CV highlights - Georgios B. Giannakis, DTC Director
ECE, McKnight Presidential Chair (last update on 04/29/2021)

I. Leadership and administrative roles

1) Digital Technology Center (DTC) Director: *College-wide, cross-disciplinary research center, University of Minnesota* (2008-present)
   a) Managed 12 administrative staff; space; seed funds; and endowed chairs;
   b) Spearheaded externally sponsored projects; facilitated resource allocation; and coordinated summer internships, industry partnerships, fellowships, and seminar series;
   c) Doubled DTC researchers (100 graduate students; 20+ postdoctoral fellows; 30+ research visitors; and 50 affiliated faculty)
   d) Increased by a factor of five publications, patents, proposals, and funding (up to $4M/yr)
   e) Broadened research spectrum to include Data Science, Network Science, Renewables, Grid, Environmental, and Health Informatics;
   f) Expanded cross-departmental/college partnerships to include the College of Liberal Arts; School of Public Affairs; Business School; Chemical Engineering, and Neuroscience;
   g) Enhanced community outreach (Robotics Tech Camp; Lab tours for middle and high school students; and Summer school on bioinformatics)

2) Major posts in professional society: *Institute of Electrical and Electronic Engineers (IEEE) IEEE Signal Processing and Communication Societie*s (SPS and ComSoc)
   a) IEEE Fellow and IEEE Proceedings Committee Member
   b) Board of Governors member; and Editor-in-Chief (SPS)
   c) Chair of Steering and Technical Committees (SPS and ComSoc)
   d) General Conference Chair, including the *IEEE Data Science Workshop*, 2019

3) Multi-university projects and proposals
   a) Army Research Laboratory, Collaborative Technology Alliance; Technical Area Lead
   b) Medium- and large-size proposals to the National Science Foundation, NIH, DoD

4) Board of Regents elected member (University of Patras, Greece, 2014-2017)

5) Hellenic Quality Assurance and Accreditation Agency, Ministry of Education, Greece

6) Research group: 12 Ph.D. students; 4 post-doctoral researchers; and 4 visitors (20 members over the last 25 years; currently downsized by 70%); now 4 PhDs + 2 postdocs.

II. Funding

1) Raised as PI or Co-PI more than 17M in 27 years (very high for SPS researchers);
2) Diverse funding sources: NSF, NIH, DoE, DoD (AFOSR, ARO, ONR), and Industry;
3) Spearheaded the research center he directed to raise 35M over the last 10 years.

III. Teaching and mentoring

1) IEEE ComSoc Education Award (2019); School-level Teaching Awards; taught 15 (under) graduate classes; and wrote two research monographs taught widely; (avg. evals. 5/6);
2) Served as a Distinguished Lecturer of the IEEE, and delivered more than 100 plenary or keynote speeches and 50 tutorial talks attended by hundreds of graduate students;
3) Mentored and awarded 55 PhDs in the last 32 years (1.8 per year) with *documented diversity* in gender and race: 32/52 faculty members; 20/52 under-represented (3 African-American, 4 Hispanic, 12 Female); 12/52 IEEE Fellows; plus 35MSc and 15BSc Theses.
4) Mentored 25 postdocs (14/25 are now faculty members; 11 are now IEEE Fellows).

IV. Research, Impact, and Visibility

1) Academia Europaea (Informatics Section) Member (2020);
2) European Assoc. for Signal Proc. (EURASIP) `Athanasios Papoulis' Society Award (2020);
3) European Academy of Sciences (EurASc) Fellow (2020);
4) IEEE `Norbert Wiener' Signal Processing Society Award (2019);
5) National Academy of Inventors (NAI) Fellow (2019);
6) IEEE Technical Field 'Fourier' Award; (first recipient in 2015);
7) Technical achievement awards from the IEEE Signal Processing Society (SPS) in 2000; and from the European Association for Signal Processing (EURASIP) Society in 2005;
8) Ten (10) best journal paper awards; 8 from IEEE-SPS and Communication Soc. (ComSoc); highest number of paper awards in SPS; plus 8 best conference paper awards;
9) Highest h-index (148) within SPS and ComSoc; and top 17 across Engineering and Computer Science worldwide. Google Scholar citations: more than 80,000;
10) More than 1,260 publications (480 journal+780 conf.); 26 book chaps.; 34 patents issued;
11) School-level research awards; ADC Chair and McKnight Presidential Chair, UMN;
12) Honorary Doctorate Degrees from U. of Patras and U. of Peloponnese, Greece (2018);
13) Professorships: Zhejiang U. (Distinguished); Fudan U. (Fellow); BIT (Advising), China.

Full CV downloadable from URL: http://www.dtc.umn.edu/s/resources/gg_cv.pdf

Biosketch available in Wikipedia URL: https://en.wikipedia.org/wiki/Georgios_B._Giannakis

CURRICULUM VITAE

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Updated: April 29, 2021

PROFESSIONAL OBJECTIVE

Leadership, teaching, and research

➢ Research areas of expertise

Signal processing, communications and networking, estimation, detection, time-series analysis, and machine learning. Past areas have included: (poly)spectra, wavelets, cyclostationary, and non-Gaussian signal analysis with applications to equalization, sensor arrays and image processing.

➢ Current research topics

Data Science, and Network Science with applications to IoT, brain, and power networks.

EDUCATION

1984 - 1986: *Ph.D. in Electrical Engineering*, University of Southern California, Los Angeles, CA

1984 - 1986: *M.Sc. in Mathematics*, University of Southern California, Los Angeles, CA

1982 - 1983: *M.Sc. in Electrical Engineering*, University of Southern California, Los Angeles, CA

1976 - 1981: *5-year Diploma in Electrical & Electronic Engr.*, Ntl. Tech. Univ. of Athens, Greece

PROFESSIONAL EMPLOYMENT HISTORY

2016 - Pres.: *McKnight Presidential Chair*, University of Minnesota (UMN)

2008 - Pres.: *Director*, Digital Technology Center, UMN

2001 - Pres.: *ADC Chair in Wireless Telecomm.*, Dept. of Electrical & Comp. Engr. (ECE), UMN

1999 - 2001: *Professor*, Dept. of ECE, UMN

1998 - 1999: *Director*, Communications, Controls, & Signal Proc. Lab, EE, Univ. of Virginia (UVA)

1997 - 1999: *Professor*, Dept. of Electrical Engr., University of Virginia

1992 - 1996: *Associate Professor*, Dept. of Electrical Engr., University of Virginia

1987 - 1991: *Assistant Professor*, Dept. of Electrical Engr., University of Virginia

1986 - 1987: *Instructor & Research Associate*, EE-Systems Dept., Univ. of Southern Cal. (USC)

1982 - 1986: *Research Assistant*, EE-Systems Department, University of Southern California

1982 - 1985: *Teaching Assistant / Grader*, EE-Systems Dept., University of Southern California

1981 - 1982: *Instructor* for a private educational center, Athens, Greece.

LEADERSHIP

➢ Digital Technology Center (DTC) Director, U. of Minnesota, 2008-Present

College-wide, cross-disciplinary, multi-departmental research center with *mission* to foster breakthrough, inter-disciplinary research and partnerships addressing the evolving challenges of our Digital Future.

- ▷ Managed personnel (12 admin. staff), resources (seed funds, fellowships, endowed chairs), and space;
- ▷ Spearheaded externally sponsored projects, and facilitated industry-university partnerships;
- ▷ Effected training through graduate student fellowships, internships, and diverse seminar series;
- ▷ Doubled DTC researchers (100 graduate students; 20+ postdoctoral fellows; 30+ research visitors; and 50 affiliated faculty)
- ▷ Increased by a *factor of five* publications, patents, proposals, and funding (up to $4M per year)
- ▷ Broadened research spectrum to include Data Science, Network Science, Renewables, Grid, Environmental, and Health Informatics;
- ▷ Expanded cross-departmental and cross-college partnerships to include the College of Liberal Arts; School of Public Affairs; Business School; Chemical Engineering, and Neuroscience;
- ▷ Enhanced community outreach (Robotics Tech Camp; Lab tours for middle and high school students; and Summer school on bioinformatics)

➢ Major posts in professional society: Institute of Electrical and Electronic Engineers (IEEE)

IEEE Signal Processing and Communication Societies (SPS and ComSoc)

- ▷ IEEE Fellow and IEEE Proceedings Committee Member
- ▷ Board of Governors member; Editor-in-Chief; Nominations and Appointments Committee (SPS)
- ▷ Chair of Steering and Technical Committees (SPS and ComSoc)
- ▷ General Conference Chair, including the *IEEE Data Science Workshop*, Minneapolis, MN, June 2019

➢ Multi-university projects and proposals

- ▷ Army Research Laboratory, Collaborative Technology Alliance; Technical Area Lead (2000-2009)
- ▷ Medium- and large-size proposals to the Ntl. Science Foundation (NSF), Ntl. Inst. of Health (NIH), and Dept. of Defense (DoD)

➢ Other major leadership roles

- ▷ Board of Regents elected member, University of Patras, Greece, (2013-2017)
- ▷ Hellenic Quality Assurance and Accreditation Agency, Ministry of Education, Greece (2012-Present)
- ▷ Research group leader (SPiNCoM): 12 Ph.D. students; 4 postdocs; 4 visitors (about 20 members per year over the last 25 years); currently down by 70%; 4 PhD students and 2 postdocs)

HONORS and AWARDS

☆ *Academia Europaea* (Informatics Section) Member, (2020).

☆ *European Association for Signal Processing (EURASIP) 'Athanasios Papoulis' Society Award*, (2020) "For outstanding teaching, research, educational tools, and mentorship of graduate students in Signal Processing, Wireless Communications, and Data Science."

☆ *European Academy of Sciences (EuraASc) Fellow*, (2020) "For fundamental contributions to statistical signal processing, especially for wireless communications, distributed algorithms for sensor networks, cross-layer network designs, and patents influencing commercial wireless standards."

☆ *IEEE Signal Processing 'Norbert Wiener' Society Award*, (2019) "For fundamental contributions to statistical signal processing, especially for networking and communications, and for outstanding mentoring of young researchers."

☆ *US National Academy of Inventors (NAI) Fellow*, (2019) "For having demonstrated a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on the quality of life, economic development, and welfare of society."

☆ *IEEE Communications Society Education Award*, (2019)[1] "For excellent teaching, educational tools in Wireless Communications, and mentorship of graduate students with outstanding careers in academia, government, and industry."

☆ *Fellow*, Fudan University, P. R. China (2018).

☆ *Distinguished Professorship*, Zejiang U., P. R. China (2018).

☆ *Honorary Doctorate*, Dept. of Computer Engr. & Informatics, and the Dept. of ECE, Polytechnic School, University of Patras, Greece (2018).

☆ *Honorary Doctorate*, Dept. of Informatics & Telecommunications, University of Peloponnese, Tripoli, Greece (2018).

☆ *Frontiers of Information Technology and Electronic Engineering Best Paper Award*, 2021, for the paper co-authored with G. Wang, J. Chen, and J. Sun, published in the January 2019 issue of FITEE.

☆ *IEEE Signal Processing Society's Paper Award*, 2018, (awarded to co-author M. Mardani) for the paper published in the May 2015 issue of the IEEE Trans. on Signal Processing.

☆ *Advising Professorship*, Beijing Institute of Technology, P. R. China (2017).

☆ *McKnight Presidential Chair*, [2] University of Minnesota (2016).

[1] Recognizes distinguished and significant contributions to education within the Society's technical scope. Nominees are judged by a career of meritorious achievement as exemplified by the writing of scholarly books and texts, course materials, and papers on education; inspirational and innovative teaching; and creativity in the development of new curricula and methodology.

