

Curriculum Vitae

Reto Gieré

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European Journal of Mineralogy: <https://www.european-journal-of-mineralogy.net>

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Education

- 1995 Habilitation (Venia Docendi) in Earth Sciences, **Universität Basel**, Switzerland
- 1990 Ph.D. in Earth Sciences, **ETH Zürich**, Switzerland
Thesis title: "Quantification of element mobility at a tonalite/dolomite contact (Adamello Massif, Provincia di Trento, Italy)". Supervisors: V. Trommsdorff (ETH Zürich), H.J. Greenwood (UBC Vancouver), and F. Oberli (ETH Zürich)
- 1988–1989 Visiting Graduate Student, **University of British Columbia**, Vancouver (Canada). Graduate studies in Thermodynamics. Advisors: H.J. Greenwood, T.H. Brown
- 1984 Diploma in Earth Sciences, **ETH Zürich**, Switzerland
Thesis title: "Geology and petrography of the eastern Bergell contact aureole" (in German language). Supervisors: V. Trommsdorff (ETH Zürich), V. Dietrich (ETH Zürich), A. Montrasio (Università degli Studi, Milano)

Language skills

Fluent in **five languages**: English, German, French, Italian, Romansh

Current Position

Since 2015 Professor, Department of Earth and Environmental Science, and Member of the Center of Excellence in Environmental Toxicology, **University of Pennsylvania**, Philadelphia, USA

Previous Appointments

- 2015–2019 Chair, Department of Earth and Environmental Science, **University of Pennsylvania**, Philadelphia, USA
- 2014 Teaching Fellow, **University College Freiburg**, Germany
- 2011–2012 Vice-Dean, Faculty of Chemistry, Pharmacology and Geosciences, **Albert-Ludwigs-Universität**, Freiburg, Germany
- 2012 Professeur Invité (Guest Professor), **Université du Littoral Côte d'Opale**, Dunkerque, France
- 2012 Professeur Invité (Guest Professor), **École Normale Supérieure**, Paris, France
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- 2012 Research Associate, **Australian Nuclear Science & Technology Organisation**, Menai, Australia
- 2006–2010 Dean of Student Affairs, Faculty of Chemistry, Pharmacology and Geosciences, **Albert-Ludwigs-Universität**, Freiburg, Germany
- 2007–2008 Visiting Investigator, Geophysical Laboratory, **Carnegie Institution for Science**, USA
- 2004–2014 Professor of Geochemistry, **Albert-Ludwigs-Universität**, Freiburg, Germany
- 1997–2004 Associate Professor of Geochemistry, **Purdue University**, USA (tenured since 2000)
- 1998 Research Scientist, **Argonne National Laboratory**, U.S. Department of Energy, USA
- 1995–1996 Assistant Professor, **Universität Basel**, Switzerland; and Visiting Investigator, Geophysical Laboratory, **Carnegie Institution for Science**, USA
- 1995 Lecturer, **Universität Bern**, Switzerland
- 1994 Visiting Investigator, Geophysical Laboratory, **Carnegie Institution for Science**, USA
- 1992–1993 Lecturer, **Universität Bern**, Switzerland
- 1990–1995 Teaching and Research Associate, **Universität Basel**, Switzerland
- 1988–1989 Teaching Assistant, **University of British Columbia**, Vancouver, Canada
- 1984–1990 Graduate Teaching and Laboratory Assistant, **ETH Zürich**, Switzerland
- 1982–1984 Undergraduate Tutor, **ETH Zürich**, Switzerland

Honors and Awards

- 2019 **Médaille de la Ville de Mulhouse**, France
- 2019 **Doctor of Science honoris causa (Honorary Doctorate)**, Université de Haute-Alsace, Mulhouse, France
- 2019 **Most Valuable Professor**, University of Pennsylvania, selected by the Women's Lacrosse Team
- 2018 **Honorary Member**, Mineralogical Society of Slovakia
- 2010 **Fellow**, Geological Society of London
- 2005 **Fellow**, Mineralogical Society of America
- 2004 **Top Ten Teachers in the School of Science**, Purdue University, as selected by undergraduate science students
- 2002 **Outstanding Teaching Award**, Department of Earth and Atmospheric Sciences, Purdue University
- 2002 **Top Ten Teachers in the School of Science**, Purdue University, as selected by undergraduate science students
- 2001 **Global Initiative Faculty Award**, from Purdue University Global Studies Program
- 2001 **Top Ten Teachers in the School of Science**, Purdue University, as selected by undergraduate science students
- 2000 **Top Ten Teachers in the School of Science**, Purdue University, as selected by undergraduate science students
- 1999 **Global Initiative Faculty Award**, Purdue University Global Studies Program
- 1995 **PROFIL Award (Winner of National Science Competition)**, Swiss National Science Foundation)
- 1994 **Speaker Award 1994**, Geological Society of Washington, D.C.
- 1994 **Advanced Scientists Fellowship**, Swiss National Science Foundation
- 1993 **Paul-Niggli Award**, Schweizerische Mineralogisch-Petrographische Gesellschaft
- 1990 **ETH Silver Medal** and **Highest Honors** for Ph.D. thesis
- 1984 **Distinction** for Diploma thesis and final examinations

Other Honors

2018 **Graduation Speaker**, Graduate Division of Arts & Sciences, University of Pennsylvania, Philadelphia

Additional Education

Short Courses

- *Feldspars*, taught by H.U. Bambauer
- *EAG School on Element Partition*, taught by P. Henderson and Dr. G. Calas
- *Halogens in Micas*, taught by J.L. Munoz
- *Computer-assisted X-ray Diffractometry*, taught by W.B. Stern
- *Fluids*, taught by H.P. Eugster
- *Fluids*, taught by G.B. Skippen
- *C-O-H-S-Fluids*, taught by B.R. Frost
- *Hydrothermal Systems*, taught by T.M. Seward
- *Fluid Inclusions*, taught by L.S. Hollister
- *Fluid Inclusions*, taught by J. Reynolds
- *Massive Sulfide Deposits*, taught by S.D. Scott
- *Uranium Minerals*, MSA short course, convened by P. Burns and R. Finch
- *Phase diagram calculations with THERMOCALC*, taught by R. Powell
- *Stable Isotope Geochemistry*, MSA short course, convened by J. Valley and D. Cole
- *The Science of Ash Utilization*, University of Kentucky, convened by J. Groppo, T. Robl, and K. Henke
- *Epidotes*, MSA short course, convened by A. Liebscher and G. Franz
- *School on Synchrotron X-ray and IR Methods in Environmental Sciences*, ANKA, Karlsruhe Institute of Technology, convened by J. Göttlicher
- *Medical Geology*, Geological Society of America Short Course

Professional Training

- 2020/21 Provost's Leadership Academy, *University of Pennsylvania*, Philadelphia, USA
- 2019/20 McNulty Leadership Program, The Wharton School, *University of Pennsylvania*, Philadelphia, USA
- 2019 NCSE Summer Meeting, How to Build a Culture and Climate of Inclusivity and Racial Equity
- 2019 Provost's Leadership Academy, *University of Pennsylvania*, Philadelphia, USA
- 2019 "Power, Influence, and Change", Provost's Leadership Academy, University of Pennsylvania, Philadelphia, USA
- 2018 Provost's Leadership Academy, *University of Pennsylvania*, Philadelphia, USA
- 2018 "Leading and Influencing as a Department Chair", *Academic Impressions Workshop*, Washington, D.C.
- 1998 General Employee Radiological Training, *Argonne National Laboratory* (U.S. Department of Energy)
- 1998 Radiation Worker I: Theory, Chemical Technology Division, *Argonne National Laboratory* (U.S. Department of Energy)
- 1998 Radiation Worker I: Practical Training, Chemical Technology Division, *Argonne National Laboratory* (U.S. Department of Energy)
- 1998 Analytical X-ray Safety Training, Radiological and Environmental Management, *Purdue University*, USA

Publications

Peer-Reviewed Articles

- 1) Frye B.C., Quartucci C., Rakete S., Grubanovic A., Höhne K., Mangold F., **Gieré R.**, Müller-Quernheim J., Zissel G. (2021): A cluster of Beryllium sensitization traced to the presence of Beryllium in concrete dust. *CHEST* 159(3), 1084-1093 (<https://doi.org/10.1016/j.chest.2020.09.073>)
Article highlighted: CHEST Editorial, March 1, 2021 ([https://journal.chestnet.org/article/S0012-3692\(20\)34742-5/fulltext](https://journal.chestnet.org/article/S0012-3692(20)34742-5/fulltext)); American College of Chest Physicians, Webinar on “Beryllium Disease Due to Concrete Dust” (March 25, 2021)
Media Coverage: Deutschland Funk Radio (https://ondemand-mp3.dradio.de/file/dradio/2020/09/08/taegliche_dosis_gift_beryllium_in_umweltstaeuben_entdeckt_dlf_2020_908_1650_fc4ab80d.mp3)
- 2) Vigliaturo R., Elkassas S.M., Della Ventura G., Redhammer G.J., Ruiz-Zepeda F., O’Shea M.J., Dražić G., **Gieré R.** (2021): Multi-scale characterization of glaucophane from Chiavolino (Biella, Italy): implications for international regulations on elongate mineral particles. *European Journal of Mineralogy* 33, 77–112 (<https://doi.org/10.5194/ejm-33-77-2021>)
- 3) O’Shea M., Vigliaturo R., Choi J.K., McKeon T.P., Krekeler M.P.S., **Gieré R.** (2021): Alteration of yellow traffic paint in simulated environmental and biological fluids. *Science of the Total Environment* 750, 141202 (<https://doi.org/10.1016/j.scitotenv.2020.141202>)
Media Coverage: PennTwitter (<https://twitter.com/ResearchatPenn/status/1306291156003827721>)
- 4) **Gieré R.**, Smith W., Bandemehr A., Pepino R., Howarth M., Wyman M. (2020): The need to eliminate lead paint globally. *United Nations Environment Program, World Environment Situation Room, Foresight Brief 021* (<https://wesi.unep.org/foresight/briefs>)
Media Coverage: PennToday (<https://penntoday.upenn.edu/news/call-global-ban-lead-paint>); GCSE Pathways (Finding the Light and Moving Forward Together, January 26, 2021); The Daily Pennsylvanian (<https://www.thedp.com/article/2021/02/penn-faculty-ban-lead-paint-paper-united-nations>); Engineering 360 (<https://insights.globalspec.com/article/15910/scientists-push-for-a-global-ban-on-lead-paint>); Phys.org (<https://phys.org/news/2021-02-global.html>)
- 5) Vigliaturo R., Choi, J., Pérez-Rodríguez I., **Gieré R.** (2020): Dimensional distribution control of elongated mineral particles for their use in biological assays. *MethodsX* 7, 100937 (<https://doi.org/10.1016/j.mex.2020.100937>)
- 6) Vigliaturo R., Marengo A., Bittarello E., Pérez-Rodríguez I., Dražić G., **Gieré R.** (2020): Micro- and nano-scale mineralogical characterization of Fe(II)-oxidizing bacterial stalks. *Geobiology* 2020;00:1–13. (<https://doi.org/10.1111/gbi.12398>)
- 7) Maschowski C., Kruspan P., Arif A.T., Garra, P., Trouvé G., **Gieré R.** (2020): Biomass ash in cement systems: Influence of biomass type and processing technology on mortar quality. *Journal of Sustainable Cement-Based Materials* (<https://doi.org/10.1080/21650373.2020.1764877>)
- 8) O’Shea M.J., Vann D.R., Hwang W-T., **Gieré R.** (2020): A mineralogical and chemical investigation of road dust in Philadelphia, PA, USA. *Environmental Science and Pollution Research* 27, 14883-14902 (<https://doi.org/10.1007/s11356-019-06746-y>)
Media Coverage: EOS (<https://eos.org/articles/road-dust-a-health-hazard-hidden-in-plain-sight>)
- 9) Sedlazeck K.P., Vollprecht D., Müller P., Mischitz R., **Gieré R.** (2020): Impact of an in-situ Cr(VI)-contaminated site remediation on the groundwater. *Environmental Science and Pollution Research* (<https://doi.org/10.1007/s11356-019-07513-9>)
- 10) Nabukalu C., **Gieré R.** (2019): Charcoal as an energy resource: global trade, production and socioeconomic practices observed in Uganda. *Resources* 8, 183 (<https://doi.org/10.3390/resources8040183>)
Media Coverage: PennToday (<https://penntoday.upenn.edu/news/many-lives-charcoal>); Science Daily (<https://www.sciencedaily.com/releases/2020/02/200210133219.htm>); EurekAlert (https://www.eurekalert.org/pub_releases/2020-02/uop-tml021020.php);
- 11) Vigliaturo R., Pollastri S., **Gieré R.**, Gualtieri A.F., Dražić G. (2019): Experimental quantification of the Fe-valence state at amosite-asbestos boundaries using acSTEM dual-electron energy-loss spectroscopy. *American Mineralogist* 104, 1820-1828 (<https://doi.org/10.2138/am-2019-7218>)
- 12) Giacobbe C., Wright J., Dejoie C., Tafforeau P., Berruyer C., Vigliaturo R., **Gieré R.**, Gualtieri A.F.

- (2019): Depicting the crystal structure of fibrous ferrierite from British Columbia using a combined synchrotron techniques approach. *Journal of Applied Crystallography* 52, 1397-1408 (<https://doi.org/10.1107/S1600576719013980>)
- 13) Di Giuseppe D., Zoboli A., Vigliaturo R., **Gieré R.**, Bonasoni M.P., Sala O., Gualtieri A.F. (2019): Mineral fibres and asbestos bodies in human lung tissue: a case study. *Minerals* 9, 618 (<https://doi.org/10.3390/min9100618>)
 - 14) Maschowski C., Kruspan P., Garra, P., Arif A.T., Trouvé G., **Gieré R.** (2019): Physicochemical and mineralogical characterization of biomass ash from different power plants in the Upper Rhine Region. *Fuel* 258, 116020 (<https://doi.org/10.1016/j.fuel.2019.116020>)
 - 15) Vigliaturo R., Garra P., Dieterlen A., Trouvé G., Dietze V., Wilson J.P., **Gieré R.** (2019): Opaline phytoliths in *Miscanthus sinensis* and its cyclone ash from a biomass-combustion facility. *Industrial Crops and Products* 139, 111539 (<https://doi.org/10.1016/j.indcrop.2019.111539>).
Media Coverage: PennToday (<https://penntoday.upenn.edu/news/weighing-environmental-impacts-byproduct-biofuel-combustion-plant-skeletons>); The Daily Pennsylvanian (<https://www.thedp.com/article/2019/11/plants-energy-sustainability-fossil-fuels-research-penn>); Technology.org (<https://www.technology.org/2019/10/16/weighing-the-environmental-impacts-of-a-byproduct-of-biofuel-combustion-plant-skeletons>)
 - 16) Vigliaturo R., Garra P., Dieterlen A., Trouvé G., Dietze V., Wilson J.P., **Gieré R.** (2019): Data for: Opaline phytoliths in *Miscanthus sinensis* and its cyclone ash from a biomass-combustion facility. Mendeley Data, v1 (<http://dx.doi.org/10.17632/w86x7fbdhz.1>)
 - 17) Vigliaturo R., Della Ventura G., Choi J.K., Marengo A., Lucci F., O'Shea M.J., Pérez-Rodríguez I., **Gieré R.** (2018): Mineralogical characterization and dissolution experiments in Gamble's solution of tremolitic amphibole from Passo di Caldenno (Sondrio, Italy). *Minerals* 8, 557 (<https://www.mdpi.com/2075-163X/8/12/557/html>)
 - 18) Arletti R., Fantini R., Giacobbe C., **Gieré R.**, Vezzalini G., Vigliaturo R., Quartieri S. (2018): High-temperature behavior of natural ferrierite: In-situ synchrotron X-ray powder diffraction study. *American Mineralogist* 103, 1741-1748 (<https://doi.org/10.2138/am-2018-6663>)
 - 19) Arif A.T., Maschowski C., Khanaqa P., Garra P., Garcia-Käufer M., Wingert N., Mersch-Sundermann V., Gminski R., Trouvé G., **Gieré R.** (2018): Characterization and in vitro biological effects of ambient air PM₁₀ from a rural, an industrial and an urban site in Sulaimani City, Iraq. *Toxicological and Environmental Chemistry* (<https://doi.org/10.1080/02772248.2018.1520234>)
 - 20) Biagioni C., Meisser N., Nestola F., Pasero M., Robyr M., Roth P., Schnyder C. **Gieré R.** (2018): Hydrokenopyrochlore, (□,#)₂Nb₂O₆·H₂O, a new species of the pyrochlore supergroup from the Sahatany Pegmatite Field, Antananarivo Province, Madagascar. *European Journal of Mineralogy* 30, 869-876 (<https://doi.org/10.1127/ejm/2018/0030-2761>)
Media Coverage: Penn Today (<https://penntoday.upenn.edu/news/newly-identified-mineral-may-find-host-practical-applications>); Asian Campus Tribune (<http://asiancampustribune.com/2018/10/a-new-to-us-mineral>)
 - 21) Della Ventura G., Vigliaturo R., **Gieré R.**, Pollastri S., Gualtieri A.F., Iezzi G. (2018): Infrared spectroscopy of the regulated asbestos amphiboles. *Minerals* 8, 413 (<http://www.mdpi.com/2075-163X/8/9/413/html>)
 - 22) Sommer F., Dietze V., Baum A., Sauer J., Gilge S., Maschowski C., **Gieré R.** (2018): Tire abrasion as a major source of microplastics in the environment. *Aerosol and Air Quality Research* 18, 2014-2028 (<http://dx.doi.org/10.4209/aaqr.2018.03.0099>)
Media Coverage: ScienceNews (<https://www.sciencenews.org/article/car-tires-and-brake-pads-produce-harmful-microplastics>), Inverse (<https://www.inverse.com/article/50785-microplastics-from-tires-and-cars-pollutio>), Science Daily (<https://www.sciencedaily.com/releases/2018/09/180910160635.htm>); DailyMail (<https://www.dailymail.co.uk/sciencetech/article-6384713/Particles-brake-systems-tires-roads-produce-microplastics-end-ocean.html>), EurekAlert (https://www.eurekalert.org/pub_releases/2018-09/uop-ard091018.php); MedicineNewsLine (<https://medkit.info/2018/09/11/analyzing-roadside-dust-to-identify-potential-health-concerns>); PennToday (<https://penntoday.upenn.edu/news/analyzing-roadside-dust-identify-potential-health-concerns>) and (<https://penntoday.upenn.edu/news/protecting-planet-at-penn>); PHYS.ORG (<https://phys.org/news/2018-09-roadside-potential-health.html>); remonews.com (<https://aus.remonews.com/tech-analyzing-roadside-dust-to-identify-potential-health-concerns-report>); Transportation Management (<http://systems.enpress-publisher.com/index.php/TM>); Laboratory Equipment

