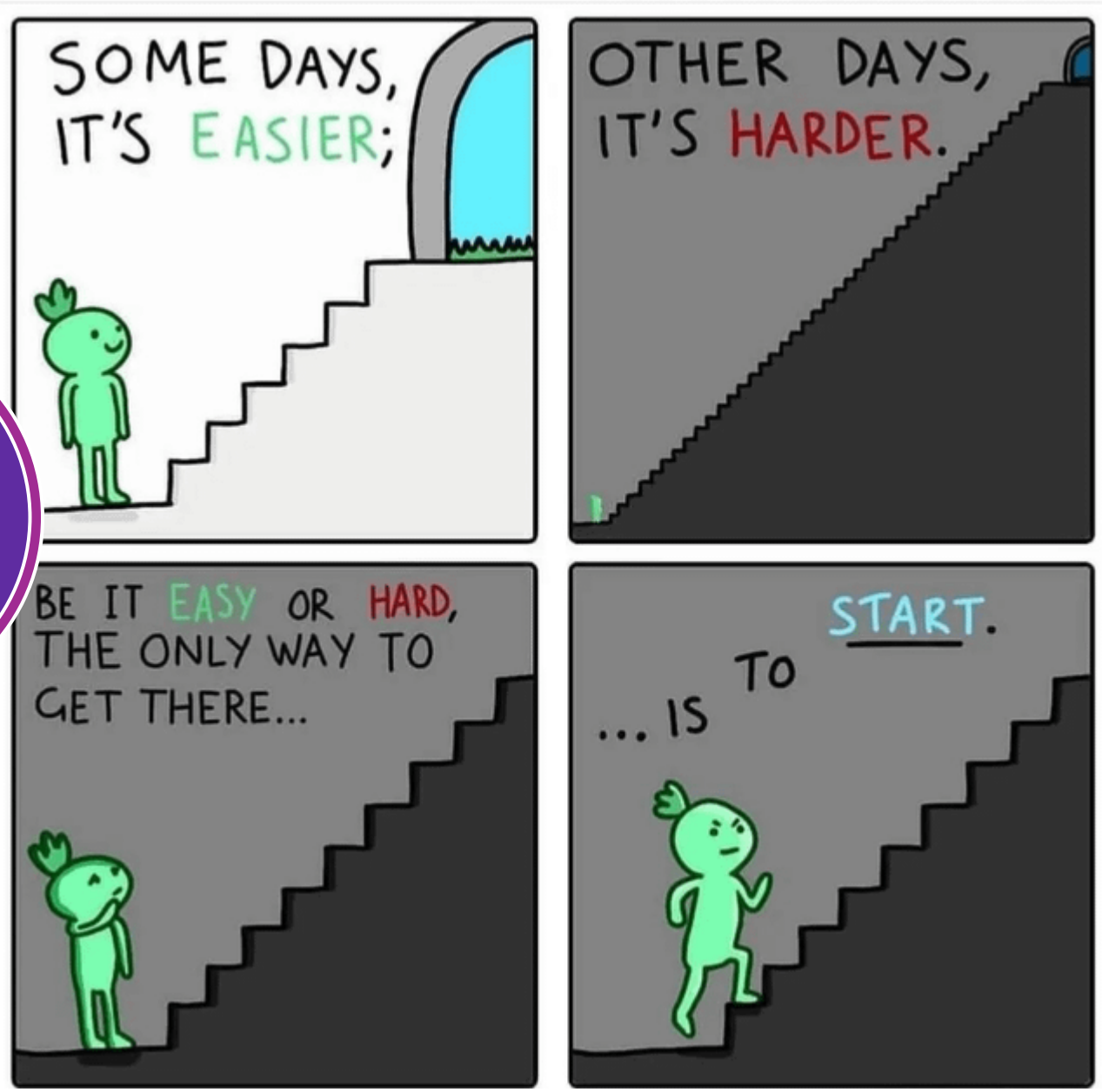
What

Why

How



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Social interactions can be stressful

but you don’t get better at something by avoiding it.

We Get It! There's A Lot To Do!

