

EDITORIAL

The Society for Environmental Geochemistry and Health (SEGH): building for the future of early career researchers

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In a 2019 editorial entitled “The Society for Environmental Geochemistry and Health (SEGH): building for the future” [1], SEGH President Dr Michael Watts and all current board members outlined their aspirations and initiatives for the Society’s expansion into the new decade and beyond. Central to these efforts was the establishment of a dedicated group of early career researchers (ECRs) within SEGH to foster interaction, collaboration, mentorship and ultimately the expansion of this demographic. SEGH defines ECRs as undergraduate or postgraduate (Masters/PhD) students or as scientists having received their highest degree (BSc, MSc, or PhD) within the past five years. ECRs currently make up approximately 20% of SEGH memberships, and nurturing growth at grassroots level is a critical strategy in preserving the Society’s long-term future if it is to remain relevant in an ever more competitive research landscape. With this in mind, ECR representatives currently sitting on the board took the initiative to follow up the 2019 editorial from an ECR perspective, with contributions made exclusively by members of this group. Drawing from personal experiences, we focus on key aspects of SEGH as a society and a community, but more importantly as a wider discipline and career path. We highlight the unique selling points of

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SEGH membership to ECRs, while voicing our wishes for improvement with the overall aim of promoting the society, and the society's core values. Our hope is that we can attract more ECRs to our diverse community and enhance the experience of our current members.

A vibrant and welcoming community with conferences and networking

Attending conferences as an ECR can be daunting. For many, it will be the first time that their research will be showcased in front of a large audience of fellow researchers outside of their peer group. Seizing presentation opportunities early on in their careers helps to instil confidence and shapes ECR's into effective scientific communicators. By comparison to other societies, SEGH is a close-knit community which has the advantage of offering relaxed conference atmospheres of modest attendance – i.e. ~100 to 150 attendees compared to the 1,000s of delegates at broader environmental and epidemiological meetings. ECR attendees at SEGH conferences benefit from a truly unintimidating network experience where they can meet face-to-face with a spectrum of international experts from across the discipline and members of the SEGH board and promote themselves to potential employers and future collaborators. Previous conferences have been hosted at spectacular international locations, from the banks of the Zambezi River overlooking Victoria Falls in Livingstone, Zambia, to the winding medieval streets of Bratislava in the Slovak Republic. These meetings also bring great opportunities for further socialising in the evenings. While increasing membership and conference attendance is a strategic goal of SEGH, there remains room for improvement in terms of boosting numbers while preserving the open and interactive forum afforded by plenary sessions. If SEGH undergoes the desired growth in membership, a challenge for its leadership will be to ensure that conferences preserve the welcoming atmosphere that makes them unique. Previous SEGH conferences have made special efforts to highlight the work of ECRs, such as prizes for the best ECR oral and poster presentations, and dedicated ECR networking lunches. A consideration for future meetings would be to designate a slot in the programme exclusively for ECR research. This might take the form of a 'Future Leaders' session, offering a limited number of talks to outstanding ECRs, with fellow ECRs playing lead roles in both abstract assessment and session chairing.

Opportunities for training and development

When the ECR initiative was introduced in 2018, a mentorship scheme was launched to connect each ECR with an appropriate experienced member of SEGH. The aim of this pairing was to provide ECRs with an additional contact in their specific scientific field, outside of their regular supervisory structure, who could offer impartial guidance on a variety of activities, such as reviewing CVs, manuscripts for publication, informing about relevant grant applications and funding opportunities, and suggesting PhD examiners among other things. Success stories of these arrangements are already emerging from our ECR community, such the development of joint concept notes for funding calls. In order to develop a sense of community amongst the ECR cohort, the SEGH board has ensured that at each annual conference, the organising committee dedicate time to an ECR luncheon. The aims of this session are to (i) allow ECRs to meet each other and develop an international network within the environmental geochemistry and health field, (ii) meet board members, SEGH fellows, and other experienced members of the society, and (iii) discuss from within how to further develop the ECR community of the society. Extra volunteers to help with the maintenance of SEGH social media accounts and the establishment of an African SEGH chat group are just two examples of initiatives having resulted directly from discussions started at these luncheons. A focal point of recent SEGH annual conferences has been delivering a range of training courses for delegates to attend, specifically catered to the in-

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demand skills of the ECR cohort. At the 34th International Conference in Livingstone, Zambia, an entire day was dedicated to such courses. These included introductory workshops on open source Geographic Information Systems software (Quantum GIS), statistical programming language packages (R), environmental epidemiology, research ethics and a 'how to publish' workshop. We would like to see these training opportunities become a permanent fixture at future conferences, giving much added value to conference fees.

