Gokhan Sahin, Ph.D. (University of Washington, Seattle, 2001)

Professor and Founding Faculty Member (2004-Present)
Electrical and Computer Engineering Department
Garland Hall, 260P
Miami University, Oxford, OHIO 45056 USA
E-mail: sahing@miamioh.edu

Google scholar page: Gokhan Sahin at Miami University (h-index: 18; i10-index: 26);
PI or co-PI on awards/contracts of ~$2.6 Million over the past decade.

EDUCATION

Ph.D. in Electrical Engineering
University of Washington, Seattle, WA, 2001

Dissertation title: *Service and restoration routing and wavelength assignment, and restoration signaling in optical networks*
Concentration Areas: *Computer and Communication Networks, Algorithms*
Advisor: *Murat Azizoglu*

Master of Science in Electrical Engineering
University of Washington, Seattle, WA, December 1997

Thesis title: *Multicast routing and wavelength assignment in wavelength-routed networks*
Advisor: *Murat Azizoglu*

Bachelor of Science in Electrical Engineering
Bilkent University, Ankara, Turkey, 1996

High School Diploma
Ankara Ataturk Anadolu Lisesi, 1992

AWARDS AND ACHIEVEMENTS

- 2019 Outstanding Researcher Award, College of Engineering and Computing, Miami University, August 2019.
- Nokia-Siemens Networks Chaired Professorship awarded by the National Science Foundation of Portugal, Nokia-Siemens Networks, and U. of Aveiro, following an open international competition, 2013-2016.
- Co-invented AT&T's ROLEX restoration method and protocol suite, which were publicly acknowledged as having led to AT&T's decision to build mesh-based optical backbone networks (US patents awarded in 2005 and 2006).
- ROLEX was also used in the national-scale DARPA CORONET testbed for applications ranging from multi-terabit IP and optical networks to SDN Wide-Area Network for cloud computing by an industry consortium including AT&T Labs, IBM T.J. Watson, and Applied Communication Sciences between 2008 and 2015.
- Wayne C. and Grace Stanley Fellowship, University of Washington, Seattle, 2000 - 2001.
- Full scholarship including tuition, accommodations, and stipend, Bilkent University, 1992 - 1996.
- Ranked 27th nationwide among ~1 million candidates in Turkey's National University Entrance Exam (1992).

ACADEMIC EXPERIENCE

Miami University*, Oxford, OH

Professor, Electrical and Computer Engineering Dept.	**2019-Present**
Associate Professor (tenured), Electrical and Computer Engineering Dept.	**2010 -2019**
Founding Faculty-Assistant Professor, Electrical and Computer Engineering Dept.	**2004-2010**

***Among national public universities, Miami University is ranked No. 3 for its excellence in undergraduate teaching**, according to the U.S. News & World Report 2024 Best Colleges rankings and is consistently among the top 5. **I joined the ECE department the year it was established in 2004**, and contributed to the development of its Electrical Engineering, Computer Engineering, Robotic Eng., M.S. and PhD programs in all aspects from 2004 to present. I helped

shape the curricula (including, as Chair of CC) and obtain our first ABET accreditation in 2007 and maintain it through three additional ABET visits. I have led the ECE assessment and evaluation efforts (as the Chair of the ABET Assessment & Evaluation committee, I was also in charge of preparing the computer engineering and electrical engineering undergraduate assessment reports to the Associate Provost), the governance committee (including drafting a major rewriting), tenure and promotion committee, and the faculty search committees, among numerous other roles. I also served the University Honors Program in leading roles on both recruitment and admissions and the curriculum aspects. I have also served on numerous CEC and University Senate committees including representing the CEC as a University senator.

Universidade de Aveiro and Instituto de Telecomunicacoes (iT)*, Aveiro, Portugal, 2013-2016
Nokia-Siemens Networks Chair and (Full) Professor, 2013-2016
Awarded by the National Science Foundation of Portugal, Nokia-Siemens Networks, and U. of Aveiro following a rigorous open international competition for this national priority area. I was granted a special leave approved by the Miami University president that allowed me to divide my time between Miami University and U. of Aveiro due to the exceptional nature of this recognition.
Researcher, **Instituto de Telecomunicacoes (iT)*, 2013-2016**
* Instituto de Telecomunicacoes (iT) is Portugal's national-scale, not-for-profit, of public interest telecom research institute with participation from both the industry and the academia

Wright Patterson U.S. Air Force Research Lab, Dayton, OH **Summer 2008**
Summer Faculty
Conducted research on intelligent sensing and jamming methods in wireless ad hoc networks

University of Nebraska, Lincoln, NE **2004**
Research Assistant Professor, Computer Science and Engineering Dept.

The George Washington University, Washington, DC **2002-2004**
Research Scientist, Electrical and Computer Engineering/Computer Sci. Dept.

University of Washington, Seattle, WA **1996-2001**
Research/Teaching Assistant, Fundamentals of Networking Lab, Electrical and Computer Eng.

INDUSTRY EXPERIENCE
Corvis Corporation, Columbia, MD **2001-2002**

Senior Network Architect

Technical manager reporting to VP of Network Architecture at the company that developed the first commercially deployed all-optical cross-connect.

Metawave Communications, Redmond, WA **Spring 2000**

Advanced Product Development & Research Intern

Compared the performances of switched-beam and fully adaptive smart antenna systems in CDMA wireless networks.

AT&T Labs Research, Red Bank, NJ **Summer 1998**

Summer Manager

Co-invented/developed a high-impact a restoration method and signaling protocols that achieved sub-second failure-recovery under minimal fault-monitoring requirements in optical mesh networks, with later applications in cloud computing. Two U.S. patents were granted in 2005 and 2006; my co-inventors are: Robert Doverspike, formerly Executive Director of Network Evolution Research at AT&T Labs-Research, John Strand, and Robert Tkach. The method was used in DARPA CORONET Testbed (2008-2015) by a consortium including AT&T Labs, IBM T.J.

Watson Research Labs, Applied Communication Sciences (formerly Telcordia) and other major industry partners in areas ranging from Software-Defined Network (SDN) Wide Area Network for fast provisioning of cloud computing applications to early demonstration of rapid on-demand provisioning in national-scale Multi-Terabit Core Optical Networks (please see details in the NOTE under PT1 and PT2 below).

PUBLICATIONS and PATENTS

Patents (The AT&T Robust Optical Layer End-to-End Cross-Connection (ROLEX) Method):

[PT1] US Patent 7,088,676: R. Doverspike, **G. Sahin**, J. Strand, R. Tkach, **"Methods and Systems for fast restoration in a mesh network of optical cross-connects**," Aug. 2006.

[PT2] US Patent 6,970,417: R. Doverspike, **G. Sahin**, J. Strand, R. Tkach**, "Methods and Systems for fast restoration in a mesh network of optical cross-connects**,"** Nov. 2005

NOTE: The method of PT1 and PT2, called ROLEX (Robust Optical Layer End widely -to-End Cross-Connection), became important factor in determining AT&T's network architecture. It was also used in a DARPA project (2008-2015), CORONET, by a consortium including AT&T Labs, IBM T.J. Watson Research Labs, Applied Communications Sciences (Telcordia), AT&T Government Solutions, and University of Southern California. DARPA CORONET (Dynamic Multi-Terabit Core Optical Networks) aimed to develop the future Internet through IP-over-optical networking paradigm. The inventions were also licensed to several network equipment vendor companies. Some articles referring to ROLEX's significance in Coronet and AT&T's network architecture are listed below.