- (<https://www.laboratoryequipment.com/news/2018/09/dust-analyzed-identify-health-concerns>); Lab Manager (<https://www.labmanager.com/news/2018/09/analyzing-roadside-dust-to-identify-potential-health-concerns#.W5ukYegzZhE>); Ifishings.com (<http://ifishings.com/2018/09/11/analyzing-roadside-dust-to-identify-potential-health-concerns>); e-Duque (<http://e-duque.net/tag/reto-giere>); vortl.com (http://vortl.com/main.pl?redir=comments&crypt=OZ5VNGq2KEM948994ec&encode_label=&&page=articles&rss_id=195897905&t=Analyzing-roadside-dust-to-identify-potential-heal); e-Duque.net (<https://e-duque.net/camiones-a-diesel-los-mas-grandes-contaminadores>); Xaralite (<https://xaralite.com/2019/03/06/research-on-the-roadside-dust-and-potential-health-concerns-automation-and-transportation>); Architecture&Design (<https://www.architectureanddesign.com.au/news/it-s-not-just-exhaust-highway-dust-is-also-unheal>); National Geographic (<https://www.nationalgeographic.com/environment/2019/09/tires-unseen-plastic-polluter>); Greening (<https://greeninginc.com/blog/new-tech/how-much-do-brakes-contribute-to-microplastic-pollution>); CaroleNash (<https://www.carolenash.com/insideclassics/classic-car-news/could-road-dust-created-by-cars-be-an-environmental-issue>)
- 23) Fachinger F., Drewnick F., **Gieré R.**, Borrmann S. (2018): Communal biofuel burning for district heating: Emissions and immissions from medium-sized (0.4 and 1.5 MW) facilities. *Atmospheric Environment* 181, 177-185 (<https://doi.org/10.1016/j.atmosenv.2018.03.014>)
 - 24) Sedlazeck K.P., Höllen D., Müller P., Mischitz R., **Gieré R.** (2017): Mineralogical and geochemical characterization of a chromium contamination in an aquifer – A combined analytical and modeling approach. *Applied Geochemistry* 87, 44-56 (<https://doi.org/10.1016/j.apgeochem.2017.10.011>)
 - 25) Lumpkin G.R., **Gieré R.**, Williams C.T., McGlenn P.J., Payne T.E. (2017): Petrography and chemistry of tungsten-rich oxycalciobertholite in hydrothermal veins of the Adamello contact aureole, northern Italy. *Mineralogy and Petrology* 111, 499-509 (<http://doi.org/10.1007/s00710-017-0525-z>)
 - 26) Chen J., Elmi C., Goldsby D., **Gieré R.** (2017): Generation of shock lamellae and melting in rocks by lightning-induced shock waves and electrical heating. *Geophysical Research Letters* 44, 8757-8768 (<http://doi.org/10.1002/2017GL073843>)
Media Coverage: SCIENCE (<http://www.sciencemag.org/news/2017/07/lightning-can-beat-rocks-asteroid-strike-casting-doubt-past-impacts>); Spektrum.de/ZEITONLINE (<https://scilogs.spektrum.de/mente-et-malleo/einen-quarz-schockt>); Geophysical Research Letters (<http://doi.org/10.1002/2017GL074840>); EOS (<https://doi.org/10.1029/2017EO082493>).
 - 27) Tian Z., Dietze V., Sommer F., Baum A., Kaminski U., Sauer J., Maschowski C., Stille P., Cen K., **Gieré R.** (2017): Coarse-particle passive-sampler measurements and single-particle analysis by transmitted light microscopy at highly frequented motorways. *Aerosol and Air Quality Research* 17, 1939-1953 (<http://doi.org/10.4209/aaqr.2017.02.0064>)
 - 28) Biagioni, C., **Gieré R.**, Meisser, N., Nestola, F., Pasero, M., Robyr, M., Roth, P. and Schnyder, C. (2017): Hydrokenopyrochlore, IMA 2017-005. CNMNC Newsletter No. 37, June 2017, page 531; *European Journal of Mineralogy*, 29, 529–533
 - 29) Arif A.T., Maschowski C., Garra P., Garcia-Käufer M., Petithory T., Trouvé G., Dieterlen A., Mersch-Sundermann V., Khanaqa P., Nazarenko I., Gminski R., **Gieré R.** (2017): Cytotoxic and genotoxic responses of human lung cells to combustion smoke particles of Miscanthus straw, softwood and beech wood chips. *Atmospheric Environment* 163, 138-154 (<https://doi.org/10.1016/j.atmosenv.2017.05.019>)
 - 30) Dornhof R., Maschowski C., Osipova A., **Gieré R.**, Seidl M., Merfort I., Humar M. (2017): Stress fibers, autophagy and necrosis by persistent exposure to PM2.5 from biomass combustion. *PLOS ONE* 12(7): e0180291 (<https://doi.org/10.1371/journal.pone.0180291>)
 - 31) Elmi C., Chen J., Goldsby D., **Gieré R.** (2017): Mineralogical and compositional features of rock fulgurites: a record of lightning effects on granite. *American Mineralogist* 102, 1470-1481 (<https://dx.doi.org/10.2138/am-2017-5971>)
Media coverage: Phys.Org (<https://phys.org/news/2017-04-quantify-lightning.html>); PennNews (<https://news.upenn.edu/news/penn-researchers-quantify-changes-lightning-inspires-rock>); WeatherBug (<https://weather.weatherbug.com/news/Researchers-Quantify-the-Changes-that-Lightning-In>); American Mineralogist (http://www.minsocam.org/MSA/Ammin/AM_Notable_Articles.html).
 - 32) Smith, K.L., **Gieré R.** (2017): Why some nations choose nuclear power. *Kleinman Center for Energy Policy; Policy Digest*, pp. 10 (<http://kleinmanenergy.upenn.edu/policy-digests/why-some-nations-choose-nuclear-power>)

Media coverage: Penn Current (<https://penncurrent.upenn.edu/features/nuclear-power-faces-big-hurdle-public-perception>); DailyCaller (<http://dailycaller.com/2017/07/27/study-biggest-factor-holding-back-nuclear-power-is-public-perception>); The Libertarian Republic (<https://thelibertarianrepublic.com/study-biggest-factor-holding-back-nuclear-power-public-perception>).

- 33) Huang J.-H., Paul S., Mayer S., Moradpour E., Hasselbach R., **Gieré R.**, Alewell C. (2017): Metal biogeochemistry in constructed wetlands based on fluvial sand and zeolite- and clinopyroxene-dominated lava sand. *Scientific Reports* 7: 2981 (<https://dx.doi.org/10.1038/s41598-017-03055-7>)
- 34) Fachinger F., Drewnick F., **Gieré R.**, Borrmann S. (2017): Household solid fuel combustion: Influence of fuels and burning conditions on particulate and gaseous emissions of wood and pellet stoves. *Atmospheric Environment* 158, 216-226 (<https://dx.doi.org/10.1016/j.atmosenv.2017.03.027>)
- 35) Hien-Dinh T.T., Dao D.A., Tran T., Wahl M., Stein E., **Gieré R.** (2017): Lithium-rich albite-topaz-lepidolite granite from Central Vietnam: a mineralogical and geochemical characterization. *European Journal of Mineralogy* 29, 1-18 (<http://dx.doi.org/10.1127/ejm/2017/0029-2581>)
- 36) Elmi C., Guggenheim S., **Gieré R.** (2016): Surface crystal chemistry of phyllosilicates using X-ray photoelectron spectroscopy: A review. *Clays and Clay Minerals* 64, 537-551 (<http://dx.doi.org/10.1346/CCMN.2016.064033>)
- 37) Sommer F., Maschowski C., Dietze V., Grobóty B., **Gieré R.** (2016): Comparing single-particle analysis data of volcanic ash of the 2010 Eyjafjallajökull eruption obtained from scanning electron and light microscope images. *European Journal of Mineralogy* 28, 855-868 (<http://dx.doi.org/10.1127/ejm/2016/0028-2555>)
- 38) **Gieré R.** (2016): Magnetite in the human body: biogenic vs. anthropogenic. *Proceedings of the National Academy of Sciences of the United States* 113, 11986-11987 (<http://dx.doi.org/10.1073/pnas.1613349113>)
- 39) Maschowski C., Zangna M.C., Trouvé G., **Gieré R.** (2016): Bottom ash of trees from Cameroon as fertilizer. *Applied Geochemistry* 72, 88-96 (<http://dx.doi.org/10.1016/j.apgeochem.2016.07.002>)
- 40) Puchkova E.V., Bogdanov R.V., **Gieré R.** (2016): Redox states of uranium in samples of microlite and monazite. *American Mineralogist* 101, 1884-1891 (<https://dx.doi.org/10.2138/am-2016-5475>)
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- 115) Sperlich R., **Gieré R.**, Frey M. (1996): Evolution of compositional polarity and zoning in tourmaline during prograde metamorphism of sedimentary rocks in the Swiss Central Alps. *American Mineralogist* 81, 1222-1236 (http://www.minsocam.org/msa/ammin/toc/Articles_Free/1996/Sperlich_p1222-1236_96.pdf)
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- 117) Berger A., **Gieré R.** (1995): Structural observations at the Eastern contact of the Bergell pluton. *Schweizerische Mineralogische und Petrographische Mitteilungen* 75, 241-258 (<http://retro.seals.ch/digbib/view2?pid=smp-001:1995:75::258>)
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- 119) **Gieré R.**, Guggenheim R., Düggelin M., Mathys D., Williams C.T., Lumpkin G.R., Smith K.L., Blackford M.G., Hart K.P., McGlenn P.J. (1994): Retention of actinides during alteration of aperiodic zirconolite. *Electron Microscopy 94: Proceedings of the 13th International Congress on Electron Microscopy, Applications in Materials Sciences* 2B: 1269-1270
- 120) Lumpkin G.R., Smith K.L., Blackford M.G., **Gieré R.**, Williams C.T. (1994): Determination of 25 elements in the complex oxide mineral zirconolite by analytical electron microscopy. *Micron* 25/6, 581-587 ([http://doi.org/10.1016/0968-4328\(94\)90020-5](http://doi.org/10.1016/0968-4328(94)90020-5))

- 121) Lumpkin G.R., Smith K.L., Blackford M.G., Hart K.P., McGlenn P.J., **Gieré R.**, Williams C.T. (1994): Prediction of the long-term performance of crystalline nuclear waste form phases from studies of mineral analogues. In: McDonald N.R. (ed): *Proceedings of the 9th Pacific Basin Nuclear Conference* (The Institution of Engineers, Barton, Australia), 879-885 (<http://search.informit.com.au/documentSummary;dn=478452731391946;res=IELENG>)
- 122) **Gieré R.** (1993): Transport and deposition of REE in H₂S-rich fluids: evidence from accessory mineral assemblages. *Chemical Geology* 110, 251-268 ([http://dx.doi.org/10.1016/0009-2541\(93\)90257-J](http://dx.doi.org/10.1016/0009-2541(93)90257-J))
- 123) **Gieré R.**, Williams C.T. (1992): REE-bearing minerals in a Ti-rich vein from the Adamello contact aureole (Italy). *Contributions to Mineralogy and Petrology* 112, 83-100 (<http://dx.doi.org/10.1007/BF00310957>)
- 124) **Gieré R.** (1992): Compositional variation of metasomatic titanite from Adamello (Italy). *Schweizerische Mineralogische und Petrographische Mitteilungen* 72, 167-177 (<http://retro.seals.ch/digbib/view2?pid=smp-001:1992:72::183>)
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- 126) Williams C.T., **Gieré R.** (1988): Metasomatic zonation of REE in zirconolite from a marble skarn at the Bergell contact aureole (Switzerland/Italy). *Schweizerische Mineralogische und Petrographische Mitteilungen* 68, 133-140 (<http://retro.seals.ch/digbib/view2?pid=smp-001:1988:68::148>)
- 127) **Gieré R.** (1987): Titanian clinohumite and geikielite in marbles from the Bergell contact aureole. *Contributions to Mineralogy and Petrology* 96, 496-502 (<http://dx.doi.org/10.1007/BF01166694>)
- 128) **Gieré R.** (1986): Zirconolite, allanite and hoegbomite in a marble skarn from the Bergell contact aureole: implications for mobility of Ti, Zr and REE. *Contributions to Mineralogy and Petrology* 93, 459-470 (<http://dx.doi.org/10.1007/BF00371716>)
- 129) **Gieré R.** (1985): Metasedimente der Suretta-Decke am Ost- und Südostrand der Bergeller Intrusion: Lithostratigraphische Korrelation und Metamorphose. *Schweizerische Mineralogische und Petrographische Mitteilungen* 65, 57-78 (in German) (<http://retro.seals.ch/digbib/view2?pid=smp-001:1985:65::65>)

Peer-Reviewed Articles – in press

- 130) Frye B.C., Quartucci C., Rakete S., Grubanovic A., Höhne K., Mangold F., **Gieré R.**, Müller-Quernheim J., Zissel G. (2020): To the Editors. *Chest*

Peer-Reviewed Articles – submitted or in revision

- 131) Vigliaturo R., Jamnik M., Dražić G., Podobnik M., Tušek Žnidarič M., Della Ventura G., Redhammer G.J., Nada Z., Caserman S., **Gieré R.** (2021): Nanoscale transformations of amphiboles within human alveolar epithelial cells. *Journal of Hazardous Materials*
- 132) O'Shea M.J., Krekeler M.P.S., Vann D.R., **Gieré R.** (2021): Investigation of Pb-contaminated soil and road dust in a polluted area of Philadelphia. *Environmental Research*
- 133) Toupal J., Vann D.R., Zhu C., **Gieré R.** (2021): Geochemistry of surface waters around four hard-rock lithium deposits in Central Europe. *International Journal of Environmental Research and Public Health*

Scholarly Books

- 134) **Gieré R.**, Stille P. (2004): *Energy, Waste, and the Environment: a Geochemical Perspective*. Geological Society, London, Special Publications, 236, pp. 670 (<http://dx.doi.org/10.1144/GSL.SP.2004.236.01.37>)

Peer-Reviewed Book Chapters (* invited)

- 135) ***Gieré R.**, Lumpkin G.R., Smith K.L. (2018) Titanate Ceramics for High-Level Nuclear Waste Immobilization. In: Heuss-Abbichler S., Amthauer G., John M. (eds): *Highlights in Applied Mineralogy*. de Gruyter, pp. 344 (ISBN: 978-3-11-049122-7); 223-241 (<https://doi.org/10.1515/9783110497342-011>)
- 136) **Gieré R.**, LaFree S.T., Carleton L.E., Tishmack J.K. (2004): Environmental impact of energy recovery from waste tyres. In: **Gieré R.**, Stille P. (eds): *Energy, Waste, and the Environment: a Geochemical*

