# Lynne J. Elkins

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## EDUCATIONAL AND PROFESSIONAL EXPERIENCE

### Professional Experience

2022-present Associate Professor, Earth and Atmospheric Sciences, University of Nebraska-Lincoln
2015-2022 Assistant Professor, Earth and Atmospheric Sciences, University of Nebraska-Lincoln
2008-2015 Continuing Lecturer, Department of Geology, Bryn Mawr College
2009-2011 Director, Summer Science Research Program for Undergraduates, Bryn Mawr College

### Education

2009 Ph.D. in Igneous Geochemistry, Marine Geology and Geophysics, MIT-WHOI Joint Program
2003 M.S. in Volcanology, Earth and Planetary Sciences, University of New Mexico
2001 B.A. in Geology with highest honors, *Magna cum laude*, Smith College

## HONORS, AWARDS, AND MEMBERSHIPS

2023 Lawson Award in Earth and Atmospheric Sciences, UNL
2021 College of Arts and Sciences Distinguished Teaching Award, UNL
2015-2016 Research Development Fellow, UNL
National Defense Science and Engineering Graduate Fellow, 2001-2004
Member: American Geophysical Union, Mineralogical Society of America, Geochemical Society, Geological Society of America, Association for Women Geoscientists, National Association for Geoscience Teachers, Sigma Xi, Phi Beta Kappa

## SCHOLARLY INTERESTS

Igneous petrology, volcanology and volcanic hazards, isotope geochemistry, divergent boundary processes, oceanic crust formation and construction, mid-ocean ridge–hotspot interactions, volcanism in ambiguous tectonic settings, mantle chemical structure and evolution, uranium-series and radiogenic isotopes, melt modeling, computational methods, diversity and equity in geoscience, science education

### Current and Past Projects

- ◊ Development of a new uranium-series geochemical melt modeling program (Elkins et al., 2019; Elkins and Spiegelman, 2021; https://gitlab.com/ENKI-portal/pyUsercalc (code repository); Elkins and Lambart, *in review*)
- ◊ Study of Cenozoic tectonics and volcanic activity in Southern Vietnam and the Central Highlands (Hobbs et al., 2023a,b,c, Richard et al., 2023a,b (datasets); Hobbs et al., 2023 (article); Richard et al., *accepted; in prep.*)
- ◊ Study of U-Th-Ra-Pa isotope disequilibrium in mid-ocean ridge basalts from the Kane-Atlantis supersegment of the Mid-Atlantic Ridge (Elkins et al., 2023 (dataset); Elkins et al., *in prep.*)
- ◊ Inquiry into the origins of the Central Atlantic Magmatic Province (Elkins et al., 2020*)*
- ◊ UNITE (University of Nebraska Isotope and Trace Element) Geochemistry Lab cleanroom design, ongoing management and supervision
- ◊ Jan Mayen hotspot interactions with North Atlantic mid-ocean ridges (Elkins, 2015 (dataset); Elkins et al., 2016a, 2016b)
- ◊ Regional study of basalt petrogenesis beneath slow- and ultraslow-spreading Arctic mid-ocean ridges (Elkins et al., 2008; 2011; 2014)
- ◊ High-pressure U and Th partitioning during garnet pyroxenite melting (Elkins et al., 2008)

◊ Nitrogen isotopes and volatile concentrations in geothermal and volcanic fluids from the Nicaraguan volcanic arc (Elkins et al., 2006)

**RESEARCH FUNDING**

2021-2026 NSF CAREER award to L. Elkins: *Modeling two-phase flow, multi-lithologic melting, and chemical disequilibrium with uranium-series isotopes* ($696,573)

2018-2023 NSF Tectonics award to L. Elkins (lead PI, UNL) and C. Burberry (UNL): *Reconciling extrusion tectonics, rifting, and lithosphere-asthenosphere coupling models for the Central Highlands diffuse igneous province, Vietnam* ($413,437)

2017-2022 NSF MGG award to L. Elkins: *Assessing segment-scale compositional control over slow-spreading ridge morphology* ($278,905)

2016-2017 UNL CAS International Collaboration Fund: *International Inquiry into the Origins of the Central Atlantic Magmatic Province* ($10,000)