[2] Presidential Endowed Chair acknowledges the critical contributions of important University faculty who have distinguished themselves and their departments in the missions of research, education and public engagement; see also https://twin-cities.umn.edu/news-events/georgios-giannakis-awarded-prestigious-mcknight-presidential-endowed-chair

☆ *Technical Field Award - IEEE Fourier Award*, (2015)[3] Inaugural recipient worldwide "For contributions to the theory and practice of statistical signal processing with applications to wireless communications."

☆ *Board of Regents*, University of Patras, Greece; elected member (2013-2016).

☆ *IEEE Signal Processing Society's Best Paper Award*, 2011; for the paper (co-authored with P. Xia) that was published in the May 2006 issue of the IEEE Transactions on Signal Processing.

☆ *EURASIP's Best Paper Award*, 2009; for the paper (co-authored with P. Anghel and Z. Wang) that was published in the February 2005 issue of the Journal for Applied Signal Processing.

☆ *Fellow of the European Association for Signal Processing* (EURASIP), 2008; the association's most prestigious honor to recognize outstanding achievements of its members and volunteers.

☆ *Highly Cited Researcher*, included in the Thomson ISI Web of Knowledge List of Highly Cited Researchers in Comp. Science and Engrg., 2007; with an **h-index=148** (top in the IEEE Signal Processing Society; and **top 17** (top 13) across Eng. and Computer Science authors worldwide (nationwide)).

☆ *Distinguished Lecturer of the IEEE*, Signal Processing Society, 2006-2008. Invited by 20 chapters worldwide to deliver lectures on multi-carrier, ultra-wideband and space-time coded wireless communications, and distributed estimation-detection using wireless sensor networks.

☆ *Technical Achievement Award*, The European Association for Signal, Speech and Image Processing (EURASIP), 2005. This is the highest award given to an individual by EURASIP in recognition of fundamental contributions to the advancement of science.

☆ *G. W. Taylor Award for Distinguished Research*, Information Technology, University of Minnesota, 2004; "For outstanding contributions to telecommunications, including wireless systems and networks".

☆ *IEEE Signal Processing Society's Technical Achievement Award* [4], 2000, "For fundamental contributions to non-Gaussian and non-stationary signal analysis, system identification, and equalization of single- and multi-user communication systems."

☆ *IEEE Communications Society's Gugliermo Marconi Prize Paper Award*, 2004; for the paper (co-authored with Ph.D. students Y. Xin and Z. Wang) that was published in the March 2003 issue of the IEEE Transactions on Wireless Communications.

☆ *IEEE Signal Processing Society's SP Magazine Best Paper Award*, 2003; for the paper (co-authored with Ph.D. student Z. Wang) that was published in the May 2000 issue of the IEEE Signal Processing Magazine.

☆ *IEEE Signal Processing Society's Best Paper Award*, 2001; for the paper (co-authored with N. Sidiropoulos and R. Bro) that was published in the August 2000 issue of the IEEE Transactions on Signal Processing.

[3]Selection criteria: Impact on the field of signal processing technology, including innovation; leadership; and seminal contributions as evidenced by publications or patents or transition to practice.

[4]Honors a person who, over a period of years, has made outstanding technical contributions to the theory and/or practice in technical areas within the scope of the IEEE-SP Society, as demonstrated by publications, patents, or recognized impact on the field.

☆ *IEEE Signal Processing Society's Best Paper Award*, 2000; for the paper (co-authored with A. Scaglione and S. Barbarossa) that was published in the July 1999 issue of the IEEE Transactions on Signal Processing.

☆ *Asilomar Conference Appreciation Plaque* for Technical Service, 2000.

☆ *Board of Governors*, IEEE SP Society, elected member (2001-2004).

☆ *Editorial Board* of the Proceedings of the IEEE, elected member (2000-2003).

☆ *IEEE Fellow Election Committee*, elected member (1999-2002).

☆ *IEEE Signal Processing Society's Paper Award*, 1998, (under 30 years old category; awarded to co-author M. K. Tsatsanis) for the paper published in the August 1995 issue of the IEEE Transactions on Signal Processing.

☆ *IEEE Fellow*, 1996-97, "For contributions to System Identification and Statistical Signal Processing."

☆ *IEEE Signal Processing Society's Young Author Paper Award*, 1992, for the paper (co-authored with J. M. Mendel) published in the March 1989 issue of the IEEE Transactions on Acoustics, Speech, and Signal Processing.

☆ *Outstanding Young Faculty Teaching Award*, Department of Electrical Engineering, University of Virginia, 1992.

☆ *Institutional Junior Faculty Research Award*, School of Engineering, University of Virginia, 1988.

☆ *Best Conference Paper Award* in Identification Session, American Control Conference, 1986 and 1988.

☆ *Best Student Paper Awards* (9 in the last 20 years) won by student co-authors in Wireless Symposium, ICASSP, CROWNCOM, KDD, and Asilomar Conferences.

☆ *City of Corinth excellence award* for top grade in 1976 Entrance Examination of Greek Universities.

PAST, CURRENT, AND PENDING RESEARCH FUNDING

➢ **Summary figures: $11,872,323 (as PI); $4,861,537 (as co-PI); Total amount: $16,733,860**

Past

PA1. *Harry Diamond Labs* ($35,000), "Optical Triple Correlators," October 1988 - November 1989.

PA2. *Univ. of Virginia: Dean's Research Initiation Grant*, ($9,000 no overhead), "Adaptive algorithms for neural networks," October 1989-September 1990.

PA3. *Harry Diamond Labs* ($40,000), "Signal and image detection and classification using higher-order statistics," October 1989 - July 1990.

PA4. *Army Research Labs* ($50,000), "Channel equalization and array processing using higher-order correlations," November 1989 - October 1990.

PA5. *Army Research Labs* ($91,000), "Research in higher-order spectral analysis," January 1991 - December 1991.

PA6. *Dept. of Pediatrics, Health Sciences Center, Univ. of Virginia*, ($15,000), "Signal processing architectures for neonatal heart rate variability tests," January 1992-December 1992.

PA7. *Army Research Labs* ($45,000), "Canceling platform noise and detection of helicopter acoustic signals," January 1992 - December 1993.

PA8. *Office of Naval Research*, ($20,000), "Intl. Workshop on Higher-Order Statistics," (November 1992 - August 1993; ONR/Math. Div. N00014-93-1-0065.

PA9. *Army Research Office*, ($7,000), "Intl. Workshop on Higher-Order Statistics," May 1993 - September 1993; DAAH04-93-G-0180.

PA10. *National Science Foundation*, ($90,000), "Optimal multiresolution analysis in statistical signal processing," July 1992 - July 1995; NSF/MIPS - Research Initiation Award.

PA11. *Office of Naval Research*, ($179,000), "Polyspectral algorithms for optimal processing of cyclostationary acoustic signals," July 1993 - October 1995; ONR Grant No. N00014-93-1-0485.

PA12. *Army Research Office*, ($10,000), "8th Intl. Workshop on Statistical Signal and Array Processing," May 1, 1996 - April 30, 1997; ARO Grant No. DAAH04-96-1-0171.

PA13. *Office of Naval Research*, ($10,000), "8th Intl. Workshop on Statistical Signal and Array Processing," May 1, 1996 - April 30, 1997; ONR Grant No. N00014-96-1-0725.

PA14. *Harbor Branch, Oceanographic Inst., Inc.*, ($20,000), "Propagation modeling, characterization, and equalization of underwater acoustic channels," December 1, 1996 - November 30, 1997.

PA15. National Science Foundation (CISE/MIPS), ($171,242), "Estimation and equalization of time-varying channels," July 1995 - May 1999; NSF Grant No. MIP 9424305.

PA16. *Office of Naval Research* (AASERT), ($191,614), "Applications of cyclostationarity in communications and signal analysis," May 1, 1995 - September 30, 1998; ONR Grant No. N00014-95-1-0908.

PA17. *Office of Naval Research*, ($296,347), "Parametric modeling of nonstationary signals and identification of nonlinear time-varying channels," October 1995 - October 1999 ONR Grant No. N00014-93-1-0485.

PA18. *DURIP/ONR*, ($145,429), "Instrumentation for Research in Wireless Communications," 1997-1998; co-PI with Dr. H. Liu (PI).

PA19. *Office of Naval Research*, ($60,000), "PARAFAC Space-Time Processing for Circular Ring Arrays," May 1999 - December 1999; ONR Grant No. N00014-99-1-0693; PI with co-PI N. Sidiropoulos.

PA20. *Army Research Lab*, ($25,000), "Multipath mitigation in frequency-hopping systems," April 1999 - May 2001; DOD Grant no. ARL-7850-98.

PA21. *Army Research Office*, ($297,346), "Algorithm Development and Experimental Evaluation of Blind Equalizers for Rapidly Varying Channels with Antenna Arrays," April 1998 - May 2001; ARO Grant no. DAAG55-98-1-0336.

PA22. *National Science Foundation - CISE/CNRS (Communications and Networking)*, ($255,000), "Design of User Codes and Low-Complexity CDMA Receivers for MUI Elimination in Unknown Multipath," July 1, 1998 - June 30, 2001; NSF CCR grant no. 9805350.

PA23. *General Dynamics, MN*, ($25,000), "Frequency-Hopped Generalized Multi-Carrier Transceivers for Multi-User Communications," October 1, 2001 - May 31, 2002.

PA24. *National Science Foundation - Electrical and Communications Systems Div*. ($925,000), "Mobile Communications and Networking: Low Power and Low Complexity Transceivers for Wireless Multimedia Transmissions," September 1, 1999 - August 31, 2002; NSF Wireless Initiative grant no. 9979443; PI with 4 co-PIs: S. Alouini, M. Kaveh, J. Kieffer, and A. Tewfik.

PA25. *ARL Collaborative Technology Alliance*, ($250,000), "Precoding, Space-Time Coding, and Turbo-Decoding in FH Communications," October 1, 2001 - September 2002; PI with N. Sidiropoulos co-PI.

PA26. *ETRI, Korea*, ($50,000), "Space-Time-Frequency Coding for MIMO OFDM," May 1, 2002 - March 31, 2003.

PA27. *ARL Collaborative Technology Alliance*, ($350,000), "Precoding, Space-Time Coding, and Turbo-Decoding in FH Communications," October 1, 2002 - September 2003; PI.

PA28. *National Science Foundation - CISE/SPS (Signal Processing)*, ($350,000), "Chip-interleaved Block-Spread Code Division Multiple Access," May 1, 2001 - April 30, 2004; NSF SPS grant no. 0105612.

PA29. *ARL Collaborative Technology Alliance*, ($344,000), "Precoding, Space-Time Coding, and Turbo-Decoding in FH Communications," October 1, 2003 - September 2004; PI.

PA30. *ETRI, Korea*, ($100,000), "Multicarrier MIMO Communications for High-Speed Mobile Cellular Access," May 1, 2005 - December 31, 2006.

PA31. *ARL Collaborative Technology Alliance*, ($344,000), "Precoding, Space-Time Coding, and Turbo-Decoding in FH Communications," October 1, 2004 - September 2005; PI.

PA32. *ARL Collaborative Technology Alliance*, ($325,000), "Precoding, Space-Time Coding, and Turbo-Decoding in FH Communications," October 1, 2005 - September 2006; PI.

PA33. *ARL Collaborative Technology Alliance*, ($300,000), "Precoding, Space-Time Coding, and Turbo-Decoding in FH Communications," October 1, 2006 - September 2007; PI.

PA34. *ARL Collaborative Technology Alliance*, ($280,000), "Precoding, Space-Time Coding, and Turbo-Decoding in FH Communications," October 1, 2007 - September 2008; PI.

PA35. *National Science Foundation - FMF Regular*, ($450,906) "Waveform Diversity for Wireless Communications," August 1, 2005 - July 30, 2008; co-PI with M. Zoltowski, Purdue Univ.; Giannakis' part 71K/yr.

PA36. *Army Research Office*, ($272,000), "Energy-Efficient Protocols and Cross-Layer Designs for Wireless Sensor Networks," June 1, 2005 - May 31, 2008 (sole PI).

