



European Association of Geochemistry



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2022 GLOBAL GEOCHEMISTRY SURVEY – THE RESULTS ARE IN...

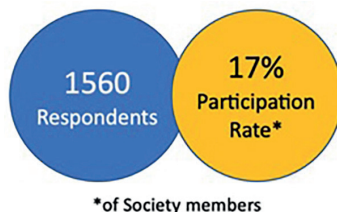
Geochemists work on diverse, societally relevant, environmental challenges and drive fundamental understanding concerning Earth's evolution and Solar System history. To develop creative, innovative approaches to solve these challenges, make important discoveries, and optimise productivity, it is essential to attract and retain a diverse workforce. But just how diverse are we as a geochemistry community? And is anything getting in the way of recruiting, supporting, retaining, and progressing the very best talent?

Global Geochemistry Survey goals

1. To understand the community composition and experiences of geochemists
2. To investigate barriers to diversity and inclusion in geochemistry

Respondents

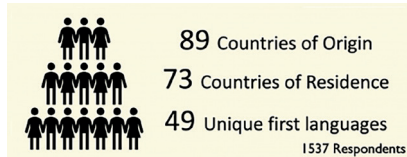
Of the 1560 respondents to the 2022 Global Geochemistry Community survey, 75% are members of one or both Societies (the European Association of Geochemistry (EAG) and Geochemical Society (GS)). The geographical distribution of respondents is similar to the members (see TABLE).



Similarities among EAG/GS members, member respondents, and non-member respondents			
Region	Estimated % of EAG/GS members	% of member respondents	% of non-member respondents
Europe	42%	45%	42%
North America	34%	35%	35%
Other	25%	20%	23%

Survey methodologies are well-established approaches to studying communities, and care was taken to share the survey widely whilst adhering to international data protection law and ethics of data collection. Because responding to such a survey is optional, the findings are not representative of Society membership or of global geochemists as a whole.

Nevertheless, these data provide the first-ever constraints and insights for the geochemistry community. They include descriptions of the community's demographics, career experiences, work-life balance, access/support of needs, and experiences of exclusionary behaviours.



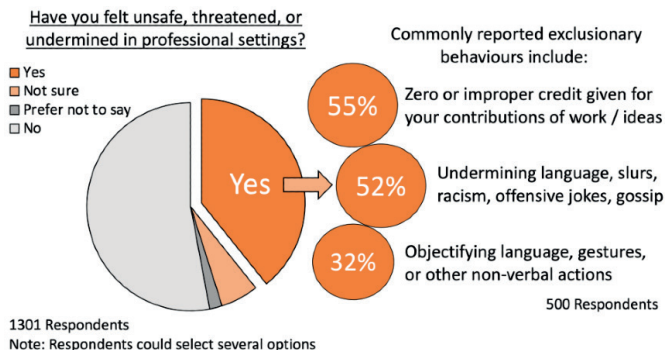
The survey results could be scrutinised further to obtain additional insights into the diversity of the geochemistry community; for example, investigating the relationship between community diversity and seniority. The data also provide a reference frame with which results of proposed future 5-year surveys can be compared.

First of all, we would like to celebrate that our overall geochemistry community is very diverse with respect to country of origin, language, ethnicity, gender and gender identity, sexuality, disability, and much more!

Download a poster summarising the Survey Findings at <https://blog.eag.eu.com/news/2022-global-geochemistry-survey-the-results-are-in/>.

Key Finding: High Prevalence of Exclusionary Behaviours

On the other hand, the survey highlights that many in geochemistry have reported experiencing exclusionary behaviours. For example, 40% of survey respondents reported that they have felt unsafe, threatened, or undermined in professional settings.



In comparison, other studies have shown that the incidence of harassment and discrimination varies from 20% to >50% of women respondents depending on the definitions used (National Academies of Sciences (NAS) 2018; Porter et al. 2022). Scientists from under-represented groups (including people of colour, women, and gender-diverse individuals, those with a disability, and those who identify as LGBTQIA+) may more frequently experience harassment and discrimination (NAS 2018; Marin-Spiotta et al. 2023). For example, in a recent survey, 18% of LGBTQIA+ respondents experienced exclusionary behaviour, compared with 10% of non-LGBTQIA+ respondents (Institute of Physics, Royal Astronomical Society, and Royal Society of Chemistry 2019).

Next Steps?

All of us at the EAG and GS are individuals, limited by our own lived experiences, so we need your help to decide on our next steps. We are specifically interested in what you think the Societies can do about the prevalence of exclusionary behaviours in geochemistry...

Read the full report at <https://www.eag.eu.com/about/dei/survey-report-and-questionnaire/> and suggest actions!

Finally, we are deeply grateful to all those who responded to this first survey of our international community. All engagement and contributions are valued and assist in united, cooperative efforts to improve geochemistry. Thank you!

The 2022 Global Geochemistry Community Survey was a joint initiative of the Diversity, Equity and Inclusion Committees of the European Association of Geochemistry and the Geochemical Society. Data analysis was carried out by survey specialists Dr Rachel Ivie and John Tyler.



