Sarah Kate Wilson

Electrical and Computer Engineering Department Santa Clara University

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Education

• Stanford University Electrical Engineering Ph.D. 1994

• Stanford University Electrical Engineering M.S. 1987

• Bryn Mawr College Mathematics A.B. 1979

Dissertation

Ph.D. Dissertation: "Digital Audio Broadcasting in a Fading and Dispersive Channel," Advisor: Prof. John M. Cioffi

Academic Honors

1. IEEE Education Society Harriett B. Rigas award for "for excellence in communications engineering, education and promoting equity" 2018.
2. Co-chair of WCNC '17 winner of the 2018 IEEE iCon award for the best IEEE conference of 2017.
3. IEEE Communications Society Joseph LoCicero Award for Exemplary Service to Publications, "For sustained and innovative contributions to Publications", 2017.
4. Outstanding Service Award from the IEEE Communications Women in Communications Engineering (WICE) Committee. December 2014.
5. IEEE Fellow, "for contributions to Orthogonal Frequency Division Multiplexing", 2014.
6. David Packard Junior Fellow, Department of Electrical Engineering, Santa Clara University, Santa Clara, CA, September 2006 – August 2008.
7. Prize from the Royal Institute of Technology for promoting gender equity, December 2003. Organized a women-in-engineering program for the Signals, Sensors and Systems Institution at the Royal Institute of Technology, Sweden.
8. Ruth and Joel Spira teaching award from the Purdue School of Electrical and Computer Engineering for undergraduate and graduate teaching, 1996.
9. Stanford University Electrical Engineering Department Service Award for organizing the Wireless Data Workshop and for teaching Digital Communications, 1993.

Teaching and Professional Experience Academic Positions

1. Professor, Santa Clara University, September 2017 –
2. Acting Associate Dean for Undergraduate Engineering, Winter Quarter 2017, Winter-Spring Quarters 2019.
3. Visiting Associate Professor, ECE Department, Northeastern University, 2013-2014.
4. Associate Professor, Santa Clara University, September 2011-September 2017.
5. Assistant Professor, Santa Clara University, September 2006-August 2011.

6. Visiting Assistant Professor, Department of Electrical Engineering, Stanford University, Stanford, CA, March 2009-August 2009.
7. Guest Professor/Researcher, Division of Signal Processing, Royal Institute of Technology,Sweden, January 2003 –September 2004.
8. Assistant Professor/Associate Professor, Luleå University of Technology, May 1997-June 1999. Promoted to Associate Professor (Docent Degree from Luleå University of Technology) June 2000.
9. Assistant Professor, Purdue University January 1994-May 1997.
10. Guest researcher, Luleå University of Technology Luleå, Sweden, Fall 1994.
11. Research Assistant, Teaching Assistant and Teaching Fellow, Stanford University, September 1989- August 1994.

Industry Experience

1. Expert Witness in a Patent lawsuit for Fish and Richardson, October 2013-2014.
2. Prior art searching for a patent legal case for Fish and Richardson, October-December 2011.
3. Prior art searching for a patent legal case for Reed-Smith, April-May 2009.
4. Consultant, Texas Instruments, October 2005-August 2006.
5. Consultant, Cswitch Corporation, Santa Clara, CA, May, 2005-October 2005.
6. Prior Art Searching and analysis on behalf of twenty top-tier PC, Semiconductor and Retail OEM companies in preparation for defensive patent litigation; lead contact through Atheros Communications, Sunnyvale, CA, November, 2004 – January 2006.
7. Senior Protocol Manager, ArrayComm, Inc., May 2000 – June 2003.
8. Member of Technical Staff, Agilent Technologies, July 1999- May 2000.
9. Signal Processing Engineer, Nellcor, Inc., July 1987- June 1989.
10. Research Engineer, SRI International. January 1985- September 1986.
11. Programmer/Analyst, IIT Research Institute. June 1979- December 1984.

