

American Public Power Association

The American Public Power Association is the voice of not-for-profit, community-owned utilities that power 2,000 towns and cities nationwide. We represent public power before the federal government to protect the interests of the more than 49 million people that public power utilities serve, and the 93,000 people they employ. The Association advocates and advises on electricity policy, technology, trends, training, and operations. Our members strengthen their communities by providing superior service, engaging citizens, and instilling pride in community-owned power.

The Association partners with its members to promote public power, helping community-owned utilities deliver superior services through joint advocacy, education, and collaboration. Its vision is to shape the future of public power to drive a new era of community-owned electric service.

Florida Municipal Power Agency

Florida Municipal Power Agency (FMPA) is a wholesale power agency owned by municipal electric utilities. FMPA's mission is to provide low-cost, reliable and clean power plus value-added services for FMPA's owner customers that benefit their communities and customers.

The benefits of working together include:

- **Low-cost, Reliable and Clean Power:** By coordinating the power supply needs for several utilities, FMPA is able to provide wholesale power that is low-cost, reliable and clean.
- **Access to Resources:** FMPA members have access to the resources of a statewide organization, including FMPA's professional staff and more than two dozen services.
- **Strength in Numbers:** Working together enables municipal utilities to pool their resources in beneficial ways, such as planning, operating, negotiating, advocating and more.

Staff Office: Tangerine, 3rd Floor

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Day 1

8:00 a.m. Registration, coffee, continental breakfast

9:00 a.m. Welcome and opening remarks, (Room: Citron East/West, 1st Floor)

Jacob Williams, Florida Municipal Power Agency

9:10 a.m. Panel discussion: Elements of a successful public power cybersecurity program, (Room: Citron East/West, 1st Floor)

- Cybersecurity in your supply chain. Paying attention to the threats and risks lurking in your vendors, devices, and systems.
Michael Rovnan, National Security Agency (NSA)
- Cybersecurity challenges facing public power: What is being done?
Carter Manucy, Florida Municipal Power Agency
- Cybersecurity for energy deliver systems: Tools and resources available from the American Public Power Association
Nathan Mitchell, American Public Power Association
- Information sharing resources contribute to resilience and help prepare for responses
Bill Lawrence, Electricity Information Sharing and Analysis Center (E-ISAC); North American Electric Reliability Corporation
Eugene Kipniss, Multi-State Information Sharing and Analysis Center (MS-ISAC)

10:30 a.m. Break

10:45 a.m. Breakout sessions

	Breakout Session A (Pindo A, 1st Floor): Management Track Moderator: Peggy Welsh Welsh Consulting, LLC	Breakout Session B (Pindo B, 1st Floor): Operations Track Moderator: Christopher Kelley Beam Reach Consulting Group
10:50 a.m.	<ul style="list-style-type: none"> • Public Power Cybersecurity Scorecard—An overview for managers Jason Christopher, Axio Research, LLC. 	<ul style="list-style-type: none"> • How to plan for and execute successful incident response policies and procedures Mark McKinney, Acumen Engineered Solutions International, Inc. (AESI)
11:20 a.m.	<ul style="list-style-type: none"> • Reviewing a real-world exercise. Rapid Attack Detention, Isolation and Characterizations Systems (RADICS) experience with repowering a grid with malware on OT Michael Toecker, Context Industrial Security 	<ul style="list-style-type: none"> • Tools and research in cybersecurity — resources for security professionals Dr. Osama A. Mohammed, Florida International University Ernest Ferrareso, Cyber Florida: The Florida Center for Cybersecurity