2016 UNL CAS International Travel Fund: Goldschmidt Conference, Yokohama, Japan ($1,500)

2011-2015 NSF MGG award to L. Elkins (lead PI, UNL), K. Sims (UW): *Collaborative RUI: Uranium-Series Constraints on Melting in the Jan Mayen Region* ($140,000 to Elkins)

2009-2010 Faculty Research Grant from Bryn Mawr College to L. Elkins for study of chemical alteration of mid-ocean ridge basalts ($4,500)

**PUBLICATIONS**

**Peer-reviewed journal articles** (Students)

Hobbs, K.P., **Elkins, L.J.**, Lassiter, J.C., Hoang, N., Burberry, C.M., 2023, Characterizing peridotite xenoliths from southern Vietnam: Insight into the underlying lithospheric mantle, *Geochem. Geophys. Geosys.* V.24, e2023GC010971, https://doi.org/10.1029/2023GC010971.

**Elkins, L.J.** and Spiegelman, M., 2021, pyUserCalc: A revised Jupyter notebook calculator for uranium-series disequilibria in basalts. *Earth and Space Science* v. 8, e2020EA001619, https://doi.org/10.1029/2020EA001619. *(Now also available as a Notebooks Now! AGU publication at: https://agu.curve.space/articles/NN0002.)*

**Elkins, L.J.,** C.M. Meyzen, S. Callegaro, A. Marzoli, and M. Bizimis, 2020, Assessing origins of end-Triassic tholeiites from Eastern North America using hafnium isotopes, *Geochemistry Geophysics Geosystems* v. 21(6), doi: 10.1029/2020GC008999.

**Elkins, L.J.,** B. Bourdon, B., and S. Lambart, 2019, Invited review: Testing pyroxenite versus peridottie sources for marine basalts using U-series isotopes. *Lithos* v. 332-333, 226-244, doi: 10.1016/j.lithos.2019.02.011.

**Elkins, L.J.,** Scott, S.R., Sims, K.W.W., Rivers, E.R., Devey, C.W., Reagan, M., Hamélin, C., Pedersen, R., 2016, Exploring the role of mantle eclogite at mid-ocean ridges and hotspots: U-series constraints on Jan Mayen Island and the Kolbeinsey Ridge, *Chemical Geology* 444, 128-140, doi: 10.1016/j.chemgeo.2016.09.035.

**Elkins, L.J.,** Hamélin, C., Blichert-Toft, J., Scott, S.R., Sims, K.W.W., Yeo, I., Devey, C., Pedersen, R.B., 2016, North Atlantic hotspot-ridge interaction near Jan Mayen Island. *Geochem. Perspectives Letters* 2, 55-67, doi: 10.7185/geochemlet.1606.

**Elkins, L.J.,** Sims, K.W.W., Prytulak, J., Blichert-Toft, J., Blusztajn, J., Fretzdorff, S., Reagan, M., Haase, K., Elliott, T., Humphris, S., Schilling, J.-G., 2014, Melt generation beneath Arctic

Ridges: Implications from measurements of U decay series disequilibria in the Mohns, Knipovich, and Gakkel Ridges. *Geochim. Cosmochim. Acta* 127, 140-170.

**Elkins, L.J.,** Sims, K.W.W., Prytulak, J., Elliott, T., Mattielli, N., Blichert-Toft, J., Blusztajn, J.,Dunbar, N., Devey, C., Mertz, D., Schilling, J.-G., Murrell, M., 2011, Understanding melt generation beneath the slow-spreading Kolbeinsey Ridge using $^{238}$U, $^{230}$Th, and $^{231}$Pa excesses, *Geochim. Cosmochim. Acta* 75, 6300-6329.

**Elkins, L.J.,** Gaetani, G.A., Sims., K.W.W., 2008, Partitioning of U and Th during garnet pyroxenite partial melting: Constraints on the source of alkaline ocean island basalts, *Earth Planet. Sci. Lett*., 265, 270-286.

**Elkins, L.J.,** Fischer, T.P., Hilton, D.R., Sharp, Z.D., McKnight, S., Walker, J., 2006. Tracing nitrogen in volcanic and geothermal volatiles from the Nicaraguan volcanic front, *Geochim. Cosmochim. Acta* 70, 5215-5235.

