

PIER Helmholtz Graduate School (PHGS)

A Graduate Education Program of DESY in Cooperation
with Universität Hamburg



Why doing a doctorate at DESY?

- Is one of the world's leading accelerator centres: *Researchers use the large-scale facilities at DESY to explore the microcosm in all its variety – from the interactions of tiny elementary particles and the behaviour of new types of nanomaterials to biomolecular processes that are essential to life.*
- Excellence scientists
- Cooperations with excellent partners worldwide
- Exciting interdisciplinary setting
- Cooperates with industry and business
- Benefits from the metropolitan regions of the two DESY locations: Hamburg & Zeuthen
- DESY is directly involved in three graduate schools which offer tailored made structures, services and scientific excellence to early career researchers like you!

DASHH Graduate School

- Data Science in Hamburg-Helmholtz Graduate School for the Structure of Matter
- Nine partners, main partners: DESY, UHH, TUHH
- Structured program and regular networking in data science
- Interdisciplinary data science projects in Photon Science | Accelerator Science | Particle Physics | Structural Biology | Materials Science | Reproducible Data Science
- Applications as Associate Doctoral Researcher throughout the year
- Open fully funded projects to be found here:
https://www.dashh.org/application/phd_topics/index_eng.html
<https://www.dashh.org>

International Helmholtz-Weizmann Research School on Multimessenger Astronomy (MM School)

- Joint German-Israeli Graduate School
 - Partners: DESY (Zeuthen), Humboldt University, Potsdam University, Weizmann Institute of Science (Israel)
 - Associates: Friedrich-Alexander University Erlangen-Nürnberg, Ruhr University Bochum
- Topics: gamma rays, other electromagnetic radiation, neutrinos, gravitational waves, theory spanning from fundamental physics to particle acceleration to plasma physics, compact objects, dark matter, particle cosmology, etc.
- 34 doctoral researchers at the moment
- What we offer:
 - International supervision
 - Networking events: Cohort + Annual Meetings, Science Journal Clubs,...
 - Research stays at partner institutions
 - Training opportunities for professional and personal skills

Next application round: 25 Sept – 5 Nov 2023. More than 10 paid doctoral positions available.

For info and how to apply see: www.multimessenger-school.de/application/

Contact: Silvia Alessandria (School Coordinator) multimessenger-school@desy.de

MMS Annual Meeting in Israel, June 2023



PIER Helmholtz Graduate School (PHGS)

- Graduate Education Program at DESY in Cooperation with Universität Hamburg
 - Located on Campus Bahrenfeld, Hamburg
 - Open to doctoral students who have an affiliation/employment contract with DESY Hamburg and/or the University Hamburg who do their doctorate in one or more of the following PIER research fields:
 - Particle and Astroparticle Physics
 - Photon Science
 - Nanoscience
 - Infection and Structural Biology
 - Accelerators
 - Theoretical Physics
- = encompasses all research fields on Campus Bahrenfeld, Hamburg
- Registration possible all year long.
 - <https://graduateschool.pier-hamburg.de/>

PHGS: facts

- Oldest graduate school at DESY – founded in 2012
- Largest graduate school on Campus Bahrenfeld, Hamburg
- Currently 270 members
- 60 % international doctoral students: Non EU: 36% | EU: 24% | GER: 40%
- Gender mix: female 35% | male: 65%
- Language of instruction: English
- Offers many German language courses

PIER activities: language courses

German courses

6 different courses

Level A1.1 (beginner) to B2.2 (advanced)

English courses

Academic writing for doctoral researchers

Communication and pronunciation

Conflict management



PHGS: doctoral programme

Doctoral programme with focus on:

- Internationally recognised structured programme in the respective research fields
- Scientific supervision on the highest level possible
- Focus on career planning and transferrable skill training
- Networking events
- Leisure activities and social events
- Buddy programme for new international doctoral students
- PHGS team which is caring about the well-being of each of its members



