

DON'T PANIC

The Grad Student's Guide
to Surviving your PhD

Don't Panic

a very succinct guide that may help you to survive your PhD

Jilles Vreeken



UNIVERSITÄT
DES
SAARLANDES



Disclaimer

- 1) I'm not the "useful" type of doctor

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- 2) Any advice you'll get is useless.

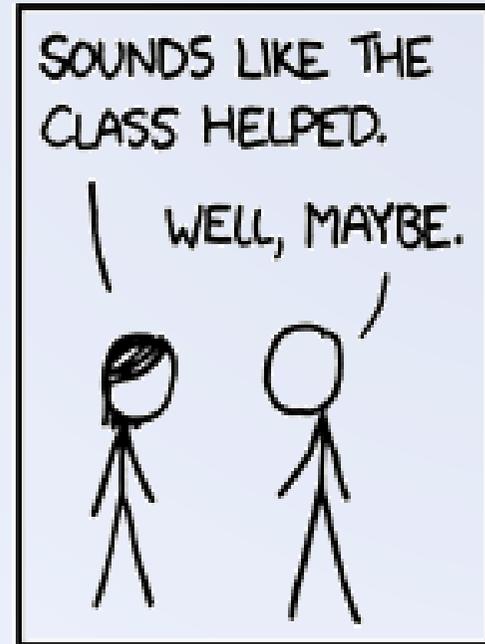
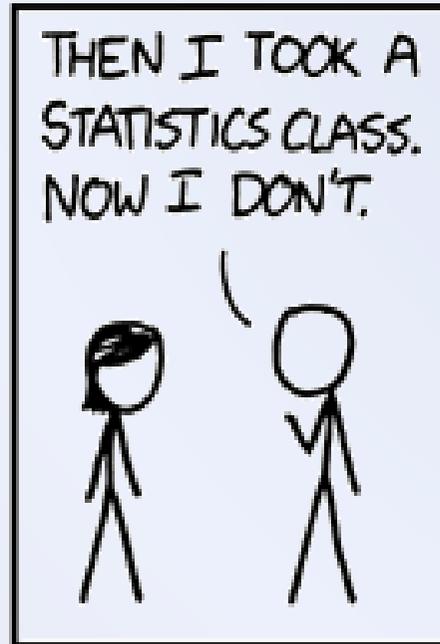
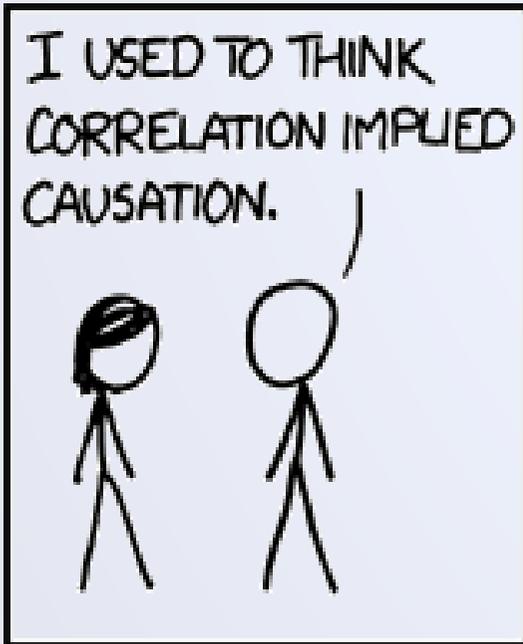
Don't ask **survivors** for advice.

*"Russian roulette is a
great way to make money!"*

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- 2) Any advice you'll get is useless.
- 3) This is not a scientific presentation.

Disclaimer



Disclaimer

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- 2) Any advice you'll get is useless.
- 3) This is not a scientific presentation.
- 4) I stand on the shoulders of giants.



and many, many others

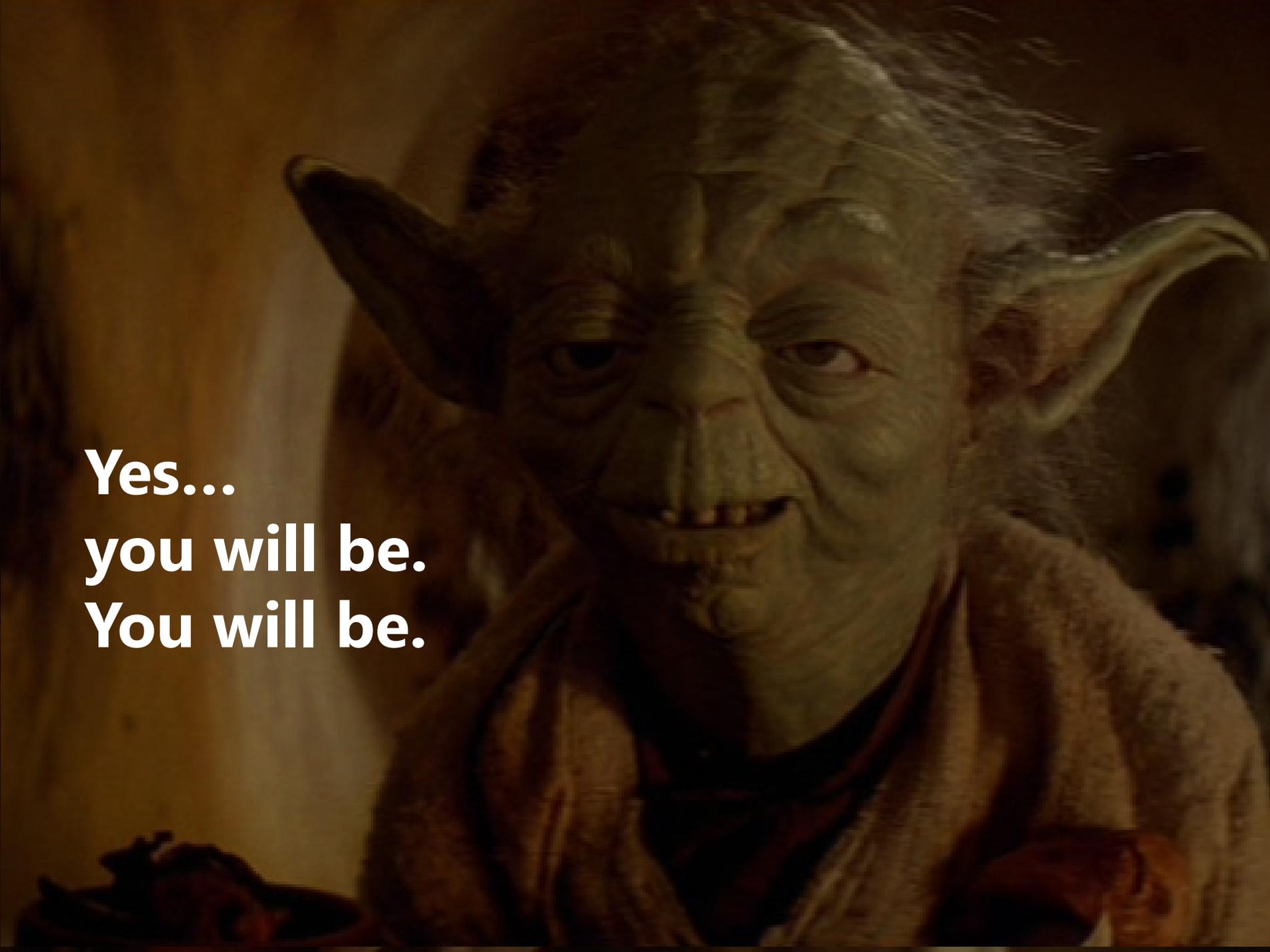
Let's start with

the **best** advice
you'll *ever* get...

**DON'T
PANIC**



I'm not afraid.



Yes...
you will be.
You will be.

Time of Disillusionment

I have some **bad** news for you

Doing a PhD will help you find out

(page 1 of 56)

- there are people who are better than you
- you are not good at everything
- being good at courses is not enough
- doing what you are told may not be enough

And, most prominently: **life is unfair**

- people less smart or hard-working will be luckier, get better results
- people who have done worse work will end up with better jobs

First things first

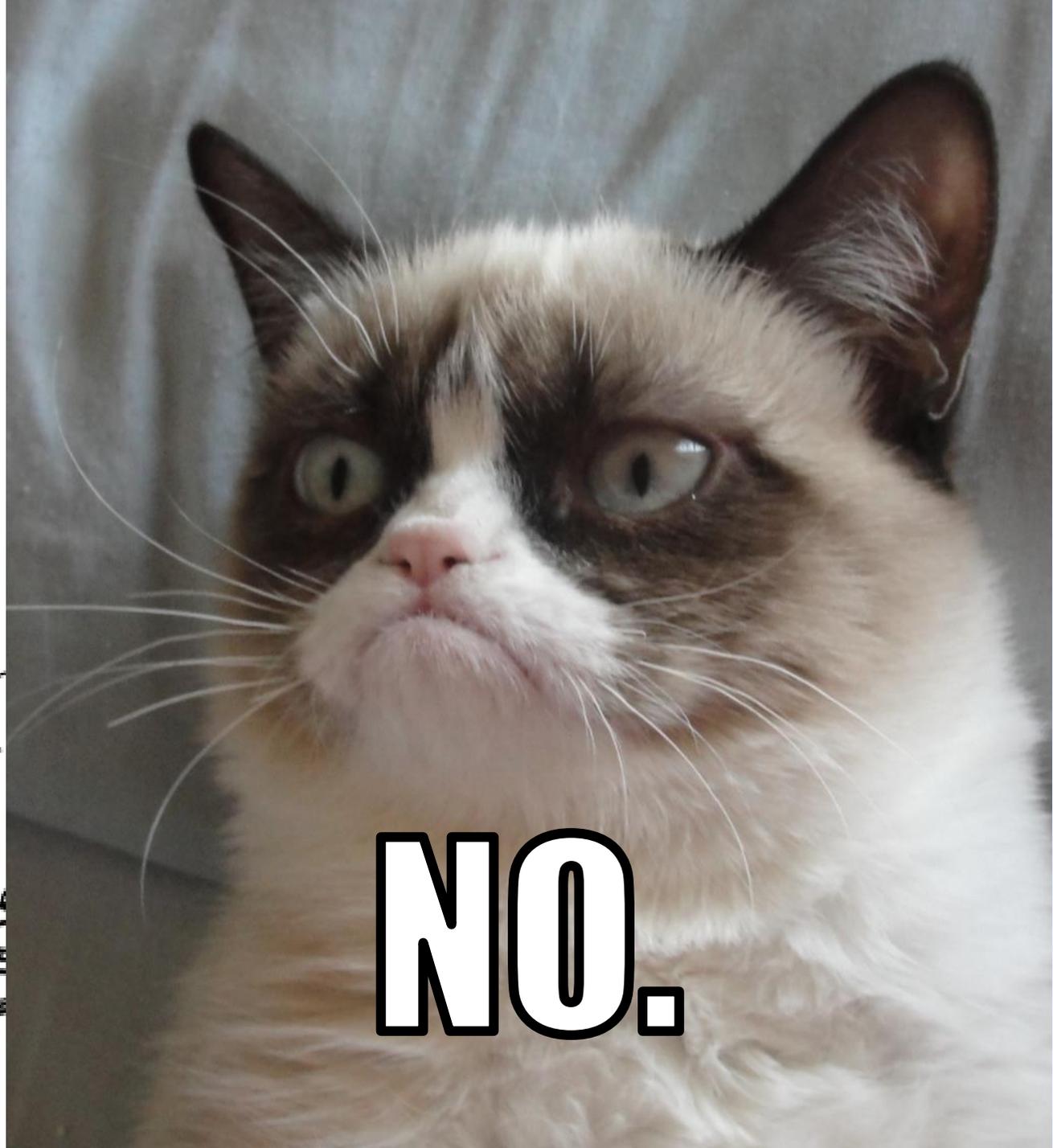
Why do a PhD?



Its gonna
make me
rich!



Its gonna
make me
rich!

