

ECS PhD Induction Agenda

- **14:00** **Welcome by Geoff Merrett, Michael Ng & Mark Weal**
- **14:10** **Health and Safety by Neil Palmer**
- **14:20** **Demonstrating by Ivan Ling**
- **14:35** **Being a Research Student**
- **15:15** **Coffee/Tea break**
- **15:45** **Ethics & Diversity by Dominic Taunton**
- **16:05** **Training by Asieh Salehi Fathabadi**
- **16:25** **Panel of PhD Students:** Shaokai Song, Pankaj Kumar, Zihao Wang, Niketa Gandhi, William Hunt.

Welcome

- ECS Doctoral Programme Directors**



Michael Ng

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Electronics
(EPE, NGW, SEMS, SET)



Mark Weal

mjw@ecs.soton.ac.uk

Computer Science
(AIC, CPS, Cyber, DHBE, VLC,
WAIS)

ECS Training



Asieh Salehi Fathabadi

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ECS Research Skills &
Development Champion



Lie-Liang Yang

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ECS Director of
PGR Training



Nawfal Fadhel

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ECS PGR Training

ECS Senior tutors



Julian Field
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ECS
Senior Tutor



Graeme Bragg
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ECS
Senior Tutor

- Director: Associate Professor Alex Weddell



- The Really Important People

Doctoral College Team

The grad school office is the first point of contact when your supervisor doesn't know something... Email: Doctoral-College@soton.ac.uk

Welcome to ECS

World-leading education
in a world-class research environment

Prof Michael Ng and Prof Mark Weal
Doctoral Programme Directors of Graduate School (ECS)

ECS in Rankings

ECS ranked in the top 10 for CS for more than 10 years (The Complete University Guide)

100 % of CS research impact recognized as world-leading or internationally excellent (REF 2021)

ECS ranked 3rd for EEE (The Guardian University Guide 2025)

Southampton ranked in the top 100 universities for CS and EEE (2025 QS World Ranking)

97 % of research outputs in EEE rated as world-leading or internationally excellent (REF 2021)

1st in the UK for the volume and quality of research in EEE (REF 2021)

EEE ranked 4th and CS ranked in the top twenty in the UK in the Times Good University Guide 2024

Top-ranked University for Telecommunications in Europe (Shanghai's Global Ranking of Academic Subjects 2024)

Key information

Structure

10 Research Groups
6 Research Centres

Staff

180+ academic Staff, including 40+ Professors
100+ Research Staff

Students

~ 1,000 Undergraduate students
~ 300 Postgraduate Taught students
> 300 Postgraduate Research students

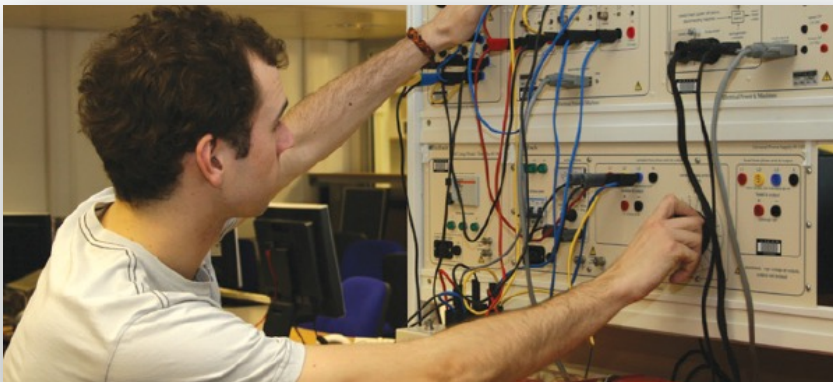
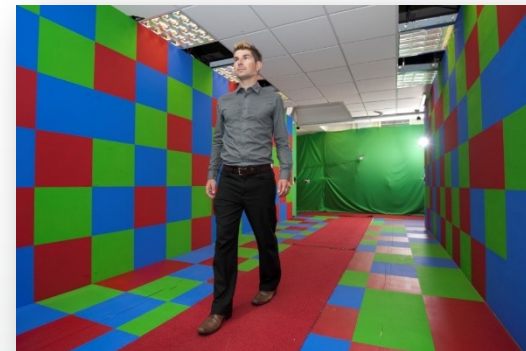
Research Groups

1. **Agents, Interaction and Complexity (AIC)**
2. **Cyber Physical Systems (CPS)**
3. **Cyber Security (CYBER)**
4. **Electrical Power Engineering (EPE)**
5. **Next Generation Wireless (NGW)**
6. **Smart Electronic Materials and Systems (SEMS)**
7. **Sustainable Electronic Technologies (SET)**
8. **Digital Health and Biomedical Engineering (DHBE)**
9. **Vision, Learning and Control (VLC)**
10. **Data and Intelligent Society (DAIS)**



Research Centres

- Cyber Security Research Centre
- Pervasive Systems Centre
- Web Science Institute
- Centre for Health Technologies
- Centre for Internet of Things
- Centre for Neuromorphic Computing
- Centre for Robotics



Thank you

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Being a research student

- Michael Ng (Next Generation Communications)
- Mark Weal (DHBE)

How long does it take?

