Party Time for Mathematicians in Heidelberg

OSMO PEKONEN

This column is a forum for discussion of mathematical communities throughout the world, and through all time. Our definition of “mathematical community” is the broadest: “schools” of mathematics, circles of correspondence, mathematical societies, student organizations, extracurricular educational activities (math camps, math museums, math clubs), and more. What we say about the communities is just as unrestricted. We welcome contributions from mathematicians of all kinds and in all places, and also from scientists, historians, anthropologists, and others.

Heidelberg, one of Germany’s ancient places of learning, is making a new bid for fame with the Heidelberg Laureate Forum (HLF). Each year, two hundred young researchers from all over the world—one hundred mathematicians and one hundred computer scientists—are selected by application to attend the one-week event, which is usually held in September. The young scientists attend lectures by preeminent scholars, all of whom are laureates of the Abel Prize (awarded by the Norwegian Academy of Science and Letters), the Fields Medal (awarded by the International Mathematical Union), the Nevanlinna Prize (awarded by the International Mathematical Union and the University of Helsinki, Finland), or the Computing Prize and the Turing Prize (both awarded by the Association for Computing Machinery).

In 2018, for instance, the following eminences appeared as lecturers at the sixth HLF, which I attended as a science journalist: Sir Michael Atiyah and Gregory Margulis (both Abel laureates *and* Fields medalists); the Abel laureate Srinivasa S. R. Varadhan; the Fields medalists Caucher Birkar, Gerd Faltings, Alessio Figalli, Shigefumi Mori, Bào Châu Ngô, Wendelin Werner, and Efim Zelmanov; Robert Endre Tarjan and Leslie G. Valiant (who are both Nevanlinna and Turing laureates); the Nevanlinna laureate Constantinos Daskalakis; the Turing laureates Frederick Brooks, Vinton Gray Cerf, Stephen A. Cook, Whitfield Diffie, Martin Hellman, Sir C. Antony R. Hoare, John E. Hopcroft, William Morton Kahan, Richard Manning Karp, Leslie Lamport, Butler W. Lampson, Silvio Micali, David A. Patterson, Joseph Sifakis, Richard Edwin Stearns, Michael Stonebraker, Ivan Sutherland; and the Computing Prize laureates Sanjeev Arora and Jeffrey A. Dean. Representatives of various German scientific bodies and funding agencies and a number of German politicians, including the minister of education of the state of Baden-Württemberg, also attended.

The main sponsor of the Heidelberg Laureate Forum is the Klaus Tschira Stiftung, one of Germany’s largest philanthropic organizations, with assets of about \$5 billion. Its founder, Klaus Tschira (1940–2015), was a physicist who cofounded the software firm SAP in 1972. “I can create more benefit for society by directing the money than if I left it to the state through taxation,” Tschira described his philosophy to the *Wall Street Journal*.¹ The foundation that

➤ Submissions should be uploaded to <http://tmin.edmgr.com> or sent directly to **Marjorie Senechal**, MathCommunities@gmail.com.

¹*Wall Street Journal*, July 4, 2000. Quoted in <https://www.forbes.com/pictures/mm45kfj/20-klaus-tschira/?sh=71cfcbbcd26>.

he created is also among the sponsors of the similarly organized annual meeting of Nobel laureates in natural sciences at Lindau, Germany. A full-day visit to the SAP premises in Waldorf was included in our program.

Heidelberg is a romantic place whose beauty was praised by Goethe and Hölderlin, and most of whose ancient monuments, happily enough, survived WWII. The Ruprecht-Karls-Universität Heidelberg, founded in 1386, is Germany's oldest university. With twelve faculties, it is a complete university today, but its ancient fame rests perhaps more on humanities than the natural sciences. Hardly any of Germany's famous mathematicians can be associated with Heidelberg, whereas some great physicists, such as Bunsen, Helmholtz, and Kirchhoff, taught there. Sofia Kovalevskaya studied with them in 1869–1870. Perhaps she could become yet another symbolic figure of the HLF.

The core of the Forum consists of its scientific lectures, of course. The laureates describe their work, and they are told to do so in widely understandable terms, since the audience is a mixture of people from two different scientific communities. The students also organize workshops and poster sessions of their own. Besides the usual business of a scientific conference, many opportunities for informal interaction between senior and junior scientists are created. The social program is more lavish than I have ever seen in a mathematical meeting (and that is saying a great deal!).

To begin with, the laureates were marched into the lecture hall of the university's main building to the strains of *When the Saints Go Marching In*. Dozens of black Mercedes-Benz limousines with chauffeurs lined up to hustle VIPs from and to their hotels, airports, and other destinations. Photographers, journalists, and black-suited security staff with earpieces teemed all over the place. Some of the mathematicians seemingly felt uneasy in their newly won role as rock stars of science. Wendelin Werner told the audience about his very first visit to Heidelberg as a poor backpacker tourist many years before. The setup was perhaps less embarrassing for the computer scientists, who may have had greater experience of public appearances in business attire. In his smart three-piece suit, Vint Cerf was by far the most sartorially splendid member of the conference; he was awarded a Bavarian prize named after Count Palatine Charles Theodore, Elector of Bavaria (1724–1799), which gave occasion to yet another lavish dinner in the Heidelberg City Hall.

