Dr Daniela Schnitzler

Edinburgh | Berlin

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Summary

Highly enthusiastic and dedicated, I am a postdoctoral researcher with a PhD in neuroscience who thrives on learning and discovery. My work spans neuroscience, with a focus on neuroendocrinology and affective disorders, alongside education research and meta-science. I develop open research and teaching tools, including the BlinkR app, and critically examine how emerging technologies such as generative AI are shaping scholarship. I am also the founder of Paperstars, a community-driven platform for post-publication review, which prioritises research quality and integrity. I am passionate about the academic environment, where I continuously expand my knowledge while sharing it with others, and my ability to communicate complex concepts in a clear and engaging way has made me an effective and enthusiastic educator. I am fully bilingual in English and German, and proficient in French.

This hybrid CV takes inspiration from a narrative CV according to Resume for Researchers (R4R) and the recommendation by DORA, promoting qualitative evaluation for fairer research assessment.

Research Experience

Post-doctoral Researcher | INBICA, Medical School Berlin Oct 2023 - present

- *Supervisor: Prof Melanie Stefan*
- Combining neuroscience, education research, and meta-science: investigating a novel framework of depression, developing innovative teaching tools, delivering course materials, supervising students, managing the virtual lab environment, and exploring the impact of generative AI on scholarship.

Doctoral Researcher | CDBS, University of Edinburgh Sep 2017 - Jul 2023

- *Supervisor: Dr Paula Brunton*
- Applied a multi-disciplinary approach to researching the long-term effects of gestational stress on offspring in a rat model, including behavioural techniques, molecular techniques, bioimaging, as well as 16S rRNA sequencing and high-throughput sequence analysis.

Research Assistant | CDBS, University of Edinburgh Oct 2016 - Apr 2017

- *Supervisor: Dr John Menzies*
- Assisted in laboratory work required by the group, carrying out various experiments pertaining to the role of oxytocin in feeding behaviour, including immunohistochemistry and image analysis.

Summer and Undergraduate Researcher | IMS, University of Aberdeen Summer 2016

- *Supervisor: Prof Peter McCaffery*
- Eight-week funded project by the British Society of Neuroendocrinology.
- Investigated the effects of estrogen on pineal gland in a rat model through molecular techniques.

Undergraduate Researcher | Smith & Nephew (York) Sept 2014 - Jun 2015

- *Supervisor: Dr Alan Horner*
- MSci Industrial Placment
- Examined the effects of proprietary compound in bone regrowth *in vitro* through biocompatibility testing, cell culture, and molecular techniques.

Undergraduate Researcher | IMS, University of Aberdeen Summer 2013

- *Supervisor: Dr Ann Rajnicek*
- Summer placement
- Contributed to research examining wound healing *in vitro* through cell culture and time-lapse imaging.

Entrepreneurship

Founder & CEO | Paperstars Ltd 2025 - present

- Founded and lead the development of a community-driven platform for post-publication peer review, enabling qualitative assessment of research outputs beyond journal-based metrics.
- Provide strategic and operational leadership across all aspects of the organisation, including development, governance and compliance, financial planning, risk management, stakeholder engagement, and community growth.

Narrative CV

Module 1: Contributions to the generation of new ideas, tools, methodologies or knowledge

My decision to pursue an academic career has always been motivated by genuine curiosity and a commitment to continuous scholarship. While obtaining my undergraduate degree (MSci), the opportunity presented itself to undertake an internship at Smith & Nephew, where I contributed significant scientific work that was incorporated into the white paper for a product, not only complementing the foundational undergraduate education I had been seeking, but also forging a deeper understanding of the intersection between academia and industry. Following the completion of my MSci, my path then led me to pursuing a PhD in neuroendocrinology, where my work involved integrating behavioural neuroscience with central molecular and systemic microbiome investigations, which not only contributed to a multidisciplinary prenatal stress model of anxiety in rats, but also widened my methodological and categorical knowledge across multiple fields. Alongside this empirical work, I independently conceptualised a semi-automated image analysis pipeline for the lab, demonstrating adaptive problem solving skills and the initiative to dynamically adopt and innovate new approaches. Indeed, teaching myself to code in order to develop this tool marked a significant turning point in my research trajectory and directly informed my transition into a postdoctoral role within a computational neuroscience environment.