PA37. *National Science Foundation - Medium ITR Grant*, ($1,599,980) "Multi-Robot Emergency Response," September 1, 2003 - August 31, 2008; co-PI with 5 co-PIs; Giannakis' part 70K/yr; multi-institutional proposal: UMN (lead), UPenn, and Caltech.

PA38. *National Science Foundation - MRI*, ($500,000) "Development of Miniature Search/Rescue Robots," September 1, 2004 - August 31, 2008; co-PI with 5 co-PIs; Giannakis' part 50K/yr; multi-institutional proposal: UMN (lead), Berea College.

PA39. *ARL Collaborative Technology Alliance*, ($275,000), "Precoding, Space-Time Coding, and Turbo-Decoding in FH Communications," October 1, 2008 - September 30, 2010; PI.

PA40. *National Science Foundation - ECCS Regular*, ($300,000) "A Stochastic Framework for Robust Wireless Networking," Sept. 1, 2008 - August 31, 2011 (sole PI).

PA41. *National Science Foundation - CCF Regular*, ($300,000) "Theoretical Foundations for Wireless Communication Networks," Sept. 1, 2008 - Aug. 31, 2011 (sole PI).

PA42. *National Science Foundation - CISE CCF*, ($100,000) "CIF: Exploiting Sparsity for Dimensionality Reduction," Sept. 1, 2010 - Aug. 31, 2011 (sole PI).

PA43. *European Commission, CORDIS - Marie Curie Fellowship*, ($81,871) "Distributed Estimation in Sensor Networks," March 1, 2009 - Feb. 28, 2011 (co-PI with K. Berberidis, Greece).

PA44. *Qatar National Research Fund*, ($1,100,000) "Spectrum Cartography for Cognitive Radio Sensing," Oct. 1, 2010 - Sept. 30, 2013 (PI with 3 co-PIs; Giannakis' part 120K/yr; multi-institutional proposal: UMN (lead), Texas A&M, Qatar; and Qatar Univ.).

PA45. *National Science Foundation - ECCS Regular*, ($391,707) "IHCS: Sparsity-Aware RF Cartography for Cognitive Networks," June 1, 2010 - May 31, 2013 (sole PI).

PA46. *Australian Research Council*, ($520,000) "Cross-layer design in wireless communication systems with channel uncertainty," Oct. 1, 2010 - Sept. 30, 2013 (PI with 3 co-PIs; Giannakis' part 60K/yr.).

PA47. *National Science Foundation - CISE/CCF and ENG/ECCS*, ($50,000) "Workshop on Control, Computing and Signal Processing for Future Power Systems," November 1, 2013 - October 31, 2014 (co-PI with S. Dhople (Minnesota PI) and S. Low (Caltech)).

PA48. *Institute of Renewable Energy and the Environment (IREE)*, ($375,000) "Big Data and Control of Renewable Energy Sources in Microgrids," December 1, 2012 - November 30, 2015 (PI with 2 additional co-PIs from Minnesota; no overhead; Giannakis' part 65K/yr for 3 years.).

PA49. *AirForce - MURI* (with U. of Pennsylvania; UofMn sub-award $1,350,000 co-PI with S. Roumeliotis (PI)); "CHASE: Control of Heterogeneous Autonomous Sensors for Situational Awareness," Sept. 1, 2010 - Aug. 31, 2015; Giannakis' part 120K/yr.

PA50. *National Science Foundation - ECCS*, ($416,340) "Modeling, Monitoring, and Optimization of Cognitive Networks," May 1, 2012 - April 30, 2015; no-cost extension to April 2016 (sole PI).

PA51. *Greek Research Council - Thales Program*, ($790,848) "Secure Wireless Nonlinear Communications at the Physical Layer," Jan. 1, 2012 - Dec. 31, 2015; total of 12 co-PIs; Giannakis' part 32K.

PA52. *Greek Research Council - Thales Program*, ($790,848) "Energy-efficient Designs of Communication Networks," Jan. 1, 2012 - Dec. 31, 2015; total of 12 co-PIs; Giannakis' part 24K.

PA53. *National Science Foundation - EARS Program*, ($499,379) "Spectral Tweets: A Community Paradigm for Spatio-temporal Cognitive Sensing and Access," Sept. 1, 2012 - Aug. 31, 2015 (co-PI with J. Haupt, and N. Sidiropoulos (PI); Giannakis' part 60K/yr for 3 years).

PA54. *National Renewable Laboratory (NREL)*, ($100,000) "Optimal Inverter Dispatch: Facilitating High PV Penetration with Optimization and Grid Informatics," October 1, 2014 - September 30, 2016 (co-PI with S. Dhople (PI)); plus $300K for B. Johnson (NREL).

PA55. *National Science Foundation - CIF*, ($100,000) "Parallel Online Learning for Big Data and Dynamic Networks," September 1, 2015 - August 31, 2016 (PI).

PA56. *National Science Foundation - CISE/CCF and ENG/ECCS*, ($254,786) "From Communication to Power Networks: Adaptive Energy Management for Power Systems with Renewables," September 1, 2014 - August 31, 2018 (PI); plus $172,000 to U. Texas at San Antonio (N. Gatsis) (co-PI).

PA57. *National Science Foundation & AFOSR: EAGER-DynamicData Program*, ($300,000) "Censor, Sketch, and Validate to Learn from Dynamic and Large-Sale Data," Jan. 1, 2015 - Dec. 31, 2018 (sole PI).

PA58. *Army Research Office*, ($450,000) "Comprehensive Tactical Network State Inference from Incomplete Data," June 1, 2015 - May 31, 2018.

PA59. *National Institutes of Health - Joint NIH-NSF-DMS Program on Computational Biology*, ($1,840,214) "High-Dimensional Sparse Structural Equation Modeling for Inference of Gene Networks and Optimized Chemical Genomics," September 1, 2012 - December 31, 2018 (co-PI with Chad Meyers (Minnesota), and two co-PIs from U. of Miami; PI: X. Cai; Minnesota part $896,461; Giannakis' part 95K/yr for 5 years.).

PA60. *National Science Foundation - EARS Program*, ($1,200,000) "Comprehensive Network State Inference for Policy-Cognizant Spectrum Access," Sept. 1, 2013 - Aug. 31, 2019 (PI with S.-J. Kim, S. Kelley from Minnesota, and R. Baxley (GTRI); Giannakis' part 775K/yr for 4 years).

PA61. *National Science Foundation - CCF/CyberSEES*, ($649,147) "Tenable Power Distribution Networks," September 1, 2014 - August 31, 2019 (PI with S. Dhople co-PI); plus $550,000 to U. of Michigan (G. Mihailidis) and GWU (X. Chen).

PA62. *National Science Foundation - ENG CCSS*, ($410,230) "Smart-Grid Powered Green Communications in Heterogeneous Networks," May 1, 2015 - April 30, 2019 (co-PI with X. Wang (PI), FAU); Giannakis part $231,230 for 3 yrs.

PA63. *National Science Foundation, ECCS-EPCN*, ($300,000) "Stochastic Power Control and Learning for Energy Grids," September 1, 2015 - August 31, 2019 (PI with V. Kekatos as co-PI).

PA64. *Huawei Inc.*, ($115,000) "High-Dimensional Parameter Self Optimization in Wireless Networks," Nov. 1, 2018-Oct. 31, 2019 (PI).

PA65. *National Science Foundation - ENGR CCSS*, ($400,000) "Learn-and-Adapt to Manage Dynamic Cyber-Physical Networks," May 1, 2017 - April 30, 2020 (PI).

PA66. *National Science Foundation - ENGR CCSS*, ($400,000) "Learn-and-Adapt to Manage Dynamic Cyber-Physical Networks," May 1, 2017 - April 30, 2020 (PI).

Current

CU1. *National Science Foundation - CISE CIF: Medium*, ($702,232) "Adaptive Diffusions for Scalable and Robust Learning over Graphs," Sept. 1, 2019 - August 30, 2022 (PI with A. Nikolakopoulos as co-PI).

CU2. *Army Research Office*, ($49,898.00) Short-term Innovation Research (STIR) Award, "Unifying Robustness to Uncertain Perturbations in Statistical Learning and Inference," May 15, 2021 – Feb. 14, 2022 (PI).

PROFESSIONAL SOCIETY LEADERSHIP ACTIVITIES

➢ Major IEEE Activities

- ▷ *Member* of the Special Interest Group on Big Data, IEEE Signal Proc. Soc. (term: 01/16 - 12/18)
- ▷ *Member* of the Editorial Board for IEEE J. on Special Topics in Signal Proc. (term: 01/16 - 12/18)
- ▷ *Member* of the Nominations & Appointments Cmt., IEEE Signal Proc. Soc. (term: 01/16 - 12/17)
- ▷ *Chair* of the Technical Committee on Signal Processing for Communications, IEEE Signal Processing Society (term: 05/98 - 12/01)
- ▷ *Member & Secretary* of the Steering Committee for the IEEE Transactions on Wireless Communications (term: 05/01 - 01/06)
- ▷ *Editor-in-Chief* for the IEEE Signal Processing Letters (term: 01/00 - 01/02)
- ▷ *Member* of the IEEE Fellow Election Committee (term: 06/99 - 06/02)
- ▷ *Member* of the Editorial Board, Proceedings of the IEEE (term: 01/00 - 01/03)
- ▷ *Member-at-Large*, Board of Governors, IEEE Signal Processing Society (term: 01/01-12/04)
- ▷ *Member* of the Publications Board, IEEE Signal Processing Society (term : 02/96 - 01/02)
- ▷ *Member & Vice Chair* of the Statistical Signal & Array Processing Committee (term: 05/91 - 03/98)
- ▷ *Associate Editor* for the IEEE Transactions on Signal Processing (Area: Spectrum Estimation & Modeling; term : 03/91 - 03/93)
- ▷ *Associate Editor* for the IEEE Signal Processing Letters (Area : Statistical Signal Processing, 1st term: 06/95 - 06/98; 2nd term: 07/98-07/2001)
- ▷ *Secretary & Member* of the Conference Board, IEEE Signal Processing Society (term: 06/95 - 06/98)
- ▷ *Co-organizer & lead guest editor* (with C. Cendrillon, V. Cevher, A. Swami, and Z. Tian) of the Special Issue on "Signal Processing for Big Data," IEEE Journal on Special Topics in Signal Processing, June 2015.
- ▷ *Co-organizer & lead guest editor* (with F. Bach, C. Cendrillon, M. Mahoney, and J. Neville) of the Special Issue on "SP for Big Data," IEEE Signal Processing Magazine, September 2014.
- ▷ *Co-organizer & guest editor* (with N. Al Dhahir, B. Hochwald, B. Hughes, and T. Marzetta) of the Special Issue on "Signal Processing Techniques for Space-Time Coded Transmissions," IEEE Transactions on Signal Processing, October 2002.

- *Organizer & guest editor* of the Special Issue on "Signal Processing Advances in Wireless and Mobile Communications," IEEE Signal Processing Magazine, May 2000.
- *Organizer & guest editor* of the "50th Anniversary of Signal Processing Series: Highlights of Signal Processing for Communications," IEEE Signal Processing Magazine, March 1999.
- *Organizer & guest co-editor* (with G. Xu) of the Special Issue on "Signal Processing for Advanced Communications," for the IEEE Transactions on Signal Processing, January 1997.
- *Organizer & guest co-editor* (with A. Swami) of the Special Issue on "Higher-order Statistics," for the Signal Processing Journal, EURASIP, August 1996.
- *Organizer & guest editor* of the Special Issue on "Adaptive Signal Processing using Higher-Order Statistics," for the Intl. J. of Adaptive Control and Signal Processing, Wiley, March 1996.