- Perspective. *Geological Society, London, Special Publications* 236, 475-498 (<http://dx.doi.org/10.1144/GSL.SP.2004.236.01.26>)
- 137) Lumpkin G.R., Smith, K.L., **Gieré R.**, Williams C.T. (2004): Geochemical behaviour of host phases for actinides and fission products in crystalline ceramic nuclear waste forms. *In: Gieré R., Stille P. (eds): Energy, Waste, and the Environment: a Geochemical Perspective. Geological Society, London, Special Publications* 236, 89-111 (<http://dx.doi.org/10.1144/GSL.SP.2004.236.01.06>)
- 138) Stefanovsky S.V., Yudinsev S.V., **Gieré R.**, Lumpkin G.R. (2004): Nuclear waste forms. *In: Gieré R., Stille P. (eds): Energy, Waste, and the Environment: a Geochemical Perspective. Geological Society, London, Special Publications* 236, 37-63 (<http://dx.doi.org/10.1144/GSL.SP.2004.236.01.04>)
- 139) **Gieré R.**, Stille P. (2004): Energy, Waste, and the Environment - a Geochemical Perspective: Introduction. *In: Gieré R., Stille P. (eds): Energy, Waste, and the Environment: a Geochemical Perspective. Geological Society, London, Special Publications* 236, 1-5 (<http://dx.doi.org/10.1144/GSL.SP.2004.236.01.01>)
- 140) ***Gieré R.**, Sorensen S.S. (2004): Allanite and other REE-rich epidote-group minerals. *In: Liebscher A., Franz G. (eds): Epidotes. Reviews in Mineralogy and Geochemistry* 56, 431-493 (<http://dx.doi.org/10.2138/gsrmg.56.1.431>)
Scientific Awards: 4th, 5th, and 6th Most Cited Paper (GeoScienceWorld 2008-2010, <http://rimg.geoscienceworld.org/reports/mfc1.dtl>); New Hot Paper in the Field of Geosciences (ISI Essential Science Indicators, http://www.esi-topics.com/nhp/2005/march-05-Giere_Sorensen.html); Emerging Research Front (ISI Essential Science Indicators, <http://www.esi-topics.com/erf/february2005.html>)
- 141) ***Gieré R.** (2002): Solidification/stabilization of toxic and nuclear waste. *In: Mellini M., Panichi C. (eds): Engineering Mineralogy of Ceramic Materials. Proceedings of the International School "Earth and Planetary Sciences". Special Publication Università di Siena and Consiglio Nazionale delle Ricerche, p.167-186*
- 142) ***Gieré R.** (2000): Minerals as natural analogues for crystalline nuclear waste forms. *In: Memmi I., Hunziker J.C., Panichi C. (eds): A Geochemical and Mineralogical Approach to Environmental Protection. Proceedings of the International School "Earth and Planetary Sciences". Special Publication Università di Siena and Consiglio Nazionale delle Ricerche, p. 83-101*
- 143) ***Gieré R.** (1999): Natural analogues for nuclear waste forms. *In: Ricci C.A. (ed): Toxic Waste Disposal. Proceedings of the International School "Earth and Planetary Sciences". Special Publication Università di Siena and Consiglio Nazionale delle Ricerche, p. 175-192*
- 144) ***Gieré R.** (1999): Nuclear waste forms. *In: Ricci C.A. (ed): Toxic Waste Disposal. Proceedings of the International School "Earth and Planetary Sciences". Special Publication Università di Siena and Consiglio Nazionale delle Ricerche, p. 67-78*
- 145) ***Gieré R.** (1996): Formation of rare earth minerals in hydrothermal systems. *In: Jones A.P., Williams C.T., Wall F. (eds): Rare Earth Minerals: chemistry, origin and ore deposits. Mineralogical Society Series, Chapman & Hall, p. 105-150*

Other Book Chapters (* invited)

- 146) ***Gieré R.** (2021): Towards a more sustainable cement and concrete industry. *In: George G., Haas M.R., Joshi H., McGahan A., Tracey P. (eds): Handbook on the Business of Sustainability: The Organization, Implementation, and Practice of Sustainable Growth. Edward Elgar Publishing, Cheltenham, UK (accepted)*
- 147) *Nabukalu C., **Gieré R.** (2021): The status and future of charcoal in the energy transition era in sub-Saharan Africa: Observations from Uganda. *In: Nalule V.R. (ed): Energy Transitions and the Future of the African Energy Sector: Law, policy and governance. Palgrave Macmillan, Cham, Switzerland, p. 189-229 (https://doi.org/10.1007/978-3-030-56849-8_6)*
Media Coverage: (<https://www.youtube.com/watch?v=NW13jvtexXg&lc=UgxRpbBvnBg0Ocio8n14AaABAq>)
- 148) Ettler V., **Gieré R.** (2017): Chromitites, platinum-group elements, and ore minerals – Special issue dedicated to Zdeněk Johan (1935-2016): Preface. *European Journal of Mineralogy* 29, 539-541 (<http://dx.doi.org/10.1127/ejm/2017/0029-2671>)
- 149) **Gieré R.** (2017) Biomass, energy and health. *Pan European Networks Science and Technology* 23, 210-211 (<http://origin.misc.pagesuite.com/pdfdownload/45f067a7-1fff-4ece-905a-1c8de293cc61.pdf>)

- 150) **Gieré R.** (2015): Blutregen und die Suche nach einer wissenschaftlichen Erklärung. In: Eickhoff, F.C. (ed): Wissen, Epistemologische Überlegungen aus verschiedenen Disziplinen. *Septem, University College Freiburg*, Rombach Verlag, Freiburg, p. 77-110
- 151) Garra P., Maschowski C., Liaud C., Dieterlen A., Leysens G., Schönnenbeck C., Kohler S., Trouvé G., **Gieré R.** (2014): Fluorescence microscopy analysis of dust from biomass burning. Proceedings of the 1st International Conference on Atmospheric Dust – DUST 2014, *ProScience* 1, 249-254
- 152) **Gieré R.**, Oberti R., Quartieri S., Wogelius R. (2014): GEOLIFE – Geomaterials for the environment, technology and human activities. Preface to the October 2014 special set of papers arising from presentations at the Goldschmidt 2013 conference. *Mineralogical Magazine* 78, i-iii (<http://minmag.geoscienceworld.org/content/78/5/i>)
- 153) Dao D.A., **Gieré R.** (2010): Leaching of manganese ore of Cao Bang Province in Vietnam by SO₂ gas in H₂SO₄-rich solutions. *Proceedings of the International Conference on Advanced Mining for Sustainable Development*, p. 733-739
- 154) **Gieré R.**, Li H., Smith, K.L., Blackford M. (2005): Particulate emissions from combustion of a coal+tire blend. *World of Coal Ash, 2005 Proceedings*, ISBN 0-9674971-6-7, woca2005:papers:15gie.pdf, p. 1-12
- 155) Heinrich C.A., Engi M, **Gieré R.**, Nievergelt P. (2005): Final issue of this journal. *Schweizerische Mineralogische und Petrographische Mitteilungen* 85, 103
- 156) ***Gieré R.**, Li H., Smith K., Blackford M. (2005): SEM and TEM Characterization of particulates emitted during coal and tire combustion. In: White T.J., Ferraris C., Yu L., Halada K., Umezawa O. (eds): *Advances in Ecomaterials*, Stallion Press, Singapore, Volume 1, p. 209-215
- 157) ***Gieré R.** (2000): Major elements. In: Hancock P.L., Skinner B.J. (eds): *The Oxford Companion to the Earth*. Oxford University Press, p. 636-637
- 158) ***Gieré R.** (2000): Trace elements. In: Hancock P.L., Skinner B.J. (eds): *The Oxford Companion to the Earth*. Oxford University Press, p. 1044-1045
- 159) ***Gieré R.** (2000): Geochemical distribution. In: Hancock P.L., Skinner B.J. (eds): *The Oxford Companion to the Earth*. Oxford University Press, p. 393-394
- 160) ***Gieré R.**, Ilchik R.P. (2000): Elemental associations and ore minerals and allied deposits. In: Hancock P.L., Skinner B.J. (eds): *The Oxford Companion to the Earth*. Oxford University Press, p. 304-308
- 161) ***Gieré R.**, Rumble D. (1994): History of tourmaline growth in metamorphic schists from the Central Alps. *Carnegie Institution of Washington, Year Book* 93, 90-91
- 162) ***Gieré R.**, Hoering T.C. (1990): Isotopic composition of sulfides in Ti-rich veins from the Adamello contact aureole (Italy). *Annual Report Geophysical Laboratory, Carnegie Institution of Washington 1989/1990*, 33-37
- 163) ***Gieré R.** (1987): La geologia tra le valli Sissone e Muretto. *Val Malenco Natura 1. Atti ufficiali del convegno*, p. 21-26 (in Italian)

Special Issues of Journals Edited

- 164) Ettler V., **Gieré R.** (2017): Chromitites, platinum-group elements, and ore minerals – Special issue dedicated to Zdeněk Johan (1935-2016). *European Journal of Mineralogy* 29, 539-776 (<http://dx.doi.org/10.1127/ejm/2017/0029-2671>)
- 165) **Gieré R.**, Oberti R., Quartieri S., Wogelius R. (2014): GEOLIFE – Geomaterials for the environment, technology and human activities. *Mineralogical Magazine* 78, 1071-1239 (<http://minmag.geoscienceworld.org/content/78/5/i>)
- 166) **Gieré R.** (2010): Atmospheric particles. *Elements* 6, 201-272 (<http://doi.org/10.2113/gselements.6.4.215>)
- 167) Alexander W.R., **Gieré R.**, Hidaka H., Yoshida H.D. (2006): Natural immobilization processes aid the understanding of long-term evolution of deep geological radioactive waste repositories. *Geochemistry: Exploration, Environment, Analysis* 6, 3-67 (<http://doi.org/10.1144/1467-7873/05-100>)

- 168) **Gieré R.** (1996): Transition from Penninic to Austroalpine Units in the Bergell Alps. *Schweizerische Mineralogische und Petrographische Mitteilungen* 76, 325-564 (<http://retro.seals.ch/digbib/view2?pid=smp-001:1996:26::342>)

Book Reviews (* invited)

- 169) ***Gieré R.** (2017): Book Review – “Amazonite: Mineralogy, Crystal Chemistry, and Typomorphism”, authored by: Ostrooumov M. (2016), Elsevier. ISBN: 978-0-1280-3721-8, 228 p., *American Mineralogist* 102, 1767-1768 (<http://www.minsocam.org/msa/AmMin/TOC/2017/Abstracts/AM102P1767.pdf>)
- 170) ***Gieré R.** (2011): Book Review – “Atlas of non-silicate minerals in thin section”, authored by: Melgarejo J.C., Martin R.F. (2011), Special Publication 7 of The Canadian Mineralogist, Mineralogical Association of Canada, Quebec, Canada, 522 p. *Elements* 7, 428 (<http://elements.geoscienceworld.org/content/7/6/427.full.pdf+html>)

Popular and Educational Publications (* invited)

- 171) Nabukalu C., **Gieré R.** (2020): Receding tropical forests and the persistent burden of global charcoal supply. Kleinman Center for Energy Policy, Insight (<https://kleinmanenergy.upenn.edu/news-insights/receding-tropical-forests-and-the-persistent-burden-of-global-charcoal-supply/>)
- 172) Nabukalu C., **Gieré R.** (2020): Global charcoal consumption and the question of energy security. Kleinman Center for Energy Policy, Insight (<https://kleinmanenergy.upenn.edu/blog/2020/11/11/global-charcoal-consumption-and-question-energy-security>)
- 173) *Nabukalu C., **Gieré R.** (2020): The environmental trail of the global charcoal supply chain. *GreenBiz*, April 2, 2020 (<https://www.greenbiz.com/article/environmental-trail-global-charcoal-supply-chain>)
- 174) Pepino R., **Gieré R.**, Penning T., Howarth M. (2019): Vote on lead-safe law tabled. Letter to Editor of *The Philadelphia Inquirer*, August 5, 2019
- 175) ***Gieré R.** (2016): Nuclear waste forms and natural analogs. Proceedings of the 6th Meeting of the Kommission Lagerung hoch radioaktiver Abfallstoffe, Deutscher Bundestag (Berlin, 6. Dec. 2014), Document Nr. K-Drs. 79, 1-4
- 176) ***Gieré R.** (2016): Kristalline Medien zur Entsorgung von HAA: Lehren aus der Natur. Proceedings of the 6th Meeting of the Kommission Lagerung hoch radioaktiver Abfallstoffe, Deutscher Bundestag (Berlin, 6. Dec. 2014). Document Nr. Zu-K-Drs. 79, 1-4 (in German)
- 177) ***Gieré R.** (2006): The waste tire problem: solution through combustion? *Geochemical News* 127, 12-17
- 178) ***Gieré R.** (2003): Swiss Alps yield a new mineral. *Purdue University, School of Science, Sequel* 39, 8
- 179) ***Gieré R.** (1997): Wie Basler Mineralogen den Atommüll einschliessen wollen. *Basler Zeitung* 155 (127), 3 (Tagesthema, 4. Juni 1997; in German)
- 180) Hauber L., Schmid S., **Gieré R.**, Stünitz H. (1993): Von der Ausbeutung der Ressourcen zur Pflege des Planeten Erde. *Uni Nova* 69/93, 4-9 (in German)
- 181) Trommsdorff V., **Gieré R.** (1988): Chemischer Transport und Bildung von Mineraladern in der Erdkruste. *ETH Bulletin* 215, 18-19 (in German)

Excursion Guide Books and Maps (* invited)

- 182) *Trommsdorff V., Ulmer P., **Gieré R.**, Baumgartner L. (1989): Guide book to the excursion to the Central Alps, Bergell and Adamello. Special publication Università degli Studi di Siena and Consiglio Nazionale delle Ricerche (CNRS), pp. 121

Software

- 183) **Gieré R.** (1992): "Gresen" - software package for the calculation of mass-balance during alteration/weathering of rocks or during replacement of a mineral by other minerals. Catalogue of software for mineralogists, International Mineralogical Association, Edmonton; p. 86

Funded Research

British Council / Schweizerischer Nationalfonds ¹ <i>Collaboration with Natural History Museum, London</i> May 1, 1991 – April 30, 1992	CHF 2,675 ²
Schweizerischer Nationalfonds <i>Mineralogisch-kristallchemische Untersuchungen im Bereich der Monte-Leone-Decke</i> (Co-PI ³ ; PI: Stefan Graeser, University of Basel) October 1, 1992 – September 30, 1994	CHF 70,925
Schweizerischer Nationalfonds (Renewal) <i>Mineralogisch-kristallchemische Untersuchungen im Bereich der Monte-Leone-Decke</i> (Co-PI; PI: Stefan Graeser, University of Basel) October 1, 1994 – March 31, 1996	CHF 70,793
Schweizerischer Nationalfonds <i>REE-Ungleichgewichte in Gesteinen der Lebendun-Serie</i> (Co-PI; PI: Stefan Graeser, University of Basel) April 1, 1995 – March 31, 1997	CHF 81,559
ETH Research Foundation <i>Hydrothermal Alteration of Zirconolite</i> (Co-PI; PI: Volkmar Trommsdorff, ETH Zürich) January 1, 1997 – December 31, 1999	CHF 129,000
Schweizerischer Nationalfonds <i>Barium Anomalies in the Berisal Series, Simplon area (Switzerland)</i> (Co-PI; PI: Stefan Graeser, University of Basel) April 1, 1997 – March 31, 2000	CHF 112,842
Purdue Research Foundation <i>Incorporation of U, Th and REE in Epidote-Group Minerals</i> July 1, 1998 – August 31, 1998	US\$ 5,000
National Science Foundation / Purdue Research Foundation <i>MRI: Acquisition of an Automated X-ray Powder Diffractometer</i> August 1, 1998 – July 31, 2000	US\$ 124,227
Purdue Research Foundation <i>Petrology of Tourmaline-Rich Rocks</i> August 17, 1998 – August 16, 1999	US\$ 11,666
Purdue Research Foundation <i>International Travel Grant (France)</i> 1999	US\$ 558
School of Science, Purdue University <i>Acquisition of a PetroScope for Undergraduate Instruction in Earth Sciences</i> 1999	US\$ 7,786

¹ Swiss National Science Foundation

² CHF = Swiss Francs

³ PI = Principal Investigator; Co-PI = Co-Principal Investigator

Purdue Global Studies Program <i>Environmental and Safety Assessment of Nuclear Waste Repositories: Insights from a Natural Analogue Study</i> May 1, 1999 – December 31, 2000	US\$ 9,352
Purdue Research Foundation <i>Petrology of Tourmaline-Rich Rocks</i> August 17, 1999 – July 31, 2001	US\$ 12,626
Purdue Research Foundation <i>International Travel Grant (Australia)</i> 2000	US\$ 1,633
Purdue Research Foundation <i>How Safe are Plutonium Waste Ceramics?</i> June 1, 2000 – July 31, 2000	US\$ 5,000
Purdue University <i>Acquisition of Crystallographic Software for Instruction and Research</i> January 1, 2001 – December 31, 2001	US\$ 549
Purdue Global Studies Program <i>Atmospheric Pollution from Coal-Fired Power Plants: Micro- and Nanochemistry of Aerosols</i> January 1, 2002 – December 31, 2002	US\$ 2,500
Purdue University <i>Acquisition of Materials for Undergraduate Instruction in Earth Sciences</i> January 1, 2002 – December 31, 2002	US\$ 4,000
Purdue University <i>Purchase of New Rock-Cutting Equipment</i> (Co-PI; PI: Jeff Swope, Purdue University) January 1, 2002 – December 31, 2002	US\$ 9,500
Purdue Research Foundation <i>International Travel Grant (Switzerland)</i> 2002	US\$ 995
Indiana Academy of Sciences <i>Chemical and Mineralogical Characterization of Particulate Emissions from Coal-Fired Power Plants</i> June 1, 2002 – May 31, 2003	US\$ 1,411
Indiana Department of Commerce / Novotech Inc. ⁴ <i>Commercialization of Germanium Extraction from Indiana Coal Combustion By Products</i> September 1, 2002 – August 31, 2004	US\$ 81,204
Indiana Department of Commerce <i>Additional Proposed Testing for: Commercialization of Germanium Extraction from Indiana Coal Combustion By-Products</i> May 1, 2003 – April 30, 2004	US\$ 26,181