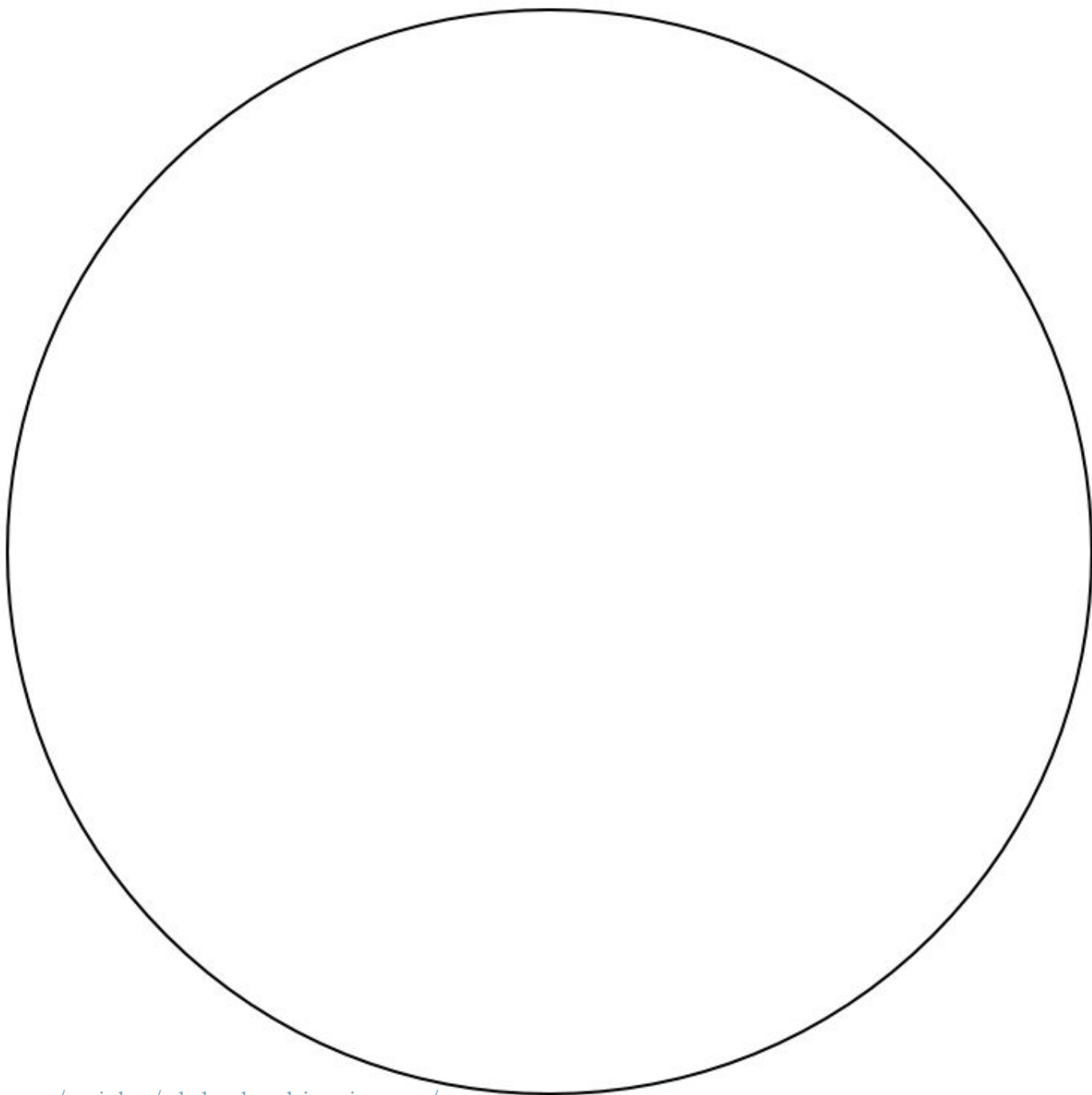
- One PhD = Three years
- **Roughly** speaking you have:
 - 6 months to find your feet
 - 12 months to investigate a specific area
 - 12 months to do the body of the work
 - 6 months to write up
- Take into account reports, transfer thesis, papers, conferences, etc...
- Look around you – people have managed to do it!

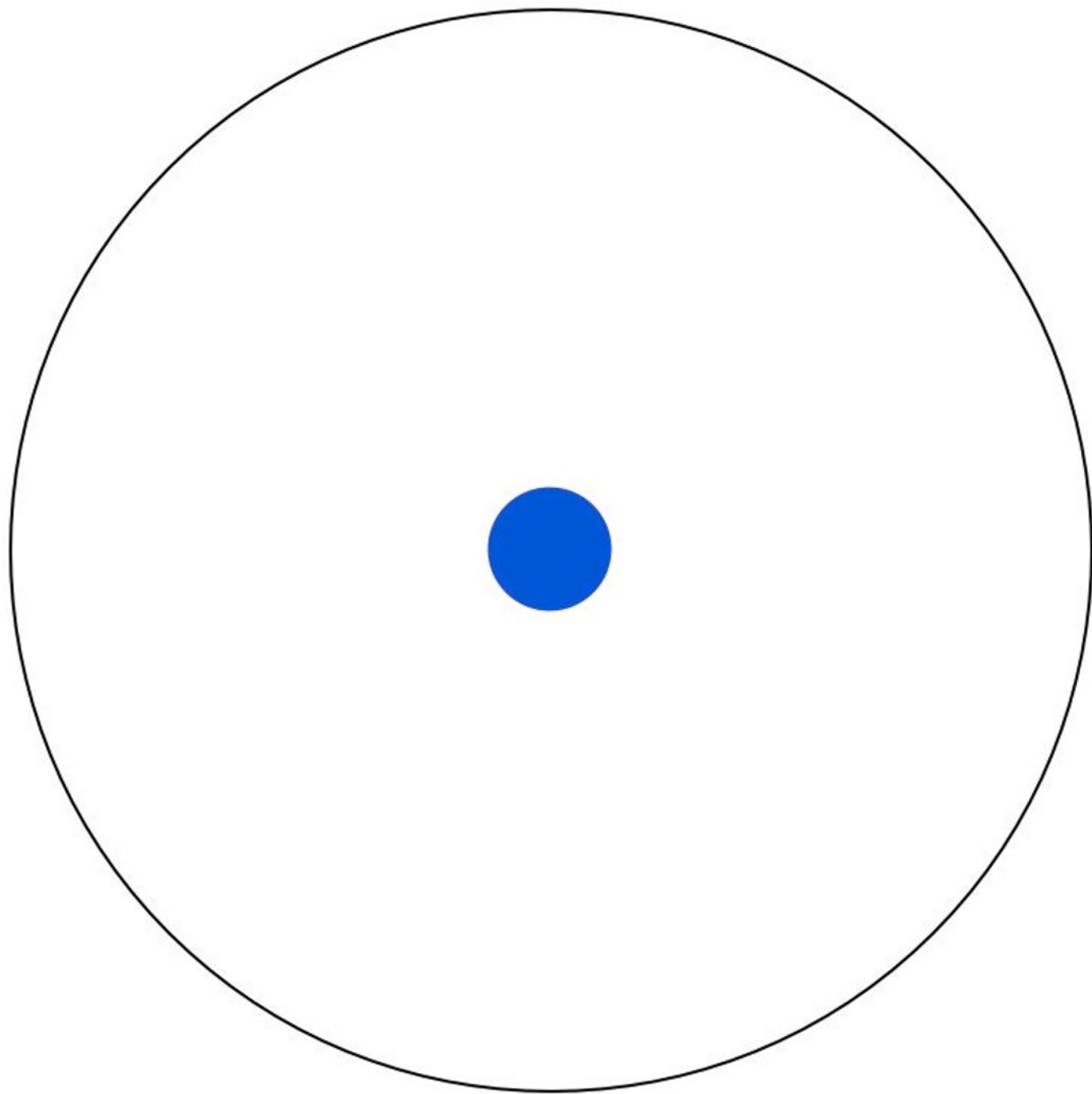
What are the key steps of a PhD?