PHGS: Curriculum

File Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe

Deutschlands größtes Beschleuniger X PIER Helmholtz Graduate School X PIER Doctoral Programme - PIER X The Helmholtz Graduate School X

https://relaunch.pier-hamburg.de/e5/e5274/e5699/index_eng.html?preview=preview

Curriculum

The effort of the PHGS curriculum is calculated on the basis of credit points (CP). A successful completion of the curriculum requires 17 credit points: A minimum of 14 CP in the area of professional skills (categories A and B) and a minimum of 3 CP in the area of transferable skills (category C):

- Block seminars: 1 day = 0.5 CP, 2 days = 1 CP, etc.
- Half-day block seminars can also be credited.
- Block courses are credited with a maximum of 10 days/5 CP.
- 1 credit point = 15 x 45 minutes sessions.
- The calculation of credit points includes the workload for lectures, posters, etc.
- A written confirmation of attendance by the organiser, lecturer or supervisor is required for each course/workshop/conference. Doctoral students are asked to upload each attendance confirmation in the PHGS Portal. [\(Click here for the template "Proof of attendance" provided by the PHGS\)](#)
- [Click here for an example PHGS certificate](#)

CATEGORY A:

Project-related group seminars and workshops in the main research field

- Research group seminars and workshops
- Research institute seminars and workshops
- Research training groups
- Workshops in the main research field inside and outside of Hamburg/Germany

CATEGORY B:

Professional qualification in the PIER research fields

- Lecture weeks inside and outside Germany
- PIER Graduate Week
- PIER PhD Seminar
- Programming courses (Python, Matlab, Artificial intelligence, Quantum Computing etc.) offered on the PIER Education Platform (PEP) or by other institutions
- Subject-specific courses from the curricula of Universität Hamburg's master's programmes or other universities
- Winter/summer schools inside and outside Germany

Click to Edit!
Shift+Click to Properties Menu

CATEGORY C:

Obtaining transferable skills

- Career orientation & planning
- Language courses
- Programming skills
- Teaching activities at a university
- Transferable skills trainings & workshops

Suchen

09:38
01.09.2023

PHGS activities: transferrable skills courses (online/onsite)

Communicating Science

- Academic Writing
- Creating comprehensible scientific figures
- PIER PhD Seminar
- Scientific Writing
- Scientific Presentations

Coordination and Management

- Competition & conflict in Academia – Empower yourself against sexual harassment
- Good Scientific Practice
- Project Management
- Supervision and Leadership
- Time- and Self-Management

Career Development

- Applications Talk
- Career Orientation for Doctoral Researchers
- Career Planning
- Individual Career Coaching

