



# Impostor Syndrome Workshop

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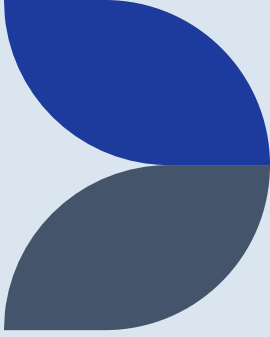
Slides available at: <https://paola-pinilla.com/>



# Outline

1. Introduction and examples in Astronomy
2. Discouraging situations in Astronomy
3. Activities (15-20 mins)
  - Two Truths and a lie
  - Impostor Syndrome Bingo
4. Some tips to deal with the impostor syndrome (as a community and as individuals)

# The Impostor Syndrome



Introduced to describe **“highly successful women who nevertheless had difficulty internally recognizing their own achievements and continued to feel as though they were imposters in their careers.”**

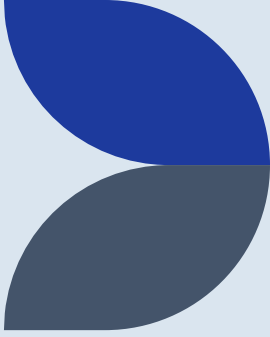
The imposter phenomenon in high achieving women:  
Dynamics and therapeutic intervention.

Clance, Pauline R.; Imes, Suzanne A.

Psychotherapy: Theory, Research & Practice,  
Vol 15(3), [1978](#), 241-247.

See more: Harvey et al. 1981; Bravata et al., 2019

# The Impostor Syndrome



“Believing that one’s accomplishments came about not through genuine ability, but as a result of **having been lucky, having worked harder than others, and having manipulated other people’s impressions,** while attributing success in others to skill and ‘natural talent’ ”

Langford & Clance 1993



# The Impostor Syndrome

1

It is ***not*** a recognized as a medical disorder, but a very real and common phenomenon

2

It can be ***greatly worsened*** by other mental health issues, like depression and anxiety disorders

Sonnak and Towell, 2001; McGregor et al., 2008

3

It has decremental consequences in career advancement

Kets de Vries, 2005; Vergauwe et al., 2014; Neureiter and Traut-Mattausch, 2016

4

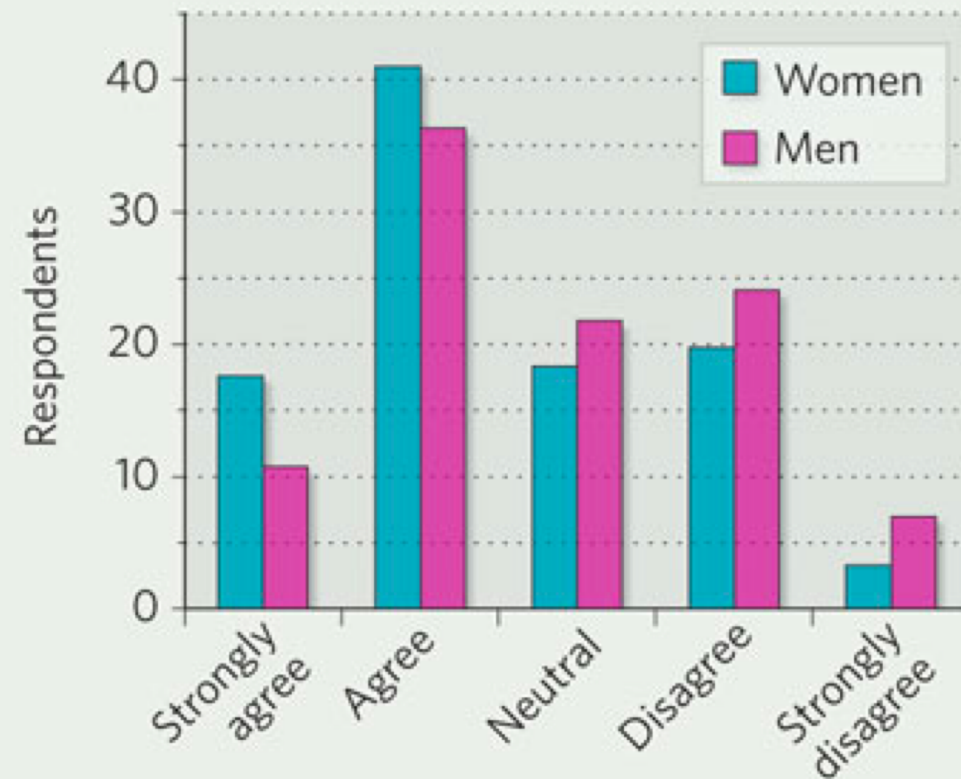
A low level of Imposter Syndrome may help outperform their non-imposter colleagues