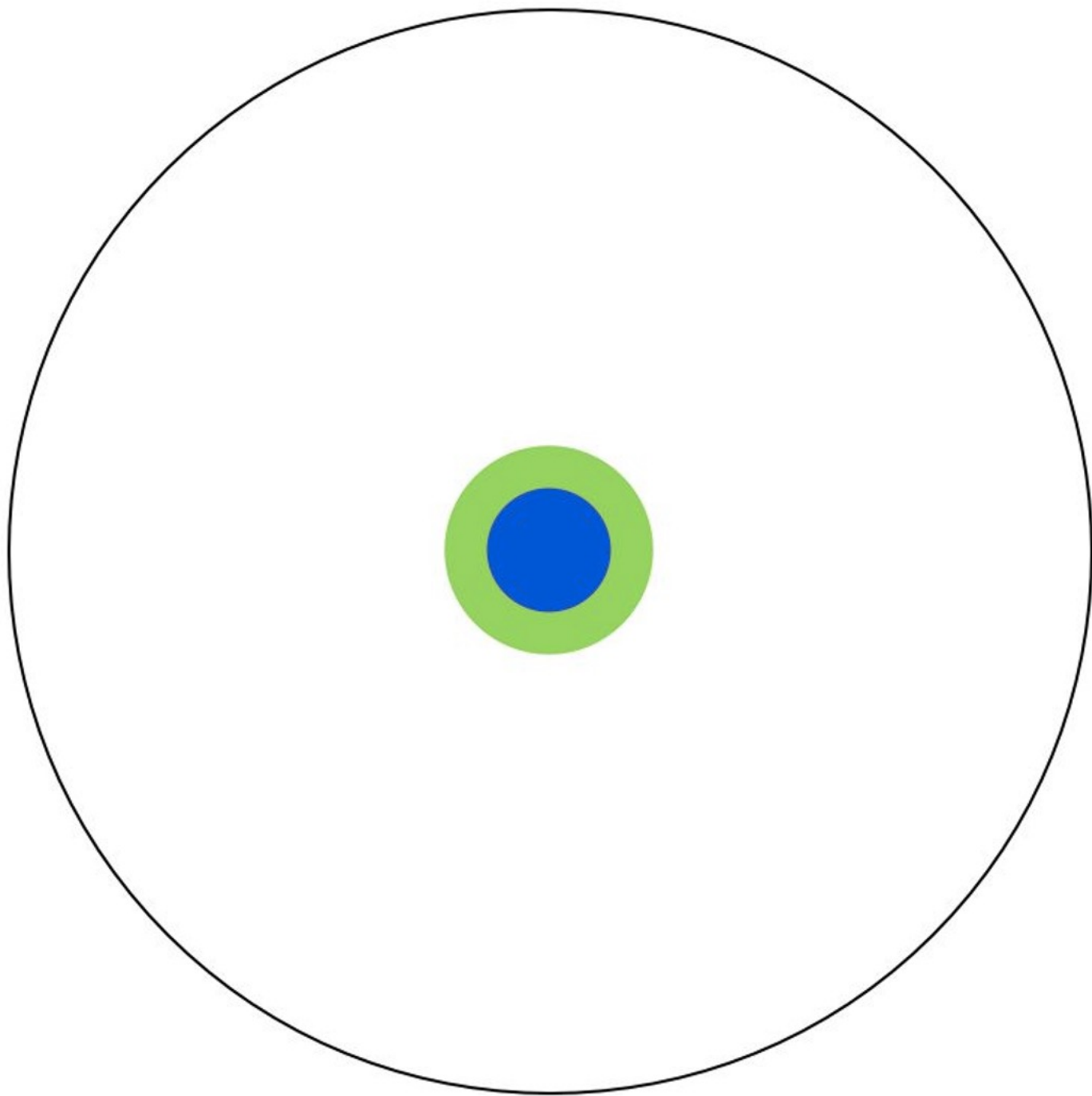
1. Find an interesting open problem
 - Not too mature / not too immature / exciting / realistic.
2. Establish the context
 - Identify state of the art.
3. Come up with your own solution
 - Design your algorithms / systems / theory.
4. Evaluate your solution
 - Find datasets, run experiments, evaluate success metrics.
5. Disseminate your results
6. Highlight limitations and future extensions

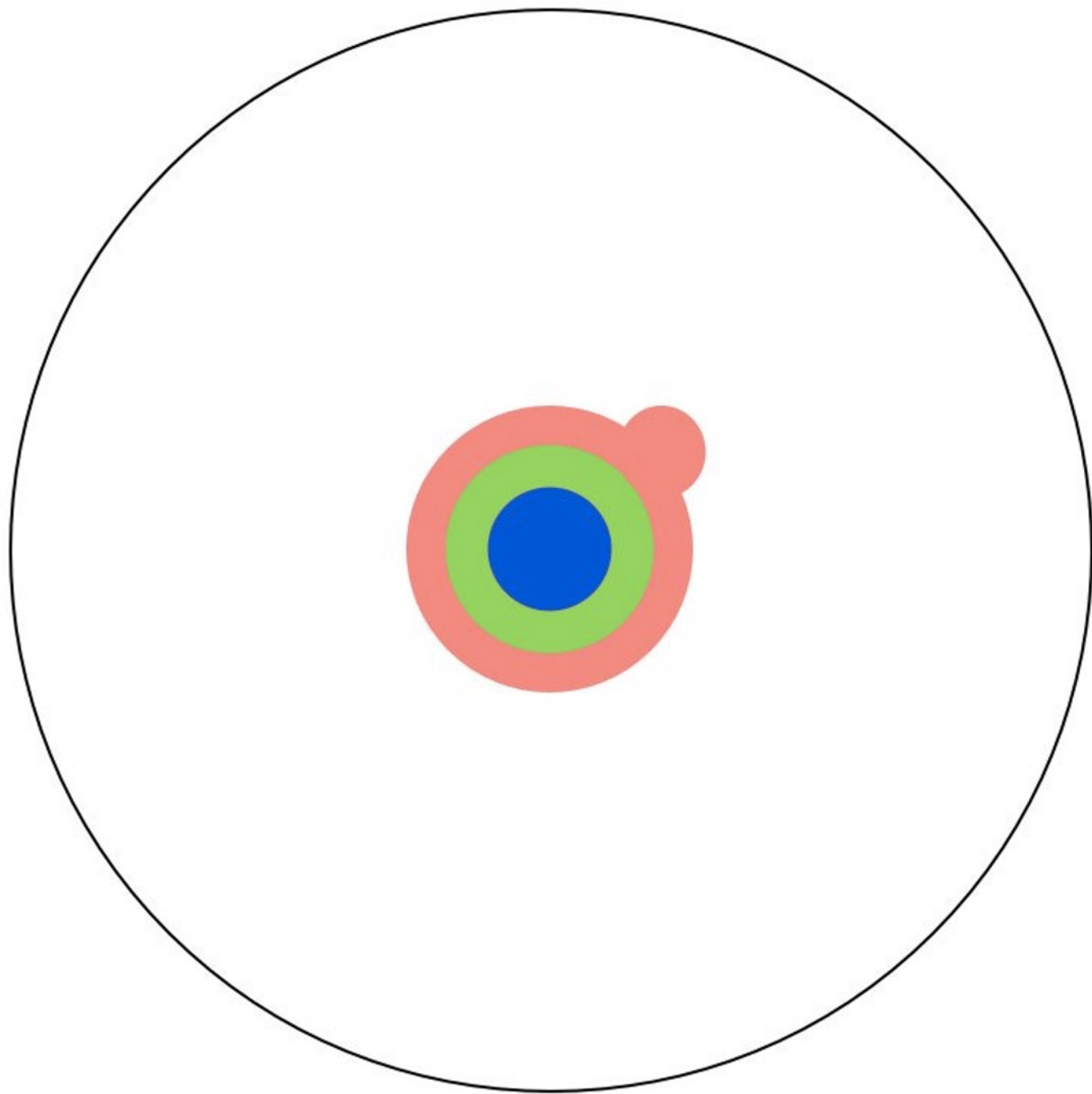
What's required for a PhD?

