

IMPOSTOR SYNDROME & WHAT RESEARCHERS NEED TO KNOW



<https://youtu.be/JqFKv9Rg0k8>



Danfeng (Daphne) Yao
Professor of Computer Science

To share my personal experiences in my decades-long journey overcoming impostor syndrome

The sooner you know about it, the sooner you become a better researcher

“News anchors’ jobs are easy”



CNN Anchors, Reporters and Staff - CNN
cnn.com



CNN Anchors, Reporters and Staff - CNN
cnn.com



CNN Anchors, Reporters and Staff - CNN
cnn.com



CNN Anchors, Reporters and Staff - CNN
cnn.com



CNN Anchors, Reporters and Staff - CNN
cnn.com



CNN Anchors, Reporters and Staff - CNN
cnn.com



CNN Anchors, Reporters and Staff - CNN
cnn.com



CNN anchor reads epic list of 2018 news ...
cnn.com



CNN anchor reads epic list of 2018 news ...
youtube.com



CNN Anchors, Reporters and Staff - CNN
cnn.com



CNN Anchors, Reporters and Staff - CNN
cnn.com



CNN anchor told colleague her salary ...
cnn.com



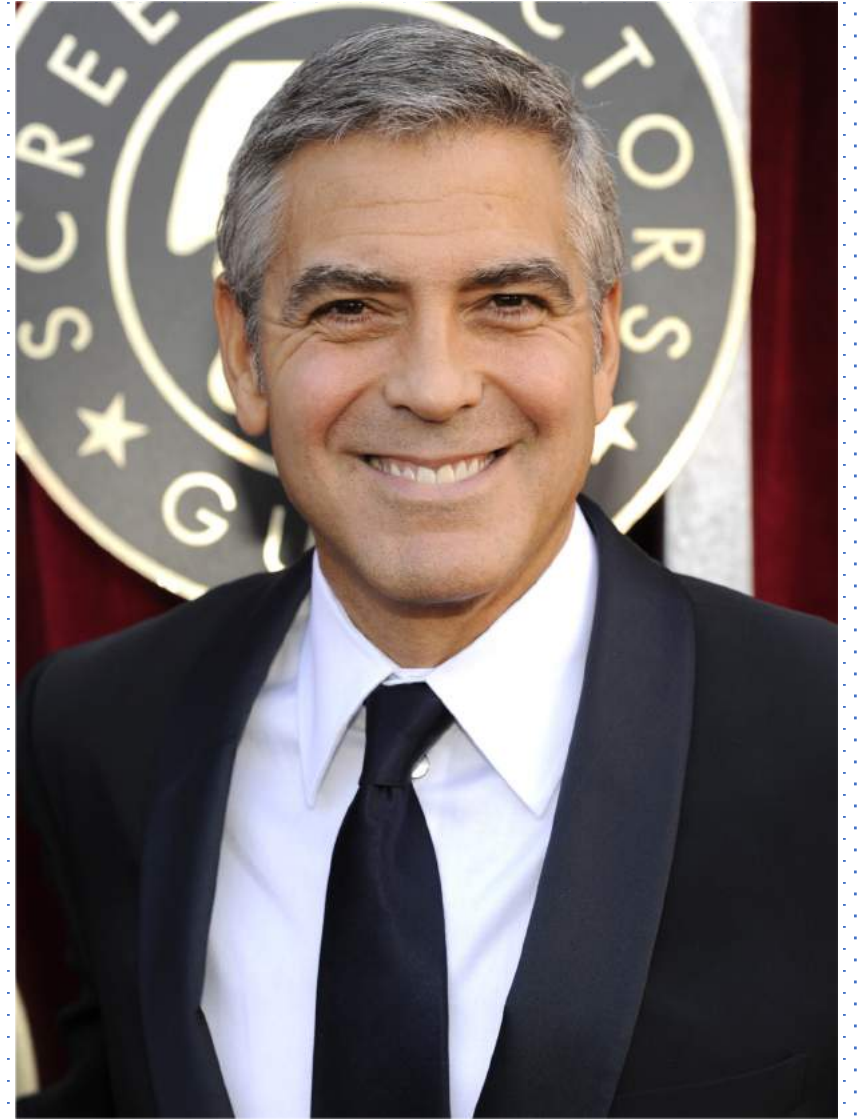
My ultimate goal for you –

Ability to think and speak while being
questioned/criticized

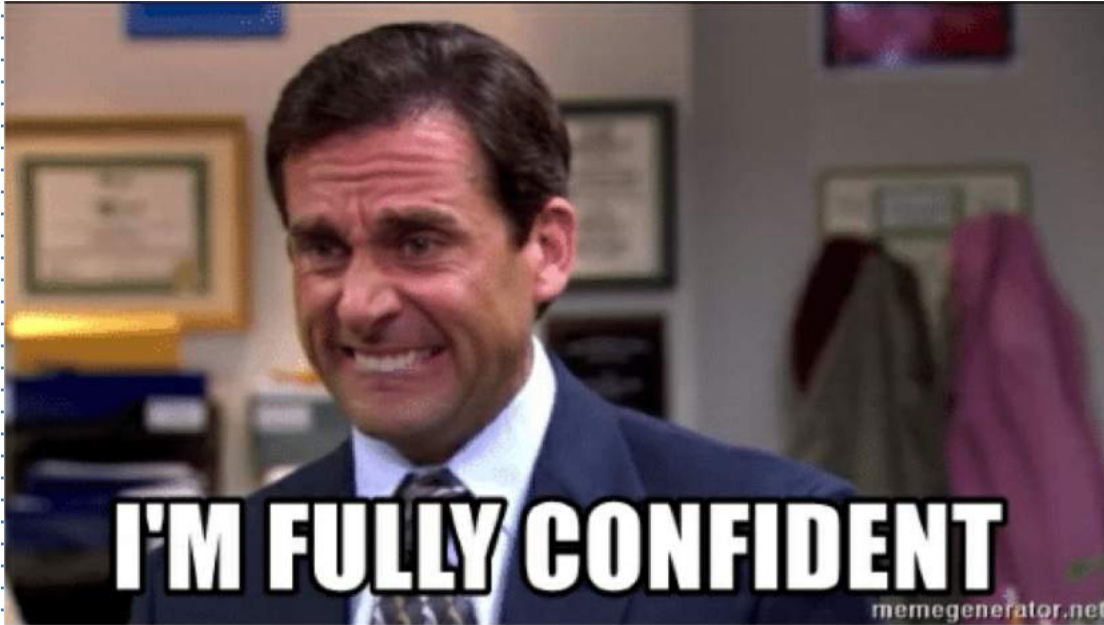
“Don’t act differently when you’re around important people.”