Programming

- Python Basics
- Python Data Analysis
- Python Machine Learning




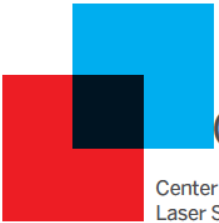
PHGS activities: PIER Graduate Week

PIER Graduate Week 2023

Interdisciplinary lecture and workshop week for PhD students



Partnership of Universität Hamburg and DESY





16–23 OCT '23

Center for Free-Electron Laser Science, SR I-V

Programme / registration: graduateschool.pier-hamburg.de/gradweek2023

Course Overview

Time	Course	Monday, 16 OCT	Tuesday, 17 OCT	Wednesday, 18 OCT	Thursday, 19 OCT	
Morning sessions	09:00 – 10:30	/ Course 1: Physics and artificial intelligence SR II Gregor Kasieczka, Universität Hamburg Physics & AI: Foundations and Applications of Machine Learning in Fundamental Physics Research	Gregor Kasieczka, Universität Hamburg Physics & AI: Foundations and Applications of Machine Learning in Fundamental Physics Research	Gregor Kasieczka, Universität Hamburg Physics & AI: Foundations and Applications of Machine Learning in Fundamental Physics Research	Gregor Kasieczka, Universität Hamburg Physics & AI: Foundations and Applications of Machine Learning in Fundamental Physics Research	
	10:30 – 11:00	Coffee break				
	11:00 – 12:30	/ Course 1: Physics and artificial intelligence SR II Gregor Kasieczka, Universität Hamburg Physics & AI: Foundations and Applications of Machine Learning in Fundamental Physics Research	Gregor Kasieczka, Universität Hamburg Physics & AI: Foundations and Applications of Machine Learning in Fundamental Physics Research	Gregor Kasieczka, Universität Hamburg Physics & AI: Foundations and Applications of Machine Learning in Fundamental Physics Research	Gregor Kasieczka, Universität Hamburg Physics & AI: Foundations and Applications of Machine Learning in Fundamental Physics Research	
	12:30 – 14:00	Lunch break				
Afternoon sessions	14:00 – 15:00	/ Course 2: The physics of the life sciences: Connections of fundamental physics to modern biology & medicine SR II Alessandra Picchiotti, Universität Hamburg Introductory Spectroscopy for the life sciences	Helen Ginn, DESY Structural biology, crystallography and cryo EM	Elisabetta Gargioni, UKE Hamburg Imaging in medicine and biotechnology (I.b.c.)	Maya Topf, LVI / UKE / CSSB Hamburg Data science for the life sciences, an holistic approach, part 1 (online)	
	15:00 – 15:45	Coffee break				
	15:45 – 16:35	/ Course 2: The Physics of the life sciences: Connections of fundamental physics to modern biology & medicine SR II Susann Quinn, University College Dublin Time resolved spectroscopy	Pedram Mehrabi, Universität Hamburg Crystallography, from physics to proteins	Antonio Virgilio Falla, UKE Hamburg Advanced imaging techniques (I.b.c.)	N.N. Data science for the life sciences, an holistic approach, part 2 (online)	
	16:35 – 17:00	Coffee break				



Mirko Siemssen | Coordinator PHGS

PHGS activities: PIER Graduate Week

Two lecture series

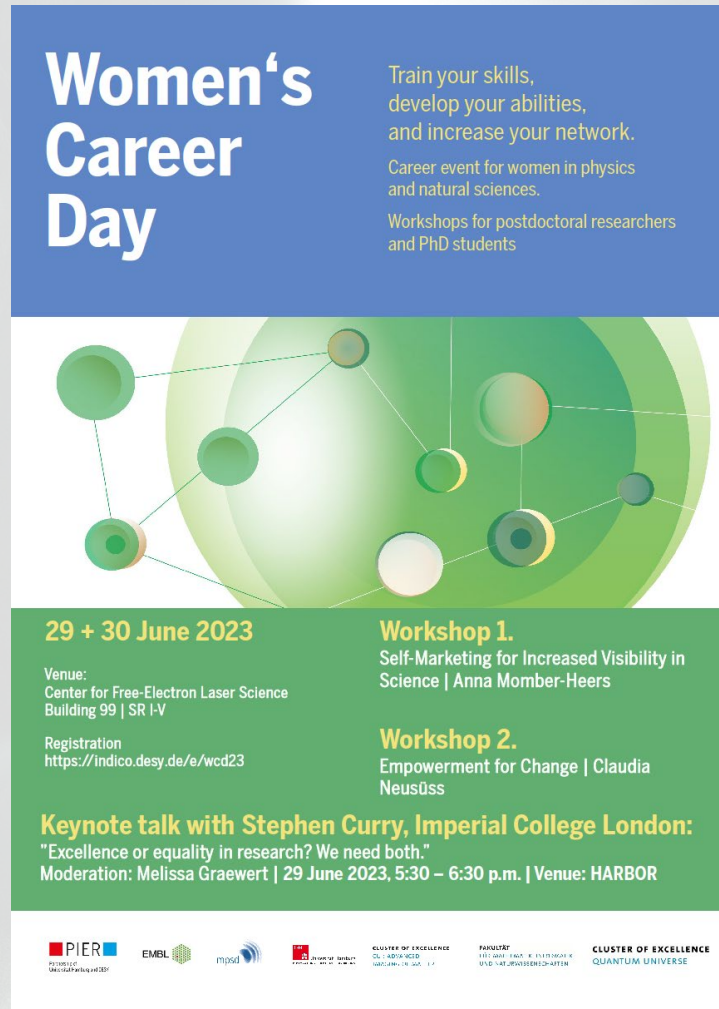
- Advanced scientific computing: Machine learning in physics
- The physics of the life sciences: Contributions of fundamental physics to modern biology and medicine

Extras

- Scientific colloquium on "Artificial intelligence in neurointensive medical care"
- Industry talk on "Flight physics at AIRBUS" with DESY alumnae Dr. Jasone Garay Garcia
- Workshops on presentation skills and academic competition, making acting methods usable for everyday work contexts
- Career planning and career counselling sessions
- Poster session



PHGS: collaborative activities for women



Women's Career Day

Train your skills, develop your abilities, and increase your network.

