

## Suvankar Chakraborty, Ph.D.

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### CONTACT INFORMATION

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### TECHNICAL EXPERIENCE

Operation and maintenance of Delta Plus XP IRMS with EA, TC/EA, GCC, MAT 253 IRMS, CRDS, and Gasbench for stable isotopes; Q-600 series TGA; laser diffraction particle size analyzer; Tiamo titration unit; Cameca SX-50 electron microprobe; ARL-SEMQ electron microprobe; Hitachi 4300 SEM; Rigaku Geigerflex XRD; HATCH spectrophotometer and Mössbauer spectroscopy.

Experienced running samples on Ion microprobe (IMS-1270, UCLA), La-ICP-MS (Arizona), XRF, Cameca SX-100 electron microprobe (Michigan and New Mexico Tech), Fluid inclusion analyzer (Linkam THMSG600), ICP-MS and ICP-OES (Kentucky).

Experience in petrographic microscopy, modal analysis and ore microscope study.

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### RESEARCH EXPERIENCE

Provenance study, igneous petrology, sedimentology, stable and radiogenic isotope analysis, geochemistry and tectonics.

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### WORK EXPERIENCE

**2013-Current-** University of Utah, Stable Isotope Research Facility (SIRFER) Research Manager, Department -Global Change and Sustainability Center Adjunct Assistant Professor, Department – Geology and Geophysics SIRFER routinely measures H, C N, and O isotope ratios in air, water, sediment, rock, soil and organic samples. Overseeing research and operation of the laboratories, all major stable isotope equipment, staff and facility users. Maintaining database system for client base operation, communicating with internal and external clients, conducting experiments and methods development to explore possible isotopic analysis of geologic and environmental samples.

**2012-2013-** University of Kentucky, Department of Earth and Environmental Sciences Research Facility Manager. Overseeing research and laboratory equipment (including IRMS, CRDS, XRD, TGA and EMP) and conducting laboratory experiments. Training and assisting visiting clients, preparing sample mounts for SEM and electron microprobe analysis, and record keeping.

**2010-2012-** Postdoctoral Scholar, National Astrobiological Institute (NASA) Synthesizing carbonate minerals in laboratory condition and study them for mineral chemistry and stable isotope. Also perform regular maintenance work for XRD, EMP, IRMS, SEM and TGA.

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**2007-2010-** Researcher, University of Kentucky  
Provenance study of the Neoproterozoic Ocoee sediments; maintaining ARL-SEMQ microprobe and Cameca SX-50 microprobe equipment and conducting experiments.

**2004-2007-** Teaching Assistant, Bowling Green State University and University of Kentucky  
Organizing and teaching labs for introductory level geology courses both in field and in lab.

**2002-2004-** Quality Controller, Future Techno Solutions of India, Kolkata

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## EDUCATION

**2010-** Ph.D. (Geology), University of Kentucky  
**Dissertation-** *Provenance of the Neoproterozoic Ocoee Supergroup, Eastern Great Smoky Mountains.*

**2007-** M.S. (Geology), Bowling Green State University, Ohio  
**Thesis-** *The geochemical evolution of alkaline magmas from the Cray Mountains, Marie Byrd Land, Antarctica.*

**2002-** M.Sc. (Geology), University of Calcutta, Calcutta, India  
**Thesis-** *Petrology of lamprophyric intrusives and sandstone provenance study around Bagrakot, Darjeeling Himalaya.*

**2000-** B.Sc. (Geology), University of Calcutta, Calcutta, India

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## PUBLICATIONS

- ✚ Cook, C.S., Erkkila, B., Chakraborty, S., Tipple, B.J., Cerling, T.E., and Ehleringer, J.R. (2017). Stable Isotope Biogeochemistry and Ecology: Laboratory Manual. Amazon publication. ISBN-10 1973349086.
  - ✚ Chesson, L., Tipple, J.B., Chakraborty, S., Rogers, K.M., Carter, J.F. (2017). Odds and Ends, or, All That's Left to Print. In Carter, James and Chesson, Lesley. Editor (Eds.), *Food Forensics*, New York, CRC Press.
  - ✚ Mcglue, M. M., Palacios-Fest, M. R., Cusminsky, G. C., Camacho, M., Ivory, S. J., Kowler, A. L. & Chakraborty, S. (2017). Ostracode biofacies and shell chemistry reveal quaternary aquatic transitions in the Pozuelos basin (Argentina), *Palaos*, 32: 413-428.
  - ✚ Ford, W., Fox, J., Pollock, E., Rowe, H., & Chakraborty, S. 2013. Testing assumptions for nitrogen transformation in a low gradient agricultural steam, *Journal of Hydrogeology*, 527, 908-922.
  - ✚ Chakraborty, S., Moecher, D., & Samson, S. (2012). Provenance of the Ocoee Supergroup, *GSA Bulletin*, 124: 1278-1292.
  - ✚ Li, W., Chakraborty, S., Beard, B., Romanek, C.S., & Johnson, C. (2012). Magnesium isotope fractionation during precipitation of inorganic calcite under laboratory conditions, *Earth and Planetary Science Letters*, 333, 304-316.
  - ✚ Yang, Y., Sahai, N., Romanek, C.S., & Chakraborty, S. (2011). A
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computational study of Mg<sup>2+</sup> dehydration in aqueous solution in the presence of HS<sup>-</sup> and other monovalent anions – insights to dolomite formation, *Geochimica et Cosmochimica Acta*, 88:77-87.