REFERENCES

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- Institute of Physics, Royal Astronomical Society and Royal Society of Chemistry (2019) Exploring the Workplace for LGBT+ Physical Scientists, 55 pp
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- National Academies of Sciences, Engineering, and Medicine (2018) Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine. The National Academies Press, 313 pp

ON THE EAG BLOGOSPHERE: CAREERS OUTSIDE ACADEMIA

New on the EAG Blogosphere from **Thaïs Couasnon (EAG Communications Committee)** is a **compilation of testimonials** from geochemists working outside academic science. Thaïs writes,

"Each tells the journey that led the interviewees to work where they are today after an early career researcher experience. Their shared experience in diverse fields, such as education, public policy, climate tech, science communication and management, museum conservation or laboratory engineering, may help you to discover a new job title, a transition approach or, on the contrary, convince you to fight for a permanent academic position." Read short extracts below and visit the EAG blogosphere at <https://blog.eag.eu.com/categories/non-academic-careers/> to read the full interviews.



Rachael Moore, Senior Energy Consultant at the World Bank

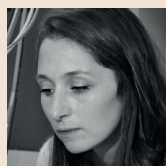
Energy, carbon capture utilization and storage (CCUS), and industrial decarbonization implementation

What aspect of your work are you most excited about at the moment?

"What I am enjoying most is being at the nexus of innovation, policy, and implementation. Today, there is significant momentum growing behind energy transition. It is really exciting to be part of it and to translate the technical aspects of projects and technologies into digestible and clear messages and actions for policy makers."

What advice do you have for PhD students/academic staff who are thinking of leaving academia?

"I'm clearly biased, but come to the energy sector! Opportunities for geoscientists are exploding, given that energy transitions need huge volumes of critical minerals, more geothermal, CCUS, etc. That said, a big advantage we have as geoscientists is that we are well practiced in cross-disciplinary thinking and multidisciplinary work. Our work is also very applied. Personally, I lost sight of that when I was first applying for jobs outside of academia. Initially, I tried to sell my very niche and specific expertise, rather than my substantial skills in managing projects, synthesizing and translating technical information, and solving problems. When leaving academia, I recommend individuals present their geoscience expertise as value added, but unless it is key to the role, it should not be the focus. Rather than focusing on WHAT you did, focus on HOW you did it. As part of that, be sure to have a succinct and clear CV."



Caroline Thaler, Climate Tech Project Entrepreneur at Marble

Climate tech, DeepTech, start-ups, environmental impact, CO₂ storage, and biomineralization

What helped you to be aware of the alternative career paths to academia?

"From the moment I decided to look for funding to develop my project outside of academia, I started to participate in any event/program related to entrepreneurship that was advertised in my academic mailing lists. I became aware of funding opportunities, startup clusters, and working groups. Once

you are in the network, it is easier. For example, Marble organizes evenings and climate tech events once every two months in Paris. In such events, I met someone that allowed me to be further connected in the American/international Climate tech network."

What skills acquired during your academic experience are the most valuable for you today? What are some new skills that you have learned in your current job?

"Communication skills definitively helped me integrate into the climate tech environment. In addition, knowledge in science (biogeochemical cycles, notions like alkalinity, thermodynamics, and kinetics of carbonates formation/dissolution) is a major asset for me today. I am now learning new things about the climate tech ecosystem and how to actually build a startup."



David Au Yang, Analytical Research Engineer at CEREGE

High school teaching, lab engineering, analytical development, and stable isotope analysis

Did you initially plan on this career at the onset of your PhD?

"Before my PhD, I wanted to be a high school teacher. However, when I was involved in my PhD, I was focused only on my academic career, hoping that I would not have to take any other exam. I wanted to be the equivalent of a lecturer in France. At the end of my first post-doctoral contract, 2 years after my PhD, I applied to post-doctoral job offers and wrote proposals and funding grants such as Marie Curie. As I didn't get the funding, I finally decided to work for a year as a contract teacher to see if the teaching experience in high school would fit me. After a very pleasant experience, I applied to the research engineer offer because I was missing performing experience in the laboratory and the ability to work on innovative subjects in geosciences. Moreover, I still have the opportunity to teach in this position."

What aspect of your work are you most excited about at the moment?

"At the moment, I really like the analytical development part. I like to fix a problem within a context for collaborators working on very distinct topics such as phytoliths or meteorites. Besides, there is eventually a possibility to teach at the university within my current job."



Marie Kuessner, Scientific Referee at the German Federal Office of Radiation Protection

Radiation protection and society

What aspect of your work are you most excited about at the moment?

"I really appreciate that I work independently on my projects but can always get feedback from my boss. As a scientific referee, you also have the opportunity to collaborate with working groups of people with different profiles, which is exciting. For example, on a project concerning radioactivity, drinking water, and the involvement of drinking water devices, I work with engineers, academics, including chemists and biologists, as well as other regional officers. I also work on constructing emergency plans for drinking water, which I find very impressive. It fulfils my curiosity."

What advice do you have for PhD student/academic staff who are thinking of leaving academia?

"I have actually several. Always be open for new things. Don't be anxious about what is coming. Have the courage to go out of your comfort zone. In German they say, *"Sie kochen auch nur mit Wasser"*—you also only cook with water—which means that other people are also only human and have their own flaws. Do things with your own character, as most decisions are driven by feeling, instinct, interhuman interactions. Have the courage also to try things and be allowed to fail."

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Pourret O and 9 coauthors (2021) Diversity, equity, and inclusion: tackling underrepresentation and recognition of talents in geochemistry and cosmochemistry. *Geochimica et Cosmochimica Acta* 310: 363–371, doi: 10.1016/j.gca.2021.05.054