

Creating Community for Early-Career Geoscientists

Student involvement in geoscience unions: A case study from hydrology



Young hydrologists view the possibilities of open source and low-budget measurement equipment at the AGU Student and Early Career Science Conference. Credit: Frank Sedlar

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The American Geophysical Union (AGU) and the European Geosciences Union (EGU) play central roles in nurturing the next generation of geoscientists. Students and young scientists make up about one quarter of the unions' active memberships [*American Geophysical Union*, 2013; *European Geosciences Union*, 2014], creating a major opportunity to include a new

generation of geoscientists as more active contributors to the organizations' activities, rather than merely as consumers.

Both organizations are now explicitly expanding their bottom-up organizational structures to include early-career members (ECMs) by appointing student (AGU) and [early-career scientist](http://www.egu.eu/young-scientists/) (<http://www.egu.eu/young-scientists/>) (EGU) representatives for their scientific divisions. (We refer to "early-career members" because [AGU](http://membership.agu.org/students/) (<http://membership.agu.org/students/>) and [EGU](http://www.egu.eu/awards-medals/union-definition-of-a-young-scientist/) (<http://www.egu.eu/awards-medals/union-definition-of-a-young-scientist/>) define student and postdoc members differently). Because this expansion is a recent development, it is still unclear what roles these representatives will play and how these roles will evolve over the coming years.

We are ECMs in the hydrological sciences. Here we show how the Young Hydrological Society (YHS) used bottom-up initiatives, aligned closely with the newly appointed AGU and EGU representatives, to help improve the professional development of student and postdoc members by providing opportunities to increase their contributions to the geoscience unions. We call for a conversation on how ECMs can make the best use of these new opportunities to engage proactively with the unions.

Growing Opportunities for Early-Career Members

AGU and EGU have long histories of actively supporting students by providing reduced conference fees, recognizing outstanding students, and awarding travel grants. These members have become more visible with the recent appointment of ECM representatives for the various scientific divisions within AGU and EGU. This is an important development, as these representatives will serve as links between each union's divisions and its ECMs. However, because the organizations do not want to dictate strict requirements for bottom-up initiatives, the precise aims and goals of these representatives have not yet been defined.

Thus, ECM representatives to AGU and EGU must think about, discuss, define, and communicate what their objectives are and how these objectives can be achieved. Opinions on these objectives may differ among individual members, fields of study, or geoscience organizations and are likely to change over time. Rather than providing a blueprint for what should be done, we provide here an example of how this process is evolving within the hydrological sciences community as a means of catalyzing this discussion.

A Case Study from Hydrology

It was clear that with so many early-career members, there was enormous potential to increase their involvement.

During the 2012 EGU General Assembly in Vienna, we saw that there was no organizational structure for the involvement of ECMs in the EGU Hydrological Sciences Division, nor were such members very actively involved within the division. Nevertheless, it was clear that with so many ECMs, there was enormous potential to increase their involvement. Increased involvement would enhance ECMs' own conference experiences and improve their contributions to the hydrologic community. This was the key motivation behind the establishment of the YHS.

YHS is a bottom-up initiative: two ECMs, Wouter Berghuijs and Tim van Emmerik, turned this idea into a creative solution during a night at a bar. Soon after YHS was launched in October 2012, it received great support from the geosciences unions as a way to increase ECM involvement in the hydrological community. YHS aspires to function as an umbrella organization for many aspects important to early-career hydrologists, including scientific training, professional development, and networking with young peers and more-senior scientists. YHS is an independent organization, not founded within a single union. This allows ideas and sessions to be transferred seamlessly among different conferences.

Structure and Goals

The YHS organizing committee comprises volunteers currently spanning three continents. The representatives within the AGU and EGU hydrology divisions are among the active members of the YHS team. This involvement facilitates good communication and cooperation between initiatives in both unions.

To ensure that activities represent the needs of a group broader than just the organizing team, YHS hosts annual public meetings at both the AGU Fall Meeting and the EGU General Assembly. We invite ECMs to these meetings to evaluate objectives, define goals, and create opportunities for ECMs to get involved. On the basis of these meetings, we have established five current objectives:

- facilitate connections among hydrologists early in their careers
- organize events to enhance the professional development of early-career hydrologists
- provide a central information platform for early-career hydrologists
- create awareness of current and future research topics within hydrology
- make the scientific community more accessible to early-career hydrologists

To achieve these goals we created a [website \(http://www.younghs.com\)](http://www.younghs.com) to share information about upcoming conferences, workshops, events, online lectures, funding, and other relevant

information. A number of social media platforms, including a [LinkedIn group](https://www.linkedin.com/groups?home=&gid=4723306&trk=anet Ug_hm) (https://www.linkedin.com/groups?home=&gid=4723306&trk=anet Ug_hm), a [Facebook group](https://www.facebook.com/groups/665424523493747/) (<https://www.facebook.com/groups/665424523493747/>), and a [Twitter account](https://twitter.com/younghydrology) (<https://twitter.com/younghydrology>), also keep members, friends, and followers digitally connected.