➢ Plenary, Keynote, and Tutorial Talks

- Plenaries in 2020: Intl. Conf. on Acoust., Speech, and Signal Proc., Barcelona, Spain, May 2020; Workshop on Sensor Array and Multichannel (SAM) Signal Proc., Hangzhou, China, June 2020; One World Signal Processing Seminar (OWSPS), October 22, 2020.
- Plenaries in 2019: Computing and Communication Workshop and Conf., Las Vegas, NV, Jan. 9, 2019; Intl. Conf. on Acoust., Speech, and Signal Proc., Brighton, UK, May 13, 2019; Tutorials in 2019: Intl. Conf. on Acoust., Speech, and Signal Proc., Brighton, UK, May 2019.
- Plenaries in 2018: 7th Spanish Workshop on Signal Processing, Communication and Information Theory San Sebastian, Spain, Jan. 22-23, 2018; ShanghaiTech Workshop on Information, Learning, and Decision (SWILD), June 30-July 1, 2018; IEMCON, Vancouver, Canada, Nov. 2, 2018; Globalsip Conf., Anaheim, CA, Nov. 27, 2018; Tutorials in 2018: MILCOM Conf., Los Angeles, CA, Oct. 28-31, 2018; Globecom Conf., Abu Dhabi, UAE, Dec. 9-13, 2018.
- Plenaries in 2017: 3rd Symp. U. of Florida Informatics Inst., Gainesville, FL, March 16, 2017; ACCESS Dist. Lecture Series, Stockholm, Sweden, May 16, 2017; Workshop on Compressive Sensing and Applications, Budva, Montenegro, May 26, 2017; 1st Intl. Balkan Conf. on Communications and Networking Tirana, Albania, May 30, 2017; Trans-Atlantic Symposium on Technology and Policy for a Smart Society Minneapolis, MN, June 19, 2017; 17th Intl. Symp. on Comm. and Infor. Technologies (ISCIT), Cairns, Australia, September 25-27, 2017. Tutorials in 2017: BigDat2017, Bari, Italy, Feb. 16-17, 2017; CAMSAP Workshop, Curacao, Dutch Antilles, December 10-13, 2017.
- Plenaries in 2016: Ntl. Renewable Energy Lab (NREL), Golden, CO, Jan. 26-28, 2016; Intl. Conf. on Comp., Networking and Comm. (ICNC), Kauai, Hawaii, Feb. 15-18, 2016; Intl. Workshop on Signal, Array, and Comm. (IWSAC), Xi'an, China, March 2016; SPAWC, Edinburg, Scotland, July 3-6, 2016; STATOS, Budapest, Hungary, Sept. 2, 2016; Globalsip, Washington DC, Dec. 7-9, 2016; Tutorials in 2016: SPAWC, Edinburg, Scotland, July 3-6, 2016;
- Plenaries in 2015: Conf. on Information Sciences and Systems, John Hopkins Univ., Baltimore, March 18-20, 2015; Center for Advanced Signal and Image Sciences, Lawrence Livermore Ntl. Lab, May 13, 2015; Tutorials in 2015: CTTC, Barcelona, Spain, Oct. 26-27, 2015; Intl. Conf. of Acoust. Speech and Signal Proc., Gold Coast, Australia, April 19-24, 2015; EUSIPCO, Nice, France, Aug. 31-Sept. 4, 2015.

- Plenaries in 2014: Signal Processing Algorithms and Applications (SPA), Poznan, Poland, Sept. 22-24, 2014; Intl. Conf. on Wireless Communications and Signal Processing (WCSP), Hefei, P. R. China, Oct. 23-25, 2014; Asilomar Conf. on Signals, Systems, and Computers, Pacific Grove, CA, Nov. 2-5, 2014; GlobalSIP, Atlanta, GA, Dec. 3-5, 2014 (keynote).
  Tutorials in 2014: Intl. Conf. of Acoust. Speech and Signal Proc., Florence, Italy, May 4-9, 2014; Sensor Array and Multichannel(SAM) SP Workshop, A Coruna, Spain, June 22-25, 2014; IEEE-SPS Summer School on Signal Processing and Machine Learning for Big Data, Vancouver, CA, July 29-31, 2014; EUSIPCO, Lisbon, Portugal, Sept. 1-5, 2014.

- Plenaries in 2013: Intl. Workshop on Cross-Layer Designs, Qingdao, P. R. China, October 27-28, 2013; 10th Intl. Symp. on Wireless Comm. Systems, TU Ilmenau, Germany, Aug. 27-30, 2013; Intl. Black Sea Conf. on Communications and Networking, Batum, Georgia, July 3-5, 2013; and STATOS: Statistics, Optimization, and Signal Processing Meeting, Darmstadt, June 15-16, 2013.
  Tutorials in 2013: Intl. Conf. of Acoust. Speech and Signal Proc., Vancouver, Canada, May 26-31, 2013; Intl. Conf. on Communications, Budapest, June 9-13, 2013; EUSIPCO, Marrakech, Morocco, September 9-13, 2013; GLOBECOM Conference, Atlanta, December 9-13, 2013; and CAMSAP Workshop, St. Martin, December 15-18, 2013.

- Plenaries in 2012: 2nd Greek SP Jam, Thessaloniki, Greece, May 2012; Intl. Work. on Math. Issues in Info. Sciences (MIIS), Xi'an, China, July 2012; 3rd IFAC Work. on Distr. Estimation and Control in Networked Systems, Santa Barbara, CA, Sept. 2012.

- Plenary in 2011: National URSI Symposium, Madrid, Spain, Sept. 2011.

- Plenaries in 2010: Australian Communication Theory Symposium (AusCTW), Canberra, Australia, Feb. 2010; Intl. Conf. on Telecommunications (ICT), Doha, Qatar, April 2010; Cognitive Information Processing (CIP), Elba, Italy, June 2010; Signal Proc. Advances in Wireless Communications (SPAWC), Marrakech, Moroco, June 2010; Wireless Advanced Symposium, London, UK, July 2010.
  Tutorials in 2010: Intl. Conf. on Telecommunications (ICT), Doha, Qatar, April 2010; and Intl. Conf. on Communications (ICC), Cape Town, South Africa, May 2010.

- Plenaries in 2008: EE-PanIranian Conf., Tehran, Iran, June 2008; Intl. Conf. on Communications (ICC), Beijing, PRC, June 2008; ISABELE Conf., Aalborg, Denmark, Oct. 2008; and Intl. Conf. on Electronics Engr. (ICEE), Mexico City, Mexico, Oct. 2008. Tutorials in 2008: Intl. Conf. on Accoust., Speech, and Signal Proc. (ICASSP), Las Vegas, May 2008.

- Plenaries in 2007: SIU Signal Proc. and Comm. Applications Conf., Eskisehir, Turkey, June 2007; URSI Intl. Symp. on Signals, Systems and Electronics, Montreal, Canada, July 2007; Intl. Workshop on Advances in Wireless Sensor Networks, Philadelphia, PA, August 2007; EUSIPCO, Poznan, Poland, September 2007; Intl. Workshop on Computational Advances in Multi-Sensor Adaptive Processing, St. Thomas, U.S. Virgin Islands, Dec. 2007. Tutorials in 2007: Intl. Conf. on Communications, Glasgow, UK, June 2007; also at the Intl. Conf. on Acoust. Speech and Signal Proc.,Honolulu, Hawai, April 2007; and at Univ. of Santa-Fe, Argentina, March 2007.

- Plenary in 2006: Last Mile Wireless Workshop, Dublin, Ireland, August 2006. Tutorials in 2006: A-Star, Singapore, March 2006; Intl. Conf. Ultra-Wideband Comms., Waltham, MA, Sept. 2006.

- Tutorials in 2005: Intl. Conf. on Communications, Seoul, Korea, May 2005.

- ▷ Plenaries in 2004: IEEE Intl. Conf. on Electronic Design, Veracruz, Mexico, November 2004; and IASTED Conf., Hawaii, August 2004. Tutorials in 2004: Globecom Conf., Dallas, TX, Dec. 2004; Vehicular Tech. Conf., Los Angeles, CA, Sept. 2004; Intl. Conf. on Acoustics, Speech and Signal Processing, Montreal, Quebec, Canada, May 2004; and Wireless Comm. and Networking Conf., Atlanta, GA, March 2004.

- ▷ Plenaries in 2003: Intl. Symp. on Signal Proces. and Info. Technology, Darmstadt, Germany, Dec. 2003; 6th Baiona Workshop on Signal Proc. in Communications, Baiona, Spain, Sept. 2003; Signal Proc. Advances in Wireless Communications Workshop, Rome, Italy, June 2003; and Intl. Conf. on Acoust. Speech, and Signal Processing, Hong Kong, April 2003 (never delivered because meeting was cancelled due to SARS). Tutorials in 2003: Conf. on Ultra Wideband Systems and Technologies, Reston, Virginia, Nov. 2003; MILCOM Conf., Boston, MA, October 2003; and Vehicular Tech. Conf., Orlando, FL, October 2003.

- ▷ Plenary in 2002: Sensor Array and Multichannel Processing Workshop, Washington DC, on Aug. 2002. Tutorials in 2002: Intl. Conf. on ASSP, Orlando, FL, May 2002; and Wireless Communications and Networking Conf., Orlando, FL, March 2002.

- ▷ Plenary in 2001: Statistical Signal Processing Workshop, Singapore, August 2001. Tutorials in 2001: GLOBECOM Conf., San Antonio, TX, Nov. 2001; Army Research Laboratory, Adelphi, MD, May 2001; and Intl. Conf. on Acoust., Speech, and Signal Proc., Salt Lake City, Utah, May 2001.

- ▷ Keynote address on "Single- and Multi-User Multi-Carrier Communications," Balkan Workshop on Signal Processing and Communications, Isik Univ., Istanbul, Turkey, June 2000.

- ▷ Plenary talk on "Cyclostationary Signal Processing: An Overview," (Sunuhara Plenary Lecture), at the 10th Symposium on System Theory and Statistics, Kyoto, Japan, November 1998.

- ▷ Expert-Summary talk on "Statistical Signal and Array Processing," papers presented at the Intl. Conf. on Acoust., Speech, and Signal Proc., Munich, Germany, April 1998.

- ▷ Plenary talk on "High-Order Cyclostationary Signal Processing," at the 5th IEEE-SP Workshop on Higher-Order Statistics, Banff, Alberta, Canada, July 1997.

- ▷ Tutorial on "Theory and Applications of Cyclostationary Signal Analysis," at the Intl. Conf. on Acoust., Speech, and Signal Proc., Adelaide, Australia, April 1994.

- ▷ Keynote address on "HOS based linear system identification: basic advances and future directions," ATHOS-ESPRIT Workshop on System Identification and Higher-Order Statistics, Sophia Antipolis, France, September 1993.

➢ Consulting and Short Courses

- ▷ Consulted for TRW, CA, 1994; Amoco, OK (1996-1998); Globespan (2000-2001); CalAmp (2002), ATC (2003); Inter-Digital (2004), and WiAV Solutions, LLC (2009-10); Dorsey & Whitney LLC, Law Firm (2011-12), Schwegman, Lundberg & Woessner, P.A. (2014).

- ▷ Taught an one-day short course on "Signal processing with higher-order spectra," Mitre Corp., Boston, MA, June 1991; E-Systems, College Station, PA, June 1992.

