

Kuan-Yu Lin, Ph.D.

Curriculum Vitae

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2024.9.3

Education

Ph.D 2018-2024	Geology, University of Delaware Dissertation: <i>Trace Elements in Mantle Olivine: Implications for Mantle Dynamics and Evolution of the Oceanic Lithosphere</i> (Advisor: Dr. Jessica M. Warren)
M.Sc. 2017	Geosciences, National Taiwan University Dissertation: <i>Suprasubduction Zone Characteristics of the Guleman and Kızıldağ Ophiolites, SE Turkey: Evidence from Peridotite Geochemistry</i> (Advisors: Dr. Kuo-Lung Wang, Dr. Sun-Lin Chung)
B.S. 2015	Earth Sciences and Chemistry (double major), National Cheng Kung University (Taiwan) Research project: Investigating the geochemistry of ophiolites from the Qilian region, China (Advisor: Dr. Huai-Jen Yang)

Appointments

2024-present	Peter Buck Postdoctoral Fellow (National Museum of Natural History, Smithsonian Institution)
2018-2024	Research/Teaching Assistantship (University of Delaware)
2023-2024	Graduate Student Fellow (National Museum of Natural History, Smithsonian Institution)
2021-2022	University Doctoral Fellow (University of Delaware)
2017-2018	Chiayi Weather Station (Taiwan, Substitute Services Draftee)
2015-2017	Research/Teaching Assistantships (National Taiwan University)
2014-2015	Research Internship , National Cheng Kung University

Awards / Honors

2023	NSF INTERN Research Internship (Dept. of Mineral Sciences, NMNH)
2021-2022	University Doctoral Fellowship Award (UD)
2022	Graduate Student Travel Award (Graduate College, UD)
2021	Outstanding Graduate TA Award (Dept. of Earth Science, UD)
2017	1st prize in 34th Youth Forum (Department of Geosciences, NTU)
2017	Outstanding Teaching Assistant Award (Fall 2016, Freshman English, NTU)
2016	Outstanding Student Paper Award (ESRPC Ministry of Technology, Taiwan)

2016-2017	Excellent Teaching Assistant Award (4 semesters, Freshman English, NTU)
2016	Juan Vei-Chow Memorial Scholarship (Department of Geosciences, NTU)

Peer-reviewed Publications

Lissenberg, J., McCaig, A., Lang, S., Blum, P., Abe, N., Brazelton, W., Coltat, R., Deans, J., Dickerson, K., Godard, M., John, B., Klein, F., Kuehn, R., **Lin, K.-Y.**, Liu, H., Lopes, E., Nozaka, T., Parsons, A., Pathak, V., Reagan, M., Robare, J., Savov, I., Schwarzenbach, E., Sissmann, O., Southam, G., Wang, F., Wheat, C.G., Anderson, L., Treadwell, S., (2024). A long section of serpentinized depleted mantle peridotite (2024). *Science*, 385,623-629. <https://doi.org/10.1126/science.adp1058>

Lin, K.-Y., Warren, J. M., Davis, F.A., (2023). Trace elements in abyssal peridotite olivine record melting, thermal evolution, and melt refertilization in the oceanic upper mantle. *Contributions to Mineralogy and Petrology*, 178, 66. doi.org/10.1007/s00410-023-02044-6

Liu, H., Xue, Y., Deng, J., Yang, T., Xiao, Y., Sun, H., Tong, F., Wang, K., Gao, Y., **Lin, K.-Y.**, Sun, W., (2023). Slab dehydration and K, Li recycling in the Mariana forearc indicated by K and Li isotope compositions of exhumed metabasites. *Geochimica et Cosmochimica Acta*, 360, 16-35. doi.org/10.1016/j.gca.2023.09.006

Rose-Koga, E. F., Bouvier, A. S., Gaetani, G. A., Wallace, P. J., ... **Lin, K.-Y.** et al., (2021). Silicate melt inclusions in the new millennium: A review of recommended practices for preparation, analysis, and data presentation. *Chemical Geology*, 120145. doi.org/10.1016/j.chemgeo.2021.120145

Lin, K.-Y., Wang, K.-L., Chung, S.-L., Bingöl, A. F., Iizuka, Y., & Lee, H.-Y., (2020). Tracking the magmatic response to subduction initiation in the forearc mantle wedge: Insights from peridotite geochemistry of the Guleman and Kızıldağ ophiolites, Southeastern Turkey. *Lithos*, 376, 105737. doi.org/10.1016/j.lithos.2020.105737

