WSRD Workshop

Artificial Intelligence & Wireless Spectrum:
Opportunities and Challenges

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Participant Biographies

Paul Antonik is the Chief Scientist, Information Directorate, Air Force Research Laboratory, Rome, N.Y. Dr. Antonik serves as the directorate's principal scientific and technical adviser and primary authority for the technical content of the science and technology portfolio. He provides principal technical oversight of a broad spectrum of information technologies. Dr. Antonik began his career with the Air Force in 1978 when he joined the Rome Air Development Center. In 1983, he transitioned to the private sector, where he served as a systems engineer and designed, developed, and evaluated a wide variety of sensor systems, waveforms, and signal processing techniques. In 1998, he returned to government service, joining the Air Force Research Laboratory, Sensors Directorate, where he developed waveform diversity and knowledge-aided signal processing techniques. In 2009, Dr. Antonik joined the Information Directorate to become Technical Advisor of the Advanced Computing Division. He later became Technical Advisor to the Computing and Communications Division. Dr. Antonik entered the senior executive service in 2012 as the Air Force Senior Scientist for Connectivity and Dissemination. Dr. Antonik holds 4 U.S. patents, and has authored or co-authored more than 55 journal, conference, and technical papers and reports. Additionally, Dr. Antonik participates in several national and international panels, committees, and working groups. He is also a licensed Professional Engineer. He holds a B.S. in Electrical Engineering, State University of New York, Buffalo; M.S., Electrical Engineering, Syracuse University; and Ph.D in Electronic and Electrical Engineering, University College London.

Randall Berry is the John A. Dever Professor and Chair of the Department of Electrical and Computer Engineering at Northwestern University. His research interests include topics in wireless communications, spectrum sharing, and network economics. Dr. Berry is the recipient of a CAREER award from the National Science Foundation and an IEEE Fellow. He has served as an Editor for the IEEE Transactions on Wireless Communications and the IEEE Transactions on Information Theory as well as guest editor for special issues of the IEEE Journal on Selected Topics in Signal Processing and the IEEE Journal on Selected Topics in Communications. He has also served on the program and organizing committees of numerous conferences including serving as the co-chair of the 2012 IEEE Communication Theory Workshop and TPC co-chair of the 2018 ACM MobiHoc conference. Dr. Berry received his Ph.D. degree in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology in 1996 and 2000.
In 1998 he was on the technical staff at MIT Lincoln Laboratory in the Advanced Networks Group and currently also works as a Principal Engineer for Roberson and Associates.

R. Chandramouli (Mouli) is the Thomas Hattrick Chair Professor of Information Systems in Electrical and Computer Engineering (ECE) at Stevens Institute of Technology. Prior to joining Stevens he was on the ECE faculty at Iowa State University, Ames. His research covers cognitive radio networking, dynamic spectrum management/access, machine learning, and prototyping/experimental research in these areas. He currently also serves as co-founder and CEO of Spectronn, a cognitive mobile edge computing startup. His professional activities include IEEE COMSOC Distinguished Lecturer, Editor of IEEE Journal on Selected Areas in Communications (JSAC)--Cognitive Radio Series, Associate Editor of IEEE Transactions of Circuits and Systems for Video Technology, Founding Chair of the IEEE COMSOC Technical Committee on Cognitive Networks (TCCN), Member of the IEEE COMSOC Standards Board. Dr. Chandramouli is a recipient of the NSF CAREER award, IEEE GLOBECOM Best Paper Award (2008), IEEE Richard E. Merwin Scholarship, Provost's Award for Academic Entrepreneurship and Enterprise Development (2012), New Jersey Inventors Hall of Fame Innovator Award (2012) and the Master of Engineering Honoris Cause (2014) from the Stevens Institute of Technology.

John Chapin is Vice President, Advanced Technologies for Roberson and Associates with 17 years' experience in the industry, focusing on challenging problems at the boundary between technical and policy concerns. Dr. Chapin most recently served as Program Manager in the Defense Advanced Research Projects Agency (DARPA), where he initiated and led programs in spectrum access and spectrum sharing technology. Dr. Chapin previously served as Visiting Scientist at the Research Laboratory of Electronics of the Massachusetts Institute of Technology (MIT) and concurrently as Chief Scientist at TV Band Service, LLC. Earlier, he spent nine years in technical leadership roles at Vanu, Inc., a provider of software-designed radio (SDR) based cellular radio access networks. Prior to Vanu he was on the faculty of the Electrical Engineering and Computer Science department of MIT. Dr. Chapin earned a B.A. in Japanese History, an M.S. in Computer Science, and a Ph.D. in Computer Science, all from Stanford University.

