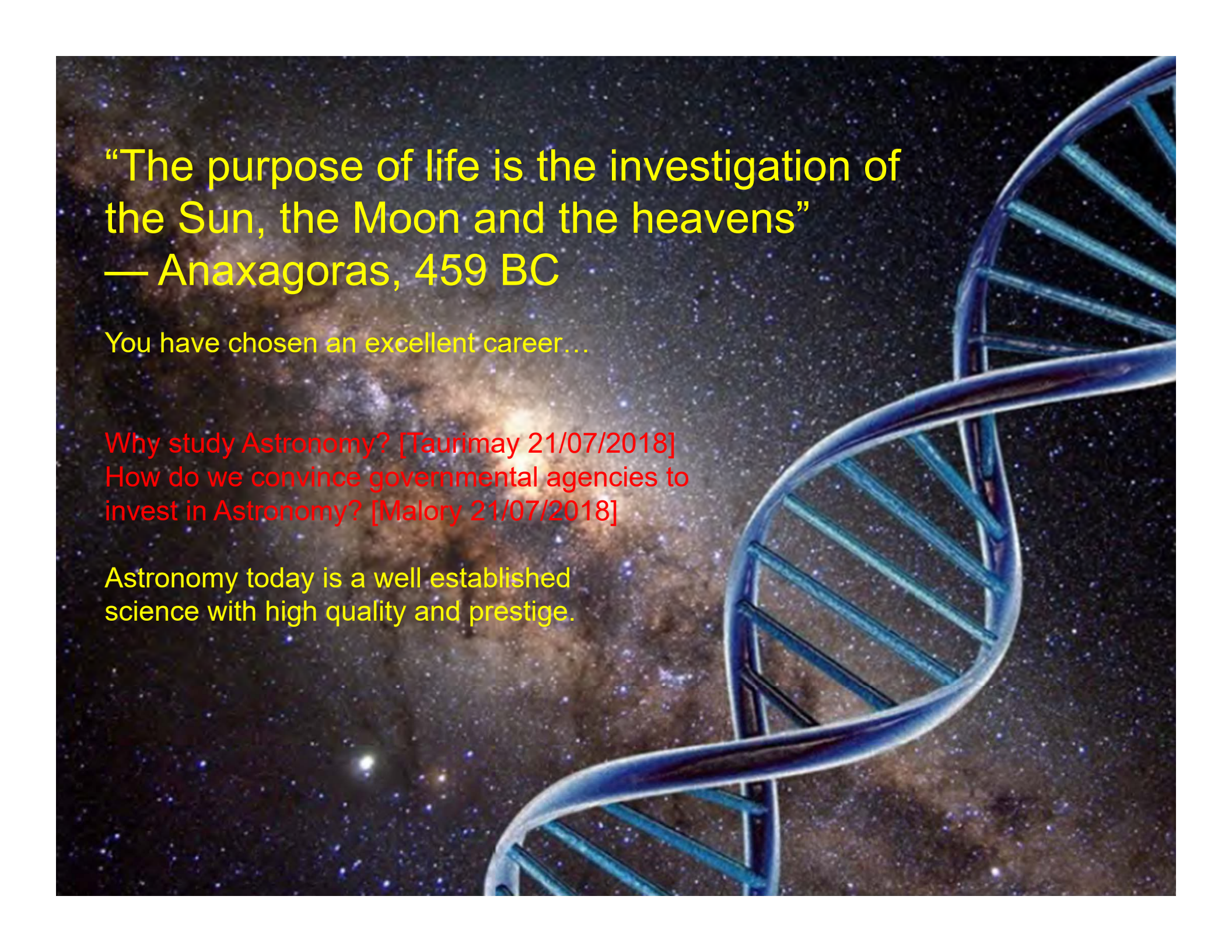


Career Development

Itziar Aretxaga (itziar@inaoep.mx)
41st ISYA, Socorro, Colombia, July 2018

Acknowledgements:

- Selection of viewgraphs from Dante Minniti's talk on Career Development



“The purpose of life is the investigation of
the Sun, the Moon and the heavens”
— Anaxagoras, 459 BC

You have chosen an excellent career...