Wang, K.-L., Chu, Z.-Y., Gornova, M.A., Dril, S., Belyaev, V.A., **Lin, K.-Y.**, O'Reilly, S.Y., (2017). Depleted SSZ type mantle peridotites in Proterozoic Eastern Sayan Ophiolites in Siberia. *Geodynamics and Tectonophysics*, 8 (3), 583-587. [doi:10.5800/GT-2017-8-3-0298](https://doi.org/10.5800/GT-2017-8-3-0298)

Research Grants

2023-2025 NSF (IODP Exp 399 post expedition award, sub-contract from U.S. Science Support Program, Columbia University): *Probing the formation and evolution of the Atlantis Massif oceanic core complex with olivine trace elements*; PI: Lin K.-Y.; \$20,000

2023 NSF (IODP Exp 399 Shipboard Participation, sub-contract from U.S. Science Support Program, Columbia University). PI: Lin K.-Y.; \$10,616

Technical Reports and Articles

McCaig, A., Lang, S.Q., Blum, P., Abe, N., Brazelton, W., Coltat, R., Deans, J., Dickerson, K., Godard, M., John, B., Klein, F., Kuehn, R., **Lin, K.-Y.**, Lissenberg, J., Liu, H., Lopes, E., Nozaka, T., Parsons, A., Pathak, V., Reagan, M., Robare, J., Savov, I., Schwarzenbach, E., Sissmann, O., Southam, G., Wang, F., Wheat, C.G., Anderson, L., Treadwell, S. (2024). Expedition 399 Preliminary Report: Building Blocks of Life, Atlantis Massif. International Ocean Discovery Program. <https://doi.org/10.14379/iodp.pr.399.2024>

Lin, K.-Y. (2021). DMG-MSA Diffusion Short Course Workshop Report. *Elements* v.17, no.3 (DMG Society News)

Warren, J. M., Behn, M. D., Fan, W., Morrow, T., Prigent, C., Schwartz, D. M., Andrys, J., Bahruth, M., Gong, J., **Lin, K.-Y.**, Gardner, A. T., Kot, D., Rapa, M., Kelly, B., & A'Hearn, P. (2019). AT42-20 Cruise Report for the 2019-2021 Gofar Transform Fault Earthquake Prediction Experiment, Leg 1: OBS Deployment and Rock Dredging. Woods Hole Oceanographic Institution. <https://doi.org/10.1575/1912/25464>

Conference Abstracts (selected)

Lin, K.-Y., Warren, J. M., Schilling, M.D., Akizawa, N., Plissart, G., Corgne, A., Anma, R., Alvear, M.K., González, E. V., Marin C. O. (2024). Snapshot of an oceanic mantle beneath an intermediate spreading ridge emplaced via ridge-trench collision – the Taitao ophiolite. AGU Fall Meeting (Submitted to session V013)

Schilling, M.D, Plissart, G., Akizawa, N., **Lin, K.-Y.**, Corgne, A., Alvear, M.K., González, E. V., Marin C. O., Walker, R., Anma, R., Warren, J.M., Ishikawa, A., Prigent, C., González, V., Rivera, A. Martínez, F., Donoso, N., González-Jiménez, JM. (2024). Magmatic and tectonic processes recorded by mantle rocks of the Taitao ophiolite (6 Ma), southern Chile. Goldschmidt conference

Lin, K.-Y., Warren, J. M., Schilling, M.D., Akizawa, N., Plissart, G., Corgne, A., Anma, R., Alvear, M.K., González, E. V., Marin C. O. (2023). Snapshot of a nascent oceanic mantle emplaced via ridge-trench collision – the Taitao ophiolite. AGU Fall Meeting (V31E-0147; In person poster)

Alvear Kayiza, M., Schilling, M.D, Plissart, G., Corgne A., **Lin, K.-Y.**, Akizawa, N., Warren, J.M., González, E., C. Marín, C, and Rivera, A. (2023). Petrological processes involved in the formation of the mantle-crust transition zone of Taitao ophiolite, Aysén, Chile, XVI Chilean Geological Congress, Santiago, Chile.

Marín Oyarzún, C., Schilling, M.D., Plissart, G., Corgne, A., **Lin, K.-Y.**, Akizawa N., Warren J.M., Alvear M., González E., and Rivera A. (2023). Petrological heterogeneities at the metric to micrometric scales of mantle rocks from the Taitao ophiolite, Aysén Region, Chile, XVI Chilean Geological Congress, Santiago, Chile.

Plissart, G., Akizawa, N., Schilling, M.D., Corgne, A., **Lin, K.-Y.**, Alvear, M., Marín, C., González, E., Warren, J.M., and Anma, R. (2023). First report of a massive chromitite from the Taitao ophiolite (Chile): an enigmatic origin leading to PGM and Y-REE phosphate crystallization, XVI Chilean Geological Congress, Santiago, Chile.

