

Dr. Jeffrey Paulo H. Perez

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EDUCATION

- 2017 – 2020 **PhD in Earth Sciences (Geochemistry), Freie Universität Berlin, Germany**
Summa cum laude, Doctoral defense: Jan. 17, 2020
Dissertation: “Green rust formation and reactivity with arsenic species”
Supervisor: Prof. Dr. Liane G. Benning
- 2014 – 2016 **MSc in Environmental Sanitation, Ghent University, Belgium**
Summa cum laude (1st in class, top 5%)
Dissertation: “Iron oxide nanoparticles in covalent organic frameworks: Novel hybrid adsorbents for metal sequestration” (Grade: 18/20)
Supervisors: Prof. dr. ing. Gijs Du Laing, Prof. dr. Pascal Van Der Voort
- 2007 – 2012 **BSc in Chemical Engineering, University of the Philippines Los Baños, Philippines**
Cum laude (5th in class, top 10%), 5-year undergraduate program

RESEARCH EXPERIENCE

- Nov. 2022 – Present **Discovery Research Fellow (*Eigene Stelle*)**
GFZ German Research Centre for Geosciences, Germany
Section 3.2 Organic Geochemistry (Head: Prof. Dr. Christian Hallman)
- Feb. 2020 – Oct. 2022 **Postdoctoral Scientist, GFZ German Research Centre for Geosciences, Germany**
Section 3.5 Interface Geochemistry (Head: Prof. Dr. Liane G. Benning)
- Feb. – Mar. 2022 **Visiting Researcher, CNRS Géosciences Environnement Toulouse (GET), France**
Stable Isotope Geochemistry Group, Host: Dr. Romain Guilbaud
- Oct. 2016 – Jan. 2020 **PhD Research Fellow, GFZ German Research Center for Geosciences, Germany**
Section 3.5 Interface Geochemistry, Supervisor: Prof. Dr. Liane G. Benning
Marie Skłodowska-Curie PhD Fellowship (EU H2020 MSCA-ITN Metal-Aid)
- Jan. – May 2019 **Visiting Researcher, University of Leeds, United Kingdom**
Leeds Electron Microscopy and Spectroscopy Centre (LEMAS)
Hosts: Dr. Andy P. Brown, Dr. Helen M. Freeman
- Sept. 2018 **Visiting Researcher, Karlsruhe Institute of Technology, Germany**
Geochemistry Working Group, Institute of Applied Geosciences
Host: Prof. Dr. Thomas Neumann
- Oct. 2017 – Feb. 2018 **Visiting Researcher, University of Copenhagen, Denmark**
May 2017 *NanoGeoScience, Nano-Science Centre, Department of Chemistry*
Host: Dr. Dominique J. Tobler
- June – July 2015 **Research Intern, Universidad de Cuenca, Ecuador**
Ucubamba Waste Water Treatment Plan, ETAPA

TEACHING EXPERIENCE

- Mar. 2021 – Present **Lecturer, GFZ German Research Centre for Geosciences**
Section 3.5 Interface Geochemistry, Department of Geochemistry
- Co-teach the graduate level course ‘Mineral Characterization’ (offered through Freie Universität Berlin) with Prof. Liane G. Benning, specifically on the topics of

'Gas Sorption Analysis' and 'Applications of X-ray Absorption Spectroscopy (XAS) in Environmental Geochemistry'

- June 2012 – June 2014 **Instructor 4, University of the Philippines Los Baños, Philippines**
Dept. of Engineering Sciences, College of Engineering & Agro-Industrial Technology
- Course development and teaching engineering courses to Bachelor students, usually 2-3 lecture (30-35 students) and 2-3 practical courses (20 students) per semester: *Statics of Rigid Bodies, Mathematical Methods in Engineering, Engineering Graphics, Computer Applications in Engineering*
 - Coordination, development, outreach and teaching (1 class per semester, 3 h per week; 20-30 students) for literacy and civic welfare training programs

