

AMW50

The Fiftieth Asilomar Microcomputer Workshop

April 24-26, 2024

AMW@50: What a Long, Great Trip It's Been!

Wednesday, April 24 (All times Pacific; we will adhere to the times shown)

1:30-1:45pm: Welcome to AMW50

- *on-site* Welcome to AMW50 - Tim Požar, *TwoP LLC*

1:45-3pm: A Retrospective of Our First 49 Workshops – Brian Berg, *Berg Software Design*; Fred Coury, *Consultant*

- 1:45 *on-site* AMW50 Retrospective: Introduction - Brian Berg, *Berg Software Design*
- 1:47 *on-site* In 1975, What Were We Thinking? - Fred Coury, *Consultant*
- 1:55 *on-site* Remembering Fred Terman - Nan Borreson, *self*
- 2 pm *remote* Remembering John Walker - Mary Eisenhart, *self*
- 2:05 *remote* Memories of AMW #1, Part 1 - Edward Miller, *self*
- 2:10 *remote* Memories of AMW #1, Part 2 - Jim Toreson, *Toreson Industries*
- 2:15 *on-site* 1984: The End of AMW? - Allan Schiffman, *CommerceNet*
- 2:20 *on-site* AMW's First 49 Workshops: What a Long, Great Trip It's Been! - Brian Berg & Fred Coury
- 2:45 *on-site* Gary Kildall, AMW, and CP/M - David Laws, *self*

3-3:15pm: Break

3:15-4:45pm: Eponymous μ Processor Session, Part 1 – Thaís "barbie" Moreira Hamasaki, *Intel Corp.*

- *remote* All Models are Uncertain - Prof. Gianluca Iaccarino, *Stanford University*
- *on-site* The Road to Rowhammer - What Led to the Ability to Exploit a So-Called "Reliability Issue" as a Security Vulnerability? - Thomas Dullien, *Independent*
- *on-site* From PKI to Quantum Walls: Evolving HSMS for a Borderless World - Henrique Kawakami, *Intel Corp.*

4:45-5pm: Meet the New Minds! *First-timers should briefly introduce themselves. In-person attendees: come to the podium. Remote attendees: raise your Zoom hand and wait to be called on.*

5-6pm: Reception [Sponsor: Nancy Blachman, Founder, *Julia Robinson Mathematics Festival* (jrmf.org) and Board, *G4G*]

6-7:30pm: Dinner

7:30pm: Athematic Short Talks (20 minutes/speaker, incl. intro and Q&A) – Ken Shoemaker, *Intel Corp. (retired)*

- *on-site* Prisoner's Dilemma: Testing AI/ML & GenAI on an Extremely Human Problem - Brandon Holland & Jaden Cohen
- *on-site* Exploring the Challenge of Recursivity in AI Systems: Implications for International Conflict - Zoya Slavina, *University of Bialystok*
- *on-site* Slicing Interactive Software to Make Playable Quotes - Adam Smith, *UC Santa Cruz* & Joël Franušić, *Independent*

- *on-site* Building the World's First Computer: Charles Babbage's Analytical Engine - Len Shustek, Founding Chairman Emeritus, *Computer History Museum*
- *on-site* The Secret History of Adoption - Nancy Blachman, *Julia Robinson Mathematics Festival* and *G4G*
- *on-site* Computation, Creative Tools & Empowerment - Paula Te, *Chibitronics* & Jennifer Jacobs, *UC Santa Barbara*
- *on-site* Large Language Models on Commodity Processors - Brian Case, *Esperanto Technologies*
- *on-site* Digital Emblem - Bill Woodcock, *Packet Clearing House*
- *remote* TamaGo: Open Source Secure Firmware - Andrea Barisani, *WithSecure / F-Secure*

Thursday, April 25 (All Times Pacific!)

