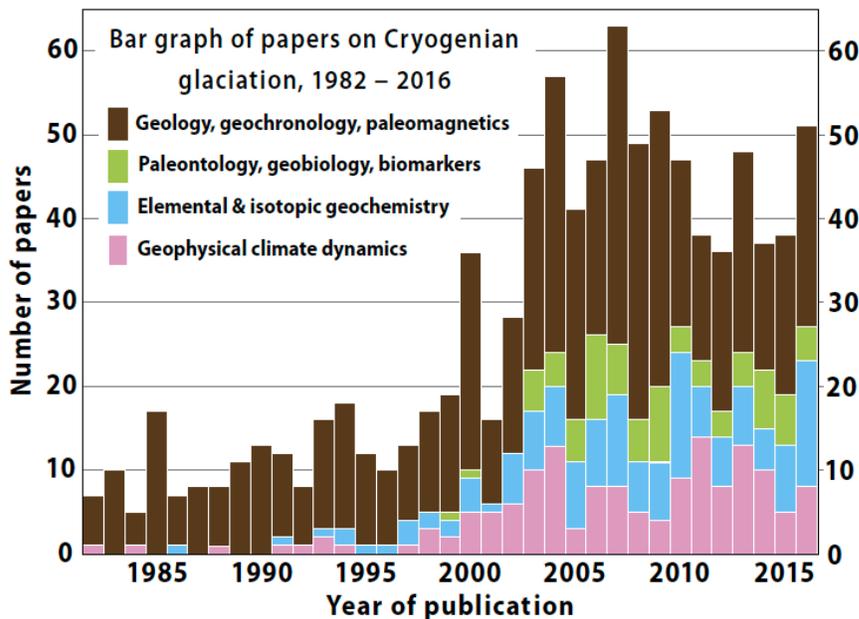


GEL 250 (Spring 2021) Seminar on Snowball Earth (The CRN is 62848)

Instructor: Qing-zhu Yin (Zoom Meetings)

My colleagues and I have been doing some research in the recent years on testing Snowball Earth hypothesis with our high precision geochronological capabilities. We have published some work, and a lot more to come. However, the more I delve into the subject, the more I find myself inadequately equipped with the new knowledge and insights developed over the last two decades by the wider scientific community. The field of research has been growing so rapidly since the first inception of Cryogenian glaciation in 1982 (see attached figure from Hoffman et al., 2017 in the flyer). There were significant growths of geophysical and geochemical papers after 1996; and there were significant growths in geobiology papers after 2002; whereas research on “eo-Cambrian” glaciation was exclusively geological from 1870 to 1980s.



The aim of the course is for the participants to catch up with some key developments and advanced understanding in the interdisciplinary fields of geology, geochemistry, geophysics and geobiology from the last two decades on the subject of Snowball Earth hypothesis. The course will be a combination of lectures on some key observations and arguments following Hoffman et al 2017 Science Advances review paper, followed by in depth discussion of some key papers from geology, geochemistry, geophysics and geobiology, lead by the participating graduate students in the class. Select papers will be chosen from the 500 or so references in Hoffman et al (2017) as well as some most recent papers from 2017 to 2021.

It is a 3-credit graduate level course. We will have a first organizational meeting in the first week of Spring Quarter, 2021. I encourage graduate students interested in the general subject to register for GEL 250: Seminar on Snowball Earth.

There are no prior technical knowledges of the subject required. All of us would have to start from somewhere, sooner or later in our career. By spending time on a subject (like earning a degree), we become an expert in a field. It is my genuine hope that I could share my excitement, my mistakes, my misconceptions, and my learning experiences with all participants and we grow together academically in our common quest to understand our home planet a step closer. The students performance will be evaluated and graded based on your active participation, contribution to the class discussion, and final summary presentation and reports written up of 15 pages summarizing key observations, findings, ideas, hypothesis, and future areas for further research and testing, in any subdisciplines of geology, geochemistry, geophysics, and geobiology pertinent to the subject of Snowball Earth. Depending on the number of students in the class, the project for the final presentation and write up could be a group effort or individual one.

Qing-Zhu Yin

Feb. 9, 2021