Arushi Saxena

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Education

Center for Earthquake Research and Information University of Memphis, TN
PhD in Geophysics Aug. 2015 – May 2020
Advisor: Dr. Eunseo Choi
Thesis Title: *Investigating intraplate seismicity in the Central and Eastern US: Linking observations and numerical models*

Indian Institute of Technology Roorkee, India
Integrated Master and Bachelor of Technology in Geophysics Aug. 2009 – Aug. 2014
Advisor: Dr. Rambhatla G. Sastry
Thesis Title: *Non invasive hydraulic conductivity estimation using microgravity survey*

Professional Experience

Post-doctoral Fellow, Clemson University, USA Jul, 2023 – Present
Post-doctoral Associate, University of Florida, USA June, 2020 – Jun, 2023
Research Assistant, University of Memphis, USA Aug, 2015 – May, 2020
Junior Geophysicist, Sterling Oil and Gas, Nigeria July, 2014 – May, 2015
Graduate Research Assistant, Indian Institute of Technology, India Jun, 2013 – Jun, 2014

Publications

- ⋆ **Saxena, A.**, Dannberg J., Gassmöller, Fraters, M., Heister, T., & Styron, R. **(2023)**. High-resolution mantle flow models reveal importance of plate boundary geometry and slab pull forces on generating tectonic plate motions. *J. of Geophys. Res.: Solid Earth*
- ⋆ **Saxena, A.**, Choi, E., Powell, C. & Langston, C. A. **(in-prep)** Volatiles from slab contributes to intraplate seismicity at the New Madrid Seismic Zone.
- ⋆ Lee, S., **Saxena, A.**, Song, J. H., Rhie, J., & Choi, E. **(2022)**. Contributions from lithospheric and upper-mantle heterogeneities to upper crustal seismicity in the Korean Peninsula. *Geophys. J. Int.*, 229(2).
- ⋆ Chatterjee, A., **Saxena, A.**, Aslam, K., Van Alstine, A., & Zeb, M. S. **(2022)**. The Variation of b-Value of Earthquakes During COVID-19 Lockdowns: Case Studies from the Cascadia Subduction Zone and New Zealand. *J. of Info. Manag.*, 21
- ⋆ **Saxena, A.**, & Langston, C. A. **(2021)**. Detecting lithospheric discontinuities beneath the Mississippi Embayment using S-wave receiver functions. *Geophys. J. Int.*, 228(2)
- ⋆ **Saxena, A.**, Choi, E., Powell, C. A., & Aslam, K. S. **(2021)**. Seismicity in the central and southeastern United States due to upper mantle heterogeneities. *Geophys. J. Int.*, 225(3)
- ⋆ Geng, Y., Powell, C. A., & **Saxena, A. (2020)**. Joint local and teleseismic tomography in the central United States: exploring the mantle below the upper Mississippi Embayment and the Illinois Basin. *J. of Geophys. Res.: Solid Earth*, 125(10)

Other Publications

- ⋆ **Saxena, A.**, Fraters, M. **(2021)**. Earthquakes within plates *blog of the Geodynamics Division of the European Geosciences Union*
- ⋆ **Saxena, A.**, Heister, T. **(2021)**. Starting Earth Models *blog on Integrated Geodynamic Earth Models*,
- ⋆ **Saxena, A.**, Fraters, M. **(2020)**. Across Borders and Sectors *blog on Geodynamics Division of the European Geosciences Union*

Invited Talks

- ⋆ High-resolution mantle flow models reveal importance of plate boundary geometry and slab pull forces on plate motions, ASPECT User Meeting. **Spring 2023**
- ⋆ Numerical models to investigate intraplate global and regional tectonics, Pennsylvania State University, US. **Spring 2023**
- ⋆ Reconciling mantle convection and associated surface deformation through numerical models, Center for Earthquake Research and Information, University of Memphis, US. **Fall 2022**
- ⋆ Developing geodynamic models to investigate regional tectonics and global plate-driving forces, Indian Institute of Science Education and Research, India. **Spring 2022**
- ⋆ Investigating regional and global process through seismology and geodynamic models, University of Florida, US. **Fall 2021**
- ⋆ Reproducing present-day plate motions in high-resolution global mantle flow models with plate boundaries, GFZ Postdam, Germany. **Spring 2021**

Teaching Experience

- ⋆ **Course Instructor** of GLY 4450, GLY 5455: Introduction to Geophysics, University of Florida, Spring 2022
- ⋆ **Substitute Instructor** Introduction to Geodynamics, University of Memphis, Fall 2018

Funding

Contributed to Computational Infrastructure for Geodynamics - Community Code Scaling, **EAR2008 Frontera Pathways** 2021, 2022m 2023	150696 CPU hours
Contributed to CIG Science Gateway and Community Codes for the Geodynamics Community, **XSEDE Allocations** 2022	50000 CPU hours
Collaborator in Improving and Bringing the Geodynamic World Builder into the CIG community, **Computational Infrastructure for Geodynamics**	

Fellowship & Grants

Travel grant Eastern Section of Seismological Society of America 2019	$500
Travel grant American Geophysical Union 2017	$500
Graduate Research Scholarship Graduate Aptitude Test in Engineering 2013-2014	INR 12,000
Summer Research Fellowship Indian Academy of Sciences 2011	INR 6,000

Professional Development

Peer Review

NSF-Geophysics Proposals: Reviewer
Geophysical Journal International: Reviewer Geochemistry, Geophysics, Geosystems: Reviewer

Code Development

Contributor of **ASPECT**, community geodynamic modeling software which has been used in over 112 publications	2017–Present
Contributor of **WorldBuilder**, open-source software used for setting complex initital conditions in geodynamic models	2020–Present

Field Deployment

Nodal Seismometers in Iris Community Wavefields Experiment, Oklahoma, US	Summer 2016
Gravimeter at Indian Institute of Technology, Roorkee, India	2013–2014
GPR, Institut national de la recherche scientifique, Quebec, Canada	Summer 2013

Service

Volunteer Judge, Outstanding Student Presentation Award, AGU Fall Meeting	2020–2023
Session convener of Exploring Multiscale Solid-Earth Dynamics Using Computational Methods and High-Performance Computing, AGU Fall Meeting	2021
Blog Editor, European Geophysical Union: Geodynamics	2020-2022
Graduate Student Representative at Center for Earthquake Research and Information, University of Memphis	2017-2019
Secretary, Society of Exploration Geophysicists—Student Chapter at University of Memphis	2016-2018

Education & Outreach

Guest Speaker, Scientist in Every Florida School Middle Schools in Florida	2020-2022
Volunteer, Can you Dig it? : A partner event with University of Florida to showcase Earth Science to general public, Florida Museum	Apr 2022

References

- ⋆ Dr. Eunseo Choi, Associate Professor, CERI, University of Memphis, echoi2@memphis.edu
- ⋆ Dr. Juliane Dannberg, Assistant Professor, University of Florida, juliane.dannberg@ufl.edu
- ⋆ Dr. Timo Heister, Associate Professor, Clemson University, heister@clemson.edu