8:15-9:45am: Eponymous μ Processor Session, Part 2 – Thaís "barbie" Moreira Hamasaki, *Intel Corp.*

- *remote* Chiplets: On-Package Interconnects for Generative AI and Beyond - Debendra Das Sharma, *Intel Corp.*
- *remote* CHERI: Deterministic and Pragmatic Memory Safety - John Baldwin, *Ararat River Consulting, LLC*
- *on-site* X86S: Gently Shedding Obsolete Legacy in a Widely Used ISA - Andi Kleen, *Intel Corp.*

9:45-10am: Break

10am-Noon: Big Data, Graphics, and Visualization – Eric Allman, *UC Berkeley - retired*

- *on-site* Evolution of data center networks at Google - Leon Poutievski, *Google*
- *on-site* Pixel-Adaptive Visual Comparison Between Many Phylogenetic Trees - Tamara Munzner, *Univ. of British Columbia, Dept. of Computer Science*
- *on-site* The Next Frontier of Spatial Transcriptomics - Single Molecule Imaging - Cassidy Cobbs, *Memorial Sloan Kettering Cancer Center*
- *remote* Building Cloud Storage for Netflix Studios - Tejas Chopra, *Netflix Studios*

Noon-1:30pm: Lunch

1:30-2:30pm: Keynote: The Microprocessor – Mark Cummings, *S2-D2*

- *on-site* The Microprocessor: Yesterday and Tomorrow - Yale Patt, *The University of Texas at Austin*

2:30-2:45pm: Break

2:45-4:45pm: History & Future of Computer Architecture - Mark Cummings, *S2-D2*

- *on-site* Oceanum Computa - Michael Shebanow, *Sapeon*
- *on-site* Improving Throughput Tolerating Latencies with Parallelism - HPS/OoO, IMPACT/ILP, and GPUs - Wen-mei Hwu, *NVIDIA*
- *on-site* Memory-Centric Computing: Opportunities and Challenges - Onur Mutlu, *ETH Zurich, Stanford University*
- *on-site* Superconducting Quantum Computing - Wei-Ti Liu, *Quantum Technology, LLC*

4:45-6pm: Reception

6-7:30pm: Dinner

7:30pm-??: Open Discussion: A *Rich* Asilomar Tradition - Fred Coury, *Consultant*; Kathleen Tuite, *GetODK*

- *on-site* RATS - RAT Patrollers: Fred Coury: Gavelmeister; Kathleen Tuite: Scheduler

Friday, April 26 (All Times Pacific!)

8:30-10am: Business, History, and Strategy - Brian Berg, *Berg Software Design*

- *on-site* OpenWater's Technology & Strategy - Mary Lou Jepsen, *OpenWater*
- *on-site* The History of Pixar - Alvy Ray Smith, *Author and Consultant*
- *drive-by* NVIDIA: How to be an Overnight Success in 30 Years - Chris Malachowsky, *NVIDIA*, interviewed by David S.H. Rosenthal

10-10:15am: Break (Room Checkout; turn in your room key at the front of the meeting room)

10:15-11:45am: Athematic Wrap-up - *remote* Dewayne Hendricks, *Tetherless Access*

- *remote* A Funny Thing Happened on the Way to the Commons - Isaac Wonder, *self*
- *remote* What Can We Learn from Robotics, Cybernetics, and AI Systems, and Apply to Cybersecurity? - Désiré Banse, *IdeaCrew*
- *remote* Responding to the Dance of the Cannibal, *aka* Wetiko - Andrew Maffei, *self*

11:45am-Noon: Workshop Wrap-Up/Thanks/Kudos - Attendee Assistance Needed for A/V Equipment Breakdown!

Noon-2pm: Outdoor BBQ Lunch (weather permitting)

Thanks to No Starch Press for the Whiskey Glass Freebie!