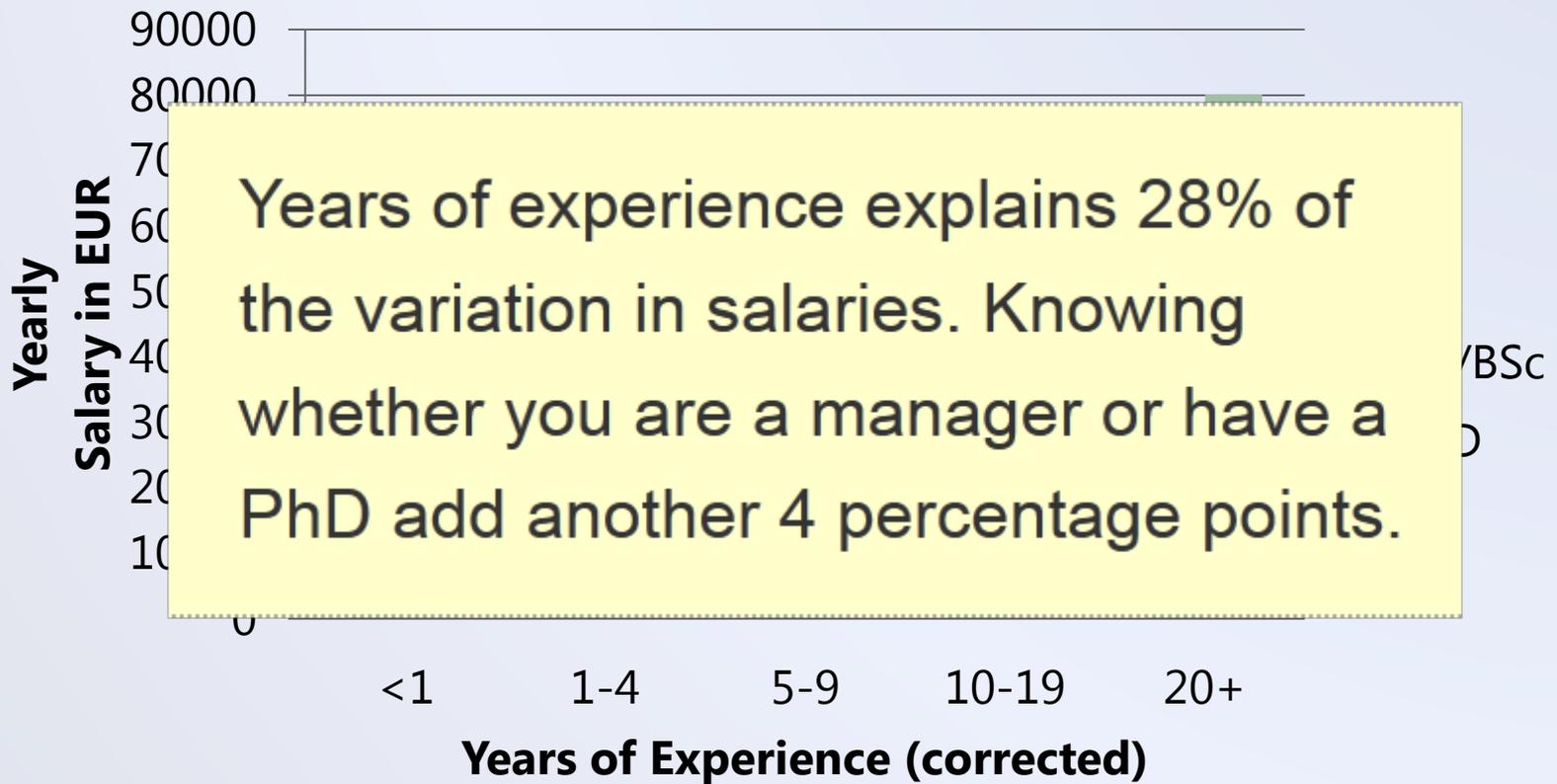


NO.

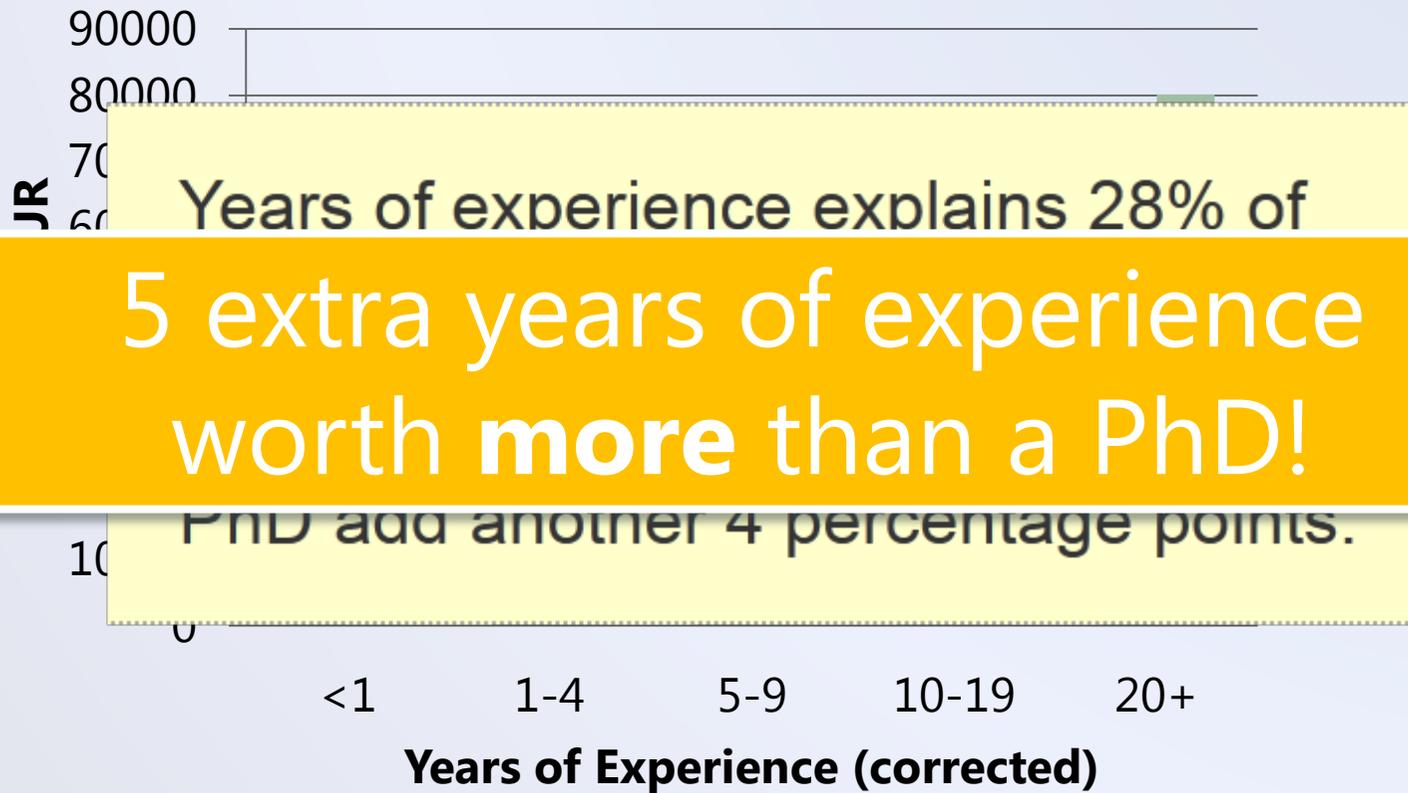
Salary by Degree



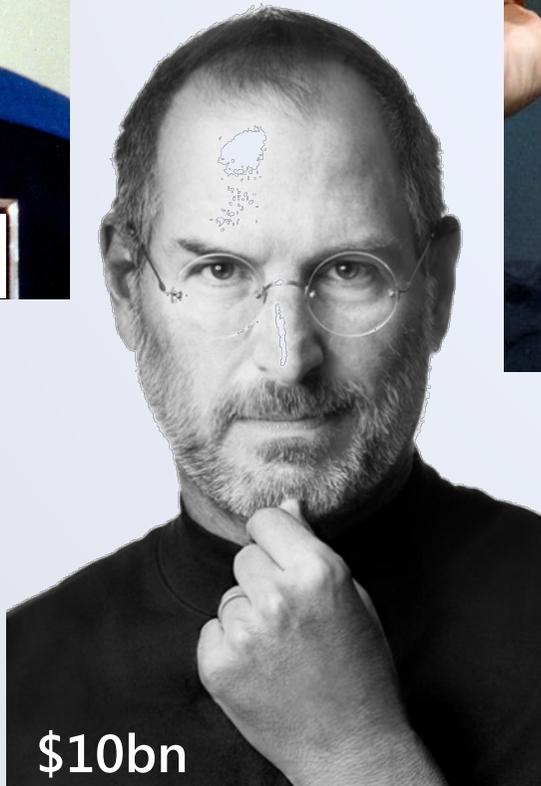
Salary by Degree



Salary by Degree



Some degree-less people



Some degree-less people



Skill sets and interpersonal skills
vs. academic qualifications.



\$10bn

\$28bn



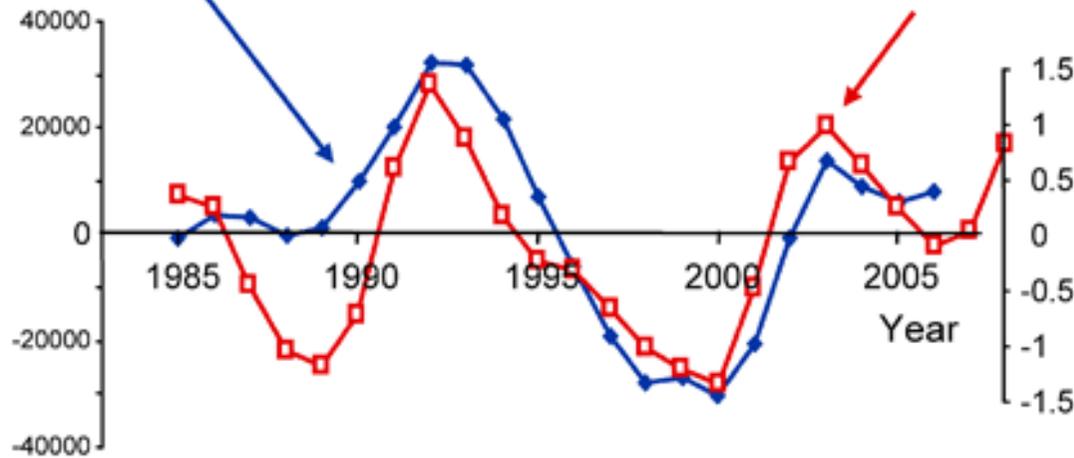
\$27bn

You're not in it for the money -
So Why are You?

You're not in it for the money -

Fluctuations in Grad Student Enrollment (Science & Engineering)

Fluctuations in the Unemployment Rate



Correlation Coefficient:

$$\rho = 0.75583$$

(that's pretty high)

JORGE CHAM © 2008

grad school is for suckers! wall street here i come!



Guess Who's Coming to Grad School?

Sources: NSF/Bureau of Labor Statistics. Fluctuations obtained by subtracting the mean regression line from the absolute values.

i always wanted to go to grad school...



First things first, again

Why do a PhD?



Because
my PhD
is gonna
change
the world!



I'm going
to change
the world
and this is
my plan...

Because
my PhD
is gonna
change
the world!



Because
my PhD
is going to
change
the world!

