

Conference Report

Reflections on the SCNAT Young Faculty Meeting 2023: Effective Communication within Academia and Beyond

Denise M. Mitrano^a, Jovana V. Milić^b, Patrick Steinegger^{cd}, and Leo Merz^{*e}

*Correspondence: Dr. L. Merz^e, E-Mail: leo.merz@scnat.ch

^aDepartment of Environmental Systems Science, ETH Zürich, CH-8092 Zürich, Switzerland; ^bAdolphe Merkle Institute of the University of Fribourg, CH-1700 Fribourg, Switzerland; ^cPaul Scherrer Institute, CH-5232 Villigen PSI, Switzerland; ^dDepartment of Chemistry and Applied Biosciences, ETH Zürich, CH-8093 Zürich, Switzerland; ^eSCNAT Platform Chemistry, CH-3001 Bern, Switzerland

The 16th SCNAT Young Faculty Meeting was held from May 31st to June 1st, 2023, and was organized by Denise M. Mitrano (ETH Zürich), Jovana V. Milić (Adolphe Merkle Institute, University of Fribourg), and Patrick Steinegger (ETH Zürich/PSI), together with Leo Merz (Platform Chemistry, SCNAT). This yearly meeting was established to promote the scientific exchange and networking amongst young faculty members in chemical sciences from all universities and research institutes within Switzerland. Whereas previous meetings were held during a single day, this edition adopted a two-day format for the first time to enable more in-depth conversations and social interactions. The event took place on the scenic Griesalp and centered around the topic of ‘Effective communication within academia and beyond’ (Fig. 1). This allowed researchers to reflect on how to better promote their scientific findings in simple and concise ways to scientists outside their main discipline, as well as to contextualize their work for broader and larger impact, such as to policymakers and the public. To facilitate these activities on improved science communications, the event brought together renowned keynote speakers who engaged in lively discussions on science communication.

To set the scene, speakers with various viewpoints related to science communication presented their experiences, ranging from advising government officials to making science more digestible to a range of audiences through effective storytelling (Fig. 2). The complementary perspectives stimulated further discussion throughout the event.

The keynote session was opened by *Caspar Hirschi* (University of St. Gallen) with his talk on the communication of scientific expertise in democracies during acute and chronic crises.^[1] In his talk, Hirschi explored similarities and differences between science and democratic politics, emphasizing the role of experts in shaping democratic controversies. More specifically, he addressed challenges concerning the language which is used between scientists and policymakers. These differences can potentially create misunderstandings due to different training and backgrounds. He continued to discuss the contrasting objectives,

questions, conflicts, and conflict resolution methods in politics and science, before highlighting the individual roles of the two in democratic decision-making processes.^[2] At the core of his presentation, he highlighted two case studies that examined the position of scientific expertise during different crises: the 2008 financial crisis and the COVID-19 pandemic. Throughout, the need to acknowledge the pluralistic nature of scientific policy advice and to maintain independence and credibility as a scientist was stressed. While science provides the best available data to make a decision, it cannot provide normative claims on which decisions to take. Consequently, the role of experts in the media is fundamentally different from the role of experts in policy advice. Overall, this contribution underscored the complexity of science–policy dynamics, emphasized the importance of effective communication, and highlighted the pluralistic character of scientific policy advice in democratic decision-making.

To complement this perspective on how scientists, as individuals, can interface with policymakers, *Nineta Hrastelj* (Secretary General of the European Chemical Society, EuChemS) addressed the question of how science can contribute to policy-making. Drawing from her experience in science policy making^[3] with a strong academic background, she underlined the need for scientists to develop additional skills beyond their scientific expertise. For example, skills that politicians are readily trained in, but scientists largely lack, include negotiation, rhetoric, communication with/in public and media domains, as well as advanced presentation skills. Consequently, the first step for any scientist aspiring to work in the policy sphere should be to obtain these skills, both through training courses and also through practice. Dr. Hrastelj presented the structure of the European policy landscape, highlighting the importance of understanding the regulations, directives, as well as the frameworks and dynamics of European institutions (e.g. the European Commission, the European Parliament, and the Council of the EU). More precisely, she provided examples of EuChemS’ involvement in policy calls and stakeholder engagements. Suggested opportunities for scientists to engage in policy-making included the registration as experts in their respective fields, participating in expert groups, and contributing to public consultations.^[4] Dr. Hrastelj ended with an appeal to scientists to actively contribute to policy-making and thereby help to shape decisions through scientific evidence and expertise. Ultimately, scientists should (and must) provide trustworthy and unbiased scientific evidence to policymakers. The final decision made by the lawmakers, however, is out of the scientists’ hands.