[recent study by Prof. Scott Galloway, NY University]

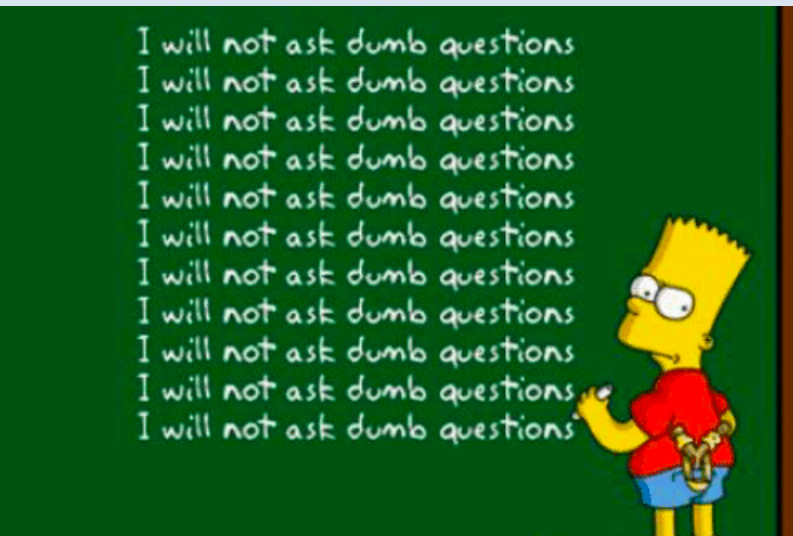
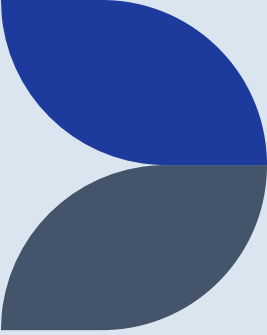
# The Impostor Syndrome in Astronomy

## CRISIS OF CONFIDENCE

Astronomy graduate students respond to the statement: "Sometimes I am afraid others will discover how much knowledge or ability I lack."

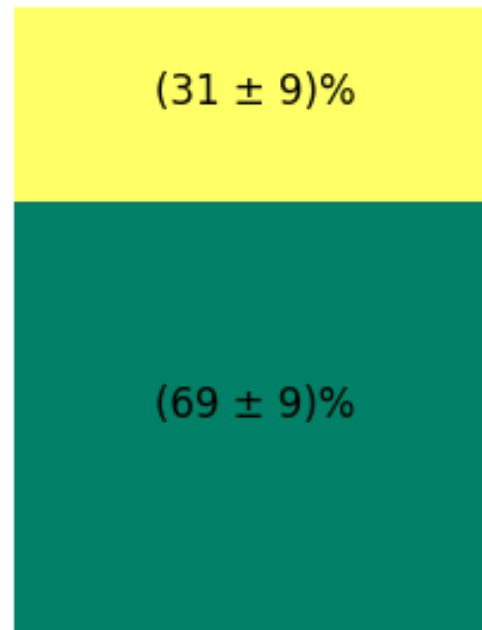


# The Impostor Syndrome in Astronomy

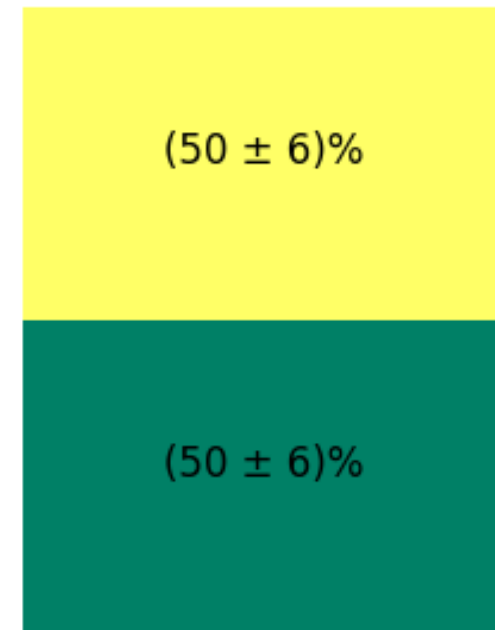


A socio-demographic study of the  
exoplanet direct imaging community  
Leboulleux et al. (2020)

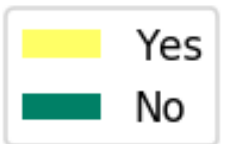
## Asked questions to a speaker at the end of their talk



Female



Male



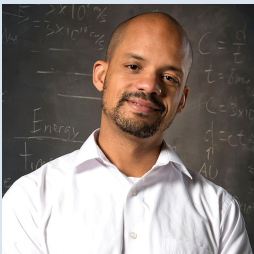
# Examples in Astronomy



## Prof. Jocelyn Bell Burnell (Oxford)

“[When I got to Cambridge], I [decided] they’ve made a mistake admitting me. That they would discover their mistake and they will throw me out... I just wasn’t bright enough for Cambridge”