Some publications citing the significance of Coronet and the ROLEX Restoration Method:

a) A. von Lehmen, et al., "CORONET: Testbeds, Demonstration, and Lessons Learned [Invited]," IEEE J. of Optical Communications and Networking, Marc 2015, vol. 7, No. 3, P. A447-458.

b) A. Chiu, et al., "Network Design and Architectures for Highly Dynamic Next-Generation IP-Over-Optical Long Distance Networks", IEEE J. of Lightwave Technology, June 2009, Vol. 27, No. 12, P. 1878-1890.

c) A. Chiu, R. Doverspike, G. Li, J. Strand, "Restoration Signaling Protocol Design for Next-Generation Optical Network", NFOEC „09, NTuC2, Mar.2009.

Book Chapter:

[B1] **G. Sahin**, S. Subramaniam, **"**Facilitating Service Level Agreements with Restoration Speed Requirements**,"** in "Emerging Optical Network Technologies" (edited by K. Sivalingam, and S. Subramaniam), Springer, 2004.

Journal/Conference Articles:

- I have (co)-authored over~***60*** peer-reviewed articles of which ***32*** are ***journal or equivalent***, ***2*** high-impact patents, ***1*** book chapter, and ***8*** abstracts/technical reports. The publication venues include some of the most competitive journals/conferences in my research areas.
- Based on google scholar, my articles have ~***950*** citations. My *h-index is* ***18*** and *i10-index is* ***26***.

NOTE 1 (Listing Conventions): The corresponding author is denoted explicitly by (c.a.) when it is not the first author. All student author names are *italicized*. Undergraduate and MS students are additionally marked with (**) and (*), respectively.

NOTE 2: The journal impact factors and rankings of most of the earlier articles are reported based on the 2017 JCR, whereas others may be based on the year the paper was published or the current year.

NOTE 3: Some premier conferences are customarily considered journal-equivalent venues in networking, due to very low acceptance rates or selection processes akin to journals (rebuttals or multi-round reviews) to ensure exceptional quality. I have only included IEEE/IFIP CNSM (with Acc. Rate 15.9%), IEEE Infocom (with Acc. Rate 19%), and network-security focused Infocom spin-off CNS in this category.

Refereed Journal or equivalent Articles:

[J1] **G. Sahin**, *S. Cheng**,* "Multi-Criteria Spectrum Management in Elastic Optical Networks," 2026 ***(****in preparation as an invited paper).*

[J2] S. Routray, **G. Sahin**, F. da Rocha, A. Pinto, " Statistical Analysis and Modeling for Optical Networks," special issue on Optical Networking and Computing, *Electronics*, 2025 (**impact factor: 2.6**).

[J3] **G. Sahin**, "A low-complexity decorrelation method for PHY-based key generation," Elsevier Journal of High-Confidence Computing, 2025 (**impact factor: 3.0)**.

[J4] S. Routray, **G. Sahin**, F. da Rocha, A. Pinto, " Deployment Route Length Estimation in Optical Transport Networks," IEEE Journal of Lightwave Technology, 2024 (**impact factor: 4.8, a leading journal in optical technologies including optical networks**).

[J5] X. Cheng, S. Chellappan, W. Cheng, **G. Sahin**, "Guest Editorial Introduction to the Network Science for High-Confidence Cyber-Physical Systems," special issue on network science for high-confidence cyber-physical systems, IEEE Trans. On Network Science and Engineering, 2020 (**impact factor 7.9**).

[J6] *S. Lambert**, H. Lu**, Z. Shreve**, Y. Zhan**,* A. Majumder(c.a.)*,* **G. Sahin**, "A Low-Powered Wearable Motion Detecting System Using Static Electric Fields," IET Cyber-Physical Systems: Theory & Applications, 2020.

[J7] *H. Li, C. Shen*, Y. Zhao, **G. Sahin (c.a.),** H.A. Choi, Y. Shah, "High-Entropy Secrecy Generation from Wireless CIR," IEEE/KICS Journal of Communications and Networks, 2019 (**impact factor: 3.2**).

[J8] *C. Shen, H. Li*, **G. Sahin (c.a.)**, H.A. Choi, Y. Shah, "Golay Code Based Bit Mismatch Mitigation for Wireless Channel Impulse Response Based Secrecy Generation," IEEE Access, vol. 7, pp2999-3007, January 2019 (**impact factor: 3.557**, JCR rank: **19/87** in Telecommunications category).

[J9] *T. Mathur*,* **G. Sahin (c.a.)**, D. Ucci, "A Performance Comparison of Centralized and Distributed Spectrum Management Techniques in Elastic Optical Networks," Journal of Engineering, Jan. 2019 (Acceptance Rate: 18%).

[J10] (**Journal equivalent**) *A. Albaidhani*,* **G. Sahin (c.a.)**, D. Ucci, "Adaptive Flag-Based Signaling for Distributed Spectrum Assignment Spectrum Assignment in Elastic Optical Networks," in IFIP/IEEE *International Conference on Network and Service Management,* 2018 (Acc. Rate: 15%).

[J11] M. Saglam*,* **G. Sahin**, H. Gur, "Calculation of the magnetic field inside the electron," Elsevier Results in Physics, vol. 10, pp 973-974, Sep. 2018 (JCR ranking: **27/78** in multidisciplinary physics category, impact factor: **2.147**).

[J12] P. Argibay-Losada, **G. Sahin**, K. Nozhnina, C. Qiao, "Transport-layer control to increase throughput in bufferless optical packet-switching networks," IEEE/OSA Journal of Optical Communications and Networking, vol. 8, issue 12, pp. 947-961, December 2016 (**the highest-ranked optical networking journal**; JCR rank **9/52** in Comp. Science Hardware and architectures category; impact factor: **2.742**).

[J13] Z. Saglam, **G. Sahin**, B. Boyacioglu, "Compton effect in terms of spintronic," Elsevier Results in Physics, vol. 6, 2016 (JCR ranking: **27/78** in multidisciplinary physics category, impact factor: 2.147).

[J14] P. Argibay-Losada, **G. Sahin**, K. Kitayama, C. Qioa, "On Whether OCS Maximizes Application Throughput in All-Optical Datacenter Networks," IEEE/OSA Journal of Optical Commun. Netw. 7, 1135-1147, December 2015 (**the highest-ranked optical networking journal**; JCR rank **9/52** in Comp. Science Hardware and architectures category; impact factor: **2.742**).

[J15] *S. Routray*, **G. Sahin**, F. da Rocha, A. Pinto, " Statistical Analysis and Modeling of Shortest Path Lengths in Optical Transport Networks," IEEE/OSA Journal of Lightwave Technology, vol. 33, no 13, July 2015, (JCR rank in optics category **13/94**, impact factor: **2025 impact factor: 4.8**).

[J16] (**Journal equivalent**) *C. Lee, C. Shen*, **G. Sahin**, K. Choi, H.A. Choi, "A Novel and Scalable Communication-History Based Knapsack Authentication Framework for IEEE 802.11 Networks" in Proc. of IEEE Communication and Network Security Conference, September 2015 (**Note: IEEE CNS is a spin-off of IEEE Infocom [about CNS],** Acc. Rate: 28%).