Fig. 1. Impressions from the Young Faculty Meeting (YFM) on the Griesalp, May 31 – June 1, 2023.



Fig. 2. Photos of the keynote speakers during their presentations at the YFM on the Griesalp.

The final presentation of the session shifted away from policy-making to communicating science at all levels. **Helga Rietz** from the ETHZ AI Center and former science journalist at the *Neue Zürcher Zeitung* (NZZ) shared her perspective on the challenges of navigating science communication from the laboratory to the headlines.^[5] Bringing expertise from her time working at a large and renowned newspaper, she focused on journalism and how news stories are shaped by factors such as novelty, relevance, and attention. She addressed the process of navigating scientific research communication, with a particular focus on understanding how science communication goes beyond communicating information. Instead of simply informing by providing information, scientists ought to answer the most pressing question, “So what?”, without leading to hyperbole or exaggeration of the scientific significance of the topic. The significance of storytelling in science communication is central in this regard, which includes the need to convey the meaning and relevance of a scientific outcome. The different roles scientists can adopt in science communication are important and may vary depending both on the personality of the individual and the aim of what the individual is trying to portray. These roles range from the pure scientist, the science arbiter, the popularizer, and the honest broker, to the issue advocate. Each of these can inform in different ways but also come with a different amount of exposure. Finally, Rietz highlighted the importance of considering the diverse perspectives of audiences, including the scientific community, the media, industry, policymakers, and the public.

These complimentary portrayals of science communication were followed by a *panel discussion* moderated by **Denise Mitrano** (Fig. 3), which evolved into a lively exchange between the panel and the audience. This included specific examples of how the young principal investigators had been involved in science communication previously, as well as tips and tricks on how they may be able to gain more traction in the public domain to communicate their science – either through traditional media outlets

or through social media. The attendees had different impressions of the importance of these different approaches. Moreover, challenges for young scientists, in particular, were highlighted, where increased exposure through voicing opinions when presenting scientific information may come with an increased risk of scrutiny. This needs to be considered carefully early on in young principal investigators’ careers when they have not attained tenure. However, collectively, the engaging discussions helped reflect on their current approaches and how these may be improved to both increase personal visibility and target certain audiences in a more effective way.

In the evening, all participants participated in a session of PowerPoint karaoke, organized and moderated by **Richard Smith** (managing director of Wiley Switzerland). Each attendee was randomly assigned a PowerPoint presentation that they had never seen before. They had to present the unknown content in four minutes in a way that would communicate the key information and engage the audience. The event allowed the participants to showcase their creativity and improvisation skills in (science) communication in a relaxed and informal environment. Denise Mitrano and Malte Oppermann won the competition with their performances.

On the second day, professionals in science communication, **Fernando Gomollón Bel** (director and co-founder of Agata Communications)^[6] and **Adria LeBoeuf** (University of Fribourg)^[7] held a workshop on the more practical aspects of science communication (Fig. 4). Gomollón Bel provided valuable perspectives on the fundamental aspects of science communication within and beyond academia. He reiterated that science communication goes beyond attempting to influence others – it can also focus on public understanding and presenting information in a thought-provoking way. This is exemplified by the many different forms science communication can take, often going beyond traditional outlets, such as illustrated magazines, media and policy reports, podcasts, and accessible tours. Moreover, science communica-