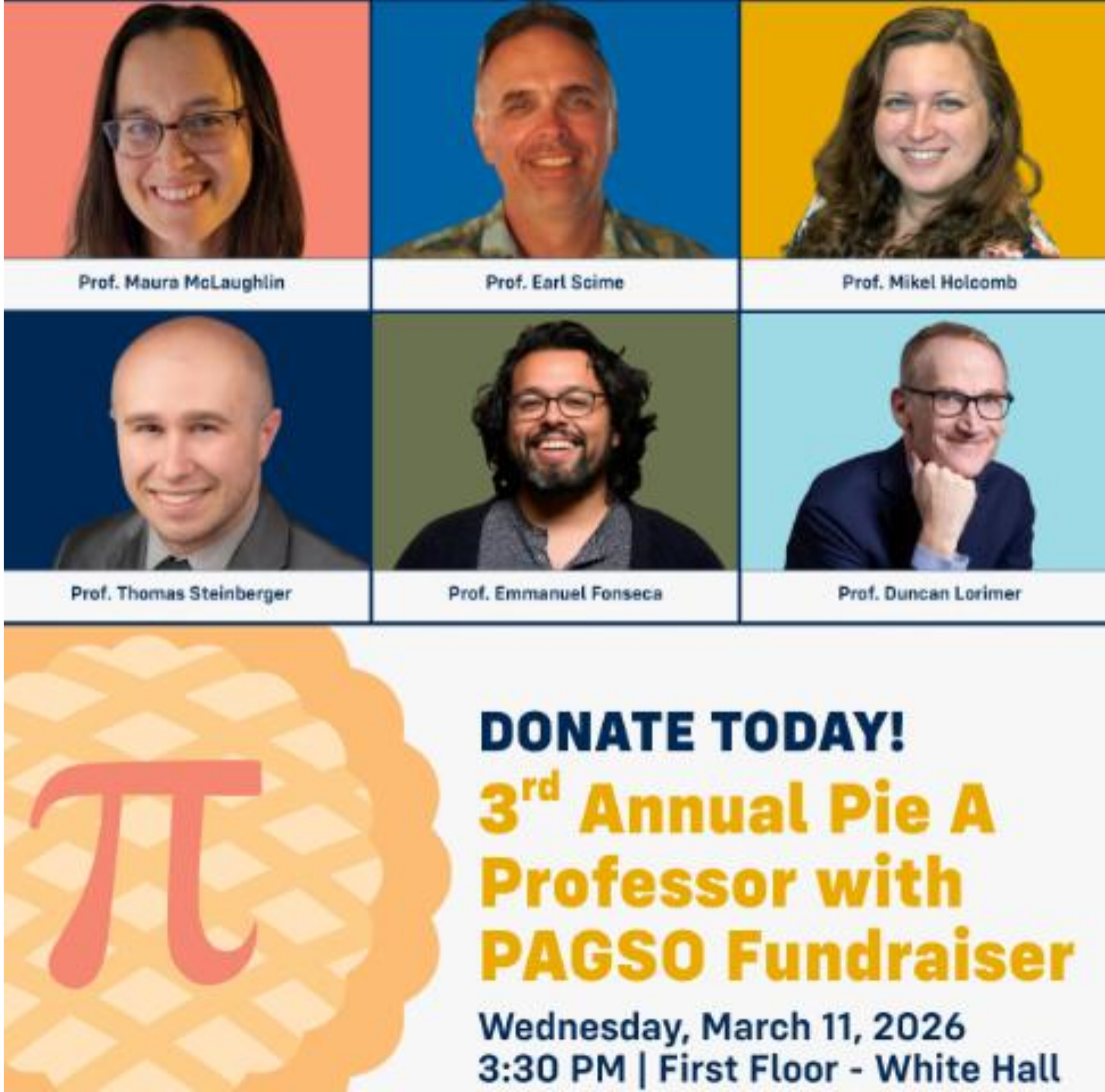
40% Teaching	40% Research	20% Service	Bonus
Teaching (6 hours/week)	Writing proposals	Colloquium (chair)	Email triage
Grading	Managing budgets/purchases	Undergrad advising	Fixing random stuff
Answering student emails	Annual reports	Graduate studies	Administrative issues
Office hours	Group meetings	Student quals/defenses	Onboarding undergrads/PDs
Updating course website	Conference abstracts/travel	Reviewing papers	Infrastructure troubleshooting
Preparing/improving materials	Writing/reviewing manuscripts	Organizing conference sessions and/or outreach	Scheduling
Fixing broken class equipment	Brainstorming future directions	Managing equipment	
Guiding students in research	Reading papers	Writing recommendation letters	

Example professor job list (incomplete)

I know we look scary

but we are so willing to help that we volunteer to get pied in the face! You may never if your life meet people more willing to help you.

FYI: My daughter is hoping to throw the pie at me.



Tricks for Introverts/Shy/Busy People

- Prepare one question in advance.
- Talk to 1-2 new person per event.
- Stand near the coffee/snacks (natural conversation flow).
- Leave after 10–15 minutes if it feels overwhelming; the *showing up* matters.