**Published data products**

Richard, N., **Elkins, L.J.,** Burberry, C.M., Hoang, N., Anh, L.D., Dinh, S., One mafic whole rock lava sample from south-central Vietnam: $^{40}$Ar/$^{39}$Ar geochronology, *Interdisciplinary Earth Data Alliance (IEDA)*, doi: 10.60520/IEDA/113128.

Richard, N., **Elkins, L.J.,** Lassiter, J.C., Burberry, C., Hoang, N., $^{40}$Ar/$^{39}$Ar geochronology of basalts from south-central Vietnam, *Interdisciplinary Earth Data Alliance (IEDA)*, https://doi.org/10.60520/IEDA/113126.

Richard, N., **Elkins, L.J.,** Lassiter, J.C., Burberry, C., Hoang, N., 2023, Major, trace, and radiogenic isotopes measured in Cenozoic lavas from south-central Vietnam, *Interdisciplinary Earth Data Alliance (IEDA),* doi: 10.26022/IEDA/113052.

Burberry, C.M., **Elkins, L.J.,** Hoang, N., Richard, N., 2023, Faults in Southern Vietnam: implications for extrusion of Indochina, *Mendeley Data*, doi: 10.17632/h4v7srkpc2.2.

Hobbs, K., **Elkins, L. J.,** Lassiter, J.C., Hoang, N., and Burberry, C. M., 2023a,b,c, Lithospheric mantle xenolith geochemistry from south-central Vietnam: Major elements, Trace elements, Radiogenic isotopes, *Interdisciplinary Earth Data Alliance (IEDA),* doi: 10.26022/IEDA/112847, 10.26022/IEDA/112848, 10.26022/IEDA/112849.

**Elkins, L.J.**, Lyu, Y., Messer, J., Soluri, L., Sorsen, J., Kant, L., Messa, C., Stark, G., Andersen, D., Richard, N., Lepow, A., Jimenez Bustos, A., Sims, K.W.W., Langmuir, C., 2023, Isotope compositions of mid-ocean ridge basalts from the Kane-Atlantis segment, Mid-Atlantic Ridge, *Interdisciplinary Earth Data Alliance (IEDA),* doi: 10.26022/IEDA/112947.

**Elkins, L.J.** and Spiegelman, M., 2021, pyUserCalc v.1.0.0 (GitLab code repository), doi: 10.5281/zenodo.5598074.

**Elkins, L.J.,** 2019, Hafnium isotopes in Eastern North American tholeiites of the Central Atlantic Magmatic Province, *Interdisciplinary Earth Data Alliance (IEDA),* doi: 10.1594/IEDA/111347.

**Elkins, L.J.,** 2015, Jan Mayen Geochemistry, *Interdisciplinary Earth Data Alliance (IEDA),* doi: 10.1594/IEDA/100536.

**Journal articles in progress**

**Elkins, L.J.** and Lambart, S., *in review,* Uranium-series disequilibria in MORB, revisited: A systematic numerical approach to partial melting of a heterogeneous mantle, submitted to *Volcanica.* (Preprint doi: 10.22541/essoar.170289974.42837909/v1.)

Richard, N., C.M. Burberry, N. Hoang, L.D. Anh, S.Q. Dinh, **L.J. Elkins**, *accepted*, Neogene-Recent Reactivation of Pre-Existing Faults in South-Central Vietnam, with Implications for the Extrusion of Indochina, submitted to *Tectonics*. (Preprint doi: 10.22541/essoar.170365257.77625509/v1.)

**10 Years of Conference Abstracts** (Presenter*; Students)

Richard, N.*, Burberry, C.M., **Elkins, L.J.**, Hoang, N., Anh, L.D., Sang, Q.D., 2023, Neogene-Recent Reactivation of Pre-Existing Faults in South-Central Vietnam, with Implications for the Extrusion of Indochina, *AGU, Fall Meeting Suppl*.

