Vanessa Graber

Curriculum Vitae

Contact Details

Inst. of Space Sciences (ICE-CSIC, IEEC)
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Research Interests

Neutron Stars: macroscopic quantum states, rotational and magnetic-field evolution, pulsar glitches, laboratory analogues, superfluidity's impact on cooling, pulsar population synthesis, continuous gravitational-wave emission, precession

Superfluidity: multi-fluid magnetohydrodynamics, mesoscopic vortex physics, Gross–Pitaevskii and Ginzburg–Landau-type models, phase transitions, superfluid helium, ultra-cold gases

Machine Learning: deep / multi-modal / active learning for parameter estimation in astrophysics, simulation-based inference, deep learning for pulsar detection and classification, interpretability and insights into decision making of deep-learning algorithms

Education

PhD, Mathematical Sciences, Univ. of Southampton, UK (Sept 2016)

- *Thesis Title*: Cosmic Condensates – Vortex, Fluxtube and Neutron Star Dynamics
- *Advisor*: Prof. Nils Andersson

Diplom (MPhys), Physics, Univ. of Tübingen, DE (Mar 2012)

- *Major*, *Minor*: Astronomy & Astrophysics, Quantum Optics
- *Thesis Title*: Dynamics of Superfluid Neutron Stars
- *Advisors*: Dr. Kostas Glampedakis, Prof. Kostas Kokkotas

Research Positions

Juan de la Cierva Incorporación Fellow, Inst. of Space Sciences, Barcelona, ES (since May 2022)

- *Focus*: Advancing macroscopic magnetic field-evolution models for neutron-star interiors that consistently incorporate microscopic and mesoscale superfluid and superconducting physics.
- *Advisor*: Dr. Nanda Rea

Senior Postdoctoral Researcher, Inst. of Space Sciences, Barcelona, ES (since Jan 2020)

- *Focus*: Leading the *Pulsar Population Synthesis* working group of the ERC project MAGNESIA – The Magnetar Census – and being the primary advisor for two PhD students, two MSc and one BSc student. Together, we are developing a new machine-learning based software pipeline for population synthesis of isolated neutron stars that are visible as pulsars across the electromagnetic spectrum.
- *Advisor*: Dr. Nanda Rea

McGill Space Inst. Fellow, McGill Univ., Montréal, CA (Oct 2016 – Dec 2019)

- *Focus*: Working at the interface of astrophysics and condensed-matter physics by studying the implications of superfluid and superconducting components on neutron-star observables in addition to being the primary supervisor for three undergraduate and one master's research projects.
- *Advisors*: Prof. Andrew Cumming, Prof. Vicky Kaspi

Doctoral Researcher, General Relativity, Univ. of Southampton, UK (Oct 2012 – Aug 2016)

- *Focus*: Studying properties of superfluid and superconducting neutron-star cores and analysing how well-known terrestrial quantum condensates can serve as versatile analogues of neutron stars.
- *Advisor*: Prof. Nils Andersson

Research Positions (Continued)

Undergraduate Researcher, Theor. Astrophysics, Univ. of Tübingen, DE (Mar 2011 – Mar 2012)

- *Project*: Developing a model for the response of the neutron-star core following a spin glitch that accounts for viscous and magnetic coupling as well as vortex-mediated mutual friction.
- *Advisors*: Dr. Kostas Glampedakis, Prof. Kostas Kokkotas

Intern, Inst. of Planetary Research, German Aerospace Center (DLR), Berlin, DE (July – Aug 2009)

- *Project*: Recording and analysing Raman spectra of rock samples to assess the spectrometer's stability and developing criteria for a database of Mars analogue material.
- *Advisor*: Dr. Ute Böttger

Undergraduate Researcher, Theor. Solid State Physics, Univ. of Tübingen, DE (June 2009 – Dec 2010)

- *Project*: Calculating magnetic-field distributions of rectangular superconducting samples using conformal mapping with the aim to optimise designs of microtraps for ultra-cold atomic gases.
- *Advisor*: Prof. Thomas Dahm

Intern, EADS Astrium GmbH (now Airbus Defence & Space), Friedrichshafen, DE (Aug – Sept 2006)