	<p>Breakout Session A (Pindo A, 1st Floor):</p> <p>Management Track</p> <p>Moderator: Peggy Welsh Welsh Consulting, LLC</p>	<p>Breakout Session B (Pindo B, 1st Floor):</p> <p>Operations Track</p> <p>Moderator: Christopher Kelley Beam Reach Consulting Group</p>
12:00 p.m.	<ul style="list-style-type: none"> Peer to peer discussion: Workforce, staff, and resources. Who is responsible for cybersecurity? Group, Moderator 	<ul style="list-style-type: none"> Peer to peer discussion: Workforce development, training, and learning resources. Strengthening skills through peer training. Group, Moderator
12:30 p.m.	<ul style="list-style-type: none"> Breakout Table Debrief 	<ul style="list-style-type: none"> Breakout Table Debrief
12:45 p.m.	Networking lunch	
1:30 p.m.	Breakout sessions resume	
	<p>Breakout Session A (Pindo A, 1st Floor):</p> <p>Management Track</p> <p>Moderator: Christopher Kelley Beam Reach Consulting Group</p>	<p>Breakout Session B (Pindo A, 1st Floor):</p> <p>Operations Track</p> <p>Moderator: Peggy Welsh Welsh Consulting, LLC</p>
1:35 p.m.	<ul style="list-style-type: none"> Frameworks for good cybersecurity hygiene. The importance of incident response. Mark McKinney, Acumen Engineered Solutions International, Inc. (AESI) 	<ul style="list-style-type: none"> Prepare for and conduct a successful cybersecurity assessment. What technical resources and information is needed? Jason Christopher, Axio Research, LLC.
2:05 p.m.	<ul style="list-style-type: none"> Public Power Cybersecurity Roadmap— culture changes needed to support cybersecurity Christopher Kelley, Beam Reach Consulting Group 	<ul style="list-style-type: none"> Reviewing a real-world exercise: Rapid Attack Detention, Isolation and Characterizations Systems (RADICS) experience with blackstart after a simulated cyber attack on OT systems. Michael Toecker, Context Industrial Security
2:35 p.m.	<ul style="list-style-type: none"> Tools and research in cybersecurity — resources for managers Dr. Osama A. Mohammed, Florida International University Ernest Ferrarresso, Cyber Florida: The Florida Center for Cybersecurity 	<ul style="list-style-type: none"> Information sharing resources. Tools for cybersecurity and how to use them at your organization Bill Lawrence, E-ISAC, North American Electric Reliability Corporation Eugene Kipniss, MS-ISAC
3:15 p.m.	<ul style="list-style-type: none"> Breakout Table Debrief 	<ul style="list-style-type: none"> Breakout Table Debrief
3:30 p.m.	Networking and relocation break	
4:00 p.m.	Open source intelligence discussion (Citron East/West, 1st Floor) Joe Gray, Enterprise Security Consultant	
5:00 p.m.	Group report-out and roundtable discussion (Citron East/West, 1st Floor) <ul style="list-style-type: none"> Participant reports from Management and Operations Tracks 	
5:45 p.m.	Closing remarks (Citron East/West, 1st Floor) Carter Manucy, Florida Municipal Power Agency	
6:00 p.m.	Close	

Day 2

- 7:30 a.m. Registration, coffee, continental breakfast**
- 8:00 a.m. Welcome and opening remarks (Citron East/West, 1st Floor)**
Nathan Mitchell, American Public Power Association
- 8:15 a.m. Neighborhood Keeper Program: Collaborative threat detection for small to medium sized public power utilities (Citron East/West, 1st Floor)**
Matt Bodman, Dragos, Inc.
- 8:45 a.m. The *Public Power Incident Response Playbook*: Deep dive into the tool (Citron East/West, 1st Floor)**
Lindsey Kishter, Nexight Group
- 9:45 a.m. Networking break**
- 10:15 a.m. Social engineering development and exercises (Citron East/West, 1st Floor)**
Joe Gray, Enterprise Security Consultant
- 12:00 p.m. Networking lunch**
- 12:45 p.m. Completing the *Public Power Cybersecurity Scorecard*, from preparation to assessment (Citron East/West, 1st Floor)**
Jason Christopher, Axio Research, LLC.
- 1:45 p.m. Taking the next steps—following the *Public Power Cybersecurity Roadmap to success* (Citron East/West, 1st Floor)**
Christopher Kelley, Beam Reach Consulting Group
- 2:15 p.m. Open discussion forum (Citron East/West, 1st Floor)**
Isaac Barbosa, Florida Municipal Power Agency
Carter Manucy, Florida Municipal Power Agency
- 3:30 p.m. Closing remarks (Citron East/West, 1st Floor)**
Nathan Mitchell, American Public Power Association
- 3:45 p.m. Close**

July 10–11

2019

American Public Power Association
Florida Municipal Power Agency
Regional Cybersecurity Summit
Orlando, Florida

Speakers

Isaac Barbosa

Information Security Analyst, Florida Municipal Power Authority

Isaac Barbosa is the Information Technology Security Analyst for Florida Municipal Power Agency, a joint-action agency in Orlando, Florida. His responsibilities with FMPA include monitoring and administering the security and network systems dedicated to internal client by using the latest tools in combating security threats to the organization. Isaac is a member of the Information Systems Security Association where he actively collects and shares Information Systems Security knowledge in the Central Florida Chapter.