Why study Astronomy? [Taurimay 21/07/2018]
How do we convince governmental agencies to
invest in Astronomy? [Malory 21/07/2018]

Astronomy today is a well established
science with high quality and prestige.

Our own craziness

We have all suffered from our own limitations

Sometimes we feel overwhelmed

We have all had a bad teacher

Don't worry too much about the future

Work hard, and trust yourself

Others have made it, and so you can

Be aware of the impostor's syndrome

We all have had problems, it's called life

Hang in there, surpass your own psychological blocks

Take all steps, one at a time, and always always always give your best.



“Impostor Syndrome”

Not a true medical condition, but a transition phase we ALL might go through.

Highly acute sense of not belonging, being below the average, and being about to be found out.

© MARK ANDERSON, ALL RIGHTS RESERVED WWW.ANDERTOONS.COM



"I think instead of worrying about why people don't believe in you, we should worry about why you don't believe in *yourself*."

Signs of Impostor Syndrome

- Self-doubt
- Sense of incompetence
- Frequently comparing yourself to others
- Low self-esteem, self-worth
- Fear, anxiety
- Immobility
- Stress & burnout
- Under-performance
- Hard to accept praise and/or compliments
- Inability to enjoy your accomplishments



Coping & Protecting Strategies

- Hard work to make up for “ineptness”
- Holding back
- Use of charm or perceptiveness
- Procrastination
- Not finishing
- Self-sabotage



From Dr. Valerie Young, www.impostorsyndrome.com

Small Changes Add Up

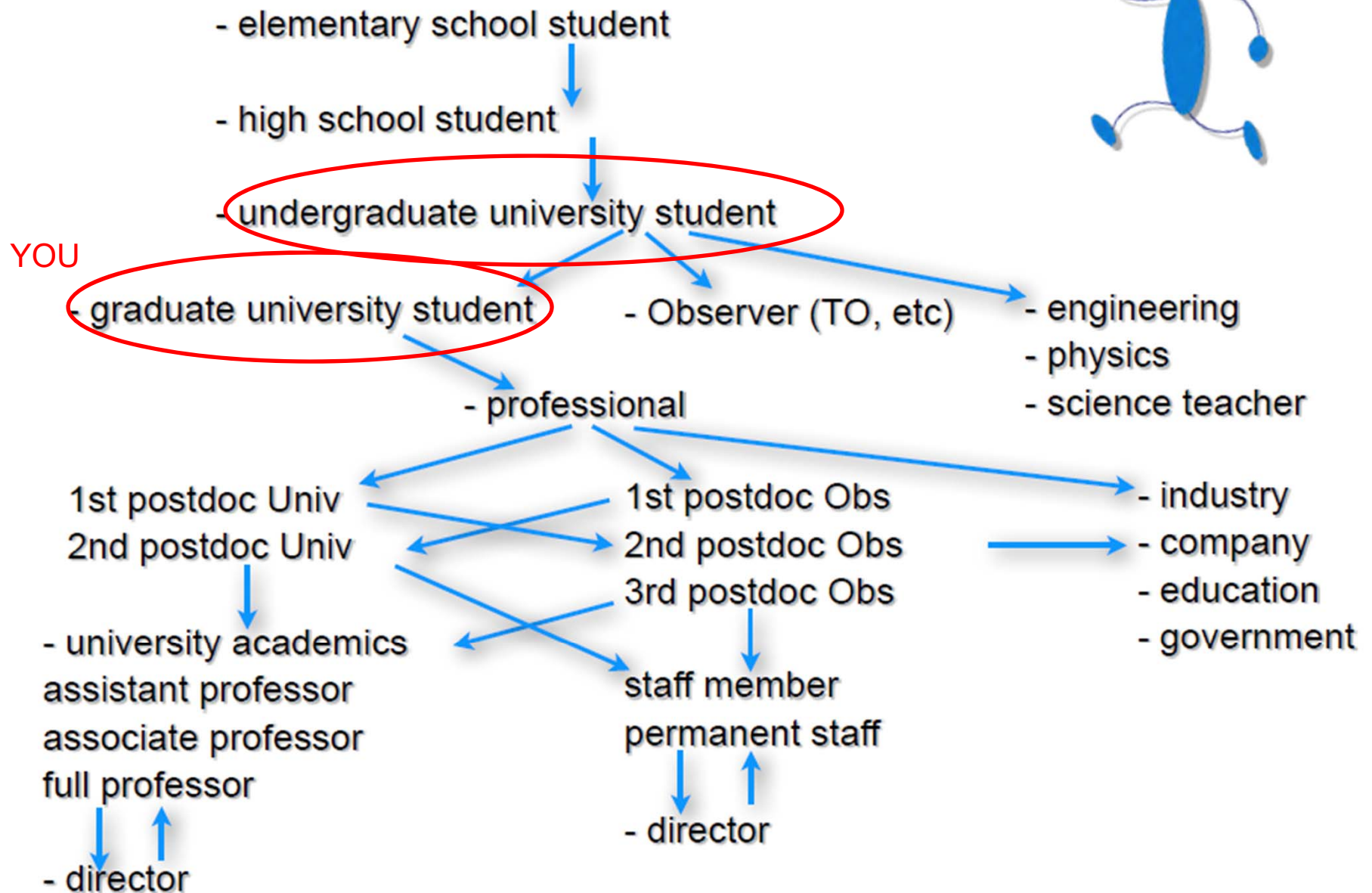
- Break the silence and normalize feelings
 - It's not just you!
- Separate feelings from fact
- Change thoughts and behaviors first and let feelings catch up...understand your unique “impostor pattern”
- Reframe those “fraud” feelings into a sense of learning and growing