Sessions and Socials

Additionally, YHS organizes sessions, short courses, and social events at the AGU Fall Meeting and the EGU General Assembly. An example, aimed at increasing the awareness of present challenges in hydrological science, is an EGU session entitled “[Meet the Expert in Hydrology](http://meetingorganizer.copernicus.org/EGU2015/session/19040) (<http://meetingorganizer.copernicus.org/EGU2015/session/19040>).” This session will feature an open discussion with experienced scientists on current and future research challenges within and beyond hydrological science.

To create further awareness of future research challenges, we also organize pop-up talks on water science. For this session we invite scientists embarking on a career in hydrology, in particular, to share their visions on the future of water science with a 5-minute TED-style presentation. The first Water Science Pop-Up was organized at the [2013 AGU Fall Meeting](http://abstractsearch.agu.org/meetings/2013/FM/ED31F.html) (<http://abstractsearch.agu.org/meetings/2013/FM/ED31F.html>). Attendance and participation nearly doubled in [2014](https://agu.confex.com/agu/fm14/meetingapp.cgi#Session/1996) (<https://agu.confex.com/agu/fm14/meetingapp.cgi#Session/1996>), and we now also run sessions at the [EGU General Assembly](http://meetingorganizer.copernicus.org/EGU2015/session/18252) (<http://meetingorganizer.copernicus.org/EGU2015/session/18252>). For the 2015 AGU Fall Meeting, a second [Social Dimensions Pop-Up](http://fallmeeting.agu.org/2015/students/student-pop-talks/social-dimensions-of-geoscience-pop-up-session-talk-proposal-application/) (<http://fallmeeting.agu.org/2015/students/student-pop-talks/social-dimensions-of-geoscience-pop-up-session-talk-proposal-application/>) session has been organized, focusing on social aspects of the geosciences, including gender and racial equality, student and postdoc mental health, interdisciplinary research, science communication, and environmental policy.

At the 2014 AGU Fall Meeting, YHS put together the inaugural [AGU Student and Early Career Science Conference](http://fallmeeting.agu.org/2014/people/students/student-early-career-scientist-conference/) (<http://fallmeeting.agu.org/2014/people/students/student-early-career-scientist-conference/>) [*van Emmerik*, 2015]. This full-day conference is now an [annual event](http://fallmeeting.agu.org/2015/students/student-early-career-scientist-conference/) (<http://fallmeeting.agu.org/2015/students/student-early-career-scientist-conference/>) that includes networking, workshops, and discussion sessions where students interact with senior scientists. This conference is being held again at the 2015 AGU Fall Meeting and includes a “Meet the Expert” session focused on the [current California drought](https://eos.org/editors-vox/insights-ongoing-california-drought) (<https://eos.org/editors-vox/insights-ongoing-california-drought>).

This overview of activities illustrates how such initiatives can contribute to enhanced involvement of ECMs in geoscience organizations. We realize, however, these initial activities

have been developed in a somewhat ad hoc manner, and there is always room for improvement.

Moving the Conversation Forward

The examples from the hydrological sciences community may give an indication of how ECM initiatives can evolve and could be replicated by other divisions. However, the possibilities for ECM involvement extend far beyond these initiatives.

Early-career members should ask themselves and one another what the unions can do for them and what they can do for their unions.

We call for more conversation addressing these possibilities. ECMs, as well as their representatives and the leadership within the geoscience unions, should ask themselves and one another what the unions can do for them and what the ECMs can do for their unions. Current goals include enhanced networking opportunities and organization of short courses, but we believe there are other opportunities that reach far beyond these immediate needs.

Involvement of ECMs in geoscience unions is not a panacea to all challenges faced by those embarking on a career in geoscience. But it is an important first step, and given the current support from the unions, it is the ECMs' responsibility to get organized and make the best use of available opportunities. To make the most valuable contributions, ECMs' objectives should encompass both short-term improvements that spur momentum and long-term change to more actively engage ECM enthusiasm and creativity in shaping a better geoscientific future.

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