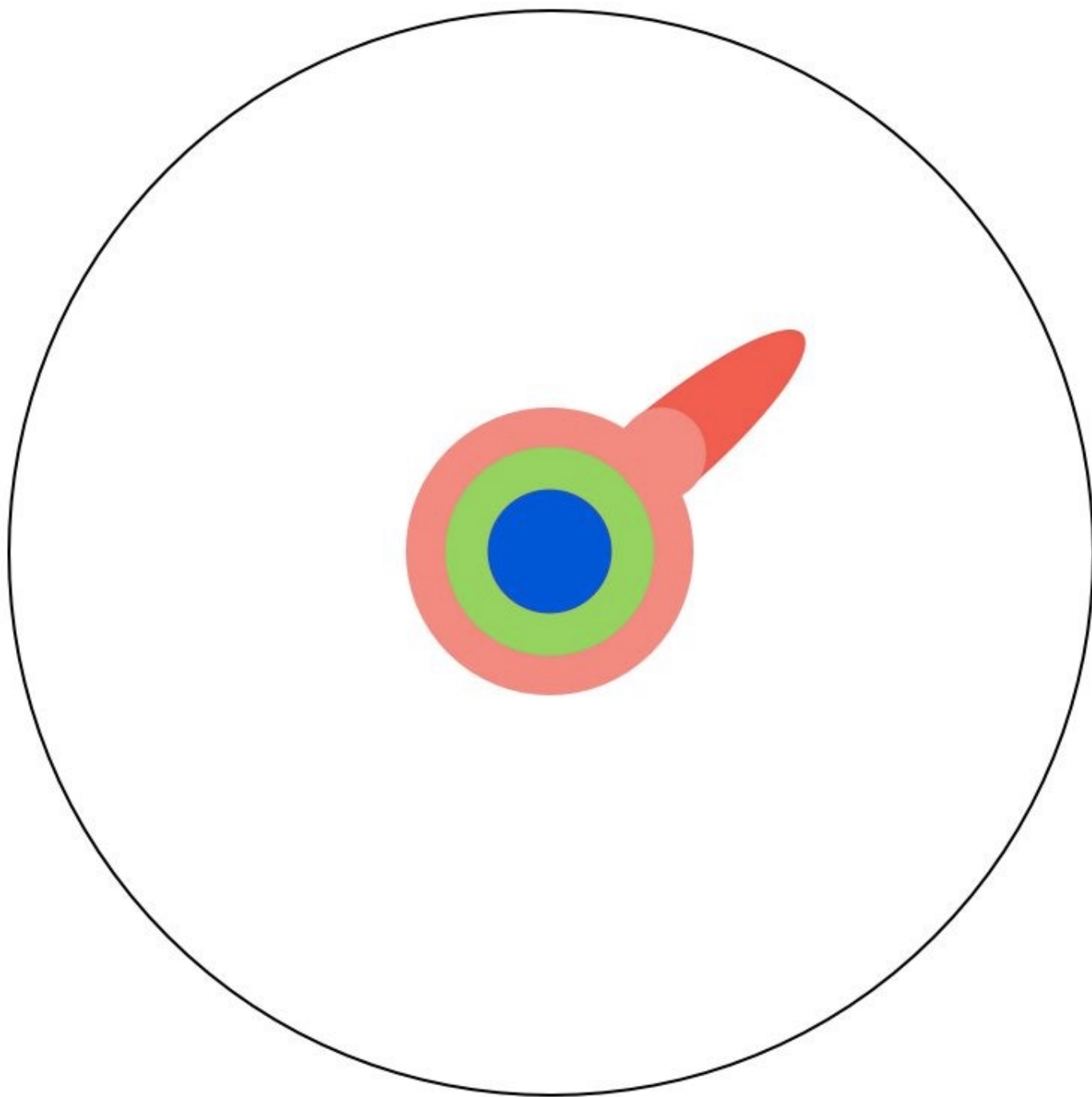
- For the award of PhD, research students must have demonstrated:
 - the **creation and interpretation of new knowledge** through original research or other advanced scholarship of a quality to satisfy peer review, extend the forefront of the discipline and merit publication;
 - a systematic acquisition and understanding of a **substantial body of knowledge which is at the forefront of an academic discipline** or an area of professional practice;
 - the general ability to **conceptualize, design and implement a project** for the generation of new knowledge, applications or understanding at the forefront of the discipline, and to adjust the project design in the light of unforeseen problems;
 - a detailed understanding of applicable **techniques for research** and advanced academic enquiry.