- *Project*: Calculating the Earth's magnetic field to study its influence on clocks as part of the Atomic Clock Ensemble in Space mission aimed at better measuring gravity's effects on time.
- *Advisor*: Dr. Achim Seidel

Research Grants, Fellowships, and Scholarships (366,825 € in Total)

- **May 2022 – Apr 2025:** *Juan de la Cierva Fellowship*, Agencia Estatal de Investigación, ES; 95,100 € (PI)
- **Apr 2023 – Dec 2024:** *SGR-Cat 2021* (group travel grant), Generalitat de Catalunya, ES; 60,000 € (PI)
- **Oct 2016 – Aug 2019:** *McGill Space Inst. Postdoctoral Fellowship*, McGill Space Inst., CA; 130,175 € (PI)
- **Jan 2013 – Dec 2015:** *PhD Scholarship*, Evangelisches Studienwerk e.V. Villigst, DE; 45,000 € (PI)
- **Oct 2012 – Sept 2015:** *Vice Chancellor Scholarship*, Univ. of Southampton, UK; 21,400 €
- **Nov 2012 – Oct 2013:** *PhD Scholarship*, German Academic Exchange Service (DAAD), DE; 15,150 € (PI)

Personal Awards and Travel Grants (4,750 € in Total)

- **July 2019:** *Travel grant* for the 69th Lindau Nobel Laureate Meeting dedicated to Physics, CA; 2,500 € (nominated by Nobel Laureate Dr. Arthur McDonald and selected in a worldwide competition)
- **July 2019:** *First Poster Prize*, voted by the participants of the 69th Lindau Nobel Laureate Meeting, DE
- **Nov – Dec 2018:** *International Visitor Grant*, OzGrav, AU; 2,250 €
- **June 2015:** *Best Student Talk Prize*, Annual NewCompStar Conference, Budapest, HU
- **Mar 2015:** SET for BRITAIN *finalist*, poster competition in the UK Parliament, London, UK

Visiting Scientist Positions

- **Sept 2019:** Aspen Center for Physics, Aspen, Colorado, US
- **Nov – Dec 2018:** OzGrav Visitor, Monash Univ. / Univ. of Melbourne, AU
- **Jan & Apr 2018:** School of Mathematics, Statistics and Physics, Newcastle Univ., UK

Invited Colloquia, Seminars, and Talks (29 in Total)

- **July 2024:** *Plenary Talk*, General Meeting, Spanish Astronomical Society, Granada, ES
- **Spring 2024:** *Physics Colloquium*, West Virginia University, US (online)
- **November 2023:** *Astrophysics Seminar*, Institute for Astronomy, Univ. of Tübingen, DE
- **October 2023:** *Geo/Astrophysical Fluid Dynamics*, Univ. of Colorado Boulder, US (online)
- **September 2023:** *Seminar*, Physics, Univ. of Hertfordshire, UK (online)
- **June 2023:** *Seminar*, Physics, Royal Holloway, Univ. of London, UK (online)
- **May 2023:** *Astronomy Seminar*, Univ. of East Anglia, UK

Invited Colloquia, Seminars, and Talks (Continued)