[J17] Z. Saglam and **G. Sahin**, "Magnetic Moment of Photon," Journal of Modern Physics, 6, 937-947, June 2015.

[J18] *S. Routray*, **G. Sahin,** F. da Rocha, A. Pinto, ""Estimation of Link-Dependent Parameters in Optical Transport Networks from Statistical Models," IEEE/OSA Journal of Optical Communications and Networking, vol. 6, no 7, pages 601-609, July 2014 (**the highest-ranked optical networking journal**; JCR rank **9/52** in Comp. Science Hardware and architectures category; impact factor: 2.742).

[J19] (**Journal equivalent**) P. Argibay-Losada, K. Nozhnina, G. Sahin, C. Qiao, "Using Stop-and-Wait to Improve TCP Throughput in Fast Optical Switching (FOS) Networks over Short Physical Distances," in Proc. of IEEE INFOCOM 2014, May 2014 (Acc. rate 19%).

[J20] *T. Dempsey**, **G. Sahin (c.a.)**, Y.T. Morton, "Passive and Active Analysis in DSR-Based Ad Hoc Networks," Springer LNICST, vol. 28, P623-638, 2010.

[J21] *S. Stanic*, S. Subramaniam, **G. Sahin**, H. Choi, H.A. Choi, "Active Monitoring and Alarm Management for Fault Localization in Transparent All-Optical Networks," IEEE Transactions on Network and Service Management, June 2010. (JCR rank in Computer Science, Information Systems **26/148**, impact factor: **3.286**).

[J22] M. Saglam, **G. Sahin**, "Photon in the Frame of the Current Loop Model," in *Int. J. of Modern Physics B*, World Scientific Publishing, 2009. (JCR Category: Mathematical Physics, Ranking: **43/55,** impact factor: 0.769)

[J23] *T. Dempsey**, **G. Sahin (c.a.)**, Y.T (Jade) Morton, C. Hopper, "Intelligent Sensing and Classification in Ad hoc Networks: A Case Study," *IEEE Aerospace and Electronic Sys. Magazine,* Vol. 24, No.8, P23-30, August 2009. (JCR Category: Engineering, Aerospace, Ranking: **12/31**, impact factor: 1.36)

[J24] **G. Sahin**, M. Saglam, "Calculation of the Magnetic Moment of the Photon," IOP Journal of Physics Conference Series. 194 022006, 2009.

[J25] *T. Dempsey**, **G. Sahin (c.a.)**, Y.T (Jade) Morton, "Intelligent Sensing and Classification in DSR-based Ad hoc Networks," *IEICE Trans. on Inf. and Sys., special section on Comm. and Inf. System Security*, Stanford University HighWire Press, Vol. E 92-D, No.5, P818-825, May 2009. (special issue **Acceptance Rate: 15/55**, Category: Computer Science, Software Engineering, Ranking: 97/104, impact factor: 0.5)

[J26] *W. Yao*, **G. Sahin**, *M. Li*, B. Ramamurthy, "Analysis of Multi-Hop Traffic Grooming in WDM Mesh Networks," *Optical Switching and Networking*, Elsevier, Vol. 6 Issue 1, P64-75, January, 2009. (**second-ranked optical networking journal**, JCR Category Computer Science, Information Systems: **109/148**, impact factor: 1.13)

[J27] *S. Koo*, **G. Sahin**, S. Subramaniam, "Dynamic LSP Routing in IP/MPLS over WDM Networks," *IEEE J. on Selected Areas in Comm.*, V.24, No.12, P45-55, December, 2006. (**impact factor: 7.172**, Category: Telecomm., JCR Ranking: **5/87**)

[J28] *A. Arora, F. Jin*, **G. Sahin**, H. Mahmoud, and H.A. Choi, "Throughput Analysis in Wireless Networks with Multiple Users and Multiple Channels," *Acta Informatica*, Springer, Vol.43 Issue 3, P147-164, October, 2006. (impact factor: 0.886, Category: Computer Science, Inf. Sys., Ranking: **124/148**)

[J29] **G. Sahin**, S. Subramaniam, "Providing Quality-of-Protection Classes Through Control-Message Scheduling in DWDM Mesh Networks with Capacity Sharing," *IEEE J. of Selected Areas in Comm.*, Vo.22, No.9, P1846-1858, November, 2004. (**impact factor: 7.172**, Category: Telecomm., JCR ranking**: 5/87**)

[J30] **G. Sahin**, S. Subramaniam, M. Azizoglu, "Signaling and Capacity Assignment for Mesh-Based Restoration Schemes in Optical Networks," *OSA J. of Optical Networking*, Vo.1, No.5, P188-205, May 2002. (**the highest-ranked optical networking journal**; JCR rank **9/52** in Comp. Science Hardware and architectures category; impact factor: 2.742).

[J31] **G. Sahin**, M. Azizoglu, "Wavelength Assignment Algorithms for Service and Restoration in WDM Rings," *OSA J. of Optical Networking*, Vo.1, No. 2, P102-111, February 2002. (became IEEE/OSA JOCN, **the highest-ranked optical networking journal**; JCR rank **9/52** in Comp. Science Hardware and architectures category; impact factor: 2.742).

[J32] **G. Sahin**, M. Azizoglu, "Optical Layer Survivability for Single and Multiple Service Classes," *J. of High Speed Networks, special issue on survivable WDM networks,* Vo.10, No.2, P91-108, October 2001. (impact factor 1.38, JCR 2001 ranking in telecom category in the year published: **6/49**)

[J33] **G. Sahin**, M. Azizoglu, "Routing and Wavelength Assignment in All-Optical Networks with Multicast Traffic," *Eur. Trans. on Telecomm., spec. iss. on WDM networks,* Vo.11, No.1, P55-62, Jan. 2000. (became Trans. on Emerging Telecomm. Technologies, Wiley, impact factor 1.606, JCR ranking in telecom category: **50/87**)

1. Refereed Conference/Workshop Proceedings:

[C1] *R. Crill, C. Cheng,J. Femiani, D. Hartup, A. Rapp,* **G. Sahin**, "Application of a Photonic Neural Net to Hypersonic Glider Detection," *GOMACTech (Government Microcircuit Applications & Critical Technology Conference),* March 2020.

[C2] *C. Shen, S. Feng,,* **G. Sahin**, H.A. Choi, "Symmetric Key Generation from Imperfect Shared PHY-Layer Secrecy," IEEE *Globecom,* December 2019.

[C3] (**Journal equivalent**) *A. Albaidhani*,* **G. Sahin (c.a.)**, D. Ucci, "Adaptive Flag-Based Signaling for Distributed Spectrum Assignment Spectrum Assignment in Elastic Optical Networks," IFIP/IEEE *International Conference on Network and Service Management,* 2018 (Acc. Rate: 15%).

[C4] *C. Shen, H. Li*, **G. Sahin**, H.A. Choi, " Low-Complexity Scalable Authentication Algorithm with Imperfect Shared Keys for Internet of Things" *2016 IEEE International Conference on Communications (ICC) Workshop on Wireless Physical Layer Security* Kuala Lumpur, pp. 116-121, May 2016.

[C5] (**Journal equivalent**) *C. Lee, C. Shen*, **G. Sahin**, K. Choi, H.A. Choi, "A Novel and Scalable Communication-History Based Knapsack Authentication Framework for IEEE 802.11 Networks" in Proc. of IEEE Communication

and Network Security Conference, September 2015 (**Note: IEEE CNS is a spin-off of IEEE Infocom [about CNS],** Acc. Rate: 28%).