A pathway to publication

SEGH has long supported and encouraged ECRs to engage with the society, even prior to the formal emergence of SEGH's ECR community. The SEGH website (www.segh.net) provides a platform for all members to practice the skill of effectively communicating advanced scientific principles in well-formulated, concise, blog-style articles. With recent renovations to the website, ECRs and members alike are urged to find new ways to interact and use this space as a platform for personal and career development, or perhaps test drive their research communications before submitting more polished, in-depth texts for peer-review. Environmental Geochemistry and Health (Springer Nature) is the official journal of SEGH, with an Impact Factor of 3.252 as of 2018 - making it an attractive choice amongst a growing number of journals in the discipline. In recent years, the journal has increased the number of appropriately qualified SEGH members as editors and reviewers, expanding both geographic diversity and expertise. As part of being in the SEGH community, journal editors are encouraged to include SEGH ECRs in the review process. This process is immensely beneficial for ECRs, offering not only experience in peer-review, but also a positive impact on their own scientific writing. SEGH has a long history of being granted special issues within the journal [2, 3], coinciding with our annual international conferences. The special issues allow conference delegates and ECRs [4-6] the opportunity to publish the work they presented at the conference. A defined timeline to publication adds valuable incentive and focus. An initiative that would be welcomed by ECRs is an annual ECR-only special issue to encourage ECR members to publish their research in the journal. ECRs could also play a lead role in reviewing submissions. The journal also hosts an annual 'Early Career Researcher Best Paper Award' competition for ECRs who are the corresponding authors for the published paper. Winners, selected by the editors-in-chief and board members of SEGH, receive a \$300 USD cash prize. However, more publicity on the journal website for each year's winner is called for.

Membership value for money

The way membership fees currently work for SEGH is that attendance and payment of registration fees for the annual international conference automatically account for the cost of membership to the delegate for the next 12 months. As already highlighted, conferences and their attached networking and training opportunities are a key selling point of SEGH, with society membership a generous bonus. For those who do not attend conferences, the student membership fee is modest at £20, and only £10 for student members in low-middle income countries (LMICs), a demographic SEGH is especially committed to supporting. Non-student ECRs are required to pay a full membership fee of £45 if they wish to access the official journal, but as many can access this through institutional libraries, a reduced fee of £26 is available. Membership opens opportunities to benefit from conference travel grants for delegates in LMICs, and SEGH also partners with a number of other societies and conference organising committees to offer discount rates for international meetings in related fields. Examples include the

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Geological Society of North America (<https://www.geosociety.org/>), and the International Conference on Environmental Research and Public Health (<https://www.mdpi.com/journal/ijerph>). Furthermore, the dedicated core individuals of the ECR group are committed to working to support the pursuit of initiatives like those discussed in this article to build an even more attractive membership package.

The discipline of Environmental Geochemistry and Health is as relevant as it has ever been. A series of global health challenges face the growing number of people reliant on ever more tested Earth systems. As SEGH approaches its 50th anniversary, we look towards sustainable development solutions to these challenges by bettering our understanding of how communities can safely interact with the geochemical environment to protect public health. For the ECRs of SEGH, the course is one we all look forward to charting together.

Summary of Future Aspirations

- Dedicated ECR sessions at future conferences, organised and chaired by ECRs.
- An ECR special issue in Environmental Geochemistry and Health, with papers contributed and peer reviewed by ECRs.
- More visibility for winners of the Early Career Researcher Best Paper Award on the journal homepage.
- ECR-led initiatives to give even greater value for money to SEGH memberships.

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