WiSC

June 27-29, 2023

Women in Security and Cryptography

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.

CASA
Cyber Security in the Age of Large-Scale Adversaries

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.

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

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.

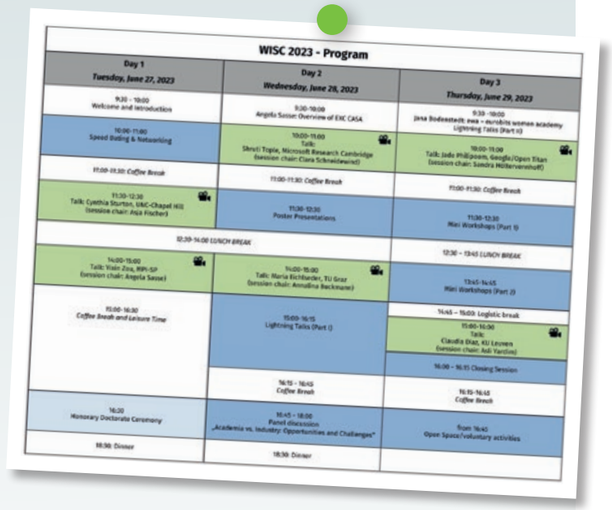
The Program

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 Theory was also the keynote speaker at the first Women in Security and Cryptography workshop in 2021.



WISC 2023 - Program

Day 1 Tuesday, June 27, 2023	Day 2 Wednesday, June 28, 2023	Day 3 Thursday, June 29, 2023
9:30 - 10:00 Welcome and Introduction	9:30-10:00 Angela Sasse: Overview of EXC CASA	9:30 - 10:00 Jana Bodestedt: ewa – europäische women academy Lightning Talks (Part II)
10:00 - 11:00 Speed Dating & Networking	10:00-11:00 Talk: Shruti Tople, Microsoft Research Cambridge (Session chair: Clara Schneidewind)	10:00-11:00 Talk: Jade Philipoom, Google/Open Titan (Session chair: Sandra Möllersheidt)
11:00-11:30: Coffee Break	11:00-11:30 Coffee Break	11:00-11:30: Coffee Break
11:30-12:30 Talk: Cynthia Sturton, UNC-Chapel Hill (Session chair: Anja Fischer)	11:30-12:30 Poster Presentations	11:30-12:30 Mini Workshops (Part I)
12:30-14:00 LUNCH BREAK		12:30 - 13:45 LUNCH BREAK
14:00-15:00 Talk: Yixin Zou, MPI-SP (session chair: Angela Sasse)	14:00-15:00 Talk: Maria Eichlseder, TU Graz (session chair: Annalina Beckmann)	13:45-14:45 Mini Workshops (Part J)
15:00-16:30 Coffee Break and Leisure Time	15:00-16:15 Lightning Talks (Part I)	14:45 – 15:00: Logistic break
		15:00-16:00 Talk: Claudia Diaz, KU Leuven (session chair: Asli Yardim)
		16:00 – 16:15: Closing Session
	16:15 - 16:45 Coffee Break	16:15-16:45 Coffee Break
16:30 Honorary Doctorate Ceremony	16:45 - 18:00 Panel discussion „Academia vs. Industry: Opportunities and Challenges"	from 16:45 Open Space/voluntary activities
18:30: Dinner	18:30: Dinner	

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".

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

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

Claudia Diaz
Katholieke Universiteit Leuven
"The Nym network: Incentivized mixnets".

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
- Utalizing 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 Shemes
- Certifying Giant Nonprimes
- Algebraic Cryptanalysis of Stream Ciphers using a Quantum Algorithm

Veelasha Moonsamy, co-organizer 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."*

Exchange. Learn. Grow.

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!

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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CASA Cyber Security in the Age of Large-Scale Adversaries

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RUB

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