

Curriculum Vitae of Patrick Barth

Last updated: January 29, 2023

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

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 were solving 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 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 which included presenting papers myself, organising speakers from within our centre, and inviting speakers from outside the University. Since 2021, I am 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

During 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 are a group of PhD students who visit primary schools in the area around St Andrews with a mobile planetarium. In half-hour planetarium shows, we teach 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. Recently, we restarted giving planetarium shows remotely, using the software Stellarium.
Since 2020	Being a Scottish STEM Ambassador (STEM Learning, UK) allows 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 able to contribute to the story A Spark in a Flask by Emma Puranen about a care-taker 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 “Lightyear”, Dundee Science Centre organised a series of events, inviting exoplanet researchers to present interesting insights into the world of astronomy. I was able to talk to a group of primary school children and their parents about the recent history of exoplanet detection, including interactively explaining them how we are able to detect exoplanets.
2022 - 2023	The Steiermark Schau is an exhibition presenting the diversity of the Austrian state of Styria. In 2023, the focus of this exhibition 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 of this exhibition, it is my role to coordinate the cooperation between exoplanet scientists at the IWF and the organisers of the project as well as the participating artists.

Scientific Talks and Posters, Conferences and Workshops

Throughout my master’s and my PhD, I was able 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 researches 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](#). For a full list of my scientific talks and posters, as well as my publications, check out my [full CV](#).

In 2022, I was able to participate 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 were able to gain insights into the operation of a modern science centre.

Volunteer Experience

During my time at university, I was able to gain 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 was able to take part in the Hector Seminar , an after-school program to encourage highly-gifted students in the STEM subjects. After having graduated 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 was able to develop a complex, organisational skill set. As secretary, I was responsible to manage 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), Frenchh (B1), Spanish (B1)
- Programming languages: Python, C, Fortran, C++
- Microsoft Office, LaTeX
- Drivers License (Type B, Germany)