➢ Professional Society Memberships

- ▷ Institute of Electrical Electronic Engineers (IEEE), Student Member 1984-1986, Member 1986-1991, Senior Member 1991-1996, Fellow Member 1996-present.
- ▷ IEEE Communications Society, 1999-present.
- ▷ IEEE Information Theory Society, 1990-present.
- ▷ IEEE Signal Processing Society, 1984-present.
- ▷ European Association for Signal Processing (EURASIP), Member, 1990-present
- ▷ Institute of Mathematical Statistics (IMS), Member, 1987-present
- ▷ Technical Chamber of Greece, and Greek Association of Electrical and Electronic Engineers, Member, 1981-present
- ▷ Geophysics, Associate Member, 1984-1989
- ▷ Eta Kappa Nu, Member, 1984-present

➢ Conference Organization - General Chairmanships

- ▷ *General Co-Chair* (with Geert Leus, TU Delft, and Antonio Marques, URJC, Spain) of *IEEE Data Science Workshop (DSW)*, Minneapolis, MN, USA, June 2-5, 2019; see https://2019.ieeedatascience.org/
- ▷ *General Co-Chair* (with G. Mateos, U. Rochester, USA; F. Gini, U. Pisa, Italy; and, F. Bandiera, U. Salento, Italy) of *IEEE SPS Summer School on Network- and Data-driven Learning*: *Fundamentals and Applications*, Lecce, Italy, May 20-24, 2019.
- ▷ *General Co-Chair* (with Cher Wang and Xiliang Luo, ShanghaiTech) of *ShanghaiTech Workshop on Information, Learning, and Decision (SWILD)*, Shanghai, P. R. China, June 30-July 1, 2018; see URL http://sist-swild.shanghaitech.edu.cn/2018/
- ▷ *General Co-Chair and Co-Organizer* (with S. Dhople and S. Low, Caltech) of the NSF-sponsored *Workshop on Computing, Control, and Signal Processing Challenges in Future Power Systems*, Arlington, VA, November 15-16, 2013; see URL http://www.dtc.umn.edu/seminars/
- ▷ *General Co-chair and Co-organizer* (with N. Sidiropoulos, and M. Kaveh as Honorary Chair) of the *Statistics, Optimization, and Signal Processing (STATOS) Workshop in memory of Prof. Alex B. Gershman*, Darmstadt, Germany, June 15-16, 2013.
- ▷ *Co-Organizer/Steering Committee* (with N. Sidiropoulos as General Chair) of the NSF-sponsored *Workshop on Big Data: From Signal Processing to Systems Engineering*, Arlington, VA, March 21-22, 2013; see URL http://www.dtc.umn.edu/bigdata/
- ▷ *General Co-chair and Co-organizer* (with H. Delic) of the 13th IEEE Workshop on Signal Processing Advances in Wireless Communications, Cesme, Turkey, June 17-20, 2012.
- ▷ *Technical Committee Chair*, 32nd Annual Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, November 1998.

- ▷ *General Co-Chairman and Co-organizer* (with L. Tong and J.-F. Cardoso) of the 1st IEEE Workshop on Signal Processing Advances in Wireless Communications, Paris, France, April 16-18, 1997.
- ▷ *General Co-Chairman and Co-Organizer* (with A. Swami), 8th Statistical Signal and Array Processing Workshop, Corfu, Greece, June 24-26, 1996.
- ▷ *General Co-Chairman and Co-Organizer* (with A. Swami), IEEE Signal Processing Workshop on Higher-Order Statistics, Lake Tahoe, CA, June 1993.

➢ Conference Committee Memberships

- ▷ Member of Intl. Scientific Com., *3rd Workshop on Signal Processing Advances in Wireless Communications*, Taiwan, March 2001.
- ▷ Member of Intl. Scientific Com., *Workshop on Statistical Signal and Array Processing*, Poconos, Pennsylvania, August 2000.
- ▷ Member of Intl. Scientific Com., 3rd Intl. IMACS Conf. on Circuits, Sys., Com., and Computers, Athens, Greece, July 4-8, 1999.
- ▷ Technical Area Coordinator, 31st Asilomar Conf. on Signals, Systems, and Computers, Pacific Grove, Monterey, CA, November 2-5, 1997.
- ▷ Member of the Intl. Advisory Board, Intl. Conf. on Information, Communications, and Signal Proc., Singapore, September 9-12, 1997.
- ▷ Member of the Scientific Committee, European Conf. on Signal Analysis and Prediction, Prague, Czech Republic, June 1997.
- ▷ Member of the Technical Committee, 4th Intl. Symposium on Signal Proc. and its Applications, Gold Coast, Australia, August 24-26, 1996.
- ▷ Member of Program Committee, SPIE Conf. on Wavelet Applications in Signal and Image Processing IV, Denver, CO, August 4-9, 1996.
- ▷ Member of the Intl. Program Committee, Inaugural Symposium of the Intl. Inst. for General Systems Studies, Slippery Rock, PA, July 13-15, 1995.
- ▷ Member of the Intl. Tech. Program Committee, Intl. Conf. on Digital Signal Proc., Limassol, Cyprus, June 26-28, 1995.
- ▷ Member, Technical Committee, 27th Asilomar Conference, on "Signals, Systems, and Computers," Pacific Grove, CA, Nov. 1993.
- ▷ Member, Steering Committee (Publications Chairman), Workshop on Higher-Order Spectral Analysis, Vail, Colorado, June 1989.
- ▷ Organizer, Session FP2 on "Cumulants in Signal Processing and System Identification," American Control Conference, Atlanta, Georgia, June 1988.

➢ Conference Session Chairmanships

▷ More than 250 (1987-present)

➢ Reviewer Activities

Proceedings of the IEEE - IEEE Trans. on Info. Theory - IEEE Trans. on Wireless Communications

IEEE Transactions on Communications - Wireless Communications and Mobile Computing

IEEE Journal on Selected Areas in Communications - IEEE Transactions on Signal Processing

IEEE Transactions on Speech Processing - IEEE Transactions on Image Processing

IEEE Transactions on Automatic Control - IEEE Transactions on Circuits and Systems

IEEE Transactions on Geoscience and Remote Sensing - Geophysics

International Journal of Adaptive Control and Signal Processing - Automatica

Signal Processing (EURASIP) - Multidimensional Systems and Signal Processing

Annals of Mathematical Statistics - Journal of Time Series Analysis

IEE Proceedings, Part F (Radar and SP)

▷ National Science Foundation - Army Research Office (reviewer for approx. six proposals/year)

▷ National Institutes of Health, Oct. 13-15, 1993 (committee member for the review of the Biomedical Engr. and Instrumentation Program, NCRR).

▷ ONR/NSF Workshop on Signal Processing for Manufacturing and Machine Monitoring, March 12-15, 1996 (invited participant to report on emerging signal processing basic research concepts that support machine monitoring).

▷ NSF-CAREER Panelist for MIPS - Signal Processing Systems Program, November 1997; and November 2000 (reviewed 12 proposals in signal processing for communications subjects per year).

▷ NSF Panelist for CISE/CCR; Communications Program (1999, 2000); and Major Research Infrastructure Proposals (2000).

▷ Reviewer for: International Science Foundation of Israel (3 proposals), Science Council of Hong-Kong (2 proposals), and the Australian Research Council (4 proposals).

▷ Book review 1 : "Lessons in Digital Estimation Theory," by J. M. Mendel, Prentice-Hall, 1987 (review appeared in Automatica, 1989).

▷ Book review 2 : Review on the first edition of "Signals and Systems," by A. Oppenheim, and A. Willsky, Prentice-Hall, 1983 (review requested in preparing the second edition of the book).

▷ Book review 3 : Review of "Analog and Digital Signal Processing," by H. Baher, John Wiley and Sons, 1990.

UNIVERSITY SERVICE

➢ Departmental committees

- ▷ *Preliminary Exam Committee*, F'00, S'01, F'04, F'06, F'07, S'16 (UMN)
- ▷ *Endowed Chair Selection Committee*, F'01, S'02 (UMN)
- ▷ *Faculty Search Committee*, '99-S'00, '00-'01, '01-'02, '03-'04, '06-'07, '09-'10, '16-'17 (UMN)
- ▷ *Industrial Relations Committee*, S'00, F'00, S'01 (UMN)
- ▷ *Graduate Committee*, (chair), F'97, S'98 (UVA); S'12, F'13
- ▷ *IEEE Student Advisor (UVA-EE Chapter)*, F'96, S'97 (UVA)
- ▷ *Eminent Speakers Series*, (chair), F'95, S'96, F'96, S'97 (UVA)
- ▷ *Chairman's Search Committee*, (member), F'95, S'96 (UVA)
- ▷ *Graduate Committee*, (member), F'91, S'92, F'92, F'94, F'96 (UVA)
- ▷ *Doctoral Exam Ad hoc Committee*, (chair), F'94 (UVA)
- ▷ *Computer Equipment Committee*, (member), F'88, S'89, F'89, F'90, S'91, F'91, F'94 (UVA)
- ▷ *Personnel Committee*, (member), F'88, S'89, F'89, S'90, F'90, S'91, F'91, S'92 (UVA)
- ▷ *Undergraduate Committee*, (member), S'88 (UVA), S'16 (UMN)
- ▷ *Graduate Student Advisory Committees*: 50 (as chairman or member), 25 (as advisor) (UVA/UMN)

➢ School of Engineering committee

- ▷ *CSE Promotion and Tenure Advisory Committee*, S'16 (UMN)
- ▷ *Endowed Chair Search Committee*, Digital Technology Center, F'01, S'02 , chair; F'02, S'03, S'04 member (UMN)
- ▷ *By-laws Committee*, S'94, F'94 (UVA)

➢ International Committees

- ▷ *Member* and *Chair* of Evaluation Committees for Universities and Departments of ECE and Informatics; ordered by the Hellenic Quality Assurance (HQA) and Accreditation Agency, Ministry of Education, Greece (2012-Present)
- ▷ *Member* of the Ph.D. Thesis Committee, KAUST, Saudi Arabia, 2017
- ▷ *Co-Advisor* and member of a Ph.D. Thesis in Univ. of Padova, Italy, 2010
- ▷ *Co-Advisor* and member of two Ph.D. defenses in Carlos III Univ., Madrid, Spain, 2006 and 2007

- ▷ *Juror* of a Ph.D. defense in Telecom, Paris, France, June 2001
- ▷ *Opponent* for a PhD defense in KTH, Stockholm, Sweden, November 1998
- ▷ *Member* of a Ph.D. Thesis Committee, Univ. of Cergy Pontoise, France, October 1998
- ▷ *Member* of an Assist. Prof. Election Committee in Telecom, Paris, France, October 1998
- ▷ *Reader* of a Ph.D. Thesis, Grenoble, France, 1995
- ▷ *Reader* of a Ph.D. Thesis, IIT, Madras, India, 1994

TEACHING

➢ Courses Taught

* ECE 8581, "Estimation and Detection," S'99, F'99, S'02, S'03, S'04, S'05, S'07, S'08, S'11, S'14, S'15, S'16, S'18, S'19, S'20, S'21, 13 credit hrs., 15-25 students (UMN)
* ECE 5542, "Adaptive Signal Processing," S'01, S'07, 3 credit hrs., 25 students (UMN)
* ECE 5505, "Wireless Communications," S'12, 3 credit hrs., 30 students (UMN)
* ECE 5501, "Digital Communications," S'00,F'00,F'01,F'03,F'06,F'07, 3 credit hrs., 30 students (UMN)
* ECE 4541, "Digital Signal Processing," F'16, 3 credit hrs., 35 students (UMN)
* EE 814, "Advanced Detection and Estimation," F'87, 3 credit hrs., 10 students (UVA)
* EE 793, "Spectral analysis and time series," F'88, 3 credit hrs., 6 students (UVA)
* EE 781, "Pattern Recognition," S'98, 3 credit hours, 8 students (UVA)
* EE 774, "Statistical Signal Processing," F'88, S'90, S'92, S'96, 3 credit hrs., 12 students (UVA)
* EE 712, "Digital Communications," S'97, 20 students (UVA)
* EE 676, "Multidimensional Signal & Image Processing," S'91, S'97, 15 students (UVA)
* EE 614, "Estimation Theory," S'90, S'92, 3 credit hrs., 10 students (UVA)
* EE 576, "Digital Signal Processing," S'88,89, F'90,91,92,96,97, 3 credit hrs., 35 students (UVA)
* EE 420, "Communications II," F'89, F'90, 3 credit hrs., 25 students (UVA)
* EE 324, "Signals and Systems II," S'93, S'94, S'95, 3 credit hrs., 60 students (UVA)
* EE 323, "Signals and Systems I," F'94, F'95, 3 credit hrs., 55 students (UVA)
* ENGR203, "Electrical Science I," S'91, 3 credit hrs., 15 students (UVA)