HONORS and AWARDS

- 2022 ▪ **Young Scientist, 71st Lindau Nobel Laureate Meeting for Chemistry**, selected as one of the 611 participants via a global multi-step selection process
- 2020 ▪ **Friedrich-Robert-Helmert-Award**, awarded by GFZ Potsdam for the best PhD thesis
- 2019 ▪ **Best Poster Award**, Research in Progress 2019 Joint Meeting, organized by the Clay Minerals Group (Mineralogical Society of Great Britain and Ireland) and RSC Environmental Chemistry Group
- 2016 ▪ **Water Technology Award** (2nd place, *Innovation Prize*), awarded by Water Circle Belgium for the best master's thesis on water treatment technology in Flanders Region, Belgium
- **Environmental Science & Technology Thesis Award**, awarded by ArcelorMittal and Indaver NV for the best master's thesis from the Faculty of Bioscience Engineering, Ghent University
- 2012 ▪ **University President's Medal of Excellence**, University of the Philippines System
- **Medal of Academic Excellence in Engineering**, University of the Philippines Los Baños
- **Medal of Academic Excellence in Science**, University of the Philippines Los Baños
- **Most Outstanding Student Leader in Engineering**, University of the Philippines Los Baños

GRANTS and FELLOWSHIPS | Total: ~556,700 EUR to date

- 2022 ▪ **GFZ Discovery Fellowship** (~210,000 EUR), a 3-year independent research fellowship (*Eigene Stelle*)
- **Procope Mobility Grant** (3,800 EUR), awarded by the French Ministry for Foreign Affairs and International Development
- **GFZ Innovations Expedition Fund** for fieldwork in Iceland (10,000 EUR), *Principal Investigator*
- **GFZ Expedition Fund** for synchrotron beamtime access (7,000 EUR), *Co-principal investigator*
- **DAAD Research Internship in Science and Engineering (RISE)** funding for undergraduate trainee (~2,800 EUR, 2 months), *Principal Investigator*
- **Royal Society of Chemistry Researcher Development Grant** for early career scientist (~600 EUR)
- 2021 ▪ **GFZ Innovations Expedition Fund** for fieldwork in Iceland (6,500 EUR), *Principal Investigator*
- **GFZ Expedition Fund** for synchrotron beamtime access (4,000 EUR), *Co-principal investigator*
- 2019 ▪ **Geo.X Travel Grant** for outgoing early career scientist (2,500 EUR)
- **DAAD RISE** funding for undergraduate trainee (~3,200 EUR, 2 months), *Principal Investigator*
- 2018 ▪ **Royal Society of Chemistry (RSC) Researcher Mobility Grant** (5,800 EUR)
- **Geo.X Conference Travel Grant** for *As2018 Conference in Beijing, China* (500 EUR)
- 2017 ▪ **Travel Grant** for the *Total Scattering for Nanotechnology Summer School* (~400 EUR)
- 2016 ▪ **Marie Skłodowska-Curie PhD Fellowship** (EU-H2020 MSCA-ITN Metal-Aid; ~250,000 EUR)
- 2014 ▪ **VLIR-UOS MSc Scholarship**, Belgium (~34,000 EUR, success rate <10%)
- 2013 ▪ **Basic Research Grant**, University of the Philippines Los Baños (~2,600 EUR)
- 2007 ▪ **DOST Undergraduate Scholarship**, Philippines (~13,000 EUR; success rate 13%)

FUNDED SYNCHROTRON BEAMTIME | Total awarded beamtime: 808 hours, ~363,000 EUR

- Dec. 2022 Scanning X-ray microscopy (SXM) coupled with C K-edge NEXAFS at the I08 beamline of Diamond Light Source, UK (144 hours, ~64,800 EUR)

- Sept. 2022 Cr K-edge XAS) at the BM20 beamline of the European Synchrotron Radiation Facility (ESRF), France (144 hours, ~64,800 EUR)
- Nov. 2021 As and Fe K-edge XAS at the BM23 beamline of ESRF, France (120 hours, ~54,000 EUR)
- Feb. 2020 As and Fe K-edge XAS at the I20-scanning beamline of Diamond Light Source, UK (96 hours, ~43,200 EUR)
- Nov. 2018 As K-edge XAS at the BM23 beamline of ESRF, France (112 hours, ~50,400 EUR)
- Sept. 2018 As and Fe K-edge XAS at the SUL-X beamline of ANKA-KIT, Germany (120 hours, ~54,000 EUR)
- Feb. 2017 X-ray powder diffraction (XRPD) and pair distribution function (XPDF) at the I15 beamline of Diamond Light Source, UK (72 hours, ~32,400 EUR)