<http://womeninastronomy.blogspot.com/2022/11/on-gender-equality-and-imposter.html>



## Prof. John Johnson (Harvard)

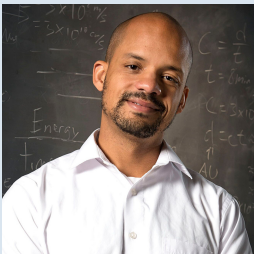
“Six months after I joined the faculty at Caltech, I woke up to the terrifying realization that I didn't have a contingency plan for my family for when I would inevitably be either let go or denied tenure.”

<http://womeninastronomy.blogspot.com/2012/10/guest-post-by-john-johson-impostor.html>

# Examples in Astronomy



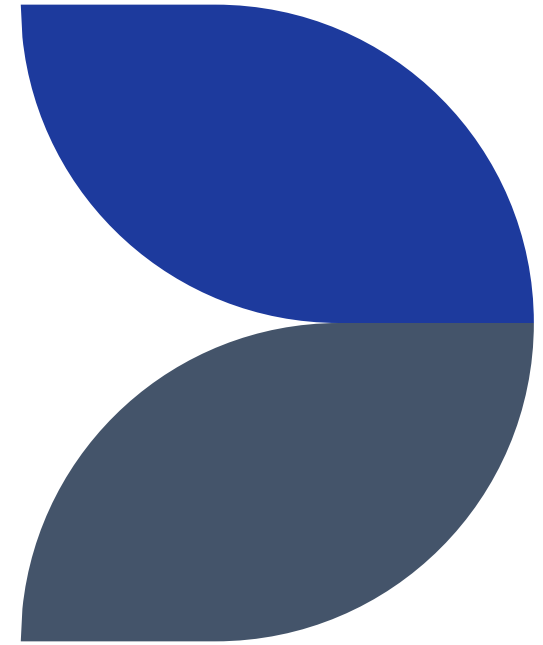
*“We’re more likely to experience imposter syndrome if we don't see many examples of people who look like us or share our background who are clearly succeeding in our field”*



**Why is there a higher rate of impostor syndrome among BIPOC (minorities)?**

Ahmed et al. (2020), Across The Spectrum of Socioeconomics

**Imposter Syndrome  
&  
Discouraging/Hostile  
Situations**



# Discouraging Situations in Astronomy

**They come in different flavors:**

- Discouraging comments
- Discouraging referee reports
- Hostile environments
- Hostile questioning
- Proposal & job rejections
- [micro] aggressions (unconscious bias)

# Vera Rubin

“The day I learned I got my scholarship to Vassar, I was really excited because I couldn't go to college without a scholarship. I met [my physics teacher] in the hall ... and I told him I got the scholarship to Vassar and he said to me, **‘As long as you stay away from science, you should do okay’.**”



Vera Rubin [1928-2016]

Professor, Carnegie, DTM

First to realize that galactic rotation curves implied the presence of dark matter



# Proposal and Job Rejections

**"Pinilla also has yet to demonstrate independent leadership, as most, if not all, of her first-author publications have co- authors that were also co-authors during her PhD.[...]"**

Therefore, it is not clear to me **what unique skills she brings that could not be reproduced by any of her theoretical collaborators.** Similarly, the observational papers she is on seem generally to be led by other authors. "

Feedback from Rutherford fellowship application  
(credit Paola Pinilla)