Fig. 3. Impressions from the science karaoke (left; Richard Smith) and panel discussion with Caspar Hirschi, Nineta Hrastelj, Helga Rietz and Denise Mitrano (right).

tion can elevate the reach of one's scientific results; those articles which are featured in the New York Times, for example, receive, on average, over 73% more citations, in addition to indirect academic impacts such as an increased number of invitations to conferences and contacts beyond academic settings. Meanwhile, Adria LeBoeuf complemented the workshop with her insights on blending science communication with a life of research. As one who has been engaged in improv theatre for many years, she guided the group in interactive exercises stimulating the mental flexibility needed in (science) communication. For effective communication, one needs to be open and receptive to the audience to keep them involved. Collectively, all keynote speakers throughout the event shared a consistent message – not to fall into the deficit model of the need just to provide the audience with information but actually engage them through well-thought-out storytelling.

In addition, as in previous years, several young faculty members were invited to make contributions to the scientific program by presenting their respective research topics (Fig. 5). **Rachel Hevey** (University of Basel) introduced how carbohydrate-based molecules could be used as new therapeutic agents,^[8] while **Malte Oppermann** (University of Basel) shared his insights on capturing and controlling molecular dynamics through chirality.^[9] Furthermore, **Sarah Pati** (University of Basel) discussed her research on using stable isotope analysis to investigate photochemical and biotransformation reactions of organic contaminants and oxygen.^[10] Although representing the same university, the first three speakers had not met before, as they all belong to different departments. Consequently, the YFM 2023 program brought together not only a wide diversity of scientists who study different topics, but was also a meeting place for connections to be made, both near and far. The scientific program continued with **José Augusto Berrocal** (Adolphe Merkle Institute (AMI) of the University of Fribourg), who presented his work on coloring plastics by means of mechanical force.^[11,12] Finally, **Jovana V. Milić** (AMI) discussed the multifunctionality of energy conversion, including hybrid materials in photovoltaics,^[13] as well as her activities at the intersection of science policy and diplomacy.^[4,14] This provided an example of the intersection of research and science communication – which ultimately was the theme and the goal of the YFM 2023 meeting.

In summary, the extension of the workshop to a two-day event proved to be worthwhile in establishing a more thorough exchange of experiences and ideas. The meeting emphasized the

importance of tailoring science communication strategies to different audiences, including the scientific community, policymakers, industry, and the general public. Recognizing the specific needs and interests of each individual group was highlighted as a crucial factor, thus enabling effective communication. The meeting also addressed the challenges and opportunities that early-career researchers face in engaging with diverse stakeholders and the wider community. In particular, young researchers need to discriminate their work from others while also attaining visibility in order to be recognized in a highly competitive academic landscape. However, this visibility can also come with the risk of becoming a target for negative pushback. Therefore, it is important to carefully consider how to approach science communication and gain the necessary skills to be proficient and comfortable outside an academic setting. Overall, the YFM 2023 provided an invaluable opportunity for young academics to enhance their communication skills, exchange knowledge, and establish connections within their field and beyond.

Acknowledgments

The authors are grateful to *Helvetica Chimica Acta* for sponsoring the YFM 2023 on the Griesalp. Photographs used in the figures were taken by Sandra Hofmann, Caroline Reymond, and J.V.M. More information about the conference and the related program, as well as some of the slide sets, can be accessed via chem.scnat.ch/YFM.

Note

The early outline of the report draft was prepared with the support of GPT4 based on the conference program and notes of the organizers, which was further edited by all co-authors.

