**Mark P. Mahon, Ph.D.**
Teaching Professor
Pennsylvania State University
School of Electrical Engineering and Computer Science
W209A Westgate Bldg.
University Park, PA

## Highlights

Teaching faculty experienced in research and systems development in cellular and mobile wireless networks, wireless local area networks, wireless network security, mobility management, mobile data systems including networks, protocols, and applications, wideband signal processing, modulation theory, algorithms, mathematical/analytical modeling, communication, detection and estimation, and control systems. Pursues funding for and conducts advanced research in computer and mobile networks, theoretical and experimental analysis of communication systems, cellular, wireless, and mobile systems, wideband signal processing, sensors, tracking, localization, and data fusion. Experienced in hardware/software development, data acquisition, integration, and testing, field test planning, preparation, and execution. Extensive programming experience including UI, analysis tools, real-time object-oriented programming, and embedded systems code development in C, C++, python, java, Verilog, RTL, VHDL, HDL, and assembly.

## Education

PhD. Acoustics, The Pennsylvania State University, University Park, PA 16802, 2001
M.S. Electrical Engineering, The Pennsylvania State University, University Park, PA, 16802, 1991
B. S. Electronics Engineering, The University of Scranton, Scranton, PA, 18510, 1987

## Employment

**July 2021 – Present:** *Teaching Professor, School of Electrical Engineering and Computer Science, The Pennsylvania State University, University Park, PA 16801*
**June 2018 – June 2021:** *Associate Teaching Professor*
**Aug. 2015 – June 2018:** *Assistant Teaching Professor*
Teach graduate and undergraduate courses in computer science and electrical engineering such as communication networks, mobile networks, neural networks, programming, mathematics, and wireless security. Advise and direct graduate students' MS and PhD research in the areas of wireless and computer networks, data pipelining, network resource allocation and optimization techniques, ultrawide band systems, multiple antenna applications, and wireless security. Guide Schreyer Honors College students' honors theses. HackPSU, BlockChain@PSU, and ML@PSU faculty adviser, member of graduate advising committees, member of Computer Science Undergraduate Curriculum Committee, member of School of EECS Management Committee, advise undergraduate electrical engineering, computer science, computer engineering, and data science students.

**2003 – Aug. 2015:** *Associate Research Professor, Applied Research Laboratory, Communications, Information, and Navigation Office, The Applied Research Laboratory, The Pennsylvania State University, State College, PA* Principal Investigator, Co-Principal Investigator, Technical lead conducting research on multi-Int data fusion and UI design to support intelligence analysts in Combat Operation Centers, cellular and mobile networks, computer network security, mobile communication systems, and wideband signals and image processing with total funding over $12M.

**2002 – 2003:** *Sr. Systems Engineer, Klein & Stump, Inc., 2120 Washington Blvd. #400, Arlington, VA 22204* Researcher and technical consultant working on wireless communications projects for US Special Operations Command (SOCOM) and Naval Information Warfare Activity (NIWA). Awarded $150k SBIR for SOCOM advanced signal simulator.

**1991 – 2002:** *Assistant Research Professor, Applied Research Laboratory, Communication Sciences and Technology Division, The Applied Research Laboratory, The Pennsylvania State University, State College, PA 16804* Principal Investigator and researcher conducting research on cellular and mobile networks, wideband signals, tracking and localization, adaptive signal processing, acoustic propagation, sensor systems, remote sensing, and active noise control. Awarded $750k for development of novel wavelet based wideband signal detection for high altitude sensors.

**1988 – 1989:** *Program Engineer, Central Intelligence Agency, Langley, VA 22101*
Assisted in the development of algorithms and signal processing systems for novel applications in the areas of RF communications and signal modulation techniques.

**Detailed Research Experience:**

*Current ongoing research:*
Resource allocation and scheduling improvements in NG networks and edge computing; Multiple Input Multiple Output antenna techniques for increased capacity in NG systems; Fast handover techniques using blockchains to reduce mobility interruption times in 5G networks; AI/NN techniques applied to network scheduling and optimization, and mobile robotics for localization and mapping; Automated object detection and 3D mapping using sonar array data. Security vulnerabilities in UWB ranging.

*2015 – Present*
Lead graduate and undergraduate student research in wireless communication networks, distributed video processing in cellular systems, UWB ranging, communication systems and security, software defined network security, application of game theory to cyber resiliency, wireless, machine learning, big data analytics, and artificial intelligence for mobile and computer network security and automated detection in acoustic and sonar systems.

*2014 – 2015*
Leading internal research and development effort on deep packet inspection for zero day and predictive detection for data networks. Technical performer developing novel deformable wavelet-based contour matching technique for automated object detection in satellite images. Acoustic tracking and identification of drones for area defense system.

