Astrocareers & Diversity workshop

Prof. Dr. Katja Poppenhäger

Leibniz Institute for Astrophysics Potsdam (AIP)
University of Potsdam

Zoom etiquette for today:

while listening:
mute yourself
switch your video off

when you interact:
unmute (and video on if you like)

use “raise hand” feature and zoom chat

This is me:

Prof. Dr. Katja Poppenhäger

I’m a professor for Stellar Physics and Exoplanets at Potsdam University, my office is at AIP in Babelsberg

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All workshop materials on my homepage under → Misc. → Diversity

Today’s program:

Morning session
10:30 Academic careers and interdisciplinary research (Katja Poppenhäger)
10:50 Solar physics with a pinch of data science (Dr. Meetu Verma, AIP)
11:10 Building a low-cost nano-3D polymer printer (Dr. Stephan Eickelmann, MPIKG)
11:30 Panel discussion on interdisciplinary academic careers

Lunch break 12:00 - 13:00

Afternoon session (Katja Poppenhäger)
13:00 Why giving talks is good for your career
13:10 What are your worries when giving a talk?
13:20 How to never give a bad conference talk + Q&A
13:45 How to advance your career when you're in the audience of a talk
14:00 Strategies for asking questions
14:20 Wrap-up and feedback collection

Sessions with active participation from you in yellow.

Why this
Astrocareers & Diversity
workshop?

topics:
a) interdisciplinary research
b) general career skills

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topics:
a) interdisciplinary research
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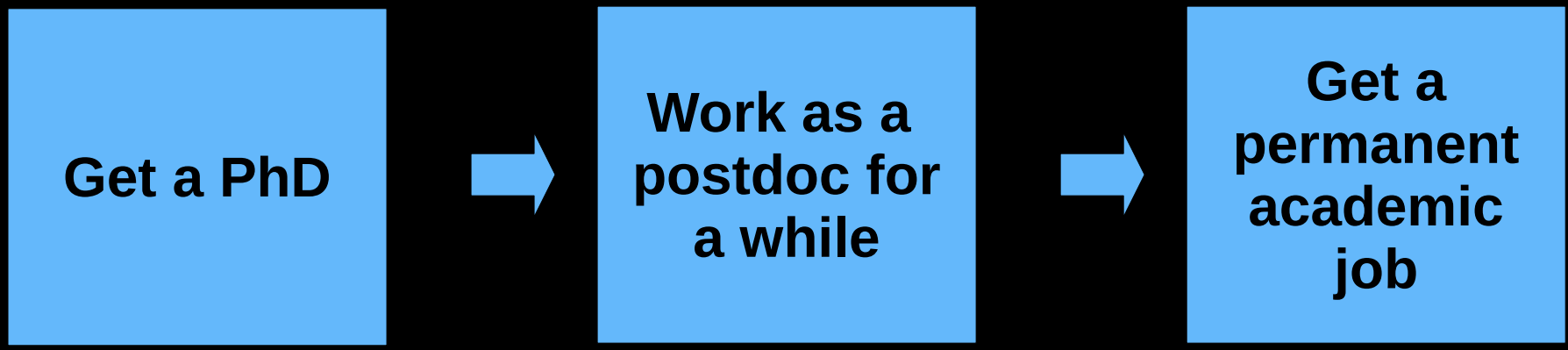
How academic astronomy careers work