Academic Advising: Graduate and Undergraduate Ph.D. Students

1. Poongo Ponnavaikko, graduated June 2018, co-supervised with Prof. JoAnne Holliday and Prof. Milica Stojanovic. Project: Underwater acoustic wireless sensor networks.
2. Rickard Nilsson, graduated 2002, Luleå University of Technology, Thesis title: “Multicarrier Modulation: Duplexing Design and Interference/Distortion Mitigation”. Rickard was my Ph.D. student from 1997-2000. When I returned to California, Prof. James LeBlanc became his advisor.
3. Frank Sjöberg, graduated 2000, Luleå University of Technology, Thesis title: “The Zipper Duplex Method in Very High Speed Digital Subscriber Lines.”
4. Jan-Jaap van de Beek, graduated 1998, Luleå University of Technology, Thesis title: “Synchronization and Channel Estimation in OFDM Systems”, co-supervised with Prof. Per-Ola Börjesson.
5. Ove Edfors, graduated 1997, Luleå University of Technology, Thesis title: “Low

Complexity Algorithms in Digital Receivers", co-supervised with Prof. Per-Ola Börjesson.

6. Magnus Sandell, graduated 1997, Luleå University of Technology, Thesis title: "Design and Analysis of Receivers for Multicarrier Modulation and Ultrasonic Imaging", co-supervised with Prof. Per-Ola Börjesson.

Publications

Journal Publications

1. Y.M. Aval, S.K. Wilson and M. Stojanovic, "On the Average Achievability Rate of QPSK and DQPSK over Rapidly Fading Channels," *IEEE Access*, May, 2018.
2. P. Ponnavaiko, S.K. Wilson, M. Stojanovic, J. Holliday and K. Yassin, "Delay-constrained Energy Optimization in High-latency Networks," *IEEE Sensors Journal*, May 2017.
3. Y.M. Aval, S.K. Wilson and M. Stojanovic, "On the Achievable Rate of a Class of Acoustic Channels and Practical Power Allocation Strategies for OFDM," *IEEE Journal of Oceanic Engineering*, September 2015, pp. 785-795.
4. G. Lim, S.K. Wilson, L.J. Cimini, Jr. and D.P. Taylor, "On Higher Order Modulations for OFDM in Frequency-Selective Fading Channels," *IEEE Communications Letters*, April 2012, pp. 641-644.
5. D.F. Barros, S.K. Wilson and J.M. Kahn, "Comparison of Orthogonal Frequency Division Multiplexing and Pulse-Amplitude Modulation in Indoor Wireless Links," *IEEE Transactions on Communications*, January 2012, pp. 153-163.
6. S.K. Wilson and J. Holliday, "Scheduling Methods for Multi-user Optical Wireless Asymmetrically-Clipped OFDM," *Journal of Communications and Networks*, December 2011, pp. 655-663.
7. K. Acolatse, Y. Bar-Ness, and S.K. Wilson, "Novel Techniques of Single-Carrier Frequency-Domain Equalization for Optical Wireless Communications," *EURASIP Journal on Advances in Signal Processing*, Volume 2011.
8. S.K. Wilson and J. Armstrong, "Transmitter and Receiver Methods for Improving Asymmetrically-Clipped Optical OFDM," *IEEE Transactions on Wireless Communications*, September 2009, pp. 4561-4567.
9. P. Svedman, S.K. Wilson, L. J. Cimini, Jr. and B. Ottersten, "Opportunistic Beamforming and Scheduling for OFDM Systems", *IEEE Transactions on Communications*, Vol. 55, No. 5, May 2007, pp. 941-952.
10. K. Sayana, S. Gelfand and S.K. Wilson, "Design and Analysis of Coded Multiplexing for the Multiuser OFDM downlink", *IEEE Transactions on Wireless Communications*, Vol. 5, No. 9, September 2006, pp. 2426-2434.
11. R. Nilsson, F. Sjöberg, M. Isaksson, J. M. Cioffi and S.K. Wilson, "Autonomous

synchronization of a DMT-VDSL system in unbundled networks*", IEEE Journal on Selected Areas in Communications: Twisted Pair Transmission,* Vol. 20, No. 5, June 2002, pp. 1055-1063.