Organizing Committee

Eric Allman	Jie Qi
Dennis Allison	David S H Rosenthal
Sabina Anja	Shevek
Brian Berg	Ken Shoemaker
Mark Cummings	Kathleen Tuite
Mary Eisenhart	
Jim Fenton	
Janet Guns	<u>Thanks to the Brain Trust:</u>
Thaís Moreira Hamasaki	Bill Cheswick
Dewayne Hendricks	Bruce Koball
Tim Požar	Robert G Kennedy III

April 24 Anniversaries:

- 127 years ago – Benjamin Lee Whorf, linguist and engineer, is born
- 110 years ago – Franck-Hertz experiment, a pillar of quantum mechanics, is presented to the German Physical Society: https://en.wikipedia.org/wiki/Franck%E2%80%93Hertz_experiment
- 86 years ago – Roger Boisjoly, Challenger disaster whistleblower and engineer, is born
- 57 years ago – Vladimir Komorov, cosmonaut and engineer, dies in the crash of Soyuz 1

April 25 Anniversaries:

- 71 years ago – James Watson and Francis Crick described the double helix structure of DNA
- 70 years ago – Bell Lab publicly demonstrated the first practical solar cell
- 63 years ago – Robert Noyce is granted US Patent No. 2,981,877 for an integrated circuit employing a planar process

Apr 26 Anniversaries:

- 62 years ago – NASA's Ranger 4 crashes into Moon; UK launches first satellite Ariel 1
- 24 years ago – World Intellectual Property Day was first observed for awareness of patents, copyrights, trademarks, designs

Bios of AMW Speakers and Session Chairs

Adam Smith is a lifelong recreational programmer and career academic. His Design Reasoning Lab at UC Santa Cruz applies artificial intelligence methods to the development of tools for creating, maintaining, interpreting, archiving, and transmitting meaningful moments of interaction with media like video games and mobile apps.

Allan Schiffman modeled KL's future highway traffic for the ADB, designed microprocessors for Fairchild Semiconductor, assassinated products for Schlumberger, made Smalltalk-80 go fast for PARC & ParcPlace, designed two losing COMSEC protocols, and founded four internet-oriented companies (all having decent exits). Having attended SUNY, Nanyang, SJSU, Stanford, CMU, and Cambridge, he wants to be remembered for dynamic code translation, polymorphic in-line caching, and algorithm negotiation in crypto protocols. He now applies AI to medicine at CommerceNet.

Alvy Ray Smith co-founded Pixar and Altamira Software. He was the first Director of Computer Graphics at Lucasfilm, and the first Graphics Fellow at Microsoft. He has received two technical Academy Awards for contributions to digital movie-making technology, and he is author of *A Biography of the Pixel*.

Andi Kleen is an engineer at Intel working on ISA and performance. He is a long-term Linux kernel contributor who worked on many different areas including the original 64bit x86 port. He is located in Portland Oregon and enjoys reading and hiking.

Andrea Barisani is an internationally recognized security researcher. Since owning his first Commodore-64 he has never stopped studying new technologies, developing unconventional attack vectors and exploring what makes things tick...and break. His experience builds on large-scale infrastructure defense, penetration testing and code auditing with particular focus on safety critical environments, with more than 15 years of professional experience in security consulting. His main focus lies on the convergence between secure hardware and software, an interest consolidated in the authorship of the USB armory hardware project and the TamaGo bare metal framework. He is a well-known international speaker, having presented at BlackHat, CanSecWest, Chaos Communication Congress, DEFCON, Hack In The Box, among many other conferences, speaking about innovative research on automotive hacking, side-channel attacks, payment systems, embedded system security and many other topics.

Andrew Maffei worked his way through several different technical roles at the Woods Hole Oceanographic Institution over his 40+ years there. It truly was a playground for him as he helped scientists study the oceans. Towards the end of his tenure, as a member of the senior technical staff, he turned towards leading efforts in ocean data science, ontologies, and informatics. Outside of WHOI, for 15+ years, he pursued a peculiar, unshakable, obsession in studying Double Entry Bookkeeping and how it might be used in non-financial applications.

Bill Woodcock is the executive director of Packet Clearing House, the intergovernmental treaty organization that builds and supports critical Internet infrastructure, including Internet exchange points and the core of the domain name system. Bill is on the boards of the Quad9 Foundation and the M3AA Foundation. Now, Bill's work focuses principally on the security and economic stability of critical Internet infrastructure.