Kevin Compher is a senior data scientist and technologist in U.S. Securities and Exchange Commission’s Division of Trading and Markets. He is a seasoned leader with over 20 years in the research, development, and management of data collection, analytics and cloud computing system. After studying distributed systems at Harvard University, he joined the intelligence community as a satellite system capability engineer. While at Naval Postgraduate School, Mr. Compher created just-in-time degaussing systems for counter mine detection. His role evolved into leading data science platform development and operations efforts where he was instrumental in deploying initial cloud systems and numerous InQTel ventures. Since joining the SEC in 2016, he has served as an applied researcher and financial engineer, and focuses on capital market structure, high performance cloud computing, market data, and evaluates the roles of AI in regulation. He also leads technical activities for audit trail systems. Mr. Compher actively builds analytic monitoring tools, machine learning and visualization capabilities, and is particularly interested in explainable AI, fairness, accountability, transparency in time series mining. He also leads numerous quant efforts and forums to foster collaboration between data science communities across industry, government and academia. Mr. Compher holds a B.S. in Chemistry and Computer Science from the University of Pennsylvania and M.S. in Systems Engineering, Naval Postgraduate School, as well as a number of data science certifications.

Michael Cotton is Division Chief of the Telecommunications Theory Division and program leader of NTIA's Spectrum Monitoring Program at the Institute for Telecommunication Sciences in Boulder, Colorado. Mr. Cotton joined NTIA/ITS in 1992. He has been involved in a broad range of research topics including applied electromagnetics, atmospheric effects on radiowave propagation, radio channel measurement and theory, interference effects on digital receivers, ultrawideband technologies, spectrum sharing with Federal systems, and spectrum occupancy measurements. Mr. Cotton has received DOC Gold Medal Awards for research and engineering achievement in the development of national policies for UWB technologies in 2002 and 3.5 GHz spectrum sharing in 2015. In 2010 and 2011, Mr. Cotton was the General Chair for the International Symposium on Advanced Radio Technologies (ISART) on Developing Forward-Thinking Rules and Processes to Fully Exploit Spectrum Resources. He has authored or co–authored over thirty technical publications. Mr. Cotton received a B.S. in Aerospace Engineering in 1992 and an M.S. in Electrical Engineering with an emphasis on electromagnetics in 1999, both from the University of Colorado at Boulder.

John Ferguson is Founder and CEO of Deepwave Digital, Inc., a Philadelphia based startup enabling the seamless integration of artificial intelligence and deep learning to wireless systems technology. Dr. Ferguson's research focuses on innovating, prototyping, and developing technology for electronic systems, including geolocation, radar, communications, and deep learning. He has previously held appointments in the Technical Staff at Massachusetts Institute of Technology -Lincoln Laboratory and Senior Professional Staff at Johns Hopkins University - Applied Physics Laboratory. Dr. Ferguson received a B.S. in Applied Mathematics and Applied Physics from Appalachian State University in 2004 and his M.S. and Ph.D. in from Cornell University in 2010.

Michael Garris is a senior computer scientist and co-founder of the Artificial Intelligence (AI) Community of Interest at the National Institute of Standards and Technology (NIST) where he has worked for the past 33 years with a technical focus in the areas of AI, image processing, pattern recognition, and biometrics. Mr. Garris is currently Chief Technology Advisor to the National Security Commission on Artificial Intelligence. He is a founding member (and former Co-chair) of the President's National Science and Technology Council's (NSTC) Subcommittee on Machine Learning and Artificial Intelligence (ML/AI) as well as the NSTC Networking and Information Technology Research and Development (NITRD) Subcommittee's AI R&D Interagency Working Group. His work under NSTC includes co-authoring "The National Artificial Intelligence Research and Development Strategic Plan" (both the 2016 original, and the 2019 update). He serves on the US national body supporting international AI standards development in ISO/IEC JTC 1/SC 42-AI. For 7 years in his career, Mr. Garris was privileged to manage the world-class biometric research, standards, test, and evaluation Image Group in NIST's Information Technology Laboratory (ITL). Mr. Garris has a B.S. in Computer Science from Clarion University of Pennsylvania, and a M.S. in Computer Science from Johns Hopkins University. In 2003, Mr. Garris was part of a biometrics team which received the Department of Commerce Gold Medal Award. In the early 1990s, Michael led the collection of the original handprint character image dataset now called MNIST, which is used as a worldwide machine learning benchmark.