12. D. Landström, S.K. Wilson, J-J. van der Beek, P. Ödling and P-O. Börjesson, "Symbol Time Offset Estimation in Coherent OFDM Systems", *IEEE Transactions on Communications,* Vol. 50, No. 4, April 2002, pp. 545-549.
13. M. Lundberg, K. Muhammad, K. Roy and S.K. Wilson, "A Novel Approach to High-Level Switching Activity Modeling with Applications to Low-Power DSP System Synthesis", *IEEE Transactions on Signal Processing*, Vol. 49, No. 12, December 2001, pp. 3157-3167.
14. J-J.van de Beek, P-O. Börjesson, M-L.Boucheret, D. Landström, J. Martinez Arenas, P. Ödling, C. Östberg, M.Wahlqvist, and S.K. Wilson. "Tracking of time and frequency offset in the uplink of an OFDM-based system for UMTS," *IEEE JSAC: Wireless Communications Series,* Vol. 17, No. 11, November 1999, pp. 1900-1914.
15. Frank Sjöberg, Mikael Isaksson, Rickard Nilsson, Per Ödling, Sarah Kate Wilson, and Per Ola Börjesson, "Zipper - a Duplex Method for VDSL based on DMT" , *IEEE Transactions on Communications*, Vol. 47, No. 8, August 1999, pp. 1245-1252.
16. S. K. Wilson and J.M. Cioffi, "Probability Density Functions for Analyzing Multi-Amplitude Constellations in Rayleigh and Ricean Channels", *IEEE Transactions on Communications,* March 1999.
17. O. Edfors, M. Sandell, J.-J. van de Beek, S.K. Wilson, P.O. Börjesson, "Analysis of DFT-based channel estimators for OFDM", *Wireless Personal Communication, Kluwer Academic Publishers*, Vol. 12, No. 1, January 2000, pp. 55-70.
18. J.-J. van de Beek, P. O. Börjesson, M.-L. Boucheret, D. Landström, J. Martinez Arenas, P. Ödling, S.K. Wilson, "Three non-pilot based time- and frequency estimators for OFDM," *Elsevier Science Signal Processing*, Vol. 80, No. 7, 2000.
19. O. Edfors, M. Sandell, J.-J. van de Beek, S.K. Wilson, P.O. Börjesson, "OFDM channel estimation by singular value decomposition", *IEEE Transactions on Communications*, Vol. 46, No. 7, June 1998, pp. 931-939.

Conference Papers

1. R. Borden, P. Nelken, S. Sparagana, S. Thompson, J. Wang, L. Doyle, H. Lee, M. Parker, S.K. Wilson, "Combatting Food Insecurity with Large-scale Aquaponics:: a Case Study in Silicon Valley," accepted to the 2019 IEEE Global Humanitarian Technology Conference (GHTC), 2019.
2. R. Davis, S.K. Wilson, K. Gonzalez, J. Yarp, M. Sinada, and N. Turner-Bandele, "Diversity and Inclusion in Engineering: A Collaboration with the Students", *ASEE CoNECD conference*, Crystal City, April 2018.
3. Y.M. Aval, S.K. Wilson, and M. Stojanovic, "Relay for Data: An underwater race," ITA Workshop, San Diego, February 2018 (Invited paper, not reviewed).
4. OS S. Kumar, A. Amari, OA Dobre, R Venkatesana, and SK Wilson, "A joint technique

for non-linearity compensation in CO-OFDM superchannel systems," Asia Communications and Photonics Conference, OSA, November 2017.