- **July 2022:** *Seminar*, Fluid Dynamics, Newcastle Univ., UK (online)
- **May 2021:** *Talk*, Journal Club, CAMK, Warsaw, PL (online)
- **Mar 2021:** *Seminar*, Hadronic, Nuclear & Atomic Physics Group, Univ. of Barcelona, ES (online)
- **Nov 2020:** *Talk*, Neutron Star Group Meeting, Univ. of Southampton, UK (online)
- **Nov 2020:** *Webinar*, Fluids ECR Forum, Univ. of Leeds, UK (online)
- **Nov 2020:** *Astronomy Seminar*, Stony Brook Univ., New York, US (online)
- **July 2020:** *Colloquium*, Research Training Group – Models of Gravity, Oldenburg, DE (online)
- **June 2020:** *Astrophysics Seminar*, IRAP, Toulouse, FR (online)
- **Feb 2020:** *Physics Colloquium*, Texas A&M Commerce, Texas, US
- **Apr 2019:** *Talk*, ICONS, JINA – CEE Workshop, Univ. of Amsterdam, NL
- **Apr 2019:** *Talk*, Quantum Turbulence, INT Workshop, Seattle, Washington, US
- **Jan 2019:** *Talk*, Mini-Symposium on GWs and QCD, Goethe Univ., Frankfurt, DE
- **Nov 2018:** *Astrophysics Colloquium*, Swinburne Univ., Melbourne, AU
- **Nov 2018:** *Astrophysics Seminar*, Univ. of Melbourne, AU
- **Nov 2018:** *Talk*, GW Group Meeting, Monash Univ., Melbourne, AU
- **Apr 2018:** *Superfluid Seminar*, Newcastle Univ., UK
- **Apr 2018:** *MHD Seminar*, Durham Univ., UK
- **Mar 2018:** *Astrophysics Seminar*, McGill Univ., Montréal, CA
- **Jan 2018:** *Astrophysics Seminar*, Newcastle Univ., UK
- **Jan 2018:** *Gravity Seminar*, Univ. of Southampton, UK
- **Nov 2017:** *Condensed Matter & Astrophysics Seminar*, Northwestern Univ., Evanston, Illinois, US
- **Nov 2017:** *Physics Colloquium*, Kent State Univ., Ohio, US

Contributed Seminars, Talks, and Posters (23 in Total)

- **Nov 2023:** *Talk*, SPINS-UK, Univ. of Oxford, UK
- **Jan 2023:** *Talk*, Inst. of Space Sciences Strategy Retreat, Montserrat, ES
- **June 2022:** *Talk*, EAS Meeting 2022, Valencia, ES
- **June 2021:** *Talk*, EAS Meeting 2021, Leiden, NL (online)
- **Nov 2020:** *Pizza Seminar*, Inst. of Space Sciences, Barcelona, ES (online)
- **July 2020:** *Talk*, Physics of Neutron Stars 2020, St. Petersburg, RU (cancelled due to Covid-19)
- **Mar 2020:** *Talk*, Annual PHAROS Conference, Patras, GR (cancelled due to Covid-19)
- **Nov 2019:** *Talk*, MAGNESIA Kick-Off Meeting, Inst. of Space Sciences, Barcelona , ES
- **July 2018:** *Talk*, COSPAR 42nd Assembly, Pasadena, California, US
- **Apr 2018:** *Talk*, PHAROS WG2 Meeting, CAMK, Warsaw, PL
- **Nov 2017:** *Talk*, Neutron Star Crusts, JINA – INT Workshop, Seattle, Washington, US
- **Oct 2017:** *Talk*, New Perspectives on Neutron Star Interiors, ECT* Workshop, Trento, IT
- **Sept 2017:** *Talk*, Trottier Family Foundation Showcase, McGill Univ., Montréal, CA
- **May 2017:** *Talk*, SMFNS2017, Havana/Varadero, CU
- **June 2016:** *Talk*, AstroGrav Pizza Lunch, Univ. of Southampton, UK
- **June 2015:** *Talk*, Annual NewCompStar Conference, Budapest, HU
- **Apr 2015:** *Talk*, BritGrav15, Univ. of Birmingham, UK
- **Jan 2015:** *Talk*, Observations & Theory in the Dynamics of NS, ECT* Workshop, Trento, IT
- **Dec 2014:** *Applied Maths Postgraduate Seminar*, Univ. of Southampton, UK
- **Mar 2014:** *Talk*, BritGrav14, Univ. of Cambridge, UK
- **July 2013:** *Poster*, School on Gravitational Waves, Banach Center, Warsaw, PL
- **June 2013:** *Applied Maths Postgraduate Seminar*, Univ. of Southampton, UK
- **Apr 2012:** *GR & Astrophysics Seminar*, Univ. of Tübingen, DE

Teaching Experience (194 Lecture Hours in Total)

Lecturer, Faculty of Sciences, Autonomous Univ. of Barcelona, ES (since May 2021)

- *Course:* Neutron Stars, Black Holes & Gravitational Waves
- *Students per year:* 15 (MSc level); *total lecture hours:* 22
- *Responsibilities:* Design lecture content and homework exercises for the above module as part of the master's program on 'High Energy Physics, Astrophysics & Cosmology'. I am currently responsible for the sections on 'Black Hole Theory' as well as 'Gravitational Wave Theory'.