More people scared of public speaking than death!

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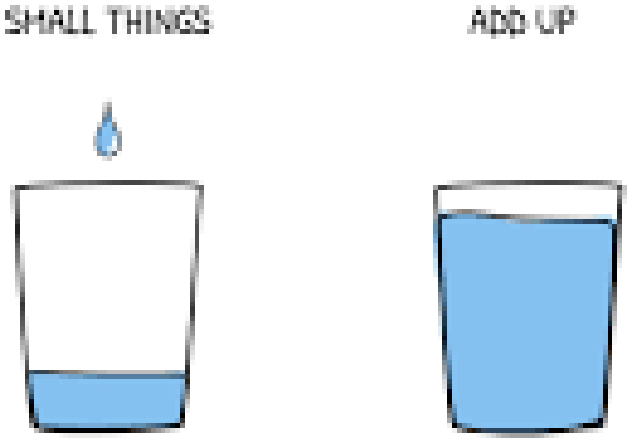
Small Actions Add Up!

- Attending colloquia and receptions regularly.
- Asking a *single* question at a talk or afterward.
- Introducing themselves to a visitor with one prepared line (“I’m a physics major working on X”).
- Attending and interacting at department social events
- Commending on a faculty member’s recent talk/class (“I liked the analogy you used…”).



Trying something new: lunches at Hatfield's

- Last week, I asked what would make you more willing to do visitor lunches. Food quality was brought up.
- Lots of university constraints, but we are going to try out Hatfield's (more variety)
- **Current survey is out to provide more feedback on how we can improve the colloquia for you.**

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Colloquium COULD be different

We have heard your frustration that some colloquium speakers don't always get the audience correct. We agree!

Current invitation states: Our colloquium series is attended by a broad audience ranging from undergraduate up through senior faculty across all areas of physics and astronomy. **We ask that talks be pitched at a general physics audience rather than assuming specific knowledge of your field.** Imagine asking yourself: "Would a physicist in a completely different subdiscipline from my own understand much of this talk?" There will be time to go into more detail during individual meetings.

Last year, Viola sent a reminder. I've asked her to restart that.

Imagine a world where students took over

(From past email) While I don't necessarily need anyone else on the colloquium committee, if any of you would like to join and/or help out, let me know.

- You can make speaker suggestions. Not all speakers have to be academics.
- You can be the point of contact for a speaker that you would like to get to know better. This is a good networking experience. Note, that you don't need to do this for all speakers, only ones that interest you. It's an opportunity to ask them questions you may have.
- Possible leadership opportunity: The chair has suggested that perhaps this committee could be run by students. I'm not certain that you want to do that, and that's fine. But, if some of you like that idea, I'd be happy to help you think about how to do that. There isn't any rush, as the fall colloquium schedule is in place, so there would be time to brainstorm it out.
- Maybe you have other ideas on how we can make the whole experience better.

Leadership Opportunity

The Ten Second Intro

"Hi, I’m ___, a (year) physics (major/PhD student). I’m interested in ___.“

If you feel more advanced, try adding a few more sentences, but not too many!

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SO TELL ME...
HOW DOES THAT MAKE YOU FEEL?
memecrunch.com

Simply Being Present Can Matter

- Hearing about internships/scholarships/etc because they came up in conversation.
- Meeting someone who works on a topic they're curious about.
- Getting invited to participate in a project because they were present when it was discussed.

Increase your *surface area for opportunity!*

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Where to best increase your opportunity

- Undergraduate/grad lounges
- Department colloquia receptions
- Social events
- Subdiscipline seminars/journal clubs
- Conferences

