

The European Junior Scientists Workshop, 35 Years On: Empowering the Next Wave

L'atelier Européen des jeunes scientifiques, 35 ans après: Former la prochaine génération

Jean-Luc Bertrand-Krajewski^a, Frédéric Cherqui^{a,b}, Francois Clemens-Meyer^c, Maria do Céu Almeida^d, Mathieu Lepot^e, Antonio Moreno-Rodenas^f, Catarina Jorge^d, Bardia Roghani^g, Franz Tscheikner-Gratl^h

^a INSA Lyon, DEEP, UR7429

^b WERG, SAFES, The University of Melbourne, Burnley

^c Skills In Motion BV

^d Laboratório Nacional de Engenharia Civil

^e Un Poids Une Mesure

^f Deltares, Hydraulic Engineering

^g Water and Environmental Engineering, Institute of Civil and Environmental Engineering, Norwegian University of Life Sciences

^h Department of Civil and Environmental Engineering Norwegian University of Science and Technology

RÉSUMÉ

S'appuyant sur la réflexion de Schilling (1999) relative aux 13 premières éditions de l'European Junior Scientists Workshop (EJSW), cet article retrace la transformation de ce séminaire au cours de près de quatre décennies, en soulignant son impact à travers les 27 éditions organisées à ce jour. Il examine comment l'EJSW s'est adapté à l'évolution du paysage universitaire et sociétal, marqué par la numérisation, l'interdisciplinarité et la pression croissante exercée sur les jeunes chercheurs, tout en préservant sa mission fondamentale d'apprentissage entre pairs et de soutien mutuel. L'article aborde également le rôle éducatif croissant du séminaire et sa contribution au développement professionnel des jeunes chercheurs. Il souligne également les défis à relever et propose des pistes pour assurer la continuité et la viabilité à long terme de l'atelier. En outre, il soulève certaines questions et propose des idées concernant les orientations futures et les changements nécessaires pour assurer le succès pérenne de ces séminaires.

MOTS-CLÉS: Chercheur en début de carrière, environnement d'apprentissage informel, apprentissage par la pratique, formation en hydrologie urbaine

ABSTRACT

Building on Schilling's (1999) reflection on the European Junior Scientists Workshop (EJSW) first 13 editions, this paper traces the workshop's transformation over nearly four decades, highlighting its impact across 27 editions to date. It examines how EJSWs adapted to the changing academic and societal landscapes which are marked by digitalization, interdisciplinarity, and increased pressures on young researchers, while preserving its core mission of peer learning and mutual support. The paper also discusses the growing educational role of the workshop and its contribution to the professional development of young researchers. It also outlines challenges and proposes pathways to ensure the workshop's continuity and long-term sustainability. Additionally, it raises some questions and ideas concerning the future directions and changes necessary for the continued success of these workshops.

KEYWORDS: Early Career Researchers, Informal Learning Environment, Learning by Practice, Urban Drainage Education

1 The European Junior Scientist Workshop (EJSW) and its inception

In 1989, an innovative idea was born to organize a very informal, yet professional workshop aimed at bringing together young researchers in the field of *Urban Drainage*. The main objective was to promote three to four days of oral presentations by young researchers (mainly PhD students and young post-docs) associated with intensive and open professional discussions, without judgement and evaluation stakes, while fostering personal connections, information and data sharing, and further networking and collaborating among participants. An invitation was sent out, marking the inception of the “*European Junior Scientists Workshop*” (EJSW) concept. Since then, 27 editions of the workshop have been held and edition 28 is planned for 2026 (Table 1), demonstrating the remarkable success and enduring impact of this initiative. While the EJSW has undergone significant structural and format updates, its core mission of mutual support remains consistent. This constancy is rooted in the persistent challenges facing early-stage researchers.

Historically, as reported by Schilling (1999), young scientists and junior industry engineers often faced isolation and, at times, frustration due to limited funding, time constraints, limited interactions with peers, and sometimes competition with them when working on unsolved scientific problems. A recent publication (van der Werf et al., 2025) argues this environment has not fundamentally improved. Some aspects appear to have even deteriorated, such as stricter graduation constraints, including publication requirements and time limitations, compounded by an increasingly uncertain and highly competitive academic job market. Although the lack of consistent metrics limits a detailed evaluation, these observed developments may reflect shifts in academic culture or perception rather than an absolute decline in conditions. Regardless, the need for a supportive forum such as EJSW, remains unchanged. Given the challenging period that early-career researchers typically navigate, a key benefit of such an environment is the opportunity for participants to recognize that they are not alone in facing these obstacles, as many of their peers encounter similar difficulties.