-- George Clooney’s advice to a young actor

Hmm... but being yourself is easier said than done



Presentation at Stanford



Presentation at a R2 university



WOMEN IN CYBERSECURITY



Cybersecurity is a tough field -- many people with a hackers' mentality, not a scientist's mentality

Jessica Alba discussed overcoming impostor syndrome

May 27, 2015, 09:57am EDT

How Jessica Alba Built A \$1 Billion Company, And \$200 Million Fortune, Selling Parents Peace Of Mind



Clare O'Connor
Entrepreneurs

“For a long time, I felt like an impostor. It's not until you feel whole in yourself that you fit in anywhere.”

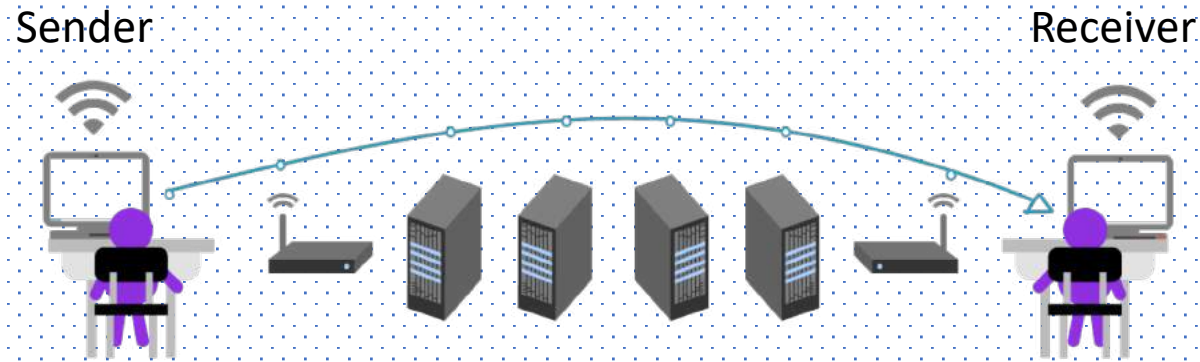
The Honest Company Expands in Canada

Canadian consumers will now see more products by The Honest Company at retailers.



Impostor syndrome (also known as **impostor phenomenon**, **impostorism**, **fraud syndrome** or the **impostor experience**) is a psychological pattern in which one doubts one's accomplishments and has a persistent internalized fear of being exposed as a "fraud".

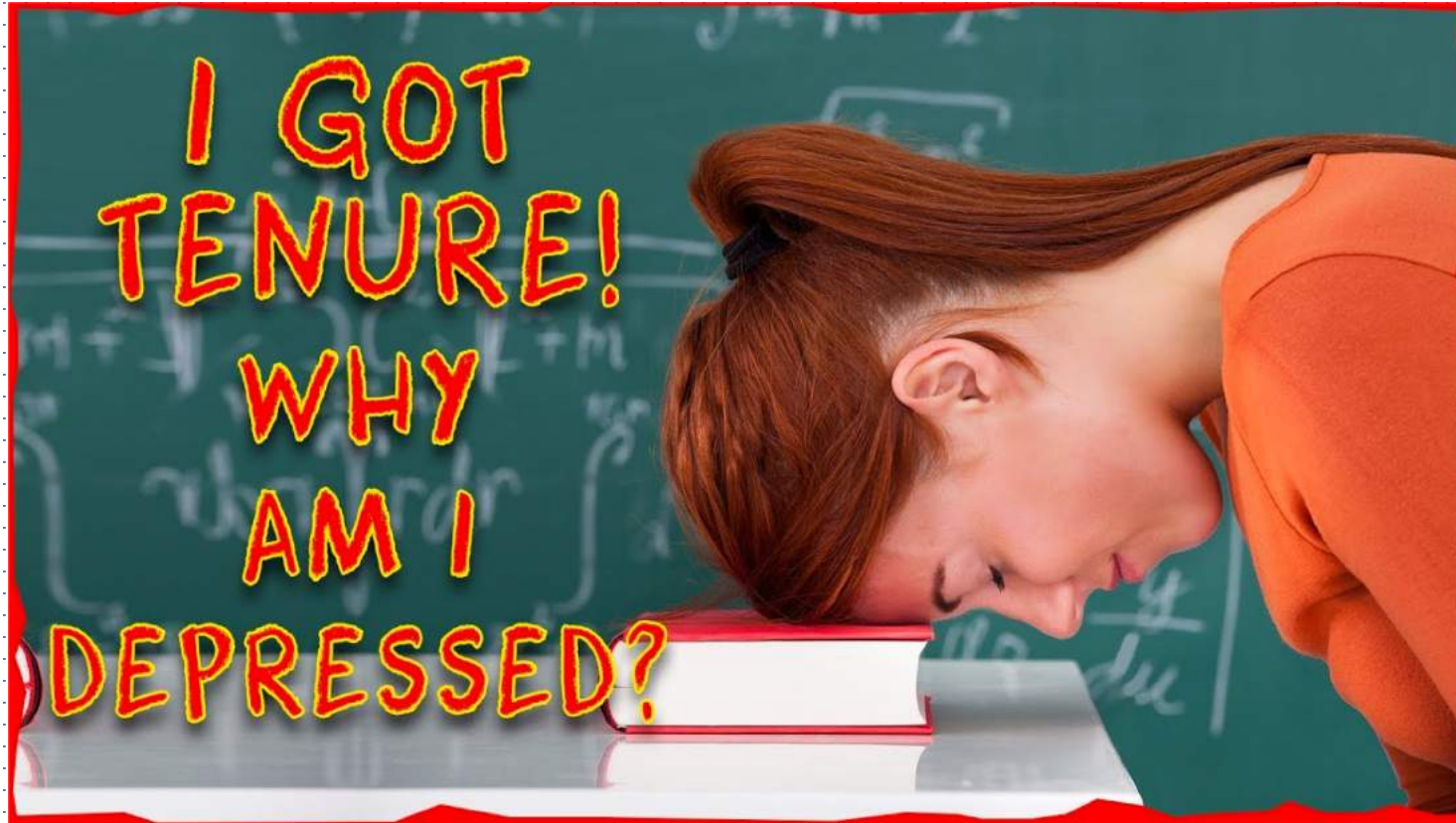
Public key infrastructure (PKI) episode during my graduate school (in 2003)



My collaborator from Sun Microsystems causally asked:
“Are you familiar with PKI?”



Post-tenure depression (2014)



San Diego sabbatical (2016)





In that beautiful beautiful San Diego
Torrey Hills Community Park in 2016, I
had a profound and overwhelming
sense of **FAILURE -- as a researcher**

I wanted to quit

I felt like a loser. My past achievements didn't matter to me.