Brent Josefiak has 15 years of experience working with military software defined radios and real-time control systems. He began his career at Harris, RFCD in Rochester, NY, working on signal-processing, RF subsystem control, radio architectures, and advanced wideband waveform development. Mr. Josefiak then became the Principal Signal Processing Engineer for Precision Optical Transceivers, a photonics start-up focused on alternative distribution technologies for 5G mmWave communication systems. Mr. Josefiak co-founded Erebus Solutions to develop autonomous spectrum access technologies for the DARPA Spectrum Collaboration Challenge and beyond. He is responsible for the decision engines that control how the waveform turns spectral perception into effective, efficient communication links. Mr. Josefiak received a B.S. in Computer and Systems Engineering from Rensselaer Polytechnic Institute and a M.S in Electrical Engineering from Rochester Institute of Technology.

Sunil Kumar is Professor and Thomas G. Pine Faculty Fellow in the Electrical and Computer Engineering Department at San Diego State University (SDSU). Dr. Kumar was a Visiting Professor (in 2014) and Summer Faculty Fellow (in summer of 2007, 2008 and 2018) in the Information Directorate at the Air Force Research Laboratory in Rome, NY. His research interests include wireless mesh, airborne, and cognitive radio networks, including the directional communication and spectrum resource optimization, and applications of machine learning techniques in wireless networks. He has published more than 160 research articles in international journals and conferences, has authored/edited four books, and has been granted several U.S. patents. His research has been funded by DOD, Air Force Research Laboratory, National Science Foundation, California Energy Commission, and industry. Dr. Kumar is a recipient of the Distinguished Faculty Award (2015) and President's Leadership Award for Faculty Excellence (2012) at SDSU. He is also a recipient of the Distinguished Alumni Award (2019) from his alma mater National Institute of Technology, Surat, India.

Wenjing Lou is the W. C. English Professor of Computer Science at Virginia Tech and a Fellow of the IEEE. Her research interests cover many topics in the cybersecurity field, with her current research interest focusing on privacy protection in networked information systems and security and privacy problems in the Internet of Things (IoT) systems. Dr. Lou is PI or Co-PI of 20+ sponsored research projects. Major sponsors include NSF, DOD, ONR, ARL and ARO. She was a recipient of the NSF CAREER award in 2008. Prof. Lou has published over 100 journal papers and 130 conference papers. Per Google Scholar, her work has been cited 27500+ times and her H-index number is 72. She received Virginia Tech's Alumni Award for Research Excellence in 2018, the highest research award that can be bestowed to a university faculty. From August 2014 to August 2017, Dr. Lou served as a Program Director at NSF.

Peter Mathys is an Associate Professor in the Department of Electrical, Computer, and Energy Engineering at the University of Colorado at Boulder. Previously, he was a Visiting Research Scientist at the Massachusetts Institute of Technology, Cambridge, MA. Peter also works on spectrum monitoring and machine learning for the National Telecommunications and Information Administration, Institute for Telecommunication Sciences in Boulder, CO. His research interests include communication theory, wireless communications, software defined radio, machine learning, multi-user information theory and coding, data networks, cryptography,

analysis of algorithms, and engineering education. Dr. Mathys received Sullivan-Carlson \Innovation in Teaching Award (2003); the Holland \Teaching Excellence Award (2010) from the University of Colorado, Boulder. He also received the IEEE W.R.G. Baker Prize Award, for the paper \The Collision Channel Without Feedback" (with J.L. Massey). Dr. Mathys received the Dipl.Ing. and Ph.D. degrees in Electrical Engineering from the Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, in 1976 and 1985, respectively.

Deborah McGuinness is the Tetherless World Senior Constellation Chair and Professor of Computer and Cognitive Science at Rensselaer Polytechnic Institute. She is also the founding director of the Web Science Research Center at RPI. Dr. McGuinness has been recognized with awards as a fellow of the American Association for the Advancement of Science (AAAS) for contributions to the Semantic Web, knowledge representation, and reasoning environments and as the recipient of the Robert Engelmore award from the Association for the Advancement of Artificial Intelligence (AAAI) for leadership in Semantic Web research and in bridging Artificial Intelligence (AI) and eScience, significant contributions to deployed AI applications, and extensive service to the AI community. Dr. McGuinness currently leads a number of large diverse data intensive resource efforts and her team is creating next generation ontology-enabled research infrastructure for work in large interdisciplinary settings. She is the AI lead on the Dynamic Spectrum Access (DSA) Policy Development award. She has published over 400 peer-reviewed papers and is an inventor on patents in knowledge based systems, ontology environments, configuration, and search technology. Dr. McGuinness received her B.S. in Math and Computer Science from Duke University, M.S. in Computer Science from University of California at Berkeley, and Ph.D. in Computer Science from Rutgers University.