Brandon Holland is a High School Junior, and in love with all parts of STEM. He has been to Defcon since the age of 8, and has won multiple competitions. Brandon has presented at conferences on his experiences at Defcon and on how his generation interacts with technology.

Brian Berg has been consulting for over 40 years, specializing in data storage including flash memory. His AMW attendance since 1987 has expanded his circle of friends and knowledge base. His IEEE officer activities include IEEE Milestones, and he has proposed and/or officiated for over 2 dozen of these including SHAKEY the Robot (SRI), Computer Graphics and Visualization (the Univ. of Utah), RenderMan (Pixar), and CP/M (as MC for its dedication following AMW in 2014, with David Laws as its proposer). He is currently working on the May dedications of 6 Milestones: at PARC (Alto computer, Laser Printer, Ethernet) and Stanford (TCP/Internet, IEEE 802 Standards Committee, PageRank & the Birth of Google). He is a member of the AMW Program Committee.

Brian Case started in computers in 1975 with an Altair 8800 kit. At AMW, he met Michael Slater, founder of *Microprocessor Report*, and he joined as Contributing Editor. At AMD, he co-architected the Am29000 early RISC uP, and wrote the chip's first optimizing C compiler. He has worked for many Valley companies and is currently at Esperanto Technologies.

Cassidy Cobbs is an evolutionary biologist by training currently serving as the Scientific Liaison for the Integrated Genomics Operation at Memorial Sloan Kettering Cancer Center, a position which is light on evolution, heavy on molecular biology, and provides access to all the latest and coolest tech in the field. They live in NYC with the dumbest pit bull to ever walk the streets of Manhattan.

Chris Malachowsky with Curtis Priem, designed Sun's GX graphics accelerators. In 1993 they left Sun, joining Jensen Huang to found NVIDIA. In the 30 years since, he has led, among others, numerous organizations, including engineering, IT, operations, and most recently, research. He is an NVIDIA Fellow, a member of the executive staff, and basically a free agent with no operational responsibilities.

David Laws retired from the furnaces of Silicon Valley, and is now in Carmel Valley. He photographs, writes, and presents on high-tech history, gardens, and travel. His work has appeared in electronic, print, and video media for the BBC and NPR, as well as in guide books, newspapers, magazines, and academic journals. He wrote the IEEE Milestone proposal for *The CP/M Microcomputer Operating System, 1974*, whose bronze plaque is at the DRI HQ site at 801 Lighthouse Ave, Pacific Grove (in the sidewalk), and which was dedicated following AMW #40 in 2014.

David S.H. Rosenthal has been writing programs since 1965, including as a Distinguished Engineer at Sun Microsystems, employee #4 at NVIDIA, and co-founder of the LOCKSS Program at the Stanford Libraries. He is a member of the AMW Program Committee.

Debendra Das Sharma is an Intel Senior Fellow, and co-General Manager of the Memory and I/O Technologies, Data Platforms, and Artificial Intelligence Group, at Intel. He leads PCI-Express, Compute Express Link, and UCIe interconnect efforts.

Désiré Banse is a cybersecurity executive at a health IT company in Washington DC, with expertise in compliance, cloud security, infrastructure. He is a former researcher at NIST and has worked on Artificial Intelligence, Robotics, Internet. In his spare time, he teaches how to build aerial platforms to schools and USMC recruits.

Edward Miller got his PhD in 1968, and worked at General Research and Science Applications on various DoD assignments. He changed course in 1977 and started Software Research, which focused on software quality issues. He grew the firm to 35 people, organized 20 annual Quality Week events, and built the TestWorks and eValid products. He holds 10 US patents, and he and his wife Rita Bral live in San Francisco and Leuven, Belgium.