From Dr. Valerie Young, www.impostorsyndrome.com

Small Changes Add Up

- Find a mentor, create a support system & community
- Teach and be a mentor
- Remind yourself that you are not alone
 - “Everyone else is an impostor, too.” – Tina Fey
- Remind yourself of your accomplishments

A Career in Astronomy



Your plans as a student:

Specialize in an area of Astronomy that you like

Increase your knowledge of other areas of Astronomy

Have (create, do) your own research projects

Learn how to publish

Obtain a MSc, PhD, and then a postdoc

Make national and international contacts (networking)

Enjoy your career, be happy



Work ahead:

Learn

Stay positive

Research

Grow

Learn English

Find work

Publish

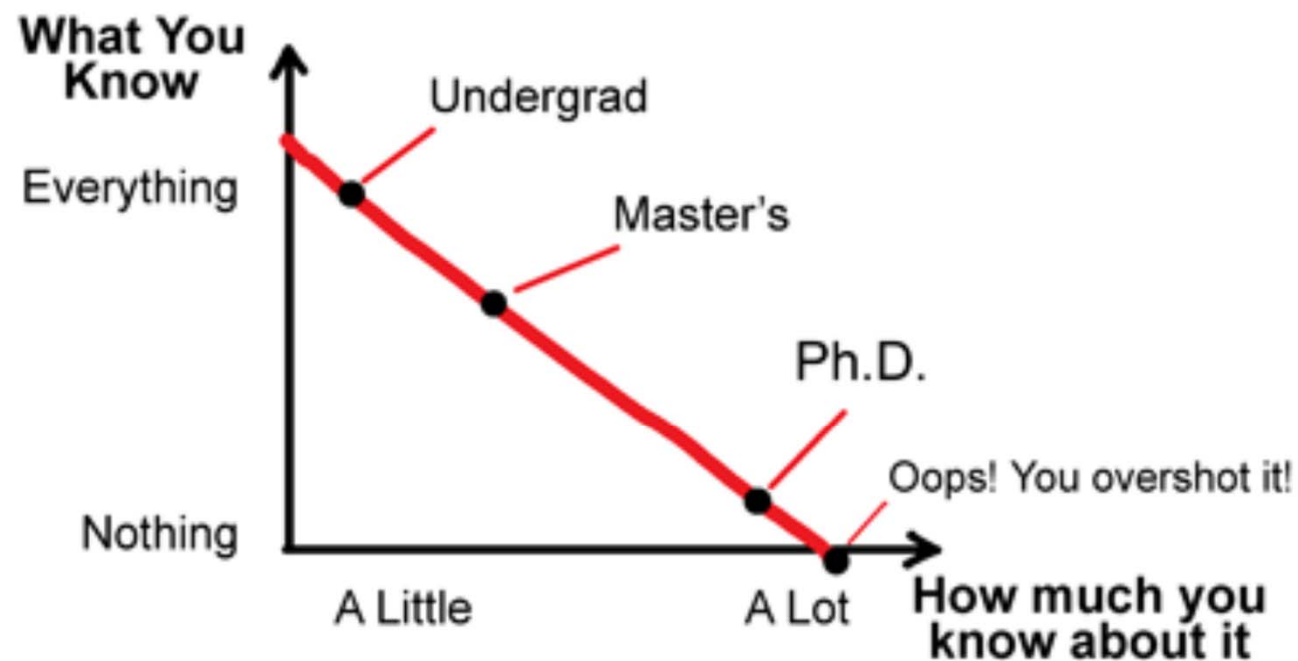
Be neat

Not be late

Be rigorous

Express yourself well

What You Know vs How much you know about it



Professor

As a student you must:

Learn

Research

Grow

Learn English

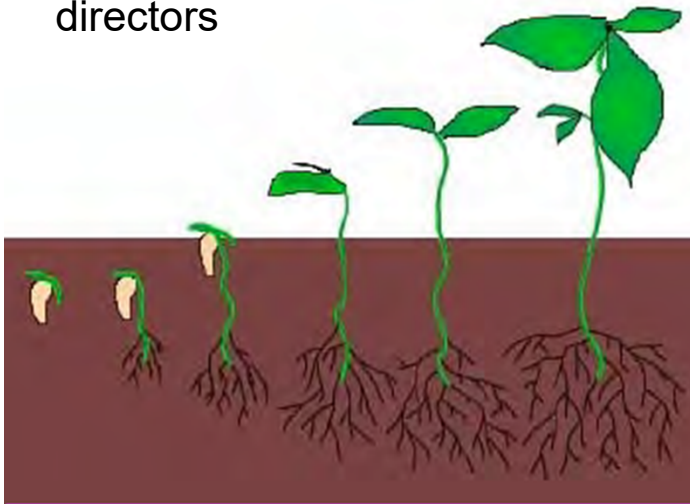
Publish

Deliver a thesis

Advice:

Learn from everybody,
advisor, professional
technicians, students,
postdocs, professors,
directors

Enormous responsibility: to help
the creation of another scientist.



PhD = world expert on his/her topic, capable of doing independent and original research.



What do you mean “networking”?

Go to talks (to all of them).

Ask questions, have lunch with the speaker, etc.

Organize workshops, discussion groups, etc.

Go to conferences (and go to all talks)

Work with other members of your Institution.

Keep in touch.

Comment papers, do blogs, twitter, facebook, linkedin, etc.

Don't be shy, your work is your best presentation card, make yourself be known by speaking about it and asking the opinion of others on how you can enrich it.



What do you mean “networking”?

Go to talks (to all of them).

Ask questions, have lunch with the speaker, etc.

Organize workshops, discussion groups, etc.



Itziar Aretxaga @ItziMex · 32 min

Loving this! We are here to serve the new generations of astronomers. Our bond goes beyond the 3-week school. We are the ISYA family [#ISYA41Col](#) [#OYA](#) [@IAU_org](#) !