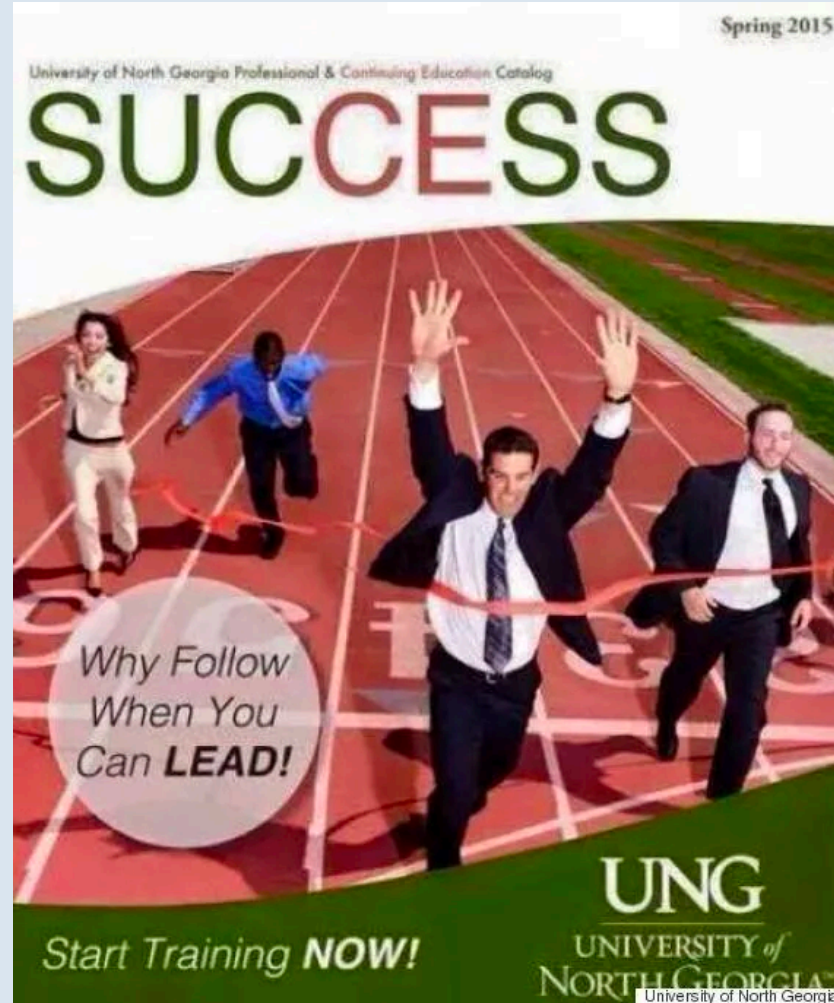
# Referee Reports

"I believe the conclusions of the authors are merely a combination of facts that have been known for a very long time, and erroneous hypothesis"