➢ New Courses Introduced

* EE 793, "Spectral analysis and time series," F'88 (UVA)
* EE 687, "Wireless Communications (Lab)," F'97 (UVA)
* EE 676, "Multidimensional Signal & Image Processing," F'89 (UVA)
* EE 614, "Estimation Theory," F'89, S'96 (UVA)

STUDENT ADVISING

➢ Completed Ph.D. Theses

1. J. M.-M. Anderson, "One- and two-dimensional system identification using higher-order statistics," May 1992; with the Dept. of Electrical Engr., University of Florida (**Associate Professor**; received NSF-Career Award, 1996); now with Howard University (**Professor** and **Dean of Engineering**);
2. M. K. Tsatsanis, "On Wavelets and Time-Varying Systems," September 1992; formerly with the Dept. of Electrical Engr., Stevens Institute of Technology, N.Y. (**Associate Professor**; received NSF-Career Award, 1998); **C**hief Tech. Officer with Voyan Technologies Inc., CA; *co-founder* of Aktino Inc., Irvine, CA; now with Entropic Communications, San Diego, CA; **IEEE Fellow**).
3. B. Sadler, "Polyspectral Techniques for Detection and Estimation in Gaussian and non-Gaussian noise," December 1992; now with the US Army Lab (**ARL Fellow** and **IEEE Fellow**), Adelphi, MD, and the Johns Hopkins Univ. Whiting Institute (Instructor).
4. A. Dandawate, "Exploiting Cyclostationarity and Higher-Order Statistics in Signal Processing," January 1993; now with **Intel Corp.**, NJ.
5. S. Shamsuder, "Array and Multichannel Signal Processing using Higher-Order and Cyclic Statistics," November 1993; formerly with the Dept. of Electrical Engr., Colorado State University, Fort Collins, CO (**Assistant Professor**); **Lucent Tech.**; now with **Verizon, Executive Director of 5G Planning**.
6. T. E. Hall, "Estimation and Validation of Image Models using Higher-Order Statistics with Applications to Textures," August 1994; now with the Information Technology & Communications Center, University of Virginia, Charlottesville, VA (**Consultant** for scientific computing).
7. G.-T. Zhou, "Random Amplitude and Polynomial Phase Modeling of Non-Stationary Processes using High-Order and Cyclic Statistics," November 1994; now with the School of Electrical Engr., Georgia Tech., Atlanta, GA; **Professor**; received NSF-Career Award, 1997; **IEEE Fellow**).[5][6]
8. S. D. Halford, "Blind Channel Equalization for Wireless Communications," November 1996; now with Intersil Corporation, Palm Bay, FL (**Research Engineer**).
9. E. Serpedin, "Blind Equalization of Linear and Nonlinear Volterra Channels using Transmitter or Receiver Diversity," December 1998; now with the Dept. of ECE, Texas A&M University (**Professor**; received NSF-Career Award, 2000; **IEEE Fellow**).

[5]Received the School of Engr. and Applied Sciences, Allan Talbott Gwathmey Memorial Research Award, Univ. of Virginia, April 1995.

[6]Received NSF Fellowship to attend Summer Program in Japan, June-August 1995.

10. A. Stamoulis, "Integrated Services in Wireless Networks with Jointly Designed Physical, Data, and Network Layers," December 2000; was with the ATT Shannon Labs; now with Qualcom (**Research Engineer**).

11. A. Scaglione, "Filterbank Precoding in Communications," U. of Rome, Italy; co-advised with prof. S. Barbarossa; formerly with Cornell University and UC Davis (**Professor**; now with Arizona State University; received NSF-Career Award 2001; **IEEE Fellow**).

12. C. Tepedelenlioglu, "Modeling and Mitigation of Time- and Frequency-Selective Fading in Single- and Multi-Carrier Communications," May 2001; now with the Arizona State University (**Professor**; received NSF-Career Award 2001).

13. Z. Liu, "Space-Time Coding for Broadband Wireless Communication Systems," November 2001; formerly with the University of Iowa (**Assistant Professor**); now with the Navy Research Laboratory (NRL), Washington, DC.

14. Z. Wang, "Linear Precoding in Wireless Communication Systems," April 2002; (**Professor**), now with Iowa State University and NSF-ECCS Program Director (**IEEE Fellow**).

15. S. Zhou, "Chip-Interleaving and Space-Time Coding for Wireless" May 2002; [7]; **Professor**, now with the University of Connecticut (**IEEE Fellow**).

16. Y. Xin, "Space-Time Coding with Linear Constellation Precoding" April 2003; formerly with the National University of Singapore (**Assistant Professor**); then NEC, Samsung; now with Futurewei, NJ.

17. X. Ma, "Doubly-Selective Fading Channels: Estimation, Capacity, and Space-Time Coding," May 2003; **Professor** now with Georgia Inst. of Technology (**IEEE Fellow**).

18. L. Yang, "Ultra-Wideband Wireless Communications: From Concept to Reality," June 2004; [8] Formerly with the U. of Florida, Gainsville (**Professor**; received NSF-Career Award, 2009); next, with Colorado State U.; now with U. of Minnesota **IEEE Fellow**).

19. W. Zhao, "Space-Time Coding and Low-Complexity Decoding for Coherent and Non-Coherent MIMO Communications," May 2005; now with Qualcomm, CA (**Research Engineer**).

20. P. Xia, "Multi-Input Multi-Output Communications with Partial Channel State Information," July 2005; formerly with Samsung Inc., CA; Broadcom; now with Amazon (**Research Engineer**); and (**Professor**) with Tongji Univ., P. R. China (**IEEE Fellow**).

21. R. Wang, "Distributed Coding for Multi-Source Cooperative Networks," March 2006; now with Qualcomm, CA (**Research Engineer**).

22. Q. Liu, "Cross-Layer Design and Modeling for Wireless Communication Networks," April 2006; Navini Networks Inc., Dallas, TX; formerly with PureWave Networks, (**Research Engineer**); now with Tongji Univ., P. R. China (**Professor**).

[7] Won the ONR Young Investigator Award, 2007; PECASE Award, 2008

[8] Won the Best Dissertation Award in the Physical Sciences and Engineering, Graduate School, U. of Minnesota, 2005; and the ONR Young Investigator Award, 2007.

23. X. Luo, "Synchronization and (De-) Modulation for Ultra-Wideband Access," May 2006; was with Qualcomm, CA (**Senior Staff Engineer**); now with Shanghai Tech., P. R. China (**Assoc. Professor**).

24. A. Cano, "Differential Modulation for Wireless Collocated and Distributed MIMO Systems," June 2006 (co-advised with Prof. Javier Ramos, Univ. of Madrid, Spain); [9] formerly with Rey-Juan Carlos Univ., Spain (**Assistant Professor**); then Broadcom, and now with Metronic (**Research Engineer**).

25. A. Ribeiro, "Wireless Cooperative Communications and Networking," January 2007; now with the University of Pennsylvania (**Professor**; received NSF-Career Award, 2010).

26. A. Garcia-Marques, "Power-Efficiency Wireless Communications and Sensor Networks," February 2007 (co-advised with Prof. Javier Ramos, Univ. of Madrid, Spain); now with Rey-Juan Carlos University, Madrid, Spain (**Professor**).

27. Y. Yu, "Cross-Layer Medium Access and Congestion Control for Wireless Networks," May 2007; was with Qualcomm, CA; now with Samsung, CA (**Senior Staff Engineer**).

28. T. Wang, "Complex-Field Network Coding in High-Throughput Anti-Jam Wireless Networks," August 2008; was with Seagate, MN (**Research Engineer**); now with Pillsbury Winthrop Shaw Pittman LLP (**Patent Law Clerk**).

29. E. Dall'Anese, "Spatio-temporal Spectrum Reuse based on Channel Gain Cartography," Dec. 2010 (co-advised with Prof. S. Pupolin, Univ. of Padova, Italy); formerly with Ntl. Renewable Energy Lab (NREL), Denver, CO (**Research Engineer**); now with U. of Colorado, Boulder (**Assistant Professor**; received NSF-Career Award, 2019).

30. S. Farahmand, "Distributed and Robust Tracking by Exploiting Set-Membership and Sparsity," June 2011; now with Iran Univ. of Science and Tech. (**Associate Professor**).

31. I. D. Schizas, "Exploiting Sparsity for Data Dimensionality-Reduction," July 2011; now with the University of Texas at Arlington (**Associate Professor**).

32. E. Msechu, "Estimation with Wireless Sensor Networks: Censoring and Quantization Perspectives," July 2011; now with Intel, CA (**Research Engineer**).

33. G. Mateos, "Sparsity Control for Robustness and Social Data Analysis," Jan. 2012; now with the University of Rochester (**Associate Professor**; received NSF-Career Award, 2018).

34. P. Forero, "Distributed and Robust Techniques for Statistical Learning," April 2012; now with SPAWAR, San Diego (**Research Engineer**).

35. N. Gatsis, "Resource Management for Wireless Networks and the Smart Power Grid," May 2012; now with the University of Texas at San Antonio (**Associate Professor**; received NSF-Career Award, 2019).

36. K. Rajawat, "Cross-Layer Designs with Network Coding," May 2012; now with the Indian Inst of Tech. (IIT), Kanpur, India (**Associate Professor**).

37. H. Zhu, "Sparsity-Cognizant Algorithms for Monitoring the Smart Power Grid," June 2012; formerly with U. of Illinois at Urbana-Champaign; now with the U. of Texas, Austin (**Assistant Professor**; received NSF-Career Award, 2017).

[9] Won the Best Dissertation Award in Telecommunication Technologies at the Univ. of Madrid, Spain, 2006.

38. J.-A. Bazergue, "Sparse Structural Equation Modeling and Nonparametric Tensor Completion for Gene Expression Networks," May 2013; formerly with UTE, Uruguay (**Research Engineer**); now with Univ. de la Republica, Uruguay (**Associate Professor**).

39. N. Yahya Soltani, "Dynamic Learning and Resource Management Under Uncertainties for Smart Grid and Cognitive Radio Networks," May 2014; now with Marquette University (**Assistant Professor**).

40. M. Mardani, "Sparsity and Low Rank for Big Data and Dynamic Networks," April 2015; formerly postdoctoral researcher at Stanford U; now with NVIDIA (**Research Engineer**).

41. Y. Zhang, "Energy Management for Sustainable Power (Micro) Grids: Distributed, Robust and Risk-Limiting Designs," May 2015; now with U. of California, Santa Cruz (**Assistant Professor**).

42. B. Baingana, "Dynamic Learning and Cartography for Time-Varying Social Networks," January 2016; now with Wind Logic (**Research Engineer**).

43. G. Wang, "Non-Convex Phase Retrieval Algorithms and Performance Analysis," March 2018; post-doctoral researcher with the group 2018-20; now with Beijing Institute of Technology, P. R. China (**Professor**).

44. Y. Shen, "Scalable Learning Adaptive to Unknown Dynamics and Graphs," December 20, 2018; now with U. of California, Irvine (**Assistant Professor**).

45. L. Zhang, "Energy Management and Scalable Learning for Power Grids," January 14, 2019; now with Google (**Research Engineer**).

46. T. Chen, "Machine Learning Meets Internet-of-Things," January 24, 2019; now with Rensselaer Polytechnic Institute (RPI) (**Assistant Professor**); won IEEE-SPS Best PhD Thesis Award , 2020.