[C6] *S. K. Routray*, C. Pavan, **G. Sahin**, J. R. Ferreira da Rocha, A. N. Pinto, "Statistical Analysis of Optical Transport Networks: Characterization and Application," 2015 European Conference on Networks and Communications - EuCNC, Paris, France, POS01.5, pp. 753-754, 29 June - 2 July, 2015 (Acc. Rate: 48%).

[C7] Z. Saglam, **G. Sahin**, M. Saglam, "Calculation of the Expectation Values of the Spin and the Magnetic Moment of the Gamma Photons,", in Proc. of 49th Annual Mtg. of the Finnish Physical Society, 2015.

[C8] Z. Saglam, **G. Sahin**, M. Saglam, "Periods of Spin and Orbital Motions of Electron in Atomic States," in Proc. of 49th Annual Mtg. of the Finnish Physical Society, 2015.

[C9] (**Journal equivalent**) P. Argibay-Losada, K. Nozhnina, G. Sahin, C. Qiao, "Using Stop-and-Wait to Improve TCP Throughput in Fast Optical Switching (FOS) Networks over Short Physical Distances," in Proc. of IEEE INFOCOM 2014, May 2014 (Acc. rate 19%).

[C10] P. Argibay-Losada, **G. Sahin**, "On the Impact of Fiber Delay Lines on the Performance of an All-Optical Network Bottleneck," in SPIE Proc. of AOP 2014, May 2014, **invited paper**.

[C11] P. Monteiro, A. de Sousa, *M. Ribeiro***, *T. Trota***, **G. Sahin**, "Algorithms in the deployment of optical transport networks," in Proc. of ICTON 2013, June 2013, **invited paper**.

[C12] *J. Morell**, **G. Sahin**, "Distance-Adaptive Routing and Spectrum Assignment of Deadline-Driven Requests in Reconfigurable Elastic Optical Networks," in Proc. of ICSNC 2012: The Seventh International Conference on Systems and Networks Communications, Nov. 2012 (Acc. Rate: 28%).

[C13] S. Pachnicke, **G. Sahin**, J. Mueller, G. Reese, *N. Luck*, P. Krummrich, "Analysis of Static versus Fully-Dynamic Routing in IP/GMPLS over WDM Optical Networks with Physical-Layer Impairment Constraints," in *Proc. of 35th European Conf. on Optical Communication (ECOC) '09,* Sept. 2009. (Acc. Rate: 32%)

[C14] *T. Dempsey**, **G. Sahin**, Y.T. Morton, "Passive and Active Analysis in DSR-Based Ad Hoc Networks," in Proc. of International Conf. on Ad Hoc Networks '09, Sept. 2009. (Acc. Rate: 39%)

[C15] **G. Sahin**, "Predictive Scheduling in Rate-Adaptive Multi-User Relay Channels with Reconfiguration Delays," in Proc. of IEEE ICDCS WiMan '09, June 2009. (Acc. Rate: 27%)

[C16] *S. Stanic*, **G. Sahin**, H. Choi, S. Subramaniam, H.A. Choi, "Monitoring and Alarm Management in Transparent Optical Networks," in Proc. of 4th IEEE International Conf. on Broadband Networks (Broadnets), September, 2007. (Acc. Rate: 35%)

[C17] **G. Sahin** and A. Chindapol, "Adaptive Spectrum Management in UAV-Aided Ad-Hoc Wireless Networks in Single-area Theater," in Proc. of IEEE Mobile Networking for Vehicular Environments (MOVE) Workshop in conj. with IEEE INFOCOM, pages 133-138, May 2007. (Acc. Rate: 28%)

[C18] *W. Yao*, **G. Sahin**, M. Li, B. Ramamurthy, "Analysis of Multi-Hop Traffic Grooming in WDM Mesh Networks," in Proc. of 2nd IEEE International Conf. on Broadband Networks (Broadnets) V.1, P165-174, October, 2005. (Acc. Rate: 43%)

[C19] *F. Jin*, **G. Sahin**, *A. Arora*, H.A. Choi, "The Effects of the Sub-carrier Grouping on Multi-Carrier Channel-Aware Scheduling," in Proc. of First International Conf. on Broadband Networks, P632-640, October 2004. (Acc. Rate: 30%)

[C20] **G. Sahin**, *F. Jin, A. Arora*, H.A. Choi, "Predictive Scheduling in Multi-Carrier Wireless Networks with Link Adaptation," in Proc. of IEEE 60th Veh. Tech. Conf., Vo.7, P5015-20, Sep. 2004. (Acc. Rate: 50%)

[C21] *S. Koo*, **G. Sahin**, S. Subramaniam, "Dynamic LSP Provisioning in Overlay, Augmented, and Peer Architectures for IP/MPLS over WDM networks," IEEE INFOCOM, 514-23, Mar. 04. (Acc. Rate: 18%)

[C22] **G. Sahin**, S. Subramaniam, "Quality of Protection Through Control Message Scheduling in Optical Mesh Networks", in Proc. of Fourth Int. Work. on the Design of Reliable Comm. Networks, 39-46, Oct. 2003.

[C23] *S. Koo*, **G. Sahin**, S. Subramaniam, "Cost Efficient LSP Protection in IP-MPLS-over-WDM Overlay Networks," IEEE ICC (Int. Comm. Conf.), Vo.2, P1278-21282, May, 2003.

[C24] **G. Sahin**, S. Subramaniam, "Online Control-Message Scheduling for Quality of Protection (QoP) in DWDM Mesh Networks," IEEE Optical Fiber Communication Conf. (OFC), (Trends in Optics and Photonics Series Vol.86) Technical Digest, Vo.2, 488-489, March 2003.

[C25] *S. Stanic*, S. Subramaniam, H. Choi, **G. Sahin**, H.-A. Choi, "Efficient Alarm Management in Optical Networks," in Proc. of 3rd DARPA Inf. Survivability Conf., Vo.1, P252-260, April 2003.

[C26] **G. Sahin**, S. Subramaniam, "Control Message Scheduling for Improving Restoration Times in Optical Mesh Networks," Invited Paper in Proc. of the 14th IASTED International Conf. Parallel and Distributed Computing and Sys., P833-838, November 2002.

[C27] *S. Stanic*, S. Subramaniam, H. Choi, **G. Sahin**, H.-A. Choi, "On monitoring transparent optical networks," in Proc. of International Conf. on Parallel Processing Workshop on Optical Networks (in conjunction with ICPP '02), P217-223, August 2002.

[C28] **G. Sahin**, M. Azizoglu, "An Efficient Wavelength Assignment Algorithm for Service and Restoration in WDM Rings," IEEE Optical Fiber Comm. Conf., Vo.2, P.TuO4-1-3, March 2001.

[C29] **G. Sahin**, M. Azizoglu, "Optical Layer Survivability: Single Service Class Case," in Proc. of the IEEE/SPIE- The Int. Society for Optical Eng.- Optical Networking and Comm. Conf., Vo. 4233, P267-278, Oct. 2000.

[C30] R. D. Doverspike, **G. Sahin**, J. L. Strand, R. W. Tkach, "Fast restoration in a mesh network of optical cross-connects," OFC/IOOC'99. Optical Fiber Communication Conf. and the International Conf. on Integrated Optics and Optical Fiber Comm., Vo.1, P170-172, February, 1999.