Career event for women in physics and natural sciences.

Workshops for postdoctoral researchers and PhD students

29 + 30 June 2023

Venue:
Center for Free-Electron Laser Science
Building 99 | SR I-V

Registration
<https://indico.desy.de/e/wcd23>

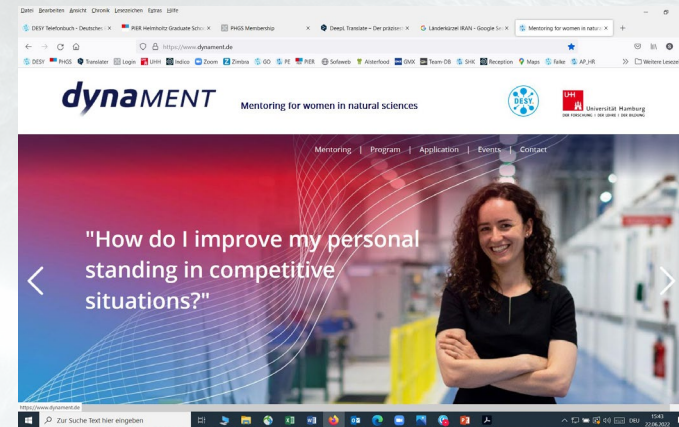
Workshop 1.
Self-Marketing for Increased Visibility in Science | Anna Momber-Heers

Workshop 2.
Empowerment for Change | Claudia Neusüss

Keynote talk with Stephen Curry, Imperial College London:
"Excellence or equality in research? We need both."
Moderation: Melissa Graewert | 29 June 2023, 5:30 – 6:30 p.m. | Venue: HARBOR

Logos: PIER, EMBL, DESY, Cluster of Excellence Quantum Universe, PIRULAT, Cluster of Excellence Quantum Universe

dynaMENT Mentoring for women in natural sciences



dynaMENT doctorate & dynaMENT advanced

General facts on doing the doctorate at DESY

- Most doctoral positions are funded through an employment contract e.g. with DESY
- Duration employment contract at DESY: 3 - 3.5 years
- Alternatively: bring your own funding (e.g. a scholarship)
- Please note
 - In Germany, only universities can award the doctoral degree
 - Therefore, every doctoral student must be enrolled as a doctoral student at a university (e.g. University of Hamburg, Humboldt University Berlin, etc.).
 - Enrollment at the university usually takes place after conclusion of an employment contract (e.g. at DESY) - Therefore, it makes sense to first apply for the funding and the doctoral project at a DESY research group and only then to enroll at a university.
 - No tuition fees at state Universities in Germany

How to apply for a doctoral position at DESY

- Use your contacts from the DESY Summer Students Programme: stay in touch!
- Look for job offers on the DESY website or the websites of your favourite research teams:
https://v22.desy.de/index_eng.html
- Check the calls of the graduate schools in which DESY is directly involved and who offer paid doctoral positions. Currently these are: DASHH and International Helmholtz-Weizmann Research School.
- Look for funding in your own country (e.g. scholarships)
- General information on the German education system:
 - DAAD (German Academic exchange Service): <https://www.daad.de/de/>

Thank you very much for your attention!

**We are looking forward to seeing you again as one of our
doctoral students!**

[graduateschool.pier-hamburg.de](https://www.graduateschool.pier-hamburg.de)

<https://www.facebook.com/PIERHamburg>

<https://twitter.com/PIERCampus>

<https://www.linkedin.com/company/70375638/admin/>