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# Division of Analytical Sciences

A Division of the Swiss Chemical Society

## 1992–2017: 25 Years of the Swiss Chemical Society's Division of Analytical Sciences – Past, Present and Future Activities

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### Launch in the 1990s – Scope and Goals – Name

In the early 1990s, the chemists' professional societies in Switzerland were reorganised. The major event was the merger of the Swiss Chemical Society and the Association of Swiss Chemists in spring 1992. Around the same time, the analytical chemists informally organised in the Comité Suisse de Chimie Analytique (see *CHIMIA* 1990, 44(9), 298–299) became the Analytical Chemistry Section (SACH) of the New Swiss Chemical Society. The first General Meeting of the SACH was held in Bern on 16 October 1992.

This article commemorates the 25th anniversary of the foundation of the SACH by reviewing some past endeavours and describing the current activities of what is now known as the *Division of Analytical Sciences (DAS)*. Michael H. Widmer of Ciba-Geigy was the first – very enthusiastic – SACH president from 1992 to 1997. He was succeeded by five analytical chemists from academia, industry and federal research institutes, as shown in the following Table, which also includes the names of the four researchers acting as DAS secretary.

#### Chair

Michael Widmer (1992–1997)  
Peter Radvila (1997–2002)  
Walter Giger (2002–2005)  
Fritz Erni (2005–2009)  
Gérard Hopfgartner (2009–2016)  
Marc Suter (since 2017)

#### Secretary

Ernst Gassmann (1992–1996)  
Aran Paulus (1997)  
Martin Schär (1998–2005)  
Stefan Schürch (since 2005)

In 1996, Michael Widmer published an article on the scope and goals of the SACH (*CHIMIA* 1996, 50(10), 487–488). He mentioned in particular the important contribution made by Prof. Wilhelm Simon at ETH Zurich to the education of analytical chemists in Switzerland.

The vision of improving analytical sciences in education – and the reputation of this discipline in academia, industry and society – underlay the goals defined at the inception of the SACH in view of:

- manifesting the importance of analytical work and quality within academic and government institutes, industrial research and authorities responsible for health and safety
- strengthening the wide range of analytical techniques and applications
- increasing the numbers of university chairs specifically dedicated to analytical sciences.

Over its 25-year history, the name of the SACH has changed twice – first to the Division of Analytical Chemistry (DAC) and finally to the Division of Analytical Sciences (DAS), reflecting

the fact that its scope is not limited to chemistry but also includes physical techniques and biological methods.

### Membership – Organisation – Communication

In 1996, almost 300 members of the Swiss Chemical Society were also members of the DAC. By 2017, membership had increased to 585 (22% of Swiss Chemical Society members).

Most of the DAC's activities were managed and organised by the relatively large DAC Board, comprising about 9 to 17 members, several of whom were active for many years. Every other year, the DAC Board held a retreat, where current endeavours were evaluated and future projects thoroughly discussed and planned.

In 1999, the importance of the internet for gaining visibility and meeting members' needs became evident. Ernst Halder and Käthi Halder initiated and maintained a divisional website at [www.sach.ch](http://www.sach.ch), including, most importantly, information on the training programme. The site also offered a calendar of events in Switzerland, Europe and overseas, and news reviews extracted from print and electronic sources. The number of visits rose from 18,000 in 2000 to 50,000 in 2013. In 2014, when the Swiss Chemical Society's website was relaunched, the divisional website was incorporated, and Hanspeter Andres became the DAS webmaster.

### Vocational Training – Continuing Education

The division's early initiatives reflected the urgency of filling gaps in analytical education. In 1999, the DAS launched a *vocational training programme* (overseen by a subcommittee), with courses attracting increasing numbers of participants. For many years, Heiner Kern, Roland Looser, Bernhard Schreiber and Adolf Wehrli were members of the core team for DAS courses. More recently, Ernö Pretsch, Peter Oggenfuss, Peter Hauser and Eric Bakker became involved, while Roland Looser remains active.