Lecturer, Inst. of Space Sciences, Barcelona, ES (July 2021)

- *Course:* ICE Annual Summer School on 'Artificial Intelligence for Astronomy'
- *Students:* 55 (MSc/PhD level); *lecture hours:* 4
- *Responsibilities:* Design and deliver lectures on 'Deep Learning & Neural Networks' and hands-on exercises on 'Scikit-learn & Clustering Algorithms' for a school targeted at master and PhD students.

Lecturer, Department of Physics, McGill Univ., Montréal, CA (June 2019)

- *Course:* CRAQ Annual Summer School on 'Stellar Astrophysics'
- *Students:* 65 (MSc/PhD level); *lecture hours:* 3
- *Responsibilities:* Design lecture content on the topic of 'Stellar Death – Neutron Stars' and a hands-on exercise on 'Mass-radius Relations' for a school targeted at master and PhD students.

Lecturer, Department of Physics, McGill Univ., Montréal, CA (Jan – Apr 2019)

- *Course:* PHYS 434 Optics
- *Students:* 45 (BSc level); *lecture hours:* 39
- *Responsibilities:* Design content for the modules 'Electromagnetism & Light Propagation', 'Geometric Optics', 'Superposition, Polarisation & Interference', 'Diffraction, Fourier Optics & Modern Optics', homework exercises and exams, lecture, grade, and supervise teaching assistants as lead instructor.

Guest Lecturer, Department of Physics, McGill Univ., Montréal, CA (Sept – Oct 2018)

- *Courses:* PHYS 352 Electromagnetic Waves, PHYS 521 Astrophysics
- *Students per class:* 45 (BSc level); *lecture hours:* 4
- *Responsibilities:* Deliver lectures on 'Light Propagation in Media' and 'Compact Binaries'.

Instructor, Department of Physics, McGill Univ., Montréal, CA (Sept – Dec 2017)

- *Course:* PHYS 632 Seminar in Astrophysics
- *Students:* 7 (MSc/PhD level); *in-person hours:* 20
- *Responsibilities:* Choose reading materials on the topic of 'Astrophysical Transients', stimulate and guide discussions in weekly meetings, answer questions and grade students.

Guest Lecturer, Department of Physics, McGill Univ., Montréal, CA (Mar 2017)

- *Course:* PHYS 432 Physics of Fluids
- *Students:* 45 (BSc level); *lecture hours:* 2
- *Responsibilities:* Give an introduction on superfluids and their role in neutron-star astrophysics.

Teaching Assistant, Mathematical Sciences, Univ. of Southampton, UK (Oct 2012 – May 2016)

- *Courses:* MATH1007 Mathematical Methods For Physical Scientists, MATH1050 Maple Labs, MATH1052 Differential Equations, MATH2045 Vector Calculus & Complex Variables, MATH3006 Relativity, Black Holes & Cosmology
- *Students per year:* 125 (BSc level); *total teaching assistant hours:* 350
- *Responsibilities:* Run weekly problem classes, answer questions, mark coursework and tests.

Teaching Experience (Continued)

Teaching Assistant, Inst. of Astronomy & Astrophysics, Univ. of Tübingen, DE (Mar 2011 – Apr 2012)

- *Course:* VFHAP High Energy Astrophysics, VFKOS Observational Cosmology (MSc level)
- *Total teaching assistant hours:* 100
- *Responsibilities:* Create electronic lecture notes for the instructor Prof. Andrea Santangelo.

Teaching Assistant, Inst. of Physics, Univ. of Tübingen, DE (Oct 2008 – Apr 2012)

- *Course:* PP2 Experimental Physics II
- *Students per year:* 100 (BSc level); *total lecture hours:* 120
- *Responsibilities:* As one of two instructors for five optics experiments, I maintained the equipment, gave a one-hour lecture for each experiment, supervised the students and marked their reports. The course was offered four times a year and taken by about 25 students each round.