Big Problems are **Big**
because they are **Hard**

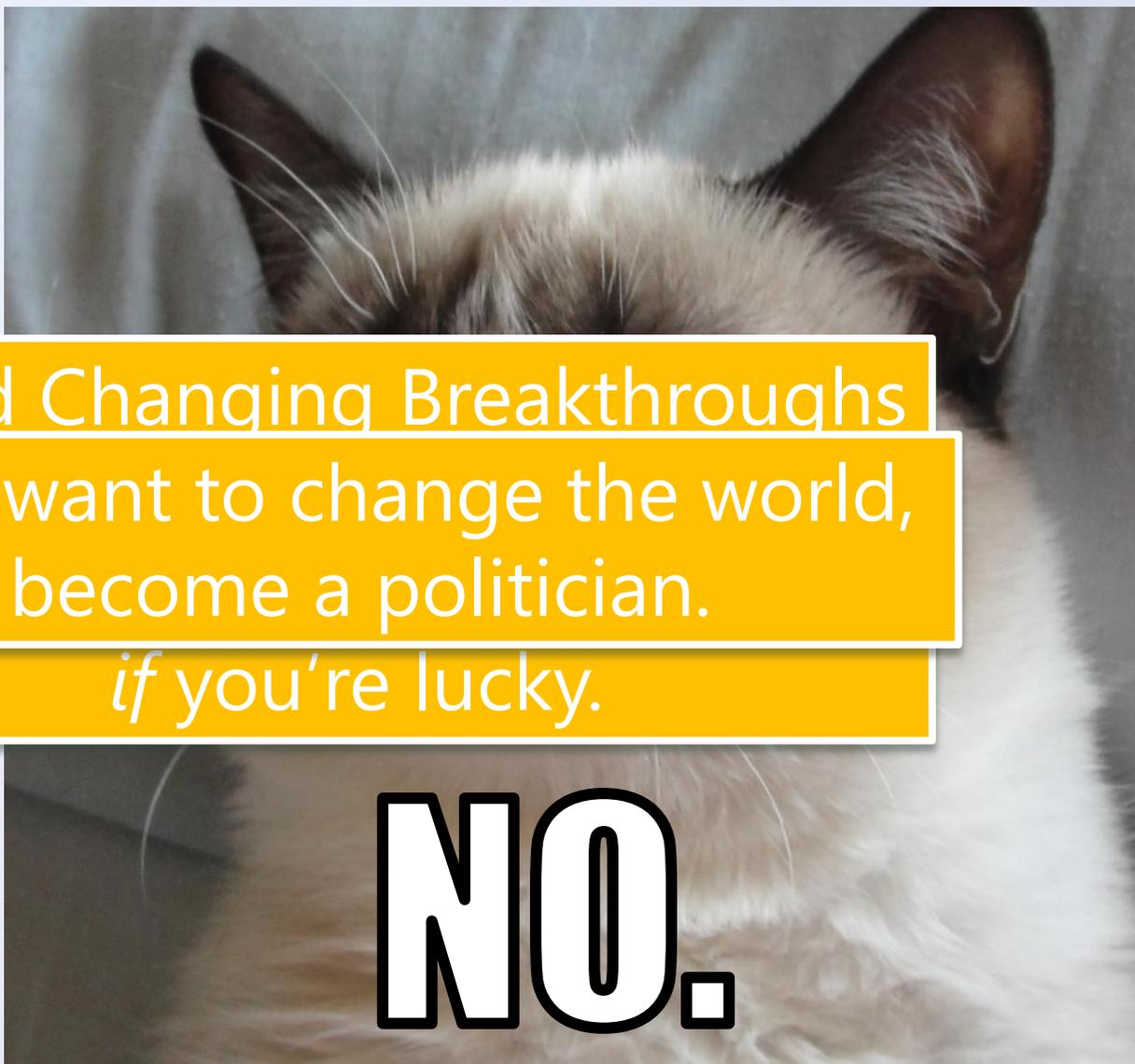
NO.



Because
my P
is go
chan
the world!

World Changing Breakthroughs
are *rare, very rare.*
Once-a-career rare,
if you're lucky.

NO.



Because
my P
is go
chan
the world!

World Changing Breakthroughs

If you want to change the world,
become a politician.

if you're lucky.

NO.

**DON'T
PANIC**

If you're here for the right reasons...

Doing a PhD can be **awesome**

But, what is the right reason?

- you are **fascinated** by a topic,
you need to know, you want to discover



You'll have to like both the big results and the little ones

What's Great about Working in Science

Freedom!

- set your own agenda, schedule, ...

You get to travel regularly

- to Beijing, to Paris, to Barcelona, to Dallas, how cool ...

What dress code?

- I've seen keynote speakers in pyjamas

Invisible band uniting all geeks

- helpful, enjoy learning, similar language

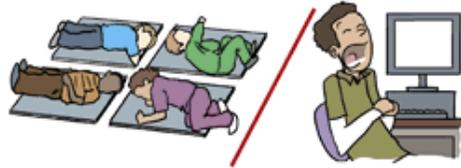
Surrounded by people who never grew up

- smart kids who love to play

What's Great about Working in Science

HOW GRAD SCHOOL IS JUST LIKE KINDERGARTEN

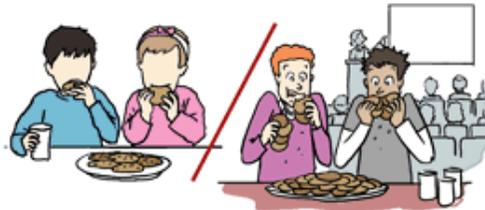
ALL DAY NAPPING IS ACCEPTABLE



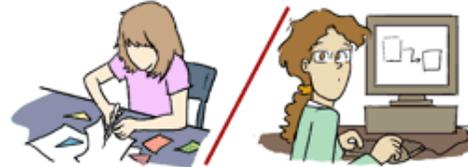
THERE IS CONSTANT ADULT SUPERVISION



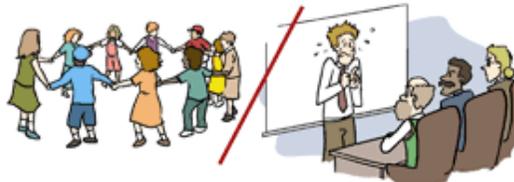
YOU GET COOKIES FOR LUNCH



MOST COMMON ACTIVITY:
CUTTING AND PASTING



THERE ARE NO GRADES
(YOU JUST HAVE TO PLAY WELL WITH OTHERS)



CRYING FOR YOUR MOMMY IS NORMAL



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WWW.PHDCOMICS.COM

What's Great about Working in Science

HOW GRAD SCHOOL IS JUST LIKE KINDERGARTEN

ALL DAY NAPPING IS ACCEPTABLE THERE IS CONSTANT ADULT SUPERVISION

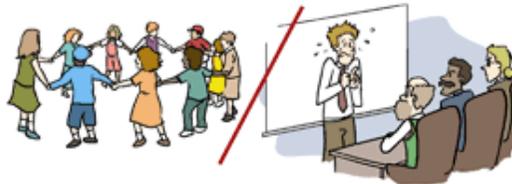


Working in science is **amazing** ...
... if you appreciate its benefits.



THERE ARE NO GRADES
(YOU JUST HAVE TO PLAY WELL WITH OTHERS)

CRYING FOR YOUR MOMMY IS NORMAL



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Perspective



Industry,
according
to academia

Perspective



Academia,
according
to industry

Perspective



Industry,
according
to academia

Perspective



There's stress everywhere.
Just different kinds.



Industry,
according
to academia

What is a PhD?

What is a ~~PhD?~~ *science* ?

What is a ~~PhD~~ science?



What is a ~~PhD?~~ *science* ?

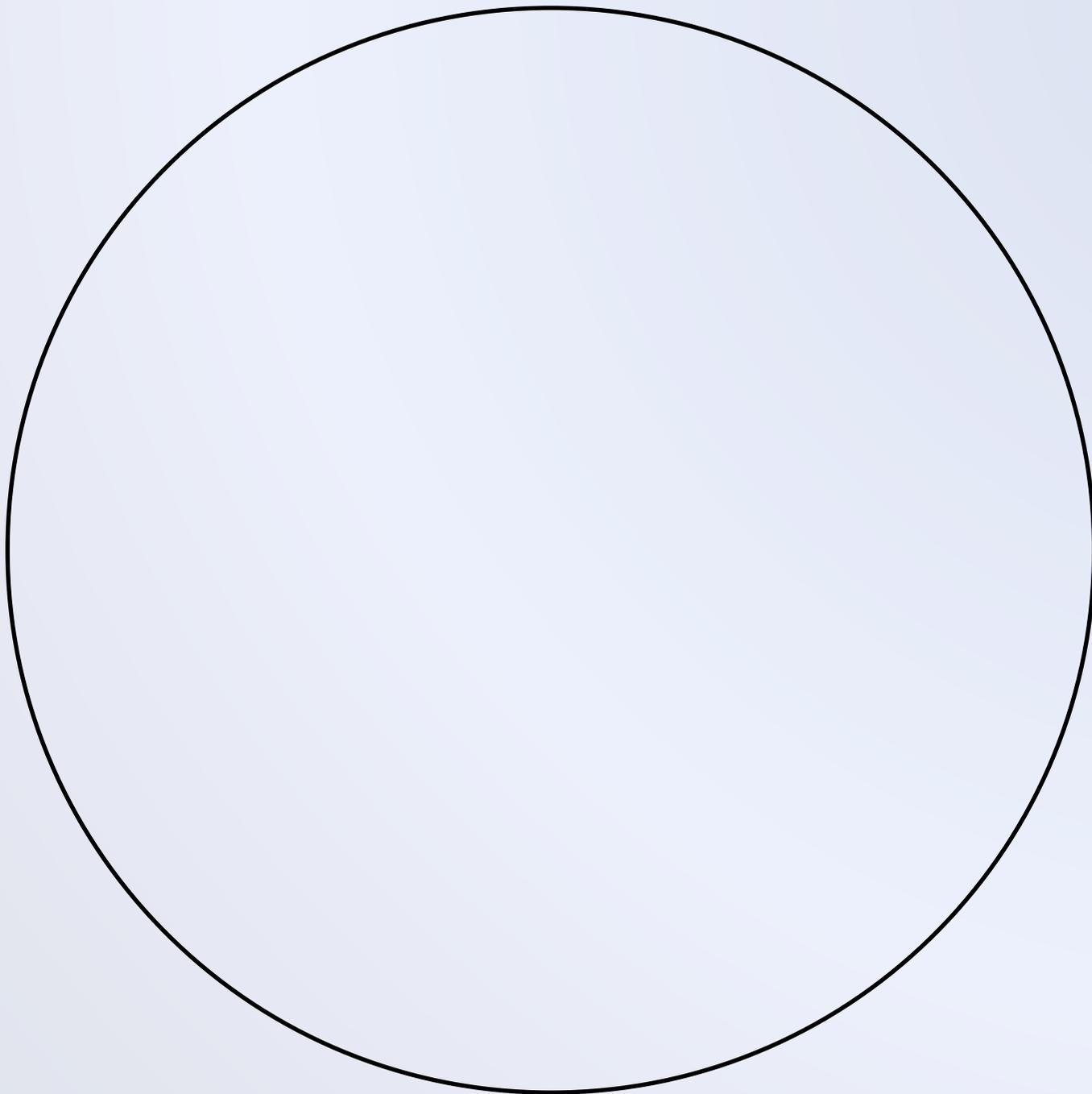
Because!

