

EDUCATION, EMPLOYMENT, VISITING POSITIONS

- 2020 **Cox Visiting Professor**, Department of Geophysics, **Stanford University**, USA
 2013 - **Associate Professor of Geophysics** and Fellow of Wolfson College, **Oxford University**, UK
 2013 - **Adjunct Associate Research Scientist**, Lamont-Doherty Obs., **Columbia University**, USA
 2010-13 **Senior Research Scientist & Lecturer**, Institute of Geophysics, **ETH Zurich**, Switzerland
 2008-10 **Postdoctoral Research Associate**, Department of Geosciences, **Princeton University**, USA
 2007-08 **Postdoctoral Scholar**, Seismological Laboratory, **California Institute of Technology**, USA
 2007 **Ph.D. Geophysics**, Department of Geosciences, **Princeton University**, Princeton, USA
 2001 **Diplom (B.Sc. & M.Sc.)**, Inst. Geophysics, **Ludwig-Maximilians-University**, Munich, Germany

TEACHING (*regular full classes in bold-italic*; plus invited external lectures & tutorials)

- 2020 Lecturer, *Wave scattering*, graduate course, Dept of Geophysics, Stanford University, USA
 2017 Invited tutor, *AxiSEM3D and model assessment*, 3rd TIDES workshop, Wolfson College, UK
 2017 Invited lecturer, *Wave propagation and inversion*, WAVES short course, Marseille, France
 2016, 17 Invited lecturer, *AxiSEM, instaseis & AxiSEM3D*, 7th & 8th MESS workshop, Sudelfeld, Germany
 2017- Lecturer, ***The Planet Earth*** (4 hrs, 1st-year undergraduate), Earth Sciences, Oxford
 2015 Invited lecturer, *Global wave propagation*, 1st TIDES workshop, Bologna, Italy
 2014- Lecturer, ***Vector Calculus*** (16 hrs, 3rd-year), Earth Sciences, Oxford
 2014- Lecturer, ***Seismology & Earth Structure*** (4 hrs), Earth Sciences, Oxford
 2014-17 Lecturer, ***The Dynamic Earth*** (4 hrs, graduate students), Earth Sciences, Oxford
 2014- Lecturer, ***Mantle Convection & Plate Tectonics*** (16 hrs, 4th-year), Earth Sciences, Oxford
 2014 Lecturer, ***Mathematics for Earth and Material Sciences*** (16 hrs, 1st-year undergraduate)
 2014 Lecturer, ***Global Seismology*** (16 hrs, 4th-year undergraduate), Earth Sciences, Oxford
 2014 Invited lecturer, *Advanced imaging of the lithosphere*, Int. PhD workshop, Copenhagen, Denmark
 2014 Invited lecturer, *AxiSEM: global broadband wavefields*, ELSI summer school, Tokyo Tech, Japan
 2013 Invited lecturer/tutor: *AxiSEM: broadband wavefields*, CIG/QUEST workshop, Univ Alaska, USA
 2010-13 Lecturer, ***Theoretical Global Seismology*** (20 hrs, M.Sc. students), ETH Zurich, Switzerland
 2004,05 Preceptor, ***A Guided Tour of the Solar System***, Depts Geo./Astrophysics, Princeton University
 2004,06 Lab Instructor, ***Earthquakes, Volcanoes and Other Hazards***, Dept. Geo., Princeton University

INSTITUTIONAL SERVICES (at Oxford unless mentioned otherwise, **leadership roles in bold**)

- 2018- Management committee, Earth Sciences
 2018- **Chair**, Athena Swan working group, Earth Sciences
 2018- **Visiting scholars liaison officer**, elected, Wolfson College
 2018- Academic committee, Wolfson College
 2018- Equality & diversity committee, Mathematics, Physical & Life Sciences Division
 2018- **Chair**, Workplace & equality committee, Earth Sciences
 2015- Management committee, Doctoral Training Program in Environmental Sciences (across 8 depts)
 2015- Teaching committee, Earth Sciences
 2014 - Disciplinary committee, Wolfson College
 2013- Mathematics/geophysics teaching working group, Earth Sciences
 2013- Department committee, Earth Sciences
 2013- Governing Body fellow, elected, Wolfson College
 2011-12 **Chair** of over 300 (non-professorial) scientists, elected, Dept Earth Sciences, ETH Zurich
 2004-07 **Vice-president**, Council of International Graduate Students, Princeton University
 2005-06 **Graduate Student Government** member, elected, Princeton University