ARO YIP Award (2014)

NSF CAREER Award (2010)

CACI Faculty Fellow (2014)

Outstanding New Assistant Professor Award (2012)

Best Paper Awards (2006, 2010, 2012)

Brown University PhD (2007)

Indiana University MS (2002)

Princeton University MA (2000)

Peking University BS (1998)

US Patent 8,266,439 (2012)

US Patent 8,763,127 (2014)

3rd US Patent application ongoing by 2016 (approved in 2018)

Impostor syndrome is not just a female issue

- High achieving individuals
- People of color
- Immigrants
- Poverty
- Mental diseases
- Traumatic childhood
- Perceived incompetence of parents
- Not looking nerdy enough

“When are they going to discover that I am, in fact, a fraud and take everything away from me?”
– Tom Hanks (2017)



What movies?

How to use your impostor syndrome as an asset

PUBLISHED DECEMBER 3, 2018 IN
[INSIDE ATLISSIAN](#)



MIKE CANNON-BROOKES
Co-Founder & Co-CEO

Take one look at my title, and you'd think I know what I'm doing when I turn up to work every day.

Over a decade ago I started a company straight out of university with a mate, Scott. We had no prior business experience and no grand plan. Today we have thousands of awesome employees, and millions of people across the planet use our software every day. Surely that kind of success comes from massive expertise and experience, right?

Public faces of impostor syndrome



Michelle Obama: 'I still have impostor syndrome'

4 December 2018



Michelle Obama has said she still feels "impostor syndrome", adding that "it never goes away".



Emma Watson: I suffered from 'imposter syndrome' after Harry Potter – I felt like a fraud

Anna Francis
6:00 pm - 15/06/13



Bling Ring star lacked confidence



Not looking nerdy enough to be a scientist

My former student -- A masculine white male software engineering intern at Overstock.com mistaken as a janitor

For 22 years, people telling me “You smile too much.”

Not looking old enough to be a professor

“You’re the lead author of the work?”

Where does the society's bias come from?

To smile or not to smile – that's the question

Google search "University Professor"



university professor

Q All Images News Videos Shopping More Settings Tools

Collections SafeSearch



UR math professor Jim Davis selected ...
news.richmond.edu



So You Want to Be a Professor? Why ...
mindingthecampus.org



Professor at a University Make Per Year ...
work.chron.com



Award-Winning Professors: How We Change ...
news.virginia.edu



Reasons To Become A College Profess...
jobmonkey.com



Dartmouth Professor Lectures for One ...
news.dartmouth.edu



UC regents appoint Dr. Owen Witte ...
newsroom.ucla.edu



Homework Help ...
homeworkhelpglobal.com



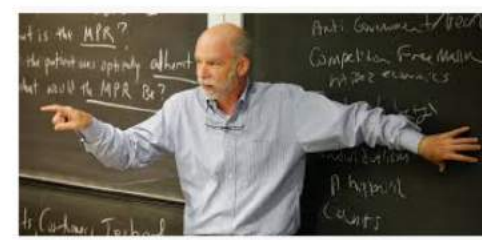
What Do Professors Do, Anyway? | HuffP...
huffpost.com



Robert I. Field | Drexel Kline School ...
drexel.edu



University Professor
emaze.com



Faculty & Staff | Brandeis University
brandeis.edu



Professorship at a university ...
research-in-germany.org



Assistant Professor at a University ...
work.chron.com



university-professor - Reappropriate
reappropriate.co



Faculty Research & Teaching | Emory ...
emory.edu



Brandeis University
brandeis.edu



Leipzig University considers firing law ...
thelocal.de

Immigrants' kids don't think their parents know America

But... people with impostor syndrome get things done

Wake up at 5am and start working

Feel like I don't deserve anything

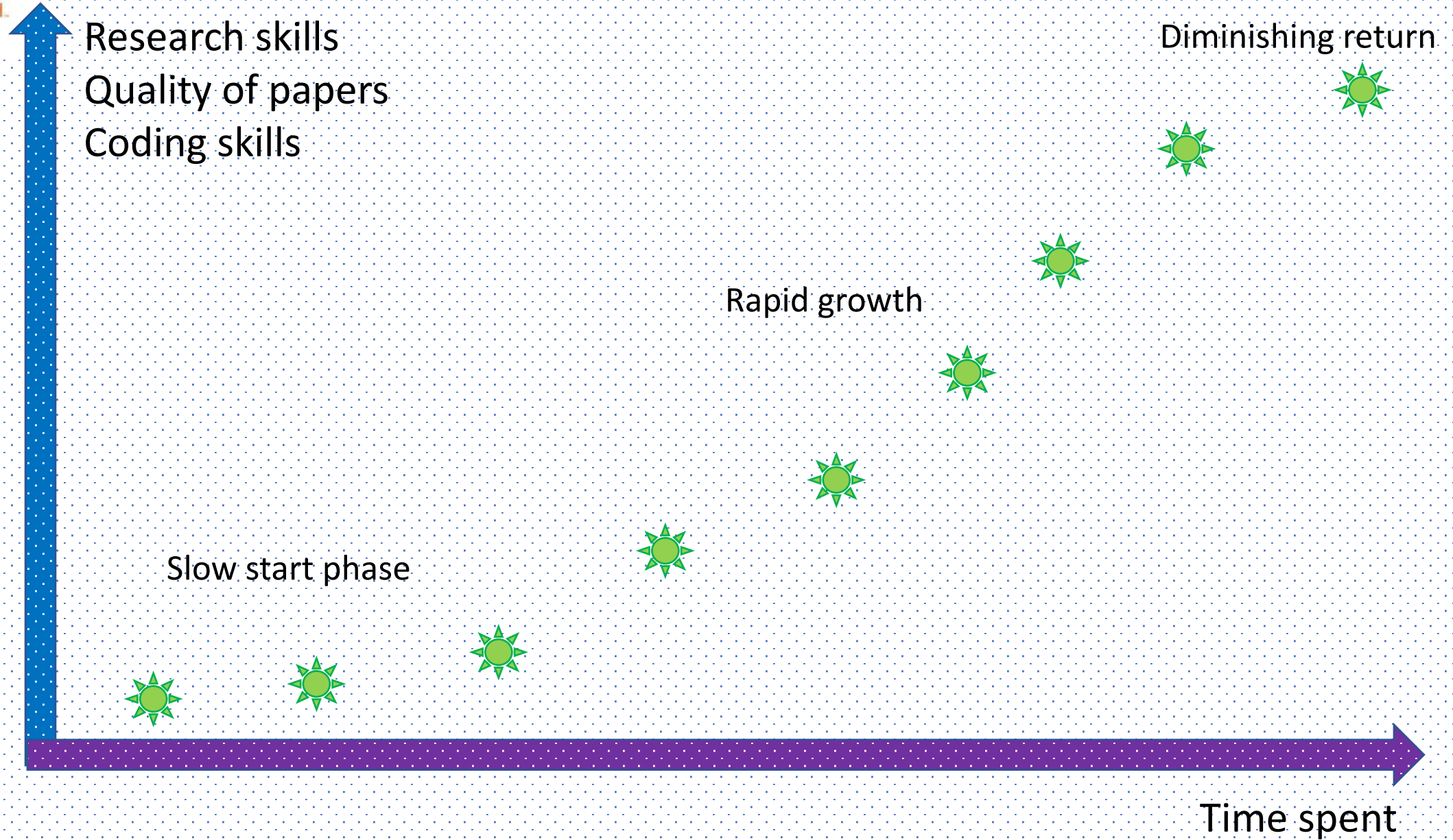
Feel like I need to always do more (to prove myself to others)

If impostor syndrome is a motivator, then why do researchers need to be aware of it?