SCIENTIFIC OUTPUT

* – co-first authors, **bold** – self, underlined – supervised student author

Total no. of publications: 21 (9 as first / co-first author) | *h*-index: 12

No. of citations (as of Feb. 14, 2023): 471 ([Google Scholar](#)), 403 ([Scopus](#)), 374 ([Web of Science](#))

Peer-reviewed publications

- Caraballo, M.A., Asta, M.P., **Perez J.P.H.**, Hochella, M. (2022). Past, present and future global influence and technological applications of iron-bearing metastable nanominerals. *Gondwana Research*, 110, 283-304. DOI: [10.1016/j.gr.2021.11.009](https://doi.org/10.1016/j.gr.2021.11.009). [Invited review paper]
- Mangayayam, M.C., **Perez, J.P.H.**, Alonso-de Linaje, V., Dideriksen, K., Benning, L.G., Tobler, D.J. (2022). Sulfidation extent of nanoscale zerovalent iron controls selectivity and reactivity with mixed chlorinated hydrocarbons in natural groundwater. *Journal of Hazardous Materials*, 431, 128534. DOI: [10.1016/j.jhazmat.2022.128534](https://doi.org/10.1016/j.jhazmat.2022.128534).
- Perez, J.P.H.**, Tobler, D.J., Freeman, H.M., Brown, A.P., Hondow, N.S., van Genuchten, C.M., Benning, L.G. (2021). Arsenic species delay structural ordering during green rust sulfate crystallization from ferrihydrite. *Environmental Science: Nano*, 8, 2950-2963. DOI: [10.1039/D1EN00384D](https://doi.org/10.1039/D1EN00384D).
- Figueroa Campos, G.A., **Perez, J.P.H.**, Block, I., Sagu, S.T., Saravia Celis, P., Taubert, A., Rawel, H.M. (2021). Preparation of activated carbons from spent coffee grounds and coffee parchment and assessment of their adsorbent efficiency. *Processes*, 9, 1396. DOI: [10.3390/pr9081396](https://doi.org/10.3390/pr9081396).
- Krone, L.V., Hampl, F.J., Schwerdhelm, C., Bryce, C., Ganzert, L., Kitte, A., Übernickel, K., Dielforder, A., Aldaz, S., Osés, R., **Perez, J.P.H.**, Sanchez, P., Wagner, D., Weckmann, U., von Blackenburg, F. (2021). Deep weathering in the semi-arid Coastal Cordillera, Chile. *Scientific Reports*, 11, 13057. DOI: [10.1038/s41598-021-90267-7](https://doi.org/10.1038/s41598-021-90267-7).
- Perez, J.P.H.**, Schiefler, A.A., Navaz Rubio, S., Reischer, M., Overhue, N.D., Benning, L.G., Tobler, D.J. (2021). Arsenic removal from natural groundwater using 'green rust': Solid phase stability and contaminant fate. *Journal of Hazardous Materials*, 401, 123327. DOI: [10.1016/j.jhazmat.2020.123327](https://doi.org/10.1016/j.jhazmat.2020.123327).
- Füllenbach, L.C., **Perez, J.P.H.**, Freeman, H.M., Thomas, A.N., Mayanna, S., Parker, J.E., Göttlicher, J., Steininger, R., Radnik, J., Benning, L.G., Oelkers, E.H. (2020). Nanoanalytical identification of siderite dissolution-coupled Pb removal mechanisms from oxic and anoxic aqueous solutions. *ACS Earth & Space Chemistry*, 4, 11, 1966-1977. DOI: [10.1021/acsearthspacechem.0c00180](https://doi.org/10.1021/acsearthspacechem.0c00180).
- Wang, H.Y., Byrne, J.M., **Perez, J.P.H.**, Thomas, A.N., Göttlicher, J., Höfer H.E., Mayanna, S., Kontny, A., Kappler, A., Guo, H.M., Benning, L.G., Norra, S. (2020). Arsenic sequestration in pyrite and greigite in the buried peat of As-contaminated aquifer. *Geochimica et Cosmochimica Acta*, 284, 107-119. DOI: [10.1016/j.gca.2020.06.021](https://doi.org/10.1016/j.gca.2020.06.021).
- Perez, J.P.H.**, Freeman, H.M., Brown, A.P., Van Genuchten, C.M., Dideriksen, K., Tobler, D.J., Benning, L.G. (2020). Direct visualization of arsenic binding on green rust sulfate. *Environmental Science & Technology*, 54, 3297-3305. DOI: [10.1021/acs.est.9b07092](https://doi.org/10.1021/acs.est.9b07092). Featured in the *European Synchrotron Radiation Facility (ESRF) Highlights 2020*.
- Mangayayam, M.C., **Perez, J.P.H.**, Dideriksen, K., Freeman, H.M., Bovet, N., Benning, L.G., Tobler, D.J. (2019). Structural transformation of sulfidized zerovalent iron and its impact on long-term reactivity. *Environmental Science: Nano*, 6, 3422-3430. DOI: [10.1039/C9EN00876D](https://doi.org/10.1039/C9EN00876D).