5. OS S. Kumar, OA Dobre, R Venkatesana, SK Wilson, O Omomukuyoa, A Amari, and D Changa, "A spectrally efficient linear polarization coding scheme for fiber nonlinearity compensation in CO-OFDM systems," *Proc. SPIE* 10130, Next-Generation Optical Communication: Components, Sub-Systems, and Systems VI, January 28, 2017.
6. Y. Aval, S.K. Wilson and M. Stojanovic, "Differentially Coherent Detection: Lower Complexity, Higher Capacity?" ITA Workshop, San Diego, February 2016. (Invited paper, not reviewed.)
7. H. Elgala, S.K. Wilson and T.D.C. Little, "Optical Polar OFDM: On the Effect of Time-domain Power Allocation under Power and Dynamic-Range Constraints," IEEE Wireless Communications and Networking Conference (WCNC), 2015, pp. 31-35.
8. Y. Aval, S.K. Wilson and M. Stojanovic, "The Acoustic Channel and Delay: A Tale of Capacity and Loss," ITA Workshop, San Diego, February, 2015, http://ita.ucsd.edu/workshop/15/files/paper/paper_3417.pdf (Invited paper, not reviewed)
9. Y.Aval, S.K.Wilson and M.Stojanovic, ``On Capacity of a Class of Acoustic Channels," in Proc. Underwater Communications and Networking Workshop (Ucomms), Sestri-Levante, Italy, Sept. 2014.
10. S.K. Wilson and M. Stojanovic, "When Does Unequal Power-Loading Make Sense?" Information Theory and Applications Workshop, ITA, San Diego, February, 2014. (invited paper, not reviewed)
11. P. Ponnavaiko, S.K. Wilson, M. Stojanovic and J. Holliday, "Energy Optimization with Delay Constraints in Underwater Acoustic Networks," IEEE Globecom, Atlanta, GA, December 9-13, 2013.
12. DJF Barros, S.K. Wilson and J. Kahn, "Comparison of Multicarrier vs. Single- forIndoor Optical Wireless Links," invited paper, IEEE Photonics 2011 Conference, Arlington, VA, October 9-13, 2011, pp. 294-295.
13. K. Acolatse, Y. Bar-Ness, and S.K. Wilson, "SCFDE with Space-Time Coding for IM/DD Optical Wireless Communication," IEEE Wireless Communications and Networking Conference, WCNC 2011, March 2011, Cancun, Mexico.
14. P. Ponnavaikko, S.K. Wilson, and JoAnne Holliday, Greedy Least Interference Forwarding Algorithm using Directional Antennas for Cellular Ad-hoc Networks, MILCOM, November 2010.
15. S.K. Wilson, "Non-pilot-based synchronization for ACO-OFDM," invited paper, Asilomar Conference on Signals, Systems and Computers, November 2009.
16. P. Ponnavaikko, S.K. Wilson, and JoAnne Holliday, "Relay selection scheme using directional antennas for cellular networks," IEEE Pacific Rim Conference on Communications, Computers and Signal Processing, August 2009.
17. S.K. Wilson and J. Armstrong, "Digital Modulation Techniques for Optical Asymmetrically-Clipped OFDM," WCNC 2008, Las Vegas, April 2008.
18. P. Svedman, L.J. Cimini, Jr., M. Bengtsson, S.K. Wilson and B. Ottersten, "Exploiting

Temporal Channel Correlation in Opportunistic SD-OFDMA" ICC 06.