[C31] **G. Sahin**, M. Azizoglu, "Multicast Routing and Wavelength Assignment in Wide-area Networks," Proc. of SPIE- The Int. Society for Optical engineering- All Optical Comm. Sys.: Architecture, Control, and Network Issues IV, Vo.3531, P196-208, November, 1998.

Other Articles or Technical Reports:

[T1] R. Crill, D. Bruce, C. Cheng, J. Femiani, D. Hartup, A. Rapp, **G. Sahin (Miami U. PI)**, "Reservoir Algorithm Implementation Using a Sensay Device," DARPA AIE Programs Joint Review Symp., June 2020.

[T2] **G. Sahin**, "Extracting Wireless Physical Layer Shared Keys: Features, Challenges, and a Decorrelation Approach," in proceedings of NSF US-Korea IoT Security Workshop, Seoul, Korea, January 2016 (abstract), invited talk.

[T3] *M. Ribeiro*, **G. Sahin**, "ONECI: Optimizing Next-Generation Optical Network Infrastructure Milestone Report: Control-plane extensions for elastic networks," submitted to National Science Foundation of Portugal, July 2015.

[T4] **G. Sahin**, M. Saglam, "Electron-Positron Annihilation in terms of the Quantum Entanglement and the Conservation of Flux Quantum," CEWQO2009, Book of Abstracts, P159, May 2009.

[T5] M. Saglam and **G. Sahin**, "Application of the Bohr-Sommerfeld Quantization to Photons," CEWQO2009, Book of Abstracts, P157, May 2009.

[T6] **G. Sahin**, "Dynamic Resource Allocation in Integrated Optical Wireless Access Architectures," Miami University Technical Report, October 2008.

[T7] *T. Dempsey**, **G. Sahin**, Y.T (Jade) Morton, "Wireless (Mobile) Ad Hoc Network Intelligent Detection and Characterization," Progress Report submitted to DAGSI/AFRL, 2008.

[T8] M. Saglam, **G. Sahin** "Nanotube Representation for a Photon," Dynamics of Soft Matter Workshop(DSM08) in 2008 Fall Materials Research Society (MRS) meeting (abstract), Boston, December 4-6 2008.

[T9] **G. Sahin**, "Towards Building a Survivable Optical Internet," in Proc. of TASSA Conf., Feb. 2005.

Selected Invited Presentations and Roundtables (presenter underlined**):**

1. *C. Shen, S. Feng,,* **G. Sahin**, H.A. Choi, "Symmetric Key Generation from Imperfect Shared PHY-Layer Secrecy," IEEE *Globecom,* December 2019.
2. H.A. Choi, A. Arora, **G. Sahin**, "Enhancing Coverage, Capacity, and Resilience in Limited Public Safety Networks," PSCR Public Safety Broadband Stakeholder Meeting, July 2019.
3. **G. Sahin**, PSCR Next Generation Deployable Networks Summit, invited participant, October 2017, NIST Laboratories, Boulder.
4. **G. Sahin**, "Minimum Configuration Update Connectivity in Multi-Constellation Relay-Assisted PSNs," NIST-GW PSIAP Project Workshop: Coverage, Capacity, and Resilience Enhancement in Limited Public Safety Networks, Washington DC, October 3, 2017.

5. **G. Sahin** and H.A. Choi, "Enhancing Coverage, Capacity, and Resilience in Limited Public Safety Networks," PSCR Public Safety Broadband Stakeholder Meeting, June 2017.
6. **G. Sahin**, "Extracting Wireless Physical Layer Shared Keys: Features, Challenges, and a Decorrelation Approach," in proceedings of NSF US-Korea IoT Security Workshop, Seoul, Korea, January 2016, invited talk.
7. **G. Sahin**, "Optimizing Statistical Multiplexing All-Optical Network Performance using Two Different Approaches," VIII Int. Seminar in Multi-Gigabit Optical Networks, June 9th, 2015, Aveiro, Portugal, invited talk.
8. P. Argibay, **G. Sahin**, "The Impact of Fiber-Delay-Lines on the Performance of All-Optical-Network Bottlenecks, and a Transport Layer Alternative," invited talk in II. International Conference on Applications of Optics and Photonics (AOP 2014), Aveiro, Portugal, May 30, 2014.
9. **G. Sahin**, "Elastic Optical Networks: Architectural Opportunities and Challenges," Instituto de Telecomunicacoes, Aveiro, Portugal, invited talk, February 21, 2013.
10. P. Monteiro, A. de Sousa, *M. Ribeiro*, *T. Trota*, **G. Sahin**, "Algorithms in the deployment of optical transport networks," in Proc. of ICTON 2013, June 2013, invited talk.

RESEARCH GRANTS:

My funding **over the past decade is ~$2,600,000.** I have been PI/co-PI on **16** awards (***10*** external and ***6*** internal) totaling **~$2,720,000**, including **$2,630,000** from external sources. Most of my external funding was awarded via open international or national competitions with highly selective processes.

External Research Grants/Awards (External total ~$2,630,000; Total funding: ~$2,720,000)

[R1] "Reservoir Algorithm Implementation Using a Sensay Device," DARPA, Photonic Edge AI Compact Hardware Program, **Phase I and Phase II**, June 2019-January 2021. Joint project with Look Dyn. Look Dyn. PI: Rikk Crill**, Miami University PI**: **G. Sahin**, May 2019-January 2021. (~$1,000,000, Miami University share: ~$450,000). Led a multi-disciplinary research team consisting of Computer Science and Software Eng., Electrical and Comp. Eng, and Physics in collaboration with the industry.

[R2] "Coverage, Capacity, and Resilience Enhancement in Limited Public Safety Networks," NIST (Department of Commerce) Public Safety Innovation Acceleration Program. Joint project with the George Washington University and VCU. GWU PI: H.A. Choi, **Miami University PI: G. Sahin**, VCU PI: W. Cheng, June 2017-August 2019 ($700,000; Dr. Sahin's share: $150,000).

[R3] "Exploring Physical Layer Information for Practical History Based Authentication in IoT," Interdigital Corporation. Joint project with the George Washington University. GWU PI: H.A. Choi, **Sub-contractor: G. Sahin,** August 2016-July 2017, $75,000.

[R4] "ONECI: Optimizing Next-generation Elastic Core Network Infrastructure," National Science Foundation of Portugal (FCT), 2013-2015. Joint project with Coriant Networks. PI: F. da Rocha, **Co-PI: G. Sahin,** P. Monteiro, A. Pinto, A. Sousa (156,723 Euros, or ~$216,000) (funding rate 11.3%).

[R5] Nokia-Siemens Networks Invited Chairship awarded by the National Science Foundation of Portugal following an international open competition with co-funding from Nokia Siemens Networks, January 2013-December 2018, **PI: Gokhan Sahin**, ~$115,676 (conversion rates as of December 2013; funds until 2016 were used).

[R6] "Dynamic Management, Control, and Optimization of Elastic Optical Networks," National Science Foundation of Portugal and Nokia Siemens Networks, January 2013-December 2018; funds until 2016 were used. (**PI: Gokhan Sahin** ~$376,126).

[R7] "Optical Network Architectures for Data-Center Applications," National Science Foundation of Portugal and Nokia Siemens Networks, May 2014-April 2015. **PI: G. Sahin** (~$24,796).