11. Hövelmann, J., Stawski, T.M., Freeman, H.M., Besselink, R.B., Mayanna, S., **Perez, J.P.H.**, Hondow, N.S., Benning, L.G. (2019). Struvite crystallization and the effect of Co²⁺ ions. *Minerals*, 9(9), 503. DOI: [10.3390/min9090503](https://doi.org/10.3390/min9090503).
12. Freeman, H.M., **Perez, J.P.H.**, Hondow, N., Benning, L.G., Brown, A.P. (2019). Beam-induced oxidation of green rust monitored by STEM-EELS. *Micron*, 122, 46-52. DOI: [10.1016/j.micron.2019.02.002](https://doi.org/10.1016/j.micron.2019.02.002).
13. **Perez, J.P.H.**, Tobler, D.J., Thomas, A., Freeman, H.M., Dideriksen, K., Radnik, J., Benning, L.G. (2019). Adsorption and reduction of arsenate during the Fe²⁺-induced transformation of ferrihydrite. *ACS Earth & Space Chemistry*, 3(6), 884-894. DOI: [10.1021/acsearthspacechem.9b00031](https://doi.org/10.1021/acsearthspacechem.9b00031).
14. **Perez, J.P.H.***, Folens, K.*, Leus, K., Vanhaecke, F., Van Der Voort, P., Du Laing, G. (2019). Progress in hydrometallurgical technologies to recover critical raw materials and precious metals from low-concentrated streams. *Resources, Conservation and Recycling*, 142, 177-188. DOI: [10.1016/j.resconrec.2018.11.029](https://doi.org/10.1016/j.resconrec.2018.11.029). [Review article]
15. **Perez, J.P.H.**, Freeman, H.M., Schuessler, J.A., Benning, L.G. (2019). The interfacial reactivity of arsenic species with green rust sulfate (GR_{SO4}). *Science of the Total Environment*, 648, 1161-1170. DOI: [10.1016/j.scitotenv.2018.08.163](https://doi.org/10.1016/j.scitotenv.2018.08.163).
16. **Perez, J.P.H.**, Freeman, H.M., Schuessler, J.A., Benning, L.G. (2019). Efficient removal of arsenic species by green rust sulfate (GR_{SO4}). In: Y.G. Zhu, H. Guo, Bhattacharya, P., Ahmad, A., Bundschuh, J. & R. Naidu (eds.) "Environmental Arsenic in a Changing World As2018". Interdisciplinary Book Series: "Arsenic in the Environment—Proceedings". Series Editors: J. Bundschuh & P. Bhattacharya, CRC Press/Taylor and Francis (ISBN 978-1-138-48609-6), pp. 409-411. [Extended conference abstract]
17. **Perez, J.P.H.***, Mangayayam, M.C.*, Navaz Rubio, S., Freeman, H.M., Tobler, D.J., Benning, L.G. (2018). Intercalation of aromatic sulfonates in 'green rust' via ion exchange. *Energy Procedia*, 146, 179-187. DOI: [10.1016/j.egypro.2018.07.023](https://doi.org/10.1016/j.egypro.2018.07.023). [Extended conference abstract]
18. Leus, K., Folens, K., Nicomel, N.R., **Perez, J.P.H.**, Filippousi M., Meledina, M., Dîrtu, M.M., Turner, S., Van Tendeloo, G., Garcia, Y., Du Laing, G., Van Der Voort, P. (2018). Removal of arsenic and mercury species from water by covalent triazine framework encapsulated γ -Fe₂O₃ nanoparticles. *Journal of Hazardous Materials*, 353, 312-319. DOI: [10.1016/j.jhazmat.2018.04.027](https://doi.org/10.1016/j.jhazmat.2018.04.027).
19. Leus, K.*, **Perez, J.P.H.***, Folens, K., Meledina, M., Van Tendeloo, G., Du Laing, G., Van Der Voort, P. (2017). UiO-66-(SH)₂ as stable, selective and regenerable adsorbent for the removal of mercury from water under environmentally-relevant conditions. *Faraday Discussions*, 201, 145-161. DOI: [10.1039/C7FD00012J](https://doi.org/10.1039/C7FD00012J).
20. Addicoat, M., Bennett, T., Chapman, K., Denysenko, D., Dincă M., Doan, H., . . . **Perez, J.P.H.**, . . . Yaghi, O. (2017). New directions in gas sorption and separation with MOFs: General discussion. *Faraday Discussions*, 201, 175-194. DOI: [10.1039/C7FD90044A](https://doi.org/10.1039/C7FD90044A). [Discussion Paper]
21. Carraro, F., Chapman, K., Chen, Z., Dincă, M., Easun, T., Eddaoudi, M., . . . **Perez, J.P.H.**, . . . Yaghi, O. (2017). Catalysis in MOFs: General discussion. *Faraday Discussions*, 201, 369-394. DOI: [10.1039/C7FD90046E](https://doi.org/10.1039/C7FD90046E). [Discussion Paper]