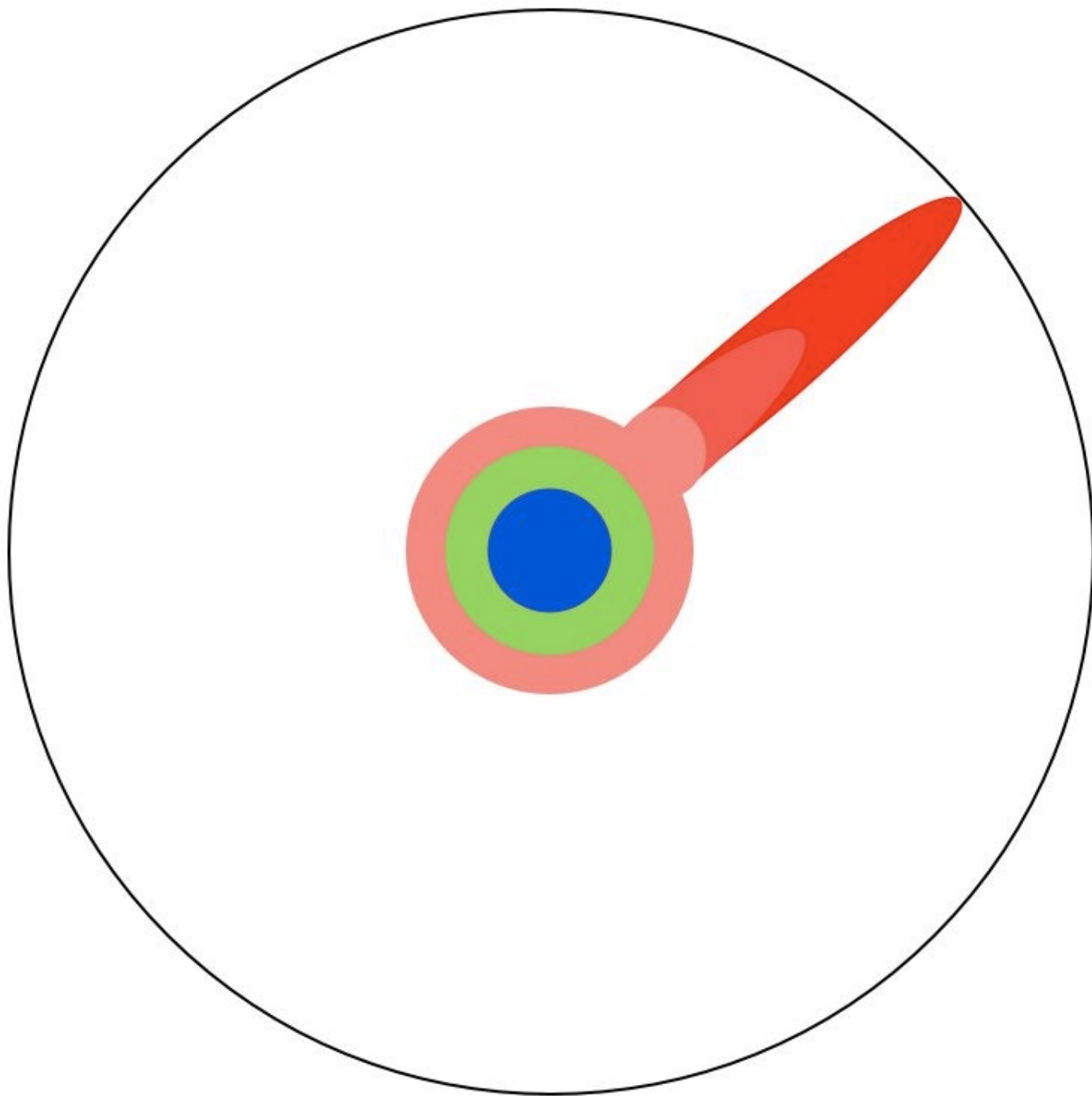


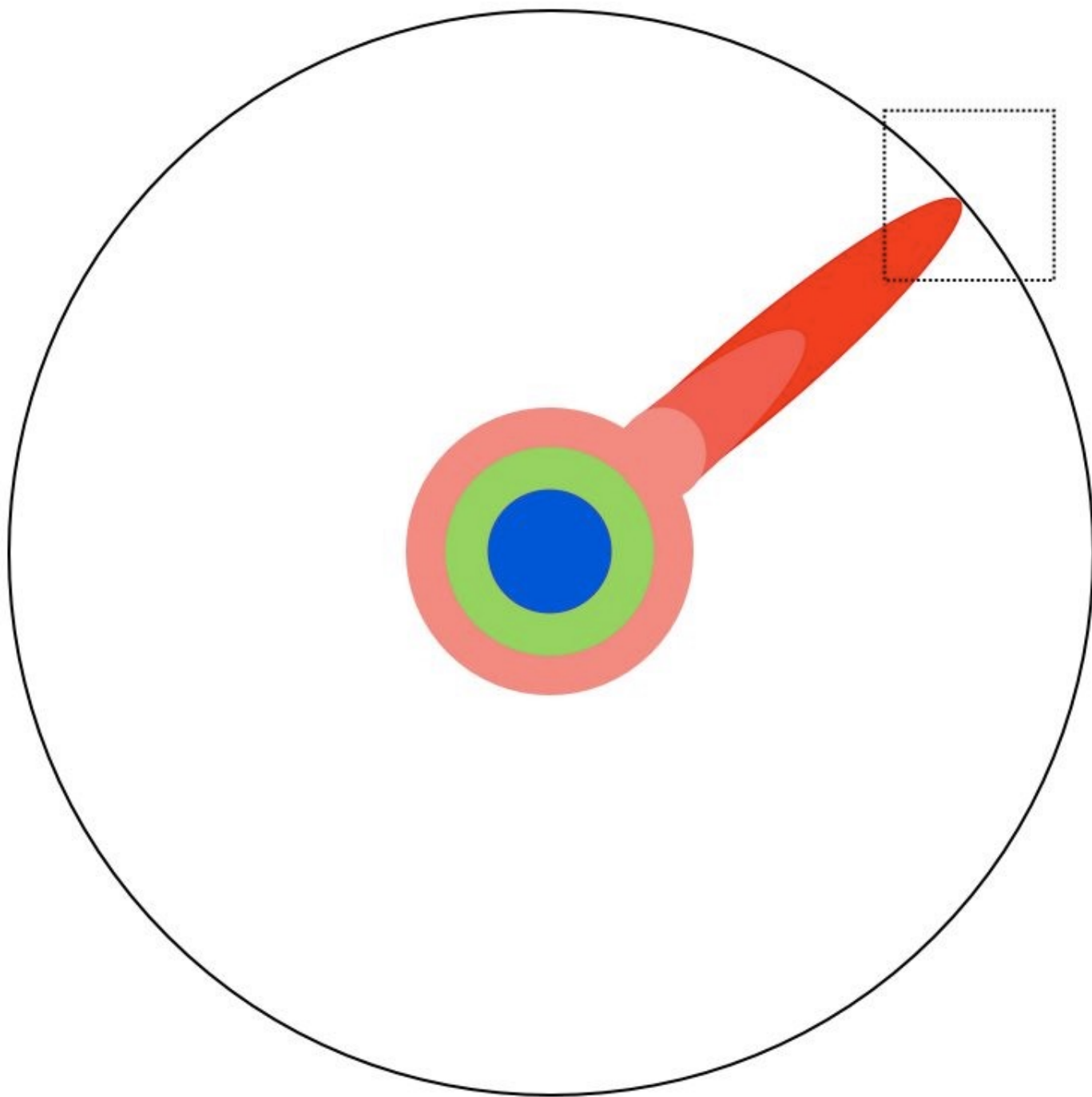


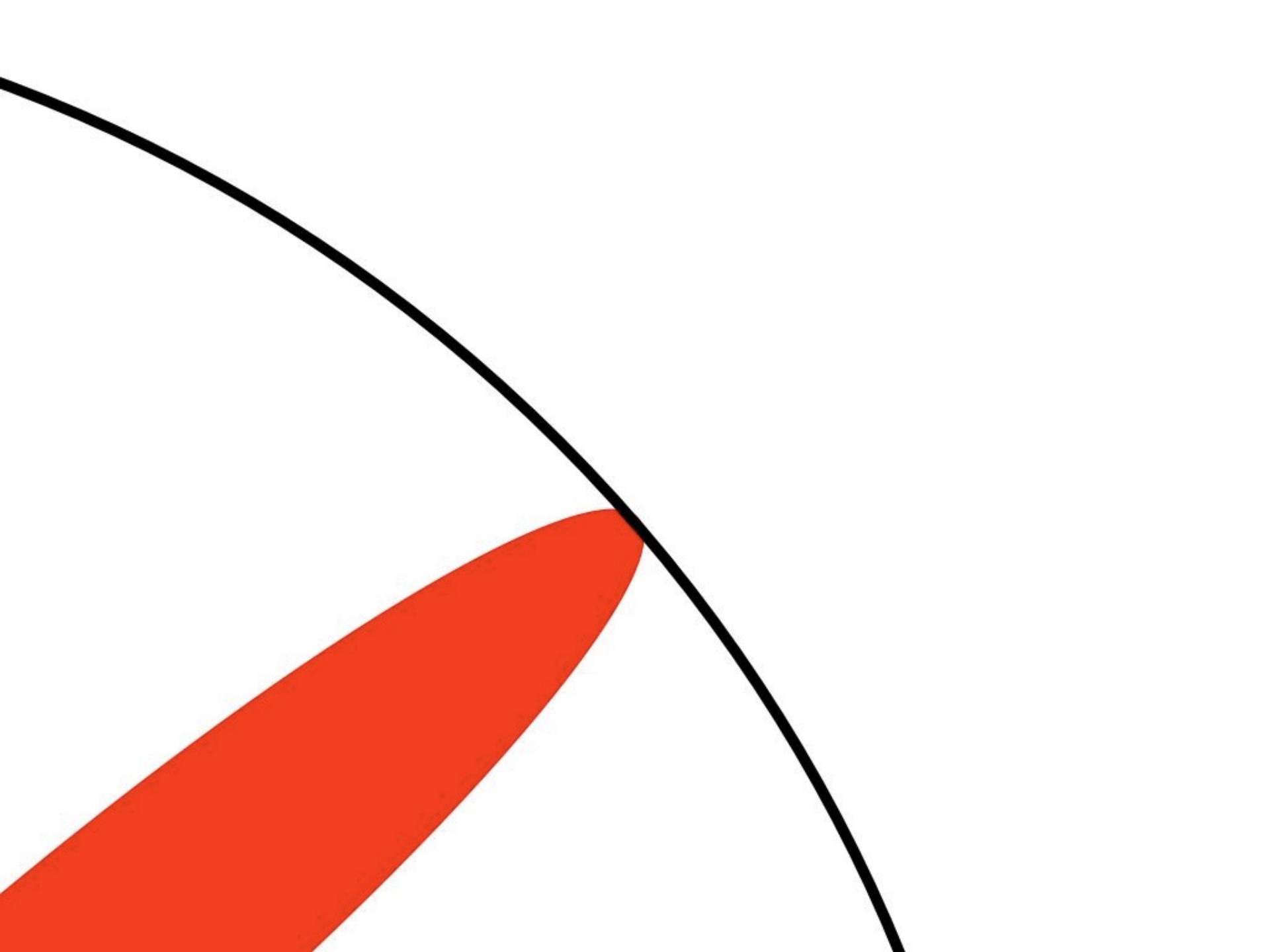


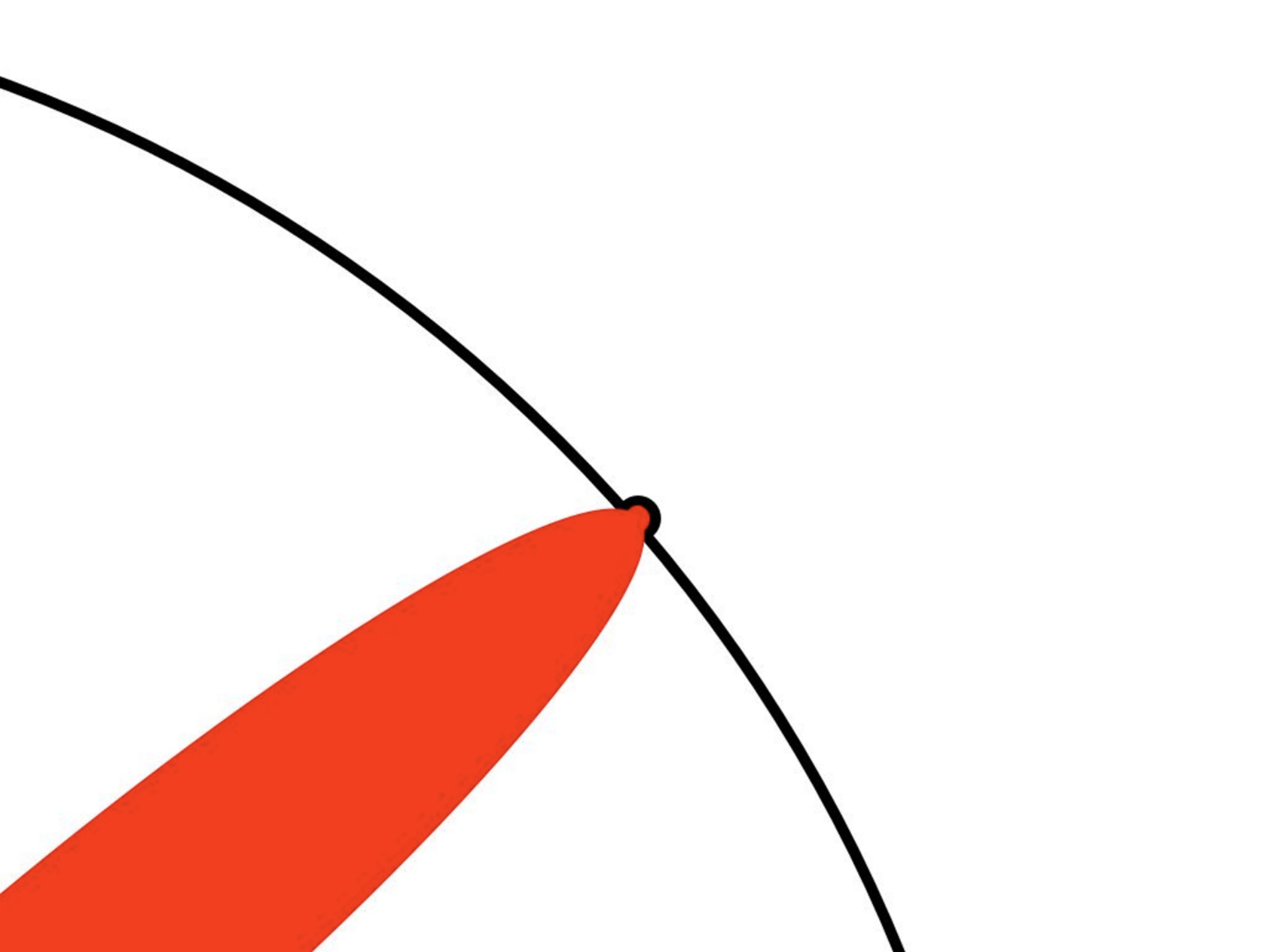


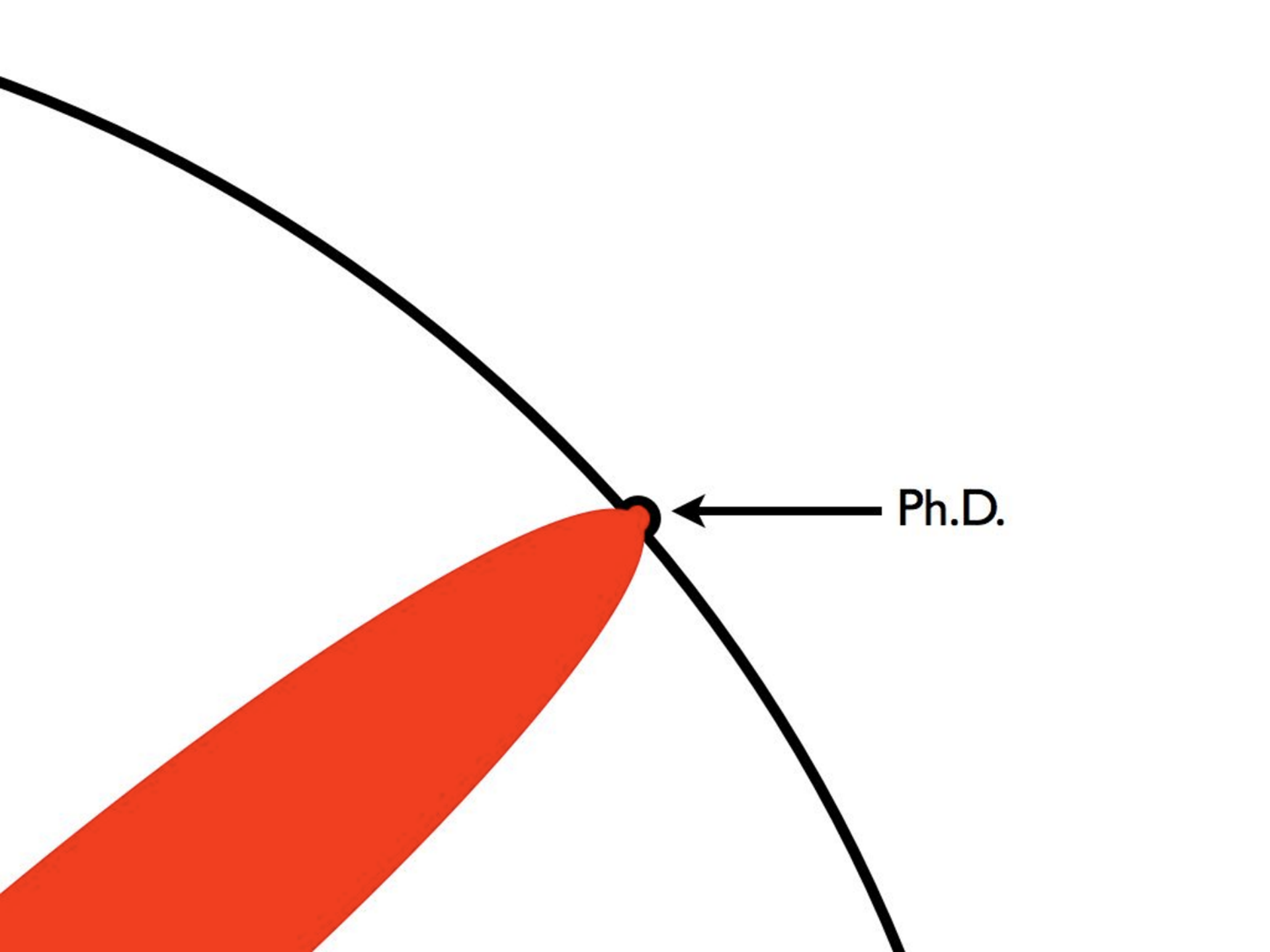




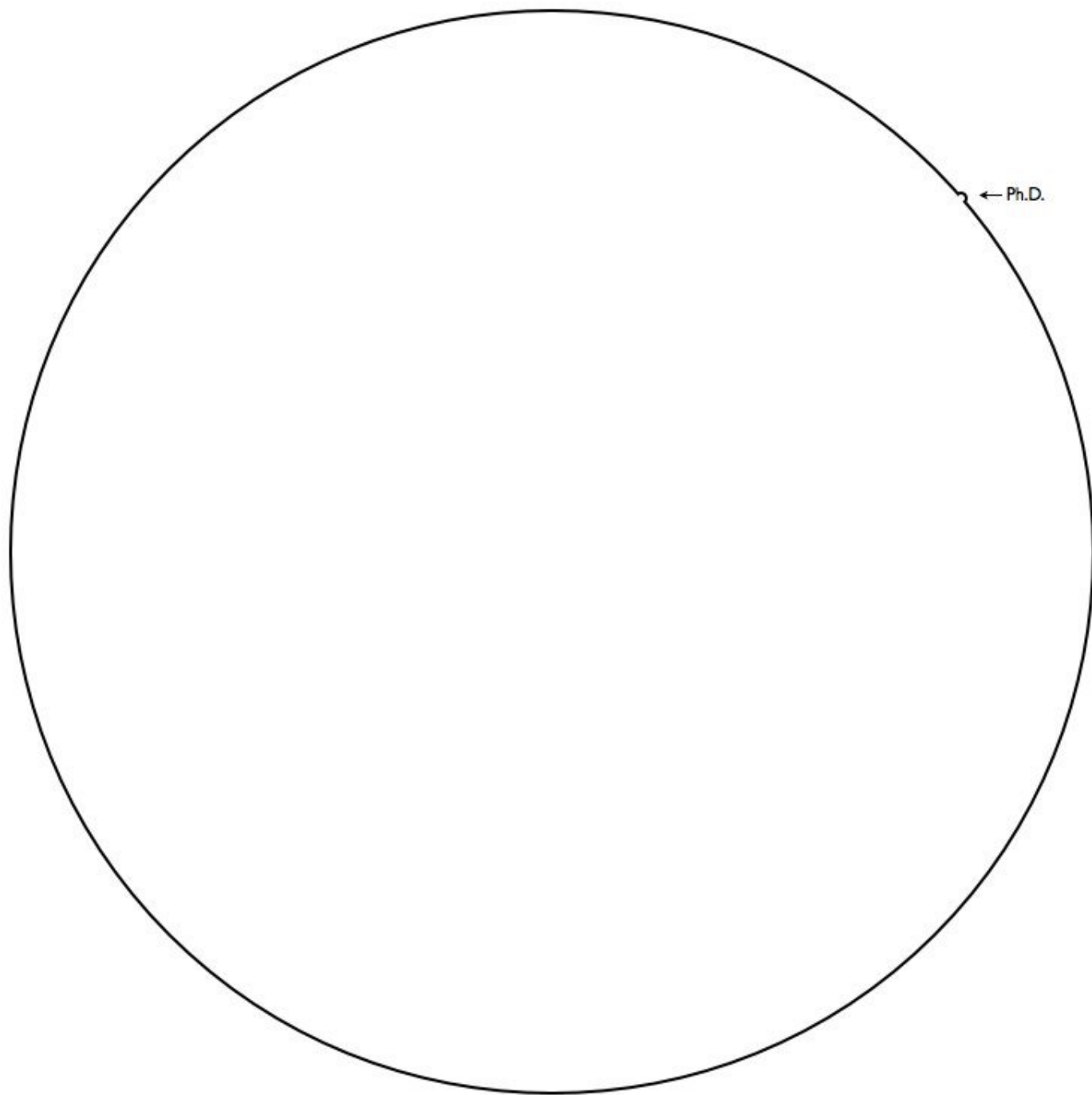












What does it take?

- Hard work
- Serious attitude
- Patience
- Courage
- Humility
- Maturity

What can we do to help? Training

Training courses are organised by the Faculty and ECS:

- Writing, presenting, library, ethics
- COMP8001, COMP8014, COMP8015, SoTeach.
- Relevant UG/MSc courses;
- Not finding what you want/need? **Tell us!**

Other support:

<https://soton.ac.sharepoint.com/teams/PGRhandbook/>

Email: Doctoral-College@soton.ac.uk

How involved is my supervisor?

- He/she is your guide, at first...
 - He/she understands good research areas from bad