Why do researchers need to get rid of impostor syndrome?

Doubting yourself – thinking “I suck at research” or “I don’t belong” -- is devastating





Why do researchers need to get rid of impostor syndrome?

Research is a luxurious activity; Creativity requires confidence & a peaceful mind

Research requires determination & persistence – big time

~~Profound sense of faking, pretending~~

~~Doubting yourself~~

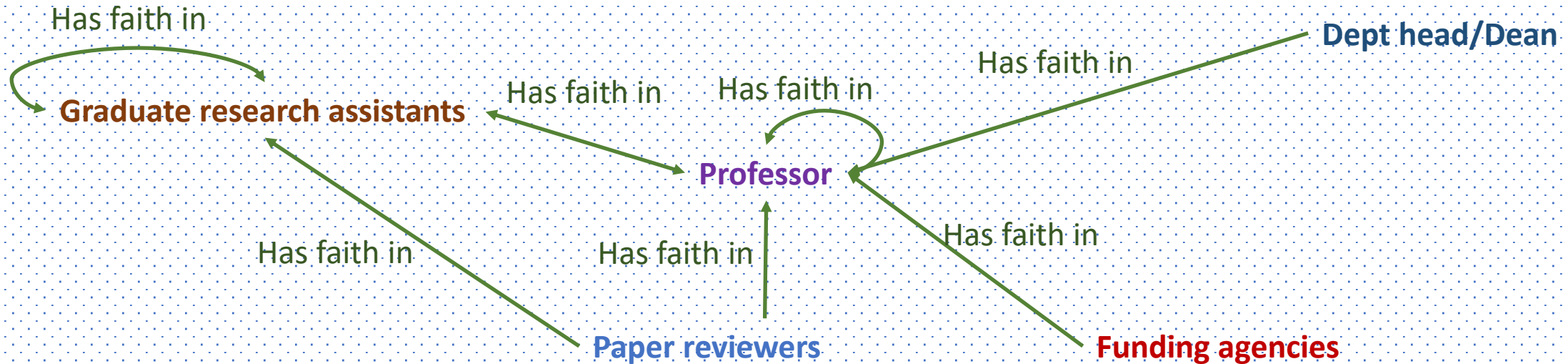
~~Feeling like a fraud~~

~~No sense of belonging~~

My impostor syndrome usually kicked in when I was being interviewed (TV, news, radio stations reporters) for the achievements/inventions/discoveries I had...

I did well in my last interview (fall 2019) -- may have outgrown it!

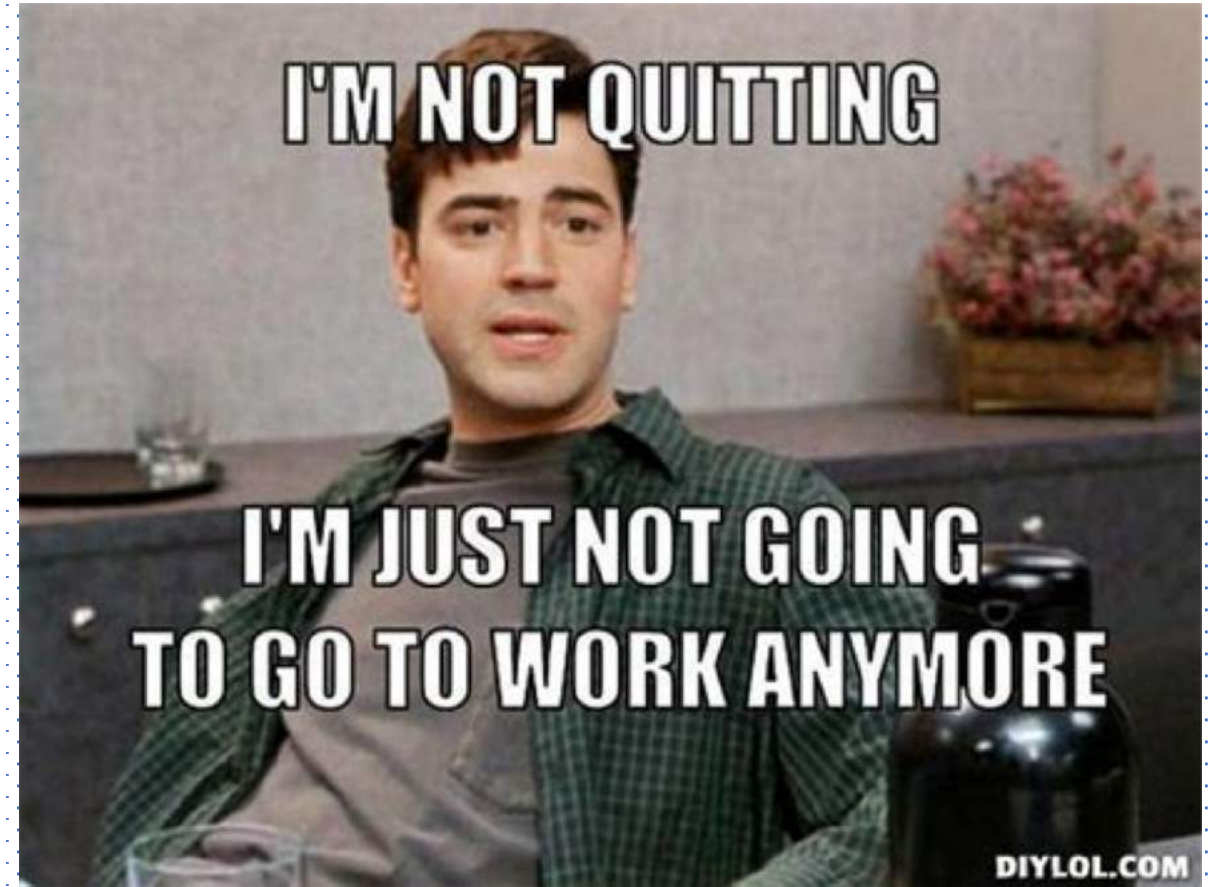
Researchers need to be aware of impostor syndrome