*2014*
Developed real-time scanner for 802.15.4 (LR-WPAN) protocol deployed on software defined radio platform.

*2013-2014*
Technical lead on developing novel mathematical model for analyzing torpedo acoustic threat surrogate systems for US Navy. Experimental lead on disposable, adaptive, high bandwidth fiber-optic undersea communication system for US Navy.

*2013*
Implemented a novel matched filter receiver for a unique OFDM signal of interest to facilitate signal detection in a high co-channel interference environment of a wide field of view high altitude receiver and wideband signal set design in highly complex propagation environments for Department of Defense (DoD).

*2012-2013*
Technical lead for design and implementation of a real-time transmitter/receiver on a software defined radio platform for maritime communication systems (Automatic Information System/Maritime Security).

*2012*
Communications/signal processing technical consultant on Maritime Domain Operations and Unmanned Surface Ship Interdiction study effort for US Navy.

*2011-2012*
Principal Investigator, technical and experimental lead on fiber optic undersea communication system for Advanced Submarine System Development effort for US Navy.

*2011*
Technical lead on mathematical analysis, algorithm development, and implementation of pattern of life signal to noise ratio analysis in high co-channel interference environment for DoD.

Trusted agent for Army Research Lab to review and critically analyze work associated with wideband signaling and passive emissions collection from cell phones. Reviewed contractor data analysis and technical briefings for scientific accuracy and rigor. Advised the sponsor on contractor testing methodologies, procedures, and analysis techniques. Technical lead implementing unique wideband acoustic communication system and specialized signal processing hardware for an acoustic system being utilized in a complex maritime environment for the DoD.

*2009 – 2010*
Tiger team lead for large unmanned undersea vehicle (UUV) assigned to identify platform induced electromagnetic interference with electronic payload system in the HF and acoustic regimes for the US Navy.

Developed and implemented a novel algorithm to calculate the effective force charge based on muzzle sensor data utilizing MEMS transducers and PIC controller on a portable howitzer for the US Army.

Conducted study and authored Intelligence, Surveillance, and Reconnaissance (ISR) for Unmanned/Minimally Manned Undersea Vehicle (UMUV) report presented to Defense Advanced Research Projects Agency (DARPA).

*2006 – 2009*
Principal Investigator for a multi-year research and FPGA-based engineering prototype development effort in the area of 3G/4G (UMTS/LTE) cellular and wireless (IEEE 802.16 and 802.11) communication systems; Effort consisted of three phases: theoretical and analytical study, proof-of-concept development, and testing, and prototype development for DoD.

*2005-2006*
Technical lead on Information Fusion engine integration into a sandbox enclave at Joint Interagency Task Force South (JIATF-S) to support multi-int data fusion.

*2003 – 2006*
Principal Investigator for multi-year Office of Secretary of Defense sponsored research program in the area of multi-intelligence data fusion (fusion engine and UI interface) as part of the overall initiative of Force Transformation; worked extensively with NGA, DIA, DISA, OSD, all military services, and some coalition components. Led team of software engineers to develop scalable user-facing

application and backend data fusion engines.

*2002 – 2003*
Pursued funding for research interests in the areas of wireless/wideband communications, wideband systems, source detection/localization, intelligent system of systems design, and data fusion; Awarded Phase I, Small Business Innovative Research contract for Portable Signal Training System by SOCOM (02-013); Technical consultant for Naval Information Warfare Center on Common for High Performance Computing Software Support Initiative's (CHSSI) Electronic Battlefield Environment (EBE) portfolio (Electromagnetic Environmental Effects Toolkit), SBIR, MERIT/TENCAP, TST programs

*1998 – 2002*
Researcher and principal investigator performed research in large time-bandwidth product (wavelets) source detection and localization – theoretical, analytical, and field testing; CDMA IS-95A/3G cellular communications; Developed mathematical analytical models and included code development of the CDMA air interface physical layer implementing major aspects of the CDMA protocol for test and analysis purposes; Built real-time hardware platform for deploying developed CDMA physical layer code.

*1996 – 1998*
Principal Investigator in charge of signal processing algorithm and code development, image acquisition and compression, telephony, and user interface design for an experimental remote, autonomous, acoustic rockslide detection for Conrail. Work included algorithm and code development utilizing embedded digital signal processing (DSP) board and development of unique algorithms for real-time monitoring of transducers to create an event detection system.