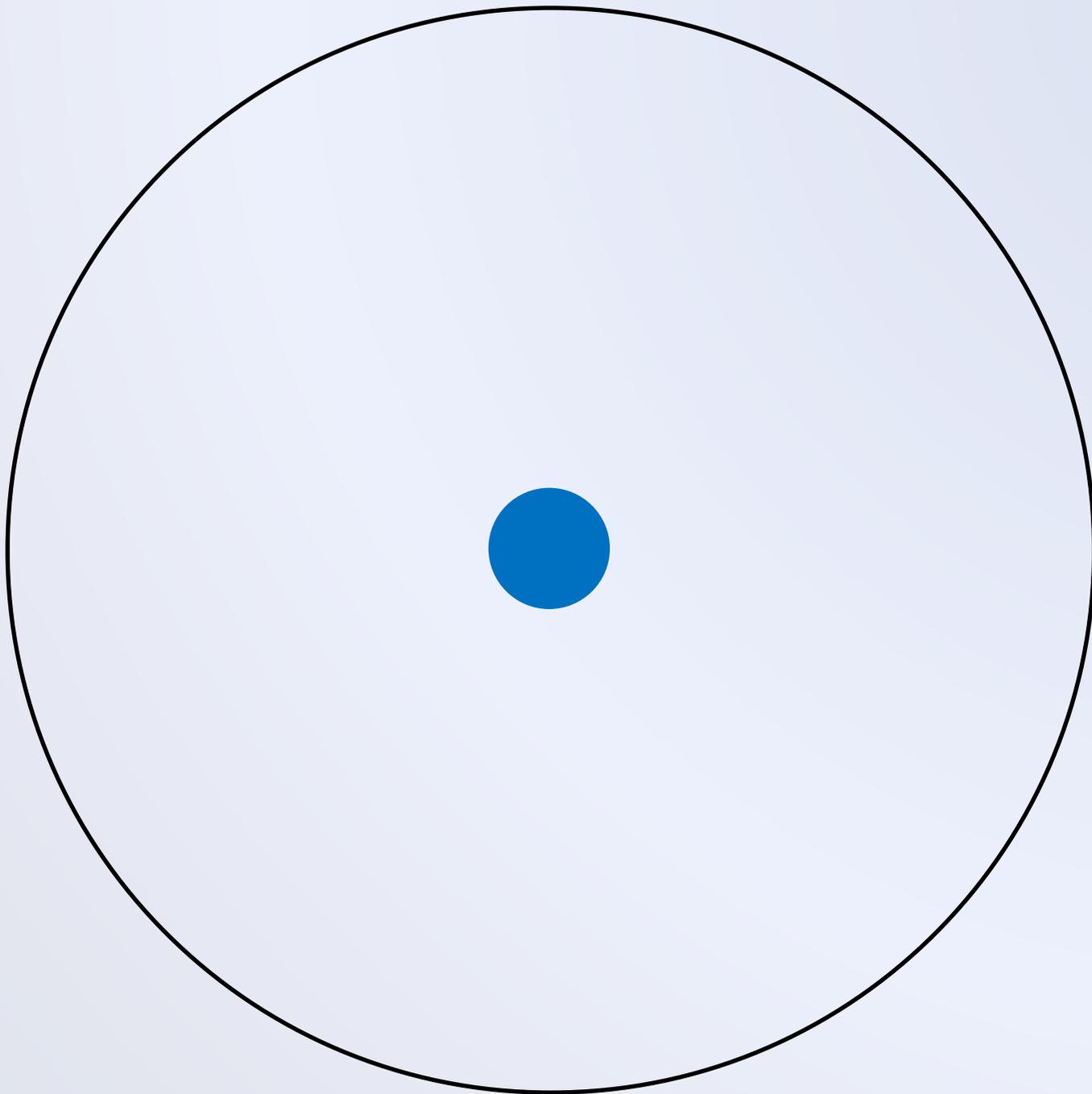
Science is about discovering
things we didn't know

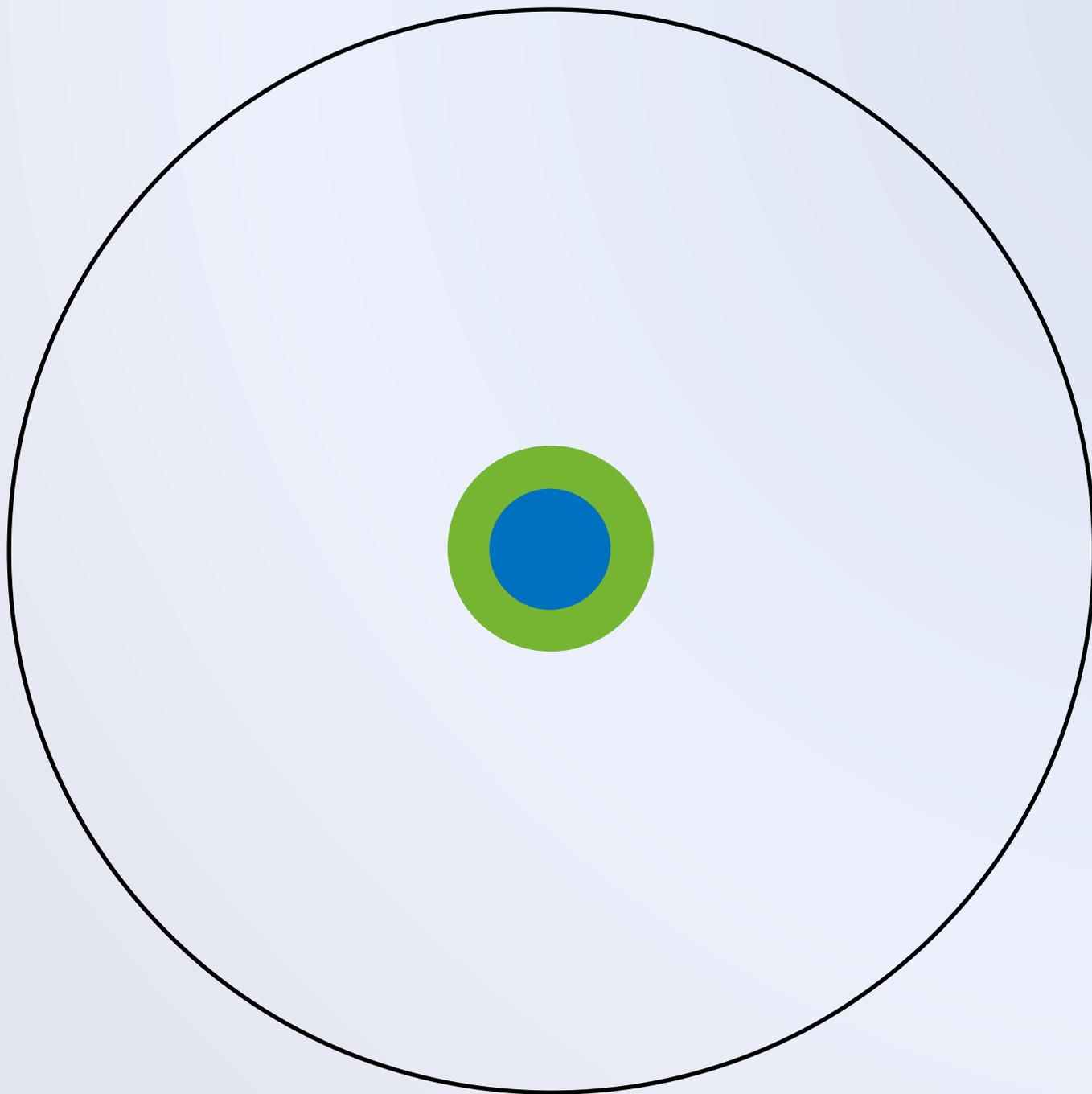
What is a PhD?

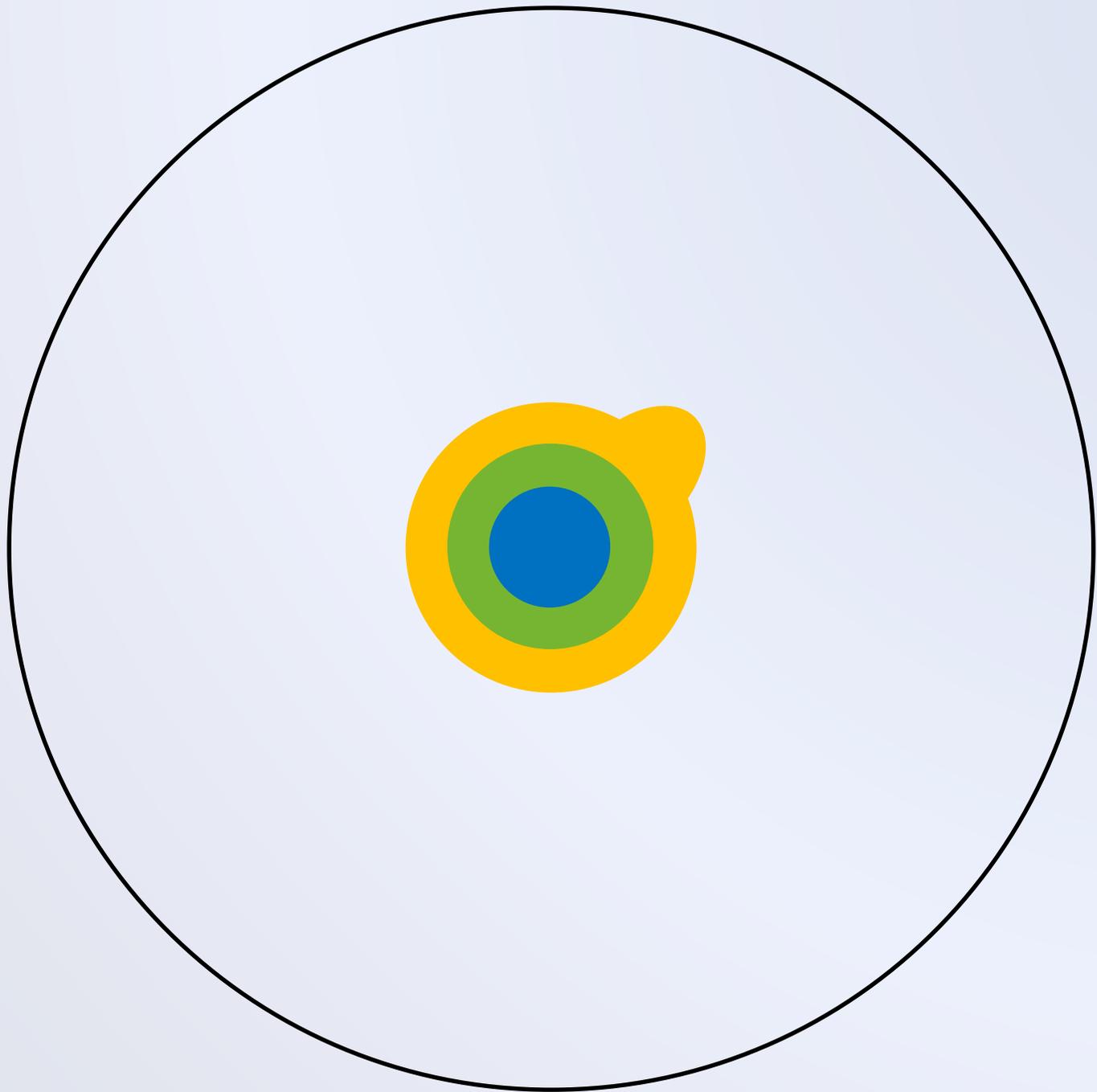
What is a PhD?

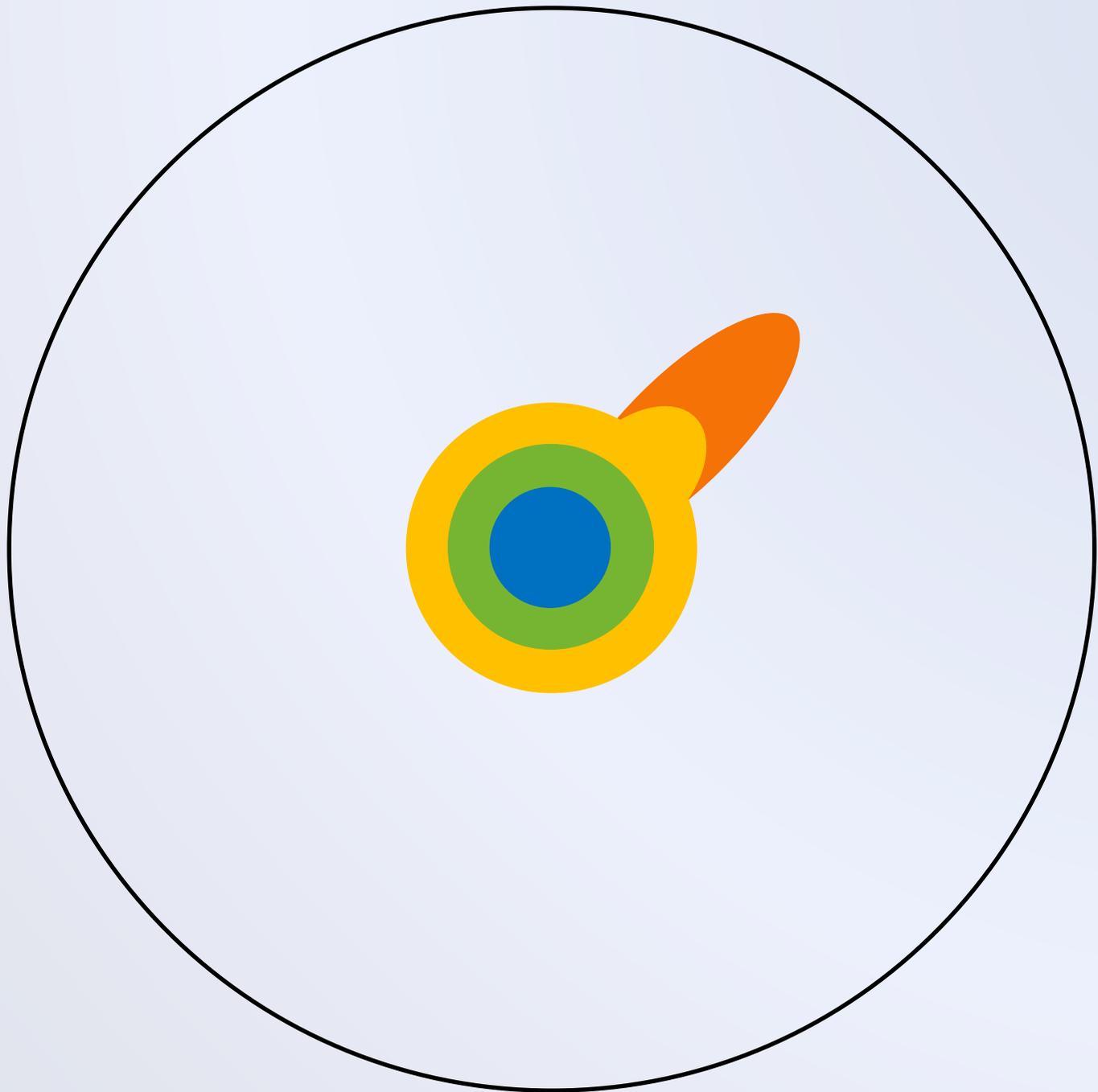
No, really, what is a PhD?