⁴ Industrial Partner, United States

Purdue Research Foundation <i>International Travel Grant (Japan)</i> 2003	US\$ 976
Rinne Stiftung Freiburg ⁵ <i>A Total 10 International Travel Grants</i> June 2004 – December 2014	EUR 26,320 ⁶
Wissenschaftliche Gesellschaft Freiburg ⁷ <i>International Travel Grant (USA)</i> November 1, 2004 – November 30, 2004	EUR 1,000
SYNTHESSYS – European Commission / Natural History Museum, London <i>Partitioning of Beryllium and Other Trace Elements in Tourmaline-Rich Schists</i> January 13, 2005 – January 28, 2005	GBP 5,000 ⁸
Wissenschaftliche Gesellschaft Freiburg <i>International Travel Grant (USA)</i> February 1, 2006 – March 31, 2006	EUR 1,070
Wissenschaftliche Gesellschaft Freiburg <i>Purchase of New Laboratory Equipment</i> February 1, 2006 – April 30, 2006	EUR 1,500
Deutsche Forschungsgemeinschaft ⁹ <i>Mineralogical Sinks for Antimony in Highly Contaminated Soils</i> October 1, 2007 – November 30, 2009	EUR 74,622
Wissenschaftliche Gesellschaft Freiburg <i>International Travel Grant (Vietnam)</i> December 1, 2009 – December 31, 2009	EUR 1,400
University of Freiburg Research Foundation <i>Particle Toxicology</i> January 1, 2010 – September 30, 2012	EUR 29,000
Wissenschaftliche Gesellschaft Freiburg <i>International Travel Grant (Vietnam)</i> September 1, 2010 – September 30, 2010	EUR 1,250
CRENOX GmbH ¹⁰ <i>TiO₂ Pigment Production Processes</i> April 1, 2012 – June 30, 2013	EUR 7,876
Wissenschaftliche Gesellschaft Freiburg <i>International Travel Grant (Canada)</i> June 1, 2012 – June 30, 2012	EUR 1,100

⁵ Private Research Foundation in Freiburg, Germany

⁶ EUR = Euros

⁷ Private Research Foundation in Freiburg, Germany

⁸ GBP = British Pounds

⁹ German National Science Foundation

¹⁰ Industrial Partner, Germany

European Union INTERREG IV Programme <i>BIOCOMBUST: Health Impacts of Energy Production Through Biomass Combustion</i> January 1, 2013 – May 31, 2015	EUR 2,095,414
SVB Schlacke-Verwertung Breisgau GmbH ¹¹ <i>Leaching Studies on MSWI Slags</i> February 1, 2013 – September 30, 2014	EUR 5,500
Sachtleben GmbH ¹² <i>Phase Separation During TiO₂ Pigment Production</i> January 1, 2014 – June 30, 2014	EUR 7,500
School of Arts and Sciences / Penn Sustainability Office, University of Pennsylvania <i>Frontiers in Energy (EnerFront) Faculty Working Group</i> March 1, 2016 – February 28, 2017	US\$ 14,240
Kleinman Center for Energy Policy, University of Pennsylvania <i>Kleinman Visiting Scholars Program</i> October 1, 2016 – October 31, 2016	US\$ 9,000
School of Arts and Sciences, University of Pennsylvania <i>Reducing Lead Exposure: Testing a Nationally Replicable University–Municipal–Community Partnership</i> March 1, 2017 – June 30, 2018	US\$ 86,500
National Institute of Environmental Health Sciences <i>Asbestos Fate, Exposure, Remediation, and Adverse Health Effects, Project 1: Remediation of Asbestos Particles</i> (Co-PI; PI: Ian Blair, University of Pennsylvania) April 1, 2017 – March 31, 2018	US\$ 88,841
National Institute of Environmental Health Sciences <i>Center of Excellence in Environmental Toxicology Pilot Grant: Chemosynthetic Transformations of Asbestos Minerals</i> (Co-PI; PI: Trevor Penning, University of Pennsylvania) April 1, 2017 – March 31, 2018	US\$ 48,909
University of Pennsylvania Research Foundation <i>The Energy-Water-Food Nexus – A Grand Challenge of our Time</i> April 1, 2017 – March 31, 2018	US\$ 9,565
Belgian National Science Foundation <i>Collaborative Research: Unravelling Particle Chemistry in Dronning Maud Land: From Atmosphere to Surface Snow</i> (Partner; PI: Andy Delcloo, Royal Meteorological Institute, Belgium) September 1, 2017 – August 31, 2021	EUR 599,018
School of Arts and Sciences, University of Pennsylvania <i>Fels Policy Research Initiative: Lead and Urban Development</i> January 1, 2018 – December 31, 2018	US\$ 10,000

¹¹ Industrial Partner, Germany

¹² Industrial Partner, Germany

National Institute of Environmental Health Sciences (Extension) <i>Asbestos Fate, Exposure, Remediation, and Adverse Health Effects, Project 1: Remediation of Asbestos Particles</i> (Co-PI; PI: Ian Blair, University of Pennsylvania) May 1, 2018 – March 31, 2019	US\$ 156,559
University of Pennsylvania Research Foundation <i>Environmental Justice and Health Disparities in the U.S.</i> March 1, 2019 – February 28, 2020	US\$ 12,000

Fellowships / Special Research Awards

Schweizerischer Nationalfonds, Advanced Scientist Award <i>Petrologic and Stable Isotopic Investigations of Tourmaline-Rich Metapelites from Campolungo (Ticino, Central Alps)</i> January 1, 1994 – December 31, 1994	CHF 60,400
Schweizerischer Nationalfonds, PROFIL Award <i>Regional Distribution and Metamorphism of Tourmaline-Rich Rocks in the Lepontine Alps</i> September 1, 1995 – December 31, 1996	CHF 402,682
Freiwillige Akademische Gesellschaft Basel ¹³ <i>Grant for Color Plates in Book on REE Minerals</i> 1996	CHF 750
Purdue Libraries <i>Library Scholars Grant</i> 1997	US\$ 300
Carl Zeiss AG ¹⁴ <i>Acquisition of Cover Picture for Elements 6/4 (2010)</i> August 2010	EUR 500

¹³ Private Research Foundation in Basel, Switzerland

¹⁴ Industrial Partner, Germany

Invited Seminars and Invited Lectures

- 1) **Le Mans (France):** *French-American Workshop on Plastic Pollution*; Dec. 12, 2019
- 2) **Paris (France):** *Sénat/Assemblée Nationale*; Office parlementaire d'évaluation des choix scientifiques et technologiques; Dec. 11, 2019
- 3) **Philadelphia (USA):** *University of Pennsylvania*; Singh Center for Nanotechnology, 2019 Annual User Meeting; Oct. 28, 2019
- 4) **Mulhouse (France):** *Université de Haute-Alsace*; École doctorale; June 7, 2019
- 5) **University Park, PA (USA):** *Penn State University*; Department of Geosciences; Feb. 27, 2018
- 6) **Bratislava (Slovakia):** *Mineralogical Society of Slovakia*; Dec. 15, 2017
- 7) **New Brunswick, NJ (USA):** *Rutgers University*; Department of Geology and Environmental Earth Science; Mar. 29, 2017
- 8) **Oxford, OH (USA):** *Miami University*; Department of Geology and Environmental Earth Science; Dec. 2, 2016
- 9) **Bryn Mawr, PA (USA):** *Philadelphia Geological Society*; Sept. 27, 2015
- 10) **Philadelphia (USA):** *University of Pennsylvania*; Penn Superfund Research Program Center, Aug. 27, 2015
- 11) **Philadelphia (USA):** *University of Pennsylvania*; Center of Excellence in Environmental Toxicology); May 22, 2015
- 12) **Philadelphia (USA):** *University of Pennsylvania*; Vagelos Integrated Program in Energy Research; Mar. 31, 2015
- 13) **Philadelphia (USA):** *University of Pennsylvania*; Penn Superfund Research Program Center; Mar. 26, 2015
- 14) **Berlin (Germany):** *Deutscher Bundestag* (German Parliament); Parliamentary Commission for the disposal of high-level nuclear waste; Dec. 5, 2014
- 15) **Freiburg (Germany):** *University College Freiburg*; Studium Generale; Dec. 3, 2013
- 16) **Brussels (Belgium):** *Université Libre de Bruxelles*; Département des Sciences de la Terre et de l'Environnement; June 5, 2013
- 17) **Philadelphia, PA (USA):** *University of Pennsylvania*; Department of Earth and Environmental Science; Feb. 1, 2013
- 18) **Lille (France):** *Université de Lille Nord de France*; École Doctorale Sciences de la Matière, du Rayonnement et de l'Environnement; Nov. 16, 2012
- 19) **Dunkerque (France):** *Université du Littoral Côte d'Opale*; Laboratoire de Physico-Chimie de l'Atmosphère; Nov. 15, 2012
- 20) **Paris (France):** *École Normale Supérieure*; Département des Géosciences; Sept. 25, 2012 (http://savoirsenmultimedia.ens.fr/uploads/videos/diffusion/2012_09_25_giere.mp4)
- 21) **Bratislava (Slovakia):** *Mineralogical Society of Slovakia*; Apr. 5, 2012
- 22) **Austin, TX (USA):** *University of Texas at Austin*; Jackson School of Geosciences; Mar. 23, 2012
- 23) **Santa Cruz, CA (USA):** *University of California Santa Cruz*; Earth and Planetary Sciences Department; Mar. 8, 2011
- 24) **West Lafayette, IN (USA):** *Purdue University*; Department of Earth and Atmospheric Sciences; Mar. 3, 2011
- 25) **Hanoi (Viet Nam):** *Viet Nam Academy of Science and Technology*; Institute of Materials Science; Sept. 21, 2010
- 26) **Shanghai (China):** *DAAD Conference "Environmental Management"*; May 21, 2010
- 27) **Shanghai (China):** *DAAD Conference "Environmental Management"*; May 22, 2010
- 28) **Indianapolis, IN (USA):** *Indiana University*; Department of Earth Sciences; Feb. 15, 2010
- 29) **Innsbruck (Austria):** *Universität Innsbruck, ÖMG Lecture Tour*; May 7, 2009
- 30) **Leoben (Austria):** *Montanuniversität Leoben, ÖMG Lecture Tour*; May 5, 2009
- 31) **Vienna (Austria):** *Universität Wien, ÖMG Lecture Tour*; May 4, 2009

- 32) **Yaoundé (Cameroon):** DAAD Conference "Environmental Management"; Nov. 19, 2008
- 33) **Yaoundé (Cameroon):** DAD Conference "Environmental Management"; Nov. 17, 2008
- 34) **Zürich (Switzerland):** Zürcherische Arbeitsgemeinschaft zur Erforschung und Bekämpfung der Staublungen in der Schweiz (silag, ETH Zurich); May 29, 2008
- 35) **Washington, D.C. (USA):** Carnegie Institution for Science; Department of Terrestrial Magnetism; Feb. 28, 2008
- 36) **Washington, D.C. (USA):** Geological Society of Washington; Feb. 27, 2008
- 37) **Reston, VA (USA):** U.S. Geological Survey; Feb. 19, 2008
- 38) **Zürich (Switzerland):** Geologische Gesellschaft Zürich; Nov. 12, 2007
- 39) **Hanoi (Viet Nam):** Viet Nam Academy of Science and Technology; Mar. 9, 2007
- 40) **Potsdam (Germany):** GeoForschungsZentrum Potsdam; Jan. 30, 2007
- 41) **Tübingen (Germany):** Eberhard-Karls-Universität Tübingen; Institut für Geowissenschaften; Jan. 25, 2007
- 42) **West Lafayette, IN (USA):** Purdue University; Department of Earth and Atmospheric Sciences; Mar. 1, 2006
- 43) **Bonn (Germany):** Universität Bonn; Geologisches Institut; Nov. 17, 2005
- 44) **Zürich (Switzerland):** ETH Zürich; Departement Erdwissenschaften; Oct. 31, 2005
- 45) **Basel (Switzerland):** Universität Basel; Festkolloquium, Mineralogisch-Petrographisches Institut; Mar. 19, 2005
- 46) **London (UK):** The Natural History Museum; Department of Mineralogy; Jan. 28, 2005
- 47) **Copenhagen (Denmark):** University of Copenhagen; Mineralogical Society of America Short Course; June 4, 2004
- 48) **Kalamazoo (MI, USA):** Western Michigan University; Geosciences Department; Oct. 27, 2003
- 49) **Sydney (Australia):** Australian Nuclear Science & Technology Organisation; Materials Division; Mar. 19, 2003
- 50) **Freiburg (Germany):** Albert-Ludwigs-Universität; Institut für Mineralogie, Petrologie und Geochemie; Dec. 2, 2002
- 51) **Baltimore, MD (USA):** Johns Hopkins University; Department of Earth and Planetary; Nov. 18, 2002
- 52) **Freiburg (Germany):** Albert-Ludwigs-Universität; EUCOR Guest Lecture; May 6, 2002
- 53) **Indianapolis, IN (USA):** Indiana University - Purdue University Indianapolis; Department of Geology; Mar. 22, 2002
- 54) **Sydney (Australia):** Australian Nuclear Science & Technology Organisation; Materials Division; Mar. 6, 2002
- 55) **Basel (Switzerland):** Universität Basel; Departement Erdwissenschaften; Feb. 5, 2002
- 56) **West Lafayette, IN (USA):** Purdue University; School of Civil Engineering; Nov. 14, 2001
- 57) **Lausanne (Switzerland):** Université de Lausanne; Département des Sciences de la Terre; Apr. 2, 2001
- 58) **Bern (Switzerland):** Universität Bern; Mineralogisch-Petrographisches Institut; Dec. 13, 2000
- 59) **Zürich (Switzerland):** ETH Zürich; Institut für Mineralogie und Petrographie; June 3, 1999
- 60) **West Lafayette, IN (USA):** Purdue University; Department of Earth and Atmospheric Sciences; Sept. 2, 1999
- 61) **Notre Dame, IN (USA):** University of Notre Dame; Department of Civil Engineering and Geological Sciences; Feb. 12, 1999
- 62) **Tübingen (Germany):** Eberhard-Karls-Universität Tübingen; Geowissenschaftliche Fakultät; Jan. 12, 1999
- 63) **Potsdam (Germany):** Universität Potsdam; Institut für Geowissenschaften; Jan. 11, 1999
- 64) **Argonne, IL (USA):** Argonne National Laboratory; Chemical Technology Division; Feb. 25, 1998
- 65) **Beloit, WI (USA):** Beloit College; Department of Geology; Feb. 24, 1998
- 66) **Melbourne (Australia):** Monash University; Department of Earth Sciences; June 13, 1997

- 67) **Canberra (Australia):** *Australian National University*; Department of Geology; June 10, 1997
- 68) **Washington, D.C. (USA):** *Carnegie Institution for Science*; Geophysical Laboratory; Nov. 12, 1996
- 69) **Washington, D.C. (USA):** *Geological Society of Washington*; Sept. 25, 1996
- 70) **Rockville, MD (USA):** *U.S. Nuclear Regulatory Commission*; May 15, 1996
- 71) **West Lafayette, IN (USA):** *Purdue University*; Department of Earth and Atmospheric Sciences; Mar. 14, 1996
- 72) **Washington, D.C. (USA):** *Carnegie Institution for Science*; Geophysical Laboratory; Dec. 12, 1994
- 73) **Washington, D.C. (USA):** *Geological Society of Washington*; Nov. 30, 1994
- 74) **Washington, D.C. (USA):** *Carnegie Institution for Science*; Geophysical Laboratory; May 2, 1994
- 75) **Karlsruhe (Germany):** *Universität Karlsruhe*; Departement für Petrologie und Geochemie; Feb. 21, 1994
- 76) **Sydney (Australia):** *Australian Nuclear Science & Technology Organisation*; Materials Division; Mar. 4, 1993
- 77) **Beijing (China):** *China University of Geosciences*; Department of Geochemistry; Sept. 11, 1992
- 78) **Boston, MA (USA):** *Harvard University*; Petrology/Geochemistry Seminar; July 20, 1992
- 79) **Zürich (Switzerland):** *Universität Zürich*; Departement für Anorganische Chemie; Feb. 1, 1990
- 80) **Bern (Switzerland):** *Universität Bern*; European Association for Geochemistry on fluid/rock interaction; Oct. 1, 1989
- 81) **Ottawa (Canada):** *Ottawa-Carleton Geoscience Center*; Jan. 22, 1987

Invited Presentations at Scientific Conferences

- 1) **Montréal (Canada):** Invited Talk, Annual Meeting of the Geological Society of America; 2020
- 2) **Honolulu (USA):** Keynote Lecture, 30th Goldschmidt Conference; 2020
- 3) **Philadelphia (USA):** Invited talk, American Chemical Society, Spring Meeting; 2020
- 4) **Casale Monferrato (Italy):** *Plenary Lecture*, 2nd European Mineralogical Union School on Mineral Fibers; 2019
- 5) **Fayetteville, AR (USA):** *Plenary Flash Talk*, NCSE Summer meeting; 2019
- 6) **Bonn (Germany):** *Keynote Lecture*, GeoBonn; 2018
- 7) **Banská Štiavnica (Slovakia):** *Plenary Lecture*, 5th Central European Mineralogical Conference; 2018
- 8) **Brussels (Belgium):** *Plenary Lecture*, SEGH Meeting; 2016
- 9) **Castellaneta Marina (Italy):** *Plenary Lecture*, Dust 2016
- 10) **Leeds (England):** *Keynote Lecture*, Thermodynamics Workshop on Rare Earth Elements; University of Leeds, 2016
- 11) **Zürich (Switzerland):** *Keynote Lecture*, 19th ETH Conference on Combustion-Generated Nanoparticles; 2015
- 12) **Strasbourg (France):** *Keynote Lecture*, BIOCOMBUST Final Conference; 2015
- 13) **Freiburg (Germany):** *Keynote Lecture*, BIOCOMBUST Conference; 2014
- 14) **Leoben (Austria):** Invited Talk, 11th Regional Workshop, European Microbeam Analysis Society; 2014
- 15) **Strasbourg (France):** Invited Talk, 1^{ère} Conférence Trinationale « Utilisation durable de la biomasse dans le Rhin supérieur »; 2013
- 16) **Kehl (Germany):** Invited Talk, Réunion du Groupe Partenaires de TRION; 2013
- 17) **Basel (Switzerland):** Invited Talk, Conférence Franco-Germano-Suisse du Rhin Supérieur (Groupe d'experts Qualité de l'air); 2013
- 18) **Freiburg (Germany):** *Keynote Lecture*, 10th LERU Bright Conference; 2013
- 19) **Montréal (Canada):** *Keynote Lecture*, 22nd Goldschmidt Conference; 2012
- 20) **San Diego (USA):** Invited Talk, Spring Meeting of the American Chemical Society; 2012