*1991 – 1997*
Performed fundamental research in the areas of signal processing algorithm development, acoustic atmospheric propagation, detection, source localization, beamforming, system identification, and active control; Main responsibilities include real-time code development (C, Visual C++, assembly) for signal processing systems, adaptive beamforming, and embedded processing for eight major projects during this time. Multiple DSP platform development; Active Noise Control, feature extraction, data logging and fusion, passive acoustic tracking, beamforming, and analysis for these projects

*1988-1989*
Assisted in the development of algorithms and signal processing systems for novel applications in the areas of RF communications and signal modulation techniques.

**Case History:**

*July 2025, McKool Smith*
*Ericsson v. Transsion*
Consulted for plaintiff Ericsson on 4G/5G signaling technology. Submitted two declarations on international patents asserted in Vietnam.

*May 2025 – Present, Anand and Anand*
*AX Wireless v. Xiamoi and Vivo, New Delhi, India*
Consulting for plaintiff on WiFi technology. Reply report filed 9/5/25.

*February 2025 – June 2025, Fish & Richardson*
*Samsung v. Wilus, IPR proceedings*
Consulting for petitioner Samsung on WiFi technology. Filed declarations on 4/30/25.

*December 2024 – May 2025, Stearne, Kessler, Goldstein*
*ISG v. Dell, HP, and Lenovo, In re matter of Certain Wireless Communication Devices and Components Thereof, ITC No. 337-3785.*
Consulted for petitioner ISG on WiFi-6 technology. No reports filed.

*October 2024 – Present, Latham & Watkins, LLP*
*Advanced Coding Technologies LLC v. Google LLC, Case No. 2:24-cv-00353 (EDTX)*
Consulting for defendant Google on coding techniques in 5G cellular systems.
Submitted claim construction declaration 6/24/25. Deposed 7/15/25.

*October 2024 – July 2025, Carmichael, IP*
*Aylo Freesites LTD v. Wellcomemat LLC IPR2024-00710*
Consulting for respondent Wellcomemat. Technology related to remote editing of video content. Filed declaration 2/12/25. Deposed 3/13/25.

*September 2024 – August 2025, Norton Rose Fulbright*
*Apple v. Smith Interface Technologies IPR2024-01085, -01090, -01087*
Consulting for respondent SIT on technology related to user interface design on mobile devices. Declarations filed 4/14/25, 4/16/25, and 4/30/25. Deposed 6/19/25. Claim construction declaration filed 7/14/25. Deposed 7/21/25 and 7/30/25.

*September 2024 – Present, GreenbergTraurig*
*GenghisComm Holdings, LLC v. Samsung Electronics America, Inc. Case No. 2:24-cv00242 (EDTX)*
Consulting for defendant Samsung on technology related to 5G/4G cellular signaling.

*July 2024 – September 2025, Alston & Bird*
*Pegasus Wireless Innovation LLC v. Cellco Partnership d/b/a Verizon Wireless et al., Case No. 2:23-cv-00640-JRG (Lead Case), EDTX.* Consulting for defendants. Invalidity, non-infringement, and first supplemental non-infringement reports filed 4/23/25, 5/20/25 and 6/18/25. No deposition.

*May 2024 – April 2025, McKool Smith*
*AT&T Services, Inc, Cellco Partnership D/B/A Verizon Wireless, Ericsson, Inc., and Nokia Corporation v. ASUS Technology Licensing, Inc. and Innovative Sonic, Case No. 2:23-cv-00486, IPR2024-0099. -009917*
Consulting for petitioners. Technology related to signaling in 4G and 5G networks. Filed declarations on 6/4/24 and 10/16/24. Filed Ex Parte reexam declaration 4/1/25.

*May* 2024 – *July 2024, Merchant & Gould*
*Apex Beam Technologies LLC v. TCT Mobile International Ltd. Case No. 2:21-cv-438 (EDTX)*
Consulting for defendant TCT. Technology related to signaling in 5G cellular networks. Wrote submitted claim construction declaration filed on 7/17/24. Deposed 7/31/24 on claim construction declaration.

*May 2024 – Present, McKool Smith*
Aspen Networks v. AT&T, Case No. 2:23-cv-00476
Consulting for defendant AT&T. Technology related to VoWiFi signaling.

*May 2024 – June 2024, Merchant & Gould*
*L2 Mobile Technologies LLC v. TCL Electronics Holdings Ltd., Case No. 1:22-cv-1306*
Consulted for defendant TCL. No work product exchanged. Case settled.

*March 2024 – Present, Quinn Emanual, LLP*
*Collision Communications, Inc. v. Samsung Electronics Co., Ltd. v. Samsung Electronics America, Inc., Case No. 2:23-cv-00587 (EDTX)*
Consulting for defendant. Filed invalidity and non-infringement reports 4/25/25 and 5/16/25. Deposed 5/27-28/25.