Research Faith Graph

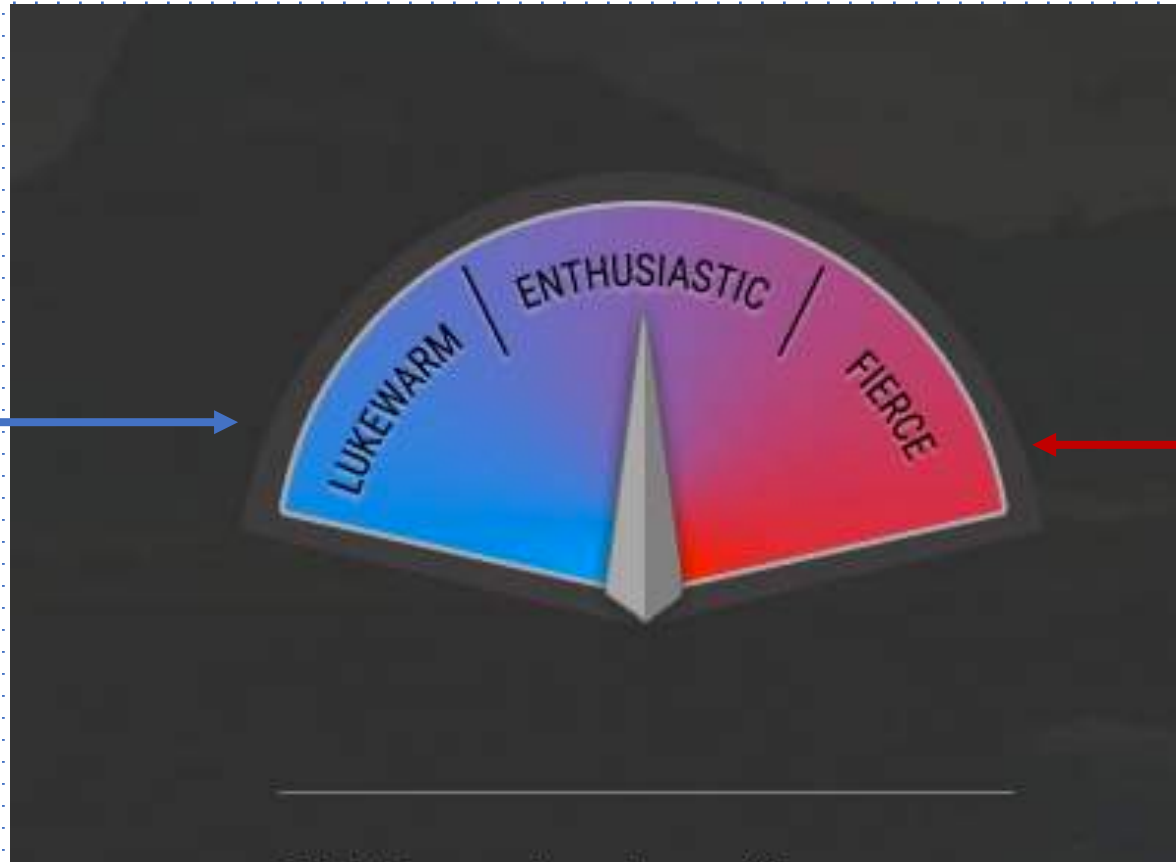
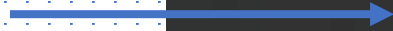
Research requires confidence &
persistence & passion & faith

Impostor syndrome erodes them



Passion meter -- Where are you as a researcher?

Dropout or semi-dropout zone



I want you to be here



Negative side effects of impostor syndrome – quit trying, compromise prematurely

Quiz (pick one):

PhD is for people who are

- A) Smart
- B) Patient
- C) Pulling all-nighters
- D) Creative

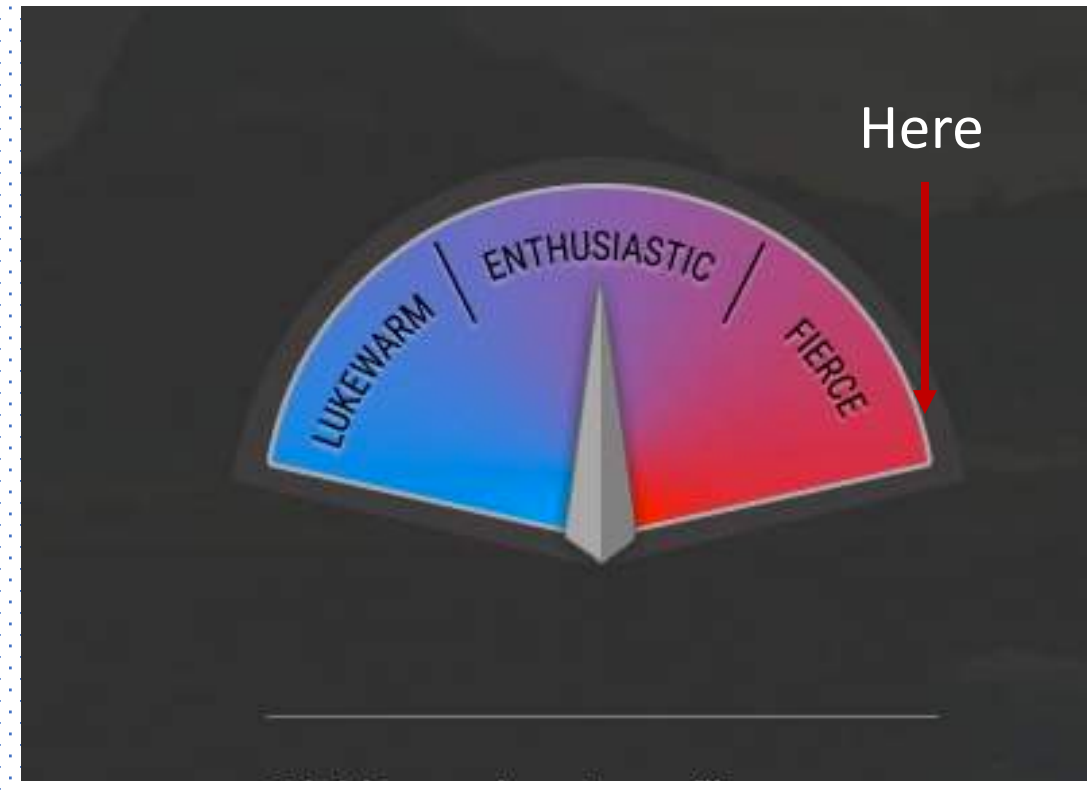
Another negative side effect of impostor syndrome – afraid of taking risks

