



## Conference Report

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The Swiss Summer Schools, often referred to as Villars Summer Schools, originate from the *séminaires du 3<sup>e</sup> cycle* in the 1960s, and are a multi-day course for master, doctoral and postdoctoral students, held in the Alpes vaudoises region. They are now organized by the Swiss Chemical Society (SCS) as part of its SCS Seminar Series, and foster scientific exchange between participants and lecturers, and among peer groups. This year's edition of the summer school series on *Trends in Organic Synthesis* focused on **Catalysis and Sustainable Chemistry** (<https://summer-school21.scg.ch>), and was co-organized by SCS and NCCR Catalysis and co-chaired by Bill Morandi and Jérôme Waser. The topic was received with great interest across communities, and the participant slots and waiting list filled up quickly.

We opened the Swiss Summer School 2021 with lectures presented by Nobel Laureate Robert Grubbs and Eva Hevia, and, for the first time ever, a *Careers in Chemistry* session, with presentations described in Table 1. Here, the 79 participants learned what a career in chemistry can look like from the perspective of three firms.

Table 1. *Careers in Chemistry* presenters, their affiliations and topics.

Christoph Boss, Idorsia	Medical chemistry in the pharmaceutical industry
Markus Fischer and Elisa Anders, Merck	Merck Sigma Aldrich as a company and employer
Cecilia Tortoreto and Audrey Dillier, Siegfried AG	Siegfried AG as a company and employer

Six academic lecturers from Caltech, Princeton, Ben-Gurion University, University of Bern, and ETH Zurich shed light on the many facets of catalysis and sustainable chemistry each with two hour-long lectures. The professors covered topics from olefin metathesis to enzymatic catalysis, as described in Table 2.

During the lectures from seven industry representatives (see Table 3), the participants learned about the practicalities of catalysis and sustainable chemistry in industry, from the use of machine learning in catalysis discovery, to the full drug development process.

Participants and lecturers alike had many opportunities to discuss in depth, as the lecturers (see Fig. 1) were present for a minimum of one day of the summer school. Robert Grubbs from

Caltech, who was unable to travel from the US, was also available *via* Zoom for private discussions during one of the poster sessions. Jos de Keijzer from Chemspeed gave a demonstration on lab automation workflows and held an exhibition during a poster session, sparking further discussions.

The participants had the opportunity to present their work through 10-minute short communications or poster sessions. Both poster sessions (Fig. 2) were filled with lively discussions, and for many students, this was the first opportunity to present their PhD work in person. Participants and lecturers alike reflected on the joy of being able to attend an in-person event to discuss science once more.

*Helvetica Chimica Acta* sponsored awards for the best poster and short communications. These awards went to Julia Reisenbauer from ETH Zurich for her poster, and Eloïse Colson from the

Table 2. Academic lecturers, their affiliations and lecture topics.

Robert Grubbs California Institute of Technology	Metathesis catalysts
Eva Hevia University of Bern	Bimetallic and main group catalysis
Christophe Copéret ETH Zurich	Surface organometallic chemistry
Javier Pérez-Ramírez ETH Zurich	Sustainable catalyst engineering
Anat Milo Ben-Gurion University of the Negev	Reaction mechanisms in organocatalysis
Todd Hyster Cornell University	Enzymatic catalysis

Table 3. Industrial lecturers, their affiliations and lecture topics.

Markus Fischer Merck	Industrial chemistry
Thomas Carl Siegfried AG	Process performance on scale
Teodoro Laino IBM Research	Machine learning for catalysis
Edouard Godineau Syngenta	Green chemistry
Audrey Langlois Novartis	Drug process development
Lucie Lovelle Novartis	Drug chemical development
Susanne Drechsler Sulzer	Scaling bio-based solutions



Fig. 1. Academic and industry lecturers, from left to right: Javier Pérez-Ramírez, Anat Milo, Eva Hevia, Christophe Copéret, Teodoro Laino, Audrey Langlois, Jos de Keijzer, Todd Hyster; Markus Fischer; and Thomas Carl.



Fig. 2. Participants and lecturers during the poster sessions.



Fig. 3. Award winners Julia Reisenbauer, Eloïse Colson, Francesco Bernasconi, and Arik Beck with Richard J. Smith from Wiley-VHCA AG and Marie Francine Lagadec from NCCR Catalysis, respectively.

University of Bern for her short communication. Additionally, Chemistry Europe sponsored prizes for the runner-ups in each category. The poster runner-ups were Pablo Díaz-Kruik from the University of Bern and Diana Cavalli from EPFL. Susanne Reischauer from the Max Planck Institute for Colloids and Interfaces was the runner-up in short communication. NCCR Catalysis offered awards for poster and short communication which focused on catalysis and sustainable chemistry research. The NCCR Catalysis poster award went to Francesco Bernasconi from Empa, and the NCCR Catalysis short communication award went to Arik Beck from ETH Zurich (Fig. 3). The jury had a difficult task, given the high quality of all posters and short communications. Congratulations to the winners!

The feedback from students on the Summer School 2021 was fantastic, meeting expectations of 100% of respondents. In particular, 96% found that the format fostered interaction, 93% improved their knowledge on catalysis and sustainable chemistry, and 89% appreciated the strong presence of industry lecturers. Participants appreciated the balance between industry and academia talks, the opportunities to connect with peers and lecturers alike, and the short communication and poster sessions. In short: they went back home inspired and motivated.

This wonderful event would not have been possible without our sponsors. We thank them for their generous financial support, and presence of their researchers and HR representatives. The location in Les Diablerets, at Eurotel Victoria and Maison des Congrès des Diablerets was spectacular, and the respective staff took great care to ensure a smooth event, and COVID safety for all.

Lastly, we thank all participants and lecturers for making this event a success!

Image source: Matthias Lehmann, visualalps.com.