Received: August 10, 2023

- [1] C. Hirschi, *Leviathan: Berliner Zeitschrift für Sozialwissenschaft* **2021**, 49, 161–185, <https://www.alexandria.unisg.ch/handle/20.500.14171/111055>
- [2] M. Blastland, A. L. J. Freeman, S. van der Linden, T. M. Marteau, D. Spiegelhalter, *Nature* **2020**, 587, 362, <https://doi.org/10.1038/d41586-020-03189-1>.
- [3] EuChemS Science Policy Advice, <https://www.euchems.eu/communication/science-policy-advice/>, accessed July 20, 2023.
- [4] T. John, M. Cieslak, D. Vargova, S. M. Richardson, V. Mougel, J. V. Milić, *Chem. Eur. J.* **2021**, 27, 6359, <https://doi.org/10.1002/chem.202100167>.
- [5] H. Rietz, *Die Fachwerkstatt*, <https://www.die-fachwerkstatt.de/rietz/>, accessed July 20, 2023.
- [6] F. Gomollón-Bel, Science Communication, <https://gomobel.com/>, accessed July 20, 2023.
- [7] A. LeBoeuf, *The Catalyst*, http://thecatalyst.ch/author/dr_lbf/, accessed July 20, 2023.

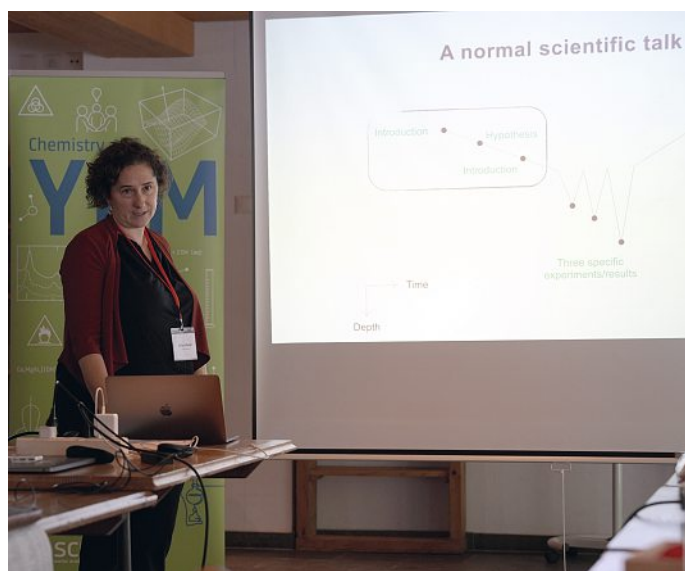


Fig. 4. Impressions from the science communication workshop with Fernando Gomollón Bel (left) and Adria LeBoeuf (right).

