

IAHR Spain Young Professionals Network. Annual Report 2019.

About the Young Professionals Network

IAHR South East Spain Young Professionals Network was founded in 2012, led by José María Carrillo at Universidad Politécnica de Cartagena and was originally known as “Universidad Politécnica de Cartagena student chapter”. It grew with the additional support of the Universitat Politècnica de València and Universidad de Castilla - La Mancha; it comprehends the Spanish South-East Mediterranean region, which shares common hydraulic engineering challenges mainly related to water scarcity and seasonal flooding, augmented by the impact of climate change. It currently counts on 14 active members and an advisor Professor.

Recent activities of the Young Professionals Network

Having a clear focus on knowledge transfer in water science and the relevance of stimulating at younger ages, several activities related to research and dissemination have been carried out in the recent past. This YPN also served to effectively establish links with South American young hydraulic engineers’ communities and has kept an active profile in IAHR events.

Actions have been conducted in a regular basis, having a continued contact with our community. To mention a few:



- Implementation and coordination of “IAHR Revista Hidrolatinoamericana de Jóvenes Profesionales e Investigadores” (IAHR Journal of Latin American Young Professionals): a new journal (ISSN: 2520-2960) was launched under the auspices of IAHR, in Spanish and Portuguese languages, aiming to support the hydraulic engineering Latin Speaking young communities. Volume 2 was recently launched, hence proving successful this enterprise.

- River workshops in children’s hospitals: since our start in 2012, we have had the opportunity to participate in several classes for hospitalized children. Our “young students” get to know evolving morphodynamics in a joyful manner, by means of a “toy” river with sand and water.

- River workshops in public libraries: a short introduction to river morphology and sediment transport is provided to the young audience meeting in public libraries. Kids get to place model houses, trees, and others, and see how the ever evolving river may affect the setup they arranged in a stream



table. A notion of risk and uncertainty also applying to dry areas is conveyed to the general public.

- Civil engineering Olympic Games “design your city sewerage system”: formulated as a challenge for teams of 4-8 pregraduate students assisted by a teacher. Each team designed a scale model of a sewerage system, including the location of up to 8 grates. The designs were tested in a raining flume in the hydraulics laboratory to assess the safest design.

- Participation in the girls on STEM project “I want to be an engineer”: careers are genderless. The current statistics of enrolment in engineering degrees, unfortunately, do not speak for that. This project aimed to encourage and motivate high school girls to pursue a civil engineering education. Several workshops in hydraulic engineering were performed for high-school girls, where they were taught about droughts and floods prevention, water supply and, more generally, hydraulic engineering.

- Participation in scientific dissemination exhibitions: our YPN has participated during past years in several general knowledge exhibitions. Hydraulic engineering models have brought to the public attention, allowing direct contact of audience with our discipline. Our models included: irrigation techniques for groundwater use, hydropower plants, embankment dams design, river engineering, harbour hydrodynamics, sanitary engineering, and fundamentals of hydraulics, among others.

- Project mentoring through the program “introduction to research” in public schools (IES). During the last 4 years, our YPN members have advised in several projects in high school classrooms. Those projects included studies of energy dissipation in hydraulic jumps; jet trajectory in sky jumps; discharge coefficient of different weirs; design of non-linear weirs; and 3D modelling of a river in reduced scale model using photogrammetry techniques. The aim of this project is to encourage future engineers to chase a career in civil/hydraulic engineering.