47. D. Berberidis, "Adaptive Diffusions and Node Embeddings for Scalable Learning over Graphs," January 25, 2019; postdoctoral researcher at CMU; now with Goldman Sachs (**Research Engineer**).

48. F. Sheikholeslami, "Learning with a Budget, Tensors, and Reinforcement," March 11, 2019; now with Bosch Research and Technology Center (**Research Engineer**).

49. P. Traganitis, "Ensemble Learning," May 6, 2019; now postdoc at UMN.

50. D. Lee, "Data-driven Channel Learning for Next-generation Communication Systems," October 1, 2019; now with Samsung Inc. (**Research Engineer**).

51. V. Ioannidis, "Robust Deep Learning on Graphs," August 17, 2020; now with Amazon AWS (**Research Engineer**).

52. M. Ma, "Locally Aggregated ADMM for Efficient Decentralized Optimization," April 15, 2021; now with ByteDance (**Research Engineer**).

53. A. Sadeghi, "Robust and scalable learning with applications in cyber-physical systems," April 26, 2021; now with Industry (**Research Engineer**).

54. Q. Yang, "Machine Learning-Based Monitoring and Control for Cyber-Physical Energy Systems," Scheduled defense June 2021 (co-advised with Prof. J. Sun, BIT, P.R. China).

55. G. V. Karanikolas, "Structure Identification and Learning over Nonlinear and Dynamic Networks," (Scheduled defense: July 2021).

➢ Ph.D. Theses in progress

56. B. Li, "TBD" (Expected graduation date: May 2022).
57. K. Polyzos, "TBD" (Expected graduation date: Dec. 2024).
58. Y. Zhang, "TBD" (Expected graduation date: Dec. 2025)

➢ Completed M.Sc. Theses

1. A. Dandawate, "Noise cancelers using higher-order statistics with application to speech enhancement," October 1989.
2. M. Tsatsanis, "Detection, estimation and classification using matched filtering and higher-order statistics," April 1990.[10]
3. M. Rangoussi, "Signal reconstruction algorithms and the use of inverse higher-order statistics," May 1990; now with the Dept. of Electrical Engr., Ntl. Tech. Univ. of Athens, Greece (Research Assist. Prof.).
4. A. Delopoulos, "Estimation of autocorrelation and spectra using cumulants and polyspectra: nonparametric and parametric adaptive approaches," May 1990; now with the Dept. of Electrical Engr., Aristotelian Univ. of Thessaloniki, Greece (Associate Professor).
5. C. Grobmyer, "Adaptive phase correction of one-sided asymmetric interferograms," May 1992.
6. G. Zhou, "Amplitude modulated time series, higher-order statistics, and cyclostationarity," December 1992.
7. C. Malek, "Topics in chaos and fractal signal processing," May 1993.
8. R. W. Heath Jr., "Mitigating channel distortions in wireless orthogonal frequency division multiplexing communication systems," August 1997); now with the Univ. of Texas at Austin (Associate Professor).
9. Z. Wang, "Multirate Transceivers for Wireless Block Transmissions and Multicarrier CDMA Irrespective of Multipath Channels," December 1998.
10. Y. Lin, "Globally Convergent Constant-Modulus Blind Equalization of Redundant Block Transmissions," January 1999; now with Capital One, Richmond Virginia.
11. W. Tang, "Redundant Filterbank Precoders and Decision-Feedback Equalizers for Block Transmissions," January 1999; now with Hughes Network Systems, MD.
12. A. Kambanellas, "All-Digital Modulo Pre-Equalization of Nonlinear Communication Channels," February 1999; now with Telecom, Cyprus.
13. P. Anghel, "Generalized Multicarrier and Code Division Multiple Access in Wireless Multipath Channels," March 1999.
14. Y. Liao, "Turbo-Decoding of Zero-Padded OFDM Transmissions," April 2001.

[10] Received the Best Graduate Engineering Thesis Award (NEC Award), University of Virginia, 1990.

15. L. Yang, "Multi-Stage Block-Spreading for Impulse Radio Multiple Access through ISI channels," January 2002.
16. N. Bapat, "Turbo-Decoding of Unitary Precoded and Coded OFDM," December 2002.
17. B. Lu, "Block Differential Encoding for Rapidly Fading Channels," December 2002.
18. A. Ribeiro, "Distributed Quantization-Estimation for Wireless Sensor Networks," August 2005.
19. T. Wang, "Wireless Cooperative Communications and Networking: Performance and Protocols," January 2006.
20. S. Farahmand, "Low-Complexity Synchronization and Demodulation Algorithms for Ultra-Wideband Impulse Radios," May 2006.
21. I. D. Schizas, "Distributed Estimation using Wireless Sensor Networks," February 2007.
22. G. Mateos, "Distributed Adaptive Estimation and Tracking using Ad Hoc Wireless Sensor Networks," July 2009.
23. J.-A. Bazerque, "Distributed Sensing and Resource Allocation for Cognitive Radio Networks," August 2009. (Won the university-wide best M.Sc. Thesis Award for 2009.)
24. H. Zhu, "Distributed Kalman Filtering, Demodulation, and Decoding Using Consensus and Exploiting Sparsity," September 2009.
25. N. Gatsis, "Utility-Based Power Control for Cooperative Dynamic Spectrum Access Networks," July 2010.
26. N. Jain, "Joint Link Learning and Cognitive Radio Sensing," May 2012.
27. B. Baingana, "Embedding Graphs under Centrality Constraints," May 2013.
28. P. A. Traganitis, "Large-scale clustering using Random Sketching and Validation," *Dept. of ECE, University of Minnesota*, July 2015.
29. D. K. Berberidis, "Online Censoring for Large-Scale Regressions with Application to Streaming Big Data," *Dept. of ECE, University of Minnesota*, July 2015.
30. T. Chen, "Resource Allocation for Green Cloud Networks under Uncertainty: Stochastic, Robust and Big Data-driven Approaches," *Dept. of ECE, University of Minnesota*, June 2016.
31. G. V. Karanikolas, "Multikernel-based Nonlinear Functional Connectivity Brain Models," *Dept. of ECE, University of Minnesota*, August 2016.
32. V. N. Ioannidis, "Kernel-based Reconstruction and Kalman Filtering of Space-time Functions on Dynamic Graphs," *Dept. of ECE, University of Minnesota*, July 2017.
33. B. Li, "On Variance Reduction in Machine Learning," *Dept. of ECE, University of Minnesota*, May 2021.

➢ Undergraduate Theses supervised

1. A. Pressuti, "Analysis and synthesis of speech signals," December 1990.
2. C. Malek, "A programming aid for chaotic and nonlinear system analysis," May 1991.
3. D. Dinh, "A voice-activated appliance controller system design," May 1991.
4. S. Pan, "Implementation and testing of human vocal tract estimation model," May 1993.
5. E. Byrne "Hardware design of a DSP platform for high fidelity audio," May 1993.
6. X. Wu "Use of a load plate under a dynamic test condition," August 1993.
7. R. Mozeleski, "Digital processing of an audio signal for passive monitoring of hospital patients' heart signal," May 1994.
8. A. Redfern "Time-varying models of speech," May 1995.
9. B. Allen, "Using wavelets for forecasting 1/f type behavior," May 1995 (Applied Math student).
10. R. W. Heath Jr., "Blind blur identification and perfect image restoration," May 1996. [11]
11. A. Kambanellas, "Pre-equalization of OFDM systems," April 1998.
12. A. Pitsillides, "Multicarrier Wide-band CDMA Systems," May 1999.

➢ Postdoctoral Researchers supervised

1. Daniele Angelosante, 2009-2011; formerly with ABB; now with Amazon, Switzerland (**Research Engineer**).
2. Xiaodong Cai, 2001-2004; now with the Univ. of Miami (**Professor**).
3. Alfonso Cano, 2007-2011; formerly with Broadcom, CA; now with Medtronic, MN (**Res. Engineer**).
4. Jia Chen, 2017-present; now with the UT Rio Grande Valley (**Assistant Professor**).
5. Emiliano Dall' Anese, 2011-2014; formerly with NREL: Ntl. Renewable Energy Lab, Denver, CO (**Research Engineer**); now with the Dept. of ECE, U. of Colorado, Boulder (**Assistant Professor**).
6. David Declercq; 1995-1997; now with the Univ. of Cergy, France (**Professor**).
7. Siavash Ghavami, 2015-2016; now with Mayo Clinic, Rochester, MN (**Research Fellow**).
8. Vasileios Kekatos, 2008-2014; now with Virginia Tech., (**Assistant Professor**).
9. Seung-Jun Kim, 2008-2013; now with the Univ. of Maryland Baltimore County (**Asst. Professor**).
10. Geert Leus, 2000-2002; now with Delft Univ. of Tech., Netherlands (**Professor and IEEE Fellow**).
11. Qin Lu, 2018-present; now with the group.

[11] Received the William L. Everitt Student Award for Excellence; won the first prize in the Undergraduate Thesis Symposium (oral presentation), University of Virginia, 1996.

12. Bertrand Muquet, 1999-2001; now with Motorola, France (**Research Engineer**).
13. Athanasios Nikolakopoulos, 2017-2019;
14. Daniel Romero, 2015-2016; now with University of Agder, Norway, (**Associate Professor**).
15. Pooya Rezaei, 2015-2016; now with OATI (**Software Engineer**).
16. Anna Scaglione, 1999-2001; now with the Arizona State Univ.; formerly with Univ. of California, Davis; Cornell Univ.; and U. of New Mexico (**Professor and IEEE Fellow**).
17. Konstantinos Slavakis, 2012-2015; now with SUNY Buffalo (**Associate Professor**)
18. Panayotis Traganitis, 2019-2021; now postdoctoral researcher with the SPiNCOM group
19. Gang Wang, 2018-2020; now with Beijing Inst. of Technology, P.R. China (**Professor**).
20. Xin Wang, 2005-2007; Florida Atlantic U., USA; and with Fudan U., P.R. China (**Professor**).
21. Yunlong Wang, 2015-2016; now with IMS Health Data Analytics (**Software Engineer**).
22. Yingwei Yao, 2002-2004; now with the Univ. of Illinois at Chicago (**Associate Professor**).

PUBLICATIONS

➢ Theses

G. B. Giannakis, "Signal Processing via Higher-Order Statistics," Ph.D. Thesis, University of Southern California, Los Angeles, California, July 1986.

G. B. Giannakis, "Spectral Estimation: Applications to Seismic Data Processing," Diploma Thesis, National Technical Univ. of Athens, Athens, Greece, October 1981.

➢ Books

[B1] G. B. Giannakis, Y. Hua, P. Stoica, L. Tong, Editors, *Signal Processing Advances in Wireless and Mobile Communications,* Vol. 1: Trends in Channel Est. and Equalization, Prentice Hall, 2000.

[B2] G. B. Giannakis, Y. Hua, P. Stoica, L. Tong, Editors, *Signal Processing Advances in Wireless and Mobile Communications,* Vol. 2: Trends in Single- and Multi-User Systems, Prentice Hall, Inc., 2000.

[B3] G. B. Giannakis, Z. Liu, X. Ma, and S. Zhou, *Space-Time Coding for Broadband Wireless Communications*, John Wiley & Sons, Inc., 2007.

[B4] M. Leinonen, M. Codreanou, and G. B. Giannakis, *Compressed Sensing with Applications in Wireless Networks*, Foundations and Trends in Signal Processing, Dec. 2019.

➢ Book Chapters

[b1] A. Sadeghi, G. B. Giannakis, F. Sheikholeslami, and G. Wang, "Reinforcement Learning for Caching with Space-Time Popularity Dynamics," Chapter in *Edge Caching for Mobile Networks* H. V. Poor and W. Chen (Eds), IET, 2020.

[b2] G. Cavraro, V. Kekatos, L. Zhang, and G. B. Giannakis, "Learning Power Grid Topologies," Chapter in *Advanced Data Analytics for Power Systems*, A. Tajer, S. Perlaza, and H. V. Poor (Eds) Cambridge University Press, 2019.