Afraid of stepping into leadership positions & taking responsibilities

Afraid of failures, risk averse

Feeling unqualified or

Feeling others saying you're underqualified



Research involves risks and uncertainties all the time

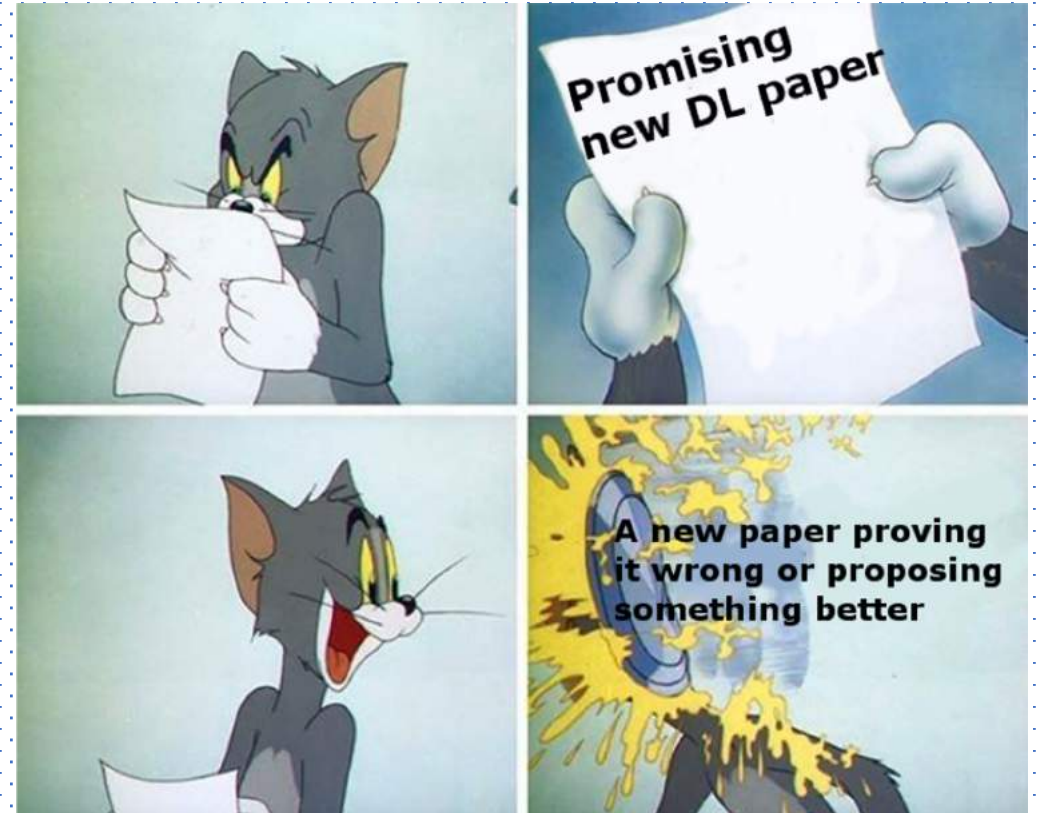


A common pitfall in computer science graduate research

Working in a fast moving field

A profound sense of knowledge gaps

- “I need to read all these books first before I do research”
- Non-stop reading literature
- Unable to recognize novelty in own work



If your advisor had a better choice, he/she would not have asked you to do it

So, you're the best qualified person to do this work

Learn from Janet Yellen

Former Chair of the Federal Reserve

However, there were doubts about her qualification when she was nominated



People say – No, Larry Summers would be a stronger candidate.



To criticisms, Janet Yellen replied:

“Don’t count me out yet.”



Yet another negative side effect of impostor syndrome
– unable to defend your work against critics

“You don’t have new math”

“Your security solution
is insecure”

“Your work is not useful”

“Your result is not surprising”

“You should work on Y, instead of X”

“Not novel”

“Your work is too rigorous for security conferences”

Impossible to achieve
perfect security

Impossible to please
everyone



There'll always be
attacks that evade
detection



There'll always be
people who think
you suck

How to cope with impostor syndrome?

It's not to say that you should not work hard

Working hard \neq Having impostor syndrome

Hard working (being a subject expert) is a starting point of a researcher

Also don't go to the other extreme



Don't be Elizabeth Holmes
(Google "Theranos")



Don't be Billy McFarland
(Google "Fyre Festival")

Know your strengths

STRENGTHS:

ZOOLOGY
WEAPONS VALET

WEAKNESS:

CAKE
SPEED
STRENGTH

MY WEAKNESS IS MY STRENGTH?

Daphne's biggest moments of clarity

My weakness (e.g., abstract thinking) is precisely my strength!

Wait, people actually need me?

Daphne's No. 1 tip for coping with impostor syndrome

1. Know/find your strengths
2. Let your strengths shine
3. Repeat

What if having no strengths?

Great minds don't think alike

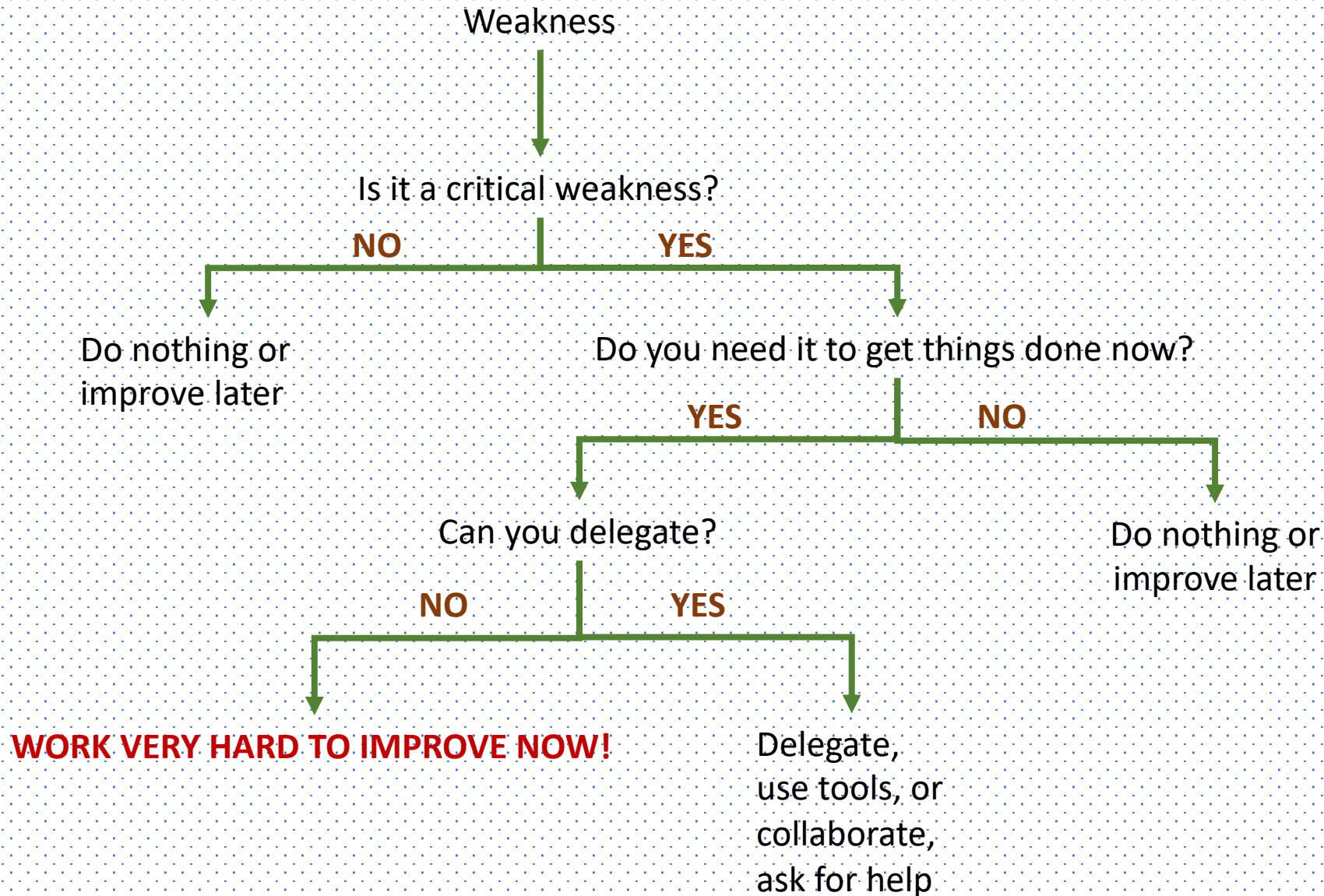
Recognizing other
researchers' style/strengths
brings clarity to yours