*March 2024 – February 2025, Duane Morris*
*Ericsson and Nokia v. Active Wireless IPR2024-00886, -00951, -00985, -00986*
*Active Wireless v. T-Mobile, Ericsson, and Nokia Case No. 2:23-cv-00261 (EDTX)*
Consulted for petitioners Ericsson and Nokia. Technology related to signaling in 4G and 5G cellular networks. Wrote four declarations for IPR. Consulted for defendants T-Mobile and intervenors. Submitted invalidity report for defendant and intervenors; deposed 12/4/24.

*March 2024 – May 2024, Quinn Emanuel, LLP*
*Samsung Electronics Co., Ltd. v. Datang Mobile Communications Equipment Co., Ltd.*
Consulted for petitioner Samsung. Technology related to random access in 4G/5G cellular networks. Wrote declaration in support of claim construction. Case stayed.

*March 2024, Rimon Law*
*L2 Mobile Technologies LLC v. OnePlus Technology (Shenzhen) Co., Ltd., No. 2:23-cv-00087*
No work product oral or written exchanged. Case settled.

*January 2024 – Present, McKool Smith*
*Headwater Research, LLC v. AT&T Corp. et al, Case No. 2:23-cv-00398*
Consulting for defendant. Technology related to control of battery and data usage in 4G/5G user devices. Filed a rebuttal report 3/13/25. Deposed 3/19/25.

*December 2023 – March 2024, Duane Morris*
*Ericsson, Inc. and Nokia of America v. XR Communications, LLC, IPR2024-00613 (IPR); Case No. 2:23-CV-00202-JRG-RSP (EDTX).* Consulted for petitioners and defendants. Technology related to MIMO in cellular networks. Filed declarations on 3/6/24. Deposed 1/7/25.

*October 2023 – April 2024, Erise IP; Finnegan, DLA Piper, Husch Blackwell*
*BNR v. ASUSTek/Media Tek/Laird/NXP Inc. Inv. No. 337-TA-1367 (USITC).* Consulting for defendant ASUS on ASUS (Qualcomm-based products) non-infringement and JDG (ASUS/Media Tek/ Laird/ NXP) on Tech DI non-infringement on WiFi wireless devices and semiconductor chips with wireless capabilities related to wireless transmission technologies. Wrote rebuttal report. BNR settled with ASUS and Media Tek; BNR withdrew complaint for NXP.

*September 2023 – April 2024, McKool Smith*
*Daingean Technologies Ltd. v. AT&T, et al, Case No. IPR2024-00309.* Consulting for petitioner AT&T. Technology related to 5G wireless transmissions. Wrote declarations. Case settled.

*August 2023 – December 2023, Greenberg Traurig*
*Atlas Global Technologies, LLC v. Acer Incorporated, No. 2:22-cv-00259 WDTX.* Consulting for defendant Acer. Technology related to wireless transmissions in WiFi networks. No reports. Settled.

*August 2023 – February 2025, McKool Smith*
*Ericsson v. Lenovo/Motorola, In the Matter of Certain Mobile Phones, Components Thereof, and Products Containing Same, Inv. No. 337-TA-1375 (USITC); IPR204-00702 (IPR)*
Consulting for Complainant Ericsson on technology related to 5G cellular signaling technology. Infringement and invalidity rebuttal. Testified at the ITC. Filed Decl 12/6/24. Deposed IPR 2/12/25.

*August 2023 – Present, Caldwell, Cassady and Curry*
*Neo Wireless, LLC v. Ford, et al., Case No. 2:22-MD-03034.* Consulting for plaintiff on technology related to 4G cellular radio access. Wrote infringement and invalidity rebuttal reports.

*June 2023 – November 2023, Duane Morris*
*Ericsson, Inc., and Cellco Partnership D/B/A Verizon Wireless v. Woodbury Wireless LLC., IPR 2023-01364.* Consulted for petitioner Verizon. IPR. Technology related to MIMO and minimization of interference. Declaration filed 10/10/23. Case settled.

*January 2023 – April 2023, McKool Smith*
*Ericsson v. Koninklijke KPN N.V., Case No. IPR2023-00582.* Consulting for Petitioner Ericsson. IPR. Technology related to neighbor cell lists in wireless systems. Declaration filed 2/17/23.

*November 2022 – April 2023, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP*
*Qualcomm, Inc. vs. FedEx, Inc., IPR 2022-00585.* Consulting for patent owner FedEx. Wrote IPR declaration. Deposed 4/19/23.Technology related to sensor information collected by tracking devices.

*October 2022 – November 2023, BC Law Group, P.C.*
*Lionra Technologies Limited v. Apple, Inc. Case No. 6:22-cv-00351-ADA, WDTX*
Consulting for patent owner Lionra. Case dismissed 11/18/23.

