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Watts, Michael J, An, Taicheng, Argyraki, Ariadne, Arhin, Emmanuel, Brown, Anthea, Button, Mark, Entwistle, Jane A, Finkelman, Robert, Gibson, Gillian, Humphrey, Olivier S, Huo, Xia, Hursthouse, Andrew S, Marinho-Reis, A Paula, Maseka, Kakoma, Middleton, Daniel RS, Morton-Bermea, Ofelia, Nazarpour, Ahad, Olatunji, Akinade Shadrach, Osano, Odipo, Potgieter-Vermaak, Sanja, Saini, Sherestha, Stewart, Alex, Tarek, Moataz, Torrance, Keith, Wong, Ming Hung, Yamaguchi, Kosei E, Zhang, Chaosheng and Zia, Munir (2020) The Society for Environmental Geochemistry and Health (SEGH): building for the future. *Environmental Geochemistry and Health*, 42 (2). pp. 343-347. ISSN 0269-4042

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**Downloaded from:** <https://e-space.mmu.ac.uk/623670/>

**Version:** Accepted Version

**Publisher:** Springer (part of Springer Nature)

**DOI:** <https://doi.org/10.1007/s10653-019-00381-9>

Please cite the published version

<https://e-space.mmu.ac.uk>

## EDITORIAL

### 1 **The Society for Environmental Geochemistry and Health (SEGH):** 2 **building for the future**

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53 The challenges of sustainable development are even more pressing, and the skills, interests and  
54 capability of the SEGH membership are well placed to continue to make more meaningful  
55 contributions to environment society and well-being. We reflect on the historical development of  
56 the Society, its response to the dynamic international research landscape and the great  
57 opportunities ahead. In 2018, SEGH implemented a new board structure after 2-3 years of  
58 consultation, with approval of a new constitution and a new strategy across the large number of  
59 international board members. Whilst regions were represented by sections in Europe,  
60 Asia/Pacific and the USA, the structure required renewal in order to be more representative of the  
61 distribution of members and website traffic that had evolved in preceding years. In addition, the  
62 society wanted to improve its position for future growth opportunities across rapidly developing  
63 regions.

64 SEGH has been a welcoming society for early career researchers (ECRs) over the years,  
65 providing a supportive and encouraging atmosphere at conferences. However, a formal structure  
66 was required to continue to engage and support ECRs as they become established in their  
67 careers. In addition, retention and recognition of experienced scientists and practitioners was  
68 required for past and on-going contribution to the long-standing success of SEGH since the initial  
69 formation in the early 1970's. The Society for Environmental Geochemistry and Health (SEGH)  
70 was first established in the USA to provide a forum for experts to work together in understanding  
71 the interaction between the geochemical environment and the health of plants, animals, and  
72 humans. Wixson and Davies (2019) recently provided an account of the Society's formation.

73 We offer this account of current initiatives and future aspirations to enhance the value that this  
74 society can offer to the SEGH community and beyond.

75

### 76 **Evolution of SEGH**

77 The new international board structure of SEGH was formalised in 2018 so that there are now four  
78 representatives from each of the European, Americas, Asia/Pacific sections, with an additional  
79 African section established at the SEGH 2018 34<sup>th</sup> International Conference in Victoria Falls,  
80 Livingstone, Zambia (Watts et al. 2018). There is scope to co-opt and elect more board members  
81 in order to cover wider geographic and multidisciplinary aspects as a way of reinforcing the  
82 aspirational nature of SEGH.

83 Elected board members in 2018 came from the UK, Portugal and Greece for Europe; Kenya,  
84 Nigeria and Zambia for Africa; China, Japan and Pakistan for Asia/Pacific, and the USA and  
85 Mexico for the Americas. Co-opted members enthusiastic to undertake new initiatives for growth  
86 in new regions/countries include Canada, Egypt, Ghana, Iran and Panama, with discussions  
87 progressing elsewhere.

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88 In 2018, the first group of 22 ECRs (early career researchers) was established at the SEGH 2018  
89 conference with initial plans to develop a programme of mentorship, training activities and  
90 interaction over a three-year period. ECR members were connected with appropriate SEGH  
91 'experienced' and relevant members as mentors. This grouping is open to new ECRs as we  
92 evolve the programme and balance the demographics. The ECRs have been encouraged to  
93 establish a community to improve communication through social media and become involved in  
94 the peer review process for Environmental Geochemistry and Health (EGAH). The ECRs as a  
95 group are ideal for generating and testing new ideas and identifying trends to develop SEGH and  
96 potentially grow as individuals for succession management of the international board.

97 In 2019, SEGH launched a new Fellowship status for SEGH (FSEGH) encompassing senior  
98 researchers who have been engaged with SEGH for a number of years and maintained their  
99 membership., as well as demonstrating that they have worked hard in the EG&H field, and  
100 supported the institute in a variety of ways. The ECR group will have an opportunity to progress  
101 through to FSEGH via nomination from SEGH members, as will senior members with continuous  
102 scientific engagement and support of SEGH.

### 103 **Environmental Geochemistry and Health (EGAH) Journal**

104 Environmental Geochemistry and Health is the official journal of SEGH published by Springer  
105 Nature, to which all members can subscribe and access the back-catalogue online via  
106 [www.segh.net](http://www.segh.net). The journal has been refreshing and updating the list of coordinating editors who  
107 are essential to the peer review process for articles submitted to EGAH. Candidates for this role  
108 who can commit to supporting the peer review process are welcome, particularly where SEGH  
109 can improve geographic diversity and coverage for emerging trends across multidisciplinary  
110 themes and reinforce the involvement of health practitioners (clinical and public health) /  
111 epidemiologists. The journal has experienced continued and solid progress, particularly in recent  
112 years, with the Impact Factor progressing steadily (2018: 3.252) and the number of papers  
113 submitted increased from 400+ in 2016 to 600+ in 2018, with a 40% acceptance rate.