[R8] "Optical Networks for Data Applications," Institute of Telecommunications (Portugal's national R&D institute in telecommunications) Strategic Fund, September 2013-August 2015. **PI: G. Sahin** (36,000 Euros, or ~$49,593).

[R9] "Phase II: Wireless (Mobile) Ad Hoc Network Intelligent Detection and Characterization," U.S. Air Force Research Laboratory/DAGSI, August 2008-May 2009. **PI: G. Sahin,** Y.T. Morton ($11,433).

[R10] "Wireless (Mobile) Ad Hoc Network Intelligent Detection and Characterization," U.S. Air Force Research Laboratory/DAGSI, August 2007-August 2008. **PI: G. Sahin,** Y.T. Morton ($60,840)**.**

Internal Grants (total $90,689)

[R11] "Multicast Support in Elastic Optical Networks," ECE Undergraduate Research fund to supervise Yezhou Ni, Advisor: G. Sahin, $2500, Summer 2018.

[R12] "NI-USRP Kits for Teaching and Research in Networking," CEC capital equipment funds, Miami University; **equal-level PIs: G. Sahin** and C. Cheng, $38,600, 2016.

[R13] "Cyber-Physical Systems – A hybrid dynamical systems approach to address optimization, reliability and adaptability under uncertainty," A. Shukla (PI), **G. Sahin (Financial Manager and co-PI**), S. Wright, February 15, 2011-February 15, 2012, $11,056.

[R14] "*Returning Wandering Elders Home: A Pilot Study*," G. Petonito (PI), G. Muschert, M. Paranandi **G. Sahin (co-PI)**, and J. Weiner, Miami University OARS Seed Grant (first place award from OARS interdisciplinary proposal competition based on a speed-networking session), April 2010-April 2011, $10,000.

[R15] Miami U. OARS Matching Fund for Air Force Research Laboratory/DAGSI Phase II, Aug 2008-May 2009. **PI: G. Sahin,** $24,933.

[R16] Dynamic Resource Allocation in Wireless Networks with Link Adaptation," 2005. Undergraduate summer Scholar (USS) program for research with *Dung Nguyen*, Miami U. ($3600).

DOCTORAL STUDENT RESEARCH CO-SUPERVISION:

The College of Engineering and Computing at Miami University did not have a PhD program until 2025. The doctoral students below were informally co-supervised with their main advisors at other institutions.

- C. Shen, "Golay Code Based Bit Mismatch Mitigation for Wireless Channel Impulse Response Based Secrecy Generation, PhD. Dissertation, the George Washington University, 2019 (Advisor: H.A. Choi; External Committee Member: G. Sahin)
- S. Routray, "Statistical Analysis and Modeling of Optical Transport Networks,"Ph.D. dissertation, Department of Electronics, Telecommunications, and Informatics, U. of Aveiro, 2015 (Advisor: A. Pinto)
- S. Stanic, "Fault monitoring and localization in transparent optical networks," DSc dissertation, Electrical and Computer Engineering, the George Washington University, 2011 (Advisor: S. Subramaniam).
- A. Arora, "Theoretical Foundations of Channel Scheduling in Wireless Networks," DSc dissertation, Computer Science, the George Washington University, 2006 (Advisor: H.A. Choi).
- W. Yao "Traffic Grooming in Next-Generation Optical WDM Mesh Networks," Ph.D. dissertation, Computer Science and Engineering, University of Nebraska Lincoln, 2005 (Advisor: B. Ramamurthy).
- Mengke Li, "Cost-Efficient Design of Waveband Switching in Optical Wavelength Division Multiplexed Networks, Ph.D. dissertation, University of Nebraska Lincoln, Computer Science and Engineering Department, 2005 (Advisor: B. Ramamurthy).
- S. Koo, "Provisioning and restoration in IP/MPLS over WDM networks," DSc dissertation, Electrical and Computer Engineering, the George Washington University, 2004 (Advisor: S. Subramaniam).

M.S. and UNDERGRADUATE STUDENT RESEARCH SUPERVISION:

MS thesis supervision:

MS1 T. Dempsey, "Intelligent Sensing and Classification in DSR-Based Ad Hoc Networks," Master of Science in Computer Science, Miami University, 2009 (Advisor: G. Sahin).

MS2 Jared A. Morell, "Adaptive Resizing of Deadline-Driven Requests for Provisioning Traffic in Elastic Optical Networks," Master of Science in Computational Science and Engineering Miami University, August 2013 (Advisor: G. Sahin).

MS3 Tushar Mathur, "Study of spectrum allocation schemes in generalized multi-protocol label switched control plane enabled flexi grid networks," Master of Science in Computational Science and Engineering Miami University, August 2015 (Advisor: G. Sahin).

MS4 Andrew Rush, "Partial destination resolution in multicast elastic optical networks: a mixed-integer linear programming approach," MS in Computational Science and Engineering, Miami University, 2016, Advisor: G. Sahin).

MS5 A. Albaidhani, "Improving lightpath establishment in elastic optical networks," MS in Computational Electrical and Computer Engineering, Miami University, August 2017 (Advisor: G. Sahin).

Undergraduate capstone project and research supervision:

1. Dzung Nguyen, Summer 2005 Undergraduate Summer Scholars (USS) Program, "Channel-Aware Scheduling in Wireless Networks with Link Adaptation." Advisor: G. Sahin
2. Gregg Newstadt and Daniel Schiebl, Fall 2006-Spring 2007 Senior Capstone Project, "GNSS Signal Simulation Toolkit." Advisors: J. Morton and G. Sahin.
3. Ryne Montemurro, Craig Hathaway, and, Derek Podboy, Fall 2007-Spring 2008 Senior Capstone Project, "iPod Transmitter." Advisors: J. Herdtner and G. Sahin.
4. Scott Rom, and Scott Spalding, Fall 2008-Spring 2009 Senior Capstone Project, "Intelligent Jamming in Ad Hoc Networks." Advisor: G. Sahin
5. Faculty Advisor for Shamal Lalvani (High School Senior), Independent Research on "Online Rectangle Filling Algorithms for Channel-Aware Scheduling," 2008-2009.
6. Julia Peak, Raavian Rehman, Joshua Tomaine, Fall 2010-Spring 2011 Senior Capstone Project, "Safe-Walk Assistive Technology for People with Dementia." Advisor: G. Sahin; interdisciplinary project with Sociology and Gerontology.
7. Brady Turner, Shasha Tang, Fall 2011-Spring 2012 Senior Design Project, "Simulation Software for Next-Generation Optical Networks." Advisor: G. Sahin.
8. Marco Ribeiro and Tiago Trota, Spring 2013, "Algorithms for OTN Optimization." (Advisors: A. de Sousa and G. Sahin).
9. Piril Kusoglu, undergraduate research intern, May 2014 (Advisor: G. Sahin).
10. Evan Swihart, and Stephanie Chaffin, "Algorithms and Simulator for Multicasting in Elastic Optical Networks," Senior Capstone Project, Fall 2014-Spring 2015, ECE Department, Miami University (Advisors, G. Sahin, and D. Ucci).
11. Scott McCartney, Independent Research, Fall 2015 - Spring 2016, "Control-Plane for Elastic Optical Networks," undergraduate independent research involvement (Advisors: G. Sahin and D. Ucci).
12. Shane Lambert, Haitao Lu, Zane Shreve, Yi Zhan, Fall 2017-Spring 2018 Senior Capstone Project, "Wearable Internet of Things for Activity Classification." Advisors: AKM. Majumder and G. Sahin.
13. Yezhou Ni, Independent Research, Summer 2018, "Multicast Support in Elastic Optical Networks," Advisor: G. Sahin
14. Cory Hufford, Haixu Dong, Yu Qi, Fall 2018-Spring 2019 Senior Capstone Project, "Mobile BS Placement in LTE-based Public Safety Networks," Advisor G. Sahin
15. Lanutoshi Paul, Independent Research, Fall 2018, "Public Safety Networks Simulations," Advisor: G. Sahin.