Eric Allman created *sendmail*, one of the Internet's first Mail Transfer Agents, and *syslog*, the de facto standard logging mechanism used in nearly all open systems and peripherals. He was Lead Programmer on the INGRES relational database management project, made significant contributions to the Berkeley Software Distribution, and authored the UNIX version of the Star Trek game. Eric worked on database interfaces at Britton Lee, neural networks at the International Computer Science Institute, and shared computing and storage infrastructure at UC Berkeley. He co-founded Sendmail, Inc. and served as its CTO. Eric has been on the boards of USENIX Association, Sendmail, Cal Performances, ACM, and the Berkeley Hillside Club, and he is currently the President of the Berkeley Historic Building Fund. Although officially retired, he still seems to work all the time. He is a member of the AMW Program Committee.

Fred Coury attended the Univ. of Michigan, where he wrote a Neural Network Simulator in PDP-8 assembly language. He later joined the university's Brain Research Laboratory where he designed and built equipment which recorded and reinforced single neurons' activity in freely moving laboratory animals. At Hewlett-Packard, he managed the HP2100 Computer Project. As a consultant, he designed the Intel Multibus and the Osborne Vixen. He also taught at The Univ. of Michigan and UCSC. He is now retired and pursuing his lifelong quest to figure out "How the Brain Works." Fred Coury is Guest Gavelmeister for this year's RATS, returning to this prized position after having "accidentally" creating this part of the program at AMW #1 in 1975. He is one of 5 founders of AMW.

Gianluca Iaccarino is the Director of the Institute for Computational Mathematical Engineering and Professor in the Mechanical Engineering Department at Stanford University. He received his PhD in Italy and has worked for several years at the Center for Turbulence Research (NASA Ames & Stanford) before joining the faculty at Stanford in 2007. Since 2014, he is the Director of the PSAAP Center at Stanford, funded by the US Department of Energy focused on multiphysics simulations, uncertainty quantification and exascale computing. In 2010, he received the Presidential Early Career Award for Scientists and Engineers (PECASE) award, and in 2019 was elected Fellow of the American Physical Society "for seminal contributions to turbulence modeling, developments in advanced numerical methods for complex flows, and pioneering research in uncertainty quantification for turbulent flow simulations."

Henrique Kawakami has been deeply involved in the design of cryptographic hardware for over 15 years. From conceptualizing architectural and microarchitectural designs to hands-on tasks like firmware writing, PCB layout, and prototype soldering, he's honed his expertise across every facet of hardware development. Transitioning from hardware design, Henrique redirected his focus to scrutinizing and researching security issues within hardware devices and CPUs. Currently, he leads the STORM team at Intel, which drives forward innovation and excellence in the field of platform security, not only fixing many of the speculative execution class of vulnerabilities, but conceptually rethinking how processors are made.

Isaac Wonder is the former director of the Free Network Foundation, and remains interested in the liberation of all beings. He lives in Berlin, Germany, where you can find him at <https://offline.place>

Jaden Cohen is a High School Junior. His interests lie in the realms of math and science. He is particularly fascinated by the fields of ML and AI, especially in the context of human-computer interaction. Beyond these technical interests, he also has a passion for reading and writing.

James S. Toreson is a consultant with Toreson Industries. He made leading-edge technical contributions in the fields of integrated circuits, computer design, POS laser scanners, and disk drives early in his career. AMW co-founder Fred Coury was his instructor in a computer lab at the Univ. of Michigan, exposing him to PDP-8 digital design of interfaces. Fred was later his boss at HP while working on the HP 21MX minicomputer. While at HP, he took several post-grad courses taught by AMW co-founder Dr. Fred Clegg at the Univ. of Santa Clara in microprogramming, crypto, ECC, and fault tolerant logic design.

Jennifer Jacobs is an assistant professor at UC Santa Barbara. She heads the Expressive Computation lab, delving into computational art, design, and human-computer interaction. Her research amalgamates emerging computational creation with traditional methodologies, empowering artisans and designers. With a PhD from MIT, Jacobs' work, showcased globally, advances interdisciplinary methodologies. See <https://ecl.mat.ucsb.edu/>

Joël Franušić is an artist and programmer from Alameda, California. His art and work focus on his mission to make all software, from all time, instantly available for use by any programmer.