- # Hietpas, J., Samson, S., Moecher, D., Chakraborty, S. (2011). Enhancing tectonic and provenance information from detrital zircon studies: Assessing terrane-scale sampling and grain-scale characterization: *Journal of the Geological Society-London* 168, 309-318.
- # Moecher, D.P., Hietpas, J., Samson, S.D., and Chakraborty, S. (2011). Insights into southern Appalachian tectonic from ages of detrital monazite and zircon in modern alluvium: *Geosphere*, 7, 494-512.
- # Saha, A., Dhang, A., Ray, J., Chakraborty, S., & Moecher, D. (2010). Complete Preservation of Ophiolite Suite from South Andaman, India: A Mineral-Chemical Perspective, *Journal of Earth System Science*. 119, 1-16.
- # Chakraborty, S., and Ray, J. (2008). Geochemistry and Tectonic setting of the recent Barren Island Volcanism of the Andaman Sea, *Indian Journal of Geology*, 77, 13-21.

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- # Freeman, R., Sarah, F., Schramm, T., Brett, C., Mosser, S., Blair, M., & Chakraborty, S. (2013). Can carbon isotopes constrain high-resolution stratigraphy of Ordovician shallow water facies in the Cincinnati, Ohio region? *GSA Abstract*, 45, 585.
  - # Timel, D., Romanek, C.S., Chakraborty, S., Unrine, J., & Mehmet, M. (2011). Comparison of trace-element content of different sulfur mineralizations in Kalkim region (Yenice-Biga Peninsula, Turkey), *GSA abstract*, 43, 5, 587
  - # Li, W., Chakraborty, S., Beard, B., Johnson, C., & Romanek, C. (2011). Experimental determination of Mg isotope fractionation during precipitation of inorganic calcite, *GSA abstract*, 43, 5, 162.
  - # Chakraborty, S., Romanek, C.S., & Moecher D. (2011). Whole-rock geochemistry, mineralogy, petrography and thermometry of an L6 chondrite from Pembina County, North Dakota, *GSA abstract*, 43, 5, 268.
  - # Chakraborty, S., Moecher, D., & Samson, S. (2010). Provenance Analysis of the Neoproterozoic Ocoee Supergroup, Eastern Great Smoky Mountains, NC/TN, *GSA Abstract*, 42, 1.
  - # Chakraborty, S., Panter, K., & Wilch, T. I. (2010). Evolution of phonolite and trachyte magmas at the Crary Mountains, Marie Byrd Land, Antarctica, *GSA Abstract*, 33, 28.
  - # Moecher, D., Hietpas, J., Samson, S.D., & Chakraborty, S. (2010). Insights into Southern Appalachian Tectonic History from Ages of Detrital Monazite and Zircon in Modern Alluvium and Bedrock Sources, *GSA Abstract*, 42, 1
  - # Hietpas, J., Samson, S.D., Chakraborty, S., & Moecher, D. (2008). Zircon-Based Provenance Studies: Going All the Way Requires More than Just A Date, *Geological Society of America- Northeast sectional meeting*, Buffalo, NY.
  - # Chakraborty, S., Moecher, D., & Samson, S. (2008). Detrital Mineral
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## ABSTRACTS

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## CONFERENCE PRESENTATIONS

- Chemistry and Petrographic Constraints on Provenance of Snowbird Group Siltstones, Eastern Great Smoky Mountains, abstract, GSA Annual Meeting.
- ✚ Chakraborty, S., and Ray, J. (2002). Petrology of Lamprophyric Intrusives around Bagrakot, Darjeeling Himalaya, abstract, IGCP, GONNDWANA-II, Christchurch, New Zealand.
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- ✚ University of Calcutta, Department of Geology- 2002- (Oral Presentation) - "Geochemistry and Tectonic setting of the recent Barren Island Volcanism of the Andaman Sea".
  - ✚ GSA Annual Meeting -2008 – (Poster Presentation) – "Detrital Mineral Chemistry and Petrographic Constraints on Provenance of Snowbird Group Siltstones, Eastern Great Smoky Mountains".
  - ✚ AAPG Student Expo – 2009 – (Poster Presentation)- "Provenance study of the Snowbird Group".
  - ✚ University of Kentucky, Department of Earth and Environmental Sciences – 2009 – (Oral Presentation) - "Provenance Analysis of the Snowbird Group, Eastern Great Smoky Mountains (NC/TN)".
  - ✚ GSA Northeastern / Southeastern Section Meeting – 2010 – (Oral Presentation) - "Provenance Analysis of the Neoproterozoic Ocoee Supergroup, Eastern Great Smoky Mountains (NC/TN)".
  - ✚ GSA Annual Meeting- 2011 - (Poster Presentation) – "Whole-rock geochemistry, mineralogy, petrography and thermometry of an L6 chondrite from Pembina County, North Dakota".
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## INVITED PEER REVIEW

