

**Junior Faculty Mentorship Program at Department of Earth Sciences,  
Indiana University Purdue University Indianapolis, USA**

**Grantee Information**

Name: Muhammad Zahir

U.S. Institution: Indiana University-Purdue University, Indianapolis (IUPUI)

Home Institution in Pakistan: Centre for Climate Research and Development (CCRD),  
COMSATS University Islamabad

Research Field: Air quality and water quality monitoring

**Scholar Bios**

My name is Muhammad Zahir currently I am working as a Research Associate at Centre for Climate Research and Development (CCRD), COMSATS University Islamabad. I am an Environmentalist I worked on several key projects and studies.

**What resources did you use and/or in which activities did you partake at the institution where you stayed? (Please select all the apply.)**

- Visited an on-campus library (Yes)
- Utilized scholarly collections that were previously unavailable (Yes)
- Attended a lecture (outside of the classroom) (Yes)
- Attended an in-class lecture (Yes)
- Gave a lecture (outside of the classroom) (Yes)
- Gave an in-class lecture (No)
- Collaborated with other junior scholars (Yes)
- Collaborated with other senior scholars (Yes)
- Exchanged contact information with other scholars (if yes, approximately how many?)  
Yes, and I shared contact information with 15 scholars
- Attended a local/cultural event (Yes)
- Began a new research project (Discussed with many scholars and supervisor and very soon it will start)
- Continued working on a research project started before this program (Yes)
- Became more familiar with the U.S. culture and lifestyle (Yes)
- Other (please explain below)

**Program Description**

The main focus of this program (Junior faculty mentorship program) was the capacity building of junior researchers from Pakistan. It consists of attending different lectures on environmental matters, visiting different environmental research laboratories, and several discussion sessions on initiating research opportunities together. This program helped me in my professional development and improved my teaching, service, and research responsibilities. This program was designed for six weeks starting from August 18 to September 29, 2019. Professor Dr. Gabriel Filipelli, Professor of Earth Sciences and Director, Center for Urban Health Indiana University-Purdue University, Indianapolis (IUPUI) was my mentor. Under his supervision and guidance, I discussed some very interesting research opportunities together. My visit involved different discussion sessions in

which some other faculty members and experts also participated to discuss the possible collaborations.

## **Deliverables and Outcomes**

The primary purpose of this mentoring program was the capacity building and to ensure the career success of junior faculty. Junior faculty mentorship program is an informal program designed to help newly hired and non-tenured faculty members. This program was included on following things: Meetings, Seminars /Lectures/ Symposium, Field visit for sampling and Labs visits

Introductory Meeting with professor Gabe and other faculty members of the Earth sciences department. I met with several members of the department of earth sciences and discussed with them about CCRD working and what our future mission. Madam Susann Haase, International Scholar Advisor, Office of International Affairs gave orientation to International scholars at first day. I attended some events during this period, like Purdue School of Science, Science Welcome Picnic, Friday, September 13, 2019, 11:00 AM - 2:00 PM, 2019 ERI Fall Research Symposium organized by Environmental Resilience Institute at Indiana University Bloomington and Visit of IU Bloomington for Symposium, it was a great session Meeting with some students and other faculty and discussed on CCRD working. Visit to Air Quality network in Pleasant Run and visit to view sensor installed at Keep Indianapolis beautiful (KIB) building.

Learn from prof. Gabe on Lead and mercury and how Gabe team working on it. He shared some literatures with us usually his recent papers like, Geochemical legacies and the future health of cities: A tale of two neurotoxins in urban soils. I shall also be participating in writing a research article along with other researchers.

I visited the University of Wisconsin, Wisconsin State Laboratory of Hygiene (WSLH)

The Wisconsin State Laboratory of Hygiene (WSLH) develops and provides essential public health laboratory support to communities, agencies and private health providers consistent with the public health goals of the state. This includes: Analytical services for the Department of Natural Resources, the Department of Health Services, local government units, healthcare practitioners and private citizens; Specialized public health procedures and reference testing; Training, technical assistance and consultation for private and public health agencies; Applied research and university instruction related to the public health and environmental protection mission of the laboratory. I really impressed from this laboratory they have such a great setup and doing an excellent job. I met with Martin Shafer, Michael R Olson, and Robel Rebelde.

I also visited the Water Science and Engineering Laboratory (WSEL)

The Water Science and Engineering Laboratory (WSEL) is a multidisciplinary facility devoted to research and graduate training. WSEL is administered by the College of Engineering (COE) in collaboration with other campus colleges. Researchers affiliated with COE, the College of Agricultural and Life Sciences (CALS) and the College of Letters and Science (LS) conduct research in WSEL. Collaborative projects frequently bring scientists and engineers from the WI DNR, the US Geological Survey, the Wisconsin State Laboratory of Hygiene, industry, and other universities to WSEL. Alex Lai gave us overview of PM 2.5 and 10 sampling and characterizations methods and demonstrate methods for sectioning filters, extraction, and analysis for IC and WSOC, and extraction for GCMS analysis. I learned so many new things from Alex demonstration. We also got to see the Wisconsin DNR Horicon Marsh Sampling Site. I went to the collection of water sampling in Pleasant Run Watershed with Dr. Katerina and I learned from Dr.

Katerina how she is collecting water samples and analyse water quality parameters both in field and in lab.

Visit of IU Bloomington for Symposium, it was a great session during the symposium, I met with Michael W. Hamburger, professor of geophysics, Stephanie H. Richards and Prof. Dr. Richard P. Phillips. I also had couple of meetings with Asrah (a Ph.D. student of Dr. Gabe). She gave us a demonstration on the monitoring of PM 2.5 through sensors in Indianapolis. I visited an NGO called "Keep Indianapolis Beautiful". They have started different projects like community forestry, habitat restoration, urban naturalists, trash boxes and recycle and communities involments for natural reseources managments. Other than the study visits, there were fun visits too like I have been to Indiana state museum, White river and Mississippi river. Through this visit I got familiar with American cultute, people and so many things.

I am very thankful to AIPS for funding this program and my special thanks are, Professor Gabe, Cathy Chouinard, John, Asrah, Dr. Farhat, Nadeem Akbar and Katerina for guidance and support. Some pictures from the visit are attached below;