



Time for a conversation: HITS Alumni Meeting

In July, HITS again invited its alumni to a two-day meeting with the current “HITSters.” More than 100 participants – consisting of more than 40 alumni – accepted the invitation, including alumni from HITS’s predecessor organizations, EML and EML Research. In the introductory colloquium, **Prof. Rainer Malaka** (University of Bremen, EML Alumnus 1997–2006) reminisced about the institute’s beginnings: In 1997, Klaus Tschira brought in Malaka to be the newly founded EML’s first researcher. Malaka has noted that his own work as Professor of Digital Media in Bremen is still influenced by Klaus Tschira’s ideas of developing “cool IT that benefits people.”



In the following “Career Talks,” which HITS group leader **Prof. Michael Strube** moderated, **Dr. Agnieszka Bronowska** (Newcastle University, UK), **Prof. Matthias Stein** (Max Planck Institute for Complex Systems, Magdeburg), and **Prof. Simone Paolo Ponzetto** (University of Mannheim) spoke about their career paths in science. In a conversation with the young HITSters, the scientists detailed their experiences in research and teaching and traced the sometimes-rocky path toward permanent employment in science.



On the second day, the alumni celebrated a reunion with their former groups over a barbecue and drinks. This reunion was quite literally a “family reunion” as alumni and HITSters also brought their partners and children with them to the HITS campus, where everyone enjoyed the summer despite a few raindrops.



Heidelberg Laureate Forum

HITS is a scientific partner of the Heidelberg Laureate Forum (22 Sept.–27 Sept. 2019). This year, we will once again welcome a group of young researchers to the institute.



Records at the “NCT Run Against Cancer”



On 5 July, the so-called “NCT Run Against Cancer” took place in Heidelberg. The event was organized by the National Tumor Center (NCT), and HITS took part this year with a record number of 27 runners – more than 20% of the entire workforce. HITSters competed in all categories: from the lap run to the 10-kilometer run to the half marathon. Thanks to **Lucas Rettenmeier** (NLP), who completed the 10-kilometer run in under 36 minutes, a “HITSter” even made it to the top of the podium. All 5,597 runners ran for a good cause: Through participation fees and donations, a total of €180,000 was raised, which will go toward benefitting the NCT.

Michael Strube “Associate Editor” of an AI Journal



Prof. Michael Strube, leader of the NLP group, was appointed Associate Editor of the “Journal of Artificial Intelligence Research” (JAIR). The open-access journal JAIR is dedicated to disseminating the latest research results in artificial intelligence (AI) and covers all areas of research in this field, from agent systems to machine learning.

“Best paper award” for HITS computational linguists

HITS alumnus **Dr. Benjamin Heinzerling** as well as **Federico López** and **Prof. Michael Strube** (all NLP) were awarded a “best paper award” at the “Workshop on Representation Learning for NLP” at the ACL Conference in Florence, Italy. With over 3,000 participants, the ACL is the largest specialist conference in computational linguistics.

New employees and visiting scientists

CCC: Oğhuzan Kucur, PhD student

MBM: Benedikt Rennekamp, PhD student

HITS groups (09/2019)

Astroinformatics (AIN), Computational Carbon Chemistry (CCC), Computational Molecular Evolution (CME), Computational Statistics (CST), Data Mining and Uncertainty Quantification (DMQ), Groups and Geometry (GRG), Molecular Biomechanics (MBM), Molecular and Cellular Modeling (MCM), Natural Language Processing (NLP), Physics of Stellar Objects (PSO), Scientific Databases and Visualization (SDBV).



10 years of COMBINE: Better standards in systems biology



Systems biology uses simulated computer models to investigate biological processes and entire organ systems. Researchers obtain data from different sources and in various formats. In order to combine these data and make them truly “predictable,” numerous data standards have been developed in recent years that cover subfields of research. These subfields include “Systems Biology Markup Language” (SBML) as a representation format for biological computer models and “Systems Biology Graphical Notation” (SBGN) for visualization. The problem, however, is that the standards were developed independently of each other. This is where the international initiative “Computational Modeling in Biology Network” (COMBINE) comes in. COMBINE aims at harmonizing these standards. For 10 years, experts from this international network have been meeting worldwide at annual conferences. This year, two HITS scientists – **Martin Golebiewski** and **PD Dr. Wolfgang Müller** (both from Scientific Databases and Visualization, SDBV) – hosted “COMBINE 2019,” which took place from 15 to 19 July for the tenth time (and the second time at HITS) in the Studio Villa Bosch.