 - He/she is quicker than you at identifying dead ends
 - He/she will help manage your PhD process effectively
 - He/she will suggest events that you should attend

It **pays** to listen to him/her
- ...at the end, he/she will be a colleague!
- Co-author on all your work
- He/she has the **duty** to supervise you!
- If this is not happening:
 - Talk to them first, then 2nd supervisor, HoG, Michael or Mark
 - Don't suffer in silence

What about papers and talks?

We are in the business of getting and **selling** ideas

- At least one journal paper (hopefully more!)*
 - Writing clearly, concisely, and effectively does not come easy for **anybody**
 - Learning how to do it **well** is part of your training and essential for your survival here and elsewhere.
 - How to: write, submit, **address feedback**, rewrite, submit, etc.
 - Transferable skill!

* No official requirement for papers / conferences, but strongly encouraged

What about papers and talks?

We are in the business of getting and **selling ideas**

- At least one conference
 - Talking effectively in 10-20 minutes about something you spent 2 years on does not come easy!
 - Audience is not your enemy... but you can turn it into one, if you are not careful!
 - How to: rehearse, rehearse, rehearse...
 - Wherever you will end, this is an essential skill
 - Attending: important part of learning about research and confronting ideas
 - Normally in the 2nd/3rd year

What about papers and talks?

- Other venues for exposing and absorbing ideas:
 - Internal seminars (in your group):
 - excellent soundboard to check out new ideas,
 - excellent training for conference talks
- Local seminars (different UK universities)
- Workshops (excellent!)
- Doctoral consortia
- Summer schools
- Reading groups
- Coffee machines
- 3-Minute Thesis Competition

What about failing?

- Graceful exit points
 - Before the end of year 1 (with a smile)
 - After the 2nd Progress Review (with an MPhil)
- Hindenburg-like
 - Failing the 9mths/transfer thesis (with nothing)
 - Before the end of year 3 (with nothing)
- Think hard at each point
 - Is it still right for me?
 - Am I still committed?
 - Am I **enjoying** it?



What about me?

- Personal development
- Intellectual development
- International experience
- Career opportunities

Enjoy your Ph.D.!

...you won't be so lucky as to get another one, probably!

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16:25 Panel of PhD Students:

1. Shaokai Song
2. Pankaj Kumar
3. Zihao Wang
4. Niketa Gandhi
5. William Hunt