Matt Bodman

Director of Special Programs and Privacy Officer, Dragos, Inc.

Mr. Bodman is the Director of Special Programs and Privacy Officer at Dragos, Inc. Before joining Dragos he spent more than 20 years in government service, including the U.S. Navy and the intelligence community, where he worked, managed, and advised clients on computer network operations focused mission.

Since 2013, he has served as an Adjunct Law Professor at the University of Baltimore, School of Law, where he teaches courses related to internet, cybersecurity, and information privacy law. Mr. Bodman received a B.A. in Economics from University of Maryland, College Park; a J.D. from the University of Baltimore; and an LL.M in National Security Law from Georgetown Law School. He also maintains status as a Certified Information Systems Security Professional (CISSP) and as a Certified Information Privacy Professional (CIPP/US).

Jason Christopher

Chief Technology Officer, Axio Research, LLC.

Jason Christopher is the Chief Technology Officer for Axio Research, LLC. His responsibilities include providing technical leadership on security and resilience issues relevant to Axio, its partners, and clients, and the development of all Axio technology platforms for security metrics and benchmarking.

Prior to Axio, Mr. Christopher led the research for cybersecurity metrics and information assurance at the Electric Power Research Institute. Previously, he was the technical lead for cybersecurity capability and risk management at the U.S. Department of Energy, where he managed the Cybersecurity for Energy Delivery Systems Operations program, which included the Cybersecurity Capability Maturity Model and other collaborative efforts. Mr. Christopher also served as the program lead for both Critical Infrastructure Protection Standards and Smart Grid Security at the Federal Energy Regulatory Commission. Mr. Christopher worked on a variety of infrastructure projects, particularly in the field of industrial control systems design and implementation. He has also researched and designed technology systems across

multiple industries, including energy, water, transportation, and communications. He has been a representative on the Federal Smart Grid Task Force, the Critical Infrastructure Protection Committee (CIPC), and other technical committees.

Mr. Christopher is a member on the Institute of Electrical and Electronics Engineers (IEEE-USA) Energy Policy, Communications Policy, and Research & Development Policy Committees. Over the past decade, he has focused on the development of cybersecurity standards and practices for the nation's critical infrastructure.

Ernest Ferraresso

Associate Program Director, Cyber Florida: The Florida Center for Cybersecurity

As the Associate Program Director for Cyber Florida, Ernie Ferraresso oversees the Center's partnership program, working with industry, academia and the private sector to collaborate on projects of mutual interest. Additionally, he coordinates Cyber Florida's efforts to support Government and Law Enforcement Cyber programs as well supporting the efforts to expand Florida's cybersecurity education in K-12 schools.

Prior to Cyber Florida, Mr. Ferraresso worked for a small technology design and integration firm as the Director of Operations, overseeing the design and implementation of cybersecurity and operation center technology solutions in the United States and throughout Latin America. He is a retired U.S. Marine Intelligence Officer who served in the United States and abroad. His work included assignments with U.S. Special Operations Forces, the intelligence community, the George C. Marshall European Center for Security Studies, and U.S. Cyber Command.

Joe Gray

Enterprise Security Consultant

Joe Gray joined the U.S. Navy directly out of high school and served for seven years as a Submarine Navigation Electronics Technician. Joe maintains his own blog and podcast, "Advanced Persistent Security." In his spare time, Joe enjoys attending information security conferences, contributing blogs to various outlets, training in Brazilian Jiu Jitsu (spoken taps out A LOT!), and flying his drone. Mr. Gray is in the inaugural winner of the DerbyCon Social Engineering Capture the Flag (SECTF), and was awarded a DerbyCon Black Badge. Joe has contributed material for the likes of AlienVault, ITSP Magazine, CSO Online, and Dark Reading.