*September 2022 – June 2023, Quinn Emanuel, LLP*
*Google LLC v. Sonos, Inc., Inv. No. 337-TA-1330 (USITC)*
Consulting for patent owner Google. Wrote infringement and validity rebuttal reports.
Technology related to voice assistants and smart devices. Deposed 4/14/23. Testified at trial 6/20/23 and 6/23/23.

*September 2022 – August 2023, BC Law Group, P.C.*
*Apple, Inc. vs. Speir Technologies Limited, IPR2022-01512 and -00151*
Consulted for patent owner Speir on UWB localization technology. Wrote IPR declarations. Deposed 10/25/23. Case dismissed 11/18/23.

*August 2022 – July 2024, Venable, LLP*
*VoIP-Pal.com, Inc. v. Verizon Communications Inc. Case No. 6:21-cv-00672, WDTX*
Consulting for defendant Verizon. Wrote non-infringement report. Deposed 5/17/23.
Technology relates to VoIP in cellular networks. Summary judgement of non-infringement.

*July 2022 – November 2023, Quinn Emanuel Urquhart & Sullivan, LLP*
*Evolved Wireless LLC v. Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc., Case No. 2-21-cv-00033, EDTX.* Technology related to handovers in 4G networks.
Consulting for defendant Samsung. Wrote non-infringement and validity rebuttal report. Deposed 7/5/23; Testified at trial 11/14/23.

*March 2022 – Dec. 2022, Knobbe, Martens, Olson & Bear, LLP*
*Jawbone Innovations, LLC v. Amazon.com, Inc., et al.*
Consulting for petitioner Amazon (IPR). Technology related to tracking using acoustic arrays. Case stayed. No reports.

*May 2022 – Dec. 2022, McKool Smith; Alston Bird*
*Ericsson Inc. and Telefonaktiebolaget LM Ericsson vs. Apple Inc., Case No. 2:21-cv-376, EDTX*
Consulted for plaintiff and counter-defendant Ericsson.
Report on Essentiality and Rebuttal report (FRAND). Deposed 10/4/2022. Testified 12/7/2022. Case settled during trial.
Broad spectrum of technology related to cellular networks (core network and mobile device)

*March 2022 – Dec. 2022, McKool Smith*
*Ericsson Inc. and Telefonaktiebolaget LM Ericsson vs. Apple Inc., Inv. No. 337-TA-1299, ITC*
Consulted for Ericsson. Opening and Rebuttal report. Deposed 10/7/2022. Case settled.
Technology related to security in cellular systems.

*January 2022 – March 2023, Duane Morris*
*Telecom Network Solutions v. AT&T Inc., et al, Case No. 2:21-cv-415 and Verizon Communications Inc., et al, Case No 2:21-cv-416, EDTX*
Consulted for defendants AT&T and Verizon on Invalidity. Case settled; no reports filed.
Technology related to QoS in cellular networks.

*September 2021 – December 2021, Duane Morris, LLP*
*KAIFI LLC v. Verizon Wireless, Case No. 2:20-cv-280-JRG, EDTX*
Consulted for defendant Verizon. Wrote Non-Infringing Alternatives and Non-Infringement reports. Deposed 12/15/21. Case settled. Technology related to cellular and WiFi enablement cellular systems.

*September 2021 – December 2021, Quinn Emanuel, LLP*
*L2 Mobile Technologies, LLC v. Google, Case No. 6:21-cv-358, WDTX*
Consulted for defendant Google. Wrote reply Claim Construction brief. Case settled.
Technology related to control signaling in cellular systems.

*August 2021 – May 2022, McKool Smith*
*Godo Kaisha IP Bridge 1 v. Ericsson, Case No. 2:21-cv-00213-JRG, EDTX*
Consulted for defendant Ericsson. IPR and Claim Construction declarations.
Technology related to signaling in OFDM systems.

*July 2021 – August 2021, Quinn Emanuel, LLP*
*Finesse Wireless, LLC v. Nokia, et al., Case No. 2:21-CV-00063-JRG, EDTX*
Consulted for defendant Nokia on claim construction. Wrote declaration and deposed on 8/17/21.
Technology related to coding techniques in wireless systems.

**Case Testimony History:**

*October 2024 – July 2025, Carmichael, IP*
*Aylo Freesites LTD v. Wellcomemat LLC IPR2024-00710 (IPR)*
Consulting for respondent Wellcomemat. Technology related to remote editing of video content. Filed declaration 2/12/25. Deposed 3/13/25.