19. P. Svedman, S.K. Wilson and B. Ottersten, "A QoS Aware Proportional Fair Scheduler for Opportunistic OFDM", VTC Fall 04.
20. S.K. Wilson, P. Svedman and L.J. Cimini, Jr. "A Pruning Scheduler for Multi-user Clustered OFDM Systems", VTC Fall 04.
21. P. Svedman, S.K. Wilson, L.J. Cimini, Jr. and B.Ottersten, "A Simplified Opportunistic Beamforming Feedback and Scheduling Scheme for OFDM", VTC Spring 04.
22. N.Jalden and S.K. Wilson, "Autonomous frequency planning for GSM networks", Networks 2004, Vienna.
23. P. Svedman, S.K. Wilson and B. Ottersten, "A QoS Aware Proportional Fair Scheduler for Opportunistic OFDM", VTC Fall 04.
24. S.K. Wilson, P. Svedman and L.J. Cimini, Jr. "A Pruning Scheduler for Multi-user Clustered OFDM Systems", VTC Fall 04.
25. J.V. Steele, E. Lindskog, T. Chauvin, S.K. Wilson, "Multiple access interference as spatially colored noise", VTC Fall 2002, Vancouver, B.C.
26. F. Sjöberg,R. Nilsson, M. Isaksson, J. Cioffi, S.K. Wilson , "Self-synchronizing a DMT-based VDSL system", ICC 2001, Helsinki, Finland.
27. R. Morrison, L.J. Cimini, S.K. Wilson, "On the Use of a Cyclic Extension in OFDM", VTC Fall 2001, Atlantic City, New Jersey.
28. M. Lundberg, K. Muhammad, K. Roy and S.K. Wilson, "High-level Modeling of Switching Activity with Application to Low-Power DSP System Synthesis", ICASSP '99.
29. R. Nilsson, F. Sjöberg, S. K. Wilson, "Combating Impulse Noise in DMT-based VDSL systems", RVK '99, Sweden.
30. F. Sjöberg, S. K. Wilson, M. Isaksson, "Power Back-off in the Upstream of VDSL", RVK '99, Sweden.
31. D. Landström, S.K. Wilson, Jan-Jaap van de Beek, P. Ödling,P.O. Börjesson, "Symbol time offset estimation in coherent OFDM systems", ICC '99.
32. F. Sjöberg, R. Nilsson, N. Grip, P-O. Börjesson, S.K. Wilson, and P. Ödling, "RFI Suppression in DMT-based VDSL systems", International Conference Telecommunications, ICT'98, Chalkidiki, Greece, June 22-25, 1998.
33. R. Nilsson, F. Sjöberg, O. Edfors, P. Ödling, H. Eriksson, S.K. Wilson, P-O. Börjesson, "A Low Complexity Threshold Detector Making MLSD Decisions in a Multiuser Environment", VTC'98, Ottawa, Canada, May 18-21, 1998.
34. J.-J. van de Beek, P. O. Börjesson, M.-L. Boucheret, D. Landström, J. Martinez Arenas, P. Ödling, C. Östberg, M. Wahlqvist, S.K. Wilson, "On the synchronization of a TDMA-OFDM frequency hopping system for UMTS", Proceedings of the 48th IEEE Vehicular Technology Conference, VTC'98, Ottawa, Ontario, Canada, May 18-21, 1998.
35. J. Seoane, S.K. Wilson and S. Gelfand, "Analysis of the intertone and interblock interference when the length of the cyclic prefix is less than the length of the impulse

response of the channel," Globecom '97, Phoenix, Arizona, November 1997.

36. M. Sandell, S.K. Wilson, and P.O. Börjesson. "Performance analysis of coded OFDM on fading channels with non-ideal interleaving and channel knowledge" VTC'97, Phoenix, Arizona, May 5-7, 1997.
37. M. Isaksson, P. Deutgen, F. Sjöberg, P. Ödling, S.K. Wilson, P.O. Börjesson, "Zipper - a flexible duplex scheme for VDSL" Proceedings of the International Workshop on Copper Wire Access Systems, CWAS'97, pp. 95-99, Budapest, Hungary, October 1997.
38. O. Edfors, M. Sandell,J.J. van de Beek, S.K. Wilson and P.O. Börjesson. "An Application of Singular Value Decomposition to Channel Estimation in OFDM ", VTC '96, Atlanta, Georgia.
39. J-J. v.d. Beek, O. Edfors, M. Sandell, S.K. Wilson and P.O. Börjesson. "On Channel Estimation in OFDM Systems" VTC '95, Chicago, Illinois.
40. S. K. Wilson, R. E. Khayta and J. M. Cioffi. "16 QAM Modulation with Orthogonal Frequency Division Multiplexing in a Rayleigh-Fading Environment." Vehicular Technology Conference VTC '94, Stockholm, Sweden, June 8-10, 1994.
41. S. K. Wilson, M. Mallory, J. A. C. Bingham and J. M. Cioffi. "Erasure Tagging in a Slowly-Rayleigh-Fading Environment." Globecom '94, San Francisco, California.
42. S. K. Wilson and J. M. Cioffi. "Equalization Techniques for Direct-Sequence Code Division Multiple Access Systems in Multipath Channels." International Symposium on Information Theory ISIT '93, San Antonio, Texas, January 17- 22, 1993.
43. S. K. Wilson and J. M. Cioffi. "Multi-Dimensional Equalization for Adjacent Channel Interference." International Conference on Communications ICC ' 91, Denver, Colorado, June 23-26, 1991.