[b3] V. Kekatos, G. Wang, H. Zhu, and G. B. Giannakis, "PSSE redux: Convex relaxation, decentralized, robust, and dynamic approaches," Chapter 9 in *Advances in Electric Power and Energy; Power Systems Engineering*, M. El-Hawary Editor, 2018.

[b4] V. Ioannidis, M. Ma, A. N. Nikolakopoulos, and G. B. Giannakis, "Kernel-based Inference of Functions on Graphs," Chapter in *Adaptive Learning Methods for Nonlinear System Modeling*, J. Principe and D. Comminiello Eds., Elsevier, 2018.

[b5] M. Mardani, G. Mateos, and G. B. Giannakis, "Big Data," Chapter in *Cooperative and Graph Signal Processing*, P. Djuric and C. Richard Eds., 2018.

[b6] G. Mateos and G. B. Giannakis, "Robust PCA by controlling sparsity in model residuals," in *Robust Decomposition in Low Rank and Sparse Matrices and its Applications in Image and Video Processing*, T. Bouwmans, E. Zahzah, and N. Aybat, Editors, CRC Press, 2017.

[b7] G. B. Giannakis, G. Mateos, I. D. Schizas, H. Zhu, and Q. Ling, "Decentralized learning for wireless communications and networking," in *Splitting Methods in Communication and Imaging, Science and Engineering*, R. Glowinski, S. Osher, and W. Yin, Editors, New York, Springer, 2016.

[b8] B. Baingana, P. Traganitis, G. Mateos and G. B. Giannakis, "Big Data analytics for Social Networks," in *Graph Analysis for Social Media*, I. Pitas, Editor, CRC Press, 2015.

[b9] A. G. Marques, N. Gatsis and G. B. Giannakis, "Optimal Cross-Layer Design of Wireless Multihop Networks," in *Cross Layer Designs in WLAN Systems*, N. Zorba, C. Skianis, and C. Verikoukis, Editors, Troubador Publishing, Leicester, UK, 2010.

[b10] A. Ribeiro, I. D. Schizas, J.-J. Xiao, G. B. Giannakis and Z.-Q. Luo, "Distributed Estimation under Bandwidth and Energy Constraints," Chapter 7 in *Wireless Sensor Networks: Signal Processing and Communications Perspectives*, A. Swami, Q. Zhao, Y. Hong and L. Tong, Editors, pp. 149-184, Wiley, October 2007.

[b11] I. D. Schizas, A. Ribeiro and G. B. Giannakis, "Dimensionality Reduction, Compression and Quantization for Distributed Estimation with Wireless Sensor Networks," in *Wireless Communications*, P. Agrawal, D. M. Andrews, P. J. Fleming, G. Yin, and L. Zhang, eds., vol. 143 in Mathematics and its Applications, pp. 259–296, Springer, New York, 2006.

[b12] L. Yang and G. B. Giannakis, "Digital-Carrier Spreading Codes for Baseband UWB Multiple Access," in *Wireless Ultra-Wideband Radio Communications*, X. Shen, M. Guizani, R.-C. Qiu, and T. Le-Ngoc Editors, Wiley, 2006.

[b13] Z. Tian and G. B. Giannakis, "Acquisition and Tracking for Ultra-Wideband Radios," in *Wireless Ultra-Wideband Radio Communications*, X. Shen, M. Guizani, R.-C. Qiu, and T. Le-Ngoc Editors, Wiley 2006.

[b14] X. Ma and G. B. Giannakis, "Communicating over Wireless Doubly-Selective Channels," in *Space-Time Wireless Systems: From Array Processing to MIMO Communications*, H. Boelcskei, D. Gesbert, C. B. Papadias and A.-J. van der Veen Eds., Cambridge University Press, 2006.

[b15] Z. Tian, T. Davidson, X. Luo, X. Wu and G. B. Giannakis, "Ultra-Wideband Pulse-Shaper Design," in *UWB Wireless Communications*, H. Arslan and Y. Chen, Wiley 2005.

[b16] S. Zhou and G. B. Giannakis, "MIMO Communications with Partial Channel State Information," in *Space-Time Processing for MIMO Communications*, A. Gershman and N. Sidiropoulos Eds., Wiley 2005.

[b17] F. Gini, G. B. Giannakis, M. Greco, L. Verrazzani and G. T. Zhou, "Texture Modeling, Estimation and Validation using Real Sea-Clutter Data," *ASI Project*, E. Dalle Mese Ed., pp. 28-53, November 2002.

[b18] C. Tepedelenlioglu and G. B. Giannakis. "Applications of Filterbanks to Communications," in *Multirate Systems: Design and Applications*, Idea Group Publishing, 2001.

[b19] Z. Wang and G. B. Giannakis. "Block spreading for multipath-resilient generalized multi-carrier CDMA". In G. B. Giannakis, Y. Hua, P. Stoica, and L. Tong, editors, Signal Processing Advances in Wireless and Mobile Communications, volume 2, Chapter 6, Prentice-Hall Inc., 2000.

[b20] A. Scaglione, G. B. Giannakis, and S. Barbarossa. "Linear Precoding for Estimation and Equalization of Frequency-Selective Channels". In G. B. Giannakis, Y. Hua, P. Stoica, and L. Tong, editors, Signal Processing Advances in Wireless and Mobile Communications, volume 1, Chapter 9, Prentice-Hall Inc., 2000.

[b21] G. B. Giannakis and G. T. Zhou, "Statistical Signal Processing: Higher-Order Tools," chapter in Encyclopedia of Electrical and Electronics Engineering, vol. 20, pp. 492-509, John Wiley & Sons Inc., 1999.

[b22] A. Swami, G. B. Giannakis, and G. Zhou, "Bibliography on Higher-Order Statistics," Signal Processing, vol. 60, pp. 65-126, Elsevier Science Publ. B.V., 1997.

[b23] G. B. Giannakis, "Statistical Signal Processing," chapter in Digital Signal Processing Handbook, V. K. Madisetti, D. Williams, Editors-in-Chief, CRC Press, 1998.

[b24] S. Shamsunder and G. B. Giannakis, "Cyclic and High-Order Sensor Array Processing," in Digital Signal Processing Techniques and Applications, Editor, C. T. Leondes, vol. 75, pp. 259-299, Academic Press, 1996.

[b25] G. B. Giannakis, and G. Zhou, "On amplitude modulated time series, higher-order statistics and cyclostationarity," in Higher-Order Statistical Signal Processing and Applications, Eds. E. Powers, B. Boashash, and A. Zoubir, pp. 179-209, Longman Chesire, Australia, 1995 (ISBN 0 582 800773).

[b26] G. B. Giannakis, "Trends in Spectral Analysis: Higher-Order and Cyclic Statistics," in Digital Signal Proc. Tech., P. Papamichalis and R. Kerwin, Eds., pp. 74-97, vol. CR57, 1995.

➢ Patents issued

[P1] G. B. Giannakis, and X. Ma, "Estimating Frequency-offsets and Multi-antenna Channels in MIMO-OFDM Systems," **US Patent no. 10,700,800 B2**, issued June 30, 2020.

[P2] S. Dhople, G. B. Giannakis, and E. Dall'Anese, "Decentralized Optimal Dispatch of Photovoltaic Inverters in Power Distribution Systems," **US 10,139,800 B2**, issued Nov. 27, 2018.

[P3] G. B. Giannakis, and H. Zhu, "State Estimation of Electrical Power Networks using Semidefinite Relaxation," **US Patent no. 9,863,985 B2**, issued January 9, 2018.

[P4] G. B. Giannakis, and X. Ma, "Estimating Frequency-offsets and Multi-antenna Channels in MIMO-OFDM Systems," **US Patent no. 9,614,633**, issued April 4, 2017.

[P5] G. B. Giannakis, E. Dall'Anese, J. A. Bazerque, H. Zhu, and G. Mateos, "Robust Parametric Power Spectrum Density Map Construction," **US Patent no. 9,363,679**, issued June 7, 2016.

[P6] G. B. Giannakis, and X. Ma, "Estimating Frequency-offsets and Multi-antenna Channels in MIMO-OFDM Systems," **US Patent no. 9,374,143 B2**, issued June 1, 2016.

[P7] G. B. Giannakis, G. Mateos, and J. A. Bazerque, "Non-parametric Power Spectral Density Map Construction," **US Patent no. 9,191,831**, issued November 17, 2015.

[P8] G. B. Giannakis, and X. Ma, "Estimating Frequency-offsets and Multi-antenna Channels in MIMO-OFDM Systems," **US Patent no. 2015/0288430 A1**, issued October 8, 2015.

[P9] G. B. Giannakis, and X. Ma, "Estimating Frequency-offsets and Multi-antenna Channels in MIMO-OFDM Systems," **US Patent no. 8,718,185 B2**, issued May 6, 2014.

[P10] G. B. Giannakis, J. A. Bazerque, and G. Mateos, "Nonparametric Power Spectral Density (PSD) Map Construction," **US Patent no. 2013/0310093/A1**, issued November 21, 2013.

[P11] G. B. Giannakis, and X. Ma, "Estimating Frequency-offsets and Multi-antenna Channels in MIMO-OFDM Systems," **US Patent no. 8,588,317**, issued November 19, 2013.

[P12] G. B. Giannakis, and X. Ma, "Estimating Frequency-offsets and Multi-antenna Channels in MIMO-OFDM Systems," **US Patent no. 8,064,528 B2**, issued November 22, 2011.

[P13] G. B. Giannakis, and X. Ma, "Estimating Frequency-offsets and Multi-antenna Channels in MIMO-OFDM Systems," **US Patent no. 20110255572 A1**, issued October 20, 2011.

[P14] G. B. Giannakis and X. Luo, "Blind Synchronization and Demodulation," **US Patent no. 7,864,880 B2**, issued January 4, 2011.

[P15] G. B. Giannakis and L. Yang, "Noncoherent Ultra-Wideband (UWB) Demodulation," **US Patent no. 7,769,115**, issued August 3, 2010.

[P16] G. B. Giannakis, L. Yang, and X. Luo, "Pulse shaper design for ultra-wideband communications," **US Patent no. 7,738,545**, issued June 15, 2010.

[P17] G. B. Giannakis, and X. Ma, "Full-Diversity Full-Rate Complex-Field Space-Time Coding for Wireless Communications," **US Patent no. 7,706,454**, issued April 27, 2010.

[P18] G. B. Giannakis, P. Xia and S. Zhou, "Bandwidth- and Power-Efficient Multi-Carrier Multiple Access for Uplink Broadband Wireless Communications," **US 7,672,384 B2**, issued March 2, 2010.

[P19] G. B. Giannakis, and S. Zhou, "Space-Time Coded Transmissions within a Wireless Communication Network," **US Patent no. 7,609,782**, issued October 27, 2009.

[P20] G. B. Giannakis, and X. Ma, "Channel Estimation for Block Transmissions over Time- and Frequency-Selective Wireless Fading Channels," **US Patent no. 7,590,188**, issued September 15, 2009.

[P21] G. B. Giannakis and L. Yang, "Digital-Carrier Multi-Band User Codes for Baseband UWB Multiple Access," **US Patent No. 7,561,613**, issued July 14, 2009.

[P22] G. B. Giannakis, and S. Zhou, "Space-Time Coding using Estimated Channel Information," **US Patent no. 7,522,673**, issued April 21, 2009.

[P23] G. B. Giannakis and L. Yang, "Multi-User Interference Resilient Ultrawideband Communication," **US Patent no. 7,496,128**, issued February 24, 2009.

[P24] G. B. Giannakis, and S. Zhou, "Space-Time Coded Transmissions within a Wireless Communication Network," **Korean Patent no. 10-0870557**, issued November 27, 2008.

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