What about your weaknesses?

~~Fake it till you make it?~~

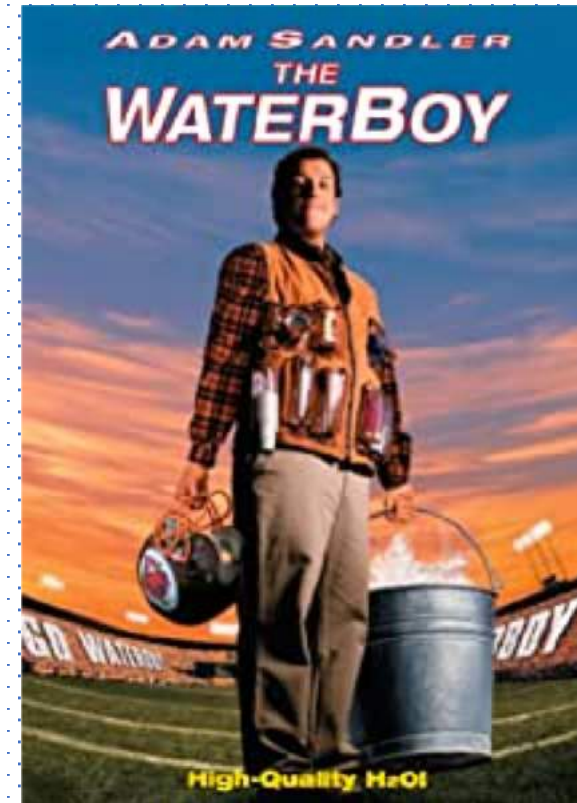
What about weaknesses?



Watch sports movies – overcoming self-doubt



The Replacements (2000)



The Waterboy (1998)

Have role models

They don't have to look like you to be your role models

You can have more than 1 role model

Having role models for different scenarios

Role models don't have to be famous



IMPORTANT

Find and build your support system

Find and build your support system

Women in Cybersecurity Research (CyberW) 2020 workshop speakers/organizers



I organize many inclusive excellence events



CyberW Workshop 2017, Dallas TX

Find your allies

Women's Reception at ACM CCS 2019, London UK





Celebrate every achievement!



Celebrate when a paper got published



What else to do to cope with impostor syndrome?

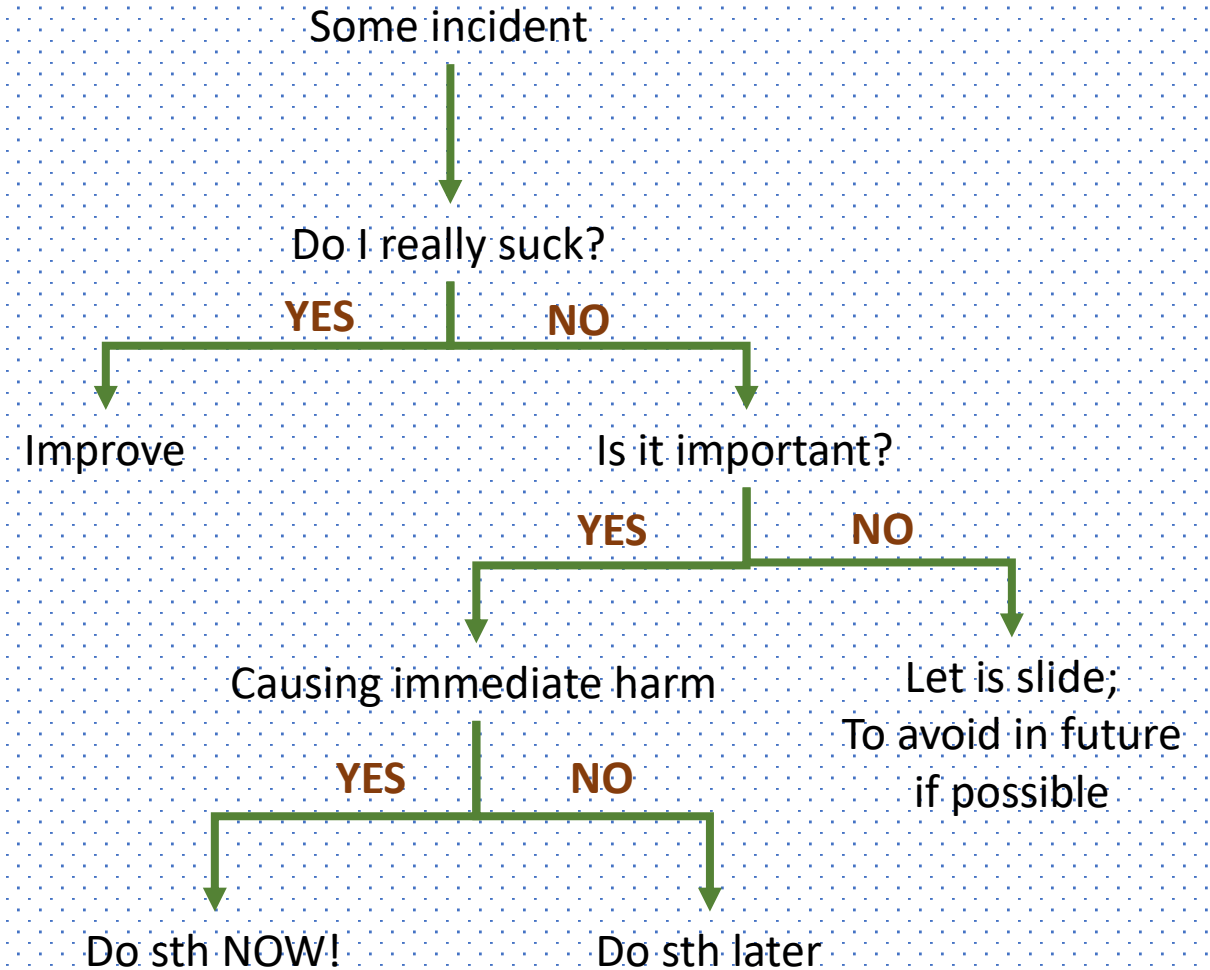
To watch out for impostor-syndrome-inducing incidents