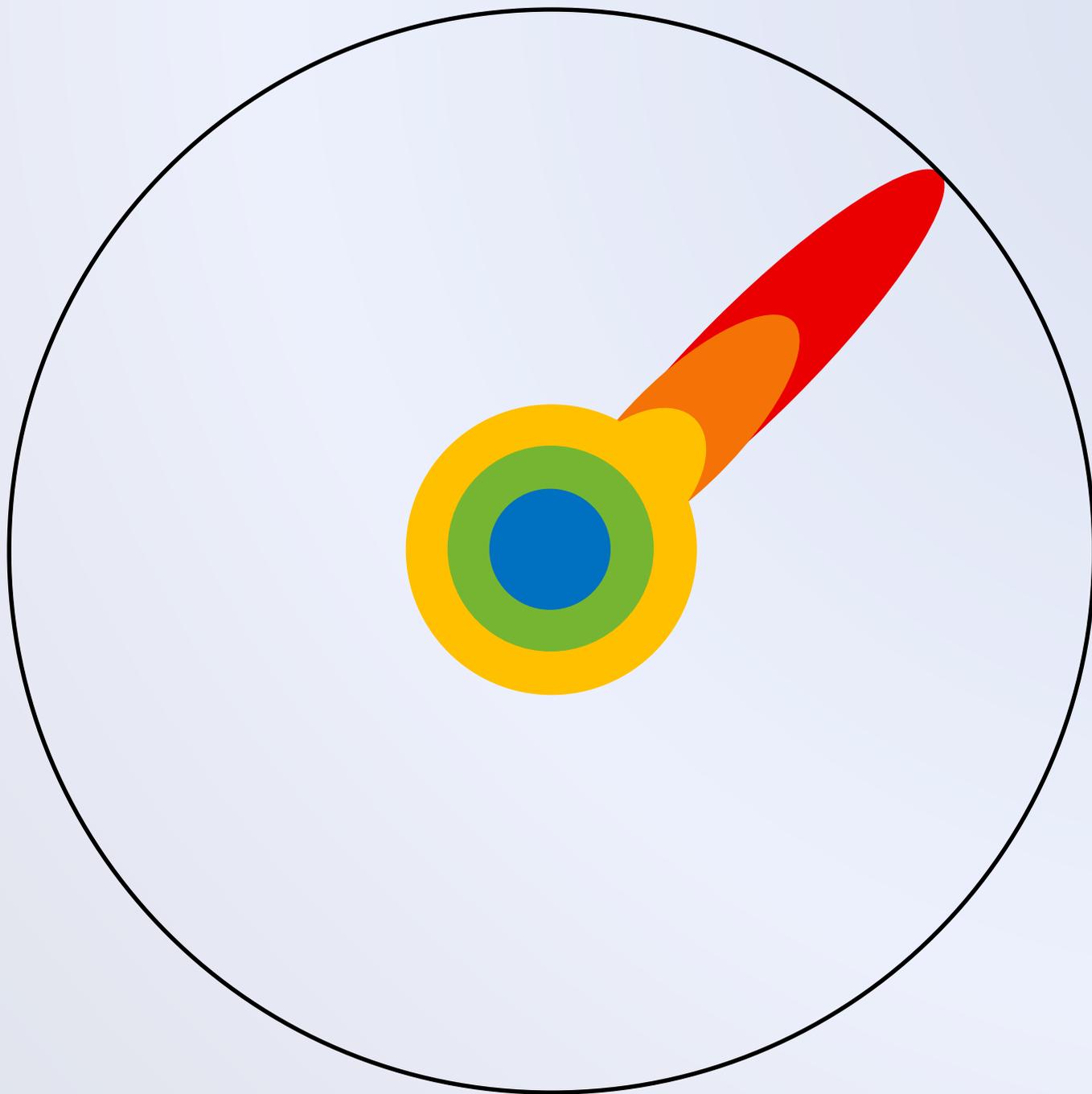


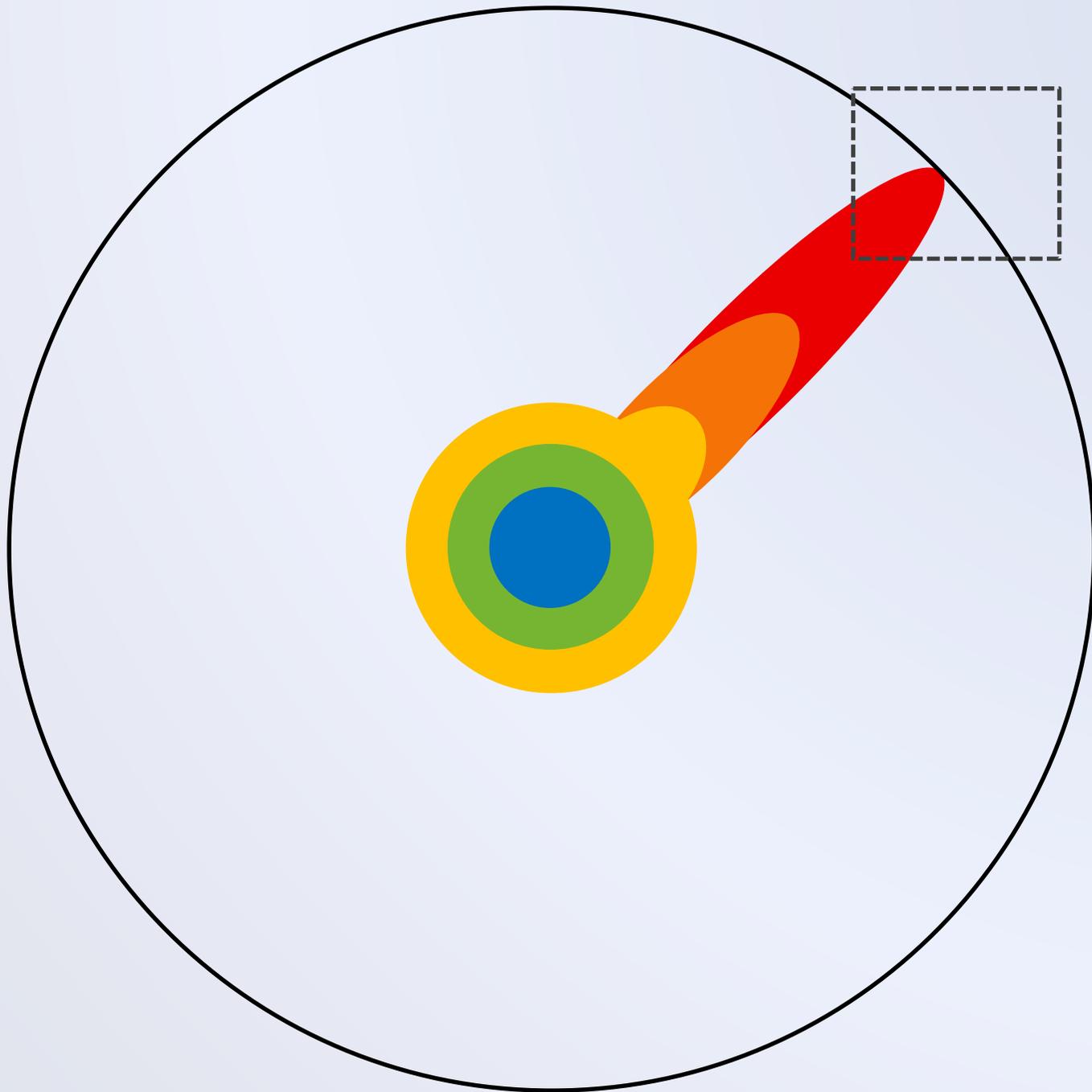


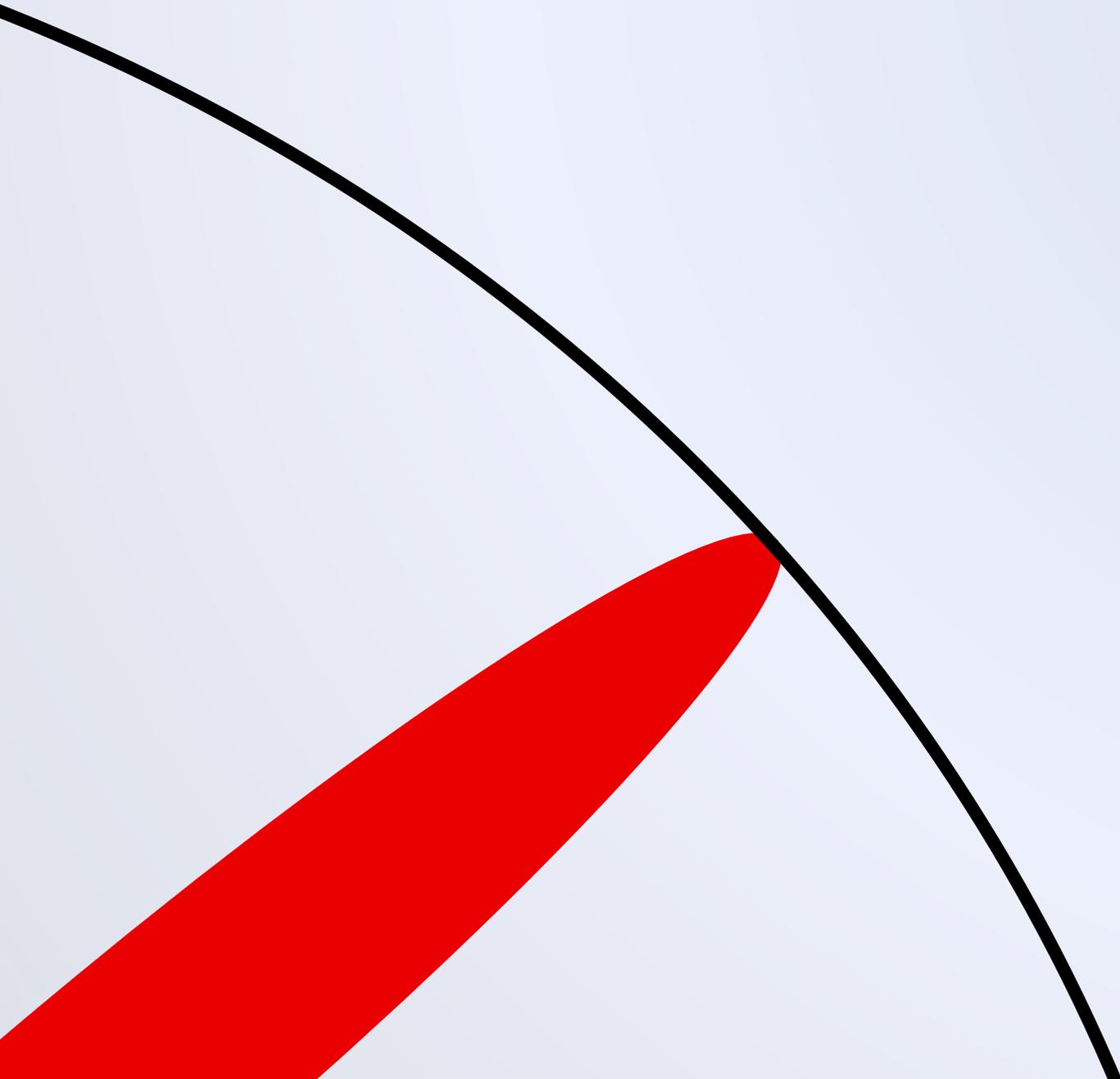


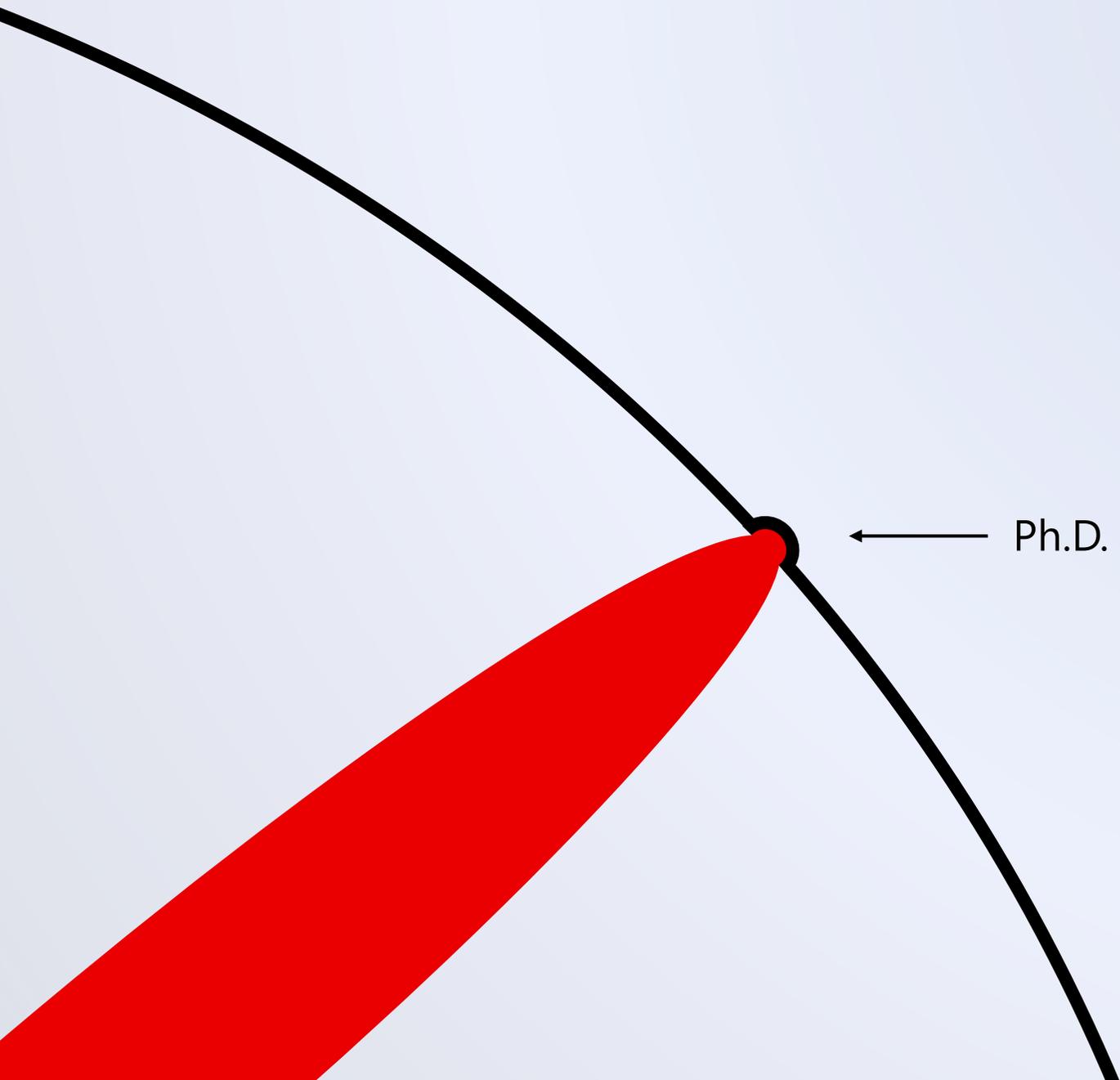