Lin, K.-Y., Warren, J. M., Davis, F.A. (2023). Contrast in thermal history of abyssal peridotites from ridges with different spreading rates. Gordon Research Conference: Interior of the Earth (poster)

Lin, K.-Y., Warren, J. M., Davis, F.A. (2022). Evaluating the effects of spreading rate and melt-addition on the closure temperatures recorded by peridotite thermometers. Goldschmidt Conference (3aT2; In person talk)

Nalesnik, A., Lynn, K.J., Rose, T., Warren, J., **Lin, K.-Y.** (2022). Glass chemistry of the Kulanaokuaiki Tephra Units 4 and 5 deposited from explosive eruptions of Kīlauea Volcano (HI). Goldschmidt Conference (5eT2)

Lin, K.-Y., Warren, J.M. (2021). Trace element systematics of abyssal peridotite olivine: Implications for ridge melting and melt transport. AGU Fall Meeting (V35A-0116; In person poster)

Bahruth, M., Warren, J.M., Prigent, C., Schwartz, D.M., Andrys, J.A., **Lin, K.-Y.**, Behn, M.D., Morrow, T.A., Fan, W., Gong, J., Roland, E.C., Boettcher, M.S., Liu, Y., German, C.R., Collins, J.A. (2021). Aseismic Movement of Gofar Transform Fault may be Aided by Formation of Clay-Bearing Basaltic Breccias. AGU Fall Meeting (T11D-08)

Schwartz, D.M., Andrys, J.A., Warren, J.M., Behn, M.D., Bahruth, M., **Lin, K.-Y.**, Prigent, C., Morrow, T.A., Schmitz, M.D., Boettcher, M.S. (2021). Insights into ~3 Ma of Mid-Ocean Ridge Mantle Source Heterogeneity from the Gofar Transform Fault, East Pacific Rise. AGU Fall Meeting (V35A-0115)

Lin, K.-Y., Wang, K-L., Chung, S-L., Chu, Z., Iizuka, Yoshiyuki, Bingöl, A.F. (2018). Geochemical Characteristics of Peridotites from Guleman and Kizildağ Ophiolites, SE Turkey: Investigating Subduction Initiation Magmatism. Goldschmidt Conference (03b; In person talk)

Lin, K. Y., Wang, K. L., Chung, S. L., Iizuka, Y., & Bingöl, A. F. (2016). Suprasubduction Zone Characteristics of the Guleman Ophiolite, SE Turkey: Evidence from Peridotite Geochemistry. AGU Fall Meeting (T13C; In person poster)

Invited Seminars

- 2024 **Delaware Mineralogical Society** (DE, USA)
Fluid, peridotite, and the building blocks of life: Insights from International Ocean Discovery Program Expedition 399
- 2023 **Dept. of Mineral Sciences, National Museum of Natural History** (Washington DC, USA)
Trace element systematics in abyssal peridotite olivine: Implications for the formation and evolution of the Atlantis Massif oceanic core complex (IODP Expedition 399)
- 2023 **UD Dept. of Earth Sciences Graduate Student Research Presentation Series** (DE, USA)
Exposed mantle rocks on the seafloor reveal contrasting thermal histories among mid-ocean ridges and subduction zones
- 2021 **Institute of Earth Sciences, Academia Sinica** (Taipei, Taiwan)
Deciphering the record of subduction initiation and melt-rock interaction in the oceanic mantle
- 2020 **National Museum of Natural Science** (Taichung, Taiwan)
Understanding the Life Cycle of the Oceanic Lithosphere - Insights from Peridotite Chemistry

Field & Cruise Research Experience

- 2023 **D/V JOIDES Resolution - IODP Expedition 399**
Accessing the Building Blocks of Life: Atlantis Massif (Igneous petrologist)
- 2022 **Field expedition in the Taitao peninsula, Chile**
The 6 Ma Taitao Ophiolite (Drill core, regular and oriented sampling of oceanic lower crust and upper mantle lithologies)
- 2019 **R/V Atlantis (AT42-20)**
Capturing 4D Variations in Stress, Slip, and Fault-Zone Material Properties: The 2019-2021 Gofar Transform Fault Earthquake Prediction Experiment (Shipboard scientist; dredging, rock description and documentation, data digitization, OBS deployment)
- 2018 **Field work in Southern Oregon and Northern California, USA**
The Josephine and the Trinity ophiolite (Peridotite drill core and oriented sampling; mapping)
- 2016 **Field work in Siberia, Russia**
The Olondo greenstone belt (Sample collection and mapping on Archean ultramafic massifs)
- 2014 **Field work in Hsiao Liuqiu, Taiwan**
Stratigraphic logging of Miocene coral reef carbonate deposits