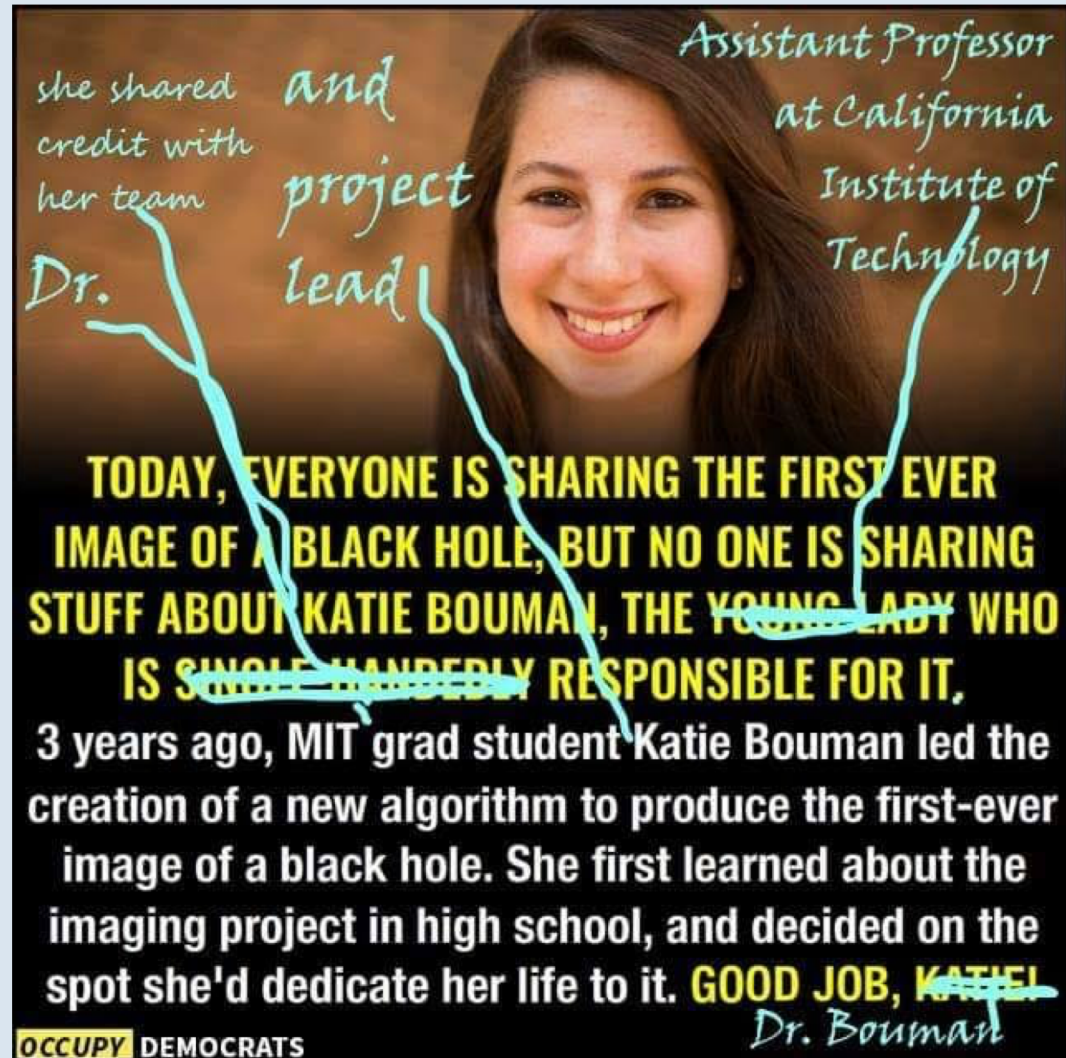


Report to a paper lead by a PhD student  
Credit: Anonymous

# [micro]Aggressions from Unconscious Bias



# [micro]Aggressions from Unconscious Bias



# Activities

# Two Truths and a Lie

We need a handful of volunteers to share their impostor “Two Truths and a Lie” examples.

As a group, we try to guess which is the false impostor thought.



# Impostor Syndrome Bingo

## Groups of 2-4 people

1. If you could pick just one card of the bingo to permanently eliminate from your life, which would it be – and why?
2. Is there a “card” on the Bingo that you used to follow, but don’t anymore?  
What changed?

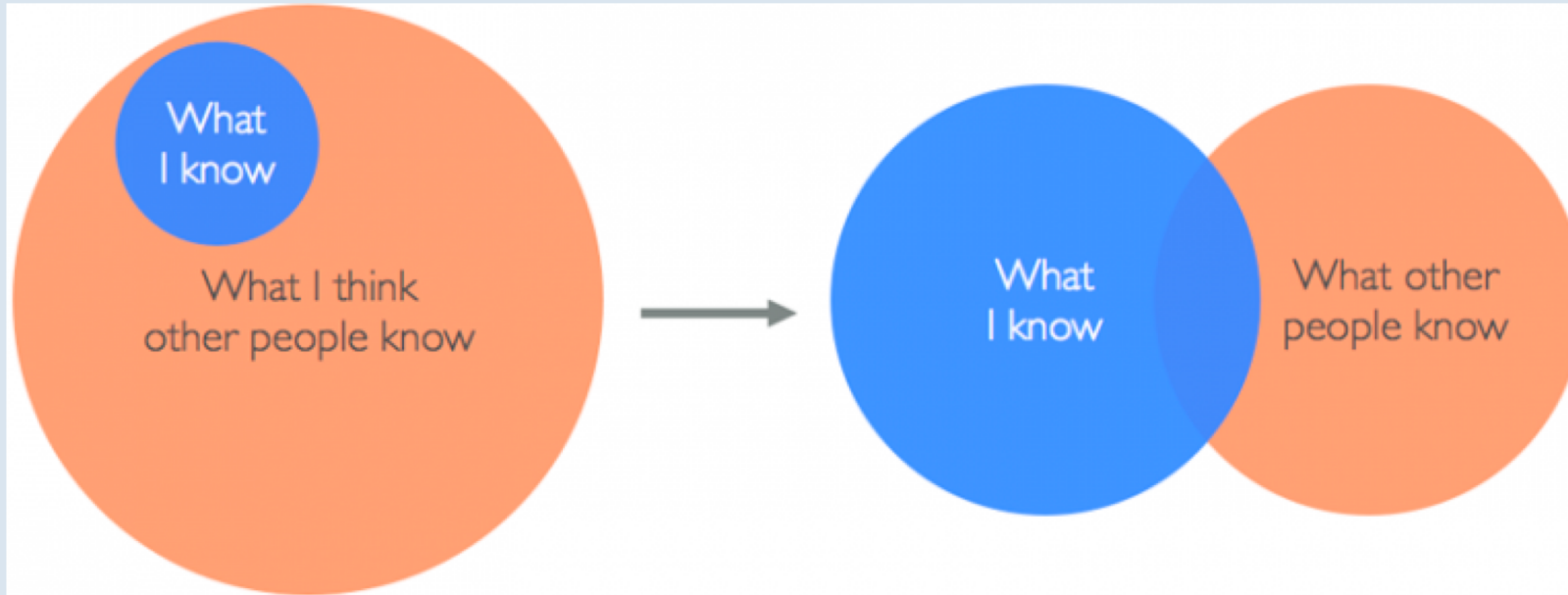
B	I	N	G	O
I feel like I should succeed at everything I do	When someone uses an unfamiliar word, I assume everyone else understands	I don't challenge myself for fear of looking bad if I don't "succeed"	I should be able to do everything myself	I always explain why I don't deserve a compliment
I always apologize for mistakes or for not knowing something	"I'm a fraud & it's just a matter of time before everyone finds out"	I don't let people see me working too hard at anything, incl. recovery	I always assume I'll fail so I won't be disappointed when I do	I usually qualify my comments by saying "This may not be right, but..."
I should be able to anticipate problems before they happen	I avoid expressing confidence ... people will see it as obnoxious or overcompensating	Free!	I judge how I'm coping with recovery based on how others are coping	I attribute accomplishments to something other than myself
I usually assume other folks are right	I must maintain productivity at the same pace despite crisis	I feel like I should automatically "get it"	One day folks will realize I'm underqualified for my roles	I never let on when I don't know how to do something
I don't feel like I belong	I don't tell anyone that I feel like an impostor	I tend to panic before sharing in groups or at meetings	When people compliment me, I assume they're just being nice	I think I was entrusted with a role bc of some kind of mistake