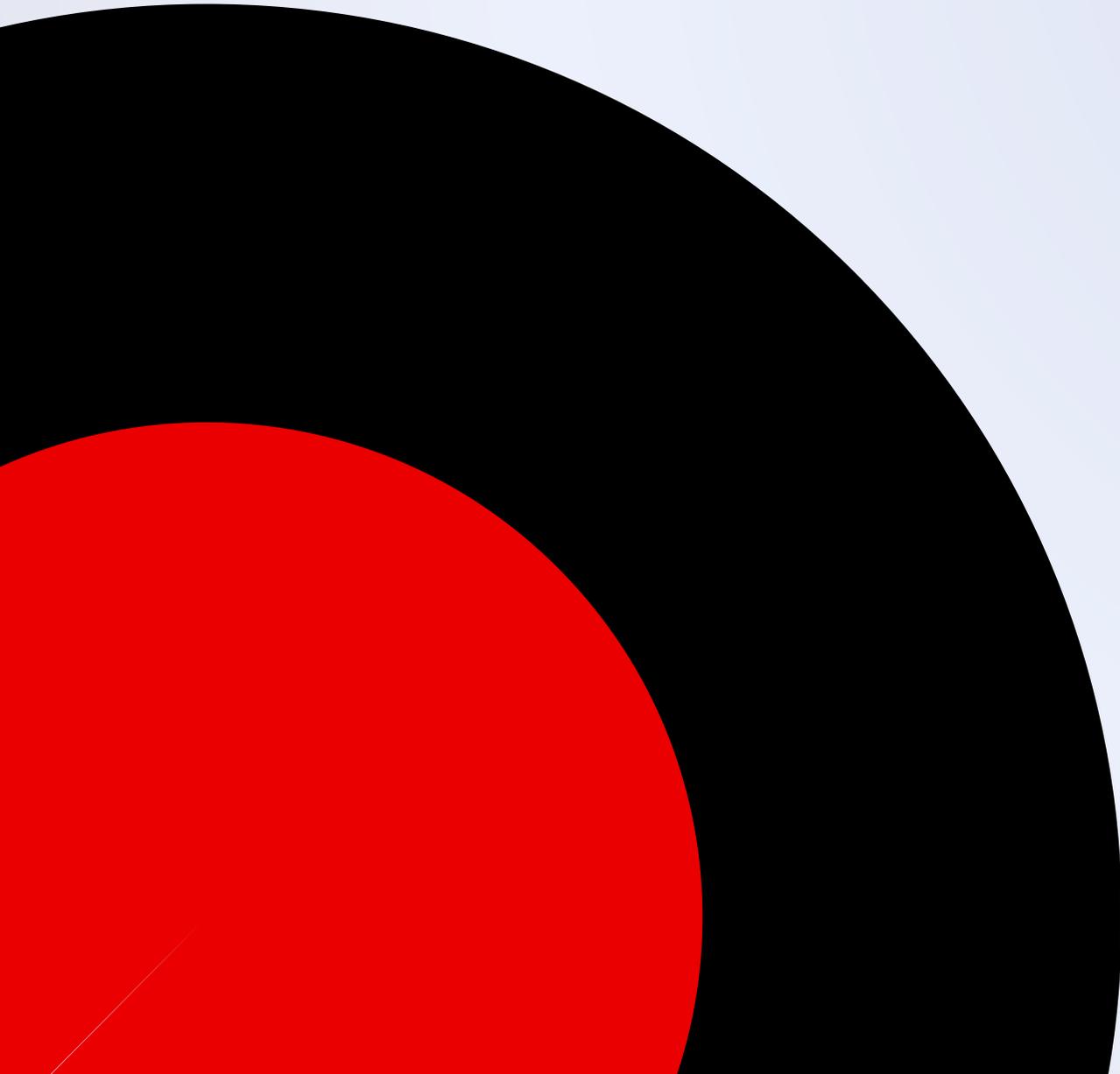


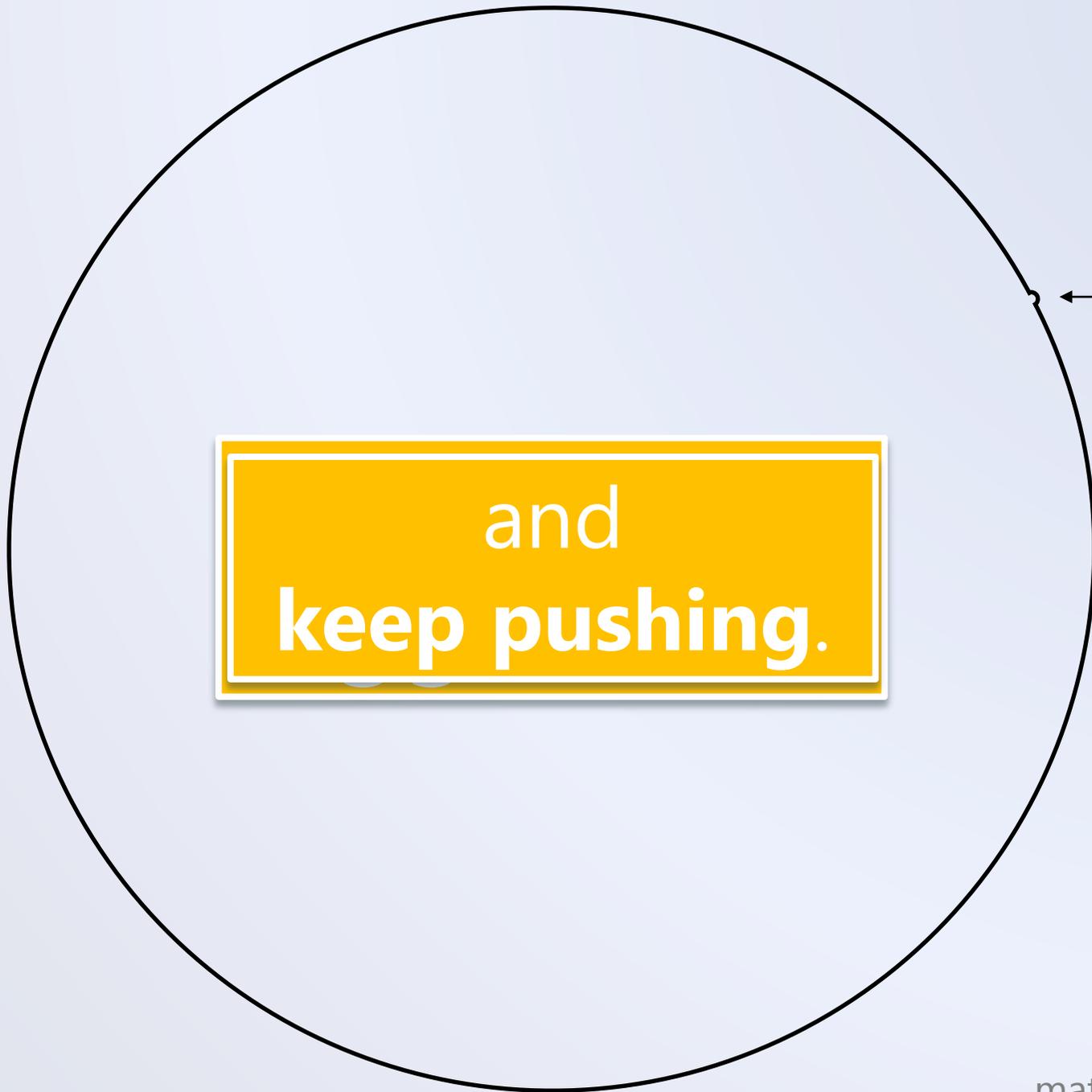






← Ph.D.





and
keep pushing.

← Ph.D.