- ✚ Peng, C., Wang, M., Yang, Y., Zhang, K., Li, Peng, Yang, Y., Ni, J., & Zhu, Q. (2017). Spatial patterns of leaf  $\delta^{13}\text{C}$  and its relationship with plant functional groups and environmental factors in China. *Biogeosciences. Imp.Fact- 3.7*
  - ✚ Zang, M., Liu, X., Wang, S., Zhou, P., Wang, J., & Zhao, P. (2017). Stable hydrogen and oxygen isotope ratios of bottled water through China, *Isotopes in Environmental and Health Studies, Imp.Fact- 1.33*
  - ✚ Black, S., Eley, Y., Loveridge, A.J., Wood, K., Trethowan, P., & Macdonald, W. (2017). Pussy cat, pussy cat where have you been..? Evaluating the use of stable isotopes, radiogenic isotopes and trace elements for investigating the ecology of *Panthera leo*, *Ecology and Evolution, Imp.Fact-2.537*
  - ✚ Liu, X., Zang, M., Wang, S., Zhou, P., Wang, J., & Zhao, P. (2016). Stable hydrogen and oxygen isotope ratios of bottled water in China, *Rapid Communication in Mass Spectrometry. Imp.Fact- 2.226,*
  - ✚ Ladd, N., & Sachs, J. P. (2016).  $^2\text{H}/^1\text{H}$  fractionation in lipids of the mangrove *Bruguiera gymnorrhiza* increases with salinity in marine lakes of Palau, *Geochimica et Cosmochimica Acta, Imp.Fact- 4.250*
  - ✚ Kavousi, A., Maghsudnia, H., & Shaham, A. (2016). Introducing the Promising Mineral Areas of the Northwest of Qazvin Province based on Geochemical Studies, *OJG, Imp.Fact- 0.60*
  - ✚ Gholamhosseinfard, N., Sorbi, A., & Arian, M. (2015). Active Tectonics of Kangavar Area, W Iran. *OJG, Imp.Fact- 0.60*
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- ✚ Farajat, M. A., Adamat, R, A., Amoush, H., A., & Harahshesh, A. (2014). Using GIS and DRASTIC vulnerability mapping of groundwater in determining spatial expansion of dumpsites, case study from Mafrag and Russaifah, OJG. Imp.Fact- 0.6
  - ✚ Belay, S., Amsaulu, A., & Abebe, E. (2014). Land use and land cover changes in Awash National Park, Ethiopia: Impact of decentralization on the use and management of resources. OJE. Imp.Fact- 0.56
  - ✚ Delgado, E.A.H., Molina, A. E. M., Camis, P. J., Candelas-Sanchez, F., Miranda, J.S.F., Ramos, C. M., Rodriguez, R. G., Mege, P., Acuna, A. A. M., Maldonado, I. O., Cruz, A. O., & Ramos, S. E. (2014). Community-Based Coral Reef Rehabilitation in a Changing Climate: Lessons Learned from Hurricanes, Extreme Rainfall, and Changing Land Use Impacts, OJE, Imp.Fact- 0.56
  - ✚ Alshahrani, S., & Evans, J.E. (2014). Shallow-water Origin of a Devonian Black Shale, Cleveland Shale Member (Ohio Shale), Northeastern Ohio, U.S.A., OJG, Imp.Fact- 0.60
  - ✚ Authors Undisclosed, (2014), Similarity of groundwater quality wetland of Rio Negro, Mato Grosso do Sul, Brazil, NS. Imp.Fact- 0.80
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**OTHER SERVICE**

- ✚ Judge: Tracy Farmer institute for Sustainability and the Environment Annual Student Poster Presentation 2013.
  - ✚ Judge: 2017 University of Utah Geology and Geophysics annual student poster presentation
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**COMPUTER SKILLS**

- ✚ Petrology software: Igpert, Newpet, Minpet and P-T modeling
  - ✚ Geophysics software: Vistas and Zip
  - ✚ GIS software: ArcGIS and Surfer
  - ✚ Geochronology: software isoplot and zips
  - ✚ Stable isotope software: Isodat
  - ✚ Statistical software: SPSS and SAS and MatLab
  - ✚ Low temperature geochemistry software: Geochemist workbench and Minteq
  - ✚ Graphical software: Photoshop, Corel, Grapher, Canvas and Micrographics
  - ✚ Win NT architecture, C++, VC++, Win32API, VJ++, VB, DTC, SQL, System Management, networking, HTML, MS Office suites
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**HONORS AND AWARDS**

- ✚ Brown-McFarlan Grant for Research (2008-2009), Department of Earth and Environmental Sciences, University of Kentucky
  - ✚ Ferm Grant for Field Research (2007-2009), Department of Earth and Environmental Sciences, University of Kentucky
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