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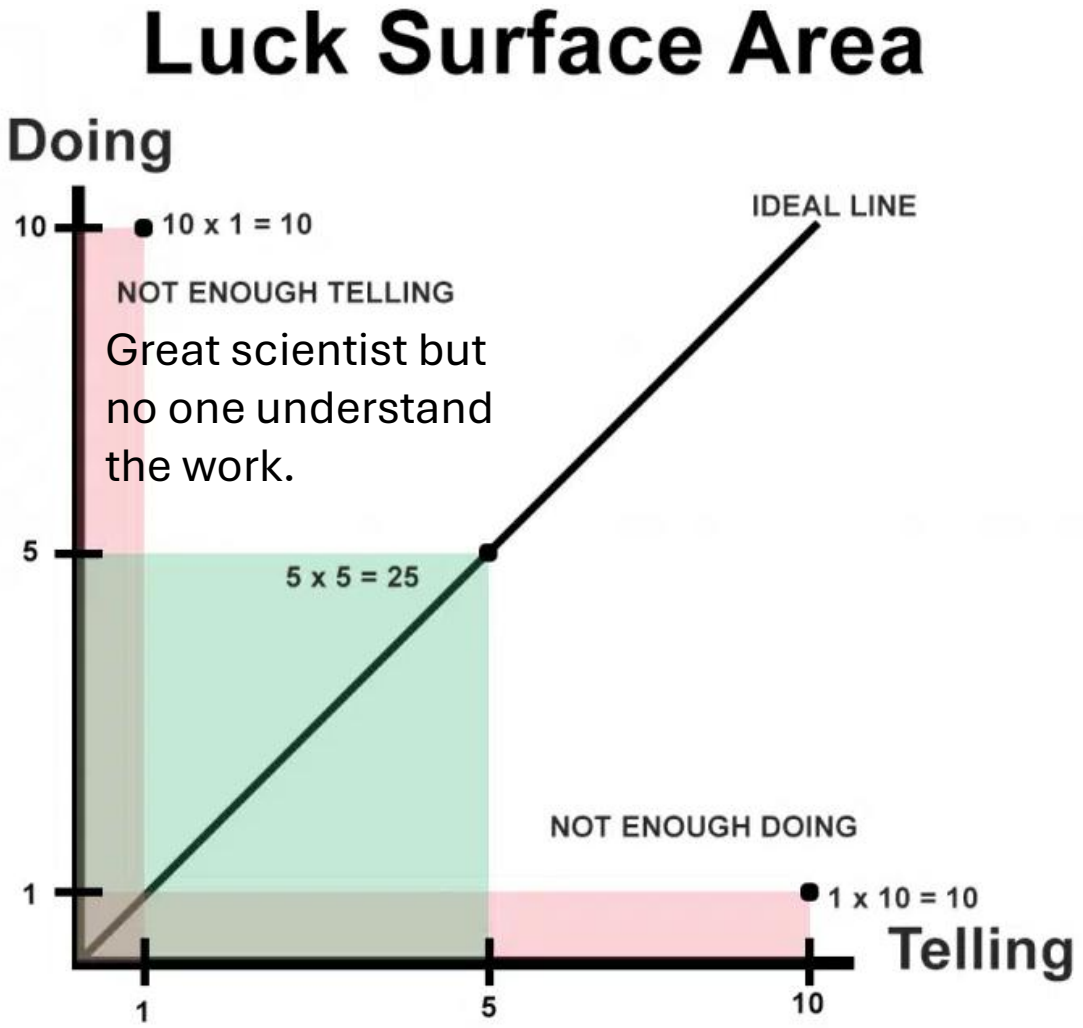
Similar to another idea

- The concept was originated by management thinker Jim Collins, who used the term to describe the relationship between hard work and luck in achieving success. It is the amount of exposure an individual has to opportunities and resources that can lead to success.
- Collins first introduced in his book “Great by Choice,” where he argued that successful individuals are able to increase their luck through hard work and persistence.



Courtesy of Mental Model Practices

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Speaking with a Colloquium Visitor or Other (Question Examples)

- **Ask about their path**: “How did you get started in this area?”
- **Ask about their work**: “What drew your group to this approach?” or “What’s a challenge your students are working on?”
- **Ask for advice**: “What skills would you recommend someone in my stage focus on?”
- **Ask about opportunities** (for grads/advanced undergrads): “Are there summer schools or workshops in your field you recommend?”

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Things that Leave a Good Impression for Talks

- Always have a backup. Technology fails.
- People are busy, and may not hear everything you say. Don't your contact information only on the first/last slides. (Have an odd name?)
- Include slide numbers and use the trick. (Also useful if running behind.)
- Arrive early and stay after your talk
- Repeat your main message more than once. People get distracted.
- Have a conversation hook slide:
- "An open question we're still thinking about…"
- "A limitation of our current approach…"
- "A puzzle we don't understand yet…"

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Other Ideas from the Crowd?

Likely many in the room are network experts, and even those just learning might have ideas on how to make this less stressful.

Don’t just sit on them!

Take Aways

- There are many reasons to network.
- There are also many approaches. There isn't one "right" answer for how to network, but not doing anything is the wrong answer.
- Practices makes.....less stressful, but we don't get better at things by avoidance.

Resource:
https://www.betterup.com/blog/networking

How Mentoring Benefits Mentors

1. Clarifying and Reinforcing Their Own Understanding. Explaining concepts, giving advice, or helping someone navigate a problem forces mentors to: reflect on their own career path, articulate what works (and what doesn't) and strengthen their ability to teach and communicate.