Teaching Experience

University of Delaware (S=Spring, F=Fall)

- 2024S, 2022F GEOL105-011 Geological Hazards and Their Human Impact (TA; Virtual)
- 2021S GEOL302 Igneous and Metamorphic Petrology (TA; Virtual)
- 2020, 2019S GEOL302 Igneous and Metamorphic Petrology (TA)

National Taiwan University

- 2015-2017 Freshman English (TA; 4 semesters in total)

Professional Affiliations

2023-present	Geological Society of Washington (GSW)
2021-present	Geochemical Society (GS)
2021-present	Asian Americans and Pacific Islanders in Geosciences (AAPLiG)
2016-present	European Association of Geochemistry (EAG)
2016-present	American Geophysical Union (AGU)

Workshops and Short Courses

2024	Future of US Marine Seafloor and Subseafloor Sampling Capabilities Workshop (WHOI; in person attendee)
2023	NSF proposal Broader Impacts Workshop (UD Research Office & ARIS)
2021	Thermodynamic Modeling of Magmatic Systems with alphaMELTS 2 (Virtual)
2021	HDIP software workshop: an introduction to quantitative LA-ICPMS data processing (Goldschmidt; Virtual)
2021	Phase equilibrium modeling: approaches and pitfalls (Virtual)
2021	DMG-MSA Short course: Application of Diffusion studies to the determination of timescales in Geochemistry and Petrology (Bochum, Germany; Virtual)
2021	Recent Developments and Applications in Earth Sciences of EPMA analysis (Agricultural University of Athens; Virtual)
2020	Goldschmidt Diffusion Workshop (Virtual)
2019	ThermoFisher Scientific Chromatography and Mass Spectrometry Seminar
2019	Mantle Water Workshop at Lamont-Doherty Earth Observatory
2018	Mineral-Hosted Melt Inclusions, Goldschmidt Workshop

Professional Service

2022	Goldschmidt Conference session convener: <i>Fluid-rock interactions along plate margins and metamorphic belts</i> (Session 04e)
2022	US-SODA petition on NSF support for R/V JOIDES Resolution bridging program and new U.S. operated global-ranging riserless drilling vessel

Manuscript reviewer: *Contributions to Mineralogy and Petrology*, *Rapid Communications in Mass Spectrometry*

University Service (University of Delaware)

2022	ES graduate student Brown Bag - Bibliography management using Zotero (Speaker)
2022	CEOE EmPOWER peer-mentoring program Mentor workshop (Panelist)
2021	Graduate Student Voice Night (Co-host; presenter on behalf of TSA)
2021	Graduate College APIDA Professionals Networking Mixer (Co-host)

2021-2024	Earth Science Graduate Student Association (International Student Representative, Safety Representative, Department Seminar Representative)
2021	SOURCE program workshop on Graduate School (Panelist)
2021	Women of Color Discussion Series: Asian American Identity and Asian Identity in America (Co-host on behalf of UDTSA)
2021	CEOE Graduate student open house event (Panelist)
2020	CEOE EmPOWER/Share your skills virtual workshop (Lead presenter)
2020-2022	CEOE EmPOWER peer-mentoring program (Mentor)
2020-2022	Taiwanese Student Association (President)
2020-2021	Earth Science Graduate Student Association (Safety Committee Representative)
2018	CEOE interactive booth at AGU Fall Meeting

Outreach

2024	NMNH <i>Expert is in!</i> public outreach program - Uncovering the Secrets of Early Life: Clues from the Ocean Floor
2023	EGU Geodynamics blog - Into the Unknown: Research Cruises and the Geologist's Drill (invited blog author)
2023	The Deep-Sea Podcast #37: Deep digging with Andrew McCaig (invited guest scientist)
2022	Delaware Chinese American Community Center Festival (Taiwan booth volunteer)
2021	Archiving hand specimen donations from Lincoln University for teaching and outreach (Department of Earth Sciences, University of Delaware)
2020	NTU Geoscience Alumni Career Experience Symposium - Studying and Working abroad (Virtual; USA section panelist)
2018	<i>Ocean Rocks!</i> University of Delaware Coast Day at Lewes Campus
2018	NCKU Introduction Earth Sciences: Alumni Career Experience Talk (Speaker)
2013	NCKU Earth Sciences Exhibition (Oceanography, Group Leader)
2012	NCKU Earth Science Camp for High School Students (Coordinator-in-chief)