16. Yuyang Wang, Di Hou, Spring 2019 Senior Capstone Project, "An Obstacle Avoiding Robot Implementation," Advisor: G. Sahin.
17. Xu Zhuo, Summer 2019, ECE Scholar Program, "Communication Gap Avoiding Trajectory Computation for mobile eMBS for Public Safety Networks," Advisor: G. Sahin
18. Wenbo Nie, Geng Zhang, Weiguang Zhao, Fall 2019-Spring 2020 Senior Capstone Project, "Agent Based Simulation for Public Service Network Disaster Scenario Benchmarks" Advisors: P. Jamieson and G. Sahin.
19. J. Hagan, C. Corless, J. Russell, H. Le, Fall 2020-Spring 2021 Senior Capstone Project, "HyperDimensional Computing" Advisors: D. Hartup and G. Sahin.
20. J. Edward, R/ Vonerden, R. Zank Fall 2025-Spring 2026 Senior Capstone Project, "Using ML for Statistical Modeling of Optical Networks" Advisor: G. Sahin.

Other:

21. Faculty Advisor for T. Dempsey, "Wireless (Mobile) Ad Hoc Network Intelligent Detection and Characterization," DAGSI/AFRL Graduate Student/Faculty Research Project: January 2007-August 2009 (proposal developed while Tae was an undergraduate)
22. Faculty Advisor for paid Student Summer Research, A. Wibowo, "Hybrid Cyber-Physical Systems Research" Summer 2011.

SUMMARY OF TEACHING EXPERIENCE AND SUCCESS:

I have taught in the Electrical and Computer Engineering (ECE) department at Miami University since 2004. My academic positions at Miami University, University of Washington, the George Washington University (ECE and CSE), and University of Nebraska (CSE) allowed me to have teaching and research interactions with both ECE and Computer Science and Software Engineering students. Miami is well-known for its commitment to teaching excellence. The US News and World Report consistently ranks Miami University among the top 5 institutions nationwide for its undergraduate teaching [about Miami]. I taught over ***70*** regular-semester courses with over ***100*** course sections, ranging from 100-level to graduate, all of which except one had associated laboratory components or major projects. In courses with laboratory components, I was physically in the labs, directly teaching these components as well, which gave me valuable opportunities for on-on-one interaction with the students to reinforce the concepts covered in the lecture. The courses I taught/developed have shown significant variation in terms of content, as well as the mix and size of the student population: EAS/ECE/CSE 102: Introduction to Computing and Engineering (a 3 credit-hour lecture and hands-on laboratory course that involves programming projects with sensor-equipped Lego robots in NXC and MATLAB), ECE 203/205: Circuits, ECE 304: Electronics, ECE 301/ECE 305: Adv. Circuits and Renewable Energy, ECE 306: Signals and Systems, ECE 388: Smartphone Technologies, ECE 461/561: Network Modeling and Performance Analysis, ECE 661: Optical Network Architectures. I personally proposed/developed the courses ECE 388, ECE 461/561, ECE 661, and the ECE-designated version of 102, and essentially all the teaching materials for the remaining courses (ECE 203/205, ECE 304, ECE 305, and ECE 306). In all these courses, I strived to follow an integrated approach that combines theory and applications; simulations and hands-on experiments; and, lecturing and in-class activities geared towards active learning. I used the following methods for formal evaluation of teaching. 1) Student Evaluations (conducted for each course); 2) Small Group Instructional Diagnosis (SGID) conducted by Miami Center for Teaching Excellence; 3) Peer Evaluations. All the formal evaluations consistently and strongly indicated my exceptional level of teaching success, surpassing the high standards of Miami, which prides itself in its teaching excellence. I also use informal feedback mechanisms to improve my teaching. I discuss student evaluations in more detail next.

I received exceptionally strong teaching evaluations from my students at Miami University. In a quantitative analysis of evaluations tracked over a 15-year period, students overwhelmingly expressed that I effectively facilitated learning (average rating: ***3.58*** out of ***4.0*** across all courses taught), and, rated my teaching as excellent (average rating: ***3.45***). I received high ratings from the students in all categories of professor evaluation. These averages vary between ***3.35*** and ***3.80*** with a median of ***3.61*** and a mean of ***3.58***. The student evaluation ratings suggest that the instructor: explained theories, applications clearly (***3.42***); was

highly enthusiastic about subject (***3.63***); was welcoming to questions (***3.71***); was respectful and concerned with all students (***3.72***); was available and helpful outside class (***3.70*** and ***3.61***).

RECENT COURSES TAUGHT AS FIRST-TIME OFFERING AT MIAMI UNIVERSITY:

The following courses were completely developed and taught by me as first-time offering at Miami University.

- **ECE 661: Optical Networks** (FALL 2023): Graduate level course in optical networks and architectures.
- **ECE 388: Smartphone Technologies (Wireless Networks and Systems)** (FALL 2023): An introductory course covering key technologies associated with wireless communications and networks.
- **Quantum Networks (4xx/5xx):** To be offered as a cross-listed (BS/MS level) course focusing on the algorithmic and protocol aspects of quantum networks (in preparation in support of the newly introduced Quantum Computing degree program within the Computer Science and Software Eng. Department).

SERVICE:

Editorship and Service to the Profession

- Associate Guest Editor, MDPI Electronics, special issue on Optical Networking and Computing, 2025.
- Associate Guest Editor, *IEEE Transactions on Network Science and Engineering*, special issue on Network Science for High-Confidence Cyber-Physical Systems, 2020.
- Editorial Board Member, *IETE Technical Review*, 2008-present (**Impact Factor: 1.8**)
- Editorial board member of the American Institute of Mathematical Sciences (AIMS) journal *Mathematical Foundations of Computing*, 2017-2020.
- Technical Program Committee Member, IEEE Globecom 2019, 2018, 2016, 2015, 20011, 2019, 2006, 2005, 2004 in Wireless Networking or Optical Networking Symposia, or both, as well as IEEE ICC for several years. Technical Program Committee Member, ICNC 2012, and several other international conferences.
- Reviewer / Referee for the following journals/magazines (in addition to numerous conferences): IEEE/ACM Transactions on Networking, IEEE Journal on Selected Areas in Communications, Elsevier Optical Switching and Networking Journal, Photonic Communications and Networks (Springer), OSA/IEEE Journal of Optical Communications and Networking, IEEE/OSA Journal of Lightwave Technology, IEEE Internet of Things Journal, IEEE Communications Magazine, Theoretical Computer Science Journal, ACM Transactions on Embedded Computing Systems, IETE Technical Review, Computer Networks, Journal of High Speed Networks, IEEE T. on Network Science and Engineering.