Research Project Supervision

Co-supervisor, Inst. of Space Sciences, Barcelona, ES (since Jan 2022)

- *Responsibilities:* Primary supervisor (90%) of PhD student Celsa Pardo Araujo applying deep learning to astrophysical problems including pulsar population synthesis for the ERC project MAGNESIA.

Co-supervisor, Inst. of Space Sciences, Barcelona, ES (since Jan 2020)

- *Responsibilities:* Primary supervisor (90%) of PhD student Michele Ronchi who is performing pulsar population synthesis and long-period pulsar studies as part of the ERC project MAGNESIA.

Supervisor, Inst. of Space Sciences, Barcelona, ES (Dec 2022 – Mar 2023)

- *Responsibilities:* Advisor of MSc student Zoë Fowler exploring simulated pulsar populations.

Supervisor, Inst. of Space Sciences, Barcelona, ES (Feb – June 2021)

- *Responsibilities:* Advisor of BSc student Eric Amill Ferré exploring clustering machine-learning algorithms for the pulsar population observed across all electromagnetic wavebands.

Co-supervisor, Inst. of Space Sciences, Barcelona, ES (Nov 2020 – July 2021)

- *Responsibilities:* Primary supervisor (60%) of MSc student Marco Ermolli whose thesis project focused on the impact of superfluidity and relevant microphysics on neutron-star cooling.

Supervisor, Department of Physics, McGill Univ., Montréal, CA (Jan – Nov 2019)

- *Responsibilities:* Supervisor for BSc students Aveen Mahon and Claudia Bielecki working on neutron-star astrophysics related research projects and MSc student Étienne Camphius who wrote Python code to numerically solve and analyse the Ginzburg–Landau equations for his MSc thesis project.

Supervisor, Department of Physics, McGill Univ., Montréal, CA (May – Sept 2017)

- *Responsibilities:* Advisor for BSc summer student Jean-Michel Cauchy-Delli Gatti writing Python code to determine the composition of neutron star interiors for different equations of state.

Additional Mentoring Responsibilities

Mentor, Inst. of Space Sciences, Barcelona, ES (since Oct 2021)

- *Responsibilities:* Official mentor for PhD student Eloy Peña-Asensio working on computational quantum simulation of physicochemical properties of meteorites and other extraterrestrial materials.

Mentor, Evangelisches Studienwerk e.V. Villigst, DE (since Oct 2020)

- *Responsibilities:* Mentor for physics undergraduate student Clara Lilje at the Univ. of Edinburgh as part of the Studienwerk's internal mentorship program.

Additional Mentoring Responsibilities (Continued)

Instructor, Inst. of Space Sciences, Barcelona, ES (Oct – Nov 2022)

- *Topics:* Three-day event on 'Writing Postdoc Applications'
- *Responsibilities:* Organise a workshop for Early Career Researchers, give an overview talk on the process, guide a Q&A session with other researchers, develop interactive writing and feedback sessions.

Instructor, McGill Space Inst., McGill Univ., Montréal, CA (May – Sept 2019)

- *Topics:* 'Interacting with your Research Group', 'Applying for Grad School', 'Non-academic Careers'
- *Responsibilities:* Organise and run personal development workshops for undergraduates.

Instructor, McGill Space Inst., McGill Univ., Montréal, CA (May – Sept 2018)

- *Topics:* 'Talking to your Research Advisor', 'Highs & Lows of Research', 'Non-academic Careers'
- *Responsibilities:* Organise and run personal development workshops for undergraduates.

