

Ranpeng Li

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EDUCATION

Ph.D., Geology, University of Florida

Aug 2021 - Present

Advisor: Dr. Juliane Dannberg

GPA: 4.0/4.0

Thesis: How phase transitions change convection patterns through the Earth's history: A modeling study

Project Description: Computational geodynamics modeling with community software ASPECT to investigate the influence of mineral phase transitions on mantle convection. Model visualization and interpretation, code testing and implementation, method development.

B.Sc., *with honor*, Earth Science, University of California, Santa Barbara

Dec 2020

Advisor: Dr. Zach Eilon

GPA: 3.7/4.0

Honors thesis: Regularization for body wave tomography of Alaska

PUBLICATIONS

Dannberg, J., Gassmüller, R., **Li, R.**, Lithgow-Bertelloni., & Stixrude, L. (2022). *An entropy method for geodynamic modeling of phase transitions: Capturing sharp and broad transitions in a multi-phase assemblage*. *Geophysical Journal International*, 231(3), 1833-1849. <https://doi.org/10.1093/gji/ggac293>

Sun, J., Rudnick, R. L., Kostrovitsky, S., Kalashnikova, T., Kitajima, K., **Li, R.**, & Shu, Q. (2020). *The origin of low-MgO eclogite xenoliths from Obnazhennaya kimberlite, Siberian craton*. *Contributions to Mineralogy and Petrology*, 175(3), 1-22. <https://doi.org/10.1007/s00410-020-1655-6>.

PRESENTATIONS

Li, R., Dannberg, J., Gassmüller, R., Lithgow-Bertelloni., & Stixrude, L. (2023) *Phase transitions impact variations in layering of convection throughout Earth's history: Modeling with a new entropy method and visco-plastic rheology*. **Selected talk** at Gordon Research Seminar & Gordon Research Conference

Li, R., Dannberg, J., Gassmüller, R., Lithgow-Bertelloni., & Stixrude, L. (2022) *Phase transitions impact variations in layering of convection throughout Earth's history: Insights from a new entropy method*. AGU 2022

Li, R., Dannberg, J., Gassmüller, R., Lithgow-Bertelloni., & Stixrude, L. (2022) *Phase transitions may have induced plume and slab stagnation in Earth's past: modeling with a new entropy method and visco-plastic rheology*. Ada Lovelace Workshop on Numerical Modeling of Mantle and Lithosphere Dynamics 2022

Li, R., Dannberg, J., Gassmüller, R., Lithgow-Bertelloni., & Stixrude, L. (2021) *How phase transitions change convection patterns through the Earth's history: A modeling study*. AGU 2021

PROFESSIONAL AND TEACHING EXPERIENCE

Teaching Assistant - Earth Materials

Fall 2022

Instructor: Dr. Matt Smith

Duties: lead mineralogy lab sections, maintain microscopes, hold office hours, grade lab assignments

Teaching Assistant - Age of Dinosaurs

Summer 2022

Instructor: Dr. Ryan Wilhelmi

Duties: maintain office hours, grade assignments

Teaching Assistant - Environmental & Engineering Geology

Fall 2021

Instructor: Dr. Courtney Sprain

Duties: maintain office hours, grade assignments

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Research Assistant – Mineralogy sample preparation

Oct 2019 – Mar 2020

Supervisor: Dr. Roberta Rudnick (UCSB)

Mineral separation methodology for steel mortar and pestle rock crushing, Frantz magnetic separation, and heavy liquids density separation.

FIELD EXPERIENCE

Blake Plateau, Offshore Southeast US

Aug 2023

PI: Dr. Harm Van Avendonk (UT Austin)

Four-week high energy marine seismic investigation on the Atlantic passive margin with R/V Marcus Langseth. OBS deployment and retrieval.

Death Valley, CA

Mar 2022

Instructor: Dr. Jim Vogl (UF)

One-week field trip to study the tectonics and the metamorphic core complex in Death Valley.

Mojave Desert, CA

May 2018 & Mar 2020

Instructor: Dr. Alex Wrobel (UCSB)

A four-day field trip to practice the field methodology and a five-day trip to study the structural geology of Mojave Desert. Mapping and field methods.

Semail Ophiolite, Oman

Dec 2019

Instructor: Drs. Matt Rioux and Susannah Porter (UCSB)

Two-week field trip to study the Semail Ophiolite and related UHP rocks, snowball earth related deposits, and Neoproterozoic sedimentary formations in Oman.

HONORS/AWARDS/SCHOLARSHIP

UF Grinter Award	2021, 2022 & 2023
UF Graduate Student Council Travel Grant	2021, 2022 & 2023
UF Geological Sciences Department Travel Support	2021, 2022 & 2023
UF LUCEI Travel Grant	2021, 2022 & 2023
German Academic Exchange Research Internship in Science & Engineering	2020
Mineralogical Society of America's Undergraduate Prize	2019

SKILLS

Programming & Softwares:

Python, MatLab, C++, GMT, Linux, LaTeX, Microsoft Office/Word, Excel, and PowerPoint, Photoshop, Paraview, ImageJ, Inkscape

Laboratory Methods & Procedures:

Optical Petrography Analysis, Microscope Photography, Heavy Liquids Separation, Frantz Magnetic Separation, EMPA Sample Preparation

OUTREACH AND VOLUNTEER

Treasurer, GeoGrads Student Organization	2022 & 2023
Organizer, Department Brown Bag seminars	2022 & 2023
Lecturer, Scientist in Every Florida School	2022 & 2023
Volunteer, Can You Dig It at Florida Museum of Natural History	2022 & 2023