# Tips to deal with the Impostor Syndrome



## Impostor Syndrome

## Reality



**If you believe you  
deserve your success,  
it's easier to deal with**

- Discouraging comments
- Discouraging referee reports
- Hostile environments
- Hostile questioning
- Proposal & job rejections
- [micro] aggressions (unconscious bias)

## Impostor Syndrome



## Impostor Phenomenon



"Impostor phenomenon as not merely a dysfunctional “syndrome” that resides within certain individuals, but instead as a psychological response to a dysfunctional context" *Feenstra et al. 2020*

Create an environment in which everyone feels as though they rightly belong by

- Tackling persistent stereotypes
- Increasing diversity across occupations and hierarchical levels
- Assuring equal treatment for all group members.

## Impostor Syndrome

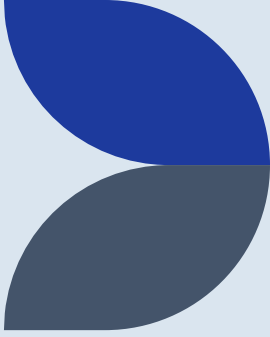


## Impostor Phenomenon



**By creating an more inclusive and equal environment,  
members of minority groups will be more likely to  
respond with lower incidences of impostor feelings**

# What else can we do as community?



- **Give (constructive) feedback:** It feels good to receive constructive feedback, don't forget to give it to others (talks, papers, service, etc)
- **Acknowledge initiative, effort, and progress** (no only success)
- **Celebrate milestones**  
In our field, rewards come much later than the real effort (papers are accepted months later after submission, jobs offers come months later after application, etc). Be able to celebrate success on time!

# What else can we do as community?

**Change the reward system, redefine excellence, and reward good practices**

We are compared to others our whole lives — when earning grades, winning awards, applying for jobs and grants, giving interviews: often come out on top, as individuals.

The academic reward system still focuses on the individual and promotes competition as a key to proceed.



# What else can we do as community?

Change the reward system, **redefine excellence**, and reward good practices

EDITORIAL | 21 February 2018

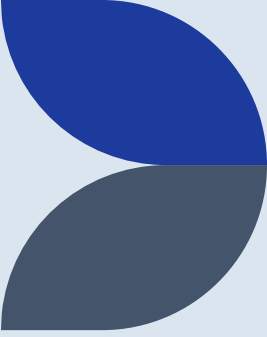
## **Science needs to redefine excellence**

**The concept of research excellence is ubiquitous, but its meaning depends on context.**

We *need a new composite definition of excellence*, where we value cooperation, transparency, shared knowledge and training for scientists and for their managers.

# What else can we do as community?

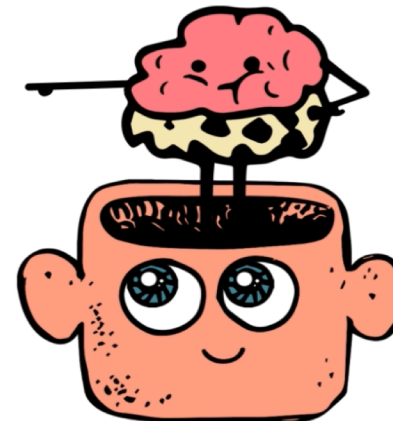
Change the reward system, redefine excellence, and  
**reward good practices**



A stamp to reward a good practice (in the institute, in a conference).

These are things that can be done, without always asking researchers to 'fix' their skills.