Book

S.K. Wilson and S.G. Wilson, editors, *Transmission Techniques for Digital Communications*, August 2016 by Elsevier Academic Press, Ezio Biglieri, Editor-in-Chief.

Book Chapters

1. S.K. Wilson and O. Dobre, "Chapter 9: Multicarrier Modulation in a Frequency Selective Channel," in *Transmission Techniques for Digital Communications*, August, 2016 by Elsevier Academic Press.
2. S.K. Wilson, "Synchronization in OFDM" for *OFDM (Orthogonal Frequency Division Multiplexing) for Wireless Communications*, Geoffrey Li and Gordon Stuber editors, Springer, January 2006.
3. J.-J. van de Beek, P. Ödling, S.K. Wilson and P.O. Börjesson, "OFDM Orthogonal Frequency-Division Multiplexing", *URSI's Review of Radio Science*, August 1999.

Patents

1. Sarah Kate Wilson, Todd Henry Chauvin, Adam Bruce Kerr, Christopher Brunner, Mitchell D. Trott, Athanasios A. Kasapi, Erik David Lindskog, "System and related methods for clustering multi-point communication targets," US Patent No. 6973314

issued December 6, 2005 and US Patent No. 7299073, issued November 20, 2007.

2. Frank Sjöberg, Sarah Kate Wilson, Rickard Nilsson, Daniel Bengtsson, Mikael Isaksson, Tomas Nordstrom, Per Odling, Gunnar Bahlenberg, Magnus Johansson, Lennart Olsson, Sven-Goran Okvist, "VDSL Transmission Systems", US Patent No. 7050489, Issued May 23, 2006.
3. Mikael Isaksson, Magnus Johansson, Lennart Olsson, Tomas Stefansson, Gunnar Bahlenberg, Anders Isaksson, Goran Okvist, Lis-Marie Ljungren, Daniel Bengtsson, Sven-Rule Olofsson, Joachim Johansson, Per-Ola Borjesson, Niklas Grip, Rickard Nilsson, Frank Sjoberg, Sarah Kate Wilson and Per Odling, "Subscriber Line Transmission Systems," US Patent No. 6738440, issued May 18, 2004.

Other Articles

1. A. Goldsmith and K. Wilson, "Conference Report: WCNC '17 wins iCon annual award as most innovative IEEE conference," *IEEE Communications Magazine*, October 2018.
2. S. Kishore, S.K. Wilson, O. Dobre, Z. Ahmadian, K. Andronicos, S. Chorti, " Final report on the Second Women's Workshop on Communications and Signal Processing," http://archive.dimacs.rutgers.edu/Workshops/SignalProcessing/Report-Second-Women's-Workshop-on-CommunicationandSignal-Processing.pdf, 2014.
3. S. Benedetto, S.K. Wilson, L. Cimini, S.Gorshe, E. Neira, "Publications: one of the jewels in the crown [The President's Page]", *IEEE Communications Magazine*, May 2014.
4. S. Hemami, U. Mitra, M. Stojanovic, S.K. Wilson, "Women's Workshop on Communications and Signal Processing," http://www.birs.ca/workshops/2012/12w2147/report12w2147.pdf, July 2012.
5. S.K. Wilson, "Review Appreciation Program," Editorial in *IEEE Communications Letters*, March 2011.
6. K. Wilson, "Milica Stojanovic and Zoran Zvonar," *IEEE Communications Magazine*, November 2010.

Invited Lectures and Panels

1. Keynote speaker at IEEE Vehicular Technology Diversity Workshop, "Reflections of a female wireless communications engineer," September 2019, Honolulu, Hawaii.
2. Panel Participant on "Women in Technology in Silicon Valley," Bryn Mawr Alumnae Association, February 2017, Google, Mountain View.
3. Panel Participant on "Academia-Industry: The roadmap for Open Innovation," July 2015, 14th Canadian Workshop on Information Theory, Newfoundland, Canada.
4. "Shine a Light: Optical Wireless Communications," Invited Talk, July 2015, 14th Canadian Workshop on Information Theory, Newfoundland, Canada.
5. "Tripping the Light Fantastic: Optical Wireless Communications," Keynote Talk, June 2015, International Workshop on Telecommunications, Inatel, Santa Rita de Sapucai,

Brazil.