Over a period of 18 years, the *DAS course programme* was substantially expanded and continuously updated. The number of courses available grew from 28 in 1999/2000 to 54 and 74 in 2016 and 2017, respectively. Parallel courses taught in French were run by the Centre de Compétences en Chimie et Toxicologie Analytiques (ccCTA) in Geneva. Each year, numerous analytical experts acted as course organisers and instructors, including many DAS Board members – almost 20 in 1999/2000, rising to 42 in 2017. The DAS and ccCTA courses attracted from 150 up to more than 300 participants per year. Altogether, more than 3,000 analytical professionals registered for DAS vocational training courses. In addition, in-house courses were organised for several companies.

DAS now offers a wide range of continuing education courses, in areas such as separation technologies (e.g. GC, HPLC), spectroscopy (including mass spectrometry), analytical applications, methods of biotechnology and life sciences, and quality assurance and information management. Particular emphasis is placed on regulations and practices for controlling the quality of analytical data. In 2017, the DAS started to also

offer courses taught in French and increased the number of events in English language.

The target group comprises all levels, from beginners to experts. Courses are run in collaboration with industrial partners to ensure the relevance of the subject matter. The list of topics is continuously adapted, with additional themes being tested to see whether sufficient demand exists.

Closely connected to the continuing education programme are practice-oriented conferences known as *APPLICA* (or in one case *DETECTA*). These conferences were initially organised primarily by Adolf Wehrli and then Roland Looser. The *APPLICA* events include small exhibitions, where instrument manufacturers can present their latest products, applications and developments.

## Publications

Several DAS members were active contributors to *CHIMIA*, the journal published by the Swiss Chemical Society. Early on, Mike Widmer regularly published short opinion pieces and reports under the heading *COLUMN ANALYTICA*.

Since 2006, Veronika Meyer has edited a series of practice-oriented articles in *CHIMIA* under the heading *Highlights of Analytical Sciences in Switzerland*. By 2017, *CHIMIA* had published more than 120 one-page articles in this series, considered extraordinarily valuable by many analytical researchers.

DAS Board members also acted as guest editors for *CHIMIA* Special Issues:

- Fritz Erni: *Analytical Science in Switzerland*, *CHIMIA* **1997**, 51(10)
- Ursula Spichiger: *Chemical Sensors, Biosensors, and Bioarrays*, *CHIMIA* **1999**, 53(3).
- Walter Giger: *Environmental Analysis*, *CHIMIA* **2003**, 57(9).

Ervin Kováts, Peter Radvila and Bernhard Schreiber authored an article entitled ‘*Analytical Chemistry – Adequate at the Turn of the Century?*’ (*CHIMIA* **1999**, 53(6), 281–283). This position paper was based on detailed discussions within the DAS community under the heading *ANALYTIK 2000*. The paper notes that, despite or because of its successes and contributions to natural sciences and technology, analytical chemistry is being neglected in academic teaching; inadequacies in practice and a scarcity of qualified young analytical chemists jeopardise the continuation of past scientific and commercial successes and rapid developments. The Swiss authorities responsible for education are called on to intensify education in analytical chemistry at all universities and colleges. The hope is expressed that the Swiss government’s planned laws and programmes for the advancement of education, research and technology may give impetus and support to revisions of the chemical curriculum, intensifying the teaching of analytical chemistry.

In 2008, the DAS became one of the owner societies of *Analytical and Bioanalytical Chemistry (ABC)*. Several DAS Board members have served as members of this journal’s International Advisory Board, and since 2016 Gérard Hopfgartner, a former DAS president, has been one of the Editors.