Membership in Large Collaborations

- **since Sept 2022:** Einstein Telescope (ET) Collaboration, Nuclear Physics & Transient Sources Divisions
- **since Mar 2022:** AIHUB, Artificial Intelligence initiative of Spain's National Research Council
- **since Feb 2020:** International Research Network for Nuclear Astrophysics (IReNA)
- **since Feb 2019:** Joint Inst. for Nuclear Astrophysics (JINA – CEE)
- **since Jan 2018:** Square Kilometre Array (SKA) Collaboration, Pulsar Working Group (Associate Member)
- **Nov 2017 – May 2022:** PHAROS (European COST Action CA16214)
- **Nov 2013 – Nov 2017:** NewCompStar (European COST Action MP1304)

Membership in Scientific Societies

- **since June 2022:** *Junior Member*, International Astronomical Union (IAU)
- **since Mar 2021:** *Ordinary Member*, European Astronomical Society (EAS)
- **since Feb 2021:** *Leadership Team*, Inclusion, Diversity & Equity in European Astronomy (IDEEA)
- **since Oct 2014:** *Member*, Inst. of Physics (IoP)
- **since Jan 2010:** *Member*, German Physical Society (DPG)
- **Oct 2016 – Dec 2019:** *Member*, Le Centre de recherche en astrophysique du Québec (CRAQ)

Scientific Meeting Organisation

- **July 2024:** *Invited Convener*, 10th International Conference on Quarks & Nuclear Physics, Barcelona, ES
- **Nov 2022:** *LOC*, 3rd ATHENA Conference, Barcelona, ES
- **May 2022:** *LOC & SOC*, Annual PHAROS Conference, Rome, IT
- **July 2021:** *LOC & SOC*, Inst. of Space Sciences 4th International Summer School on AI, ES (online)
- **Mar 2020:** *SOC*, Annual PHAROS Conference, Patras, GR
- **Dec 2019:** *Invited Convener*, 30th Texas Symposium on Relativistic Astrophysics, Portsmouth, UK

Reviewing and Refereeing Activities

- **since 2017:** *Reviewer* for scientific journals (A&A, ApJ, APSS, MNRAS, PRD, PRL)
- **Nov 2022:** *PhD thesis committee*, Ricard Aguilera-Miret, Univ. of the Balearic Islands, ES
- **Sept 2022:** *PhD thesis committee*, Laura Cabayol García, Autonomous Univ. of Barcelona, ES
- **2021:** *External reviewer*, Early Career Scheme, Research Grants Council of Hong Kong, CN
- **2020:** *External reviewer*, OPUS Funding Scheme, National Science Center, PL
- **2017:** *External reviewer* Junior Leader Grant Competition, BASIS Foundation, RU

Departmental Services

- **since Oct 2020:** *Chair*, Pizza Seminars, Inst. of Space Sciences, ES
- **since Sept 2020:** *Member (chair since Sept 2022)*, Equity Committee, Inst. of Space Sciences, ES

Departmental Services (Continued)

- **Oct – Nov 2022:** *Organiser*, ECR Workshop on Postdoc Application Writing, Inst. of Space Sciences, ES
- **July 2020 – Aug 2022:** *Organiser*, Machine Learning Journal Club, Inst. of Space Sciences, ES
- **Oct 2016 – Dec 2019:** *Member*, AstroMcGill (McGill Space Inst. Outreach Team), CA
- **May – Aug 2019:** *Co-organiser*, McGill Space Inst. Student Workshops, McGill Univ., CA
- **June 2017 – May 2019:** *Co-organiser*, McGill Space Inst. Seminars, McGill Univ., CA
- **Aug – Dec 2018:** *Organiser*, Postdoctoral Personal Development Workshops, McGill Univ., CA
- **May – Aug 2018:** *Co-organiser*, McGill Space Inst. Student Workshops, McGill Univ., CA
- **Oct 2014 – Aug 2016:** *Organiser*, Applied Maths Postgraduate Seminar, Univ. of Southampton, UK