- 21) **Halong City (Viet Nam):** Invited Talk, International Mining Conference “Advanced Mining for Sustainable Development”; 2010
- 22) **Freiburg (Germany):** *Keynote Lecture*, Fall Meeting of the German Society for Pulmonology and Respiratory Medicine; 2008
- 23) **Singapore:** *Keynote Lecture*, 3rd International Conference on Materials for Advanced Technologies (ICMAT 2005); 2005
- 24) **Vienna (Austria):** *Keynote Lecture*, General Assembly of the European Geosciences Union; 2005
- 25) **Roanoke, VA (USA):** Invited Talk, 11th Goldschmidt Conference; 2001
- 26) **Boston, MA (USA):** Invited Talk, 25th International Symposium on the Scientific Basis for Nuclear Waste Management, MRS’01; 2001
- 27) **Stockholm (Sweden):** *Keynote Lecture*, CER200, Annual Meeting of the Swedish Mineralogical Society; 2004
- 28) **Sydney (Australia):** Invited Talk, 24th International Symposium on the Scientific Basis for Nuclear Waste Management, MRS2000; 2000
- 29) **Washington, DC (USA):** Invited Talk, Spring Meeting of the American Geophysical Union; 2000
- 30) **London (England):** Invited Talk, International Conference on Rare Earth Minerals; 1993
- 31) **Stainz (Austria):** Invited Talk, MinPet 92; Tagung der Österreichischen Mineralogischen Gesellschaft; 1992
- 32) **Salzburg (Austria):** Invited Talk, Gemeinschaftstagung der Deutschen und der Österreichischen Mineralogischen Gesellschaften; 1991
- 33) **Vienna (Austria):** Invited Talk, International Geological Correlation Project No. 291; 1989

Contributed Presentations at Scientific Conferences

- 1) **Montréal (Canada):** Annual Meeting of the Geological Society of America; 2020
- 2) **Bari (Italy):** GeoHealth 2020; 2020
- 3) **Honolulu (USA):** 30th Goldschmidt Conference; 2020
- 4) **Washington, D.C. (USA):** Annual Conference of the National Council for Science and the Environment; 2020
- 5) **Sacramento, CA (USA):** Annual Superfund Research Program Meeting; 2018
- 6) **Indianapolis, IN (USA):** Annual Meeting of the Geological Society of America; 2018
- 7) **Boston, MA (USA):** 28th Goldschmidt Conference; 2018
- 8) **Bari (Italy):** Dust 2018
- 9) **Philadelphia, PA (USA):** Annual Superfund Research Program Meeting; 2017
- 10) **Seattle, WA (USA):** Annual Meeting of the Geological Society of America; 2017
- 11) **San Francisco, CA (USA):** Annual Meeting of the American Geophysical Union; 2016
- 12) **Denver, CO (USA):** Annual Meeting of the Geological Society of America; 2016
- 13) **Rimini (Italy):** emc2016
- 14) **Sacramento, CA (USA):** 24th Goldschmidt Conference; 2014
- 15) **Castellaneta Marina (Italy):** DUST 2014
- 16) **Tübingen (Germany):** Annual Meeting of the German Mineralogical Society; 2013
- 17) **Firenze (Italy):** 23rd Goldschmidt Conference; 2013
- 18) **Prague (Czech Republic):** 21st Goldschmidt Conference; 2011
- 19) **Budapest (Hungary):** 20th General Meeting of the International Mineralogical Association; 2010
- 20) **Knoxville, TN (USA):** 20th Goldschmidt Conference; 2010
- 21) **Portland, OR (USA):** Annual Meeting of the Geological Society of America; 2009
- 22) **Davos (Switzerland):** 19th Goldschmidt Conference; 2009
- 23) **Berlin (Germany):** Annual Meeting of the German Mineralogical Society; 2008
- 24) **Vancouver (Canada):** 18th Goldschmidt Conference; 2008

- 25) **Köln (Germany):** 17th Goldschmidt Conference; 2007
- 26) **Cambridge (UK):** Frontiers in Mineral Sciences; 2007
- 27) **San Francisco, CA (USA):** Fall Meeting of the American Geophysical Union; 2006
- 28) **Boston, MA (USA):** 30th International Symposium on the Scientific Basis for Nuclear Waste Management; 2006
- 29) **Hannover (Germany):** Annual Meeting of the German Mineralogical Society; 2006
- 30) **Melbourne (Australia):** 16th Goldschmidt Conference; 2006
- 31) **Aachen (Germany):** Annual Meeting of the German Mineralogical Society; 2005
- 32) **Lexington, KY (USA):** World of Coal Ash Meeting; 2005
- 33) **Denver, CO (USA):** Annual Meeting of the Geological Society of America; 2004
- 34) **Strasbourg (France):** Joint Earth Sciences Meeting; 2004
- 35) **Florence (Italy):** 32nd International Geological Congress; 2004
- 36) **Copenhagen (Denmark):** 14th Goldschmidt Conference; 2004
- 37) **Seattle, WA (USA):** Annual Meeting of the Geological Society of America; 2003
- 38) **Bochum (Germany):** Urban2003; 2003
- 39) **Kurashiki (Japan):** 13th Goldschmidt Conference; 2003
- 40) **Boston, MA (USA):** 26th International Symposium on the Scientific Basis for Nuclear Waste Management; 2002
- 41) **Denver, CO (USA):** Annual Meeting of the Geological Society of America; 2002
- 42) **Davos (Switzerland):** 12th Goldschmidt Conference; 2002
- 43) **Boston, MA (USA):** Annual Meeting of the Geological Society of America; 2001
- 44) **Strasbourg (France):** EUG 11; Biennial Meeting of the European Union of Geosciences; 2001
- 45) **Boston, MA (USA):** 23rd International Symposium on the Scientific Basis for Nuclear Waste Management; 1999
- 46) **Denver, CO (USA):** Annual Meeting of the Geological Society of America; 1999
- 47) **Strasbourg (France):** EUG 10; Biennial Meeting of the European Union of Geosciences; 1999
- 48) **Boston, MA (USA):** 22nd International Symposium on the Scientific Basis for Nuclear Waste Management; 1998
- 49) **Toronto (Canada):** Annual Meeting of the Geological Society of America; 1998
- 50) **Toronto (Canada):** 17th General Meeting of the International Mineralogical Association; 1998
- 51) **Sendai (Japan):** MIGRATION '97; 6th International Conference on the Chemistry and Migration of Actinides and Fission Products in the Geosphere; 1997
- 52) **Davos (Switzerland):** 21st International Symposium on the Scientific Basis for Nuclear Waste Management; 1997
- 53) **Strasbourg (France):** EUG 9; Biennial Meeting of the European Union of Geosciences; 1997
- 54) **San Francisco, CA (USA):** Fall Meeting of the American Geophysical Union; 1996
- 55) **Denver, CO (USA):** Annual Meeting of the Geological Society of America; 1996
- 56) **Baltimore, MD (USA):** Spring Meeting of the American Geophysical Union; 1996
- 57) **New Orleans, LA (USA):** Annual Meeting of the Geological Society of America; 1995
- 58) **Saint Malo (France):** MIGRATION '95; 5th International Conference on the Chemistry and Migration of Actinides and Fission Products in the Geosphere; 1995
- 59) **Seattle, WA (USA):** Annual Meeting of the Geological Society of America; 1994
- 60) **Pisa (Italy):** 16th General Meeting of the International Mineralogical Association; 1994
- 61) **Baltimore, MD (USA):** Spring Meeting of the American Geophysical Union; 1994
- 62) **Charleston, SC (USA):** MIGRATION '93; 4th International Conference on the Chemistry and Migration of Actinides and Fission Products in the Geosphere; 1993
- 63) **Strasbourg (France):** Biennial Meeting of the European Union of Geosciences; 1993
- 64) **Kyoto (Japan):** 29th International Geological Congress; 1992

- 65) **Reston, VA (USA):** 11th Goldschmidt Conference; 1992
- 66) **Jerez de la Frontera (Spain):** MIGRATION '91; 3rd International Conference on the Chemistry and Migration of Actinides and Fission Products in the Geosphere; 1991
- 67) **Toronto (Canada):** Joint Meeting of the Geological Association of Canada, the Mineralogical Association of Canada, and the Society of Economic Geologists; 1991
- 68) **Strasbourg (France):** EUG VI; Biennial Meeting of the European Union of Geosciences; 1991
- 69) **Zürich (Switzerland):** International Geological Correlation Project No. 291; 1991
- 70) **Vancouver (Canada):** Annual Meeting of the Geological Association of Canada and the Mineralogical Association of Canada, "*The Greenwood Symposium*"; 1990
- 71) **Paris (France):** International Conference of Geochemistry and Cosmochemistry, European Association for Geochemistry; 1988
- 72) **Strasbourg (France):** Biennial Meeting of the European Union of Geosciences; 1987

Professional Services

Journal Editorship

- Member, Advisory Board, *Geologica Carpathica* (since 2020)
- Guest Editor of: “Chromitites, platinum-group elements, and ore minerals; Special issue dedicated to Zdeněk Johan (1935-2016)”. *European Journal of Mineralogy* 29, 539-776 (2017)
- Guest Editor for Special Issue: “GEOLIFE – Geomaterials for environment, technology and human activities”. *Mineralogical Magazine* 78, 1071-1239 (2014)
- **Chief Editor**, *European Journal of Mineralogy* (since 2012)
- Guest Editor of August 2010 issue: “Atmospheric Particles”. *Elements* 6
- **Editor**, *Journal of Petrology* (since 2004)
- Guest Editor for Special Issue: “Recent studies of natural immobilization processes as an aid to understanding the likely long-term evolution of deep geological radioactive waste repositories”. *Geochemistry: Exploration, Environment, Analysis* 6, 3-67 (2006)
- **Chief Editor**, *Schweizerische Mineralogische und Petrographische Mitteilungen* (2001 – 2006)
- Guest Editor for Special Issue: “Transition from Penninic to Austroalpine Units in the Bergell Alps”. *Schweizerische Mineralogische und Petrographische Mitteilungen* 76, 325-564 (1996)

National and International Committees

- Member, Scientific Committee, “International Conference on Atmospheric Dust”, DUST 2021, Bari, Italy; 2021
- Member, Leaders’ Alliance Executive Committee, Global Council for Science and the Environment; since 2021
- Member, Council of Environmental Deans and Directors, Global Council for Science and the Environment; since 2021
- Member, International Science Advisory, Global Council for Science and the Environment; since 2021
- Member, Scientific Committee, “International Meeting of Geohealth Scientists”, GEOHEALTH 2020, Bari, Italy; Sept. 2020
- Member, External Review Committee, PhD program, University of Massachusetts Lowell; June-July 2020
- Member, Scientific Committee, “2nd European Mineralogical Union School on Mineral Fibres”, Casale Monferrato, Alessandria, Italy; Sept. 2019
- Division Officer, Geology and Health Scientific Division, Geological Society of America; since 2019
- Member, International Reviewer Board, Slovenian Research Agency, Ljubljana, Slovenia; since 2019
- Member, International Science Advisory, National Council for Science and the Environment; 2019 – 2020
- Member, Leaders’ Alliance Executive Committee, National Council for Science and the Environment; 2019 – 2020
- Member, Scientific Committee, “International Conference on Atmospheric Dust”, DUST 2018, Bari, Italy; 2018
- Member, International Advisory Board, Earth Science Institute, Slovak Academy of Sciences, Bratislava, Slovakia; 2018 – 2022
- Member, Council of Environmental Deans and Directors, National Council for Science and the Environment; 2017 – 2020
- Member, Scientific Committee, “International Conference on Atmospheric Dust”, DUST 2016, Castellana Marina, Italy; 2016
- Member, Committee on Science and the Arts, The Franklin Institute, Philadelphia, USA; 2015 – 2020
- Chair, Theme 3: “Atmospheric and Aerosol Geochemistry”, 25th Goldschmidt Conference, Prague, Czech Republic; 2015
- Campus Representative, Geological Society of America, University of Pennsylvania; since 2015

- Member, Scientific Committee, “International Conference on Atmospheric Dust”, DUST 2014, Castellaneta Marina, Italy; 2014
- Member, Swiss Pneumoconiosis Research Group (SILAG), ETH Zürich, Switzerland; since 2013
- Member, Steering Committee, Deutsche Mineralogische Gesellschaft, Germany; since 2012
- Member, Nominating Committee for Fellows, Mineralogical Society of America, USA; 2011 – 2013
- Member, Search Committee for the Professorship “Risques et Environnement”, Université de Haute-Alsace, Mulhouse, France; 2009
- Campus Representative, Geological Society of America, Albert-Ludwigs-Universität Freiburg, Germany; 2009 – 2014
- Member, Search Committee for the Professorship “Combustion”, Université de Haute-Alsace, Mulhouse, France; 2010
- Member, Subcommittee for the Pyrochlore Group, International Mineralogical Association, Commission on New Minerals and Mineral Names; 2008 – 2010
- Book Advisor, Geological Society, London, UK; 2005 – 2011
- Member, Subcommittee for the Epidote Group, International Mineralogical Association, Commission on New Minerals and Mineral Names; 2005 – 2006

External Thesis Examiner

- Habilitation à Diriger les Recherches, Université de Haute-Alsace, Mulhouse, France; 2019
- Ph.D. Thesis, Nanyang Technological University, Singapore; 2015
- Habilitation Thesis, Universität Basel, Switzerland; 2013
- Ph.D. Thesis, Université du Littoral Côte d’Opale, Dunkerque, France; 2012
- DrSc. Thesis, Slovak Academy of Sciences, Bratislava, Slovakia; 2012
- Ph.D. Thesis, Cambridge University, Cambridge, United Kingdom; 2010
- ISTC Project #3976, Alexandrov Research Institute of Technology, Saint-Petersburg State University, Russia; 2009 – 2012
- DrSc. Thesis, Russian Academy of Sciences, Moscow, Russia; 2009
- Habilitation Thesis, Technische Universität Berlin, Germany; 2008
- Ph.D. Thesis, Université Louis Pasteur, Strasbourg, France; 2007
- Ph.D. Thesis, Université de Fribourg, Switzerland; 2007

Administrative and Academic Duties at the University of Pennsylvania, USA

- Member, Steering Committee, Penn Global (Africa); since 2021
- Faculty Advisor, Global Knowledge Lab, The Lauder Institute; since 2020
- Chair, Department of Earth and Environmental Science; 2015 – 2019
- Host, University of Pennsylvania Falling Walls Lab; 2019
- Member, Faculty Advisory Board for the Water Center at Penn; since 2019
- Host, University of Pennsylvania Falling Walls Lab; 2018
- Member, Advisory Board for the Teachers Institute of Philadelphia; since 2017
- Member, Provost’s Committee on Sustainability; since 2017
- Member, Penn Fulbright Faculty Committee; since 2017
- Director, Exposure Science Affinity Group, Center of Excellence in Environmental Toxicology; 2017 – 2018
- Co-Director, Penn Superfund Research Training Program; 2016 – 2018
- Member, Executive Committee, Penn Superfund Research Program; 2016 – 2020
- Member, Internal Advisory Committee, Center of Excellence in Environmental Toxicology; since 2016
- Search Committee, “Energy Cluster”, University of Pennsylvania; 2015 – 2016
- Member, Faculty Advisory Committee, Wharton IGEL; 2015 – 2019

- Member, Dean's Strategic Implementation Committee for Energy, Sustainability and Environment; since 2015
- Member, Curriculum Committee, Masters of Science in Applied Geoscience and Masters of Environmental Studies; since 2015
- Member, Advisory Board, Masters of Science in Applied Geoscience and Masters of Environmental Studies; since 2015

Administrative and Academic Duties at the Albert-Ludwigs-Universität Freiburg, Germany

