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:

October 2024 – March 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.

May 2024 – Present, McKool Smith
AT&T Services, Inc, Cellco Partnership D/B/A Verizon Wireless, Ericsson, Inc., and Nokia Corporation v. ASUS Technology Licensing, Inc. (IPR)
Consulting for petitioners. Technology related to control signaling in 5G networks. Filed declarations on 6/4/24 and 10/16/24.

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.

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.

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 – Present, 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, in fringement 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.

June 2021 – Dec 2021, Knobbe, Martens, Olson & Bear, LLP
Vocalife LLC v. Amazon.com, Inc., et al., Case No. 2:20-cv-00401-JRG-RSP, EDTX
Consulted for defendant Amazon on claim construction. Stayed pending sister case outcome.
Technology related to echo cancelation and signal enhancement in acoustic systems.

March 2021 – Sept 2021, Wilson Sonsini
Lenovo Holding Co, Inc., et al. v. InterDigital Technology Corp.
IPR. Consulted for InterDigital. Wrote three declarations. Deposed 7/27/21.
Technology related to control signaling in cellular systems.

January 2021 – May 2021, Winston & Strawn, LLP
Ericsson, Inc. v. Samsung Electronics, Ltd., ITC
Consulted for plaintiff. Settled May 2021. No deposition. No declaration filed.
Patents dealt with antenna arrays for 5G/4G base stations, access point signaling, bearer handling.

November 2020 – June 2021, Sheppard Mullin
Hong Kong uCloudlink v. SIMO Holdings, Inc. and Skyroam, Inc., Case No. 18-cv-05031-EMC, NDCA. Consulted for plaintiff uCloudlink on infringement and validity. Deposed (3/26/21). Case settled. Virtual SIM technology.

August 2019 – August 2020; June 2021 – Sept 2021 McKool Smith/Irell & Manella
Optis Wireless Technology, LLC et al. v. Apple, Inc., EDTX, Civ No. 2:19-cv-66
Consulted for plaintiff Optis. Infringement and validity analysis/reports, IPR. Deposed 06/01/20 and testified at trial 8/3/20 – 8/9/20. Re-trial for damages 8/10/21 – 8/16/21.

March 2019 – May 2020 Gibson, Dunn, & Crutcher, LLP
Sol IP v. AT&T, Ericsson, Nokia, Verizon, and Sprint, EDTX, Case No. 2:18-cv-526
Consulted for defendants on patents involving LTE downlink cell search and synchronization signaling. Invalidity, non-infringement analysis/reports, claim construction. No deposition, case settled.

2016 – March 2019 Sidley Austin, LLP
Huawei v. Samsung, NDCA
Case No. 3:16-cv-02787-WHO
Consulted for plaintiff Huawei on original complaint and for defendant Huawei on counterclaims on patents involving control channel signaling, network access, and security. Assisted claim construction, IPR petition and preliminary response, wrote validity and non-infringement reports. Deposed 6/20/18, 7/19/18. Case settled.

2016 Russ, August & Kabat
Core Wireless v. Apple, Court of Northern California, Case No. 6:14-cv-752-JDL
Consulted for plaintiff on patents associated with core network signaling. Wrote infringement and validity reports and rebuttals. Performed source code review and conformance testing. Deposed (8/12/2016). Patent was dropped during down-select before trial.

2015 - 2016 Hueston & Hennigan
Core Wireless v. LG Electronics, Court of Eastern Texas, Case No. 2:14-cv-911-JRG-RSP (lead case), Case No. 2:14-cv-912-JRG-RSP (consolidated)
Consulted for plaintiff on patents on cellular user interface. Present at jury trial (3/2016) and participated in mock jury trial (2/10/2016). Wrote rebuttal expert report on validity and deposed (12/11/2015). Wrote infringement report regarding cellular protocols. Performed source code review and conformance testing. Core Wireless prevailed.

2015 Bunsow De Mory Smith & Allison
Core Wireless v. LG Electronics, Court of Eastern Texas, Case No. 2:14-cv-911-JRG-RSP (lead case), Case No. 2:14-cv-912-JRG-RSP (consolidated) and Core Wireless v. Apple, Case No. 6:14-cv-752-JDL
Consulted for plaintiff on patents associated with core network signaling. Wrote declarations on claim construction. Prepared tutorial to be presented to court. Case handed off to Hueston & Hennigan.

Case Testimony History:

October 2024 – Present, 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.

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 – 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 – Present, 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 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.

March 2021 – Sept 2021, Wilson Sonsini
Lenovo Holding Co, Inc., et al. v. InterDigital Technology Corp.
IPR. Consulted for InterDigital. Technology related to control signaling in cellular systems. Wrote three declarations. Deposed 7/27/21.

November 2020 – June 2021, Sheppard Mullin
Hong Kong uCloudlink v. SIMO Holdings, Inc. and Skyroam, Inc., Case No. 18-cv-05031-EMC, NDCA. Consulted for plaintiff uCloudlink on infringement and validity. Technology related to virtual SIM. Deposed 3/26/21.

August 2019 – August 2020; June 2021 – Sept 2021 McKool Smith/Irell & Manella
Optis Wireless Technology, LLC et al. v. Apple, Inc., EDTX, Civ No. 2:19-cv-66
SEPs – Consulted for plaintiff Optis on control channel MIMO switching, control channel information fields. Infringement and validity analysis/reports, IPR. Deposed 06/01/20 and testified at trial 8/3/20 – 8/9/20. Testified at re-trial for damages 8/10/21 – 8/16/21.

2016 – March 2019 Sidley Austin, LLP
Huawei v. Samsung, NDCA
Case No. 3:16-cv-02787-WHO
Consulted for plaintiff Huawei on original complaint and for defendant Huawei. Assisted claim construction, IPR petition and preliminary response, wrote validity and non-infringement reports. Deposed 6/20/18, and 7/19/18.

2016 Russ, August & Kabat
Core Wireless v. Apple, Court of Northern California, Case No. 6:14-cv-752-JDL
Consulted for plaintiff on patents associated with core network signaling. Wrote infringement and validity reports and rebuttals. Performed source code review and conformance testing. Deposed (8/12/2016). Patent was dropped during down-select before trial.

2015 - 2016 Hueston & Hennigan
Core Wireless v. LG Electronics, Court of Eastern Texas, Case No. 2:14-cv-911-JRG-RSP (lead case), Case No. 2:14-cv-912-JRG-RSP (consolidated)
Consulted for plaintiff on patents on cellular user interface. Present at jury trial (3/2016) and participated in mock jury trial (2/10/2016). Wrote rebuttal expert report on validity and deposed (12/11/2015). Wrote infringement report regarding cellular protocols. Performed source code review and conformance testing. Core Wireless prevailed.

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, "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.

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 Computing.* Submitted July 2023.

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