6. "Go Towards the Light: Optical Wireless Communications," March 2014, Boston University ECE Seminar.
7. "Blinded by the Light: Wireless Optical Communications," November 2013, Bryn Mawr and Haverford Math Colloquium, Bryn Mawr College.
8. Panel participant on Women in Engineering, Presentation High School, February 2012.
9. "Blinded by the Light: OFDM and Wireless Optical Communications", Women's Workshop on Communications and Signal Processing, Banff International Research Station, July 14, 2012.
10. Panel participant, "Unveiling the Myth of IEEE Journals: Meet the EiCs", IEEE Globecom 2011, Houston, Texas, December 2011.
11. Invited Seminar in the "What I Know Now: Letters to my Younger Self," part of the E311 Engineering Perspectives Seminar Series, Stanford University, January 2011.
12. "Blinded by the Light: Light Intensity Modulation and OFDM", Northeastern University, Electrical and Computer Engineering Department Seminar Series, April, 8 2010.
13. "Shine a Light: Diffuse Optical Wireless Transmission and OFDM," University of Washington, Electrical Engineering Graduate Colloquium, May 8, 2009.
14. "Light the Way: Alternative frequencies and modulations for local area networks,"Joint Workshop on Communications and Coding (JWCC08), St. Helena, California. JWCC08 is an invitation only workshop, November 2008.
15. "Transceiver techniques for bit-loading for asymmetrically clipped optical wireless OFDM", Royal Institute of Technology, Stockholm, Sweden, August 26, 2008.
16. "Topics in Asymmetrically-Clipped Optical Wireless OFDM", Cornell University, April 18, 2008.
17. "Orthogonal Frequency Division Multiplexing, Packet Data Networks and Scheduling", Simon Fraser University, Vancouver, BC, Canada, 2007.
18. "Tutorial on OFDM," Swedish Patent Office, Stockholm, Sweden, 2004.
19. "Topics in Multi-user Diversity and OFDM," Uppsala University, Sweden, 2003.
20. "Multi-user Diversity and OFDM," Telecommunications Research Center, Vienna, Austria, April 30,2003.
21. "A method for modeling spatially-colored noise in WCDMA systems using antenna arrays," Chalmers University, Sweden, 2002.
22. "Channel Estimation and Synchronization in OFDM", IEEE Communication Theory Workshop, Captiva Island, 1998.
23. "An overview of OFDM," A Symposium on Women in Engineering at Lund University.
24. Topics in OFDM", Notre Dame University, South Bend, Indiana, 1997.

Service to the University and the Profession

Santa Clara University Service

1. Faculty Advisor for UPWARDS U.N.I.T.E.S. a joint program between UPWARDS, Intel and Santa Clara to promote women in engineering.
2. Co-led a Teaching for Diversity and Inclusion Workshop with Prof. Ahmed Amer at Santa Clara University, Spring 2019.
3. Faculty Senate Past-President (Term, July 2019-July 2020.)
4. Member of the University Coordinating Committee (UCC) July 2018-July 2019.
5. Faculty Senate President (Term, July 2018-July 2019).
6. Faculty Senate President Elect, (July 2017-June 2018).
7. Santa Clara University Diversity and Inclusion in Science and Engineering (DISE) committee member, 2017-Present.
8. Member of the University Budget Committee (June 2017-June 2018). (ex-officio as Faculty Senate Professor Elect.
9. Member of the University Planning Action Council (2015-2017)
10. Participant in Jesuit Conversations at Santa Clara (2014-2015).
11. ABET coordinator for the Department of Electrical Engineering (2014-2016)
12. Member of the School of Engineering Rank and Tenure Committee (2014-2016)
13. Advisor to the Society of Hispanic Professional Engineers, 2012-2013.
14. University Faculty Judicial Board, 2012-2013.
15. Small Group Instructional Response (SGIR) facilitator for faculty. 2011-2013.
16. School of Engineering Centennial Committee, 2010-2012.
17. Bannan Institute Steering Committee, 2009-2012.
18. Ignatian Faculty Forum, 2008-2011.
19. Society of Women Engineers (SWE) Faculty Advisor. (2006-2008) 15. One-step-ahead program: Worked with SWE volunteers for once-a-month Saturday programs to interest high school girls in Engineering. (2007-2008) 16. School of Engineering Computer Committee. (2006-2008)
20. Preview Day Tour Guide, annually.
21. SEEDS program, SES program and Sally Ride Festival: all programs designed to teach high school students about engineering. (2006-2007, 2016, 2017)
22. Faculty Senate Representative. (2006-2009)