John Baldwin is a systems software developer. He has directly committed changes to the FreeBSD operating system for over 20 years across various parts of the kernel (including x86 platform support, SMP, various device drivers, and the virtual memory subsystem) and user space programs. In addition to writing code, John has served on the FreeBSD core and release engineering teams. John has also contributed to the GDB debugger where he was recently appointed as a global maintainer.

Kathleen Tuite has a PhD from University of Washington where she connected citizen science and 3D computer vision via the games Foldit and PhotoCity. She now works for GetODK, architecting the open source mobile offline data collection platform ODK, which is used for humanitarian purposes around the globe. Kathleen inherited the RAT timekeeper position from Mary Eisenhart in 2018. She kindly surrenders her RAT session gavel to Fred Coury this year, but she will assist in scheduling speakers for their 10 minutes of fame. She is a member of the AMW Program Committee.

Ken Shoemaker spent nearly 40 years at Intel where he had the privilege of developing the microarchitectures of some of Intel's famous microprocessors (e.g., the Pentium) and some infamous ones (e.g., the Itanium). He had the honor of being recruited into Intel by AMW's long time chairman, John Wharton, who then invited Ken to attend his first AMW in 1985 where he presented the architecture and microarchitecture of the (then new) i80386. Since retiring in the midst of the Covid pandemic at the end of 2020, his brain has turned to mush but he still relishes every opportunity to mingle with folks in the real world doing cool stuff. He is a member of the AMW Program Committee.

Len Shustek aspired to be a physicist but only got a Masters before deciding that computers were more fun. After his Stanford PhD in Computer Science, he taught at CMU, co-founded two networking companies, and then taught at Stanford. The lack of history in their curriculum inspired him to start the Computer History Museum, whose Board he chaired for 25 years.

Leon Poutievski is a Director / Principal Engineer at Google. He leads a team developing core datacenter technologies, including network topology, routing systems, control plane networks, and scaling. Leon has led projects that introduced innovative data center networking solutions. Some of this work was published at SIGCOMM '22 (Jupiter Evolving), and has been recognized by the ACM SIGCOMM Networking Systems Award and the ACM SIGOPS Hall of Fame Award.

Mark Cummings, PhD, inventor of SDR (Software Defined Radio), has been a Silicon Valley innovator and systems architect since the early days of the microprocessors and microcomputers. He is currently working on a cybersecurity orchestration start-up called S2-D2. Amongst other publications, he reviews the impact of technology in the Fair Observer. He is a member of the AMW Program Committee. See <https://www.linkedin.com/in/mark-cummings-ph-d-34017b3>

Mary Eisenhart was recruited to AMW by Jim Warren in 1989. She served as General Chair from 2002-2005, and Timekeeper for the RAT session from 1992-2018. As editor of MicroTimes during the '80s and '90s, she interviewed a lot of interesting people, including John Walker in 1992. Currently she performs assorted tasks involving online community and content for Dead.net, Hardly Strictly Bluegrass, the Rex Foundation, and others. She is a member of the AMW Program Committee.

Mary Lou Jepsen was, among others, CTO of One Laptop per Child, founder of Pixel Qi, a fabless LCD company, and leader of projects at Google X and Oculus VR. She now works on commoditizing diagnostic imaging as CEO of OpenWater. See <https://www.maryloujepsen.com/>

Michael Shebanow is currently CTO at Sapeon, a startup developing AI inference accelerators for the cloud. Previous work has included out-of-order superscalar CPUs for Motorola, HaL, Cyrix, and AMD; NVIDIA GPUs; Samsung's first mobile GPU; and VP Of Engineering of Cadence's Tensilica group. Michael is an IEEE Fellow "for contributions to superscalar out-of-order processors."

Nan Borreson is the widow of Fred Terman, one of the founders of AMW.

Nancy Blachman founded the Julia Robinson Mathematics Festival in 2007 to inspire joy in math. Shortly thereafter, she started supporting documentary films, and is now producing short documentaries which she hopes will change viewers' attitudes and behavior. She explores things that intrigue her such as what she is about to share with you today.