In my current postdoctoral position, my work spans neuroscience, education research, and meta-science, guided by clearly defined ethical values as a researcher. These values motivate me to advance knowledge in ways that prioritise rigour, integrity, and transparency, and that allow me to shape my research directions around my core interests. For example, in an opinion piece I critically questioned the emergent adoption of GenAI in scholarly pursuits (The Journal of Physiology) and I continue to engage with AI-critical work through ongoing formal studies (in progress). In parallel, I also am pursuing neuroscientific research questions around neuroendocrinology and affective disorders, not only by guiding and supporting my PhD student in their investigation of ADHD and female sex hormones (manuscript in progress), but also by developing a novel conceptual framework for depression (manuscript in progress).

Alongside my scholarly pursuits, my commitment to principled values of transparency and integrity has also led me to develop and contribute to open research tools that address structural challenges in research practice. Most recently, the open-source web application "BlinkR", which I took the initiative to develop while co-designing an undergraduate course focussed on the fundamentals of medical research. In particular, I identified the need for an accessible multi-language tool that could be used by students, regardless of technical expertise or electronic device. In order to develop BlinkR, I not only expanded my R skills

by learning to use a Shiny framework, but also deepened my understanding of different pedagogical approaches to scientific education. This interactive tool supports students in learning experimental design and statistical analysis with R (manuscript under review). Furthermore, I used these development skills to also contribute to the open-source Data Hazards project, by writing a user-friendly self-assessment tool, supporting more responsible and defensible research decision-making.

Finally, my alignment with open science principles and a desire for a change in the *status quo* of the research environment led me to creating Paperstars, an online post-publication review platform designed to support qualitative, community-driven assessment of research outputs and to challenge metric-driven evaluation practices that shape researcher behaviour.

Module 2: The development of others and maintenance of effective working relationships

My commitment to supporting other researchers and students, particularly underrepresented groups, is central to my academic practice and I approach research as a collective endeavour rather than a competitive one. Already during my PhD, my belief that progress depends on supportive and transparent working relationships led me to develop my skills as an effective educator. This included extensive undergraduate teaching and supporting students in reaching their academic and personal ambitions through engaging tutorials and constructive assessment feedback. This work was also recognised with a nomination for a student-led teaching award.

Furthermore, I have strengthened my proficiency in pedagogy in my current postdoctoral role, where I have co-developed a course on the foundations of scientific research, including remodelling the curriculum, as well as contributing to teaching delivery and assessment. This experience also led me to take an iterative approach when developing the open-source BlinkR web-app by flexibly adapting the programme based on feedback from peers and students. Collaborative principles also guide my mentoring relationship with my co-supervised PhD student, whom I not only support through the development of technical and research skills, but also by offering career advice and deeper pastoral care.

In addition to teaching and mentoring roles, where I actively model how transparency and collaboration can have long-lasting positive effects on research culture, I also contribute to the lab environment by managing the digital infrastructure, which has not only fostered efficient communication, but has also encouraged a supportive team environment.

Finally, leading the development of Paperstars from ambitious idea to successful platform has relied on independent project management skills, as well as clear communication with various stakeholders across all areas of the research ecosystem (e.g. academics, industry, publishers, etc.). Indeed, by actively listening to the needs of this ecosystem, I have been able to set priorities, coordinate planning, and crucially, direct the execution of the development of the platform towards early success.

Module 3: Contributions to the wider research and innovation community

Supporting my belief that transparency is fundamental for research progress, I have contributed to the wider research community through formal roles and initiatives that engage with research culture. For example, I served as a member of the Athena SWAN committee during my undergraduate degree at the University of Aberdeen, contributing to discussions on equality, inclusion, and institutional responsibility within the institution.

I have further given strength to my beliefs in my current postdoctoral position, by accepting invitations to speak to incoming doctoral cohorts within the EASTBIO doctoral training partnership, where I share reflections on research, career development, and academic pathways. In addition to supporting new PhD researchers, I am a co-organiser of Science for US, a discussion cohort established in response to a lack of institutional support for US-based scientists during a period of political uncertainty. This initiative

provides a structured space for peer discussion, mutual support, and collective reflection on how academic communities can respond constructively to external pressures.