Jimenez Bustos, A.*, **Elkins, L.J.**, Lambart, S., 2023, pyMeltPX: A Python-based tool for modeling heterogeneous melting in the mantle, *AGU, Fall Meeting Suppl.*

Lepow, A.* and **Elkins, L.J.**, 2023, Non-linear dimensionality reduction of oceanic basalt isotopic data to characterize mantle chemical evolution, *AGU, Fall Meeting Suppl.*

**Elkins, L.J.*** and Lambart, S., 2023, Systematic numerical modeling of uranium-series disequilibria in MORB, *AGU, Fall Meeting Suppl.*

Sorsen, J.*, Soluri, L., **Elkins, L.J.**, Messa, C., Stark, G., Sims, K.W.W., Langmuir, C., 2023, Characterizing the influence of mantle heterogeneity and resulting magma supply variations on detachment faulting at slow-spreading mid-ocean ridges, *North-Central GSA Meeting, Grand Rapids, MI.*

Soluri, L.*, **Elkins, L.J.**, Yang, S., Humayun, M., 2023, Identifying mantle pyroxenite in North Atlantic MORBs using high-precision Ge/Si ratios, *Nebraska Academy of Science meeting*.

**Elkins, L.J.***, 2023, Exploring melt generation and lithospheric magma transport by modeling U-series isotopes: Advances and limitations, *IAVCEI Conference, Rotorua*.

Richard, N.*, **Elkins, L.J.**, Hobbs, K., Lassiter, J.C., Burberry, C.M., Hoang, N., 2022, Insight into the nature of a heterogeneous mantle source inferred through geochemical and radiogenic isotope measurements from Cenozoic basalts: South-Central Vietnam, *Nebraska Academy of Science meeting*.

**Elkins, L.J.*** and Lambart, S., 2022, Melt modeling of U-series disequilibria in mid-ocean ridge basalts, *Goldschmidt 2022 Abstract*, doi.org/10/46427/gold2022.10057.

Richard, N.*, **Elkins, L.J.**, Hobbs, K.P., Lassiter, J.C., Burberry, C.M., Hoang, N., 2021, Geochemical and radiogenic isotopes measured from Cenozoic basalts from Vietnam, *EOS Trans. AGU, Fall Meeting Suppl. (virtual).*

Messer, J.*, **L.J. Elkins,** Y. Lyu, L.B. Kant, K.W.W. Sims, C. Langmuir, 2021, Implications from uranium-series disequilibria for the origin of detachment faulting along the Mid-Atlantic Ridge, 24-30ºN, *Goldschmidt 2021 Meeting (virtual).*

Richard, N.*, C.M. Burberry, **L.J. Elkins,** L.D. Anh, and N. Hoang (2020), Neogene to Recent fault reactivation in southern Vietnam: Implications for modern-day extrusion of Indochina and microblock rotation within the core of the Sundaland block, *EOS Trans. AGU, Fall Meeting Suppl. (virtual).*

**Elkins, L.J.***, 2020, Vertical streamline integration of U-series disequilibria in basalts, *Goldschmidt 2020 Meeting (virtual).*

Hobbs, K.P.*, **Elkins, L.J.,** Lassiter, J.C., Burberry, C.M., Nguyen, H., 2019, Characterizing lithospheric mantle using xenoliths in alkaline basalts from southern Vietnam: implications for mantle dynamics during extrusion tectonics, *EOS Trans. AGU, Fall Meeting Suppl.*

**Elkins, L.J.*,** Meyzen, C.M., Callegaro, S., Marzoli, A., Bizimis, M., 2019, Melting of subduction modified mantle and continental crustal assimilation recorded by end-Triassic tholeiites from southern Eastern North America, *EOS Trans. AGU, Fall Meeting Suppl.*

**Elkins, L.J.*** and Sims, K.W.W., 2019, Invited Keynote: A review of magma generation beneath North Atlantic mid-ocean ridges, *AGU 2019 Chapman Conference on Large-Scale Volcanism in the Arctic, Selfoss, Iceland.*

**Elkins, L. J.*,** and M. Spiegelman (2019), Development of U-series disequilibrium melting and transport models using Jupyter and Python, *Goldschmidt 2019 Meeting, Barcelona, Spain*.