Service to the University

- **Departmental committees**

1. Chair, Assessment and Evaluation Comm. (2018-2021), and Member 2017-present: We develop assessment and evaluation plans; collect and review all course assessment and evaluation reports; and prepare the department-level reports for ABET accreditation reviews.
2. ECE Assessment Contact to the Provost's Office, 2018-2021: I coordinated all departmental assessment an evaluation efforts and prepare the annual assessment reports for the electrical engineering and computer engineering programs that are submitted annually to the Associate Provost.
3. Chair, Tenure and Promotion Committee (many years), and member (2010-present). I have served on the P&T committees of almost all current ECE faculty members, except the department chair.
4. Chair, Faculty Search & Scr. Committee for the years 2017-18 and 2007-08, and member (2005-present, except a few searches).

5. Chair, ECE Governance Committee: Fall 2017-present: Led the effort to review and update the governance document in multiple rounds, with emphasis on promotion and tenure guidelines for tenure-track and TCPL (teaching and clinical professors and lecturers) faculty and organizational changes.
6. ECE Governance Update, Spring 2017: Individually brought the ECE governance document up to date with the new University requirements.
7. Chair, Undergraduate Curriculum Committee (2017-present, 2014-January 2016, Fall 2013, 2010-January 2013, 2004-2007): As a new department, our curriculum has been highly dynamic. We developed major modifications to our CE and EE major and minor requirements and to prerequisites, as well as the course offering plan. We developed the current structure of the professional and technical electives for both majors. In addition, we dealt with curriculum-related student petitions on a regular basis.
8. Inaugural Member, Computer Engineering Program Advisory Committee (2019-present): This committee was formed to make recommendations to enhance the Computer Engineering program in line with the nationally accepted core and supplemental requirements for computer engineers.
9. Member, ECE Graduate Curriculum and Admissions Committee (2010 to Fall 2013, and Fall 2015)
10. Chair (currently, Ad Hoc ABET Committee for ABET's visits in 2022, 2016, 2010, and 2007. Prepared the ABET portfolio and course assessment materials for several courses: ECE 304, 305, 306, and 461.
11. ECE Department library liaison (2010-2011, 2013-2014, Fall 2014, 2015)
12. ECE representative and participant, "Creativity and Learning: Multiple Frameworks for the Engaged University" Symposium, March 26, 2010
13. Member, Ad-hoc Committee for MSCS-Communication track (2004-2006)
14. Member, CSA Department UCC as ECE department liaison (2004- ~2007).

- **Division and University Committees**

15. Globalization in Experiential Learning (University Committee, 2024-2025)
16. Program Assessment and Improvement (University Committee, 2024-2025)
17. University Senator, 2021-2024 (elected for a 3 year term)
18. CEC Faculty Advisory Council member (elected): 2017-2018 and 2018-2019, 2024: Updating CEC Governance document; developing new mission and vision statements for the CEC.
19. General Engineering Committee, 2018-present.
20. CEC Research Council, 2014-2015.
21. University Senate Faculty Welfare Committee Member (2011-2014): We reviewed the enterprise university proposal considered by the state of Ohio and experience of other universities under similar transformations. We developed a survey for clinical/lecturer faculty which was administered in 2012.
22. University Senate Honors Program Advisory Committee (2007-2013): After major revisions to the program, 60 courses and co-curricular program were newly reviewed approved in the 2010-2011 academic year (for a total of 115 offered per year). Several changes to the Honors program were reviewed and approved, including further incorporation of regional campus students to the Honors Program, and the increase of the enrollment cap in Honors courses from 20 to 24 to meet the student demand.
23. Member, Goldman Prize Finalist Selection Comm. in 2012, and Goldman Prize Interview Comm. In 2011.
24. CEC Faculty Advisory Council member from 2010 until the end of 2012: Helped develop new online chair evaluation process; revise the CEC Governance Document and CEC evaluation forms/questions.
25. Member, Honors and Scholars Program Admission and Recruitment Committee-HSPARC (2005-2012): The committee, originally named Harrison Scholars Committee, oversaw recruitment for Miami's top scholarship to incoming students. The committee, renamed HSPARC, had broader responsibilities for the UHP. My contributions for the committee are described below and were commended by Dr. Carolyn Haynes, then the Director of UHP. a) Worked with committee members to review and revise applicant evaluation criteria for reviewing all Harrison Scholarship applicants, and after 2008, all UHP applicants. b) Harrison Reader/UHP Reader: Attended Harrison/UHP reader training workshop every year and individually reviewed and scored over 50 applications. c) Attended Harrison Finalists Dinner, 2006-2008, to meet with the finalists and their families, and to help recruit the students. d) Developed an NSF proposal with Dr. Haynes for international integrated research/education partnership with TU Dortmund that includes special programs for Honors students.

26. Member, CEC Curriculum Committee (2021-present, 2011-2012): Reviewed all course and curriculum changes across all departments in CEC, as well as any other curriculum changes related to CEC.
27. Member, SEAS Diversity Committee, Fall 2005-2008: Assisted in enhancing diversity and in promoting a Seas teaching/diversity workshop entitled What to do when you do not know what to do. Served as liaison on diversity issues.
28. Member, SEAS Globalization Committee, Fall 2008-Fall 2009: Assisted in the development and evaluation of surveys to assess our students' global awareness.
29. Participated in the School of Engineering and Applied Science's Advisory Council Meetings.
30. Member, CSA Department Undergraduate Curriculum Committee (2005-2007).
31. Alternate Member, SEAS Grievance Committee.

- **Other sample special assignments**

32. CEC Recognition Ceremony, Diploma Handler, 2019, 2018, and many times earlier.
33. CEC Undergraduate Research Interview with Zane Shreve, April 27, 2018: Participated as faculty co-advisor in Zane Shreve's interview to showcase his team's capstone design project.
34. Higher Learning Commission (HLC) Review Team meeting with selected faculty members, April 28, 2015, Marcum (sharing faculty perspectives; the only CEC representative). Commended by Dr. Carolyn Haynes (Appendix 4). HLC Review team tour-guide of ECE department laboratories and facilities, April 30, 2015.
35. First week Welcome Events for freshmen Engineering students, and the associated ECE session (2013).
36. a) Panelist, "Getting Started in Research Workshop," for University Honors students, Shriver Heritage Room, Feb. 22, 2011. b) ECE representative and participant, "Creativity and Learning: Multiple Frameworks for the Engaged University" Symposium, March 26, 2010.

Service to Students (Sample List)

1. Faculty Co-Advisor, IEEE Student Chapter (2017-2019). **2.** CEC Recognition Ceremony, Diploma Handler, 2019, 2018. **3.** CEC Undergraduate Research Interview with Zane Shreve, April 27, 2018: Participated as faculty co-advisor in Zane Shreve's interview to showcase his team's capstone design project. **4.** Faculty Member, HKN, inducted in 2015. **5**. First week Welcome Events for freshmen Engineering students, and the associated ECE session (2013). **6**. Panelist, "Getting Started in Research Workshop," for University Honors students, Shriver Heritage Room, Feb.22, 2011. **7**. ECE representative and participant, "Creativity and Learning: Multiple Frameworks for the Engaged University" Symposium, March 26, 2010. **8**. I met with Harrison Scholarship finalists/families considering engineering and computing majors. **9.** Career and Graduate School Advising to many students. Many of my previous research students have completed their PhDs at various institutions.