## Conferences

In 1973, Wilhelm Simon and chromatography experts around the world, realising the potential of HPLC, organised the first international conference on HPLC at Interlaken (chaired by Simon). This has since become an annual international symposium, attended by chromatography experts from all over the world. This series of conferences played an important role in the emergence of the SACH/DAS. The *HPLC 1991* conference, chaired by Fritz Erni, was held in Basel. The participation of

many analytical scientists from Switzerland – and especially Basel – made the event a big success. The financial benefits from this conference helped to bring together the Swiss analytical experts, and to provide support for young scientists in the form of travel grants for many years. The *HPLC 2015* conference was held in Geneva and chaired by then-DAC president Gérard Hopfgartner. Over the years, several DAS members chaired large international conferences in Switzerland: Ursula Spichiger (*EUROPTRODE 1996*); Mike Widmer and Werner Haerdi (*EUROANALYSIS 1998*); Renato Zenobi, Petra Dittrich and Detlef Günther (*ANAKON 2011*); and Marc Suter and Renato Zenobi (*IMSC 2014*).

Starting in 2003, several symposia were sponsored by DAS, which were originally called *SACH Conferences*. Walter Giger started this series with a workshop on the *Analytical Chemistry of Organic Contaminants*. In 2007, Bernhard Wehrli convened at ETH Zurich a Symposium on Development and Application of Chemical Sensors. Caspar Demuth chaired four times the *BioTech – Chemical Sensors Forum* at Uto Kulm (2008) and at the Zurich University of Applied Sciences at Wädenswil (2011, 2014, 2017), respectively. Walter Giger presided in 2015 the *International Conference on Contaminated Sediments* on Monte Verità at Ascona, which was organised jointly by DAS and ETH.

The *ILMAC* exhibition and conference in Basel was initially organised by the Association of Swiss Chemists. Subsequently, it was expanded to include a 4-day symposium on various aspects of analytical sciences, organised by the DAS. At first, the DAS mainly supported the scientific programme. Later on, Heiner Kern of the DAC Board headed the scientific committee of the Scientific Forum.

Under the guidance of Stefan Schürch, the DAS regularly participates in the *Fall and Spring Meetings* of the Swiss Chemical Society, organising sessions with oral and poster presentations. In 2013, Ernö Pretsch, Marc Suter, Detlef Günther and Ralf Schlapbach started the *CHanalysis* conferences. The goal of this initially biennial event is to promote stronger cooperation among persons working in the different areas of fundamental and applied analytical sciences. The 4th *CHanalysis* is planned at Beatenberg on 12–13 April, 2018. Subsequently, it will be held annually in the spring.

## Simon-Widmer Award

In 2000, the DAS created the *Simon-Widmer Award*, in memory of Professors Wilhelm Simon and Michael Widmer, to honour distinguished scientists for their contributions to fundamental and applied analytical science and to the education of analytical scientists. Until 2015, the Simon-Widmer Award was co-sponsored by Novartis. Past award winners were Takehiko Kitamori (2017), Detlef Günther (2015), Rolf Fuhr (2009), Renato Zenobi (2006), Barry Karger (2004), Ruedi Aebersold (2002) and Csaba Horváth (2000).



Wilhelm Simon, ETH Zurich, the legendary Swiss analytical chemist.



Michael Widmer, Novartis, the first SACH president.

## European Outreach

In 1992, the SACH initiated a project within the European programme for cooperation between universities and industry regarding training in the field of technology. The *ACTIVE* project (Analytical Chemistry Turntable for Industry Visits and Education) enabled students to work temporarily in the chemical industry; conversely, analytically oriented professionals from industry were supported for further training at universities. In 1995, the *ACTIVE* office was transferred to Archamps Technopole in France. This move made it possible to continue the development of a European analytical chemistry network.