Camila Esperança 🇧🇷🇨🇴 @safreitas_c

Amanhã começa a última semana da [#ISYA2018](#). Não sei como lidar com isso.



Tomorrow is the beginning of the last week of the [#ISYA41Col](#). I don't...

Research as a student

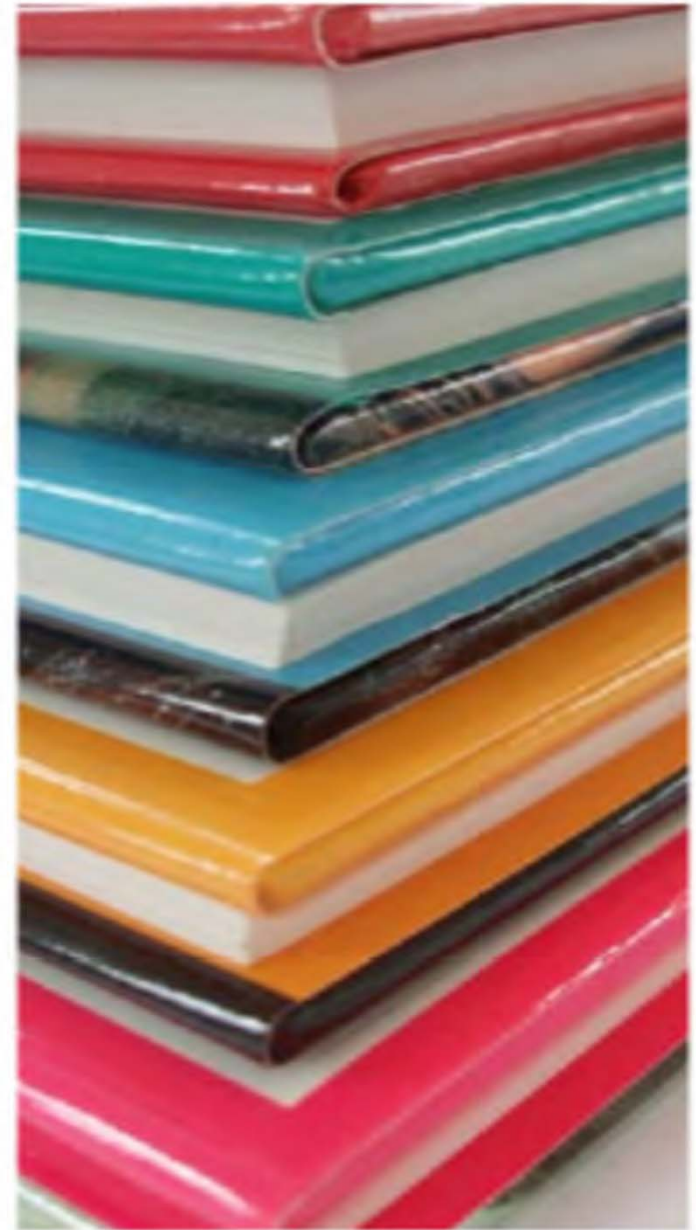
Take advantage of all opportunities

- This school!
- International contacts
- Research topics
- Observing experience
- Publications
- Languages
- Travel
- Meetings, Workshops
- Talks

Start doing research focused on a publication as a final goal.

You must know why your work is important

Beware that psychological problems are the biggest barrier to progress.



Scientific research

SOME DIFFICULTIES:

- Funding: even if there is funding, it may be restricted to a specific proposal
- Team: number, experience, topics
- Equipment: materials, computers, literature access
- Environment: collaborators, competitors, referees
- Current thinking: fashion or priority topics
- Experience: if unexperienced, may waste time, but can come up with new ways
- Maturity: honesty, effort, ethics
- Unconscious biases: minorities have it harder to climb the research career ladder

WHAT WE DO:

- Work hard
- Work under a strict ethical code
- Ask yourself what your biases are (we all have them) and analyze if/when they are at work. Work against them.



What is unconscious bias?