Mark A. McHenry has extensive experience in military and commercial communication systems design, including research on the next generation of advanced wireless networks. Dr. McHenry is President and founder of Shared Spectrum Company (SSC), which conducts software development, field measurement, and analysis projects related to spectrum use and spectrum sharing. He has served as a member of NTIA's Commerce Spectrum Management Advisory Committee since 2006. Currently, he serves on the National Spectrum Consortium (NSC) Executive Committee and has served on the President's Council of Advisors on Science and Technology Spectrum study. He was a Program Manager at the Defense Advanced Research Projects Agency, where he managed multiple tactical wireless related programs. McHenry received the Office of Secretary of Defense Award for Outstanding Achievement in 1997 and the Office of Secretary of Defense Award for Exceptional Public Service Award in 2000. He was an engineer at SRI International, Northrop Advanced Systems, McDonnell Douglas Astronautics, Hughes Aircraft, and Ford Aerospace. Dr. McHenry was named Engineer of the Year by the District of Columbia Council of Engineering and Architectural Societies in February 2006. He has 21 issued patents in spectrum and radio frequency areas and 30 published journal and conference papers. Dr. McHenry received his Ph.D. in Electrical Engineering from Stanford University, M.S. in Electrical Engineering from the University of Colorado, and B.S. in Engineering and Applied Science from the California Institute of Technology.

Thyaga Nandagopal serves in the Directorate of Computer & Information Science and Engineering (CISE) of the National Science Foundation. He is the Deputy Division Director (DDD) for the Division of Computing and Communication Foundations (CCF). Prior to his DDD position he managed wireless networking and mobile computing research within the Networking Technologies and Systems (NeTS) program at NSF. Dr. Nandagopal has managed networking and mobile computing research within the NeTS program, and contributed to several other crosscutting programs, including Spectrum Efficiency, Energy Efficiency, and Security (SpecEES) and Industry/University Collaborative Research Centers (IUCRC). He has built coalitions in support of new research directions, including leading the establishment of the Platforms for Advanced Wireless Research (PAWR) program, which has garnered $50 million in cash and in-kind contributions from an industry consortium of about 30 wireless networking companies and technology associations. He serves as co-chair of the Wireless Spectrum Research and Development (WSRD) Interagency Working Group and is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE). Dr. Nandagopal holds a Ph.D. in electrical engineering from the University of Illinois at Urbana-Champaign (UIUC); M.S. degrees in applied mathematics and computer engineering from UIUC; and a B.Eng. in electronics and communication engineering from Anna University in Chennai, India.

Bodhisatwa Sadhu is a Research Staff Member at IBM T.J. Watson Research Center, NY and an Adjunct Assistant Professor at Columbia University, NY. Since 2012, Dr. Sadhu has been working on mm-wave transceivers and subsystems in the RF/mm-wave Communications Circuits group at IBM Research where he has led the design and demonstration of a self-healing frequency synthesizer, a low power switched-beam 60GHz transceiver IC, a mm-wave 5G phased array base-station IC and a software defined phased array radio. He has authored and co-authored more than 45 papers and holds 20 issued US patents with 20+ pending. His paper describing a new approach to low phase noise LC VCO design based on transconductance linearization was the most downloaded paper in IEEE Journal of Solid State Circuits in 2013. He has authored the book, Cognitive Radio Receiver Front-Ends - RF/Analog Circuit Techniques (Springer, 2013) and has authored/co-authored several book chapters. He serves as a member of the TPC of IEEE RFIC Symposium and IEEE BCICTS, and has served as a guest editor of IEEE JSSC in 2017. Dr. Sadhu received his B.E.(Hons.) degree in Electrical and Electronics Engineering from Birla Institute of Technology and Science - Pilani (BITS-Pilani), in 2007 and his Ph.D. degree in Electrical Engineering from the University of Minnesota, Minneapolis, in 2012.