Get a PhD

Work as a postdoc for a while

Get a permanent academic job

How academic astronomy careers work

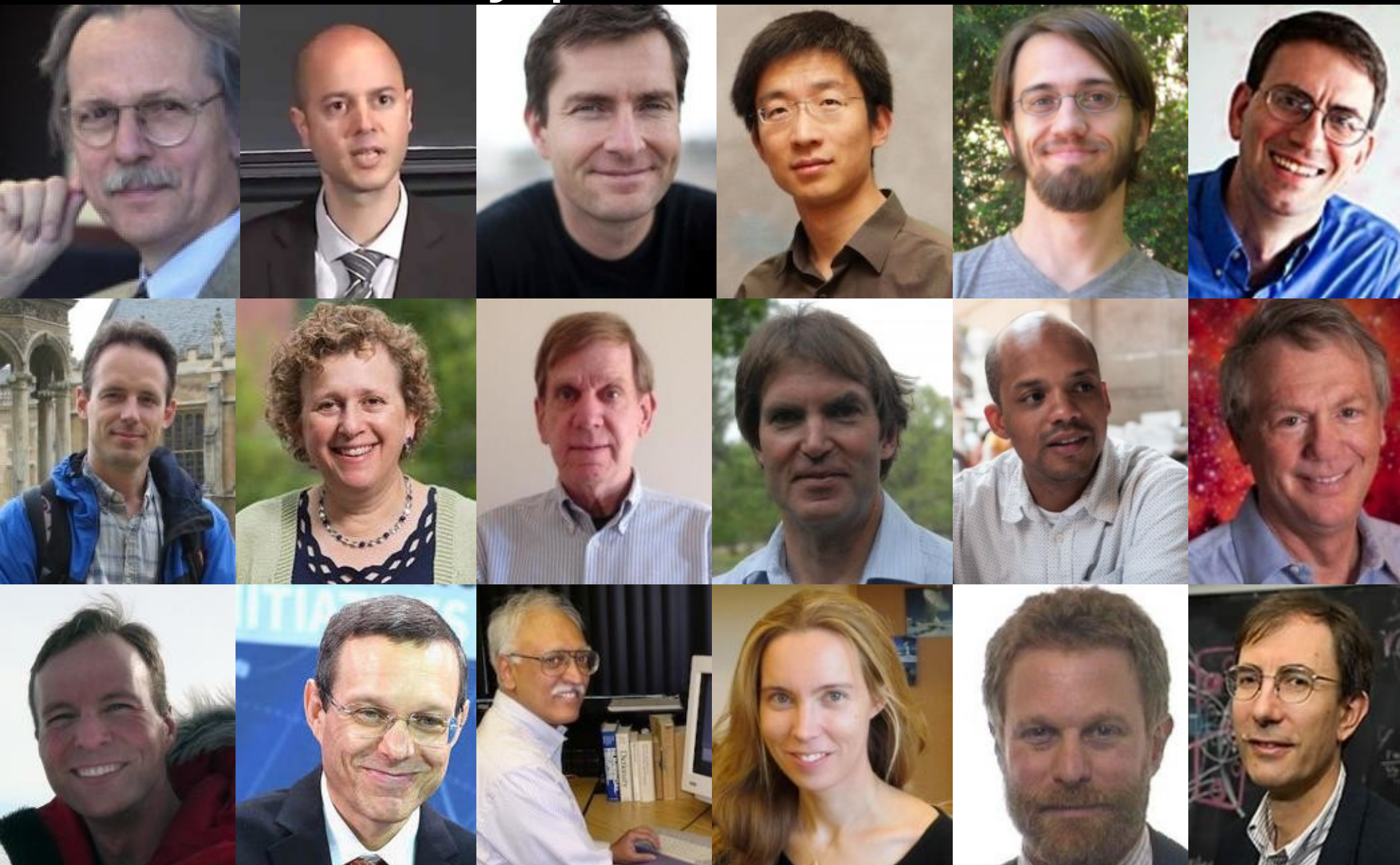


In each of these transitions, there are more applicants than available positions.

The selection process has to select the “top” 25% (or so) from the previous stage to advance to the next stage. - Fairness?

Astronomy professors at Harvard

Astronomy professors at Harvard



Academic careers

Academic careers

Academic careers

Already pretty difficult

Academic careers

Already pretty difficult

!!!

Biases

Many studies show that people (including successful professors who do the selecting) have biases (conscious and unconscious).

- People in power evaluate people of color, women, trans people, people with a disability, ... more negatively, even when the data is exactly the same.