- Unconscious bias: social stereotypes about certain groups of people that individuals form outside their own conscious awareness (Fiske & Taylor 1991; Valian, 1998, 1999)
- Almost everybody has it!
 - We are natural classifiers
- Compelling body of scientific evidence showing that it affects:
 - Hiring
 - Evaluation
 - Promotions
 - Selection of leaders
 - Daily

If you think you do not have them take the following test and be humbled:

<https://implicit.harvard.edu/implicit/demo/>

Select a Test

Gender-Career IAT

Gender - Career. This IAT often reveals a relative link between family and females and between career and males.

Age IAT

Age ('Young - Old' IAT). This IAT requires the ability to distinguish old from young faces. This test often indicates that Americans have automatic preference for young over old.

Sexuality IAT

Sexuality ('Gay - Straight' IAT). This IAT requires the ability to distinguish words and symbols representing gay and straight people. It often reveals an automatic preference for straight relative to gay people.

Religion IAT

Religion ('Religions' IAT). This IAT requires some familiarity with religious terms from various world religions.

Asian IAT

Asian American ('Asian - European American' IAT). This IAT requires the ability to recognize White and Asian-American faces, and images of places that are either American or Foreign in origin.

Native IAT

Native American ('Native - White American' IAT). This IAT requires the ability to recognize White and Native American

Unconscious Bias and Evaluation

Recommendation Letters: 312 letters analyzed (Trix & Penska, 2003)

- Letters for women were shorter, less focused on candidate's record of accomplishment
- Twice as likely to have gendered terms (“intelligent young lady” or “insightful woman”) – such descriptors NOT present for men
- Use of standout adjectives such as “excellent”, “superb”, “outstanding”, and “unique” repeated more often in men's letters, yet the use of grindstone adjectives “hardworking”, “conscientious”, “dependable”, “careful”, “meticulous” more prevalent for women.
- Study suggests that women's success more associated with effort whereas men's success with ability.

Components/Language in letter	Males (N=222)	Females (N=89)
Standout adjectives ¹	2.0/letter	1.5/letter
Grindstone adjectives ²	23%	34%
Doubt Raisers ³	12%	24%
Reference to personal life	1%	6%
Multiple mentions of research	62%	35%
Accomplishments/achievements	13%	3%
Reference to publications	13%	3%
“Successful”	7%	3%

¹ excellent, superb, outstanding, unique

² hardworking, conscientious, dependable, thorough, dedicated, careful, meticulous

³ e.g., negative language, hedges, unexplained comments, faint praise, and irrelevancies

Hiring “Karen” or “Brian”