Lyu, Y.*, **Elkins, L.J.,** Langmuir, C., Sims, K.W.W., Kant, L.B., 2019, Implications from U and Th concentrations for drivers of oceanic crustal construction along the Kane-Atlantis supersegment, 24-30ºN MAR, *Goldschmidt 2019 Meeting, Barcelona, Spain.*

**Elkins, L.J.*,** Spiegelman, M., Bourdon, B., Lyu, Y., 2018, Modeling uranium-series disequilibria in partial melts on the ENKI platform: progress and goals, *EOS Trans. AGU, Fall Meeting Suppl.*

Lyu, Y.*, **Elkins, L.J.,** 2018, Implications from U, Th, and Ra partition coefficients for constraining uncertainties and investigating the melting process beneath mid-ocean ridges, *EOS Trans. AGU, Fall Meeting Suppl.*

**Elkins, L.J.*,** Bourdon, B., Lambart, S., 2018, The effects of two-lithology mantle melting on U-series in basalts, *Goldschmidt 2018 Meeting, Boston, MA.*

**Elkins, L.J.*,** Marzoli, A., Bizimis, M., Callegaro, S., Meyzen, C., Sorsen, N., Lassiter, J., Ernesto, M., 2017, Mantle sources for Central Atlantic Magmatic Province basalts from Hf isotopes, *North-Central GSA Paper No. 38-6.*

**Elkins, L.J.*,** Marzoli, A., Bizimis, M., Meyzen, C., Callegaro, S., Sorsen, N., Lassiter, J., Ernesto, M., 2017, Mantle sources for Central Atlantic Magmatic Province basalts from Hf isotopes, *EOS Trans. AGU, Fall Meeting Suppl.*

Burberry, C.M.*, **Elkins, L.J.,** N. Hoang, L.D. Anh, Sang Q.D., 2017, Neogene-Recent Reactivation of Cretaceous-age faults in Southern Vietnam, with implications for the Himalayan-Tibetan Orogen, *EOS Trans. AGU, Fall Meeting Suppl.*

**Elkins, L.J.*,** Scott, S.R., Rivers, E.R., Sims, K.W.W., Reagan, M., Devey, C.W., Hamélin, C., Pedersen, R.B., 2016, Identifying pyroxenite in the mantle source for Jan Mayen Island and Northern Kolbeinsey Ridge, *Goldschmidt 2016 Meeting, Yokohama.*

Rivers, E.R.*, **Elkins, L.J.,** Sims, K.W.W., Blichert-Toft, J., Devey, C., Chernow, R., Davis, R., Meisenhelder, K., 2013, U-series constraints on magmatism near Jan Mayen, *EOS Trans. AGU, Fall Meeting Suppl.*

**Elkins, L.J.*,** Rivers, E.R., Sims, K.W.W., Blichert-Toft, J., Devey, C., Chernow, R., Davis, R., Meisenhelder, K., 2013, Origins of anomalous ridge magmatism near Jan Mayen, *Geochim. Cosmochim. Acta Goldschmidt Suppl.*

Davis, R.*, **Elkins, L.J.,** Augustin, N., Yeo, I., Meisenhelder, K., Rivers, E., van der Zwan, F., Devey, C., Sims, K.W.W., 2013, Explaining anomalously high magma flux at volcanic centers on the Northern Kolbeinsey and Southern Mohns Ridges using bathymetry and basalt geochemistry, *NE GSA Abstracts with Programs*, v. 45, 58.

Meisenhelder, K.*, **Elkins, L.J.,** Augustin, N., Yeo, I., Rivers, E., van der Zwan, F., Devey, C., Sims, K.W.W., 2013, Constraining crust formation at slow-spreading ridges using the composition and morphology of Mt. Eggvin, *NE GSA Abstracts with Programs* v. 45, 58.

**INVITED PRESENTATIONS (past 10 years)**

Nov. 2023 "Systematic numerical modeling of uranium-series disequilibria in mid-ocean ridge basalts." Visiting lecture series, University of Utah.

Sept. 2023 "Systematic numerical modeling of uranium-series disequilibria in mid-ocean ridge basalts." Stout Lecture Series, University of Nebraska-Lincoln.

Sept. 2021 "New tools for calculating uranium-series disequilibrium during partial melting." Visiting lecture series, University of Iowa (virtual).

Mar. 2021 " 'pyUserCalc': A new U-series disequilibrium calculator for porous flow melting." University of Texas at Austin Lithosphere and Deep Earth Virtual Seminar (virtual).

Jan. 2021 " 'pyUserCalc': A new U-series disequilibrium calculator for porous flow melting." ESIP (Earth Science Information Partners) Winter Meeting (virtual).