Outreach

- **Apr 2022:** Interview on *Neutronensterne* for the German Astronomy and Space Science podcast raumzeit
- **Mar – Aug 2021:** Scientific advisor for the short film *Pulsars: A tale of cosmic clocks*, which highlights the work of Dame Jocelyn Bell Burnell and won the first prize at the Science in Action 2022 competition
- **Feb 2021:** Virtual secondary school talk on *Being a Theoretical Astrophysicist* for the 100tífiques initiative on the International Day of Girls and Women in Science, Barcelona, ES (online)
- **Oct 2020:** Webinar on *Neutron Stars – The Strongest Magnets in the Universe* as part of NASA's Universe of Learning program, USA (online)
- **July 2020:** Public lecture on *Wenn Neutronensterne Schluckauf haben* (in German) as part of the Faszination Astronomie Online series, Haus der Astronomie, Heidelberg, DE (online)
- **July 2020:** Public lecture on *Neutron Stars – Extraordinary Cosmic Laboratories* for SEDS Celestia (Astronomy & Astrophysics Club, BITS Pilani - K. K. Birla Goa Campus), Goa, IN (online)
- **Dec 2018:** Public lecture on *Neutron Stars – Extraordinary Cosmic Laboratories* as part of the Public AstroNight series, AstroMcGill, Montréal, CA
- **Nov 2018:** Science Storytelling Slam hosted by the Broad Science Initiative, Montréal, CA
- **Nov 2018:** Mentor and judge at the 3rd Annual McGill Physics Hackathon, Montréal, CA
- **Oct 2018:** Secondary school talk on *Our Solar System*, Schillerschule, Tuttlingen, DE
- **Sept 2017:** Astronomy on Tap talk on *Neutron Stars – A Space Odyssey*, Montréal, CA
- **Aug 2017:** Solar eclipse viewing for thousands of spectators, McGill Univ., Montréal, CA
- **Mar 2016:** Southampton Science and Engineering Festival, Univ. of Southampton, UK
- **Nov 2015:** Einstein's Legacy (outreach event for college students), QMUL, UK
- **Mar 2015:** Southampton Science and Engineering Day, Univ. of Southampton, UK
- **Mar 2014:** The Big Bang Fair (science fair for secondary school students), Birmingham, UK
- **Mar 2013:** Southampton Science and Engineering Day, Univ. of Southampton UK

Additional Writing

- **Article**, *The 69th Lindau Nobel Laureate Meeting*, News & Events McDonald Inst. (Aug 2019) https://mcdonaldinstitute.ca/news/lino19/
- **Blog post**, *10 Questions with Vanessa Graber*, Women in Research (June 2019) https://womeninresearchblog.wordpress.com/2019/06/26/vanessa-germany/

Selected Press

- **Sept 2022:** *How (S)low Can You Go: Pulsar Edition*, AAS Nova
- **June 2020:** *NASA discovers youngest 'cosmic baby' neutron star*, Independent
- **June 2020:** *Astronomers just discovered the youngest ever 'baby' dead star*, CNet
- **June 2020:** *Astronomers find baby pulsar – a rare magnetar – born just 240 years ago*, Astronomy Now
- **June 2020:** *Astronomers Discover Youngest Magnetar Ever*, Sci News
- **June 2020:** *Hallan estrella 'bebé' que explica origen de las explosiones en el universo*, La Vanguardia
- **Aug 2019:** *Pulsar glitch suggests superfluid layers lie within neutron star*, Physics World

Selected Press (Continued)

- **Aug 2019:** *Wenn Neutronensterne aus dem Takt geraten*, Spektrum
- **Aug 2019:** *A Glitch In A Neutron Star Allowed Astronomers To 'Peek' At Its Interior*, IFL Science
- **Aug 2019:** *A Radio Glitch Reveals The Structure Of A Neutron Star*, Forbes
- **Aug 2019:** *Patient astronomers crack the code of super-dense spinning stars*, The Age

Additional Training

Teaching Techniques for Instructors Workshop, McGill Univ., Montréal, CA (Sept 2017)

- *Details:* One day workshop organised by the T-PULSE Initiative
- *Topics:* Writing course syllabi, organising content, creating learning objectives, giving feedback.

Career and Leadership Development Course, Univ. of Southampton, UK (Feb 2015)

- *Details:* Two-day intensive residential course run by the Univ.'s Doctoral College
- *Topics:* Developing a personal leadership style, improving understanding of career planning.

Management and Leadership Course, Furtwangen Univ., DE (Apr – Sept 2009)

- *Details:* Initiative by the Ba-Wü Foundation to support 20 outstanding female STEM students
- *Topics:* Improving management, communication and leadership skills through online training modules and on-site seminars, completing a marketing project in collaboration with a local company.