A positive balance

“COMBINE 2019” brought together more than 100 experts with the goal of advancing standards in systems biology and synthetic biology. More than 25 invited speakers from all over the world as well as numerous lectures, poster presentations, and discussion rounds dealt with topics such as computer-aided physiology, modeling tools, reproducibility, and the visualization of biological networks. A special focus was placed on the applications of systems biology for personalized medicine.



COMBINE’s history dates back to its co-founder Dr. Michael Hucka (California Institute of Technology, Pasadena, CA, USA), who is also considered the “father of SBML.” Hucka gave a positive summary of their previous work: “Today, there are eight recognized COMBINE standards as well as additional standardization initiatives, including initiatives from the pharmaceutical and neurosciences sectors.”



HITS researchers set standards

HITS database specialists have long been actively involved in international bodies that define standards for the life sciences. For example, Martin Golebiewski leads a working group on data processing and data integration in biotechnology within the international standards organization ISO and is a member of COMBINE’s coordination team. Since this year, SDBV scientists have also been heavily involved in a European standardization network that is paving the way for better data integration for computer modeling in personalized medicine.



Andreas von Bubnoff: “Even the most abstract data can conceal fascinating information.”



Coffee pot in hand, he enters the terrace in a cheerful mood. “It’s a good thing that my bike has 27 gears,” Andreas von Bubnoff proclaims with a smile. “Compared with Brooklyn, I’m not used to the kind of hills that Heidelberg has.” He has been “Journalist in Residence” at HITS for two months now and travels through the forest and up the mountain to the institute by bike every day.

As a freelance science journalist, he has spent most of his professional life in the USA. His works have appeared in English-language publications such as “WIRED,” “The Atlantic,” “Quanta Magazine,” “The Guardian,” and “Nature” as well as in the German press (“FAZ,” “DIE ZEIT”, and “RiffReporter”).

Born in Heidelberg, Germany, Andreas von Bubnoff has always been fascinated with science. After giving talks and guided tours on wildlife and the environment on an island off the German coast, he studied biology in Freiburg, Germany. He continued his studies in the USA in Seattle and Irvine (California) and received his doctorate with a thesis in developmental biology. He now teaches and researches international science communication and crossmedia journalism at the English-language Rhine-Waal University of Applied Sciences in Kleve, Germany.

During his time at HITS, von Bubnoff has already been in contact with various groups. “I am particularly interested in current developments in machine learning and the reproducibility of research results.” To learn more about standards and reproducibility, he attended the COMBINE meeting in July (see “Research”). In addition, he took the chance to get in touch with colleagues such as the editorial staff of “Spektrum der Wissenschaft” and editors of the scientific journals “EMBO Journal” and “Molecular Systems Biology,” who also reside in Heidelberg. He is currently preparing an internal seminar with “HITSters” on fact checking, research, and storytelling in science journalism: “Even the most abstract data can conceal fascinating information.” A public lecture on quality standards in journalism with a perspective on the current situation in the USA is also on his agenda, after which he will take part in the “Heidelberg Laureate Forum” as an accredited journalist at the end of his stay in Heidelberg.

The hobby photographer, jazz fan, and DJ is also interested in the visualization of data and its transformation into sound. This interest began more than a decade ago with a report on singing yeast cells that made use of an atomic force microscope as a “microphone,” followed by pieces on the visualization of natural sounds and the sound of an extinct bird species, “Sounds have an amazing potential to communicate science.” His path to HITS by bicycle leads him along the “sounds of nature” every day as if for the first time – of course, with help from his 27-gear bicycle, which brings him safely to the top.

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