

# Hongyu Xiao

The Department of Geology  
The School of Earth, Society & Environment  
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## EDUCATION

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2016	M.S. in Geophysics/Physics	University of Chicago	Chicago, IL
		Advisor: Douglas MacAyeal	
2014	B.E.S in Geological Engineering	China University of Petroleum, Beijing	Beijing, China
	GPA: 89.7/100	<i>Honor Program</i>	

## RESEARCH INTERESTS

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- Global Seismology focusing on seismic imaging of lithosphere structure

## RESEARCH PROJECTS

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- 2017-Present **Intraplate seismicity investigation and dispersion removal technique**
- Collected and visualized the current tomography data of New Madrid and East Tennessee Seismic zone
  - Adopted the ambient noise tomography package in east Asia stations to retrieve the green's function, cross correlations and dispersion relationships
  - Constructed theoretical test seismic model to test the dispersion removal method from acoustic experiment
  - Applied the dispersion removal method from acoustic experiment in the laboratory environment to real cross correlation data in east Asia
- Advisor: Xiaodong Song
- 2015-2016 **Early Earthquake Warning System modeling**
- University of Chicago*
- Conducted and visualized the current early earthquake warning model comparison in western United States.
  - Adopted the neural network method for early earthquake modeling in California and established a 3-layer theoretical model
  - Collaborated with other student from UCB to test the 3-layer model with synthetic seismograms in western United States.
  - Tested neural network model with real historical data in California and Japan to conduct the field test and calculate false alarm rates.
- Advisor: Dr. Douglas MacAyeal

- 2015-2016 **Availability research for cogeneration project**  
*University of Chicago*
- Collected and compared current energy consumption structure on campus and possible alternatives nationwide and potential budgets for cogeneration project
  - Conducted a field work with the campus facility team investing the current systems efficacy and the cost of current system
  - Collaborated with students from public policy and established a potential plan for cogeneration replacing current system with higher efficacy.
- Advisor: Dr. Elisabeth Moyer
- 2012-2013 **Application of uniform approximation in seismic data interpretation**  
 National Innovation in Science and Technology Project for College students  
*College of Geosciences, CUP(Beijing)*
- Applied the best uniform approximation for strata factors in industrial seismic interpretation data.
  - Conducted a synthetic test on the best uniform approximation method and analyzed the error range of the method
  - Compared with previous polynomial approximation method and summarized for potential application.
- Advisor: Dr. Cao Siyuan
- 2011-2012 **Genetic analysis of chert in Wumishan formation**  
*College of Geosciences, CUP(Beijing)*
- Conducted a field work with the project team into Wannianfen area and collected rock samples of Wumishan formation in Beijing area
  - Reviewed current understanding of Wumishan formation in Beijing area and constructed a comparison summary
  - Analyzed thin section samples of Wumishan formation under microscope and summarized the petrology of Wumishan formation in Beijing area
- Advisor: Dr. Ji Hancheng

## **TEACHING EXPERIENCE**

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2016-2017	STEM Teen Program	Program Instructor	Chicago, IL
	<i>University of Chicago</i>		
	<ul style="list-style-type: none"> <li>• Prepared lectures and class activities focusing on the analysis of energy consumption and earth structures for 20-30 high school seniors and freshman level undergraduates.</li> <li>• Collaborated with Argonne National Lab outreach team to provide informative demonstrations in lab about earth phenomenon and interpretations.</li> <li>• Mentored 3 groups of students for energy investigation project in data collection and in visualization of various options.</li> <li>• Guided the students in preparation and presentation of research findings.</li> </ul>		
2012-2013	Mathematical Modeling	Teaching Assistant	Beijing, China
	<i>China University of Petroleum</i>		

- Prepared lectures and class activities focusing on mathematical modeling methods.
- Explained challenging concepts using planned lessons, assignments and targeted discussions for students.
- Guided the students in preparation and presentation of research findings.

## **PUBLICATION**

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2012      Tang J, Yang Y, **Xiao H** et al.  
**Measure Metallic Linear Expansion Coefficient by Optical Lever Method.** *Modern Scientific Instruments.* 2012

## **EMPLOYMENT**

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2013	Qingdao Institute of Marine Geology Data Analyst Intern	Qingdao, China
2013	SINOPEC SHENGLI Oil Field Remaining Oil Analyst Intern	Dongying, China

## **THESES**

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2016	A Model for Early Earth Warning System Advisor: Dr. Douglas MacAyeal	Master's Thesis
2014	Study of effective source rock of Bayingebi formation in Chagan oilfield Advisor: Dr. Liu Guangdi	Senior Thesis

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## **FIELD EXPERIENCE**

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2014.11	Stratigraphy Geology Field Work in UW-Madison	Madison, Wisconsin
2013.8	Exploration Geology Field Work in Dagang oil field	Tianjin, China
2012.7	Structure Geology Field Work in Liujiang basin	Qinhuangdao, China
2011.8	Mineralogy/Geology Field Work in Zhoukoudian	Beijing, China

## **HONORS AND AWARDS**

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2013	Academic Excellence Scholarship
2011	China University of Petroleum Scholarship, First Prize

## **EXTRACURRICULAR ACTIVITIES**

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2012-2013	The volunteer working for underprivileged students in Junior High
2012-2013	Vice-president in Stock Simulation/Analysis Club
2012	China University of Petroleum Mathematical Contest in Modeling

## **PROGRAMMING SKILLS**

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Matlab/Python/C/CSH/Linux/Perl/R

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## **LANGUAGES**

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English(Professional) / Chinese (Mandarin, Native speaker) / German (Beginner)

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## **REFERENCES**

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### **Xiaodong Song, Professor**

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### **Douglas R. MacAyeal, Professor**

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### **Siyuan Cao, Professor**

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