*October 2024 – Present, Latham & Watkins, LLP*
*Advanced Coding Technologies LLC v. Google LLC, Case No. 2:24-cv-00353 (EDTX)*
Consulting for defendant Google on coding techniques in 5G cellular systems.
Submitted claim construction declaration 6/24/25. Deposed 7/15/25.

*September 2024 – Present, Norton Rose Fulbright*
*Apple v. Smith Interface Technologies IPR2024-01085, IPR2024-01090, IPR2024-01087*
Consulting for respondent SIT on technology related to user interface design on mobile devices. Declarations filed 4/14/25, 4/16/25, and 4/30/25. Deposed 6/19/25. . Claim construction declaration filed 7/14/25. Deposed 7/21/25 and 7/30/25.

*July 2024 – Present, Alston & Bird*
*Pegasus Wireless Innovation LLC v. Cellco Partnership d/b/a Verizon Wireless et al., Case No. 2:23-cv-00640-JRG (Lead Case), EDTX.* Consulting for defendants. Invalidity, non-infringement, and first supplemental non-infringement reports filed 4/23/25, 5/20/25 and 6/18/25

*May 2024 – July 2024, Merchant & Gould*
*Apex Beam Technologies LLC v. TCT Mobile International Ltd. Case No. 2:21-cv-438-JRG (EDTX); Case Filed 04/22/24.* Consulting for defendant TCT. Technology related to signaling in 5G cellular networks. Submitted claim construction declaration 7/17/24. Deposed 7/31/24 on claim construction declaration.

*March 2024 – Present, Quinn Emanual, LLP*
*Collision Communications, Inc. v. Samsung Electronics Co., Ltd. v. Samsung Electronics America, Inc., Case No. 2:23-cv-00587 (EDTX)*
Consulting for defendant. Filed invalidity and non-infringement reports 4/25/25 and 5/16/25. Deposed 5/27-28/25.

*March 2024 – February 2024, Duane Morris*
*Ericsson and Nokia v. Active Wireless IPR2024-00886, -00951, -00985, -00986*
Consulted for petitioners Ericsson and Nokia. Technology related to signaling in 4G and 5G cellular networks. Wrote four declarations for IPR. Deposed 12/4/24.

*January 2024 – Present, McKool Smith*
*Headwater Research, LLC v. AT&T Corp. et al, Case No. 2:23-cv-00398*
Consulting for defendant. Technology related to control of battery and data usage in 4G/5G user devices. Filed a rebuttal report 3/13/25. Deposed 3/19/25.

*December 2023 – March 2024, Duane Morris*
*Ericsson, Inc. and Nokia of America v. XR Communications, LLC, IPR2024-00613 (IPR); Case No. 2:23-CV-00202-JRG-RSP (EDTX).* Consulted for petitioners and defendants. Technology related to MIMO in cellular networks. Filed declarations on 3/6/24. Deposed 1/7/25.

*October 2023 – April 2024, Erise IP; Finnegan, DLA Piper, Husch Blackwell*
*BNR v. ASUSTek/Media Tek/Laird/NXP Inc. Inv. No. 337-TA-1367 (USITC).* Consulting for defendant ASUS on ASUS (Qualcomm-based products) non-infringement and JDG (ASUS/Media Tek/ Laird/ NXP) on Tech DI non-infringement. Wrote declarations on WiFi wireless devices and semiconductor chips with wireless capabilities related to wireless transmission technologies. Wrote rebuttal report. Deposed 2/8/24. BNR settled with ASUS and Media Tek; BNR withdrew complaint before hearing.

*September 2023 – June 2023, Quinn Emanuel, LLP*
*Google LLC v. Sonos, Inc., Inv. No. 337-TA-1330 (USITC)*
Consulting for patent owner Google. Wrote infringement and validity rebuttal reports. Technology related to voice assistants and smart devices. Deposed 4/14/23. Testified 6/20-23/23.

*August 2023 – July 2024, McKool Smith*
*Ericsson v. Lenovo/Motorola, In the Matter of Certain Mobile Phones, Components Thereof, and Products Containing Same, Inv. No. 337-TA-1375 (USITC); IPR204-00702 (IPR)*
Consulting for complainant Ericsson on technology related to 5G cellular signaling technology. Wrote infringement and invalidity rebuttal. Deposed 5/23/24. Testified 7/16/24. Wrote IPR declaration filed on 12/6/24. Deposed for IPR 2/12/25.

*August 2023 – Present, Caldwell, Cassady and Curry*
*Neo Wireless, LLC v. Ford, et al., Case No. 2:22-MD-03034.* Consulting for plaintiff on technology related to 4G cellular radio access. Wrote infringement and invalidity rebuttal reports. Deposed 5/16/24 and 5/17/24.