Wining and dining in style also took place in the Heidelberg Castle,

The Heidelberg Castle. (Photograph by Osmo Pekonen.)

whose largest part has been but a formidable ruin since the destruction of the castle in the War of the Palatine Succession in 1693. I learned more about the House of Wittelsbach in the splendid Palatinate Museum (Kurpfälzisches Museum). A river cruise on the Neckar was offered as well,

Good vibes, cruising the river Neckar. (© Heidelberg Laureate Forum Foundation/Flemming.)

not to mention several concerts and a Bavarian-style beer party that felt like a small-scale Oktoberfest. A highly interesting excursion brought us to the Technology Museum of Speyer, whose exhibits include a prototype of *Buran*, the Soviet space shuttle that flew only once, in 1988.

Dining in the Technology Museum in Speyer, under the Soviet space shuttle *Buran*. (© Heidelberg Laureate Forum Foundation/Kreutzer.)

On all these occasions, the laureates probably had been expressly asked to be kind and attentive to the young people. Sir Michael Atiyah, in particular, excelled in joviality, chatting, as it seemed to me, with almost everyone. He used to be a regular HLF guest but sadly, the sixth HLF was his last: he passed away on January 11, 2019, at age 89.

The visionary lecture by Sir Michael Atiyah (1929–2019) at HLF 2018 was one of his last major public appearances. (© Heidelberg Laureate Forum Foundation/Flemming.)

Every year, one guest star from the Lindau meeting attends as well. In 2018, William Daniel Phillips, a Nobel physics laureate of 1997, gave a riveting lecture entitled “Time, Einstein, and the Coolest Stuff in the Universe,” where he played with liquid hydrogen and somewhat parodied the role of a mad scientist.

The Nobel laureate physicist William D. Phillips playing the mad scientist: liquid hydrogen—and no gloves! (© Heidelberg Laureate Forum Foundation/Flemming.)

It is well known that getting a Nobel Prize may ruin the rest of your scientific career. There will be no end of invitations to glamorous events where you are supposed to mix with other socialites. On the other hand, mathematicians—laureates or not—more rarely get invited to cocktail parties and fancy dinners in town. The HLF, therefore, is a rather unique opportunity for a mere mathematician to taste some high life and feel like a celebrity. Given the rather luxurious treatment, more mathematicians could have attended.

Every year is different, but the HLF of 2018 was, by and large, dominated by computational scientists: among the 32 prize winners, only ten were Abel or Fields laureates.

Dirk Huylebrouck (left), then the *Mathematical Intelligencer's* Mathematical Tourist editor, with Andrew Wiles at the 2018 HLF. Dirk wrote, “The HLF is a great place to take selfies with one’s heroes. This picture shows Wiles and me, hoping some of his sunshine would reach me. I did not ask him if I could stand on his shoulders though.”

In the HLF of 2019, the situation was hardly better for mathematicians: only 5 Abel or Fields laureates against 18 laureates in computational sciences. One may notice a certain alarming trend: past Fields medalists rarely attend the International Congresses of Mathematicians following

their award—they have grown too big. If they also shy away from more pleasant social gatherings like the Heidelberg Laureate Forum, where can young people meet them? Distinctions imply duties. Appearing every now and then in public shaking hands with and smiling to young people in the cheerful manner of the late Sir Michael Atiyah should not be too much of a burden.

Socializing with young scientists may have its benefits even if you are not supposed to become their regular teacher or adviser. The ethologist Konrad Lorenz popularized the notion of filial imprinting, in which a young goose, for example, acquires by imitation the behavioral characteristics of its parent. Surely, many overseas student guests have found their *Doktorvater* (or *-mutter*) in Germany and will return. Visits to several departments and laboratories of Heidelberg University are organized for that purpose.

The corona pandemic ravaged the plans for the HLFs of 2020 and 2021, forcing them to go online. Nothing replaces the vibrant and youthful atmosphere of a real event. On the other hand, large online resources that have been available since the very first HLF preserve the scientific contents of these unforgettable meetings.

Mathematical Intelligencer correspondent Osmo Pekonen attending HLF 2018. (© Heidelberg Laureate Forum Foundation/Kreutzer.)

FUNDING

Open access funding provided by the University of Jyväskylä (JYU).

Osmo Pekonen
University of Jyväskylä
Agora, PL 35, 40014 Jyväskylä
Finland
e-mail: osmo.pekonen@jyu.fi

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.