2. Fresh Perspectives and New Ideas. Students ask surprising questions. They see problems differently. This helps mentors: rethink assumptions, discover new angles on research, and stay connected to emerging interests, tools, and ways of learning.

3. Developing Leadership and People Skills. Mentoring strengthens: communication skills, management skills, empathy, and the ability to guide projects and people. These are essential for running a research group, teaching effectively, and leading collaborations.

4. Feeling Connected to the Community. Mentoring builds meaningful relationships. It helps mentors feel: more connected to the department, supported by a network of students, and energized by student growth and excitement.

5. Advancing Their Own Research. When a mentee thrives: projects move faster, mentors gain collaborators, new results, papers, and grants become possible. Sometimes a student's question spawns a whole new project.

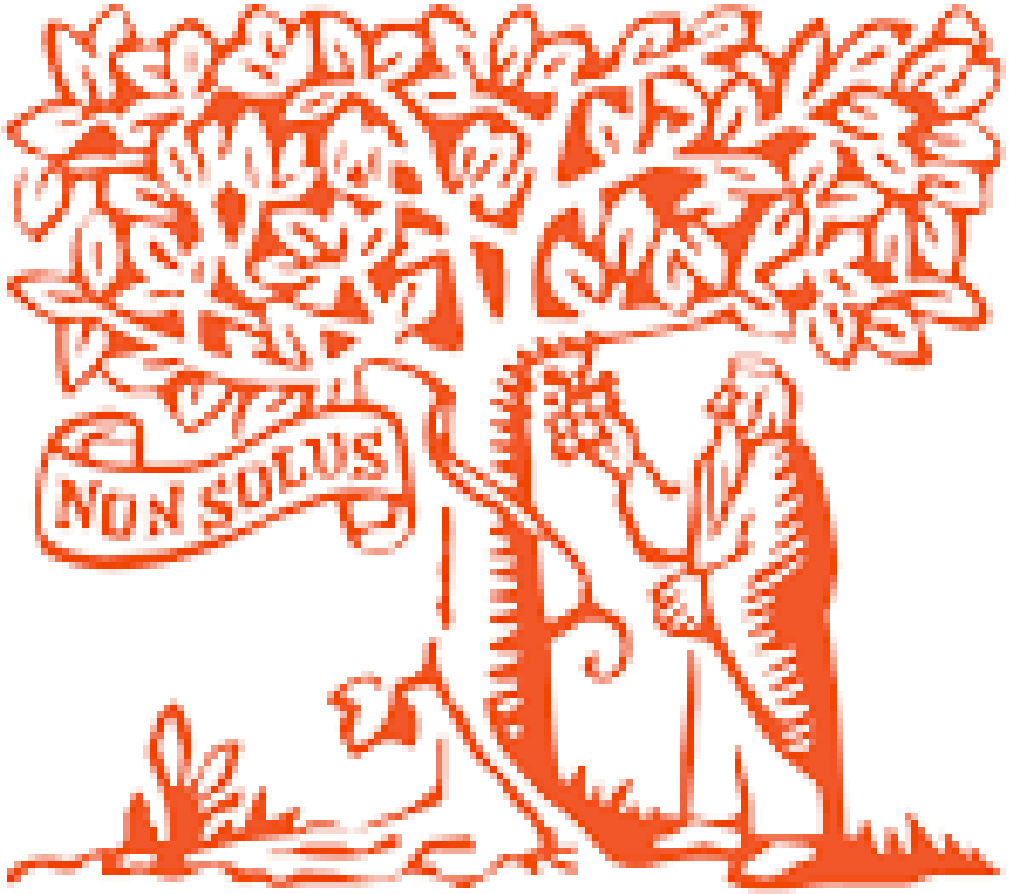
6. Satisfaction and Purpose. For many scientists, mentoring is one of the most rewarding parts of the job. Watching a student gain confidence, find a path, or achieve something meaningful is deeply fulfilling. Mentoring reminds many faculty *why* they got into science.

7. Expanding Their Own Network. When students go to conferences, REUs, grad programs, internships, etc., THEY become part of the mentor's broader network too. A strong mentoring relationship can evolve into: long-term collaboration, shared professional contacts, and mutual scientific growth.

8. Strengthening the Future of the Field. Mentors play a role in shaping the next generation of physicists. Helping students grow is an investment in the future of the discipline.

Any guesses on what the latin work means?

I mentioned my work-life training was by Elsevier (major global publisher and data analytics company specializing in scientific and technical content)



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