*November 2022 – April 2023, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP*
*Qualcomm, Inc. vs. FedEx, Inc., IPR 2022-00585*
Consulting for patent owner FedEx. Wrote IPR declaration. Deposed 4/19/23.

Technology related to sensor information collected by tracking devices.

*September 2022 – November 2023, BC Law Group, P.C.*
*Apple, Inc., vs. Speir Technologies Limited, IPR2022-01512 and -00151*
Consulted for patent owner Speir on UWB localization technology. Wrote IPR declarations. Deposed 10/25/23. Case dismissed 11/18/23.

*August 2022 – July 2024, Venable, LLP*
*VoIP-Pal.com, Inc. v. Verizon Communications Inc. Case No. 6:21-cv-00672, WDTX*
Consulting for defendant Verizon. Wrote non-infringement report. Deposed 5/17/23.
Technology relates to VoIP in cellular networks. Summary judgement of non-infringement.

*July 2022 – November 2023, Quinn Emanuel Urquhart & Sullivan, LLP*
*Evolved Wireless LLC v. Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc., Case No. 2-21-cv-00033, EDTX.* Technology related to handovers in 4G networks.
Consulting for defendant Samsung. Wrote non-infringement and validity rebuttal report. Deposed 7/5/23; Testified at trial 11/14/23. Jury found for defendant on all counts.

*March 2022 – December 2022, McKool Smith*
*Ericsson Inc. and Telefonaktiebolaget LM Ericsson vs. Apple Inc., Inv. No. 337-TA-1299, ITC*
Consulting for Ericsson. Opening and Rebuttal report. Deposed 10/7/2022. Testified 12/7/2022. Case settled during trial.

*May 2022 – December 2022, McKool Smith; Alston Bird*
*Ericsson Inc. and Telefonaktiebolaget LM Ericsson vs. Apple Inc., Case No. 2:21-cv-376, EDTX*
Consulting for plaintiff and counter-defendant Ericsson.
Report on Essentiality and Rebuttal report. Deposed 10/4/2022. Case settled.

*September 2021 – December 2021, Duane Morris, LLP*
*KAIFI LLC v. Verizon Wireless, Case No. 2:20-cv-280-JRG, EDTX*
Consulted for defendant Verizon. Wrote Non-Infringing Alternatives and Non-Infringement reports. Deposed 12/15/21. Case settled.

*July 2021 – August 2021, Quinn Emanuel, LLP*
*Finesse Wireless, LLC v. Nokia, et al., Case No. 2:21-CV-00063-JRG, EDTX*
Consulted for defendant Nokia on claim construction. Technology related to noise in the front-end of receiver. Deposed on 8/17/21.

**Teaching:**

Courses:

- CSE 516 (Mobile Networks): Redesigned the course to integrate latest developments in mobile network architecture design. The course now includes signaling, control, and protocol issues unique to 4G/5G architectures addressing eMBB, mMTC, and URLLC use cases critical to IoT and future wireless network development and future NG networks.
- CSE 514 (Communication Networks)
- CSE 590 (Colloquium)
- CMPEN 462 (Wireless Communication Systems and Security): Created and designed this course to address a gap in the wireless communications area focusing on security. This course is included in the cybersecurity computational foundations minor.
- EE 466 (Introduction to Software-Defined Radio: Overview of the principles of software-defined radio systems with laboratory components.
- EE 456 (Introduction to Neural Networks): This course is intended to address the need for EE and CMPEN students to be exposed to the principles associated with artificial intelligence.

- CMPEN/EE 362 (Communication Networks)
- CMPSC 263 (Blockchains and Modern Web Development): This course is 'module' driven and designed to provide students with a broad range of academic backgrounds an opportunity to learn about blockchains and cryptography. Under supervision, students in the Distributed Ledger Society teach the modules including theory and practice in the areas of programming, math, and cryptography.
- ACS 505 (Experimental Techniques in Acoustics)
- MATH 141 (Calculus with Analytical Geometry II)
- CMPSC 101 (Programming in C++)

**Publications:**

Rublein, Mehmeti, Mahon, and LaPorta, "Bilateral Reinforcement Learning for Distributed Resource Allocation in Edge Computing", *IEEE Transactions on Network and Service Management.* Submitted June 2025.

Rublein, Mehmeti, Mahon, and LaPorta, "Improved Methods of Task Assignment and Resource Allocation with Preemption in Edge Computing Systems", *IEEE Transactions on Parallel and Distributed Systems,* June 30, 2025.

