

10th Anniversary of Heidelberg Laureate Forum

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THE Heidelberg Laureate Forum Foundation (HLFF) has been organising the Heidelberg Laureate Forum (HLF) annually since 2013, an international networking event for mathematicians and computer scientists. German physicist Klaus Tschira Stiftung (1940-2015) laid the forum's groundwork. The scientific partners of the HLF are the Heidelberg Institute for Theoretical Studies (HITS) and Heidelberg University. The HLF is strongly supported by award-granting institutions such as the Association for Computing Machinery (ACM), the International Mathematical Union (IMU) and the Norwegian Academy of Science and Letters (DNVA). The HLF provides the platform and time for leading researchers in their fields to interact, share ideas, network and form lasting connections that promise to develop into fruitful collaborations.

The 10th HLF took place in the University of Heidelberg, Germany, from 24-29 September 2023 and brought together 32 laureates of the most prestigious prizes in mathematics and computer science, such as recipients of the Abel Prize, Field Medal, Navenlinna Prize, ACM Prize, as well as 200 bright young researchers of the next generation from over 60 nations around the world. Besides, 20 alumni from past HLFs were invited to share their experience and expertise. The weeklong event featured a host of fascinating Laureate Lectures, Lindau Lecture, Laureate Discussions, Panel Discussions, Scientific Interactions and other formats. The event discussed some of the timeliest issues relating to mathematics and computer science. In honour of its tenth anniversary, the HLF featured several notable additions of new formats, such as Lightning Talks and Spark Sessions, which provided participants with more dynamic ways to engage with contemporary scientific issues. Eleven young researchers from different institutes and universities in India participated in this event.

In his welcome address during the opening ceremony, Jens Brandenburg, Parliamentary State Secretary to the German Federal Minister of Education, lauded the efforts of the HLFF to organise such an event to bring together prestigious laureates of mathematics and computer science and young researchers of the disciplines. Rafel Lang, Chairperson, HLFF, encouraged all young researchers to seize the unique opportunity of the week. He said, "You have been selected for



Laureates of the 10th HLF

your talent, for your knowledge, for your potential This meeting is for you!". Petra Olschowski, Minister of Science, Research and Arts, Baden Wuttemberg; Bernhard Eitel, Director of Heidelberg University; Eckart Wurzner, Mayor of Heidelberg; Patrick Cramer, President of the Max Plank Society; and Anna Wienhard, Scientific Chairperson, HLFF, graced the occasion and expressed their valuable views.

Representatives of the award-granting institutions, such as Yannis Ioannidis, President, ACM; Hiraku Nakajima, President, IMU; and Lise Ovreas, President, DNVA, were also present to encourage the young researchers. On this occasion, the signatories of the HLF charter, Vinton Gray Cerf, former president of ACM; Ingrid Daubechies, former president of IMU; Nils Christian Stenseth, former president of DNVA, introduced the alumni of the last HLFs. During this auspicious ceremony, a saxophone quartet presented music.

The first day of HLF featured two major talks: In the morning, Robert Metcalfe, inventor of the Ethernet technology, gave an insightful talk on "Connectivity is a Thing, is THE Thing". Afterwards, Louis J Ignarro, a Nobel Prize recipient in Psychology or Medicine 1998, delivered the Lindau Lecture on "Nitric Oxide: The Miracle Molecule of Health and Longevity". The Lindau Lecture is held yearly at



Workshop by the laureate Leslie Lamport

the HLF to mark the strong connection between the HLF and the Lindau Nobel Laureate Meetings.

An alumna of the Forum, Jie Li, presented a fabulous birthday cake to commemorate the event. Finally, all attendees received ample opportunity to meet and interact with each other, first through a rapid speed-networking session and later in the poster flash. During the poster session, 30 pre-selected young researchers had the opportunity to present their research in a condensed poster format, presenting their work in rapid-fire two-minute presentations.

On the second day, participants had a deep pool of engaging lectures, inspiring rapid-fire talks, and insightful panel discussions by and with some of the foremost luminaries of mathematics and computer science. At first, Dennis Parnell Sullivan, a recipient of the Abel Prize 2022, delivered an insightful lecture on “Three-Dimensional Space and Fluid Motion”. Spark session included several short plenary Spark Talks of 15-20 minutes by laureates. The young researchers also had the opportunity to dive deeper into more unique topics by attending various workshops and master classes offered by the laureates.

In the afternoon, two panels closed the day, focusing on “Synergies in Research”. At the same time, the other invited the audience to share in a “Conversation with Ingrid Daubechies, Karen Uhlenbeck and Maryna Viasovska”. During Lightning talks, laureates gave short, rapid-fire, one-slide talks recalling the last ten years in computer science and mathematics or even risked a glimpse into the future. The evening programme featured a perennial favourite, the “Bavarian Evening”, in which attendees celebrated their cultural heritage and diversity by donning the traditional clothing of their home countries.

The third day of the HLF was traditionally reserved for laureates to visit local schools to speak directly in the classrooms. At the same time, the young researchers attending the HLF spent their mornings visiting various prestigious institutions in the region; among them were the German Cancer Research Center (DKFZ), the European Molecular Biology Laboratory (EMBL) as well as the Heidelberg Institute for Theoretical Studies (HITS). The day capped off



Exhibition “MAINS on Tour”

with attendees taking a leisurely boat cruise along the Neckar River, followed by a boat party against the backdrop of the historical old town of Heidelberg.

The morning of the fourth day featured a rich array of spark talks by laureates. Later, there was a Laureate Discussion where a panel seeking to answer the question, “Why Do So Many People Hate Mathematics?”. In the afternoon, attendees dove into more detail on their favourite subjects with another round of workshops and master classes. Finally, attendees gathered at the Speyer Museum of Technology in the evening and dined amid impressive plane, automobile and space shuttle exhibits.

On the final day, the attendees travelled to the SAP campus in nearby St Leon-Rot for a day packed with an exciting lecture and panels. Fields Medalist (2022) Hugo Duminil-Copin started the day with an engaging lecture on “Critical Phenomena through the Lens of the Ising Model”. Following this, two panel discussions focused on one of the most pressing topics in computer science: AI. The first examined generative AI, such as Large Language Models (LLMs), in greater detail, while the second dove into ethical ramifications surrounding the technology.

The afternoon brought together young researchers with computer scientists and mathematicians from business and academia to gain valuable insights into career paths available for the future and guidance on how to achieve their goals. To close out the final day of the 10th Heidelberg Laureate Forum, the attendees arrived at Heidelberg Castle for a guided tour and the traditional Farewell Dinner.

Each year, the HLFF showcases an exhibition centred on mathematics or computer science as part of the HLF programme, and this year also featured a curated selection of previous exhibits entitled “MAINS on Tour” and two additional visiting exhibitions.

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Laureate Discussion on “Why Do People Hate Mathematics”