HACKING YOUR BRAIN'S  
**"REWARD SYSTEM"**  
TO CHANGE HABITS

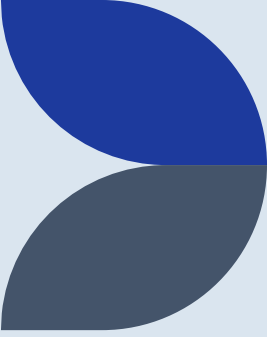


# As Individuals



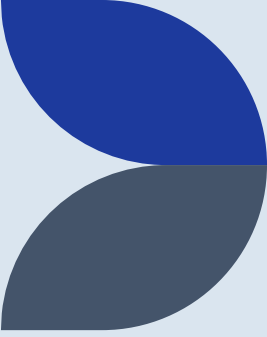


# Learn to recognize and react to your Imposter Syndrome

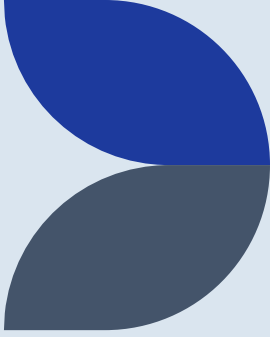


- **Flag Imposter Thoughts:**
  - “ I was **lucky** to get into that university”
  - “ They **only** gave me this award because few people applied”
  - “ If I can do it **anyone** can”
  - “ I got a **lot** of help”
  - “ They’re **just** being nice”
  - “ I knew someone in the committee, this is **the reason** why”
- Instead, focus on what you did to **earn** your success – tell yourself you deserve it, and over time it will become easier to believe.

# Be aware that there are many dimensions of research proficiency



- **“Intelligence”**: competence at complex problem solving
- **Knowledge**: Possession of relevant facts and skills
- **Taste**: Ability to identify important, answerable questions
- **Grit**: Ability to persevere, maintain attention, finish tasks, slog through drudgery
- **Curiosity**: Alertness to relevant byways, anomalies
- **Intuition/Insight**: Ability to expose oneself to, select for, and respond to constructive paths.
- **Communication**: Ability to advance ideas and generate needed input from peers



# Be aware that there are many dimensions of research proficiency

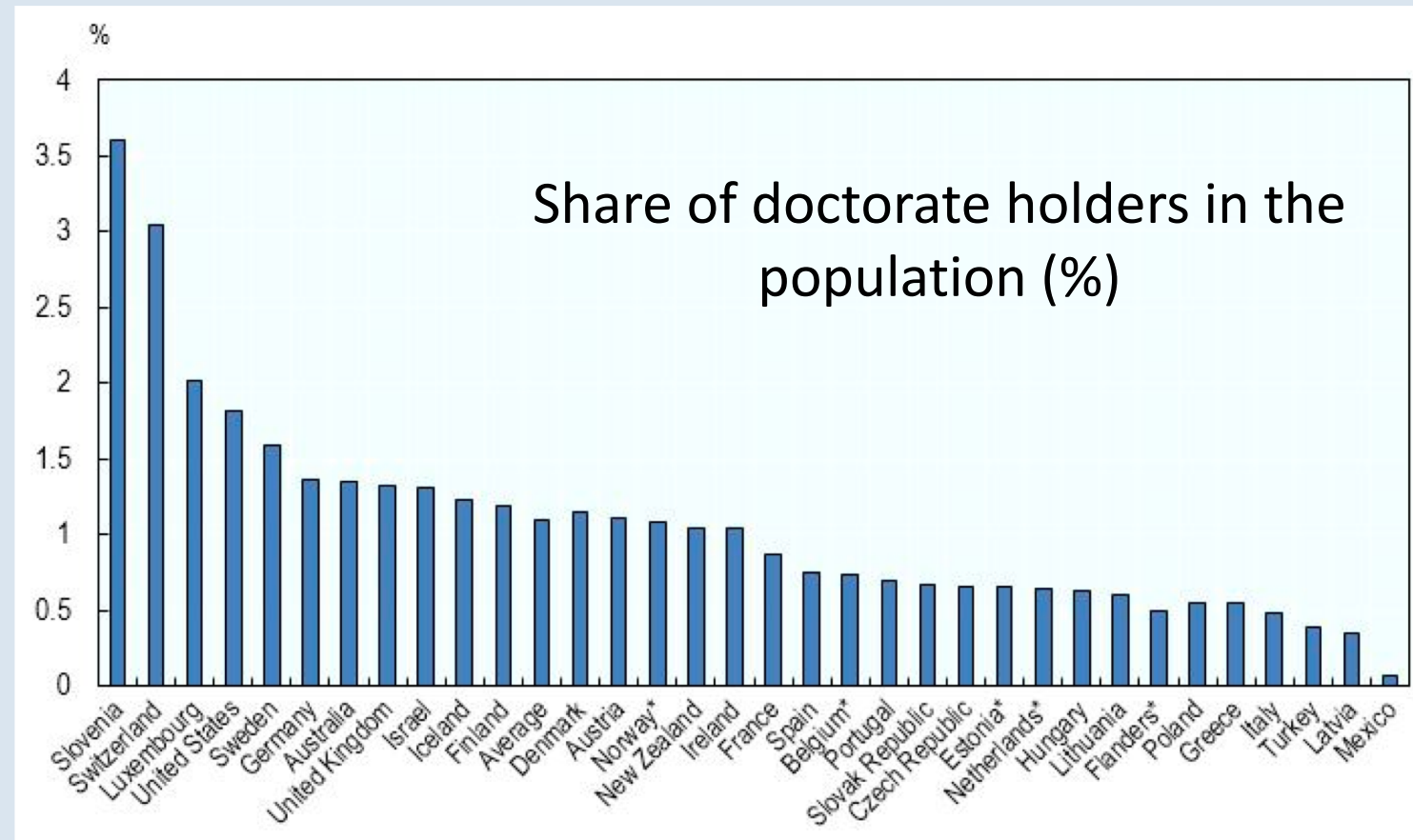
- “Intelligence”: competence at complex problem solving
- Knowledge
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- Grit: Ability to persevere through drudgery
- Curiosity
- Intuition/insight: Ability to expose oneself to, select for, and respond to constructive paths.
- Communication: Ability to advance ideas and generate needed input from peers