- This also applies to mentoring situations - people tend to tell the semi-secret tips and tricks mainly to people who look like the outdated scientist stereotype.

Goal of this workshop:

→ give you the skills you need to succeed

→ turn “secret handshakes” into career knowledge for everyone

→ fulfill your request from last year: special focus on interdisciplinary research

Why this
Astrocareers & Diversity
workshop?

topics:
a) interdisciplinary research
b) general career skills

Interdisciplinary research

Requested as special topic by participants last year.

Some examples:

- astrophysics + geophysics + biology = astrobiology

- engineering + spectroscopy + materials science = instrumentation for astronomy

...

Interdisciplinary research

Very broadly -

pros:
- often less explored, more discovery space to do cool new stuff
- maybe some major discoveries lurking nearby

cons:
- can be harder to find research groups you fit into later on
- sometimes, finding external funding can be harder

Talk 1

Dr. Meetu Verma
Leibniz Institute for Astrophysics Potsdam

“Solar physics with a pinch of data science”

Talk 2

Dr. Stephan Eickelmann
Max Planck Institute of Colloids and Interfaces (MPIKG)

“Building a low-cost nano-3D polymer printer”

Panel discussion

Ask us questions you have on

- Pros and Cons of interdisciplinary research
- Career experiences
- Tips and tricks
- ...

Giving scientific talks

Giving scientific talks

What are the most common scientific talk types?

- seminar talks at an institute (for a small-ish audience who works in a similar field as you)
- colloquium talks at an institute (bigger audience, for example from all fields of astrophysics)
- talks at a conference: in a parallel session
- talks at a conference: in the plenary session
- invited talk at a conference

Purpose of giving talks

- Make your science known to the audience
  - You can make the audience engage with your work for longer than if they just read the abstract of your paper!
- Find new collaboration partners
- You collect scientific esteem
  - People start remembering your name
  - You can list the talk on your CV
  - If the talk is very good, people remember that
  - Having talk invitations is used as a proxy for scientific quality (!)

Active session: What are your worries when you have to give a talk?

I worry about…

-

How to never give a bad conference talk

How well do people remember talks?

Very good talk

Ok talk

Below-average talk

Really bad talk

How well do people remember talks?

2 days later:

Very good talk

Ok talk

Below-average talk

Really bad talk

“That was a good talk and a good speaker. I should invite them sometime (but might forget).”

How well do people remember talks?

2 days later:

Very good talk

“That was a good talk and a good speaker. I should invite them sometime (but might forget).”

Ok talk

Completely forgot the quality of the talk, name of speaker will sound familiar when encountered again.

Below-average talk

Really bad talk

How well do people remember talks?

2 days later:

Very good talk	“That was a good talk and a good speaker. I should invite them sometime (but might forget).”
Ok talk	Completely forgot the quality of the talk, name of speaker will sound familiar when encountered again.
Below-average talk	Completely forgot the quality of the talk, name of speaker will sound familiar when encountered again.
Really bad talk	

How well do people remember talks?

2 days later:

Very good talk	“That was a good talk and a good speaker. I should invite them sometime (but might forget).”
Ok talk	Completely forgot the quality of the talk, name of speaker will sound familiar when encountered again.
Below-average talk	Completely forgot the quality of the talk, name of speaker will sound familiar when encountered again.
Really bad talk	“Oh wow that was bad (in a way that I think is the speaker’s fault). Better don’t invite this person for other talks.”

How well do people remember talks?

2 days later:

Very good talk

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All of these are a net positive for your career!

Just avoid this one.

What makes a “really bad” talk?

- Speaker is very nervous, fumbles through sentences

→ Ok or below-average. Depends a lot on career stage, but does not make a “really bad” talk.

What makes a “really bad” talk?

- Speaker can’t answer several questions after the talk

→ Ok or below-average. Depends a lot on career stage. Also depends on how fair the questions are for the career stage of the speaker.

What makes a “really bad” talk?