Feb. 2020 "Uranium-series isotope evidence for pyroxenite melting in the mantle source for marine basalts." Visiting lecture series, Kansas State University.

Oct. 2019 "A review of magma generation beneath North Atlantic mid-ocean ridges." Invited keynote, 2019 AGU Chapman Conference on Large-Scale Volcanism in the Arctic, Selfoss, Iceland.

Apr. 2019 "Uranium-series redux: Probing magma generation and transport using updated model calculators." Seminar series, South Carolina University.

Sept. 2017 "The Generation of Magma at Ultraslow Mid-Ocean Ridges." University of Wyoming Geology and Geophysics Distinguished Lecturer Series.

Sept. 2015 "Mid-Ocean Ridges and New Crustal Production." Stout Lecture Series, University of Nebraska-Lincoln.

April 2015 "Mid-Ocean Ridge Interactions with the Jan Mayen Hotspot." Chemistry Department Seminar, Haverford College.

Dec. 2014 "Mid-Ocean Ridge Interactions with the Jan Mayen Hotspot." Stout Lecture Series, University of Nebraska-Lincoln.

Apr. 2014 "Petrogenesis of North Atlantic MORB." Senior Seminar, Bryn Mawr College.

Jan. 2014 "Petrogenesis of North Atlantic MORB from U-series and radiogenic isotopes." Department Seminar, University of Bergen, Norway.

**TEACHING INTERESTS**

General Earth science and geology, solid earth, mineralogy, igneous and metamorphic petrology, volcanology, marine geology and geochemistry, high-temperature geochemistry and thermodynamics, radiogenic isotope geochemistry, computational and numerical methods, natural hazards.

Teaching people to learn effectively; facilitating learners from minoritized and disadvantaged groups in pursuing their interests; helping all students become excited about science, geoscience, and research.

**COURSES TAUGHT**

University of Nebraska-Lincoln (2015-present)

GEOL 110 Deadly Planet *(previously 'Geological Natural Hazards')*
GEOL 200 Mineralogy
GEOL 201 Igneous and Metamorphic Petrology
GEOL 210 Earth Materials: Rocks and Minerals
GEOL 412/812 Volcanology and Igneous Petrology

GEOL 415/815 Geochemical Thermodynamics
GEOL 455/855 Computational Methods in Earth Science
GEOL 460 Wasatch-Uinta Field Camp instructor

Bryn Mawr College (2008-2015)
EMLY002 Volcanoes and Society (first-year writing seminar)
GEOL101 Physical Geology Lecture and Labs
GEOL102 Earth History Labs
GEOL103 Earth Systems & Environment Labs
GEOL109 Quantitative Problems in Geoscience
GEOL110 Molten Rock: The Evolution of Planet Earth (7-week focus course)
GEOL115 Living With Volcanoes (7-week focus course)
GEOL202 Mineralogy and Crystal Chemistry
GEOL209 Natural Hazards and Human Populations
GEOL305 Igneous and Metamorphic Petrology
GEOL350 High-Temperature Geochemistry
GEOL399 Senior Thesis Seminar
Department Field Trip leader: Spring Break trip to Costa Rica (23 participants)

Visiting lectures:
2023 Guest seminar on time management, GEOS900 (Professional Development), UNL
2022 Guest seminar on geoscience careers, GEOS900 (Professional Development), UNL
2021 Guest lecture on petrographic methods, ARCH ceramics course, UNL
2018, 2019 Guest seminar on writing proposals, GEOS900 (Professional Development), UNL
2018, 2022 Guest lecture on continental rifts, Tectonics class, UNL
2018 Guest lecture on Vesuvius, CLAS161, UNL
2017 Guest seminar on giving presentations, GEOS900 (Professional Development), UNL
2017 Guest lecture on popular media, Natural Hazards class, UNK Geography
2017 Guest seminar on hazards science, College of Law, UNL
2016 Guest lecture on plate tectonics, ASTR 117, UNL