Lizy Paul leads Strategic Initiatives for the Data Links and Communication Solutions for Collins Aerospace. She currently serves as an elected member of the DoD National Spectrum Consortium (NSC) Executive Committee Board. Ms. Paul has more than 23 years of experience in the areas of Strategy, Business Development and Engineering, including 13 years in the Aerospace and Defense industry with Rockwell Collins. In her current role, Ms. Paul is responsible for defining business development strategies, tactics and system level solutions for Data Links and Communication Solutions Portfolios within the Communication, Navigation and Guidance Business Unit. Ms. Paul joined Collins (Formerly Rockwell Collins) in 2005 and has held various positions including, Director for Asia Pacific Strategy, Marketing Director for RF Communications and Networking and Pr. Engineering Manager for Communication and Networking for the

Advanced Technology Center. She has also held leadership positions at Motorola, Ericsson and Hughes Network Systems. She has published IEEE papers, presented at MILCOM, National Defense Industrial Association (NDIA), and United States Air Force Science Advisory Board Study Panels and at the US OSD CIO C4II Joint Radio COMSEC Strategy Working Group Sessions. She holds 16 patents in the area of RF Communications and Networking technologies. Ms. Paul has a M.S. in Electrical Engineering from Johns Hopkins University, and an Executive M.B.A. from the University of Iowa.

Alex Pidwerbetsky is an experienced researcher and project leader at LGS Labs. Dr. Pidwerbetsky is currently working on projects in advanced communications and networking covering from HF to W-band and beyond. He has been a lead researcher for a number of RF, optical, MIMO and system programs. He has been the PI for a number of DARPA programs, including Next Generation Internet, FCS-Communications and Mobile Network MIMO. He has also been the PI for an advanced W-band communications system development effort. He is the innovator behind a novel low-cost approach for RF systems using RFICs in phased arrays. While at Cornell University, he was with the Center for Radiophysics and Space Research working on wave propagation through random media. He also worked at General Electric's Corporate Research and Development Center on energy systems automation. He holds 10 patents and has authored or co-authored more than a dozen technical publications. His patents in the area of RFID are referenced in an additional 100+ patents. Dr. Pidwerbetsky holds a B.S. in Physics from RPI **a**nd an M.S. and Ph.D. in Applied Physics from Cornell University.

Raymond Shaw is the Chief Executive Officer and Senior Electromagnetic Spectrum Subject Matter Expert (SME) at Spectrum Bullpen, LLC. He is the lead SME on two major programs dealing with the Electromagnetic Spectrum and communications, providing radio policy support for AFRL to allow Dynamic Spectrum Access to radio systems supporting the U.S. Military through Standard Frequency Action Format; the DoD standard; and support to NTIA in the development of a national radio certification software migration from a desktop software version to a fully online version. Mr. Shaw served for 22 years as a Communications specialist in the United States Marine Corp and has led software development teams producing the Global Electromagnetic Spectrum Information Systems (GEMSIS) owned software called the Coalition Joint Spectrum Management Tool (CJSMPT) for Lockheed Martin. Mr. Shaw also led a team that developed the United States Marine Corps communications planning tool called System Planning Engineering and Evaluation Device (SPEED) software for Northrop Grumman. He is a co-author of three technical papers dealing with both Spectrum Management and Electronic Warfare. Mr. Shaw holds a BSBM from Trident University.

Meryem Simsek is a research scientist at Intel Labs and a Visiting Researcher at the University of California, Berkeley. Dr. Simsek's research interests include wireless systems, self-organizing networks, and machine learning. She is the Chair of the IEEE Tactile Internet Technical Committee and serves as the Vice Chair for the IEEE P1918.1 Standardization Working Group, which she co-founded. She holds the honorary positions of the Industry and Student Activities Coordinator in the IEEE Women in Communications Engineering committee and the Vice Chair of the IEEE ComSoc Mobile Communication Networks Standards Committee. She is a recipient of the IEEE

Communications Society FredW. Ellersick Prize and the N2Women Rising Stars in Computer Networking and Communications. Dr. Simsek received a Dipl.-Ing. degree in electrical engineering and the Ph.D. degree in reinforcement learning-based ICIC in LTE-Advanced heterogeneous networks information technology from the University of Duisburg-Essen, Germany.