Christopher Kelley, PMP

Vice President, Beam Reach Consulting Group

Chris Kelley is a management and technology consultant with more than 20 years' experience in the energy and technologies industries. As an experienced program management consultant, his background includes developing and improving utility, technology, and energy strategy and execution-oriented program management offices. He has facilitated effective collaborations of disparate groups focused on critical national challenges, innovation and ideation, industry-wide opportunities, and organizational strategy.

Mr. Kelley's recent support includes human factors change management for a distributed energy interconnection project at a large utility, and program design and stakeholder engagement for a national energy resilience program. He is currently working with the public power Cybersecurity Roadmap Advisory Committee to support development of a Cybersecurity Roadmap for small- to medium-sized public power utilities. He holds a Bachelor of Science in Information Systems from the University of Maryland, Baltimore County and a Master of Business Administration in Strategy from the University of Maryland, College Park Smith School of Business. His is a certified Program Management Professional and a Scout Leader for his son's active Cub Scout Pack.

Eugene Kipniss

Program Manager, Multi-State Information Sharing and Analysis Center (MS-ISAC)

Eugene Kipniss works on the Stakeholder Engagement team with our nation's state, local, territorial, and tribal (SLTT) governments, authorities, and public utilities. The Stakeholder Engagement team seeks to provide SLTT agencies with access to the many MS-ISAC services and information products that support organizational security posture and awareness. Additionally, he co-chairs the MS-ISAC's Education and Awareness working group, which focuses on bringing cybersecurity knowledge to both end-users and IT staff alike.

Lindsay Kishter

Director, Nexight Group

Lindsay Kishter leads the energy infrastructure and cyber security practice at Nexight Group, a strategy and technical consulting firm in Silver Spring, Maryland. She directs diverse teams of analysts and subject matter experts to conduct major client initiatives, including incident response planning guidance and exercises, workshop design and facilitation, strategic planning, research and analysis, and communications and outreach. Ms. Kishter has designed and facilitated more than 50 workshops and tabletop exercises for both government and commercial clients, led analysis and writing for highly technical studies on smart grid and cyber security risks, and supported cyber security initiatives within the Department of Energy and Department of Homeland Security for 12 years.

She has extensive experience facilitating public-private working groups of cyber security and energy industry experts to develop strategic priorities, risk management guidelines, and in-depth studies on infrastructure security and resilience. She brings a strong understanding of energy sector cyber risks and uses her communications background to translate complex topics into clear, actionable language without losing accuracy or nuance. She has directly facilitated and coordinated public-private partnership activities in the energy sector for more than a decade, giving her insight into the cyber security risks, challenges, and objectives of owners and operators at small, medium, and large utilities.

Bill Lawrence, PMP

Director, Electricity Information Sharing and Analysis Center (E-ISAC); Vice President and Chief Security Officer, North American Electric Reliability Corporation (NERC)

As NERC's vice president and chief security officer, Bill Lawrence is responsible for the oversight of the Electricity Information Sharing and Analysis Center (E-ISAC) and for directing security risk assessment and mitigation initiatives to protect critical electricity infrastructure across North America. He also leads

coordination efforts with government agencies and stakeholders on cyber and physical security matters, including analysis, response, and sharing of critical sector information.

Prior to joining NERC, Mr. Lawrence had a distinguished career in the U.S. Navy where he served as a pilot of F-14 Tomcats and F/A-18F Super Hornets. He also served as the deputy director in the Character Development and Training Division at the U.S. Naval Academy, where he taught courses in Ethics and Cyber Security. In 2012, after over 20 years of faithful service, Commander Lawrence honorably retired from the U.S. Navy. His awards include four Air Medals, three Navy Commendation Medals, and various unit and campaign awards.

Carter Manucy

Cybersecurity Manager, Florida Municipal Power Agency

Carter Manucy is the Cyber Security Manager for Florida Municipal Power Agency, a joint-action agency in Orlando, Florida. At FMPA his responsibility is for OT cyber and physical security as well as NERC CIP compliance. While working at FMPA, Carter has held numerous roles in the IT/OT domain over the last couple of decades while maintaining a passion for cyber security.

Mr. Manucy holds a SANS GCIP certification, is currently the chair for the Cyber Mutual Assistance Compliance Committee, a voting member for NERC CIPC, and acts as chair/author/member/participant/contributor for numerous other committees, groups and publications in the cyber security and compliance arenas.