Manuscripts in preparation and under review

1. **Perez, J.P.H.**, Okhrymenko, M., Blukis, R., Roddatis, V., Mayanna, S., Mosselmans, J.F.W., Benning, L.G. Vivianite-parasymplesite solid solution: A sink for arsenic in ferruginous environments? Under review in *Geochemical Perspectives Letters*.
2. Paskin, A., Couason, T., **Perez, J.P.H.**, Lobanov, S., Blukis, R., Reinsch, S., Benning, L.G. Nucleation and crystallization of ferrous phosphate hydrate via an amorphous intermediate. Under review in *Journal of the American Chemical Society*.

Conference presentations (first author contributions only)

1. **Perez, J.P.H.**, Okhrymenko, M., Blukis, R., Roddatis, V., Mayanna, S., Mosselmans, J.F.W., Benning, L.G. Structural incorporation of arsenate into vivianite. GeoMinköln 2022, Sept. 12-15, 2022, oral presentation.
2. **Perez, J.P.H.**, Chan, A.L.H., Okhrymenko, M., Blukis, R., Mosselmans, J.F.W., Mayanna, S., Roddatis, V., Benning, L.G. Competing immobilization pathways for arsenate and phosphate in Fe (II)-bearing minerals: Adsorption vs. structural incorporation. Goldschmidt 2021, July 5-9, 2021, oral presentation.
3. **Perez, J.P.H.**, Freeman, H.M., Brown, A.P., Van Genuchten, C.M., Tobler, D.J., Dideriksen, K., Benning, L.G. *Direct nanoscale observation of arsenic sequestration sites on green rust surfaces*. German Mineralogical Society (DMG) Poster Session, Nov. 30-Dec. 3, 2020, poster presentation. [virtual]

