

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.

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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 34th 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. 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 34th 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 50th 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.

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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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