**GRADUATE STUDENTS MENTORED**
2022-present Anne Lepow, M.Sc. student
2022-present Ana Jimenez Bustos, M.Sc. student
2021-2023 Logan Soluri, former Ph.D. student
2019-present Nicholas Richard, Ph.D. candidate
2019-2021 Juliet Messer, M.Sc., *"Implications from uranium-series disequilibria in a bi-lithologic mantle with varying lithospheric caps"*
2018-2020 Kirby Hobbs, M.Sc., *"Characterizing peridotite xenoliths from southern Vietnam: Insight into the underlying lithospheric mantle"*
2017-2019 Yitong Lyu, M.Sc., *"Major and trace element analyses for studying oceanic crustal construction and ridge morphology along the Kane-Atlantis Supersegment of the Mid-Atlantic Ridge"*

**UNDERGRADUATE RESEARCH STUDENTS MENTORED**
Katie Liske, UNL, 2023
Joe Blecha, UNL, 2023
Dana Andersen, UNL, 2022-2023
Jessica Sorsen, UNL, 2021-present
Clark Ward, UNL, 2019
Kirby Hobbs, UNL, 2017-2018
Max Garvue, UNL, 2017

Kris Guthrie, UNL, 2017
Yitong Lyu, UNL, 2017
Mei Liu, UNL, 2016
Evan Rivers, Bryn Mawr College, 2012-2014
Kelsey Meisenhelder, Bryn Mawr College, 2012-2013
Rachel Davis, Bryn Mawr College, 2012-2013
Nora Chong, Bryn Mawr College, 2011-2012

**PEDAGOGICAL FUNDING**

2017-2019 CAS Instructional Improvement Fund to L. Elkins: Student Projects for Synthesizing Applied Petrology Methods ($5,580)

**PUBLISHED LESSON PLANS**

Elkins, L.J., **"**Petrographic Microscope Home Kit for Smartphones," *NAGT Teach the Earth*, URL: https://serc.carleton.edu/teachearth/activities/237997.html

Elkins, L.J., "Research Podcast Project," *NAGT Teach the Earth,* URL: https://serc.carleton.edu/NAGTWorkshops/intro/activities/68104.html

Elkins, L.J., "Contour Mapping with Playdough," *NAGT Teach the Earth*, URL: https://serc.carleton.edu/NAGTWorkshops/intro/activities/67200.html (Exemplary lesson)

Elkins, L.J., "Mitigating Volcanic Hazards," *NAGT Teach the Earth,* URL: https://serc.carleton.edu/NAGTWorkshops/environmental/activities/68140.html

Elkins, L.J., "How myths form: Accounts from Mt. Pelee," *NAGT Teach the Earth,* URL: https://serc.carleton.edu/NAGTWorkshops/environmental/activities/68132.html

**SERVICE**

**Service to the Profession**

2024 Chair, MSA Awards Committee
2023-present Member, *Notebooks Now!* AGU journals working group
2023 Member, MSA Awards Committee
2022 Member, MSA Committee on Committees
2020-present Topical editor, *Volcanica*
2020 Founder and coordinator, Covid-19 Mineralogy pedagogy discussion board
2016-2019 Member, ENKI User Working Group
2018, 2022, 2023 Panelist, National Science Foundation
2016 Session Convener/Chair, Goldschmidt Meeting, Yokohama
2015 Session Convener/Chair, American Geophysical Union Fall Meeting, San Francisco
2013 Session Convener/Chair, American Geophysical Union Fall Meeting, San Francisco
2012 NSF EarthCube Early Career Strategic Visioning Workshop, Carnegie Institution
2011 Session Convener/Chair, American Geophysical Union Fall Meeting, San Francisco

Journal Reviewer: Contribution to Mineralogy and Petrology, Geochemistry Geophysics Geosystems, Journal of Geoscience Education, Geochemical Perspectives Letters, Bulletin of Volcanology, AGU Books, Earth and Planetary Science Letters, Lithos, Journal of Geophysical Research, Geochimica et Cosmochimica Acta, AGU Advances, Tectonics

Proposal Reviewer: National Science Foundation (MG&G, Petrology & Geochemistry, CAREER, Tectonics, GeoPRISMS), Fondecyt-Chile, Serna-GEOMIN, European Research Council