Mark McKinney

Director of Cybersecurity, Acumen Engineered Solutions International, Inc. (AESI)

Mark McKinney is a recognized Enterprise Architect, Information Security and Compliance Leader with demonstrated experience in managing the complete technology lifecycle: concept planning, design, project planning, budgeting, implementation, configuration, operations and maintenance. He is recognized for the design and implementation of secure, high-availability, mission-critical technology platforms and delivery systems. Mr. McKinney has successfully managed large enterprise technology projects with budgets of more than \$100 million and responsibilities including project definition, budgeting, team assembly, testing and operational readiness and maintenance.

Mr. McKinney is an Instructor for the United States Army Cyber Center of Excellence, Force Modernization Proponent (FMP) for Cyberspace Operations, Signal and Communications Networks and Information Services, and Electronic Warfare (EW). The Army's Intelligence Occupational Specialty Career Field (35) is part of the broader Military Intelligence (MI) domain. The Cryptologic Network Warfare Specialist course trains operatives to work outside of the Army's firewalls, finding and defining cyber threats, including rogue-state- and non-state-affiliated hackers and criminal enterprises that seek to compromise military and critical infrastructure networks and systems. Mr. McKinney developed the initial course outline and curriculum and continues to perform resident instruction and moderate online continuing education and re-certification.

Mr. McKinney is also a Consulting Member of the Department of Homeland Security National Protection and Programs Directorate, Office of Cyber Security and Communications and the Office of Cyber and

Infrastructure Analysis, where he advises on the development and adoption of cyber security standards and regulations for public and private organizations.

Nathan Mitchell, P.E.

Senior Director, Cyber and Physical Security Services, American Public Power Association

Nathan Mitchell, P.E. is the Senior Director of Cyber and Physical Security Services for the American Public Power Association (APPA) in Arlington, Virginia. He joined the association in 2006. Prior to that he served for 10 years at the City of Naperville, Illinois, in the Department of Public Utilities, where he was Electric Distribution manager in charge of utility operations and construction. Mr. Mitchell has a BS in Electrical Engineering from Iowa State University, and is a Registered Professional Engineer in the State of Illinois.

Mr. Mitchell provides leadership in cyber and physical security issues for APPA members. Is the principal investigator of a three-year program using DOE funds to develop cyber security tools, educational resources, guidelines, and training on strategies that public power utilities can use to address cyber risk.

Osama A. Mohammed

Distinguished Professor, College of Engineering and Computing, Florida International University

Dr. Osama A. Mohammed is a Distinguished Professor of Electrical Engineering and the Associate Dean of Research at the College of Engineering Florida International University. He is the director of the Energy Systems Research Laboratory at FIU and Professor of Electrical and Computer Engineering.

Dr. Mohammed has performed research on various topics in power and energy systems, design optimization and physics based modeling in electric drive systems, power electronics and other low-frequency environments. Dr. Mohammed is world-renowned for his contributions in these areas. He has also performed research in the areas of electromagnetic signatures, EMI, wideband gap devices, and ship power systems modeling and analysis. He currently has active research projects for several federal agencies in these areas in addition to other projects in power system operation, smart grid distributed control and interoperability, cyber physical systems, and co-design of cyber and physical components for future energy systems applications. He has published more than 700 articles in refereed journals and other IEEE refereed international conference records in addition to 15 patents awarded or filed. His publications are highly cited and his presentations are frequently invited; at research, academic and industrial organizations and conferences worldwide. He also authored a book and several book chapters.

Dr. Mohammed is a Fellow of IEEE and an elected fellow of the Applied Computational Electromagnetic Society. He received the prestigious IEEE Power and Energy Society Cyril Veinott Electromechanical Energy Conversion Award and the 2012 Outstanding Research Award from Florida International University, the 2017 outstanding doctoral mentor and the distinguished Professor promotion in 2018.

Mike Rovnan

Technical Director, National Security Agency

Mr. Rovnan has more than 20 years commercial experience in the design and operation of multiple critical infrastructure (CI) sectors to include power, oil and gas, transportation, nuclear and chemicals. After his commercial career, he joined the National Security Agency and technically directed

many critical infrastructure/industrial control systems cyber efforts. In his present capacity, he directs defensive cyber security development activities to help defend critical infrastructure/control networks in the cyber realm. He has unique experiences in the commercial sector which allows him to provide engineering and operationally-based deep technical knowledge to multiple facets of cyber security and threat understanding in this realm. He has degrees in Chemical/Nuclear Engineering.