Moreover, I am publicly dedicated to my stance on research culture reform, through my publication practices and infrastructure building. Indeed, I have demonstrated my commitment to publish research under open access models in an accepted abstract for a BERA conference. Additionally, beyond my research outputs, Paperstars represents my dedication to improving the incentives structures that currently influence knowledge generation and dissemination for the wider scientific community. The platform I have launched supports community-led evaluation of research and aligns with broader efforts to not only improve research assessment practices, but also operate within open science guidelines.

Module 4: Contributions to broader research/innovation-users and audiences and towards wider societal benefit

Alongside my academic work, I am guided by the belief that science should be accessible, and inclusive. Indeed, throughout my undergraduate degree I was a regular writer for the student-led AU Science Magazine at the University of Aberdeen, where I developed skills in clear and engaging science dissemination and education. Furthermore, my science communication skills have been honed through my enthusiastic participation in events, such as the Edinburgh Science Festival, where I delivered hands-on activities and communicated scientific ideas in accessible and engaging formats, supporting public understanding and trust in science.

Finally, during my PhD, I completed a placement at the Easter Bush Science Outreach Centre, where I further developed skills in research communication for non-academic audiences, particularly aimed at school pupils. In my role there, I not only engaged in leading groups through experiments, but also took the initiative to design follow-up activities, supporting sustained learning beyond initial outreach sessions. These experiences continue to inform my approach to teaching, tool development, and public engagement, reinforcing my commitment to ensuring that scientific knowledge is meaningful and accessible to diverse audiences.

Projects & Contributions

BlinkR Link to Repo

2025

BlinkR is a web application I developed using the Shiny framework for R, with Google Drive as a simple back-end for data storage. It was designed to be accessible for educators without advanced technical expertise, while still supporting flexibility in experimental design. The app allows instructors to define variables for simple two-group experiments, guiding students through data collection, statistical analysis, and interpretation. BlinkR provides a structured workflow that mirrors the research process but also allows individual sections to be used in isolation, making it a versatile teaching tool that supports both classroom learning and independent exploration.

Paperstars Link to Paperstars

2025

Paperstars is an online platform designed as a "Goodreads for science," enabling researchers to rate and review papers post-publication with a focus on quality over quantity. The platform supports community-driven evaluation of research and aims to encourage constructive discussion and transparent assessment. Built and maintained independently, Paperstars integrates development, administration, and outreach into a single venture, demonstrating both technical capacity and entrepreneurial initiative.

Data Hazards Project Web App Link to App

2025

Contribution to the Data Hazards Project with interactive web app allowing users to select appropriate data hazards for their project. The app is designed to be dynamic, enabling changes made on the Data Hazards website to be automatically reflected in the app.

Publications

Schnitzler, Daniela (Nov. 2025). 'Generative AI in academia: Efficiency versus scholarship'. In: *The Journal of Physiology* n/a.n/a. DOI: https://doi.org/10.1113/JP290275.

Schnitzler, Daniela and Melanie Stefan (Oct. 2025). 'UNDER REVIEW BlinkR: An Accessible, Interactive Tool for Teaching Experimental Design and Data Analysis'. In.

Education

PhD Neuroscience (Biomedical Science CDBS) | University of Edinburgh Sep 2017 - Jul 2024

- EASTBIO Doctoral Training Partnership
- Thesis: 'The Impact of Prenatal Stress and Chronic Stress in Adult Rats on the Brain, Behaviour and Gut Microbiome'

MSci (Hons.) Biomedical Science (Physiology) | University of Aberdeen Sep 2011 - Jun 2016

- First Class Honours
- Honours dissertation: 'Estrogen Regulates Retinoic Acid Mediated Gene Expression in Female Pineal Glands' with prize awarded by Society of Endocrinology
- Industrial Placement at Smith & Nephew (1 year): 'The Calcium-Sensing Receptor Plays an Essential Role in Mediating the Osteogenic Effect Induced by Biomaterial Regenesorb in Primary Human Osteoblasts *in vitro*'