4. **Perez, J.P.H.**, Freeman, H.M., Brown, A.P., Van Genuchten, C.M., Tobler, D.J., Dideriksen, K., Benning, L.G. *Mapping arsenic-induced changes on the green rust surface at the nanoscale*. Goldschmidt 2019, Aug. 18-23, 2019, Barcelona (Spain), oral (flash talk) and poster presentation.
5. **Perez, J.P.H.**, Freeman, H.M., Brown, A.P., Van Genuchten, C.M., Tobler, D.J., Dideriksen, K., Benning, L.G. *Revealing the interfacial reactions between green rust and arsenic species at the nanoscale*. Clay Minerals Group Research in Progress Meeting, May 17, 2019, Newcastle (UK), poster presentation.
6. **Perez, J.P.H.**, Freeman, H.M., Hondow, N., Brown, A.P., Benning, L.G. *Interaction between 'green rust' and arsenic revealed by STEM-EDX elemental mapping and mono-EELS*. Microscopy Characterization of Organic-Inorganic Interfaces: Advances in imaging beam sensitive materials in the transmission electron microscope, Mar. 8-9, 2019, Berlin (Germany), poster presentation.
7. **Perez, J.P.H.**, Mangayayam, M.C., Navaz Rubio, S., Freeman, H.M., Tobler, D.J., Benning, L.G. *Intercalation of aromatic sulfonates in 'green rust' via ion exchange*. International Carbon Conference, Sept. 10-14, 2018, Reykjavik (Iceland), poster presentation
8. **Perez, J.P.H.**, Tobler, D.J., Freeman, H.M., Dideriksen, K., Cecatto, M., Benning, L.G. *Fate and role of arsenic during green rust formation via reductive dissolution of ferrihydrite*. Goldschmidt 2018, Aug. 12-17, 2018, Boston (USA), oral presentation.
9. **Perez, J.P.H.**, Freeman, H.M., Schuessler, J.A., Benning, L.G. *Efficient removal of arsenic species by green rust sulfate (GR_{SO4})*. 7th International Congress on Arsenic in the Environment - Environmental Arsenic in a Changing World (As2018), July 1-6, 2018, Beijing (China), oral presentation.
10. **Perez, J.P.H.**, Freeman, H.M., Schuessler, J.A., Benning, L.G. *The role of 'green rust' as a control on arsenic mobility in contaminated groundwaters*. Environmental Sciences: Water (Gordon Research Conference and Seminar), June 23-29, 2018, New Hampshire (USA), poster presentation.
11. **Perez, J.P.H.**, Navaz Rubio, S., Schuessler, J.A., Freeman, H.M., Benning, L.G. *Interfacial reactivity of green rust sulfates with metal contaminants*. Goldschmidt 2017, Aug. 13-18, 2017, Paris (France), poster presentation.
12. **Perez, J.P.H.**, Folen, K., Leus K., Meledina, M., Dîrtu, M.M., Garcia, Y., Van Tendeloo, G., Du Laing, G., Van Der Voort, P. *Supported γ -Fe₂O₃ nanoparticles in CTF-1: A novel hybrid adsorbent for heavy metal sequestration*. New directions in porous crystalline materials: Faraday Discussion, June 5-7, 2017, Edinburgh (UK), poster presentation.

INVITED TALKS

1. Arsenic speciation controls the immobilization mechanism and stability of mixed valence iron minerals. ESRF User Meeting 2023. **European Synchrotron Radiation Facility (ESRF), France**. February 8, 2023.
2. Competitive immobilization of arsenate and phosphate in Fe(II)-bearing minerals: Incorporation versus adsorption. Environmental Mineralogy Group, **University of Bristol, Kingdom**. November 16, 2022. [Virtual]
3. How the speciation of arsenic affects its interaction with reactive iron minerals. #ESRFscience Live Online Seminars. **European Synchrotron Radiation Facility (ESRF), France**. July 18, 2022. [YouTube video](#) [Virtual]
4. Synergistic inhibition of green rust formation from ferrihydrite by arsenic and silica. **CNRS Géosciences Environnement Toulouse (GET), France**. Mar. 10, 2022.
5. Arsenic removal from natural groundwater using green rust. London Geochemistry & Isotope Centre, **University College London, United Kingdom**. Mar. 3, 2021 [Virtual].
6. Green rust formation and its reactivity with arsenic species. Interface Geochemistry Seminar Series, **GFZ German Research Centre for Geosciences, Germany**. Jan. 14, 2021 [Virtual].
7. Nano- and molecular-scale investigations of the interaction between green rust and arsenic species. School of Chemical and Process Engineering, **University of Leeds, United Kingdom**. May 24, 2019.
8. Making the invisible, visible: Looking at green rust and arsenic species at the nano-scale. Department of Chemical Engineering, **University of the Philippines Los Baños, Philippines**. April 18, 2018.