- Member, Search Committee for the Professorship “Science and Technology Studies”, University College Freiburg; 2014
- Member, Search Committee for the Professorship “Mineralogy and Petrology”; 2013
- Member, Search Committee for the Professorship “Near-Surface Geophysics”; 2013
- Member, Search Committee for the Professorship “Sedimentology”; 2013
- Board Member, Bachelor program “Liberal Arts and Sciences”, University College Freiburg; 2012 – 2014
- Search Committee for the Professorship “Analytical Chemistry”; 2012
- Vice-Dean, Faculty of Chemistry, Pharmacology and Geosciences; 2011 –2012
- Member, Faculty Steering Committee, Faculty of Chemistry, Pharmacology and Geoscience; 2011 – 2012
- Member, Search Committee for the Professorship “Mass Movements”; 2011
- Member, Search Committee for the Professorship “Soil Ecology”; 2010 – 2011
- Member, Search Committee for the Professorship “General and Structural Geology”; 2009
- Alumni Representative, Faculty of Chemistry, Pharmacology and Geosciences; 2009 – 2012
- Member, Faculty Steering Committee, Faculty of Chemistry, Pharmacology and Geoscience; 2008 – 2010
- Member, Admission Committee for Geoscience M.Sc. Curricula; 2008 – 2014
- Dean of Student Affairs, Faculty of Chemistry, Pharmacology and Geosciences; 2006 – 2010
- Member, Habilitation Committee, Faculty of Chemistry, Pharmacology and Geoscience; 2005 – 2012
- Member, Graduate Committee, Faculty of Chemistry, Pharmacology and Geoscience; 2005 – 2012

Administrative and Academic Duties at Purdue University, USA

- Member, Graduate Committee, Department of Earth and Atmospheric Sciences; 2000 – 2004
- Chair, Grade Appeals Committee, Faculty of Science; 2000 – 2003
- Member, Undergraduate Committee, Department of Earth and Atmospheric Sciences; 1999 – 2002

Session Convener at International Conferences

- Convener of Symposium “*T148. Head, Shoulders, Knees, and Toes: Delineating Biogeochemical and Metabolic Pathways Linking Environmental Exposures and Human Health*”, Annual Meeting of the Geological Society of America, Portland, OR; Oct. 2021
- Invited Convener of Symposium “*Lead pollution, exposure, health risks, and mitigation strategies*”, Annual Meeting of the Geological Society of America, Montréal, Canada; Oct. 2020
- Invited Convener of Symposium “*Micro- and Nanoparticle Populations in Environmental Health Studies*”, GeoHealth 2020, Bari, Italy; Sept. 2020
- Invited Convener of Symposium “*Lead Poisoning: Sources, Risk Assessment, and Public Policy*”, GeoHealth 2020, Bari, Italy; Sept. 2020
- Convener of Symposium “*Environmental Implications and Health Effects of Naturally Occurring and Engineered Micro-/Nanoparticles*”, 30th Goldschmidt Conference, Honolulu, HI, USA; June 2020
- Invited Convener of Symposium “*Reassessing Scientific and Social Determinants in Lowering Lead Risks*”, Annual Conference of the National Council for Science and the Environment, Washington, D.C., USA; Jan. 2020
- Invited Convener of Symposium “*Road Dust*”, DUST 2018, Bari, Italy; May 2018

- Convener of Symposium *“Innovative Techniques for reduction of PM2.5 emitted in Combustion Processes”*, DUST 2016, Castellaneta Marina, Italy; June 2016
- Convener of Symposium *“Health Impacts of Atmospheric Particles”*, 25th Goldschmidt Conference, Prague, Czech Republic; Aug. 2015
- Convener of Symposium *“Isotopic Tracing of Atmospheric Particles”*, 25th Goldschmidt Conference, Prague, Czech Republic; Aug. 2015
- Invited Convener of Symposium *“Dust from Industrial and Combustion Processes”*, DUST 2014, Castellaneta Marina, Italy; June 2014
- Invited Convener of Symposium *“Geolife”*, 23rd Goldschmidt Conference, Florence, Italy; Aug. 2013
- Invited Convener of Symposium *“Atmospheric Dust”*, 23rd Goldschmidt Conference, Florence, Italy; Aug. 2013
- Invited Convener of Symposium *“Medical and Environmental Mineralogy”*, European Mineralogical Conference, emc2012, Frankfurt, Germany; Sept. 2012
- Invited Convener of Symposium *“Natural or man-made mineral dust and its influence on humans, environment and climate”*, 9th Swiss Geoscience Meeting, Zürich, Switzerland; Nov. 2011
- Convener of Symposium *“Atmospheric Dust”*, 21st Goldschmidt Conference, Prague, Czech Republic; Aug. 2011
- Convener of Symposium *“Atmospheric Dust”*, 20th Goldschmidt Conference, Knoxville, TN, USA; June 2010
- Convener of Symposium *“Environmental mineralogy and geochemistry”*, 86th Annual Meeting of the Deutsche Mineralogische Gesellschaft, Berlin, Germany; Sept. 2008
- Convener of Symposium *“Natural and anthropogenic particulate matter in the atmosphere: mineralogy, isotope geochemistry, environment, health”*, 17th Goldschmidt Conference, Köln, Germany; Aug. 2007
- Convener of Session *“Environment: atmosphere, water, soils”*, Joint Earth Sciences Meeting, Strasbourg, France; Sept. 2004
- Convener of Session *“Mineral Engineering: from nature’s lab to technologic application”*, 32nd International Geological Congress, Florence, Italy; Aug. 2004
- Convener of Symposium *“Geochemical immobilization and long-term isolation of waste”*, 13th Goldschmidt Conference, Kurashiki, Japan; Sept. 2003
- Invited Convener of Session *“Ceramic waste forms and radiation effects”* at the Symposium on *“Scientific Basis for Nuclear Waste Management XXVI”*; Materials Research Society Fall Meeting, Boston, USA; Dec. 2002
- Invited Convener of Symposium *“New geochemical approaches to energy, waste and the environment”*, 12th Goldschmidt Conference, Davos, Switzerland; Aug. 2002
- Invited Convener of Symposium *“Recent advances in studies of the epidote group”*, 10th Biennial Meeting of the European Union of Geosciences, Strasbourg, France; Mar. 1999

Reviewer for Funding Agencies

- Australian Research Council
- British Research Council, United Kingdom
- Bundesministerium für Bildung und Forschung (BMBF), Germany
- Czech Science Foundation, Czech Republic
- Deutsche Forschungsgemeinschaft (DFG), Germany
- Fonds zur Förderung der wissenschaftlichen Forschung (FWF), Austria
- Humboldt Stiftung, Germany
- Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France
- Ministero dell’istruzione, dell’università e della ricerca, Italy
- Natural Sciences and Engineering Research Council of Canada
- Schweizerischer Nationalfonds, Switzerland

- Slovenian Research Agency, Slovenia
- United Nations Environment Programme: GEO for Cities Report
- U.S. Civilian Research and Development Foundation for the Independent States of the Former Soviet Union
- U.S. National Science Foundation (both research and equipment proposals), USA

Reviewer for Professional Journals

- American Mineralogist
- Applied Geochemistry
- Applied Radiation and Isotopes
- Atmospheric Environment
- Canadian Mineralogist
- Chemical Geology
- Chemical Research in Toxicology
- Chemosphere
- Contributions to Mineralogy and Petrology
- Environmental Science & Technology
- European Journal of Mineralogy
- Fuel
- Geochemical Journal
- Geochimica et Cosmochimica Acta
- Geologica Carpathica
- Journal of Environmental Management
- Journal of Petrology
- Lithos
- Mineralogical Magazine
- Mineralogy and Petrology
- Minerals
- Proceedings of the National Academy of Sciences of the United States of America
- Schweizerische Mineralogische und Petrographische Mitteilungen
- Science of the Total Environment
- Scientific Reports

Experience as Supervisor / Advisor

Post-Doctoral Fellows

University of Pennsylvania

- 1) Dr. Ruggero Vigliaturo; *Topic: Mineralogy of Asbestos. Period: Oct. 2017 – Sept. 2020 (supervisor). Current Position: Research Professor, Università di Torino*
- 2) Dr. Chiara Elmi; *Topic: Mineralogy. Period: Nov. 2015 – June 2017 (supervisor). Current Position: Assistant Professor, James Madison University*
- 3) Dr. Svetlana Milutinović; *Function: Research Program Manager. Period: Feb. 2015 – Dec. 2020 (supervisor). Current Position: Advisor and Research Analyst, Potsdam Institute for Climate Impact Research (PIK)*
- 4) Dr. Jiangzhi Chen; *Topic: Geophysics. Period: Jan. 2016 – Mar. 2017 (supervisor). Current Position: Chinese Academy of Sciences*

University of Freiburg

- 5) Dr. Charlotte Redler; *Topic*: Petrology. *Period*: Apr. 2013 – Dec. 2014 (supervisor). *Current Position*: Lecturer, Albert-Ludwigs-Universität Freiburg
- 6) Dr. Raul Martinez; *Topic*: Biogeochemistry. *Period*: Mar. 2011 – July 2013 (supervisor). *Current Position*: Lecturer, Albert-Ludwigs-Universität Freiburg
- 7) Dr. Nguyễn Thùy Dương; *Topic*: Clay mineralogy. *Funded by*: Viet Nam National University, Hanoi. *Period*: 2010 – 2012 (supervisor). *Current Position*: Lecturer, Viet Nam National University, Hanoi
- 8) Dr. Hoàng Thị Minh Thảo; *Topic*: UV absorption of clays. *Funded by*: Viet Nam National University, Hanoi. *Period*: 2009 – 2012 (supervisor). *Current Position*: Associate Professor and Vice Dean, Viet Nam National University, Hanoi

Ph.D. Students

University of Pennsylvania

- 1) Jaydee Edwards. *Topic*: Microplastics in the environment. *Funded by*: University of Pennsylvania. *Thesis started*: August 2020 (supervisor)
- 2) Jonas Toupal. *Topic*: Environmental pollution around Li-mining sites in the Czech Republic. *Funded by*: University of Pennsylvania. *Thesis started*: August 2019 (supervisor)
- 3) Michael O’Shea. *Topic*: Characterization and health impacts of road dust. *Funded by*: University of Pennsylvania. *Thesis started*: Aug. 2016 (supervisor). *Received 1st Prize in the Natural Sciences of the “2020 Ben Talk Competition”* (School of Arts and Sciences, University of Pennsylvania)

Montanuniversität Leoben, Austria

- 4) Philipp Sedlazeck. *Topic*: Contaminated site remediation by reduction and oxidation processes. *Funded by*: Industry projects (ChromSan, ZEROS) and Montanuniversität Leoben. *Thesis completed*: Nov. 2019 (supervisor). *Received the Hans Roth Umweltpreis* (Austrian Environmental Award). *Current Position*: Project engineer with CDM Smith in Bochum, Germany

University of Freiburg

- 5) Melanie Wenzel. *Topic*: Characterization of mineral particulate matter in human lung tissue. *Funded by*: Albert-Ludwigs-Universität Freiburg. *Thesis started*: Mar. 2013 (supervisor)
- 6) Christoph Maschowski. *Topic*: Characterization of biomass combustion products. *Funded by*: EU-INTERREG. *Thesis completed*: Jan. 2018 (supervisor)
- 7) Hoàng Thị Bích Hòa. *Topic*: Mineralogy of atmospheric particulate matter in the coal-mining district of Quảng Ninh Province, Viet Nam. *Funded by*: Ministry of Education and Training of Viet Nam. *Thesis completed*: Nov. 2017 (supervisor)
- 8) Ali Talib Arif. *Topic*: The interplay between biological systems and nanoparticles. *Funded by*: German Academic Exchange Service (DAAD) and Albert-Ludwigs-Universität Freiburg. *Thesis completed*: Nov. 2017 (supervisor). *Current Position*: Post-Doctoral Researcher at Uniklinikum Freiburg
- 9) Sascha Heilemann. *Topic*: Development of an air/cell interface system for lung-cell exposure experiments. *Funded by*: EU-INTERREG. *Thesis completed*: Nov. 2016 (supervisor). *Current Position*: Engineer at VITROCELL Systems (Waldkirch, Germany)
- 10) Hien-Dinh Thi Thu. *Topic*: Processing of Vietnamese lithium ores into Li carbonate and Li chloride. *Funded by*: German Academic Exchange Service (DAAD) and the Ministry of Education and Training of Viet Nam. *Thesis completed*: Nov. 2015 (supervisor). *Current Position*: Deputy Chief of Plan and Science & Technology Department National Institute of Mining-Metallurgy Science & Technology Hanoi, Vietnam
- 11) Zhaoxue Tian. *Topic*: Optical and chemical characterization of atmospheric particles. *Funded by*: Chinese Scholarship Council (CSC). *Visiting graduate student*: Sept. 2013 – Sept. 2014 (supervisor)
- 12) Marlies Bergheim. *Topic*: Characterization and toxicology of photo-transformation products of selected drugs in the aquatic environment. *Externally funded by*: Deutsche Bundesstiftung Umwelt (DBU). *Collaboration with*: University Clinic Freiburg. *Thesis completed*: Oct. 2012 (supervisor). *Current Position*: Assessor Environmental Safety, Henkel (Germany)

- 13) Đào Duy Anh. *Topic*: Vietnamese manganese ores and ore processing technology to produce high-quality EMD. *Externally funded by*: Ministry of Education and Training of Viet Nam and the Wissenschaftliche Gesellschaft Freiburg. *Thesis completed*: July 2009 (supervisor). *Current Position*: General Director of The National Institute of Mining – Metallurgy Science and Technology (VIMLUKI), Hanoi (Viet Nam)
- 14) Tobias Weisenberger. *Topic*: Zeolites in fissures of crystalline basement rocks. *Funded by*: Albert-Ludwigs-Universität Freiburg. *Thesis completed*: July 2009 (co-supervisor). *Current Position*: Research Associate, Iceland GeoSurvey (ÍSOR), Reykjavik (Iceland)
- 15) Sonia Ackermann. *Topic*: Antimony retention in contaminated soils from shooting ranges. *Funded by*: Deutsche Forschungsgemeinschaft (DFG). *Thesis completed*: Nov. 2008 (supervisor). *Current Position*: University of Basel (Switzerland)
- 16) Callum J. Hetherington. *Topic*: Barium anomalies in the Berisal series, Simplon area (Switzerland). *Funded by*: Swiss National Science Foundation. *Thesis completed*: Sept. 2001 (supervisor). *Current Position*: Associate Professor, Texas Tech University (USA)
- 17) Jan Malmström. *Topic*: Hydrothermal alteration of zirconolite. *Funded by*: ETH Research Foundation. *Thesis completed*: June 2000 (supervisor). *Current Position*: in Industry
- 18) Felix Ziegler. *Topic*: The Mechanisms of zinc sorption to calcium silicate hydrate. *Funded by*: ETH Zürich and EAWAG Dübendorf. *Thesis completed*: Feb. 2000 (co-supervisor). *Current Position*: High school teacher

University of Basel

- 19) Matthias Braun. *Topic*: Formation of REE minerals in Alpine fissures from the Lebendun area (Italy). *Funded by*: Swiss National Science Foundation. *Thesis completed*: Apr. 1997 (supervisor). *Current Position*: Shell Oil
- 20) Joël Brugger. *Topic*: The Fe, Mn, V, Sb, As, Be, W deposits of Val Ferrera (Graubünden, Switzerland). *Funded by*: Swiss National Science Foundation. *Thesis completed*: Dec. 1996 (co-supervisor). *Current Position*: Professor, Monash University, Melbourne (Australia)
- 21) Michael Krzemnicki. *Topic*: Mineralogical and crystal chemical investigations in the Monte-Leone Nappe (Switzerland/Italy). *Funded by*: Swiss National Science Foundation. *Thesis completed*: July 1996 (supervisor). *Current Position*: Director of the Swiss Gemmological Institute (SSEF), Basel (Switzerland)
- 22) Alfons Berger. *Topic*: Structural and petrologic aspects of the Bergell Intrusion (Central Alps): Eastern and Southern Contact. *Funded by*: Universität Basel. *Thesis completed*: May 1995 (co-supervisor). *Current Position*: Associate Professor, University of Bern (Switzerland)

Masters Students

University of Pennsylvania (MES/MSAG Theses)

- 1) Sandol Park. *Topic*: Key requirements to achieve the hydrogen economy: Sustainable water and energy management in South Korea. *MES Thesis started*: Aug. 2020 (co-supervisor)
- 2) Qicheng Ma. *Topic*: Circular economy: Sludge-to-energy potential in China and major obstacles. *MES Thesis completed*: Aug. 2020 (supervisor)
- 3) Hope Elliott. *Topic*: Chemical and mineralogical composition of artisanal charcoal from Uganda. *MSAG Thesis completed*: April 2020 (supervisor). Named *SAS Dean's Scholar* at University of Pennsylvania (April 2020). *Current position*: PhD candidate at the Rosenstiel School of Marine and Atmospheric Science at the University of Miami
- 4) Carlos A. García. *Topic*: Lithium-ion and vanadium redox-flow batteries: PJM and CAISO economics and policies considered. *MES Thesis completed*: April 2019 (co-supervisor)
- 5) Gee M. Paegar. *Topic*: Comparative analysis of policy mechanisms used by East Coast municipalities to reduce emissions associated with energy usage in buildings. *MES Thesis completed*: Dec. 2018 (supervisor)
- 6) Catherine Nabukalu. *Topic*: Assessing reverse logistics and industrial ecology strategies designed to reduce and reuse waste. *MES Thesis completed*: May 2018 (supervisor). *Current position*: Project coordinator for energy efficiency at the District of Columbia's Sustainable Energy Utility. GreenBiz 2020 "30 Under 30" honoree

University of Freiburg (M.Sc. Theses)

