

Peng JIANG

Assistant Faculty Specialist • MAS Early Career Scholar • Department of Earth Sciences • University of Hawai'i at Mānoa

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Education

- **Ph.D.** (Geology), University of Florida (UF), **2022**.
Co-Advisors: David A. Foster and Michael Perfit
- **M.S.** (Mineralogy, Petrology & Economic Geology), Institute of Geology and Geophysics, Chinese Academy of Sciences (IGGCAS), **2017**.
Co-Advisors: Hongrui Fan and Kuifeng Yang
- **B.S.** (Geology), China University of Geosciences (CUG), **2013**.
Co-Advisors: Changqian Ma and Jianwei Li

Research Interests and Projects

- Research Interests:
 - ✚ Petrochronology, Geochemistry, Accessory minerals, Microanalysis, Giant gold mineralization, Crust evolution and Craton destruction, Orogenesis and metamorphism, Oceanic magmatism and mantle source characteristics, Tectonics, Thermodynamic-geochemical modeling, Experimental petrology, etc.
- Research Projects: (See [web](#) for details)
 - ✚ Olivine geochemistry study as a probe into mantle source characteristics and magmatic differentiation in East Pacific Rise 2020-present
 - ✚ Monazite petrochronology study in Damara Orogen to gain insights into monazite growth mechanism and tectonic evolution 2019-present
 - ✚ Method Developments on high-precision and high accuracy EPMA and LA-(MC)ICP-MS elemental and isotopic analyses on accessory minerals (monazite, zircon, olivine, etc.) 2017-present
 - ✚ Hydrothermal monazite and metal sulfides geochemical study to constrain the timing of gold mineralization and mechanisms for Au deposition 2014-2017
 - ✚ Titanite petrochronology study as a probe into the tectono-magmatic evolution in Jiaodong during destruction of North China Craton 2013-2016

Instructional Portfolio

- ❖ Courses to be taught at the University of Hawai'i at Mānoa
 - **GG621 Electron Microprobe Analysis** (2 credits) - offered in Fall Semester
This is a graduate level course that is required for all users of the electron microprobe. It has a theoretical part and a lab part. The theoretical part deals with the theory of electron-solid interaction, components of the probe, quantitative and qualitative analysis as well as the various pitfalls. The lab part teaches how to become an autonomous user of the electron microprobe facility, including sample preparation, sample change, imaging and mapping and setting up a quantitative analysis from scratch. There is a theoretical test and a 1-day project at the end of the semester, where the student demonstrates the capability of obtaining high-quality data independently with safe operations.

- **GG699 Advanced Electron Microprobe Analysis** (2 credits) - offered in every other Fall Semester
Students who have already taken the GG621 course can sign up for this course. Advanced topics, such as low-voltage analysis for submicron particles, non-linear background corrections, MAN (mean atomic number) and MPB (multi-point background) background methods, time-dependent intensity variation on beam-sensitive materials, secondary fluorescence corrections, light element analyses, will be covered. Other topics can be covered upon request. Students need to develop their own lab projects with the lab manager (course instructor) to acquire desired EPMA data, so as to benefit their research work.

❖ Courses taught at the University of Florida

- ** Awarded the “Ernst Award” by the department as an *outstanding teaching assistant* 2021
- ESC1000 – *Introduction to Earth Science*, Graduate Teaching Assistant, UF 2022 (Spring)
- GLY3200C – *Principles of Mineralogy*, Graduate Teaching Assistant, UF 2021 (Fall)
- GLY4310C – *Igneous and Metamorphic Petrology*, Graduate Teaching Assistant, UF 2021 (Spring)
- GLY3200C – *Principles of Mineralogy*, Graduate Teaching Assistant, UF 2020 (Fall)
- GLY4310C – *Igneous and Metamorphic Petrology*, Graduate Teaching Assistant, UF 2020 (Spring)
- GLY3200C – *Principles of Mineralogy*, Graduate Teaching Assistant, UF 2019 (Fall)

Professional Position / Experience

- *Assistant Faculty Specialist*, Electron Microprobe Lab Manager 2022-present
- Convener & Chair of 2022 Goldschmidt session “*The Formation, Dynamics, and Influence of Magmatic Systems in the Oceanic Crust*”, Hawaii 2022
- Chair of 2021 AGU session “*The Dynamics of Magmatic Plumbing Systems*”, NOLA 2021
- Graduate research assistant, University of Florida 2017-2022
- Journal reviewer for *American Mineralogists*, *Journal of African Earth Sciences*, *Ore Geology Reviews*, *Geological Magazine*, etc. 2016-2017
- Graduate research assistant, Chinese Academy of Sciences 2014-2017
- Undergraduate research assistant, China University of Geosciences 2012-2013