Onur Mutlu is a Prof. of Computer Science at ETH Zurich, and is also a Visiting Prof. at Stanford Univ. and an Adjunct Prof. at Carnegie Mellon Univ. where he previously held the Strecker Early Career Professorship. He has held industry positions at Microsoft Research, Intel, AMD, VMware, and Google. His current broader research interests are in computer architecture, systems, hardware security, and bioinformatics.

Paula Te is Principal Designer at Chibitronics, and specializes in interface design and research, focusing on crafting, learning, and culture intersections. She explores interactive artifacts bridging digital and physical realms, fostering diverse community co-creation. Previously at Dynamicland and Xerox PARC, her work has been featured in various venues like Ars Electronica and SIGCHI.

Tamara Munzner is a Professor at the University of British Columbia Department of Computer Science, and an IEEE Fellow “for contributions to principles, processes, and design for visualization.” She has been active in visualization research since 1991 and holds a 2000 PhD from Stanford. Her book *Visualization Analysis and Design* is widely used to teach visualization world-wide. See <https://www.cs.ubc.ca/~tmm/>

Tejas Chopra is an Senior Software Engineer and Engineering Leader at Netflix where he works on architecting Netflix Studio in the Cloud. The National Diversity Council recognized Tejas as one of the 2022 40 Under 40 in Tech, and he is also a TedXspeaker where he has spoken on Web3, Cloud, DevOps, and Culture.

Thais "barbie" Moreira Hamasaki is a former ballerina, physics researcher, and reverse engineer (maybe this one still applies) who shifted to offensive security research at Intel in order to conquer the world (of CPUs). Nowadays, she spends an unusual amount of time (speculatively) looking at HAS, MAS, microcode, and RTL. She has spoken at all the conferences and seen all the things, and right now where she is, she can be considered one of the happiest hackers out there. She is a member of the AMW Program Committee.

Thomas Dullien started his career doing copy protection reverse engineering, then went on to study mathematics and start a company focused on reverse engineering tools and malware/code similarity. This company was acquired by Google, and he spent a few years integrating the technology, followed by a stint in Google Project Zero. During this time, he contributed to the first Rowhammer exploit (authored by Mark Seaborn). After his time at Google, he started a company focused on fleet-wide always-on profiling, which was quickly acquired by Elastic. He enjoys everything adjacent to security, unconventional computational models, computational efficiency, low-level spelunking, and both applied pure mathematics and applied applied mathematics.

Tim Požar works on building infrastructure that enables democratic discourse. He works on SF's Community Broadband Network that provides Internet to low-income folks. Recent works include the design and deployment of High Availability networks at Burning Man for the BLM, Native American tribal lands, etc. He is a member of the AMW Program Committee.

Wei-Ti Liu co-Founded PLX Technology where he was GM and VP of Engineering, oversaw operations, and managed the engineering group and its foundry. He was also President/CEO of NetChip Technology (now part of Broadcom), and a design engineer at IBM, AMD, and Intel. Wei-Ti has extensive experience in ASIC VLSI chip design, and currently works for Quantum Technology, LLC.

Wen-mei Hwu is Prof. Emeritus of the Univ. of the Illinois, and currently a Sr. Dir. of Research at NVIDIA. His 1987 PhD is from UC Berkeley, and he has been working on tolerating latency and maximizing throughput for multiple generations and scales of computing devices and systems.

Yale Patt is a teacher and the Ernest Cockrell, Jr. Centennial Chair in Engineering at The University of Texas at Austin. He earned obligatory degrees from reputable universities and has received more than enough awards for his research and teaching.

Zoya Slavina is an interdisciplinary researcher with an interest in the regulation, security, and ethics of AI systems and associated technologies at the University of Białystok. Her background is in philosophy, ethics, and crossmedia. Zoya expertly examines the interaction between technology and society, and she is interested in development of robust, human-centric regulations for AI development and deployment.