ACADEMIC COMMUNITY SERVICES

- 2018- High-performance computing steering committee for UK supercomputing, NERC, UK
 2018 Solicited as *editor: Geophysical Journal International* and *Royal Society Proceedings* (declined)
 2016- **Topical Editor**, Earthquakes & seismology, Solid Earth (EGU journal, IF 2.5)
 2015- Departmental representative, Royal Astronomical Society, London
 2015- Editorial Board, Lecture Notes in Geosystems, Birkhäuser Springer-Verlag
 2015-18 Scientific steering committee, EU Innovative training network WAVES
 2014-17 Management committee, UK representative, EU COST Action TIDES
 2013- Steering committee, Oxford Solid Mechanics, Oxford University
 2012-13 **Project manager PASC** (Solid Earth), Platform for Advanced Scientific Computing, Switzerland
 2010-13 **Work package co-leader**, “Inverse theory”, EU FP7 initial training network QUEST
 2008- Outstanding student paper evaluation committee, American Geophysical Union, EGU

Journal reviews: J Geophys. Research, Nature, Geophys. Research Lett., Geophys. J Int., Earth Planetary Science Lett., G-cubed, PEPI, BSSA, Geophysics, J Acoustics, Solid Earth, PAGEOPH, Seis. Res. Lett., J Comput. Physics, Comp. Mod. Eng., Int. J. Comp. Math., Computers & Geosciences, SIAM
Proposal reviews: ERC, EU Marie-Curie, NERC, STFC, NSF, DoE, DFG, ANR, STFC, L’Oreal, Royal Society, Netherlands Organisation for Scientific Research
Book reviews: Cambridge, Oxford, Princeton UP; backcover endorsement “Joy of Science”, Snieder, CUP

LEADERSHIP IN SCIENTIFIC MEETINGS & SESSIONS (number of attendants in brackets)

2018 **Host for Astor lectureship** Roel Snieder (Oxford-wide competition, 150), Oxford, UK
 2017 **Organizer**, TIDES workshop (125), *Seismic tomography & uncertainties*, Wolfson College, UK.
 2017 **Convener**, Minisymposium (30), *Advances in numerical wave propagation*, PASC, Switzerland
 2016 **Convener**, *Computational Geosciences*, AGU Fall Meeting session (100), San Francisco, USA
 2014 **Discussion leader**, session on *Mantle observations*, SEDI workshop Kanagawa (150), Japan
 2013 **Organizing committee**, CIG-IRIS-QUEST workshop (100), Alaska, USA
 2011 **Principal scientific coordinator**, 2nd QUEST EU ITN workshop (100), Iceland
 2009 **Discussion leader**, *Educational activities*, workshop Computational Geophysics (100), USA

RESEARCH FUNDING

2019 **British Antarctic Survey CASS grant** (declined for logistical reasons), Cambridge (PI)
 2019 **SeisUK NERC instrument pool** award, 20 seismic stations to deploy at Mpala Centre, Kenya (PI)
 2018-21 **STFC Aurora grant**, UK Space Agency, InSight mission, travel and research expenses, Mars (PI)
 2018-20 **National Geographic Conservation technologies grant**, elephant field work in Kenya (co-PI)
 2018-20 **NSF-NERC standard grant**, 2-year postdoc, Oxford (PI)
 2015-17 **ARCHER Leadership Grant**, UK supercomputing, Edinburgh, 10 Mio. CPU hours (PI)
 2014-18 **EU Horizon 2020 Marie-Curie ITN WAVES**, Paris, PhD position (co-PI)
 2014-18 **EU Horizon 2020 COST Action** program TIDES, Bologna (co-PI)
 2014-17 **NERC Capital Call** The Volatile Legacy of the Early Earth, Bristol (co-PI)
 2011-16 **Swiss Science Foundation** grant, PhD position, tomography, Switzerland (PI)
 2013-17 **Co-design** grant, PhD/postdocs, Platform for Advanced Scientific Computing, Switzerland (co-PI)
 2012-15 **Swiss Science Foundation**, PhD position, GPS seismology, Zurich, Switzerland (co-PI)
 2012-13 **HP2C/PASC grant**, computational scientist positions, Switzerland (PI)
 2011-12 **Swiss National Supercomputing Center**, 6 Mio. CPU hours, Manno, Switzerland (PI)