Rublein, Mehmeti, Mahon, and LaPorta, "Impact of Client Choice on Distributed Resource Allocation in Edge Computing", *The 33rd International Conference on Computer Communications and Networks (ICCCN 2024),* IEEE and IEEE Communication Society, July 29 – 31, 2024, Big Island, Hawaii, USA.

Sorensen, Mahon, Mehmeti, and LaPorta, QoE-Analysis of 5G Network Resource Allocation Schemes for Competitive Multi-User Video Streaming Applications, *IEEE Conference on Vehicular Technology,* Florence, Italy, June 2023.

Sorensen, Mehmeti, Mahon, LaPorta, and Cao, "EQMS: An Improved Energy-Aware and QOE-aware Video Streaming Policy across Multiple Competitive Mobile Devices", Wireless Networks: The Journal of Mobile Communication, Computation and Information, Dec. 2022.

Sorensen, Mehmeti, Mahon, Qui, Chan, Qui, and LaPorta, "Optimal Resource Allocation for Crowdsourced Image Processing", *IEEE Transactions on Mobile Computing*. June 2022.

Sorensen, Mehmeti, Mahon, La Porta, Cao, "Mutli-User Competitive Energy-Aware and QoE-Aware Video Streaming on Mobile Devices", *ACM Proceedings of the QoS and Security for Wireless and Mobile Networks (Q2SWinet) Symposium collocated with Modeling, Analysis, and Simulation of Wireless and Mobile Systems* (MSWIM 2020), Alicante, Spain, Nov. 2020.

Sorensen, Mehmeti, Mahon, Qui, Chan, and LaPorta, "Optimal Resource Allocation for Crowdsourced Image Processing", *IEEE International Conference on Sensing and Networking* (IEEE SECON 2020), Como, Italy, June 2020.

Swanson, Mahon, Norris, and Mast, "Atmospheric Multipath Resolution Using Spread Spectrum Acoustic Signals", *Proceedings of Meetings on Acoustics,* September 2017.

Aquaviva, Mahon, Einfalt, and LaPorta, "Optimal Cyber-Defense Strategies for Advanced Persistent Threats: A Game Theoretic Approach," *2017 International Symposium on Reliable and Distributed Systems,* Hong Kong, China, September 27 – 29, 2017.

Young, Mahon, and Wyckoff, "Automated Information Management," Chap. 12, *Mathematical Techniques in Multisensor Data Fusion,* Hall, David L., Artech House Inc., Mar 2004

Mahon, Sonsteby, and Wenchel, "Application of Non-Orthogonal Waveletes for Geolocation," *Radiolocation and Direction Finding Symposium*, Southwest Research Institute, San Antonio, Texas, 2-4 Nov. 1999.

Myers, Lovette, Kilgus, Giannini, Swanson, Reichard, Mahon, Mast, "A Java-based Information System for Wayside Sensing and Control," *Proc. of the 1998 ASME/IEEE Joint Railroad Conference,* 1998, pp. 135-147.

Swanson, Mast, Mahon, "Atmospheric Multipath Resolution Using Spread Spectrum Acoustic Signals," *Proceedings of the 133rd Meeting of the ASA*, June 15-20, 1997.

Mahon, Swanson, "Acoustic Holography as an Active Control Measurement Tool," *Proceedings of Active 95, The 1995 International Symposium on Active Control of Sound and Vibration,* Newport Beach, CA, July 1995, pp. 673-684.

Mahon, Sibul, Valenzuela, "A Sliding Window Update for the Basis Matrix of the QR Decomposition," IEEE Transactions on Signal Processing, May 1993, pp. 1951-1953.

Mahon, Sibul, Valenzuela, "An Alternative Updating Scheme for the QR Algorithm as Applied to Adaptive Beamforming," *Proc. 25th Annual Conf. on Info. Sciences and Systems,* Johns Hopkins University, Baltimore, MD, March 1991, pp. 193-199.

**Awards/Honors:**

Senior Member IEEE

2001 Formal citation letter from National Reconnaissance Office (NRO) for experimental work with mobile wireless systems

2001 Formal citation letter for excellence in software development from the NRO for work associated with mobile wireless systems.

2000 Formal citation letter from NRO for development of wavelet course presented at NRO Technology Symposium

1997 Invited session chair of "Signal Processing in Acoustics: General Signal Processing," Noise-Con '97, 133rd meeting of the ASA.

1996 Simowitz Citation Acoustics Department PSU for outstanding publication by a graduate student

1995 Invited co-chair of "Transducers for Active Control of Sound and Vibration," Active 95, Active Noise Control Conference
1993 Simowitz Award Acoustics Department PSU for outstanding publication by a graduate student

1987 Dr. A. J. Cawley Award for Excellence in Electronics Engineering by Physics/EE Department University of Scranton