You & Your Advisor



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You & Your Advisor

- You are 1 of N students
- Your paper is 1 of M papers
- (S)he reviews P papers a year
- (S)he teaches Q courses a year
- (S)he attends X committee meetings a week
- (S)he travels Y times a year

Do the math!!! (S)he only has

$$\frac{(365 - 14 - 52 * 2 - 5Y) * \left(8 - \frac{X}{5}\right) - 4P - 3 * 16Q}{52 * N * M}$$

hours /week for you
answer = 0.54

$$N=5, M=10, P=20, Q=2, X=5, Y=4$$

You & Your Advisor

- You are 1 of N students

■ Be **realistic** about
■ your advisor's time
■
■
■ (and hence, *choice* of advisor)

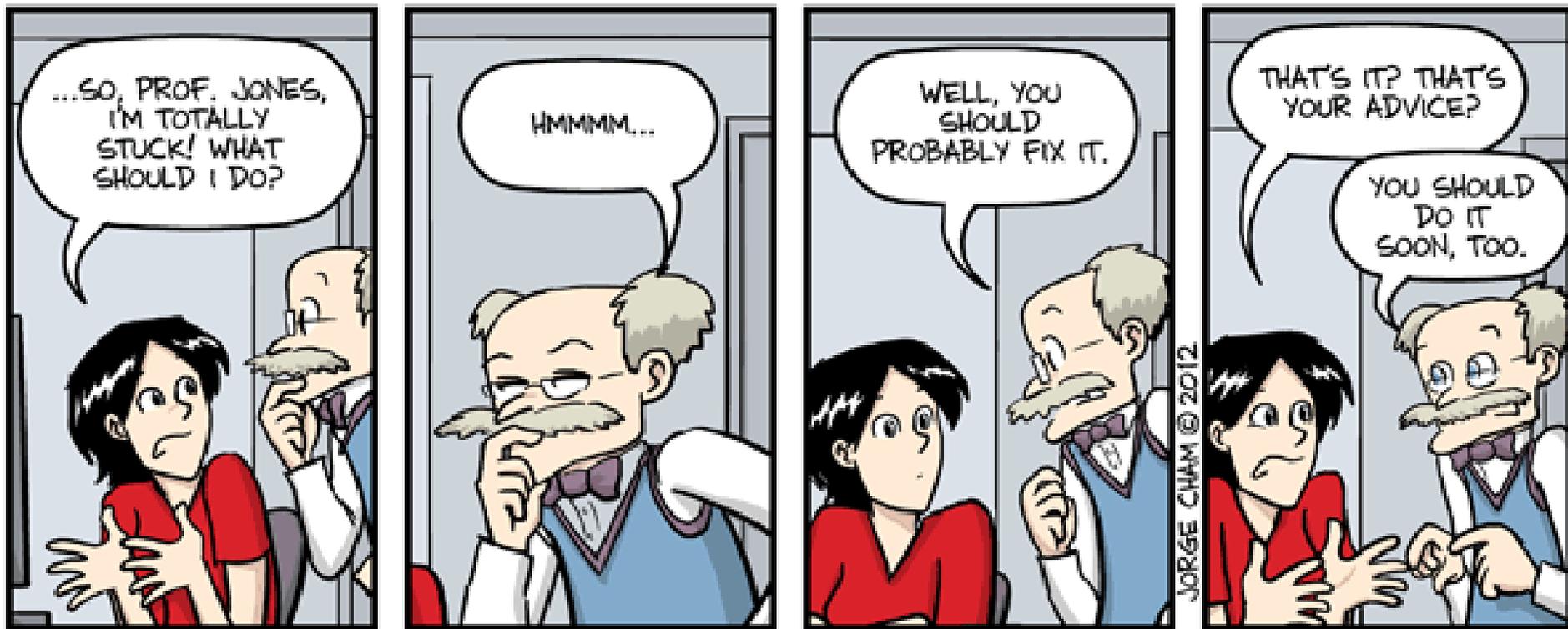
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You & Your Advisor



**DON'T
PANIC**

You & Your Advisor

Keep your advisor up-to-date, but don't spam

- Be interesting, not pestering

Agree on and check against SMART goals

- Specific, Measurable, Attainable, Realistic, Timely

Try to phrase suggestions, not questions

- "I think we should do X" vs. "Should we do X?"

There are other helpful people, you know?

- officemates, postdocs, fellow students

You & Your Advisor

Keep your advisor up-to-date, but don't spam

- Be interesting, not pestering

Agree

- Spe

Try to

- "I t

Be proactive.
Agree on concrete goals.
Learn from fellow students.

There are other helpful people, you know?

- officemates, postdocs, fellow students

EVERYBODY'S PUBLISHING



AND I'M JUST SITTING HERE...

**DON'T
PANIC**

What is a PhD about?

Learning how to do science,

such that you

become an independent researcher

What is a PhD about?

Don't compare yourself
to more senior people.

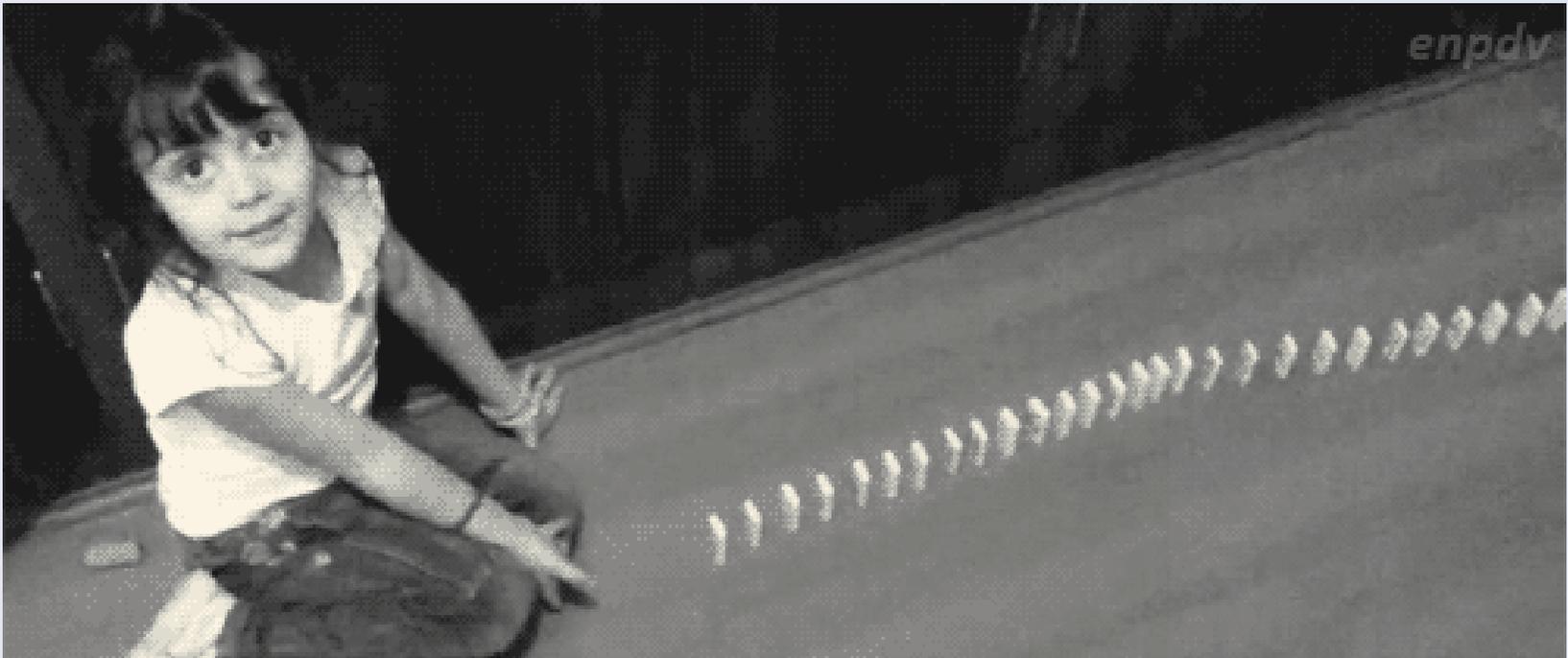
such that you

become an independent researcher

All these papers are so nice...



All these papers are so nice...



and my research is not going anywhere...

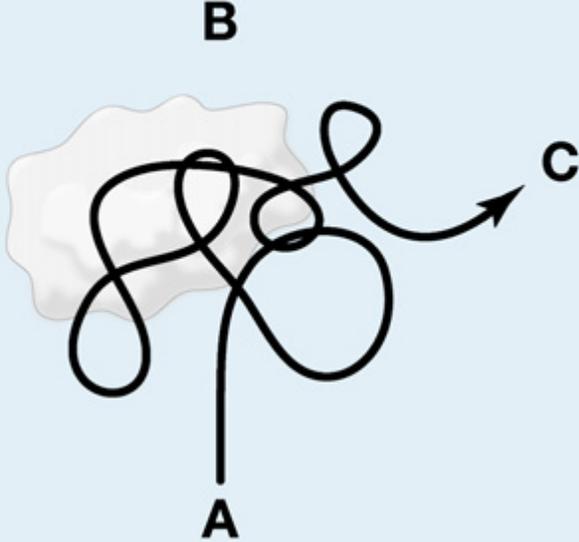
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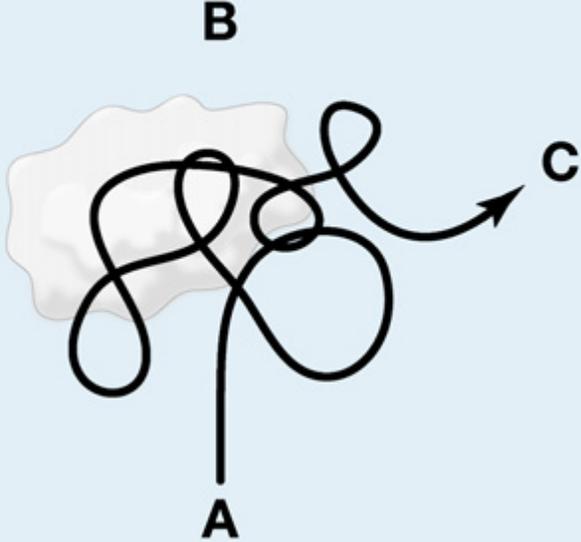
and my research is not going anywhere...

Reaching the Goal

Reaching the Goal

The objective schema can lead to frustration when the project goes off track	The nurturing schema gives support and opens new directions
 <p>A straight vertical arrow starts at point A at the bottom and points directly up to point B at the top, representing a direct path to a goal.</p>	 <p>A path starts at point A at the bottom. It enters a shaded, irregular area labeled B. Inside this area, the path loops and turns multiple times. It then exits the shaded area and ends at point C to the right, representing a path that explores alternatives when the direct route is blocked.</p>

Reaching ^a ~~the~~ Goal

The objective schema can lead to frustration when the project goes off track	The nurturing schema gives support and opens new directions
	

Reaching ~~the~~ Goal

A good **problem** is often worth more than a good **solution!**



Are you afraid of the Dark?



We're explorers

- we may strike gold, or
- find dirt, dirt, and more dirt

We don't know the way

- we follow intuition, and see where it leads us...
- soon, you'll know 'the way' better than your supervisor

Are you afraid of the Dark?



We're explorers

If you're afraid of the dark, or
research is not for you. more dirt

We don't know the way

- we follow intuition, and see where it leads us...
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How to work

Everybody works differently

- find out what works for *you*



**I'M NOT A
MORNING
PERSON**

How to work

Everybody works differently

- find out what works for *you*

It's **not** about how many hours — *stupid*!!1!!!one!eleven

- say no to peer pressure

Create a stimulating environment

- optimize your workplace

Focus.

