

Curriculum Vitae of Patrick Barth

Contact

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Education and Work experience

Bachelor of Science in Physics

2013 - 2017 University of Heidelberg, Department of Physics and Astronomy, Germany

Master of Science in Physics

2017 - 2019 University of Heidelberg, Department of Physics and Astronomy, Germany

Feb. - July 2017 Student Research Assistant, [MPIA](#), Heidelberg, Germany

2017 - 2018 University of Washington, Seattle, USA

PhD in Astronomy

2019 - 2023 [St Andrews Centre for Exoplanet Science](#), University of St Andrews, UK

2022 - 2023 [Space Research Institute, Austrian Academy of Sciences](#), Graz, Austria

Project Coordinator

Since 2023 [Stuttgart Center for Simulation Science \(SC SimTech\)](#), Cluster of Excellence EXC 2075 „Data-Integrated Simulation Science“ (SimTech), University of Stuttgart, Germany

Teaching and Coordination Experience

During my time at the University of St Andrews, I participated in the delivery of multiple Astronomy courses. I supervised teaching labs where students solved computational and scientific problems in small groups or alone. I delivered a guest lecture for the course ‘Chemistry of the Solar System’ and supervised a student who was carrying out and analysing spark discharge experiments in my lab.

Over the course of three years, together with several of my colleagues I hosted and organised the Journal Club of the St Andrews Centre for Exoplanet Science. This included presenting papers myself, organising speakers from within our centre, and inviting speakers from outside the University. Since 2021, I have been part of the organisation committee for PandA StrIDES, a seminar series at the School of Physics and Astronomy, where we organise talks by internal and external speakers on various EDI topics and their effect

on the Physics and Astronomy community. For the launch of this seminar series, one of my colleagues and I gave a talk about being LGBTQ+ in Physics and Astronomy, based on personal experiences and several reports by the Institute of Physics and the Royal Astronomical Society.

Outreach Experience

Over the last few years, I was able to participate in various outreach projects, both within and outside of the University:

2019 - 2022	I was a member of the Mobile Planetarium team at the School of Physics and Astronomy. We were a group of PhD students who visited primary schools in the area around St Andrews with a mobile planetarium. In half-hour planetarium shows, we taught the pupils about the night sky and the planets of our Solar System. During the COVID-19 pandemic we had to stop our visits to schools and later restarted giving planetarium shows remotely, using the software Stellarium.
2020 - 2022	Being a Scottish STEM Ambassador (STEM Learning, UK) allowed me to be part of a network of STEM professionals involved in outreach projects throughout Scotland and make use of an extensive library of online resources.
Sept. 2021	Emma Puranen, PhD student at the St Andrews Centre for Exoplanet Science, edited an anthology of science fiction short stories, Around Distant Suns , that were written in collaboration with scientists from our Centre. I was asked to contribute to the story <i>A Spark in a Flask</i> by Emma Puranen about a caretaker robot who services a giant research station on the moon where many different versions of the Miller-Urey experiment are running in parallel. The idea of the story was based on the experiment I was conducting in my lab in St Andrews. In 2022, this story was included in the collection Best of British Science Fiction 2021 .
March 2022	For a STEM Ambassador Edition of the Global Science Show , I produced a short video, ‘A Spark For Life’ , about my research. In preparation for this, I attended a seminar on video editing by Samuel Langford.
June 2022	In order to mark the release of the Pixar movie <i>Lightyear</i> , Dundee Science Centre organised a series of events, inviting exoplanet researchers to present interesting insights into the world of astronomy. I engaged with groups of primary school-aged children and their parents about the recent history of exoplanet detection, including interactive demonstrations of how we discover exoplanets through their movements.
Since 2022	The ‘STEIERMARK SCHAU’ is an exhibition presenting the diversity of the Austrian state of Styria. In 2023, the theme is “Diversity of Life”, and a central element will be an 800 squaremetre mobile pavilion (Curation: Dr. Astrid Kury, Design: Alexander Kada). In cooperation with the IWF in Graz and following the theme ‘Atmospheres - Climate, Art, and Cosmos’, a combination of art works and scientific reflections will be presented on a large projection space, encouraging the audience to think about the fragility of our own atmosphere in the context of the large diversity of extrasolar planets and their atmospheres. In preparation for this exhibition, my role is to coordinate the cooperation between exoplanet scientists at the IWF and the organisers of the project as well as the participating artists.

Scientific Talks, Posters, Conferences, and Workshops

Throughout my Master's and my PhD, I have taken several opportunities to present my research at various conferences and meetings. This helped to practice and develop my presentation skills and allows me to confidently speak in front of audiences of different sizes and backgrounds. A few of my talks were awarded with prizes for the best student presentation. Attending these meetings also allowed me to network with researchers from all over the world in different stages of their career. I am particularly interested in attending interdisciplinary meetings and meetings targeted at and/or organised by early career researchers. A few examples include [AbGradCon 2021](#), the [LGBTQ+ STEMinar](#), the [STEM Village](#), or the [Royal Astronomical Society Early Career Poster Exhibition 2020](#). A comprehensive list of my scientific talks, posters, and publications is available in my [full CV](#).

In 2022, I participated in a workshop on '**Science communication and education**' organised by members of the [Young DPG](#) (German Physical Society). This workshop showcased a range of career opportunities in the field of science communication and interactive sessions on science education for schools. Hosted by the [Experimenta Science Centre](#), we benefited from insights into the operation of a modern science centre. I also attended a workshop on 'Writing for a Public Audience' at the University of St Andrews, hosted by Michael Parker, the editor of *The Conversation UK*, as well as a video editing workshop by science communicator Samuel Langford.

Volunteer Experience

During my time at university, I gained a wide range of practical experience by volunteering in different organisations and societies:

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| 2013 - 2019 | As an Election Worker in my hometown Mannheim, Germany, I was part of a team ensuring a smooth and transparent course of the elections in my local community. |
| 2015 - 2021 | At high school, I took part in the Hector Seminar : an after-school program to encourage highly-gifted students in the STEM subjects. After graduating from high school, I joined the alumni association and soon became a member of the executive board (first as secretary, then as vice president). During this time I developed a complex, organisational skill set. As secretary, I was responsible for managing our membership database, gaining expertise in handling sensitive data and keeping up-to-date with data protection legislation. In addition, we frequently organised events for our members: short meetings and workshops, visits to research institutions and companies, as well as trips and conferences over several days and a festive celebration for 200 participants. Through the organisation of these events, I gained experience in communicating and networking with partners at research institutions, companies, and government institutions, as well as experience in project management and budgeting. Furthermore, I was responsible for designing and editing our newsletter, managing our Facebook page, and I was involved in the update and maintenance of our website. |

2019 - 2022

During my time in St Andrews, I was active in several societies. As Postgraduate Officer of **SaintsLGBT+**, the LGBT+ subcommittee of the Student Association, I was responsible for representing the interests of postgraduate students in the wider LGBT+ community at St Andrews, organising networking events and meet-ups for LGBT+ postgraduates, and managing a Facebook group to facilitate communication within the community, in particular during the many lockdowns of the COVID-19 pandemic. As secretary of the Whisky Society, I was responsible for managing the society's membership and organising regular whisky tastings for up to 70 participants. This included communication with distilleries and other partners, as well as the venue.

Further Skills

- Languages: German (native), English (fluent), French (B1), Spanish (B1)
- Programming languages: Python, C, Fortran, C++
- Microsoft Office, LaTeX
- Drivers License (Type B, Germany)