From June 27 to 29, 2023, our Cluster of Excellence “CASA – Cyber Security in the Age of Large-Scale Adversaries” invited outstanding female* students, PhDs and postdocs from the field of IT security to the Women in Security and Cryptography (WISC) workshop in Bochum.

GOALS of the workshop:
- Creating a forum of scientific exchange, professional development, and networking - exclusively for women*
- Offering top-class lectures by leading female* scientists in the field of IT security
- Enabling new insights into the industry
- Establishing long-lasting connections with key players in the scientific community
- Female* empowerment
**The Participants**
The participants of WISC were female* researchers, doctoral candidates, postdocs and outstanding students from the field of IT security and came from all over the world.

**IT Security Hotspot Bochum**
The Ruhr area is considered one of Europe’s leading IT security hotspots: This is where first-class IT security research institutions meet successful start-ups and established companies of the IT security industry.

**The Program**
The conference program of WISC focused on top-class lectures by leading female* scientists in the field of IT security. These enabled the participants to gain relevant insights into the industry, to get to know role models and to establish lasting connections with important players in the scientific community.

In addition to the talks, WISC offered a diverse program of networking activities, lightning talks, poster presentations, a guided tour, and – above all – many opportunities to ask questions, discuss open research problems, and exchange ideas.

Personal insights, honest words and advice were shared with the participants during the panel discussion on "Academia vs. Industry: Opportunities and Challenges." The panelists spoke about important learnings and experiences they have made in the course of their personal career paths as well as the compatibility of family and career. Two mini-workshops were held to provide the opportunity to gain practical knowledge – on preparing and implementing scientific presentations and on allyship and networks.

A unique highlight of WISC 2023 was the awarding of an honorary doctorate to computer scientist Tal Rabin. With this award, the Faculty of Computer Science at Ruhr University Bochum honored both her outstanding scientific achievements in the field of cryptography and her decades-long commitment to supporting young female* scientists. Tal Rabin, who created WISC’s sister conference Women in Security and Cryptography workshop in 2021.

**The centerpiece of the Program were the Talks by these excellent Speakers:**

- **Cynthia Sturton**
  University of North Carolina at Chapel Hill
  "Bringing Symbolic Execution to the Security Verification of Hardware Designs".

- **Yixin Zou**
  Max Planck Institute for Security and Privacy
  "Learning from the People: A Human-Centered Approach in Security and Privacy Research".

- **Shruti Tople**
  Microsoft Research
  "Unlocking the Vault: Analyzing Data Leakage in Language Models".

- **Jade Philipoom**
  Google/Open Titan
  "The Joy of Cryptographic Implementation".

- **Maria Eichlseder**
  Graz University of Technology
  "Ascon – The new NIST standard for lightweight cryptography".

- **Claudia Díaz**
  Katholieke Universiteit Leuven
  "The Nym network: Incentivized mixnets".

**Some FACTS and FIGURES:**
- 2nd edition of WISC
- 3 Days
- 28 Hours of program
- 50 Participants
- 12 Different home countries of the participants: Austria, Denmark, France, Germany, India, Iran, Italy, Netherlands, Sweden, Switzerland, UK, USA
- 6 Outstanding speakers

**Involvement of the Participants**
The participants shaped the program of WISC through their lightning talks, poster presentations, as well as their questions and topics for the panel discussion.

**Examples of research topics covered during LIGHTNING TALKS and POSTER PRESENTATIONS:**
- Homomorphic Encryption
- Is the US Railway System Secure?
- Cyber Situation Awareness
- Utilizing State Symmetry Property to Cryptanalysis of Keccak (SHa-3) and Xoodoo (Xoodyak)
- Exploring Usable Authentication in Virtual Reality
- Protection Through Friends: Security Against Subversion Attacks
- Evaluating of the Microarchitectural Safety of CHERI
- Exploring Usable Authentication in Virtual Reality
- Isogeny-based Cryptography
- On the Post-Quantum Security of Classical Authenticated Encryption Schemes
- Certifying Giant Nonprimes
- Algebraic Cryptanalysis of Stream Ciphers using a Quantum Algorithm

**Veelasha Moonsamy, co-ordinator of WISC 2023, on the topics participants contributed to the panel discussion:**

"To me, this shows that the next generation of young female* security researchers are actively thinking about their career paths, whether it is in academia or industry. There is hope that we can gradually work on fixing the "leaky pipeline" when it comes to attracting and retaining female* talents. "

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"Bringing Symbolic Execution to the Security Verification of Hardware Designs".

"Women in Security and Cryptography".

Women in Security and Cryptography

From June 27 to 29, 2023, our Cluster of Excellence CASA held its second edition of WISC, The Workshop on Security and Cryptography for Emerging Technologies (WISC 2023). This conference was organized by the CASA RaDi..."


**Experiences, Insights & Findings**

**A few INSIGHTS that the participants took away from WISC:**

- It is important to learn to prioritize and set boundaries.
- When you discover it is not your path, change it. You don’t have to commit for life.
- Don’t be afraid to make mistakes.
- Don’t be so hard on yourself.
- Reflect on your attitude towards work.
- Find a family-friendly place!
- Be open, be honest. Talk about your struggles!
- As a scientist, you are expected to fill a wide variety of roles: thinker, politician, visionary, writer, networker, communicator … You can’t do perfect justice to all of them. Some roles will require more attention and focus, some won’t.
- Take a long-term view of things. Look at the career stages like the chapters in a book.

**A few words from Marieke, our WISC 2023 organizer:**

"It’s great to see so many young early career researchers from different countries coming together to learn, network, and talk about topics they are passionate about. I’m grateful to all the contributors that we were able to put together such a diverse, interesting program, and I’m glad that the participants were interested not only in technical topics, but also in conversations about how we can promote diversity in IT security and keep breaking down barriers. We are taking with us for next WISC to support even more gender diversity and to address more purposefully people who identify as non-binary.*"

**WE ARE LOOKING FORWARD TO WISC 2025!**

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**About CASA:**

CASA is the only German Cluster of Excellence in the field of cybersecurity and is funded by the DFG (German Research Foundation) with 30 million Euros over seven years. This funding ensures excellent research conditions and allows us to support the needs and ambitions of our scientists. CASA encourages talented female* scientists to pursue careers in academia and industry and supports them in achieving a work-life balance. Our goal is to implement lasting and effective measures to promote equal opportunities and diversity.

* In case of using gender-assigning attributes we include all those who consider themselves in this gender regardless of their own biological sex.

**Join our Cluster of Excellence CASA!**

We are constantly looking for scientific talents to join our team. By offering structured support programs and personalized mentoring, CASA aims to help doctoral and postdoctoral researchers to start their scientific careers.

casa.rub.de/en/jobs

**Contact**

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