SKILLS AND EXPERTISE

- Fieldwork: Anoxic soil core sampling, water sampling for trace element and dissolved organic carbon analysis, sampling for DNA extraction and analysis

- Laboratory skills: inorganic and organic material synthesis, iron mineral synthesis, wet laboratory experience in under strict anoxic conditions (i.e. glovebox)
- Analytical and material characterization skills: trace element analysis (ICP-OES/MS, AAS), powder X-ray diffraction (XRD), nitrogen sorption analysis (surface area and porosity), UV-Vis spectrophotometry, infrared (IR) spectroscopy, X-ray photoelectron spectroscopy (XPS), thermogravimetric analysis (TGA), differential scanning calorimetry (DSC)
- Advanced transmission electron microscopy: high-resolution TEM imaging, analytical spectroscopy (EDX, EELS), analysis of beam-sensitive materials
- Synchrotron techniques: X-ray absorption spectroscopy (XAS), pair distribution function (PDF) analysis
- Geochemical modelling (Geochemist Workbench)
- Language skills: Filipino (native), English (*bilingual* proficient), German (B1, intermediate)

MENTORING EXPERIENCE

Past student supervision at GFZ Potsdam

Oct. 2022 – Feb. 2023	Hannes Arb (BEng, Hochschule Wittenstephan-Triesdorf, Germany), Research Intern
June – Aug. 2022	Alexandra Stovall (BSc, University of Central Florida, USA), Research Intern <i>Funded by DAAD Research Internship in Science and Engineering (RISE)</i>
April 2020 – Mar. 2021	Isabell Grün (MSc student, Universität Potsdam, Germany), Research Assistant
July – Aug. 2019	Marharyta Okhrymenko (BSc, RWTH Aachen, Germany), Research Intern
June – Aug. 2019	Alicia Li Han Chan (BSc, University of Nebraska, USA), Research Intern <i>Funded by DAAD Research Internship in Science and Engineering (RISE)</i>
Oct. 2018 – Dec. 2019	David Matzdorff (MSc, Universität Potsdam), Research Assistant

Current PhD co-supervision at GFZ Potsdam / Freie Universität Berlin

Nov. 2020 – Present	Zhengzheng Chen, <i>funded by CSC PhD scholarship</i>
Oct. 2020 – Present	Ruth Esther G. Delina, <i>funded by DAAD PhD scholarship</i>
Oct. 2020 – Present	Alice Paskin, <i>funded by Helmholtz Recruiting Initiative Grant</i>

PROFESSIONAL ENGAGEMENT AND OUTREACH ACTIVITIES

Outreach

Aug. 2020 – 2022	Mentor, GradMAP Philippines (Graduate Mentorship and Assistance Program), a <i>mentoring program for Filipino students planning to pursue graduate studies abroad</i>
Nov. 2019	Organizer and Media Documentation, Metal-Aid MSCA-ITN Tank Injection Experiment at NIRAS A/S, <i>public outreach event</i>
June 2017 – 2020	At-large Organizer for Sec. 3.5, “Lange Nacht der Wissenschaften” (Long Night of Science), <i>public open science day at the GFZ Potsdam</i>
Nov. 2016 – Present	Social Media Manager, MSCA-ITN METAL-AID

Conference and Meeting Convening, Scientific Representation

Sept. 2022	Session Chair and Main Convener, GeoMinKöln 2022
May 2022 – Present	PostDoc Representative, GFZ Potsdam
April 2021 – Present	Organizer, Science Talks at Sec. 3.5 in GFZ Potsdam (monthly)
July 2021	Session Chair and Main Convener, Virtual Goldschmidt 2021
Nov. 2020 – Nov. 2022	Organizer, Mineral Chemistry Journal Club at Sec. 3.5 in GFZ Potsdam (monthly)
Jan. 2020 – Present	Organizer, Interface Geochemistry Seminar Series (IGSS) at GFZ Potsdam (monthly)

Reviewer for Peer Reviewed Journals

Selected Journals: ACS Earth & Space Chemistry, Environmental Science & Technology, Environmental Science: Nano, Environmental Science: Processes & Impacts, Geochemical Perspective Letters, Geochimica et Cosmochimica Acta, Geoderma (*43 verified reviews, see [Publons profile](#) for additional reviewer statistics*)

Professional Membership

American Chemical Society, European Association of Geochemistry, German Geological Society (DGGV), German Mineralogical Society (DMG), Mineralogical Society of America, Royal Society of Chemistry