Honors and Awards

❖ Fellowship, scholarships, and awards so far reach around **\$26,083.33**

- UF Dissertation Scholarship (\$8,266) 2022
- UF pre-doctoral *MOU Fellowship* (\$10,124.33) 2021-22 & 2019
- *Honorary Mention* at the NanoFlorida 2020 Conference 2020
- *MAS (Microanalysis Society) Early Career Scholar* 2019
- *Research Publication Awards* (¥23,000; c. \$3,289) from IGGCAS 2019 & 2017
- *National Graduate Scholarship* (¥20,000; c. \$2,860) for Master student (China) 2016
- *Merit Student* at IGGCAS 2014
- *Tsang Hin-chi Scholarship* (¥3,600*3; c. \$1,544) for successive three years 2010-2012
- *University-level Outstanding Student* (three times) at CUG 2010-2012
- *Excellent Intern for Zhoukoudian Geological Internship* (CUG) 2011

Grants and Funds

- ❖ Travel & Research grants/funds so far reach **\$158,407.22**
 - University of Hawai'i at Mānoa start-up fund, \$150,000 2022-2025
 - Land Use and Environmental Change Institute (LUECI) funds (4 times), \$1,300 2018-2022
 - UF Graduate Student Council (GSC) Travel Grant (3 times), \$1050 2018, 2021, 2022
 - UF Geological Department Travel Grant (4 times), \$1100 2018-2022
 - UF College of Liberal Arts and Sciences (CLAS) Travel Grant (twice), \$600 2019, 2022
 - Geological Society of America (GSA) Graduate Student Research Grants (\$1,240) 2020
 - UF Geological Department Research Grants (\$1,000) 2020
 - UF Geological Department Chair's funding for Conference Travel Support, \$640 2019
 - MAS Quantitative Microanalysis 2019 Topical Conference Travel Grant, \$748 2019
 - UCLA SIMS Workshop Travel Grant, \$535 2019

Manuscripts in Preparation (to be submitted)

[Google Scholar](#)

[Research Gate](#)

[ORCID](#)

- [Jiang, P.](#), Foster, D.A., Goscombe, B., Kamenov, G., and Trucco, A. (202x) Episodic and semi-continuous monazite growth within an orogenic cycle: Insights from variously correlated Th-U-Y-Ce zonation and U-Pb dates. *To be submitted*.
- [Jiang, P.](#), Perfit, M., Anderson, M., Kamenov, G., Herzberg, C., and Trucco, A. (202x) Major and trace elements in Seamount Olivine: Proxies reveal the 'missing pyroxenite' and mantle metasomatism beneath the East Pacific Rise. *To be submitted*.

Manuscripts under Review / in Revision / Accepted

- Peng, H.W., Fan, H.R., Lai, J.Q., [Jiang, P.](#), Yang, Y.H., Wu, S.T. (202x) Post-deposition hydrothermal alteration and U-Pb isotopic resetting of wolframite in the Tiantangshan deposit, Nanling Range (south China): implications of complex isotopic ages. *Ore Geology Reviews* (under review).
- Zhang, Y.W., Fan, H.R., Li, L., Li, Q.L., Hu, F.F., Cai, Y.C., [Jiang, P.](#), Feng, K. (202x) Archean atmospheric sulfur stocked in the Cretaceous gold deposits. *Geochimica et Cosmochimica Acta* (under review after revision).
- [Jiang, P.](#), Foster, D.A., Perfit, M., and Trucco, A. (202x) Improved analytical protocols for monazite Th-U-total Pb chemical dating and Ti-in-zircon thermometry by electron microprobe. *Chemical Geology* (in revision).

Peer-Reviewed Papers

- [Jiang, P.](#), Perfit, M., Foster, D.A., and Trucco, A. (2022) Accurate analyses of key petrogenetic minor and trace elements in olivine by electron microprobe. *Chemical Geology*, 614, 121199. [Link](#)
- Goscombe, B., Foster, D.A., Kelsey D., Wade, B., Gray, D., Mulrooney, L., [Jiang, P.](#), Haseler M., Marsellos A. (2022) Episodic intra-continental reactivation during collapse of a collisional orogen: the Damara Belt, Namibia. *Gondwana Research* (invited review), 109, 285-375. [Link](#)
- Peng, H.W., Fan, H.R., [Jiang, P.](#), Hu, H.L. and Lan, T.G. (2021) Two-stage rollbacks of the paleo-Pacific plate beneath the Cathaysia block during Cretaceous: Insights from A-type granites and volcanic rocks.