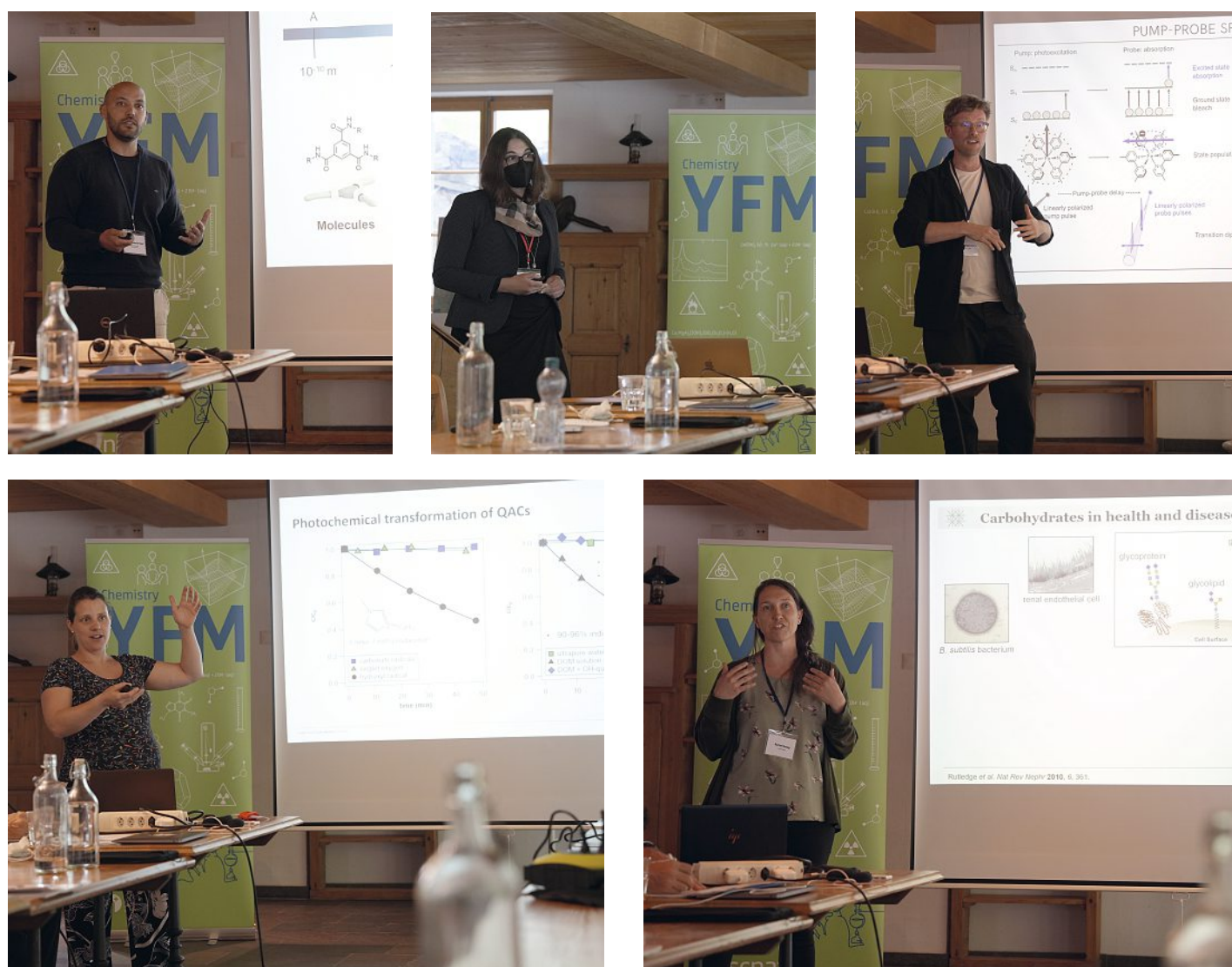


Fig. 5. Young Faculty presenting their research: (from top left) José Augusto Berrocal, Jovana V. Milić, Malte Oppermann, Sarah Pati, and Rachel Hevey.

- [8] J. Takagi, K. Aoki, B. S. Turner, S. Lamont, S. Lehoux, N. Kavanaugh, M. Gulati, A. Valle Arevalo, T. J. Lawrence, C. Y. Kim, B. Bakshi, M. Ishihara, C. J. Nobile, R. D. Cummings, D. J. Wozniak, M. Tiemeyer, R. Hevey, K. Ribbeck, *Nat. Chem. Biol.* **2022**, *18*, 762, <https://doi.org/10.1038/s41589-022-01035-1>.
- [9] M. Oppermann, F. Zinna, J. Lacour, M. Chergui, *Nat. Chem.* **2022**, *14*, 739, <https://doi.org/10.1038/s41557-022-00933-0>.
- [10] S. G. Pati, C. E. Bopp, H.-P. E. Kohler, T. B. Hofstetter, *ACS Catal.* **2022**, *12*, 6444, <https://doi.org/10.1021/acscatal.2c00383>.
- [11] J. R. Hemmer, C. Rader, B. D. Wilts, C. Weder, J. A. Berrocal, *J. Am. Chem. Soc.* **2021**, *143*, 18859, <https://doi.org/10.1021/jacs.1c10004>.
- [12] J. R. Hemmer, J. A. Berrocal, *Synlett* **2022**, *33*, 1681, <https://doi.org/10.1055/a-1854-2131>.
- [13] J. V. Milić, *CHIMIA* **2022**, *76*, 784, <https://doi.org/10.2533/chimia.2022.784>.
- [14] T. John, K. E. Cordova, C. T. Jackson, A. C. Hernández-Mondragón, B. L. Davids, L. Raheja, J. V. Milić, J. Borges, *Angew. Chem. Int. Ed.* **2023**, e202217841, <https://doi.org/10.1002/anie.202217841>.