HONOURS

2020 **Cox Visiting Professorship**, Stanford University, USA
 2019 **British Geophysical Association Image competition**, 2nd place (with B. Fernando, K. Leng), UK
 2019 **ARCHER Image & Video Competition 2019, winner** (with B. Fernando, K. Leng), UK
 2018 **InSight Science team member**, elected, NASA mission to Mars
 2012 **Chaire d’Excellence** offered (declined), Geoazur, Universite de Nice, Sophia-Antipolis, France
 2009 **Assistant Professorship** offered (declined), Dept. Physics, University of Colorado-Boulder, USA
 2006-07 **Harold W. Dodds Honorific Fellowship**, Graduate School, Princeton University
 2006 **Arnold Guyot Teaching Award**, Dept. of Geosciences, Princeton University
 2005 **Outstanding Student Paper Award** (Seismology), American Geophysical Union
 2002 **Dusenbury Prize** for high academic standing, Princeton University
 1999 **Scholarship “Hochschule International”** to study abroad, Ludwig-Maximilians-University
 1997 **Dean’s List** upon “Vordiplom” (B.Sc.), Institute of Geophysics, Ludwig-Maximilians-University

HONOURS FOR SUPERVISEES (for students and postdocs under my supervision)

2020 **Guralp Prize for best graduate research** for Claudia Haindl, Dept. Earth Sciences, Oxford
 2020 **Prize for best undergraduate thesis** for Kristiina Joon, Dept Earth Sciences, Oxford
 2019 **Outstanding student paper award**, Seismology section, AGU meeting for Ben Fernando
 2019 **Karl-Zoepfritz Prize for young scientists** for postdoc Benjamin Schwarz, German Geophys. Soc.
 2018 **Outstanding Early Career Scientist EGU Award** for Martin van Driel, Seismology Division
 2017 **DTP conference best presentation award** for Benjamin Fernando, Oxford
 2017 **Guralp Prize for best graduate research** for Kuangdai Leng, Dept. Earth Sciences, Oxford
 2016 **Outstanding student paper award**, SEDI section, AGU meeting for Kuangdai Leng
 2014 **Selected AGU Research highlight** for JGR paper by Ludwig Auer et al. EOS Transactions
 2014 **EGU Outstanding student presentation** by Krisztina Kelevitz, annual meeting of EGU

PUBLICATIONS (see [Google Scholar](#) for up-to-date list): Published 38 articles in peer-reviewed journals, with 15 to be submitted/in preparation; ~ 200 abstracts in international meetings, 3 book contributions.

OPEN-SOURCE SOFTWARE & PATENTS (as main developer or supervisor for main developer)

- AxiSEM (axisem.info; geodynamics.org); MC Kernel (github.com/seismology/mc_kernel)
- Instaseis (instaseis.net); Syngine (ds.iris.edu/ds/products/syngine/): ~3000 unique users
- AxiSEM3D (github.com/axisem3d)

PCT patent on a seismic Lattice-Boltzmann method with J. Robertsson and S. Hanasoge, 2015.

SUPERVISION & EXAMINING (postgraduate students & postdocs, years after yr2000 in brackets)

PhD **Main supervisor:** Kuangdai Leng (14-17), Marta Pienkowska (15-19), Harriet Godwin (15-20), Alex Szenicer, Ben Fernando (16-), Claudia Haindl (17-), Colombi (10-13), v. Driel, Auer (11-15)
Co-supervisor: Ben Moseley (18-), Eoghan Totten (16-), Frank Syfret (Cambridge, 17-), Janneke de Laat (Dublin, 18-), Maria Tsekhmistrenko (14-18), Afsaneh Mohammadzaheri (11-19), Percy Galvez (10-14), Max Rietmann (12-14).