- 7) Denis Guske. *Topic:* Leaching behavior of heavy metals from fine-grained MSWI bottom ash. *Thesis completed:* Dec. 2014 (supervisor)
- 8) Tobias Bader. *Topic:* Mineralogical investigations on historical mortars of the Freiburg Münster choir. *Thesis completed:* Dec. 2014 (co-supervisor)
- 9) Anja Pregler. *Topic:* ²¹⁰Pb- and ¹³⁷Cs-dating of a sediment core from Lake Biel (Switzerland) and source characterization of fallout Pu. *Thesis completed:* Nov. 2014 (supervisor)
- 10) Frank Sommer. *Topic:* Comparing single-particle analysis data obtained from scanning electron and light microscope images. *Thesis completed:* May 2014 (supervisor)
- 11) Jorge Eduardo Marquez Escobedo. *Topic:* Geochemical characterization of coal and mine rock waste samples from the region of Cam Pha in NE-Vietnam and their effect on rice paddy soil composition and toxic metal bioavailability. *Thesis completed:* Oct. 2013 (co-supervisor)
- 12) Philipp Sedlazeck. *Topic:* Leaching behavior of MSWI slags. *Externally funded by:* Schlackeverwertung Breisgau GmbH (SVB), Germany. *Thesis completed:* Sept. 2013 (supervisor)
- 13) Martin Voigt. *Topic:* Experimental investigation of the stability of clinopyroxene in mid-ocean ridge basalts: insight into the depth range of crystallization of MGRB and thermal state of the oceanic lithosphere at slow spreading ridges. *Thesis completed:* Aug. 2013 (co-supervisor)
- 14) Eloïse Moradpour. *Topic:* Accumulation of C, N, P, and selected heavy metals in constructed wetlands for wastewater treatment in Rheinland-Pfalz and Saarland, Germany. *Thesis completed:* May 2013 (co-supervisor)
- 15) Silke Mayer. *Topic:* Accumulation of C, N, P, and selected heavy metals in constructed wetlands for wastewater treatment in Rheinland-Pfalz and Saarland, Germany. *Thesis completed:* May 2013 (co-supervisor)
- 16) Christian Grimm. *Topic:* Petrology of the mafic-ultramafic Viravira Complex, Colombia: Fragments of an Alaskan-type intrusion? *Thesis completed:* Feb. 2013 (co-supervisor)
- 17) Roman Schmidt. *Topic:* Petrology of the Alto Condoto ultramafic-mafic complex, Colombia. *Thesis completed:* Jan. 2013 (co-supervisor)
- 18) Melanie Wenzel. *Topic:* Tire-wear particles and their effects on human A549 lung cells. *Thesis completed:* Nov. 2012 (supervisor)
- 19) Frauke Seeholzer. *Topic:* Characterization of lung dust. *Financial support from:* Erasmus Program. *Thesis completed:* Sept. 2012 (supervisor)
- 20) Sebastian Kopf. *Topic:* Geochemical characterization of an auriferous placer deposit in the Condoto mining area, Colombia. *Externally funded by:* Extracon Group. *Thesis completed:* Sept. 2011 (supervisor)
- 21) Christoph Maschowski. *Topic:* Characterization of two different biomass pellets and their combustion products. *Thesis completed:* Sept. 2011 (supervisor)
- 22) Georgi Laukert. *Topic:* Pyroxenites from Lena Trough. *Thesis completed:* Sept. 2011 (co-supervisor)
- 23) Max Hildebrand. *Topic:* Germanium in ash from coal combustion. *Thesis completed:* Sept. 2011 (supervisor)
- 24) Jonas Wenkel. *Topic:* Mineralogy and geochemistry of antimony deposits in NE Viet Nam. *Thesis completed:* Jan. 2011 (supervisor)
- 25) Artur Banaszewski. *Topic:* Aliphatic hydrocarbons from the Mesoproterozoic Velkerri Formation in the Roper Superbasin, Australia: maturity- and source-related examination. *Thesis completed:* Nov. 2010 (supervisor)
- 26) Elisabeth Henjes-Kunst. *Topic:* Petrographic and geochemical investigations on sphalerite from Bleiberg (Austria). *Externally funded by:* Bundesamt für Geologie und Rohstoffe, Hannover. *Thesis completed:* June 2010 (supervisor)
- 27) Sakonvan Chawchai. *Topic:* Mineralogy and alteration of Sb deposits in the Black Forest. *Externally funded by:* Royal Thai Government. *Thesis completed:* June 2009 (supervisor)
- 28) Miryana Apostolova. *Topic:* Geothermal data and utilization of geothermal energy in Bulgaria. *Externally funded by:* Fritz Planung GmbH. *Thesis completed:* June 2009 (co-supervisor)

- 29) Niklas Mundhenk. *Topic:* Alteration of clastic sedimentary rocks due to interaction with CO₂ gas and CO₂-rich fluids, Central Germany. *Externally funded by:* Bundesamt für Geologie und Rohstoffe, Hannover. *Thesis completed:* Mar. 2009 (supervisor)
- 30) Wibke Kowalski. *Topic:* Synthesis and characterization of voltaite-group minerals. *Funded by:* Albert-Ludwigs-Universität Freiburg. *Thesis completed:* Aug. 2008 (supervisor)
- 31) Han Dou. *Topic:* Suitability of fly ash from coal combustion as a Ge resource. *Externally funded by:* Ministry of Education and Research, Baden-Württemberg. *Thesis completed:* Aug. 2008 (supervisor)
- 32) Anja Oehler. *Topic:* Mineralogical and geochemical study of fine airborne particulates (PM₁₀) in the center of Strasbourg. *Externally funded by:* EUCOR and Verband der Freunde der Universität Freiburg. *Thesis completed:* Feb. 2008 (supervisor)
- 33) Christian Meyer. *Topic:* Boron isotope partitioning between tourmaline and fluids. *Externally funded by:* GFZ Potsdam. *Thesis completed:* Aug. 2007 (co-supervisor)
- 34) Ella Goldenberg. *Topic:* Geology and geochemistry of the stratovolcano Ilaló, Ecuador. *Funded by:* Albert-Ludwigs-Universität Freiburg. *Thesis completed:* Dec. 2006 (supervisor)
- 35) Christian Bratzdrum. *Topic:* Relationships between lamprophyres and granites in the Shanqi-Xiaqi granite complex, China. *Funded by:* Albert-Ludwigs-Universität Freiburg. *Thesis completed:* Aug. 2005 (co-supervisor)
- 36) Florian Eichinger. *Topic:* Mineralogy and geochemistry of antimony in soils from shooting ranges. *Funded by:* Albert-Ludwigs-Universität Freiburg. *Thesis completed:* July 2005 (supervisor)

Purdue University (M.Sc. thesis)

- 37) Chunfu Zhang. *Topic:* Formation of garnet-quartz intergrowths in pegmatites. *Funded by:* Purdue University and Purdue Research Foundation. *Thesis completed:* May 2002 (supervisor)

Undergraduate Research Students

University of Pennsylvania (Undergraduate Theses)

- 1) Michelle Nguyen. *Topic:* Airborne microplastics in Philadelphia. *Started:* March 2021
- 2) Jonathan Szeto. *Topic:* Particulate emissions in SEPTA underground station of Philadelphia. *Started:* August 2019
- 3) Hasibe Caballero-Gomez. *Topic:* Lead in high-risk census tracts of Philadelphia. *Thesis started:* Sept. 2020 (co-advisor; student at Haverford College)
- 4) Mark Duncan Kilpatrick. *Senior Thesis Topic:* Examination of road dust in Philadelphia. *Thesis completed:* Apr. 2016 (supervisor)

University of Freiburg (B.Sc. Theses)

- 5) Eva Kanari. *B.Sc. Thesis Topic:* Asbestos – Mineralogy and Health Risks; example Cyprus. *Thesis completed:* Jan 2015 (supervisor)
- 6) Jan Gerrit Sonntag. *B.Sc. Thesis Topic:* Properties of carbonate material from landslides as a function of grain size. *Thesis completed:* Nov. 2014 (co-supervisor)
- 7) Daniel Hiekel. *B.Sc. Thesis Topic:* Influence of plastic on the marine ecosystem. *Thesis completed:* July 2014 (supervisor)
- 8) Julia Hiller. *B.Sc. Thesis Topic:* Formation of CO₂-rich lakes – the example of Lake Nyos, Kamerun. *Thesis completed:* June 2014 (supervisor)
- 9) Melanie Ruff. *B.Sc. Thesis Topic:* Aluminum – Ore deposits, mining and its environmental impacts. *Thesis completed:* June 2014 (supervisor)
- 10) Gina Kraft. *B.Sc. Thesis Topic:* Radioisotopes in biomass and its combustion products. *Thesis completed:* May 2014 (supervisor)
- 11) Dorothee Siefert. *B.Sc. Thesis Topic:* Contact metamorphism in the area of Alpe Zocca, Italy. *Thesis completed:* May 2014 (supervisor)
- 12) Mia Koch. *B.Sc. Thesis Topic:* Mineralogy and petrology of ultrabasic rocks from Valle Loana, Northern Italy. *Thesis completed:* Apr. 2014 (supervisor)
- 13) Moritz Schwab. *B.Sc. Thesis Topic:* Mineralogy and petrology of rocks from Cerro Gordo Bolivar, Colombia. *Thesis completed:* Mar. 2014 (supervisor)

- 14) Melissa Gerlitzki. *B.Sc. Thesis Topic: Mineralogy and petrology of rocks from Cerro Gordo Bolivar, Colombia. Thesis completed: Oct. 2013 (co-supervisor)*
- 15) Alex Hache. *B.Sc. Thesis Topic: How rare are the Rare Earth Elements? Thesis completed: Sept. 2013 (co-supervisor)*
- 16) Florian Grimm. *B.Sc. Thesis Topic: Mineralogy and petrology of the Munt Pers granodiorite, Engadine. Thesis completed: Sept. 2013 (supervisor)*
- 17) Markus Arnold. *B.Sc. Thesis Topic: Comparison of accumulation and treatment of municipal solid waste in the EU, with special emphasis on scrap tires. Thesis completed: Sept. 2013 (supervisor)*
- 18) Charlotte Dian. *B.Sc. Thesis Topic: Mineralogy of chromite layers from Finero, Northern Italy. Thesis completed: July 2013 (supervisor)*
- 19) Moritz Gradmann. *B.Sc. Thesis Topic: Weathering of depleted-uranium ammunition in the natural environment – a literature survey. Thesis completed: May 2013 (supervisor)*
- 20) Johanna Schlögl. *B.Sc. Thesis Topic: Petrology of gabbros from Finero, Northern Italy. Thesis completed: May 2013 (supervisor)*
- 21) Philip Gebhardt. *B.Sc. Thesis Topic: Patterned ground in periglacial areas. Thesis completed: Mar. 2013 (supervisor)*
- 22) Helen Lüth. *B.Sc. Thesis Topic: Petrology of mafic xenoliths in the Montorfano granite intrusion, Northern Italy. Thesis completed: Feb. 2012 (supervisor)*
- 23) Michael Rothmann. *B.Sc. Thesis Topic: Sulfide mineralogy in mantle rocks. Thesis completed: May 2011 (co-supervisor)*
- 24) Jens Schoene. *B.Sc. Thesis Topic: Mineralogical analysis of the Mont-Blanc intrusion and its Mesozoic country rocks. Thesis completed: Apr. 2011 (supervisor)*
- 25) Johannes Chalk. *B.Sc. Thesis Topic: Chemical characterization of vehicle-brake abrasion particles. Thesis completed: Jan. 2011 (supervisor)*
- 26) Katharina Henschel. *B.Sc. Thesis Topic: Characterization of sericite-rich schists from Central Viet Nam. Thesis completed: Oct. 2010 (supervisor)*
- 27) Klaus Philipp Sedlazeck. *B.Sc. Thesis Topic: Mineralogical characterization of particles from human lungs. Thesis completed: Oct. 2010 (supervisor)*
- 28) Frauke Seeholzer. *B.Sc. Thesis Topic: Permafrost and rock glaciers in the Upper in Engadine. Thesis completed: May 2010 (supervisor)*
- 29) Anna Magdalena Weiss. *B.Sc. Thesis Topic: Permafrost and rock glaciers. Thesis completed: May 2010 (supervisor)*
- 30) Simone Schöpflin. *B.Sc. Thesis Topic: Asse II, a possible nuclear disposal site. Thesis completed: May 2010 (supervisor)*
- 31) Natalie Jendryszczyk. *B.Sc. Thesis Topic: The Carbonatite on Stjernøy. Thesis completed: May 2010 (co-supervisor)*
- 32) Michael Scherrer. *B.Sc. Thesis Topic: Explosive subaqueous volcanism at West Mata volcano – Mechanisms of degassing. Thesis completed: May 2010 (supervisor)*
- 33) Ramona Constanze Kaltenmeier. *B.Sc. Thesis Topic: Biomonitoring of air pollutants. Thesis completed: May 2010 (supervisor)*
- 34) Silke Mayer. *B.Sc. Thesis Topic: Geochemical and mineralogical characterization of road dust in Freiburg. Thesis completed: May 2010 (supervisor)*
- 35) Gregory Mahnke. *B.Sc. Thesis Topic: Characterization of airborne particulates at the Schwarzwaldstrasse, Freiburg using SEM and light-optical methods. Thesis completed: May 2010 (supervisor)*
- 36) Lea de Biasi. *B.Sc. Thesis Topic: Volatile compositions in basaltic magmas from Tolbachik (Kamchatka) – insights from melt inclusions in olivine phenocrysts. Thesis completed: May 2010 (supervisor)*
- 37) Carsten Dau. *B.Sc. Thesis Topic: Disposal of nuclear waste in salt: Example Gorleben, Germany. Thesis completed: Oct. 2009 (co-supervisor)*
- 38) Friederike Möll. *B.Sc. Thesis Topic: The Opalinus clay and the Mt. Terri rock laboratory: Investigations on a repository for nuclear waste in Switzerland. Thesis completed: Oct. 2009 (co-supervisor)*
- 39) Stefan Koch. *B.Sc. Thesis Topic: Alpine geohazards: Triggering of avalanches. Thesis completed: Oct. 2009 (co-supervisor)*

- 40) Tobias Faisst. *B.Sc. Thesis Topic: The rhyolite of Diersburg, Black Forest, Germany. Thesis completed: Oct. 2009 (supervisor)*
- 41) Stefan Fibich. *B.Sc. Thesis Topic: Sources of Asian mineral dust and atmospheric chemistry in terms of air pollution in East Asian mega-cities. Thesis completed: May 2009 (supervisor)*
- 42) Killian Etter. *B.Sc. Thesis Topic: Geology and geochemistry of "Killer-Lakes" in Africa. Thesis completed: May 2009 (supervisor)*
- 43) Katharina Rucki. *B.Sc. Thesis Topic: Sampling methods for reduced and slowly flowing water in the Grube Clara, Black Forest. Thesis completed: May 2009 (co-supervisor)*
- 44) Florian Lehner. *B.Sc. Thesis Topic: Geological evaluation of Jestetten, Germany as a possible site for a nuclear waste repository. Thesis completed: May 2009 (co-supervisor)*
- 45) Andreas Hahmann. *B.Sc. Thesis Topic: Assessment of physical and chemical properties of rocks suitable for the long-term storage of nuclear waste. Thesis completed: May 2009 (co-supervisor)*
- 46) Thomas Jauss. *B.Sc. Thesis Topic: Mobilization of heavy metals in an abandoned mine shaft, Black Forest, Germany. Thesis completed: Oct. 2008 (supervisor)*
- 47) Jonathan F. Engelhardt. *B.Sc. Thesis Topic: Geochemical study of mineralized waters in the Engadine valley, Switzerland. Thesis completed: Oct. 2008 (supervisor)*
- 48) Daniel Klapper. *B.Sc. Thesis Topic: Petrography of metasedimentary rocks in the Central Alps. Thesis completed: Oct. 2008 (supervisor)*
- 49) Jonas Wenkel. *B.Sc. Thesis Topic: Geology of manganese ore deposits. Thesis completed: May 2008 (supervisor)*
- 50) Max Hildebrand. *B.Sc. Thesis Topic: Mineralogical and geochemical study of atmospheric particulate matter from a background station in Hanoi, Viet Nam. Thesis completed: May 2008 (supervisor)*
- 51) Moritz T. Rosenkranz. *B.Sc. Thesis Topic: Mineralogical and geochemical study of atmospheric particulate matter from a high-volume traffic zone in Hanoi, Viet Nam. Thesis completed: May 2008 (supervisor)*
- 52) Georgi Laukert. *B.Sc. Thesis Topic: Mineralogy of rare-metal pegmatites from Norway and Sweden. Thesis completed: Apr. 2008 (supervisor)*
- 53) Timo Kirchner. *B.Sc. Thesis Topic: Accessory minerals in rare-metal pegmatites from the Mongolian Altai. Thesis completed: Apr. 2008 (supervisor)*

Purdue University (Senior Theses)