nr	year	Subject	Location	nr	year	Subject	Location
1	1990	Real Time Control	Kastanienbaum, Switzerland	15	2000	Decision Support for Urban Water Systems	Stavoren, Netherlands
2	1991	Stormwater Infiltration	Kastanienbaum, Switzerland	16	2002	Real Time Control and Measurement in Urban Drainage	Grammichele, Italy
3	1991	Operations Research	Terschelling, the Netherlands	17	2003	Rehab. management of urban infrastructure networks	Dresden, Germany
4	1992	Uncertainty Analysis	Saint-Victor-sur-Loire, France	18	2003	Sewer Processes and Networks	Almogrove, Portugal
5	1992	Stormwater Infiltration	Klintholm, Denmark	19	2004	Data and Integrated Urban Water Modeling	Meaux-la-Montagne, France
6	1993	Re-Use of Water	Kastanienbaum, Switzerland	20	2013	Sewer systems and processes	Graz, Austria
7	1994	Integrated Urban Storm Runoff	Cernice, Czechia	21	2014	Sewer Asset Management	Delft, The Netherlands
8	1995	Urban Rain as a Resource	Deventer, the Netherlands	22	2015	Monitoring urban drainage systems	Chichilianne, France
9	1996	Impacts Urban Drainage on Treatment plants and Receiving Waters	Kilve, United Kingdom	23	2017	Monitoring urban drainage systems	Chichilianne, France
10	1997	Infrastructure Deterioration	Tautra, Norway	24	2019	Monitoring urban drainage systems	La Berarde, France
11	1998	Sustainable Sanitary Engineering	Eekholt, Germany	25	2022	Monitoring Urban Drainage Systems and Rivers	Saint Maurice en Valgaudemar, France
12	1998	Stormwater infiltration	Prefailles, France	26	2024	Monitoring Urban Drainage Systems and Rivers	Saint Maurice en Valgaudemar, France

13	1999	Service-life management of water systems	Dresden, Germany	27	2025	Asset management in Urban Drainage	Pico Island, Portugal
14	2000	Integrated Urban Water Systems	Czech Republic (Authors could not find out the exact location)	28	2026	Monitoring Urban Drainage Systems and Rivers	Saint Maurice en Valgaudemar, France

Table 1: Lists of editions of the EJSWs

Another core aspect of the workshop, which has been maintained in nearly all editions to date, is that it should be held in a remote, non-urban location—preferably in a pleasant natural setting. The main rationale is to foster the development of a group identity by minimizing distractions, preventing participants from disengaging from the workshop environment, and sharing also leisure activities and even cooking together. Additionally, the venue should remain simple to avoid unnecessary expenses, while still providing essential professional infrastructure such as internet access and presentation equipment. As a side note, in addition to geographic location, temporal factors such as the time of year must also be considered in the planning phase to account for off-season travel costs (economic feasibility) and the scheduling of outdoor activities.

2 Evolution of the workshop

Although the core concept of the workshop remains intact, significant societal and academic changes have made it necessary to update and adapt the workshop in several respects. Two decades ago, the academic environment has been transformed by the widespread accessibility of information through the internet, a dramatic increase in the number of researchers and papers, an expansion in the scope of scientific fields, and a growing emphasis on interdisciplinary research. The academic environment has also been transformed by an increasing pressure on producing quantifiable results (i.e. publications). In this regard, the workshop's scope has expanded beyond scientific discussions to include broader topics such as research ethics, academic careers, data sharing and practical sessions.

The 'target' group for the EJSW, junior researchers, remains unaltered. Although the majority of participants was enrolled as a PhD student, over the past eight editions, M.Sc. students, post-docs, an associate professor and some practitioners have participated as well. In that sense the 'definition' of a 'junior scientist' "with respect to EJSW can conveniently be defined as a colleague who actually is engaged in detailed research work" (Schilling, 1999) is still valid.

An important change, however, is the widening international participation. While initially virtually all participants were affiliated to European organizations, recent editions have welcomed participants from Asia, North America, Australia and Africa. This evolution can encourage changing 'European' in the workshop's title into 'International', a measure that is more than just cosmetic; it removes any perceived barrier for non-Europe based colleagues interested in organizing an "IJSW". For example, the first Asian JSW, very similar to EJSWs, was held in Malaysia in 2004 and attracted also some European participants (Bertrand-Krajewski *et al.*, 2005). Moreover, after attending some editions of EJSWs, there has been a desire to have a similar event in China. In this regard, at the end of 2025, the first edition of such an event will be held in China, featuring a different format to accommodate local habits and practices.

Historically, the EJSW maintained a more or less constant flow till 2004 (19th edition), sometimes with more than one edition per year. But a significant nine-year gap occurred from 2004 (19th edition) until 2013 (20th edition), primarily because of a lack of initiative to organize a workshop and one unsuccessful attempt that failed to attract sufficient participants during that period. This highlights another gradual change within the EJSW: a change in the organizational structure. Originally, the initiative to organize the event was expected to come from a doctoral student in collaboration with his/her supervisor(s) (Schilling, 1999). However, from the 20th edition onwards, the responsibility for initiating the workshop and selecting the thematic focus progressively shifted to a relatively small group of senior researchers. The manner in which these seniors approached the task involved identifying a generic gap within the doctoral curriculum, primarily attributable to the widening scope of the research field. They subsequently designated this issue as the thematic focus for the upcoming issue of EJSW. Consequently, both educational and practical dimensions were incorporated into the original goals. Choosing a theme for the workshop by seniors could be highly beneficial, as educational institutions often face challenges in adapting curricula to accommodate the expanding scope of the field, while maintaining a requisite level of comprehensiveness.