Postdocs Kuangdai Leng (18-20), Laura Ermert (18-19), Paula Koelemeijer (15-18), Benjamin Schwarz (16-18), Piero Basini (10-12).

M.Sc. Kristiina Joon (19-20), William Rees (16-17); Andrea Tesoniero (11); Silvia Salas Romero (12)

Examiner Sean Lim (Maths Oxford, 16), Ludwig Auer (ETH, 16); Erica Galetti (Edinburgh, 15), v Driel (ETH 15); Knaute (Cambridge, 14); O'Toole (Oxford, 13); Andrea Colombi (ETH, 13).

I am the designated supervisor for 4-8 PhD students of the DTP programme during their first year, and college advisor for 10 PhD students. I examine about 3-4 M.Sc. projects/year, 3-5 PhD transfer exams/year.

INVITED RESEARCH TALKS

I have given about **70 invited talks** and keynote lectures within the scope of Earth sciences, mathematics, computer sciences, engineering, physics, zoology, and general public in 20 countries. **A selection since 2015:**

Academia:

UK: Cambridge, Leeds, Edinburgh, Liverpool
Rest of Europe: Hamburg, Munich, Max Planck Institute for Animal Behavior (Germany), Dublin Institute for Advanced Study (Ireland), Institut de Physique du Globe (France), Utrecht (Netherlands)
USA/Canada: Yale, Stanford, Harvard, McGill, Princeton, Texas, Caltech, Berkeley

Major international conferences:

AGU meeting, San Francisco, USA
 Keynote, **CTBTO Science&Tech conference**, Austria
TEDWomen conference, Palm Springs, USA
PASC conference, Zurich, Switzerland
IUGG, Prague, Czech Republic
EGU, Vienna, Austria
AOGS, Sapporo, Japan

General public & miscellaneous:

London lecture, Wolfson College's alumni, UK
Music of Sound symposium Oxford, UK
Oxford Center of Digital Scholarship, UK

International research workshops:

2nd Machine Learning in Solid-Earth, USA
 Keynote, **Petroleum Geophysics**, Norway
 Keynote, **Mathematical Geophysics**, Russia
 Wave scattering **workshop Cargese**, France
 Keynote, **7th MESS workshop**, Germany
 Keynote, **1st British Seismological Meeting**, UK
 Keynote, **1st TIDES workshop** (EU cost action), Italy
 Keynote, **2nd WAVES workshop** (ITN), Netherlands

Industry & government:

Data science seminar, **Winton Grp**, London UK
AWE Blacknest nuclear monitoring, UK
Lawrence-Livermore National Lab, USA

OUTREACH & MEDIA RELATIONS

Public outreach/lectures: Science project evaluation at Orchard Meadow Primary School (Blackbird Leys, UK); Talk on volcanoes/earthquakes at Western Primary School (150 pupils, Harrowgate, UK), Lecture on Further Maths for Earth Sciences (300 secondary school students from UK), public lecture at Bodleian Library (Oxford); Seismodome show for public (sold-out, 500 attendants, Hayden Planetarium, New York); London lecture (Wolfson alumni), TEDWomen talk (general audience, 1000 live attendants).

Interviewed by: BBC4 (UK), Science Friday (live, USA, 1 Million listeners), RTE Radio One (Ireland), CBC radio (Canada), Czech TV, Reuters, NVIDIA/eMotion Studios (movie, USA), ETH Life magazine.

Media coverage on my research: New York Times, BBC, Le Monde, National Geographic, Associated Press, Daily Mail, Daily Express; and other newspapers, webpages, blogs and outlets in ~20 countries.

Social media exposure: Seeker science movie (144k views), TEDWomen talk (no view count yet), Oxford seismology youtube channel (29k views), CIG webinar (1.4k views), Save the Elephants video (1.7k views).