Gondwana Research, 97, 158-175. [Link](#)

- Peng, H.W., Fan, H.R., Santosh, M., Hu, F.F. and [Jiang, P.](#) (2020) Infrared microthermometry of fluid inclusions in transparent to opaque minerals: challenges and new insights. *Mineralium Deposita*, 55, 1425-1440. [Link](#)
- Yang, K.F., [Jiang, P.*](#), Fan, H.R., Zuo, Y.B. and Yang, Y.H., (2018). Tectonic transition from a compressional to extensional metallogenic environment at~ 120 Ma revealed in the Hushan gold deposit, Jiaodong, North China Craton. *Journal of Asian Earth Sciences*, 160, 408-425. [Link](#)
- Feng, K., Fan, H.R., Hu, F.F., Yang, K.F., Liu, X., Shangguan, Y.N., Cai, Y.C. and [Jiang, P.](#) (2018) Involvement of anomalously As-Au-rich fluids in the mineralization of the Heilan'gou gold deposit, Jiaodong, China, Evidence from trace element mapping and in-situ sulfur isotope composition. *Journal of Asian Earth Sciences*, 160, 304-321. [Link](#)
- Ma, W.D., Fan, H.R., Liu, X., Pirajno, F., Yang, K.F., Xu, W.G., Yang, Y.H., and [Jiang, P.](#) (2017). Geochronological framework of the Xiadian gold deposit in the Jiaodong province, China: Implications for the timing of gold mineralization. *Ore Geology Reviews*, 86, 196-211. [Link](#)
- [Jiang, P.](#), Yang, K.F., Fan, H.R., Liu, X., Cai, Y.C., and Yang, Y.H. (2016). Titanite-scale insights into multi-stage magma mixing in Early Cretaceous of NW Jiaodong terrane, North China Craton. *Lithos*, 258, 197-214. [Link](#)

* **NOTE: Co-first author. Contribute equally to the paper.**

Selected Conference Abstracts

- [Jiang, P.](#), Perfit, M., Anderson, M., Kamenov, G., and Trucco, A. (2022) "Probing" mantle source compositions and melt evolution beneath the northern East Pacific Rise using olivine geochemistry. *Goldschmidt 2022*, 5fT2 (Oral).
- [Jiang, P.](#), Perfit, M., Anderson, M., Kamenov, G., and Trucco, A. (2021) Unraveling MORB petrogenesis along the East Pacific Rise (EPR) 8°20' N Seamounts and Siqueiros Transform: Insights from olivine minor and trace element geochemistry. *AGU Abstracts*, V54B-03 (Oral, Highlighted). [Link](#)
- [Jiang, P.](#), Foster, D.A., Goscombe, B., Kamenov, G., and Trucco, A. (2021) Episodic and continuous monazite growth within an orogenic cycle: A monazite petrochronology case study in the central Damara Orogen. *AGU Abstract*, T15E-0213. [Link](#)
- [Jiang, P.](#), Foster, D.A., Perfit, M., and Trucco, A. (2020) Pushing the boundaries for electron microprobe: sub-micron scale high-precision and high accuracy minor and trace element analysis. *NanoFlorida 2020 Conference abstract*. (Received "Honorary Mention" for the conference) [Link](#)
- [Jiang, P.](#), Foster, D.A., Goscombe, B. and Trucco, A. (2019) Monazite Growth in Response to Metamorphic and Deformation Events at Different Structural Levels. *AGU Abstracts*, V52B-03 (Oral).
- [Jiang, P.](#), Foster, D.A., Perfit, M., and Trucco, A. (2019) Capability of Cameca SXFive Field Emission EPMA in Acquiring High-precision and High-accuracy Minor and Trace Elemental Data at High Spatial Resolution. *MAS Quantitative Microanalysis 2019 Topical Conference Abstracts*, 118-119. [Link](#)
- [Jiang, P.](#), Foster, D.A., Perfit, M., and Trucco, A. (2018) Application of High Spatial Resolution Major and Trace Element Analyses of Accessory Minerals in Metamorphic Tectonites by Electron

Microprobe. *GSA Abstracts with Programs*, 50 (6).