Technical Skills

In Vitro & *In Vivo* Skills

- Rodent handling and husbandry
- Rodent behaviour
  - Anxiety-like behaviour
- Rodent treatment
  - Stress protocols, conscious oral gavage
- Histology and anatomy
  - Tissue dissection, tissue cryosectioning
- Microscopy
  - Bright-field microscopy, slide scanning
- Immunohistochemistry
- Cell culture
  - Primary cells, cell lines
- Radioactive *in situ* hybridisation
- Radioimmunoassay
- RT/qPCR
- Western blot
- ELISA

In Silico Skills

- Statistical and computational analysis of datasets
  - R, Python, Microsoft Office
- Bioinformatics and sequencing
  - 16S rRNA sequencing (R, Python, MOTHUR)
- Data visualisation and reporting
  - R Markdown, Shiny for R, Python
- Education and teaching tool development
  - Interactive apps for learning and research (Shiny for R)
  - Personal Jekyll-based website
- Bioimage analysis
  - ImageJ/Fiji, QuPath (incl. native Java macro languages)
- Figure and text preparation
  - LaTeX, Adobe Illustrator, Adobe InDesign, Adobe Premiere Pro/Rush, Canva, BioRender, Microsoft Office

Teaching and Science Communication

Foundations of Scientific Research Skills | Medical School Berlin Jan 2024 - present

- Co-design of course curriculum
- Development of BlinkR app as a teaching tool
- Delivery and assessment of course materials

Co-Supervision of PhD Student | Medical School Berlin Jan 2025 - present

- Mentoring and academic guidance
- Supporting experimental design and project planning
- Training in relevant analytical techniques
- Providing feedback on writing and presentations
- Contributing to career development and skills training

Undergraduate Course Tutor | BMTO, University of Edinburgh 2016-2021

- *Supervisor: Medical Biology Course Coordinator*
- Led tutorials for first year undergraduate course, marked and provided feedback on essays and assessments.
- Nominated for student-led Teaching Award (2021).

Private Biology Tutoring | Edinburgh 2017-2022

- Independent one-to-one biology tutoring for school pupils (National 5 level - Advanced Higher level).
- Enabled students to develop deeper understanding of the material required for their assessments.

Team Member (PIPS placement) | EBSOC, Edinburgh Sep 2019 - Dec 2019

- *Supervisors: Jayne Quoiani & Dr Nicola Stock*
- Required placement during PhD
- Delivered content and provided technical support for hands-on science workshops for school pupils, captured, generated, and edited video content for internal and external use, produced extension activities for students pitched at the appropriate level.

Undergraduate Science Magazine Writer | AU Science Magazine, Aberdeen 2011-2016

- Regular contributor to locally distributed student-led and student-produced, popular science magazine.

Conferences Attended

- 2025 – Meta-Science Conference, London
- 2025 – ShinyConf, Virtual
- 2020 – Federation of European Neuroscience Societies Virtual Forum, Online (Poster accepted)
- 2019 – British Neuroscience Association Festival of Neuroscience, Dublin (Poster accepted; travel grant awarded £100)
- 2018 – International Congress of Neuroendocrinology, Toronto (Poster accepted)
- 2017 – British Society for Neuroendocrinology, Nottingham

Courses Attended

- Elements of the R Language (Statistical Consultancy Unit, School of Mathematics, University of Edinburgh, 2018)
- EastBio Research Skills Training (2017)
- ScotPIL Personal Licence training modules 1-4 (University of Edinburgh, 2017)

Additional Activities

Community Organiser | Edinburgh Dog Park Calendar 2017 - present

- Founded and manage an annual charity calendar project for the local dog park community, raising over £7,000 to date.
- Solely responsible for the full process: collecting submissions, calendar design, sponsorship and marketing, liaising with local businesses, sales, and donation of proceeds.

Web Design and Maintenance Ongoing

- Design and maintain personal Jekyll-based website.
- Volunteer webmaster for my synagogue, responsible for website maintenance, updates, and design improvements.

Last updated: 8th May 2026