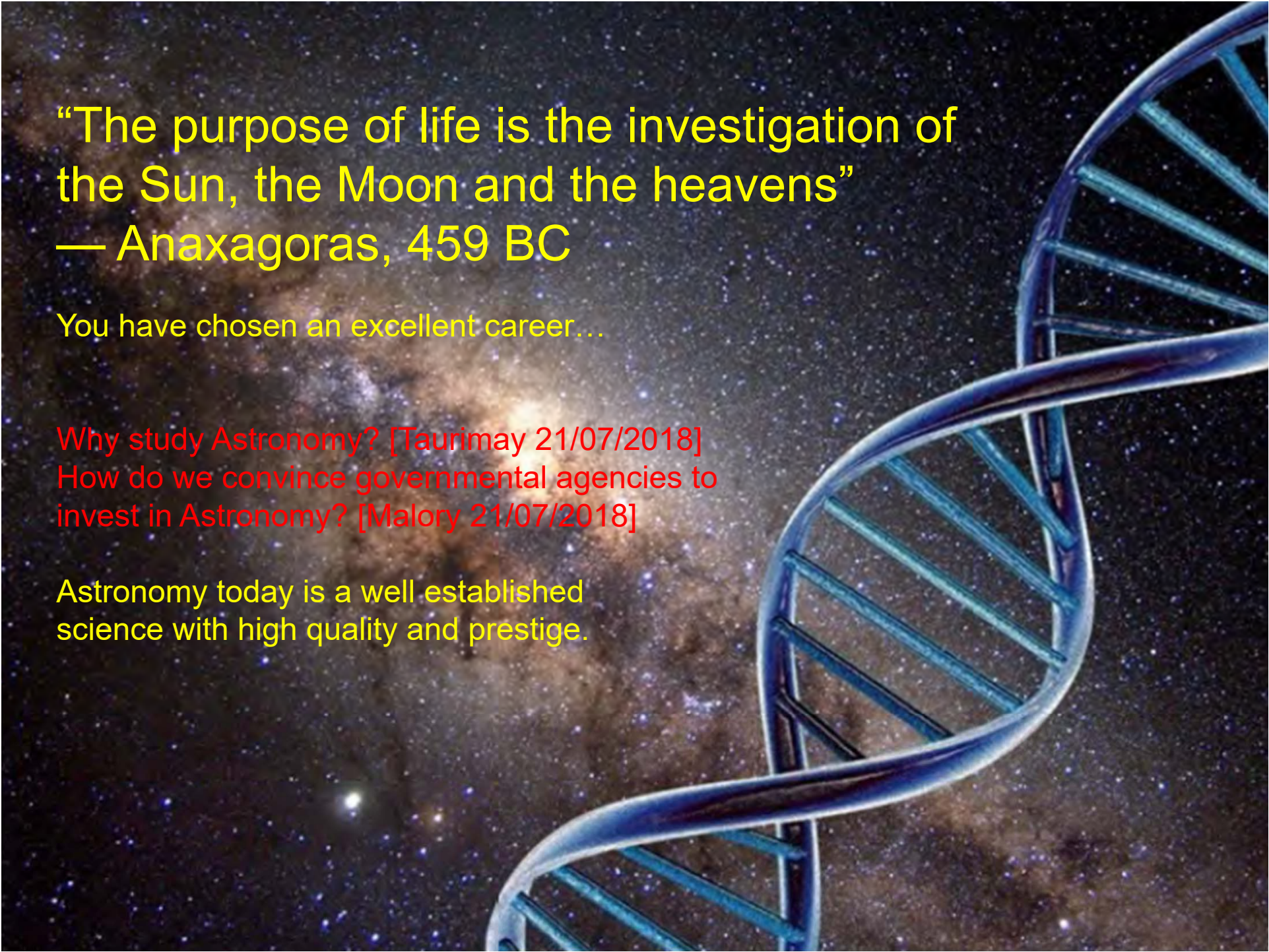
- CV of a real psychologist (one at entry level and one at tenure level) sent to 238 randomly chosen psychologists (Steinpress et al. 1999)
- Each CV assigned the name of either “Brian Miller” or “Karen Miller”
- RESULTS:
 - Significantly more likely to hire Brian at entry level
 - At tenure level equally likely to recommend tenure but..
 - Female candidate evaluations were 4x more likely to contain cautionary comments

Double Blind Searches

....

Opinions

- You sometimes get bias because you expect it? Perceptions (historical?)
- Be aware of unconscious biases and tailor your resumes to that?
- But people should be able to be free to express themselves / honor their heritage / tradition
- But in the workplace -> when you are trying to represent the best of you – that is not the place to be expressing your heritage / tradition. Fit yourself to the job – know the parameters of the job
- Unconscious bias by body language, manner of communication can be equally or more important in determining unconscious bias.
- Interviewing situation – body language, preparation etc. can be extremely important for the interviewer so as interviewer one should stick to the requirements for the job – but then what happens if you had two well-qualified applicants are present and one of them is not exhibiting the “proper body language”
- Both sides need to be aware.



“The purpose of life is the investigation of
the Sun, the Moon and the heavens”
— Anaxagoras, 459 BC

You have chosen an excellent career...

Why study Astronomy? [Taurimay 21/07/2018]
How do we convince governmental agencies to
invest in Astronomy? [Malory 21/07/2018]

Astronomy today is a well established
science with high quality and prestige.