JOYANTO ROUTH

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Department of Thematic Studies – Environmental Change
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EDUCATION

Ph.D. (Geochemistry) Texas A&M University, USA (1993-98)
MS (Geology) Eastern Washington University, USA (1991-93)
M.Sc. (Applied Geology) University of Roorkee, India (1988-90)
B.Sc. (Honours Geology) Rajasthan University, India (1986-88)

RESEARCH INTERESTS

Biogeochemistry, Environmental geochemistry, Climate change and adaptation, Organic Geochemistry
My research focuses on paleoclimate reconstruction, monsoons, and pollution issues. One of my key interests is the application of biomarkers in environmental research. Current projects focus on some of these issues in India (air pollution and respiratory impacts) Nepal (carbon flux in mountain streams), Iran (climate-culture links in Bronze Age settlements), China (acid mine drainage, bioaccumulation of metals), India (monsoon reconstruction in speleothems and lake sediments; arsenic problem in aquifers), and Lake Victoria (soot, eutrophication, POPs, and Holocene climate reconstruction).

PROFESSIONAL EXPERIENCE

2020- Full Professor, Linköping University
2018-20 Biträdande Professor, Linköping University
2011-2018. Senior Universitetslektor (Associate Professor), Linköping University
2010-2011. Forskare, Örebro University
2009-2011. Associate Professor, IISER-Kolkata (India)
2000-2009. Stockholm University
Forskare, Docent in Biogeochemistry (October 2004)
Forskarassistent in Biogeochemistry (2000-2004)
1998-2000. Geoscientist, Schlumberger-Geoquest, Houston (USA)
1998. Geochemist, ARCO, Plano, Texas (USA)
1993-1998. Research/Teaching Assistant, Texas A&M University, College Station (USA)
1991-1993. Teaching Assistant, Eastern Washington University, Cheney (USA)

RESEARCH GRANTS

Funded by various Swedish and international agencies since 2001 (VR, SIDA, Formas, Knut och Alice Wallenberg, EU, Swedish Institute, SWECO, Texas Advanced Resch Program). >25 msek as PI.

Ongoing projects

Vetenskapsrådet (2021-24) Coal-based economies in developing countries: An environmental, health and cost evaluation around mega thermal power plants. J. Routh (PI), Sayantan Sarkar, Raja Dhar, Shyama Dasgupta, Mohammad Shoeb

Vetenskapsrådet (2017-21) The fate of organic carbon in small mountain rivers in the Himalayas: Implications for soil erosion and climate change. J. Routh (PI), S. Sharma (co-PI).

Guangzhou Research Center (2019-20) Acid mine drainage and trace metal mobilization around mine sites in Guandong province: Water and food safety

SUPERVISION (ongoing)

PhD: 1 (main supervisor: Dennis Njagi, 2 (co-supervisor: Kasun Gayantha, Rajendra Bhandari)
MSc: Amira Elbarmelgy, Thanh Huyen Xa

Degrees finished up to 2018:

PhD main supervisor: 6 students (Andrew Minu, Devanita Ghosh, Andrea Baker, Preetam Choudhary, Rajesh Ranjan, Supriyo Das)
PhD co-supervisor: 2 students (Gustaf Hugelius, Johanna Borgendahl)
Licensiat (2 main supervisor: Supriyo Das, Aparajita Bhattacharya) (1 co-supervisor: Gustaf Hugelius)
MSc thesis: 12 students (Wing Sze Chan, Katrin Germanisova, Sara Versano, Chen Luo, Yannis Arnis,

Gustav Pajala, Gayatri Basapuram, Karolina Gurjarkaite, Moses Odihambo, Rajashi Roychoudhury, Vikas Kumar, Abhinav Kumar)
BSc/Examensarbete thesis (20+ students)
Post-doctoral researchers (5): Dr. Dativa Shilla (2014-15, Tanzania), Dr. Kalpana Singhamshetty (2012-13, India), Dr. Supriyo Das (2009, Sweden), Dr. Sushmitha Baskar (2009-10; India), and Dr. Ambujum Saraswathy (2001-02, Japan/India).

TEACHING

Teaching various PhD, MSc and undergraduate courses in USA (Eastern Washington Univ, Texas A&M Univ, Sweden (Stockholm Univ, Linköping Univ), and India (IISER-K) since 1993.
Graduate and undergraduate courses: Climate Science and Policy, Environmental Science, Biogeochemical Cycles, Environmental geochemistry, Organic geochemistry, Hydrology, and Introductory Geology, Environmental Sciences

REVIEWER

Associate Editor: Applied Geochemistry (Elsevier) 2011- present
Associate Editor: Current Pollution Reports (Springer) 2015- present
Associate Editor: Groundwater for Sustainable Development (Elsevier) 2015- present

Project Grants Reviewer
Norwegian Research Council, French Research Council, Singapore Research Council, IFS, NRC - Panel Member

INSTITUTIONAL RESPONSIBILITIES

Head, Vernadsky Unit, TEMA-M, Linköping Univ (2018-23)
Member of IISER-Kolkata Senate (2010-12)
Member Research Committee, IISER-Kolkata (2010)
Member Teaching Committee, IISER-Kolkata (2010)
Member Bio-Safety and Hazards Committee, IISER-Kolkata (2010)
Convener, Department of Earth Sciences, IISER-Kolkata (2010-12)
Board Member (2006-08), Department of Geology and Geochemistry, Stockholm University

Independent reviewer of departmental promotion and tenure
Linköping University, UCT-South Africa, IISER-Kolkata

PUBLICATIONS

78 peer-reviewed papers published, in review (4), >75 abstracts
Citations 2275, h-index 28 (Google Scholar); Researchgate score: 36.13

SELECTED PUBLICATIONS (last 3 years)

- Gayantha K, **Routh, J.**, Krishnamurthy, A., Jean L, Roberts, P, Chandrajith, R. and Gleixner, G. (2020) Reconstruction of the Late Holocene climate and environmental history from Bolgoda North Lake, Sri Lanka using lipid biomarkers and pollen records. *Journal of Quaternary Science,* 1-12.
- Luo, C., **Routh, J.,** Dario, M., Sarkar, S., Wei, L., Lao, D., Liu, Y. (2020) Distribution and mobilization of heavy metals at an acid mine drainage-affected region in South China. *Science of Total Environment*, 724, 138122.
- Shilla, D., Pajala, G., **Routh**, **J.**, Dario, M., Kristoffersson, P. (2019). Trophodynamics and biomagnification of trace metals in aquatic food webs: the case of Rufiji Estuary in Tanzania. *Applied Geochemistry* 100, 160-168.
- Huguet, C., **Routh, J**., Fietz, S., Lone, M.A., Kalpana, M.S., Ghosh, P., Mangini, A.M., Kumar, V., and Rangarajan, R. (2018). Temperature and monsoon tango in a tropical stalagmite: Last glacial-interglacial climate dynamics *Nature Scientific Reports DOI:* 10.1038/s41598-018-23606-w.
- Gurjarkaite**,** K., **Routh, J.,** Djamali, M., Vaezi, A., Pohat, Y., Naderi Beni, M., Tavakohli, V., and Kylin H. (2018). Vegetation history and human-environment interactions through the late Holocene in Konar Sandal, SE Iran. *Quaternary Science Reviews* 194, 143-155.
- Ghosh, D., Bhadury, P**., Routh, J.** (2018). Coping with arsenic stress: Adaptations of arsenite-oxidizing bacterial membrane lipids to increasing arsenic levels. *Microbiology Open* DOI: 10.1002/mbo3.594.

PERSONAL

Date of birth: 1968-05-05; married (2 children)