Michael Toecker

Founder, Context Industrial Security

Michael Toecker is a consultant and engineer specializing in the cyber security of industrial control systems, and predominately those within the electric power sector. A graduate of the University of Missouri-Rolla's accredited Computer Engineering program, he has a focused background in the development of computer systems, hardware engineering, electronics, networking, and software development.

Mr. Toecker started his career at the consulting engineering firm Burns and McDonnell, working specifically for electric power infrastructure owners on cyber security and compliance projects. While at Burns and McDonnell, he participated in successful penetration tests directed at Energy SCADA infrastructure and led multiple cyber security assessments of generation, transmission and control center facilities. In addition, Mr. Toecker has worked federal control system security projects, namely assessments of massive building control systems.

Mr. Toecker then moved to NextEra Energy, a sister company of Florida Power and Light, where he was part of a team responsible for ensuring the compliance and security of multiple generation facilities that had been designated NERC CIP Critical Assets. Mr. Toecker then moved to Digital Bond, where he had the opportunity to assess and consult with industrial facilities worldwide to identify vulnerabilities and recommend appropriate mitigations. While at Digital Bond, Mr. Toecker led assessments and conducted research into various different infrastructures, systems, and product lines.

In April of 2014, Mr. Toecker left Digital Bond to start Context Industrial Security, a boutique engineering and cyber security consulting firm. At Context, he focuses on the dividing line between engineering and cyber security, attempting to reconcile differences between information security and operations practices, and developing recommendations that strive to preserve the availability and reliability of the infrastructure, while ensuring that adequate security is being designed to protect against threats to that infrastructure. Most recently, Mr. Toecker was tapped as the subject matter expert for several large scale cyber security exercises meant to test the resilience of energy sector to a significant cyber event.

Peggy Welsh

Principal, Welsh Energy Consulting, LLC

Peggy Welsh is the Founder and Principal of Welsh Energy Consulting, LLC which is a woman-owned small business offering management consulting services to the energy sector. Specialties include program management, policy analysis, strategic planning and implementation, report writing and editing, research and analysis, government relations, coalition building, and event planning, execution and post-event analysis. Prior to establishing Welsh Energy Consulting, Ms. Welsh was Program Manager of Electricity Programs at Energetics, Inc. where she worked on electric power policies and programs. At Energetics, she supported the U.S. Department of Energy's Electricity Office, the Energy Policy and

Systems Analysis Office, and the Energy Efficiency and Renewable Energy Office, in addition to serving several private sector clients.

Prior to joining Energetics, Ms. Welsh was Senior Vice President of the Consumer Energy Council of America (CECA), a non-profit research organization that undertook research and conducted consensus building on energy public policy. Previously, she served as Executive Director of the National Association of Regulatory Utility Commissioners, the national association representing state utility regulators. She also served as Executive Director of the Electric Generation Association (EGA), a national trade association representing independent power producers. EGA and its counterpart merged to become the Electric Power Supply Association (EPSA). Ms. Welsh facilitated the merger while serving as Acting Executive Director of EPSA until its launch.

Ms. Welsh has held numerous other positions, including serving as Administrative Director of the Independent Power Producers Working Group, a coalition of independent power producers, while she was a lobbyist for the law firm of Dickstein, Shapiro and Morin. Earlier Peggy worked in the White House during the Ford Administration and began her career with U.S. Senator Dewey F. Bartlett (R-OK).

Jacob Williams

Chief Executive Officer, Florida Municipal Power Agency

Jacob Williams is General Manager and CEO of the Florida Municipal Power Agency (FMPA). He has 33 years of experience in the electric utility industry. Prior to joining FMPA in September 2016, Mr. Williams served as Vice President of Generation and Emissions Technologies at Peabody Energy in St. Louis, Missouri. While at Peabody, he played a key role in developing the largest new coal generation plant in more than 30 years in the United States, a 1,600 MW clean-coal power plant that was co-owned by Peabody with six municipal joint action agencies and two generation and transmission rural electric cooperatives.

Mr. Williams holds a bachelor's degree in electrical engineering from the University of Illinois at Urbana-Champaign and a Master of Business Administration from the University of Wisconsin-Madison.