GUARD your confidence

“Professor, are you sleeping?”

“Women usually suck at computer science and engineering.”

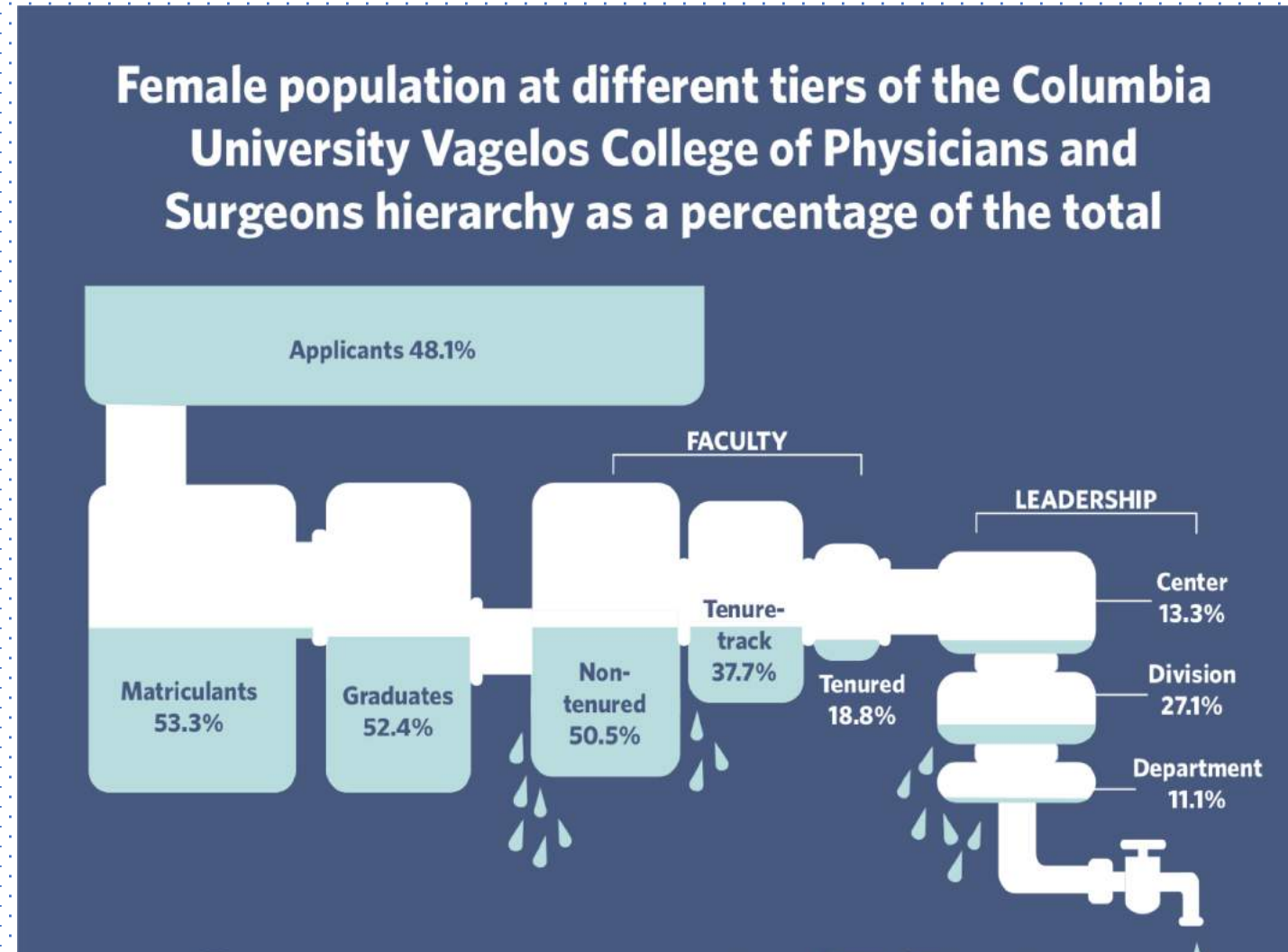
Sexual harassment incidents



Need to build better support systems

Growing thick skin
alone is not sufficient

“Lean in” alone is not
enough



Science will be better if everyone
contributes and shines

**Dr. Daphne Yao**

Elizabeth and James E. Turner Jr. '56 Faculty Fellow and CACI Faculty Fellow in the Department of Computer Science, Virginia Tech

What challenges have you faced as a woman in technology and how were you able to overcome them?

Last Saturday, a remote family friend told me that he was surprised by my achievements, because women “usually suck at technological fields.” This type of stereotypical and impostor syndrome-inducing microaggressions routinely happens to women in technology. They drag women down, making their work less and less enjoyable. It is like running in mud. Overcoming these challenges requires the society to improve, which unfortunately happens very slowly. The current system is not perfect. All women in technology need to read about impostor syndrome. Do not let gender-related issues negatively impact your self-esteem.

What can technology companies do to empower their women employees?

Technology companies need to put women in powerful decision-making positions. Give the benefit of the doubt to women. Women might not always look like or talk like the executives, board members, or presidents in stereotype-perpetuating Hollywood movies. That does not mean women cannot do the work. I have seen so many truly brilliant, devoted, and decisive ladies in the technology profession. Give women the opportunities to shine. Have faith in women.

Daphne's comments on a recent women in tech panel

<https://www.educationandcareernews.com/women-in-stem/experts-weigh-in-on-how-to-set-up-women-for-success-in-tech/>

YouTube Video Recording: <https://youtu.be/JqFKv9Rg0k8>