- 54) Lindsay Collins. *Undergraduate Research Topic: Geochemistry of coal-combustion waste. Graduated 2005 (supervisor)*
- 55) Lori Macy. *Undergraduate Research Topic: Geochemistry of tourmaline-rich metapelites from the Central Alps. Graduated 2005 (supervisor)*
- 56) Loran Carleton. *Undergraduate Research Topic: Atmospheric emissions from coal-fired power plants. Graduated 2004 (supervisor)*
- 57) Lauren Patterson. *Undergraduate Research Topic: Geochemistry of tourmaline-rich metapelites from the Central Alps. Graduated 2004 (supervisor)*
- 58) Sara LaFree. *Undergraduate Research Topic: Chemical and XRD investigation of ash from co-combustion of tires and coal in coal-fired power plants. Graduated 2003 (supervisor)*
- 59) Philip Bodanza. *Undergraduate Research Topic: Chemistry of tourmaline-rich metasedimentary rocks. Graduated 2003 (supervisor)*
- 60) Sharon Segvich. *Undergraduate Research Topic: Characterization of a Ce-rich nuclear waste ceramic. Graduated 2002 (supervisor)*
- 61) Anatol Zingg. *Undergraduate Research Topic: Microchemical and XRD investigation of mechanical precipitator ash from coal-fired power plants. Exchange student from ETH Zürich during 2001 and 2002 (supervisor)*
- 62) Leslie Lipkaman. *Undergraduate Research Topic: Petrology of mantle xenoliths in the 1801 lava flows of Hualalai Volcano, Hawaii. Graduated 2001 (supervisor)*
- 63) Nivas Vijayaraghavan. *Undergraduate Research Topic: Petrography of tourmaline-rich metaconglomerates from the Central Alps. Graduated 2001 (supervisor)*
- 64) Carrie Hatcher. *Undergraduate Research Topic: Element distribution in a titanate ceramic designed for plutonium immobilization. Graduated 2001 (supervisor)*

- 65) Erika Bracher. *Undergraduate Research Topic: Petrography of rare-metal pegmatites from the Mongolian Altai*. Graduated 2001 (supervisor)

Teaching Experience

Teachers Institute of Philadelphia, USA

- What is the Earth Made of? (Spring 2017)
- Our Earth, a Fragile Home (Spring 2016)

University of Pennsylvania, USA

- Global Knowledge Lab/INTS991
- Petrology/GEOL317
- Geochemistry/GEOL418
- Energy, Waste, and the Environment/ENVS644
- Introduction to Superfund Sites and Health Effects of Hazardous Waste/PHRM/ENVS657
- Field courses: Leader of Penn-in-the-Alps (Penn Summer Abroad program/GEOL319)
<https://penntoday.upenn.edu/news/witnessing-geology-s-impact-firsthand-penn-alps>

Albert-Ludwigs-Universität Freiburg, Germany

- Introductory Geology
- Geochemistry
- Geochemical Methods
- Physics and Chemistry of Minerals
- Geothermal Energy and Fossil Fuel Resources
- Environmental Impacts of Renewable Energy Utilization (graduate course)
- Energy, Waste, and the Environment (graduate course)
- Phase Petrology (graduate course)
- Geochemical Cycles (graduate course)
- Problems of pollutants related to renewable energy production (graduate course)
- Geothermal Energy (graduate course)
- The Cryosphere (graduate course)
- Field courses: Leader of many geological field trips to the Swiss and Italian Alps and of trips on applied Earth science topics (applied geochemistry, nuclear power station, hydropower stations, underground rock research laboratories at Grimsel and Mont Terri)

Purdue University, USA

- Geology of the Central Alps/GEOS591A
- The Dynamic Earth/GEOS109 (Introduction to General Earth Sciences)
- Energy, Waste, and the Environment/EAS591B
- Radioactive Waste Management/NUCL503-GEOS591B/E
- Earth Materials I/GEOS243 (Crystallography and mineralogy)
- Earth Materials II/GEOS244 (Igneous, metamorphic and sedimentary petrology)
- Introduction to X-Ray Crystallography/GEOS511
- Structural, Tectonic and Basin Analysis I/GEOS351 (team teaching)
- Structural, Tectonic and Basin Analysis II/GEOS352 (team teaching)
- Field courses: Leader of field trips to the Central Alps (July 2001, July 2002), to Utah, and to the Appalachians in Tennessee and North Carolina.

Università di Siena, Italy

- Short Course on “Stabilization of Toxic and Nuclear Waste”; International School on *Engineering Mineralogy of Ceramic Materials*; June 2001

- Short Course on “Minerals as Natural Analogues for Crystalline Nuclear Waste Forms”; International School on *A Geochemical and Mineralogical Approach to Environmental Protection*; Oct. 1998
- Short Course on “Nuclear Waste Forms”; International School on *Toxic Waste Disposal*; Oct. 1997
- Short Course on “Natural Analogues for Nuclear Waste Forms”; International School on *Toxic Waste Disposal*; Oct. 1997
- Short Course on “Rock-fluid Interaction in Dolomite Marbles”; III Summer School di Geologia e Petrologia dei basamenti cristallini; Sept. 1989
- Field trips: Leader of field trips to the Central Alps, and to the Bergell and Adamello Intrusions

Universität Basel, Switzerland

- Mineralogy
- Metamorphic Petrology
- Stable Isotope Geology
- Analytical Techniques in Earth Science
- Optical Mineralogy/Crystal Optics (lab course)
- Mineralogy and Crystallography (lab course)
- Microscopy of Minerals (lab course)
- Microscopy of Rocks (lab course)
- Computer Applications in Earth Science (lab course)
- Metamorphic Petrology (lab course)
- Petrography (lab course)
- Mapping courses in various metamorphic areas in the Alps
- Field trips: Leader of various field trips for graduate and undergraduate students

Universität Bern, Switzerland

- Metamorphic Petrology

University of British Columbia, Canada (as Graduate Teaching Assistant)

- Microscopy of Metamorphic Rocks (lab course)

ETH Zürich, Switzerland (as Graduate Teaching and Laboratory Assistant)

- Introduction to Earth Sciences (lab course)
- Microscopy of Minerals and Rocks (lab course)
- Optical Mineralogy/Crystal Optics (lab course)
- Mineralogy (lab course)
- Petrography (lab course)
- Metamorphic Petrology (lab course)
- Mapping courses in various metamorphic areas in the Alps
- Responsible for Electron Microprobe, Fluid Inclusion Stage, Coulomat

ETH Zürich, Switzerland (as Undergraduate Tutor)

- Introduction to Earth Sciences (lab course)
- Mineralogy (lab course)
- Petrography (lab course)

Television and Radio Appearances

- **SiriusXM Radio – Knowledge@Wharton, Philadelphia (USA):** Interview on *Plastics and the Environment* (July 20, 2018).
- **SWR2 Radio, Freiburg (Germany):** Interview about *Sulfur* (Mar. 9, 2014).
- **SWR TV, Freiburg (Germany):** Interview about *Large-scale Research Projects in the Trination area of the Upper Rhine Valley* (Feb. 9, 2014). <http://www.biocombust.eu/node/309?language=en>

- **echo-fm 88.4 Radio Station (Germany):** Interview with Elementary School Children about *Volcanoes* (July 13, 2013).
- **University of Freiburg (Germany):** Live broadcast of Kick-off Event of the BIOCMBUST Project (May 6, 2013). <http://www.biocombust.eu/node/353?language=en>
- **SWR4 Radio, Freiburg (Germany):** Interview about *Biomass Combustion* (May 6, 2013). <http://www.biocombust.eu/node/316?language=en>
- **echo-fm 88.4 Radio Station (Germany):** Interview about *Biomass Combustion* (May 3, 2013). <http://www.biocombust.eu/node/315?language=en>
- **echo-fm 88.4 Radio Station (Germany):** Interview about *Fracking* (Mar. 13, 2013).
- **echo-fm 88.4 Radio Station (Germany):** Interview about *Conviction of Italian Seismologists in Connection with the Earthquake at l'Aquila* (Oct. 24, 2012).
- **echo-fm 88.4 Radio Station (Germany):** Interview about *Possible Mega-Tsunami from the Canary Islands* (Oct. 19, 2011).
- **echo-fm 88.4 Radio Station (Germany):** Interview about *Nuclear Waste Disposal* (July 26, 2011).
- **echo-fm 88.4 Radio Station (Germany):** Interview with Elementary School Children about *Volcanoes and Earthquakes* (July 8, 2011).
- **echo-fm 88.4 Radio Station (Germany):** Interview about *Air Pollution* (May 24, 2011).
- **TV Südbaden, Freiburg (Germany):** Television Interview on *Fine Particulate Matter in the Air* (Feb. 15, 2007)
- **Deutschlandfunk Radio Station (Germany):** Interview about *Nuclear Waste* (Aug. 2002). <http://www.dradio.de/dlf/sendungen/forschak/120907/>
- **Purdue University Radio Station (WBAA AM920):** Interviews about the *Purdue Geology Field Trips to the Alps* (Apr. 2002 and Nov. 2000)

Multimedia and Outreach Experience

- **National Academies of Sciences, Engineering, and Medicine, Montréal (Canada):** Invited panelist at a public Town Hall, *representing the Geology and Health Division of the Geological Society of America* (Oct. 29, 2020).
- **University of Pennsylvania, Philadelphia (USA):** News feature on “*Shining a light on the dangers of lead*” in PennToday. <https://penntoday.upenn.edu/news/shining-light-dangers-lead> (Aug. 17, 2020)
- **University of Dundee, Dundee (UK):** The status and future of charcoal in Africa in the energy transitions era. <https://www.youtube.com/watch?v=NW13jvtexXg&lc=UgxRpbBvnBg0Ocio8nl4AaABAg> (June 9, 2020)
- **University of Pennsylvania, Philadelphia (USA):** Organizer and Chair of Special Symposium “*Environmental Justice and Health Disparities in the U.S.*” <https://web.sas.upenn.edu/enviro-justice> (Oct. 25, 2019). See also Press Release at: <https://penntoday.upenn.edu/news/focus-environmental-inequities>
- **University of Pennsylvania, Philadelphia (USA):** News feature on “*Weighing the environmental impacts of a byproduct of biofuel combustion: plant skeletons*” in PennToday. <https://penntoday.upenn.edu/news/weighing-environmental-impacts-byproduct-biofuel-combustion-plant-skeletons> (Oct. 15, 2019)
- **National Geographic Society, Washington, D.C. (USA):** Tires: The plastic polluter you never thought about. <https://www.nationalgeographic.com/environment/2019/09/tires-unseen-plastic-polluter> (Sept. 2019)
- **University of Pennsylvania, Philadelphia (USA):** News feature on “*Inferno in the rain forest*” in PennToday. <https://penntoday.upenn.edu/news/inferno-rainforest> (Sept. 6, 2019)
- **Penn Club of New York, New York (USA):** Ben Talk on “*Climate Change in the Swiss Alps: Disappearing Glaciers and Renewable Energy*”. <https://vimeo.com/335961892> (May 9, 2019)
- **University of Pennsylvania, Philadelphia (USA):** News feature on “*Power Struggle*” in Penn Arts & Sciences OMNIA. <https://omnia.sas.upenn.edu/story/power-struggle-0> (March 28, 2019) and in Penn Today (<https://penntoday.upenn.edu/news/power-struggle-nuclear-energy-contentends-climate-change>)
- **Penn Club of San Francisco, California (USA):** Ben Talk on “*Climate Change in the Swiss Alps: Disappearing Glaciers and Renewable Energy*”. <https://vimeo.com/335961892> (March 6, 2019)

- **Penn Club of Los Angeles, California (USA):** Ben Talk on “*Climate Change in the Swiss Alps: Disappearing Glaciers and Renewable Energy*”. <https://vimeo.com/335961892> (March 5, 2019)
- **University of Pennsylvania, Philadelphia (USA):** News feature on “*A new-to-us mineral*” in PennToday. <https://penntoday.upenn.edu/news/newly-identified-mineral-may-find-host-practical-applications> (Oct. 25, 2018)
- **University of Pennsylvania, Philadelphia (USA):** News feature on “*Philly as a lab, classroom, and collaborator*” in PennToday. <https://penntoday.upenn.edu/news/philly-lab-classroom-and-collaborator> (July 10, 2018)
- **University of Pennsylvania, Philadelphia (USA):** [Knowledge by the Slice: “Effects of Climate Change in the Swiss Alps” \(Video\)](#) (Oct. 18, 2017)
- **University of Pennsylvania, Philadelphia (USA):** Podcast “*Reducing Lead Exposure*” in Penn Arts & Sciences OMNIA. <https://omnia.sas.upenn.edu/story/omnia-podcast-reducing-lead-exposure-audio> (Aug. 21, 2017)
- **Freiburg-Seminar, Freiburg (Germany):** Presentation about “*BIOCOMBUST*” for high-school students (Nov. 20, 2014)
- **Children’s University, Freiburg (Germany):** Presentation about “*How small is small?*” (Aug. 21, 2014; for children)
- **Conseil d’Europe, Strasbourg (France):** Interactive science display on the EU project *BIOCOMBUST* as part of the *Conférence de clôture Année européenne de l’air* (Dec. 9, 2013; for European ministers, delegates, and scientists)
- **Albert-Ludwigs-Universität, Freiburg (Germany):** How do Dust Particles Affect the Human Lung? Health Risk in the Air. <http://www.pr.uni-freiburg.de/publikationen/surprisingscience/UmweltGesundheit/gesundheitsfeinde-in-der-luft/gesundheitsfeinde-in-der-luft-en>
- **Albert-Ludwigs-Universität, Freiburg (Germany):** Open House for the EU project *BIOCOMBUST* (Oct. 24, 2013; for the general public)
- **Albert-Ludwigs-Universität, Freiburg (Germany):** Interactive science display on the EU project *BIOCOMBUST* as part of *Dialog Science* (Oct. 14, 2013; for the general public)
- **Université de Haute-Alsace, Mulhouse (France):** Interactive science display on the EU project *BIOCOMBUST* as part of the *Fête de la Science* (Oct. 9-13, 2013; for the general public)
- **Albert-Ludwigs-Universität, Freiburg (Germany):** Interactive science display on the EU project *BIOCOMBUST* as part of the *Wissenschaftsmarkt Freiburg* (July 12-13, 2013; for the general public)
- **École Normale Supérieure (Paris):** Live broadcast of Séminaire Général (Sept. 25, 2012). http://savoirsenmultimedia.ens.fr/uploads/videos//diffusion/2012_09_25_giere.mp4
- **Berlin (Germany):** Lecture on *Nuclear Waste Disposal: Lessons from Nature* at FreiRäume – Politik trifft Wissenschaft, Parliamentary Breakfast Lecture Series (Sept. 29, 2011; for German politicians)
- **Badische Zeitung, Freiburg (Germany):** Newspaper article on *Toxins That are not Retained by Particulate Filters* (Sept. 22, 2006)
- **Geological Hikes, St. Moritz (Switzerland):** *Geological excursions for laymen* at Laudinella, St. Moritz (July 22 – 29, 2006)
- **Albert-Ludwigs-Universität, Freiburg (Germany):** Lecture on Tourmaline (June 24, 2005, for the general public)
- **Albert-Ludwigs-Universität, Freiburg (Germany):** Lecture (Antrittsvorlesung) on Nuclear Waste and Particulate Matter; for the Faculty of Chemistry, Pharmacology and Geosciences and for the general public (June 7, 2005)
- **Badische Zeitung, Freiburg (Germany):** Newspaper article on *Toxins That are not Retained by Particulate Filters* (Sept. 22, 2006)
- **Geological Hikes, St. Moritz (Switzerland):** *Geological excursions for laymen* at Laudinella, St. Moritz (July 22 – 29, 2006)
- **Albert-Ludwigs-Universität, Freiburg (Germany):** Lecture on Tourmaline (June 24, 2005, for the general public)
- **Albert-Ludwigs-Universität, Freiburg (Germany):** Lecture (Antrittsvorlesung) on Nuclear Waste and Particulate Matter; for the Faculty of Chemistry, Pharmacology and Geosciences and for the general public (June 7, 2005)

- **Purdue University, West Lafayette (USA):** Lecture on the *Geology of the Alps*, for the general public (Jan. 25, 2001.)
- **Purdue University, West Lafayette (USA):** Creation of the exhibits *Geology of SE Utah* and *Geology of the Swiss and Italian Alps*, Department of Earth and Atmospheric Sciences
- **Basler Zeitung (Switzerland):** Newspaper article on *Nuclear Waste Disposal* (Tagesthema, June 4, 1997; in German)
- **Universität Basel (Switzerland):** Lecture (Habilitationvortrag) on *Natural Analogs for Nuclear Waste Ceramics*; for the Faculty of Science and the general public (June 27, 1996)
- **Basel (Switzerland):** Creation of a special exhibit on mineralogy and geology at the MUBA Science Fair (Mar. 1995)
- **Universität Basel (Switzerland):** Launching and creation of an open-house event for the general public; Earth Science Department (Nov. 6, 1993, with radio and newspaper coverage)
- **Basel (Switzerland):** Creation of four window displays on general Earth Science topics at a major bookstore and at a leading bank (Nov. 1993)
- **Universität Basel (Switzerland):** Organization of special issue, featuring several articles on Earth Science (for the bimonthly Journal UNI NOVA, 69/93)
- **Universität Basel (Switzerland):** Creation of various exhibitions and teaching displays at the Earth Science Department (directed towards undergraduate and graduate students)
- **ETH Zürich (Switzerland):** Curator of the petrographic research collections at the Institute of Mineralogy and Petrography

Professional Associations

- American Chemical Society (ACS)
- American Geophysical Union (AGU)
- Deutsche Mineralogische Gesellschaft (DMG)
- European Rare Earth and Actinide Society (ERES)
- Geochemical Society (GS)
- Geological Society of America (GSA)
- Geological Society, London, **Fellow**
- Mineralogical Society of America (MSA), **Fellow**
- Mineralogical Society of Slovakia, **Honorary Member**
- Schweizerische Mineralogisch-Petrographische Gesellschaft
- Schweizerische Geologische Gesellschaft
- Society for Environmental Geochemistry and Health (SEGH)