- **Jiang, P.**, Yang, K.F., Fan, H.R., and Liu, X. (2016) Magma mixing, mingling and its accompanying isotopic and elemental partitioning: Records from titanites in Guojialing-type granodiorites and dioritic enclaves, Jiaodong, North China. *AGU Abstracts with Programs*, V23B-2971.
- **Jiang, P.**, Yang, K.F., Fan, H.R., Liu, X., et al. (2016) Superimposed gold mineralization triggered by multi-stage fluids in Heilangou deposit, Jiaodong: Insights from Au-bearing sulfide geochemistry and fluid inclusions in quartz. *18th National Conference for Inclusions and Geofluids Abstracts (Oral)*.
- **Jiang, P.**, Yang, K.F., Fan, H.R., Liu, X., et al. (2016) A record of ~120 Ma compressional-extensional metallogenic environmental transition: Implications for a two-stage superimposed mineralization of Hushan gold deposits, Jiaodong. *13th National Conference for Mineral Deposits Abstracts (Oral)*.

Invited Talks/Seminars

- *Academic job searching seminar* for graduate students at IGGCAS Nov 2022
- *PhD defense talk* for graduate students at the University of Caldas Oct 2022
- *Geological Sciences Brownbag Seminar Series – EPMA method development*, UF Sep 2020
- *Geological Sciences Brownbag Seminar Series – Titanite petrochronology*, UF Sep 2017
- *Annual Research Symposium of Key Laboratory of Mineral Resources (2016)*, IGGCAS Jan 2017

Professional Development & Training

- Goldschmidt *AlphaMELTS 2* Thermodynamic Modeling workshop attendee (Hawaii) 2022
- UF Graduate Professional Development, *Fall 2021 Writing Program*, participant 2021
- “*Phase Equilibrium Modeling: Approaches and Pitfalls*” workshop attendee (virtual) 2021
- 2nd International Workshop on EPMA-ATHENS attendee (virtual) 2021
- Goldschmidt Virtual Diffusion Workshop 2020 attendee 2020
- UF “*Science Communication*” workshop attendee, Gainesville, Florida, USA 2020
- UCLA SIMS Workshop attendee, Los Angeles, California, USA 2019
- USTC Isotopic Geochronology Short Course attendee, Hefei, Anhui Province, China 2013

Professional Field Experience

- Mineralogy Field Trip to North Carolina and Georgia (Mineralogy course; Co-leader) 2021
- Death Valley National Park field study (~2weeks) 2018
- Jiaodong scientific field investigation and sampling (4 field seasons, ~8 weeks in total) 2013-2016
- Graduation internship in Tieshan and Jinshandian Fe-skarn deposits (Hubei) (~7weeks) 2012
- Hong ‘an ultra-high pressure (UHP) metamorphic rocks’ field study (2 days) 2011
- Zhoukoudian comprehensive field study and independent geologic mapping (~6 weeks) 2011
- Granitoids observations and sampling in South China (Zhejiang-Fujian) (2 weeks) 2011
- Beidaihe cognitive geologic field study (~2 weeks) 2010

Students Mentored

- *Denali Kincaid*, last-year undergraduate at UF. (Guided her with EPMA mount preparation,

- EPMA MORB glass analysis, data reduction, and AGU poster revision, etc.) 2021
- *Jiaying Wu*, previous graduate student at NUS (now at UIUC). (Mentored her for academic career preparation, overseas university DIY application, paper writing, etc.) 2018-2021
- *Hong-Wei Peng*, previous graduate student at IGGCAS. (Guided him with data reduction, data interpretation, paper manuscript writing and revision, etc.) 2018-2021
- *Kai Feng*, previous graduate student at IGGCAS. (Guided him with LA-ICP-MS, EPMA and SIMS experiments, helped with data reduction and interpretation, etc.) 2016-2017

Public Outreach & Extracurricular Activities and Honors

- Florida Museum (at UF) *Can You Dig It* annual event, Instructor on Volcano “eruption” 2022
- *Speed Mentoring Event* for grads and undergrads, UF, Participant 2021
- Florida Museum (at UF) *Can You Dig It* annual event, Instructor on AR sandbox 2019
- K-12 students’ “*Earth Science Popular Science Education*” at IGGCAS, Invited presenter 2016
- “English Salon Night” at IGGCAS, Principal organizer 2014-2015
- *Second Prize* for “*National University Student Arts Festival*” (in China), Orchestra team 2012
- Chinese traditional orchestra concerts (five times), Orchestra team and Solo (or lead) 2010-2012
- Social practice survey on “*Wuhan Hanzheng Street Removal*”, *Third Prize*, Organizer 2011