**Service to the University, College, and Department**

2024 Member, EAS Beautification Committee (UNL)
2023-present Chair, Coffman Chair Search Committee (UNL)

2023 Invited presentation on research programs, New faculty orientation (UNL)
2022-present Coordinator, SEM and XRF equipment request, training, and management (UNL)
2022 Member, CAS IDEA Committee (UNL)
2022 Invited presentation on lesson design, CAS TA training
2021-present Chair, EAS DEI Committee (UNL)
2021-2022 Co-manager of EAS geology Twitter account
2021 URGE (Unlearning Racism in GEoscience) pod leader, coordinator (UNL)
2020-2023 Co-manager of department social media accounts (UNL)
2020-present Faculty Advisor, SEAS (Students of Earth and Atmospheric Science) student club (UNL)
2020-present At-large member, EAS Executive Committee (UNL)
2018-present Building Emergency Floor Coordinator (UNL)
2018-2019 Expert consultant for design of museum exhibit on Ashfall eruption, Nebraska State Museum (UNL)
2017-2022 Geology Group Meeting Coordinator (UNL)
2017-2021 EAS Faculty Recording Secretary (UNL)
2018-2019 Member, Hydrogeology Search Committee (UNL)
2017-2018 Member, EAS Computer Lab Design Committee (UNL)
2015-2018 Libraries Liaison (UNL)
2016 Salary Advisory Committee (UNL)
2015-2017 Member, Beautification Committee (UNL)
2013-2015 Member, Faculty Welfare Committee (Bryn Mawr College)
2008-2012 Member and Chair (2011-2012), Committee on Libraries, Information Services, and Computing (Bryn Mawr College)
2009, 2011 Faculty freshman advisor (Bryn Mawr College)

**Professional Development**

2023 *Seismica* DOA publishing workshop (AGU Fall Meeting)
2023 NSF Teaching Petrology Workshop (Smith College)
2021 Thermodynamic Modeling of Magmatic Processes with alphaMELTS 2 Workshop, Goldschmidt Meeting (virtual)
2020 Summer Institute for Online Teaching course and certificate (UNL)
2019 ENKI User Workshop, Breckenridge, CO
2018 ENKI User Workshop, Santa Ana Pueblo, NM
2018 UNOLS Chief Scientist Training cruise, shore-based participant with training webinars
2017 ENKI User Workshop, Friday Harbor Labs, WA
2016 Computational thermodynamics and petrology with the MELTS family of models workshop, Yokohama, Japan
2016 Grant writing workshop (UNL)
2015-2016 Research Development Fellows Program (UNL)
2015 ARISE Faculty teaching workshop (UNL)
2012 Effective Teaching and Learning in the Large Classroom Setting, NAGT Workshop
2011 Early Career Geoscience Faculty Workshop, NAGT and On the Cutting Edge
2011 Teaching and Learning Initiative Summer Seminar (Bryn Mawr College)
2010 Teaching and Learning Initiative Faculty Pedagogy Seminar (Bryn Mawr College)
2009 How to Get a Research Program Started at a Primarily Undergraduate Institution, GeoCUR Workshop

**Selected Outreach**

2024-present Volunteer coordinator, citizen science project studying antique glass chemistry, Early American Pattern Glass Society
2016-2023 Annual outreach station leader, *Dinosaurs & Disasters,* Nebraska State Museum
2022 Invited Speaker, Hastings Museum, Nebraska

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| 2019 | Sunday With A Scientist event, Nebraska State Museum |
| 2018-2020 | Letters to a Prescientist, penpal for middle school students interested in science |
| 2017 | Helped local 6th grader with mineral science project |
| 2016 | Invited Speaker, Nebraska Citizens for Science Forum |
| 2016 | Involved in research covered by popular science articles in BBC, Daily Mail (R/V Poseidon expedition to 71ºN) |
| 2015 | Faculty Trip Leader/Lecturer, Icelandic Interlude, Bryn Mawr College |
| 2015 | Faculty Trip Leader/Lecturer, Patagonian Frontiers, Bryn Mawr College |
| 2014 | Invited Speaker, Philadelphia Mineralogical Society |
| 2014 | Volunteer "Big Sister" with Big Brothers Big Sisters of Southeastern Pennsylvania, mentored middle school girl interested in science |
| 2010-2011 | Volunteer demonstrator and teaching for Expanding Your Horizons workshop at Swarthmore College, exposing middle school girls to science topics |