Recognising the importance of accurate measurements and valid statements of data for society, science and industry, the DAS sought to establish collaboration with international quality control endeavours. The European standard EN 45001:1989, 'General criteria for the operation of testing laboratories', focused on requirements for assessing the technical competence of testing laboratories. Standards of measurement and measurement services were provided for physical and engineering based industries, but no equivalent standards had been defined for analytical laboratories. This lack triggered the establishment, in 1989, of *EURACHEM* – a European network whose goal was to develop a system for evaluating the international traceability of chemical measurements and to promote good quality practices. In Switzerland, the Swiss Committee for Testing and Certification (Schweizerischer Ausschuss für Prüfen und Zertifizieren, SAPUZ) became active. In January 1999, responsibility for establishing a base for metrological measurement in analytical chemistry was transferred from the Swiss Federal Office of Metrology to the Swiss Federal Laboratories for Materials Science and Technology (EMPA). The latter began to set up a Swiss organisation analogous to *EURACHEM*. In October 1990, *EURACHEM-CH* triggered the organisation of symposia and workshops for the analytical community in Switzerland, designed to strengthen skills in the requirements of EN 45001 and the emerging ISO/IEC 17025, 'General requirements for the competence of testing and calibration laboratories'. The EMPA team was headed by DAC Board member Peter Radvila. In 2002, a Workshop on Measurement, Traceability and Uncertainty in Analytical Chemistry was held in Lucerne. In 2003, the annual *EURACHEM* meeting took place at EMPA in St. Gallen. Later on, EMPA ceased its *EURACHEM-CH* activities. Because the DAS training programme had a strong emphasis on *EURACHEM* topics and because Ernst Halder, a DAS Board member, was a national representative in *EURACHEM*, *EURACHEM-CH* was subsequently hosted by the DAS.

Under the umbrella of the DAS, Walter Giger was the Swiss Chemical Society's delegate in the *EuCheMS Division of Chemistry and the Environment*, which he chaired from 2009 to 2015. The *ICCE 2011 (International Conference on Chemistry and the Environment)* was held at ETH Zurich. This conference, at which many analytically oriented papers were presented, was co-sponsored by the DAS.

For many years, Urban Frey represented the DAS in the *EuCheMS Division of Analytical Chemistry*. Since 2016, Franka Kalman has been the Swiss delegate in this division; on behalf of the DAS, she has submitted a proposal for the organisation of *EUROANALYSIS 2023* in Geneva.

## Current Activities – Outlook

The current and future aims of the DAS are:

- to promote all aspects of analytical chemistry and analytical sciences in Switzerland, with a strengthened emphasis on non-chemical, *i.e.* biological and physical methods
- to disseminate information through the organisation or sponsorship of conferences and workshops with national and international scope
- to hold the annual *CHanalysis* conference as a key DAS event for networking of students and researchers of different fields
- to communicate through *CHIMIA* and the website of the Swiss Chemical Society, [www.scg.ch](http://www.scg.ch)
- to contribute to the success of the journal *Analytical and Bioanalytical Chemistry* by participating in editorial activities and soliciting first-class articles
- to increase the membership by reaching out to non-chemical analysts, particularly in biology
- to involve more analytical scientists from industry
- to provide a forum for knowledge transfer and discussion and for interdisciplinary collaborations
- to form a bridge between basic researchers and applied professionals in analytical sciences
- to highlight the importance of analytical sciences in research and education, industry, commerce and politics
- to strengthen links to professional societies and institutions in Switzerland and in Europe, with an emphasis on *EuCheMS* divisions and *EURACHEM*
- to manage a flexible programme of vocational training courses that includes recent developments and cutting-edge techniques
- to support young scientists with travel grants for international conferences
- to award the biannual Simon-Widmer prize

After 25 years of existence, the DAS continues to be a very lively organisation with an extraordinarily active board, ensuring a high level of activity and prosperity for current and future endeavours. The DAS is determined to maintain its services to the professional community and to ensure that the analytical sciences continue to have a strong focal point in Switzerland.

### Acknowledgments

The voluntary activities of many analytical professionals as DAS Board members and their involvement as course organisers and instructors and as conference conveners, are gratefully acknowledged. Without these contributions, the DAS success story would not have been possible.

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