Paul Tilghman joined DARPA in December 2014 as a program manager in the Microsystems Technology Office. His research interests include intelligent and adaptive RF systems, digital signal processing, machine learning, wireless communications and electronic warfare. Prior to joining DARPA, Mr. Tilghman was a senior research engineer at Lockheed Martin's Advanced Technology Laboratories where he led programs in adaptive electronic warfare, signals intelligence and non-cooperative geolocation. While at Lockheed Martin, Tilghman led the development of a real-time cognitive electronic warfare system, which used machine learning techniques to characterize and counter previously unknown radio emitters on the battlefield. He is a recipient of Lockheed Martin's highest award, the NOVA award, and was also previously honored as the company's Engineer of the Year. Mr. Tilghman received a B.S. in computer engineering from the Rochester Institute of Technology and a M.S. in electrical engineering from Drexel University.

Harish Viswanathan is currently the Head of the Radio Systems Research Group, Nokia–Bell Labs where he leads an international team of researchers investigating various aspects of wireless communication systems. Dr. Viswanathan joined Bell Labs in 1997 and has worked on multiple antenna technology for cellular wireless networks, mobile network architecture, and IoT. He holds more than 50 patents and has published more than 100 papers. He is an IEEE and Bell Labs Fellow and served as an Associate Editor for the IEEE Communications Letters and as Adjunct Faculty at Columbia University. Dr. Viswanathan received a B.Tech. degree from the Department of Electrical Engineering, IIT Madras, India, and the M.S. and Ph.D. degrees from the School of Electrical Engineering, Cornell University, Ithaca, NY, USA.

Rebecca Willett is a Professor of Statistics and Computer Science at the University of Chicago. Her research is focused on machine learning, signal processing, and large-scale data science. Dr. Willet completed her Ph.D. in Electrical and Computer Engineering at Rice University in 2005 and was an Assistant then tenured Associate Professor of Electrical and Computer Engineering at Duke University from 2005 to 2013. She was an Associate Professor of Electrical and Computer Engineering, Harvey D. Spangler Faculty Scholar, and Fellow of the Wisconsin Institutes for Discovery at the University of Wisconsin-Madison from 2013 to 2018. Dr. Willett received the National Science Foundation CAREER Award in 2007, was a member of the DARPA Computer Science Study Group, and received an Air Force Office of Scientific Research Young Investigator Program award in 2010.

Weng-Keen Wong is an Associate Professor of Computer Science at Oregon State University. He received his Ph.D. (2004) and M.S. (2001) in Computer Science from Carnegie Mellon University and his B.Sc. (1997) from the University of British Columbia. After completing his Ph.D, Dr. Wong was a Postdoctoral Associate at the Center for Biomedical Informatics at the University of

Pittsburgh. In 2005, he joined Oregon State University as an Assistant Professor and was promoted to Associate Professor in 2011. From 2016-2018, Dr. Wong was a Program Director at the National Science Foundation in the Division of Intelligent and Information Systems. He recently finished his rotation at NSF and rejoined Oregon State University in October 2018. Dr. Wong current research areas are in machine learning and data mining, with specific interests in anomaly detection, probabilistic graphical models, computational sustainability and human-in-the-loop learning.

Timothy Woods is an experienced researcher and technical leader at ANDRO Computational Solutions. Mr. Woods is currently leading efforts for commercial startups and the Department of Defense in software-defined networking, network virtualization, dynamic spectrum access, policy development, artificial intelligence, and cognitive radio development. Mr. Woods holds patents and publications in the areas of cross-layer network implementation and adjudication systems for wireless access policies. Prior to ANDRO, Mr. Woods assisted the Air Force Research Laboratory (AFRL) as a research assistant in the area of assured communications with the development of cross-layer routing protocols for mobile ad hoc networks. Mr. Woods holds a B.S. in Electrical and Computer Engineering from SUNY IT and an M.S. in Electrical Engineering from Binghamton University with a focus in communications specifically in the area of advanced field programmable gate array implementation of upper layer networking functions for software-defined radio.

Heather Zheng is the Neubauer Professor of Computer Science at the University of Chicago. Dr. Zheng joined University of Chicago after spending 6 years in industry labs (Bell-Labs, NJ and Microsoft Research Asia), and 12 years at University of California at Santa Barbara. At UChicago, she co-directs the SAND Lab (Systems, Algorithms, Networking and Data). Dr. Zheng was selected as one of the MIT Technology Review's TR 35 (2005) for her work on Cognitive Radios. Her work was featured by MIT Technology Review as one of the 10 Emerging Technologies (2006). She is a fellow of the World Technology Network, and an IEEE Fellow. Dr. Zheng received her Ph.D. in Electrical and Computer Engineering from the University of Maryland, College Park in 1999.