**Find and focus on your own strengths.  
Improve your weakness with practice  
and time**

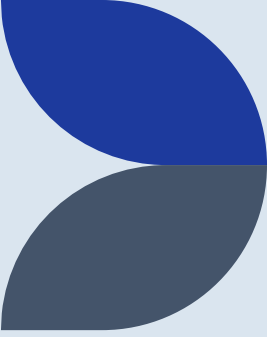
# Perspective

Remember who you are  
and your own background.

For example, the averaged  
number of people who  
hold a PhD in the world is  
less than 1%



# Other Tips

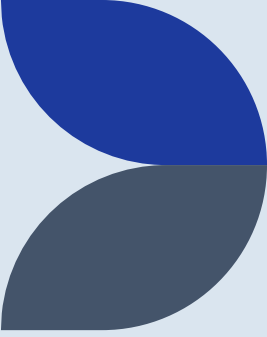


- **Keep a “happy” folder with emails of things you have accomplished, positive feedback from professors or peers.**

It can often take an army of positive comments to negate the effects of one negative comment (You may not be emotionally ready to deal with a negative comment that comes out of the blue)

- **Talk about it:** Negative thoughts just get worse the more you keep them in your own head

# Other Tips

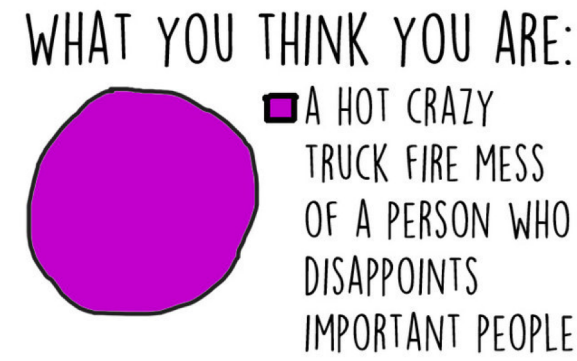
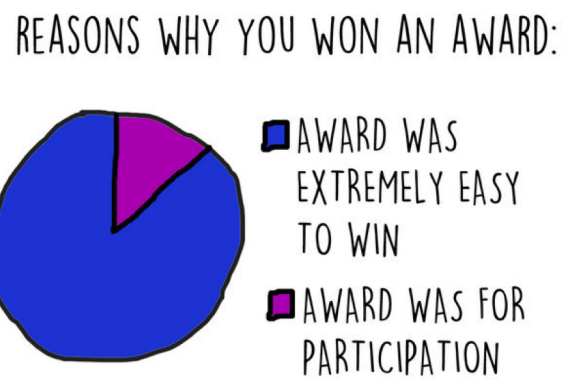


- Get lots of second opinions from people you trust – **there is a disconnect between your self-assessment and your actual abilities.**
- **Get a mentor!** Students who reported feeling mentored appear to be less likely than others to exhibit characteristics of the imposter syndrome .

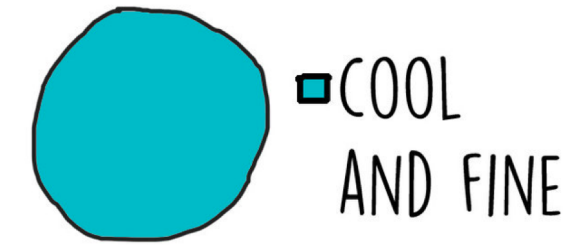
**Also, become a mentor!**

(“Women and the Imposter Syndrome in Astronomy”, Ivie & Ephraim, Jan. 2011: AAS Report on Women in Astronomy)

- **Embrace imperfection and failure**



WHO OTHERS THINK YOU ARE:



Thank you all for coming and participating!