• Speaker has technical problems with the equipment (zoom doesn’t work, projector doesn’t work, …, talk start is delayed)

→ Ok. Happens pretty often, also with experienced people who are brilliant in their scientific field.

What makes a “really bad” talk?

- Speaker talks for much longer than their time slot.

→ Below-average, can go into “really bad” territory, if the talk goes over the time limit by more than a few minutes. It is also the responsibilitry of the chairperson to stop the speaker when they go overtime, but if the speaker is experienced, it counts as impolite behaviour against the people speaking after you.

What makes a “really bad” talk?

• Speaker’s slides are so horribly bad it can only be explained by them not checking their pdf even once.

→ Can be Really bad. I have seen this in real life exactly once: A person obviously never checked their pdf, and all of the plots with the results had disappeared in their presentation.
(The person could have saved this by, for example, drawing some sketch of the results on a blackboard, but they didn’t.)
Stuff like bad layout, typos or so do not count as Really bad.

What makes a “really bad” talk?

• Speaker is at postdoc level or beyond and cannot answer basic questions on their research field.

→ Can be Really bad. This is also a thing I have only seen once ever. And it really has to be on the level of “the most obvious clarification question of the core part of the science” type of question that is getting fumbled by a fairly advanced person.

How to avoid giving a really bad talk

1) Start your talk with “Hi, my name is xxx and **I am a second-year PhD student** (Master student, ...) in the group of xxxx”. Consider adding this info to your title slide. This immediately avoids most of the “really bad” categories.

2) Check if your talk file looks ok on the computer where you will give your talk. Consider using pdf as the slide format because it is the least vulnerable to tech problems.

3) Practice answering “obvious” questions with your supervisor. If your supervisor did not think of the question you got after your talk, it’s probably an advanced question and it’s ok if you don’t know the answer (say: “I have to look into that, let’s chat later in the coffee break”).

Giving scientific talks

Other talk situations that you are worried about: ...

Being in the audience of a talk

Image credit: catspyjamasnz (Flickr)

Being in the audience of a talk

- Yes, you could use the time to catch up on emails, but…
- You can actively advance your career when you're in the audience:
- Ask a question!
  - How??? We'll get to that.
  - Why? Because a question will give you attention from the speaker and the audience.
  - At a conference, people say "Hi, I'm xxx from yyy university and my question is ..." → name recognition! (Say everything very slowly, to be understood properly!)
  - At seminars etc., you will get esteem from your colleagues. The chairperson will also be happy because they can avoid the dreaded "no questions" situation.

Being in the audience of a talk

- Setting yourself up for asking a question after a talk:
  - Choose a specific talk and go in with the intent “I will ask a question today.”
  - Sit in one of the front rows of the room.
  - Think about a question during the talk – if you have an idea for a question in the middle, write it down so you don’t forget.
  - If you’re worried your question is “stupid”, ask another student quietly what they think of your question.
  - When it’s time for questions, raise your hand right away! Nothing feels worse than when a senior professor asks your question before you get the chance to ask yourself. And then the speaker says “That’s a great question!” ...

How to find a question to ask

Think of a talk you have attended.

- What was a good question someone asked?

- What *type of question* can often be asked?

How to find a question to ask

What *type of question* can often be asked?

- Clarification questions
- “Transfer” questions: Can this model/insight/experiment be used for this related object/field/etc.?
- ...

How to find a question to ask

Take a few minutes to think about a question you could ask on a talk you have seen recently.

Feedback & wrap-up

Please give some feedback if you found this workshop helpful at this URL (see also link in zoom chat window):

https://docs.google.com/forms/d/e/1FAIpQLScuvbpz1k38U_OFaXSAbzNSL-QAgw9UngG-RVfB5oFbAPKPZA/viewform?usp=sf_link

Feedback & wrap-up

Thank you for attending and participating!

I will post all materials from this year's workshop under

www.katjapoppenhaeger.com → Misc. → Diversity.

Contact me:

If you have any questions, you can reach me via email at:

kpoppenhaeger@aip.de