

Working together for a better future!

Research engineer and adjunct professor, *Marian Muste*, College of Engineering, University of Iowa, talks to *Sarah Berry* about his relationship with India and bringing about change where it matters the most.



Q 1. Tell us a bit about your journey as a student and a professional?

I was always a “river guy.” Early on, I understood the importance of rivers as the crux of any civilization. The growing misuse of water resources became a concern as I was growing up, which is why I wanted to engage with a cause close to my heart and through which I could make a difference. Initially, I studied civil engineering but later migrated into hydrosience. Teaching and research have been integral parts of my profession for almost forty years, and I have enjoyed every bit of it.

Q 2. Since you have been a part of academia for a long time, what changes have you seen in the world of education?

A lot of focus today is laid upon ready-from-the-internet facts, figures, and solutions. Of course, technology has, is, and will play an important role across our lives, but the process of arriving at a solution is actually a journey that has to be *lived* to be understood. Research, interpretation, deduction, and outcome are important aspects of critical thinking. Commercialization is rampant, with materialistic values sometimes overtaking traditional values. Of course, times change. Dynamism is, and should be, organic.

Q 3. What about your journey in India? How did it begin?

I am involved in organizing international courses for students under the theme of water resources since 2001. Originally, our courses exposed students to water problems around the world, each year in another location. Since 2011, when we visited India for the first time, our course model has been changed and maintained so far. Two faculty instructors carry out the course delivered in India and it done in partnership with an Indian nonprofit organization employing a variety of techniques to address societal problems related to water. This new model was so successful for all the people involved i.e., students, hosts, and faculty that each year we are visiting the same country and the same place of the country: India and Mewat area, respectively. The approach now is more

centric to working with the host foundation, understanding the challenge at hand, and developing pragmatic approaches toward finding joint solutions. Currently, the work with S M Sehgal Foundation, our host, is centered on the district of Nuh in Haryana, where the challenge at hand is the availability of freshwater and its judicious use.

Q 4. How has the experience been for the students?

Each year, though there is a new batch of students, the overarching goal is always kept in sight. Students are assigned their roles in the project clearly, so that work progresses smoothly. Besides this, the interdisciplinary interaction enables students to benefit from the exchange of ideas and learn to adapt, adjust, and work with one another. Feedback has been very positive. I wish to add that it is not only work, but also getting to know the country through excursions and experiences made.

Q 5. What are the main activities envisaged during the three-week stay of the students?

The first activity pertains to field work, which includes hydraulic measurements, water-related analysis applicable to both quantity and quality, looking for new approaches to save water especially in saline pockets, and building structures to retain freshwater including monsoon water. The second step is to work on specialized numerical simulations. This is followed by the preparation of a summary brief, including suggested design protocols, that is subsequently handed over to the host organization. The sustainability of the findings is important, which is why the foundation carries forward the work done by us, based on our research and analysis.

Q 6. How do you see the way forward in terms of finding solutions for difficult challenges like the one you mentioned above?

Finding a solution is not always so simple. Having said that, it is important to bring about behavioral change, which is encouraged through supporting data. It is on the latter that we work intensively. If one has figures to support a development such as the depletion of the freshwater table by five meters over a period of just two years, this could serve as a reference for a more conscious effort to conserve water. More than technical solutions, individual behavioral changes are paramount.

Q 7. Any final comments or thoughts?

Something I have always found intriguing is how, even in a simple village life, contentment can be found in abundance. Besides this, the human link has gained even more importance for me since my travel to India. The friends made, the relationships nurtured over years, and the new bonds secured are all valuable to me. We hope to keep building on our research, develop solutions, and continue to work together for a better future.



(Interview by Sarah Berry, communications and media consultant, S M Sehgal Foundation)