### 114 **Future challenges**

115 Various challenges have resulted in a reduced membership in the USA in recent years, (which  
116 had been the cornerstone of the society for much of its history) although SEGH is not alone  
117 among societies in this experience. Growth in rapidly developing regions has balanced overall  
118 SEGH membership numbers. Greater geographical diversity across the Americas is required to  
119 ensure succession management, and efforts are on-going to develop hubs to regrow membership  
120 in the Americas.

121 The peaks and troughs in membership in Asia/Pacific, largely reflected by the occurrence of  
122 SEGH international conferences in China, are both an opportunity and challenge to manage the  
123 membership and require imaginative solutions to retain and stabilise memberships between  
124 conferences. Nevertheless, core members from Asia are regular attendees at annual  
125 conferences as the conferences rotate between the regions.

126 An increase in African membership following on from the 34<sup>th</sup> International Conference at Victoria  
127 Falls-Zambia shows promise for continued engagement. The African board members have  
128 provided an example to other regions for regular communications, in particular making use of  
129 current communication platforms (e.g. WhatsApp and Skype) which have attracted additional  
130 senior researchers to online discussions to develop new SEGH hubs in Africa.

### 131 **Future meetings and conferences**

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132 Traditionally, annual international conferences have rotated between regions, with the exception  
133 of the USA. Often members have drifted away during the 2-3 year cycles, unless smaller  
134 meetings or co-hosted meetings with other societies were organised, which more commonly have  
135 occurred in Europe. The SEGH board is backing an initiative on a wider scale to engage with  
136 traditional sponsors of our international conferences to support smaller regional meetings on a  
137 more frequent basis. Other options may need to be considered such as the use of online  
138 webinars and web-streaming of keynote presentations.

139 Recent and future conferences and meetings include: Slovakia in 2015, Belgium and Ireland in  
140 2016, China in 2017, Zambia in 2018, Greece and UK in 2019, with strong proposals for China,  
141 Kenya, Portugal and USA through 2020 for a full conference or co-badged meetings and  
142 proposed for Mexico, South Africa or Singapore for the SEGH 50<sup>th</sup> anniversary in 2021. Future  
143 conferences will aim to grow interest at conferences and meetings to attract epidemiologists and  
144 health practitioners in both curative and preventive fields, building on growing topics within SEGH  
145 in nutrition and agricultural research, all of which are highly relevant to environmental  
146 geochemistry and health.

### 147 **SEGH and the future**

148 SEGH is at a critical point in its history. The competition for memberships to societies is intense  
149 and growing, with financial challenges remaining ever problematic for members. Remaining  
150 relevant to current and future trends in scientific development and policy decisions will initially be  
151 supported by the recent initiatives, such as the ECRs and new geographical hubs with a fresh  
152 ability to review and critique our current position.

153 The multidisciplinary nature and sense of community within SEGH is as highly relevant now as  
154 when it was formed in the early 1970's. SEGH remains an effective platform for members to  
155 exchange ideas within their own field of interest. This has been emphasized in the past by SEGH  
156 membership that as a forum provides a strong and supportive environment (Stewart et al. 2012),  
157 which the board has tried to successfully sustain and grow. Following consultations with  
158 members, SEGH is strengthening efforts to connect the diverse community that is SEGH, to  
159 encourage new and practical solutions to environmental geochemistry and health challenges via  
160 collaborations. For example, the expansion of SEGH membership into rapidly growing regions  
161 (e.g. Africa, South East Asia) will help SEGH to keep up with emerging research challenges.  
162 Such a move presents an exciting opportunity to increase international collaborations to tackle  
163 increasing environmental pressures from anthropogenic activities (Brown et al. 2019; Kaininga et  
164 al. 2019; Olatunji et al. 2019; Rodgers et al. 2019; Stewart et al. 2019) that have an impact on  
165 human and animal health (Middleton et al. 2019). SEGH presents a platform for emerging  
166 technologies to identify and measure environmental pathways (e.g. water, dust, soil) for  
167 contaminants via exposure and hazard assessment, in addition to interests in nutrition through  
168 deficiency of essential nutrients and transfer pathways from soil-to-plant and onward  
169 animal/human health investigations (Watts et al. 2019).

170 SEGH has strengthened initiatives in recent years to draw in epidemiologists/health  
171 professionals; increasing emphasis on emerging contaminants; the role of agriculture and  
172 fisheries in ecological health through to food security. As in the early years of the formation of  
173 SEGH (Wixson and Davies, 2019), SEGH has a role in connecting increasingly complex and  
174 interconnected multidisciplinary studies to better inform stakeholders and policy decision makers.

175

#### **Summary of Future Aspirations**

- Improve engagement with epidemiologists and health practitioners (clinical and Public Health) to improve translation of research into policy.

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- Achieve greater editorial balance of EGAH geographically and to strengthen the 'Health component.
- Increase presence of epidemiologists and health practitioners (clinical and Public Health) within the conference programmes.
- Continue to increase regional membership hubs to grow geographical diversity of membership.
- Grow the Early Career Researcher programme for succession management within SEG and 'stay on trend' with latest research.
- Evolve relevancy of SEGH goals to include the United Nations Strategic Development Goals to reinforce relevance to policy impact
- Increase the membership of business colleagues, in order to encourage research, which applicable to real-life situations.

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