Professional Service

1. Member of the IEEE Society and Council Review Committee, 2020-Present
2. Member of the IEEE Conference Committee, 2020-Present
3. Co-chair of the 2nd Annual *IEEE VTC Diversity Workshop*, 2020.
4. Member of the IEEE Communications Society Awards Committee, 2019-Present.
5. External Reviewer for the Southern Methodist University department of Electrical Engineering, March 2019.
6. Member of the Ad Hoc IEEE Conference Open Access Committee, 2018-Present.
7. Member of the IEEE Conference Tools Committee, 2018-Present,
8. Member of the IEEE Conference Publications Committee, 2018-2019.

9. Member of the IEEE Communications Society Wireless Communications and Networks (WCNC) Steering Committee, 2018-Present.
10. Equity Champion for a Canada Excellence Research Chair review panel, Ottawa, September 15, 2017-2018.
11. Panelist for the first Launching Academics on the Tenure Track: an Intentional Community in Engineering (LATTICE) Symposium, Bainbridge Island, Washington, May 18-21, 2017.
12. Member of the Advisory Board for the NSF-funded project: Launching Academics on the Tenure Track: an Intentional Community in Engineering (LATTICE), 2016-Present
13. Member of the IEEE Awards Board Nominations and Appointments Committee, 2016-Present.
14. Vice President of Publications for the IEEE Communications Society, term 2014-2015.
15. General Co-chair (with Andrea Goldsmith of Stanford University) of the IEEE Wireless Communications and Networking (WCNC) 2017, San Francisco.
16. Co-organizer of the Second Women's Workshop on Communications and Signal Processing held in Princeton, July 16-18, 2014.
17. Member of the IEEE Industrial Innovation Award Committee, 2014-2016.
18. Co-organizer of the First Women's Workshop on Communications and Signal Processing, Banff, Alberta, Canada, July 13-July 15, 2012.
19. Director of Journals, IEEE Communications Society, 2012-2013.
20. Member of the IEEE Teaching Award Committee, 2011-2012. Chair of the Committee 2013-2014. Past Chair of the Committee 2015.
21. Chair of the Women in Communications Engineering (WICE) committee for the IEEE Communications Society, 2011-2012.
22. Chair of the IEEE Wireless Communications Letters Steering Committee 2011.
23. Member of the IEEE Communications Society, ComSoc 2020 Committee.
24. Elected to the IEEE Communications Society Board of Governors as a Member-at-Large; 2010-2012.
25. Member of the IEEE Communications Society Board for On-line Content 2010-2012.
26. Member of the IEEE Communications Society Awards Committee, 2010-2012.
27. Editor-in-Chief of *IEEE Communications Letters*, January 2009-December 2011.
28. Associate Editor for the *Journal of Communications and Networks*, 2007-2009, IEEE Transactions on Communications, 2003-2008, IEEE Communications Letters, 2003-2008, IEEE Transactions on Wireless Communications, 1998-2002
29. Vice-chair for the Communication Theory Symposium, of the IEEE International conference: Globecom 2005.
30. Founded and organized the women-in-engineering program at the Royal Institute of Technology, Stockholm, Sweden, 2003-3004.

31. Program Committee Member for: VTC Fall 2002, Globecom 2002 and Globecom 2004 Communications Theory Symposium, ISSTA 2008, ICC 08 and 09, WCNC 2008 and 2009, and Globecom 2008 Wireless Communications, 2nd IEEE Optical Wireless Communications.