Another modification pertained to the duration of the workshop. The events were extended to about five days while the daily workload was reduced allowing more time spent on generic topics like *group discussions on ethics, how to write an article, reflection on own work and that of others*. Even though these topics are normally addressed in graduate schools as well, clearly it has added value for participants to discuss on these subjects with international peers and other seniors than their supervisors. Hands-on sessions, introduced since the 22nd edition, give an added value and new benefits for the participants by allowing to 1) acquire new knowledge, 2) practice in the field, and 3) practicing in groups of peers along with facilitating seniors (EJSW organisers) which also creates new and less hierarchical interactions between junior participants and senior organisers and contributes to the enhanced interactive and collaborative spirit of EJSWs.

3 Achievements

In terms of tangible outcomes, the EJSW has also evolved over time. In some cases, formal proceedings were published (e.g. Baur *et al.*, 2004, Bertrand-Krajewski *et al.*, 2005), similar to those of conventional conferences. However, over the past 10-15 years, the emphasis has shifted toward 1) filling some gaps in the current educational curriculum on specific topics, 2) acting as a guide for upgrading international educational curricula, and 3) providing guidelines and first experience as session chairpersons. Moreover, certificates of attendance are now issued after each edition and even recognised as educational credits by some universities or doctoral schools. Besides, it has emphasized the formation of 'cohorts' of participants who maintained contact and continued to meet informally even years after participating, often taking the initiative to collaborate on various subjects. Moreover, although the workshop series is primarily designed for junior scientists, it is worth noting that senior participants also experience involvement in the workshops as very rewarding. In many cases, they have reported learning as least as much as the juniors.

4 Challenges and proposals for modernizing

Overall, based on evaluations by participants, authors' personal observations and feedback from other colleagues, the concept of EJSW is still valued, while the gradual modifications in scope, duration and subjects seem to be in accordance with expectations. The key questions pertain to how the EJSW's (or IJSW's) can be sustainably organized in the foreseeable future, given that no formal entity currently bears responsibility for its organization. Organizing an EJSW requires substantial effort, and not all institutions permit their employees to dedicate time to this task as this is not always considered to be in line with the core activities. This situation makes it increasingly challenging to find senior individuals willing to take on this responsibility. To ensure the continued success and sustained organization of the workshop series, it may be necessary to implement some organizational mechanism that distributes responsibilities more effectively and reduces the burden on individual organizers. Schilling (1999) already confirmed that encouraging colleagues to organize this event through "spreading the word" was not very effective, and there is a need to make an effort to find an administrative home for the EJSW concept. If the extended goal of the EJSW is acknowledged, this may be an additional encouragement for e.g. the IWA/IAHR joint committee (JCUD) and its working groups to pick up this role. Doing so would also enhance the status of these workshops, making it easier for institutions to allow their employees to participate in organizing them. Already, the 27th edition of the workshop was organized through the Urban Drainage Asset Management (UDAM) working group of JCUD, which was a successful example in this regard and demonstrated how effectively the nine working groups can contribute to this event.

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LIST OF REFERENCES

- van der Werf, J. A., Pons, V., Smyth, K., Shi, B., Lechevallier, P., Abdalla, E. M. H., Andrusenko, E., Broekhuizen, I., Cavadini, G. B., Cortés Moreno, A. F., Cristiano, E., D'Ambrosio, R., Droste, A. M., Evangelisti, M., Fernandes, G., Garzón, A., Girot, E., Guericke, L., Liao, W., Mazzoglio, P., Mittal, A., Müller, A., Naves, J., Oberascher, M., Okwori, E., Perez-Alvarino, J. I., Pritsis, S., Regueiro-Picallo, M., Roghani, B., Taguchi, V. J., Wani, O., Wei, H., Yıldızlı, T., & Yerima, H. Z. (2024). *Flooded with potential: Urban drainage science as seen by early-career researchers*. *Wat. Sci. & Tech.*, 91(7), 861-875.
- Schilling, W. (1999). *The European Junior Scientist Workshop-A flying start for doctoral students*. In proc. Of the First European Seminar on Environmental Engineering Education Zürich, Switzerland, 22-24 August 1999.
- Bertrand-Krajewski, J. L., Almeida, M. C., Matos, J., Abdul-Talib, S. (Ed.) (2005). *Sewer Networks and Processes within Urban Water Systems*. *Water and Environmental Management Series vol 4*, May 2005, IWA Publishing. <https://doi.org/10.2166/9781780402772>.
- Baur, R., Zielichowski-Haber, W., and Kropp, I. 2004. *Statistical analysis of inspection data for the asset management of sewer networks*. In Proceedings of the 19th EJSW on Process Data and Integrated Urban Water Modeling, Lyon, France. March 2004.