

Tanya Shukla

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Research interests

Fluvial geomorphology | Earth surface processes | Remote sensing | Sustainable river management | River health | Geospatial analysis

Education

August 2019 - Present	Ph.D. (<i>in progress</i>) Geography and Geographic Information Science, University of Illinois at Urbana Champaign (UIUC) Thesis: Dynamics of anabranching rivers juxtaposed with lowland meandering rivers in intensively managed landscapes Advisor: Prof. Bruce Rhoads
July 2018	Masters of Technology Earth Science, Indian Institute of Technology Gandhinagar (IITGN) Thesis: Sediment budgeting of the Narmada River basin as a tool for sustainable sediment mining and river management Advisor: Dr. Vikrant Jain
May 2016	Bachelors of Technology Civil Engineering, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, India

Teaching Experience

Sp23, F22, SU22	Instructor, GIS/ESE 103: Earth's Physical Systems, UIUC
Sp20	Teaching Assistant, GIS/ESE 103: Earth's Physical Systems (In-person), UIUC
F19	Teaching assistant, GEOG/ESE 103: Earth's Physical Systems (Online), UIUC
F17	Teaching assistant, EH 601: Earth Surface Processes in the Anthropocene, IITGN

Research Experience

2020-2021	Research Assistant, Critical Interfaces Network (CINet), UIUC
Sp18	Research Fellow, River Health Assessment for the Ramganga River, India, IITGN

Publications

- 2022 | **Shukla, T**, Lewis, QW, Rhoads, BL. Spatial Patterns of Transport-Effective Flow at Three Small Confluences: Relation to Channel Morphology. *Earth Surf. Process. Landforms*. <https://doi.org/10.1002/esp.5532>
- 2022 | **Shukla, T**, Rhoads, BL. Meandering Rivers in the midwestern US that anabranch: prevalence, morphological characteristics, and power regime. In *Riverflow 2022 conference proceedings*
- 2018 | Devi, U; Taki, K; **Shukla, T**; Sharma, K.P.; Hoque, R.R.; Kumar, M. Microzonation, ecological risk and attributes of metals in highway road dust traversing through the (Kaziranga) National Park, Northeast India: Implication for confining metal pollution in the national forest, *Environmental Geochemistry and Health*. doi: 10.1007/s10653-018-0219-4.

Funded projects

- 2021-2022 | Co-investigator, "Floodplain morphology, floodplain inundation, and riparian ecology in the context of the changing hydrology of rivers in Illinois". (with Principal investigators Dr. Bruce Rhoads and Dr. Praveen Kumar), Illinois Water Resources Center (IWRC), \$11,504

Fellowships and awards

- Schlesinger Travel Grant, UIUC, 2022
- Summer research grant, 2021
- Block Grant fellowship for 2021-22 academic year
- Second runner up, SESE Research Review Outstanding Poster Award, 2022
- Supplementary Summer Block Grant (SSBG), Graduate College, University of Illinois
- Messina Stanley Graduate Scholarship
- Winner, Doctoral or Master's poster competition at West Lakes AAG conference
- Foster fellowship
- Lloyd V. Berkner Travel Fellowship for AGU Fall Meeting 2018, Washington D.C.

Professional affiliations

- American Association of Geographers, November 2019-2021
- American Geophysical Union (AGU), August 2018-19, 2020-21

Relevant coursework

Fluvial Geomorphology | Sediment Transport | Humans and Rivers | Open channel Hydraulics | Sedimentology and Stratigraphy | Earth surface processes in the Anthropocene | Modeling of earth system and sustainability | Critical zone system science | Remote sensing of the land and environment | Advanced hydraulic engineering | River processes | Quantitative geomorphology

Conference presentations

- 2022 **Tanya Shukla**, Bruce Rhoads. Critical linkages between floodplain geomorphology and riparian forests in intensively managed fluvial landscapes. American Geophysical Union Fall Meeting, (Talk)
- 2022 **Tanya Shukla**, Bruce Rhoads. Prevalence of juxtaposed anabranching-meandering channel planform in Midwestern US: morphological characteristics and power regimes. American Association of Geographers Annual Meeting (Talk)
- 2021 **Tanya Shukla**, Bruce Rhoads. Anabranching reaches juxtaposed with lowland meandering rivers in the midwestern United States: morphological characteristics and power regimes. American Geophysical Union (AGU) Fall Meeting (Poster)
- 2021 **Tanya Shukla**, Bruce Rhoads. Dynamics of anabranching rivers juxtaposed within lowland meandering rivers in intensively managed landscapes. American Association of Geographers (AAG) Annual Meeting (Talk)
- 2020 **Tanya Shukla**, Quinn Lewis, Bruce Rhoads. Stage-related changes in flow structure at three small confluences. American Geophysical Union (AGU) Fall Meeting (Talk)
- 2019 **Tanya Shukla**, Quinn Lewis, Bruce Rhoads. Three-dimensional flow structure at three confluences with different planform configurations at high flow stages. West Lakes Division of the American Association of Geographers (WLDAAG) 2019 Annual Meeting (Poster)
- 2019 **Tanya Shukla**, Divya Chaudhari and Vikrant Jain. River health analysis of a Himalayan river: A hydrogeomorphic approach. European Geosciences Union (EGU) (Poster)
- 2018 **Tanya Shukla** and Vikrant Jain. Sediment Budgeting as a Tool for Sustainable Sediment Mining: Case Study from a Bedrock River in Peninsular India, Abstract EP33C-2354, American Geophysical Union (AGU) Fall Meeting 2018 (Poster)
- 2018 **Tanya Shukla**, Sonam and Vikrant Jain. Spatial variability in channel processes and its applications for river management. The 6th International Symposium on Advances in Civil and Environmental Engineering Practices, for Sustainable Development (ACEPS-2018)

Languages and software skills

- **Data analysis tools:** ArcGIS | ENVI | ERDAS-IMAGINE
- **Modeling tools:** SWAT | SWAT-CUP | HEC-RAS | ANSYS-Fluent
- **Programming languages:** MATLAB | R | Python
- **Markup languages:** L^AT_EX

Synergistic activities

- Chair, SESE Research Review organizing committee, 2022
- Faculty Representative, Geography Graduate Student Association (GGSA), 2021-2022
- Conference session organizer and chair 'River Dynamics - Forms, Processes and Observations', American Association of Geographers (AAG) Annual Meeting 2022
- Panelist, Annual Ethics Discussion, Department of Geography and GIS, University of Illinois, 2021
- Conference session organizer and chair 'River Dynamics - Forms, Processes and Observations', American Association of Geographers (AAG) Annual Meeting 2021
- Moderator, Virtual networking event 'Meetup for International Graduate Students and Early Career Geographers', AAG Annual Meeting 2021