- and procrastinate when you can't

How to work

Everybody works differently

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It's **not** about how many hours — *stupid*!!1!!!one!eleven

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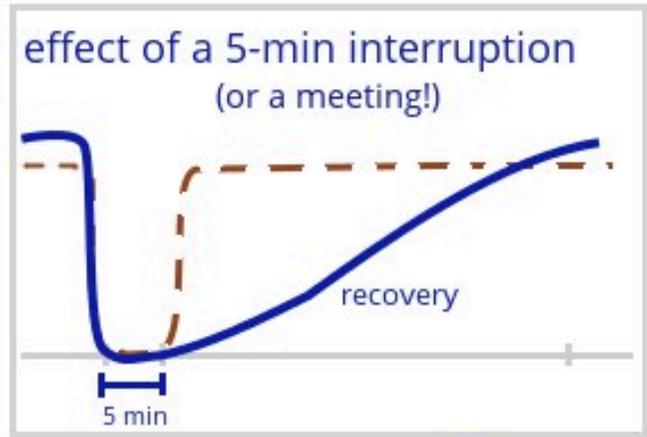
Create a stimulating environment

- optimize your workplace

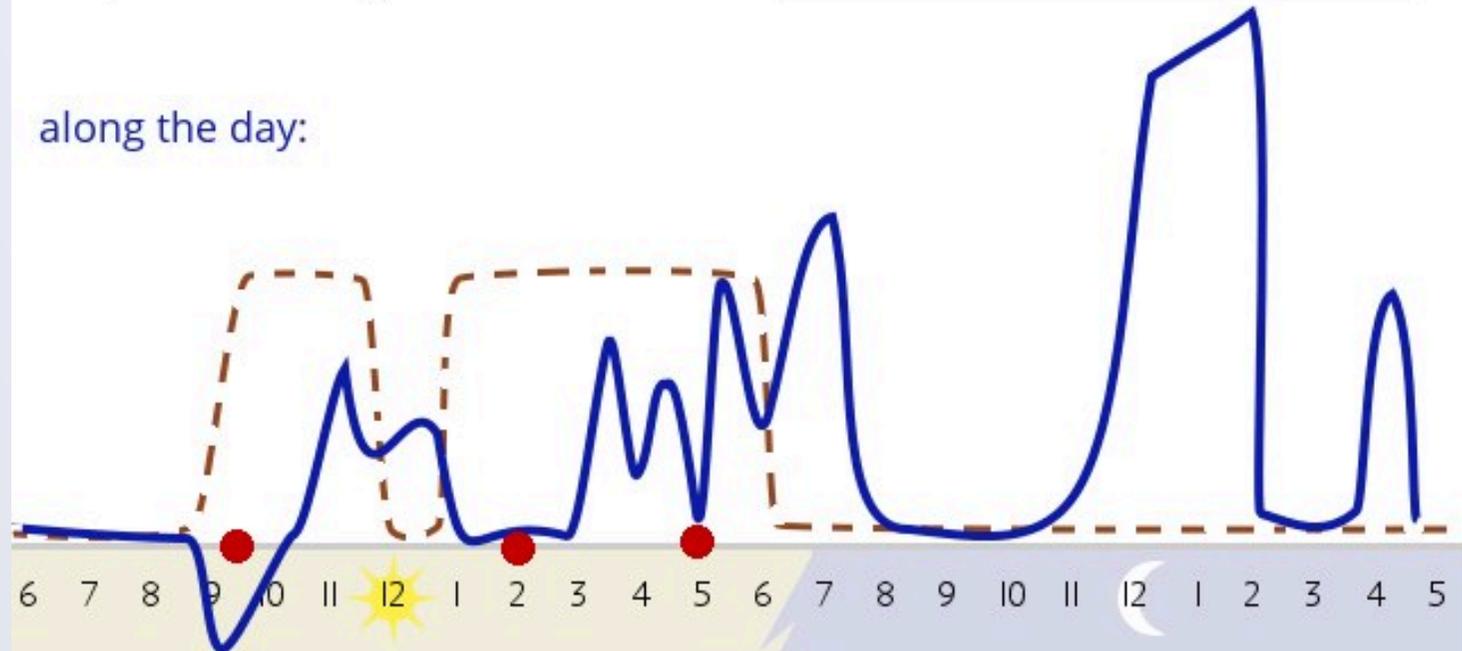
Focus.

geek productivity at work

- how non-geeks think it works
- how it actually works
- sampling points likely to be used by non-geeks to get a general picture of how geeks work



along the day:



How to work

Everybody works differently

- find out what works for *you*

It's **not** about how many hours — *stupid*!!1!!!one!eleven

- say no to peer pressure

Create a stimulating environment

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Focus.

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How to work

Everybody works differently

- find out what works for *you*

It's **not** about

- say no to p

Create a st

- optimize your workplace

Focus.

- and procrastinate when you can't

PhD Goal:
figure out how
you get ideas

1!!!one!eleven

I don't know man..

VIA 9GAG.COM

**Sometimes, I don't want to
move it move it.**

I don't know man..

Sometimes, it's just not happening. No need to keep your chair warm, call it a day – go out, have **fun**. Who knows, maybe you'll even get a good idea.



Sometimes, I don't want to move it move it.

Sometimes...



WELL CRAP



You're stuck.

**DON'T
PANIC**



I NEED AN ADULT



Don't be afraid
to ask for **help**.

When You're Feeling Low

It's not so bad, really

- don't get yourself down

Acknowledge the good times

- keep a **folder** with past **accomplishments**, with e.g., graduation photos, acceptance notifications, awards, conference visits, etc.

When You're Feeling Low

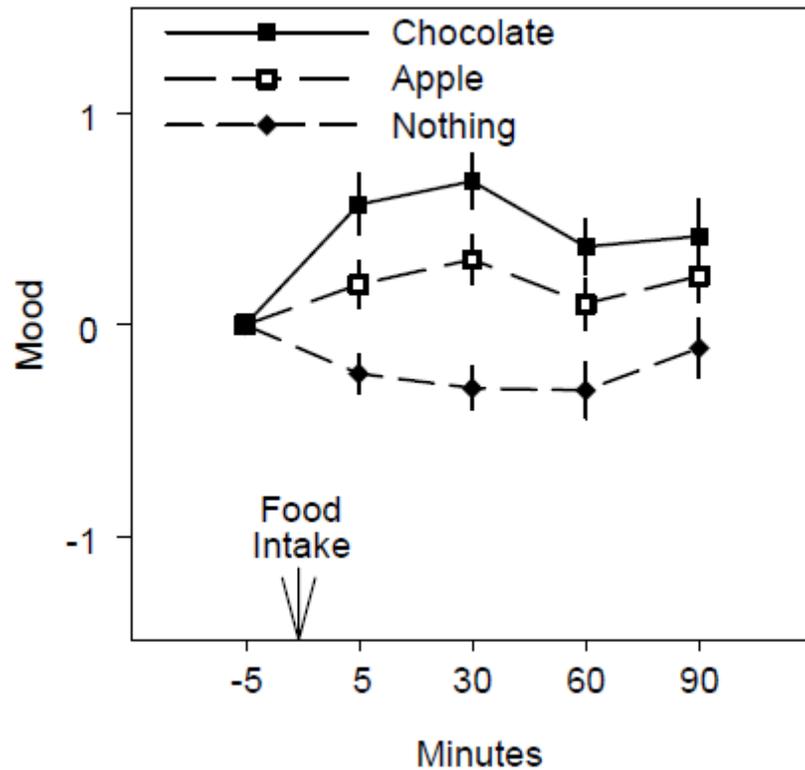
Everyday mood and emotions after eating a chocolate bar or an apple

Michael Macht *, Dorothee Dettmer

When You're Feeling Low

Everyday mood and emotions after eating a chocolate bar or an apple

Michael Macht *, Dorothee Dettmer

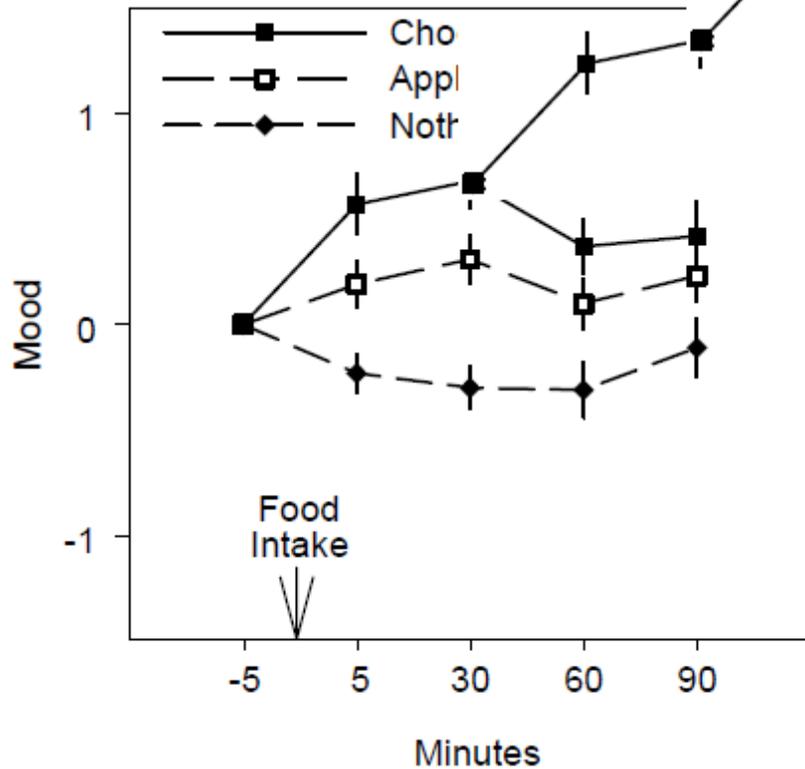


When You're Feeling Low

Ever

chocolate bar or an apple

er



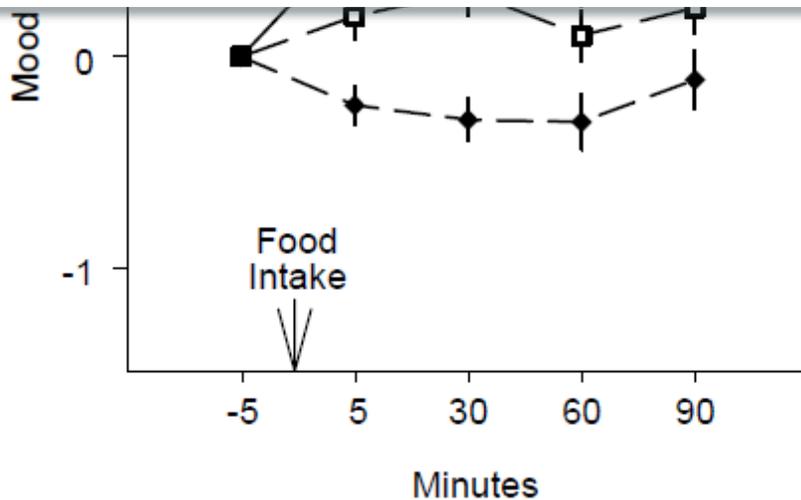
When You're Feeling Low

Ever

chocolate bar or an apple

er

Who cares about "an apple a day ...",
it's: "a chocolate bar every 30 minutes"!



Survival Checklist

Put yourself in the shoes of **your audience**

- your advisor, your readers, conference attendees, ...

Get your priorities **straight**

- define achievable short-term goals and stick to them

Learn when to say **no**

- don't get involved in too many things

Be thoughtful about networking opportunities

- personal story

Thanks and Good Luck!!

THAT'S MY PLAN. I'D LIKE TO THANK ALL OF YOU FOR YOUR UTTER APATHY.



Dilbert.com DilbertCartoonist@gmail.com

A FEW OF YOU STAYED AWAKE, AND I THINK I GOT SOME ACCIDENTAL EYE CONTACT ONCE WHEN THE A.C. MADE A NOISE.



8-7-10 ©2010 Scott Adams, Inc./Dist. by UFS, Inc.

IN CONCLUSION, I HATE MY JOB, I HATE MY COWORKERS, AND I HOPE FERAL CATS EAT EVERY ONE OF YOU.



ARE YOU TAKING QUESTIONS?

For pointers to books, slides, sites, ...

jilles@mpi-inf.mpg.de

Some references

Good Books

- "A PhD is not Enough", Feibelman
- "Mastering your PhD", Gosling & Noordman
- "How to Get a PhD", Philips & Pu

Informative Sites

- <http://matt.might.net/articles/>
- <http://public.randomnotes.org/richard/>

Great Slides

- Sue Moon "A few tips I wish I had before I met my advisor"
- Yannis Smaragdakis "PhD Rants and Raves – be afraid, be very afraid"
- Eamonn Keogh "How to do good data mining research, get it published, and get it cited"

Special thanks to **Ingmar Weber** for his **excellent** talk

- "Advice for young Jedi knights and PhD students" at PIKM 2012

Google [title] filetype:pdf

- "From Research to Manuscript", Katz
- "Scientific Writing", Peat
- "Writing for Science", Goldbort

Funny Sites

- *Research in Progress* – researchinprogress.tumblr.com
- Piled Higher & Deeper – phdcomics.com