

Dr. Kevin E. Cooper
9244 SE Mystic Cove
Hobe Sound, FL 33455
Cell: 772-634-8095 ♦ Email: kkcoop@yahoo.com

Profile of Experience

- Management and leadership experience in corporate, private business and academic environments managing over 70 direct reports and P&Ls up to \$16M/year.
- Successfully launched a large-scale corporate spinoff and a small-scale startup company. In both environments, managed products life from conception to market.
- 10 years of academic experience in a range of settings including Grant Manager (PI NSF ATE Center), Division Director, Dean of Economic and Workforce Development, and Academic Dean.
- Brought over \$24M of grant funding and \$3M of private funding to IRSC in first 10 years.
- Built local, state, national and international partnerships with academia, industry, and agencies, and countries. This work is featured as a best practice at the ASPEN Institute (Invited Speaker for the 2017 ASPEN award prize ceremony) and by the NSF ATE Program.
- Ph.D. in chemical engineering with a wide breadth of academic, private, and industrial experience across the fields of workforce development, manufacturing, energy, nanotechnology, robotics, cybersecurity, digital media, lasers and photonics, economic development, and applied research.
- Authored over 25 patents/invention disclosures, 40+ publications/journal articles, and presented at over 500 international meetings on a range of topics.
- Executive member or board member of National Science Foundation (ATE & HiTEC), American Nuclear Society, Treasure Coast Research Park, Indian River Lagoon Council, and Southeast Maritime and Transportation (SMART) Center.
- 20+ year grant reviewer for NSF, Department of Energy, and Nuclear Regulatory Commission, IEEE Transactions of Semiconductor Manufacturing, Advanced Metallization Conference, and Electrochemical and Solid State Letters.

EXPERIENCE

2008 – **INDIAN RIVER STATE COLLEGE** Fort Pierce, FL
Present Assistant Dean, Advanced Technology Division

- Administrator over academic, grant, and economic development divisions including the direct supervision of over 74 employees.
- Academic division includes 2 and 4-year programs in Electric Engineering Technology, Cyber Security & Information Technology, Manufacturing, Digital Media, Building Construction, and Drafting & Design.
 - Data driven division focused on increasing success rates (retention, completion, and placement) through a 5-year strategic plan.
 - Successfully converted all programs to guided pathways with embedded internships and completion points (national recognized certifications).

- Added Data Analytics and Environmental Management, 2 and 4 year degrees.
- Economic Development division includes Small Business Development Center (SBDC), Community & Corporate Training Institute (CCTI), Pioneer Incubator, Applied Research, and Entrepreneurship Development Institute (EDI).
- Grant division manages ~\$2.5M in yearly funding including 2 NSF ATE Centers and funding from a multitude from local, state, and national agencies and non-profits.
- Lead, facilitated and directed the design, purpose, and outfitting of two new facilities (~150K ft²).
- Established NSA cyber center of excellence in 2018.
- Formed strategic partnerships with over 90 colleges, 15 universities, 120 industry partners, and 12 governmental agencies in various fields
- Represent IRSC on speaking circuit, meetings, and boards presenting over 60 times a year in local, state, and national forums.
- Division received 20 national awards during my tenure including awards from NSF, NACCE, NiSOD, League of Innovation, & John & Suanne Roueche.
- Work featured in over 40 print and media articles including on the cover of CC Times (4 times), on the front-page TC Palm (6 times), featured 4 times in Progress & Innovation, and featured article on AACC's home page (2 times).
- Brought over \$18M of grant funding and \$3M of private funding to IRSC in first 10 years.

2002 –2014 **A BROADER VIEW**

Atlanta, GA

Small Business Co-Founder & Owner (Manufacturing Company
– Primarily Educational Products and Toys)

- Launched, maintained and expanded the business portfolio, which resulted in a \$3M in revenue and a 20% gross margin.
- Developed 14 new product lines. This included finding, qualifying, and optimizing manufacturing facilities in China.
- Responsibilities include directing 4 full time employees, negotiating contracts, maintaining company budget, and streamlining operations to minimize expenses through optimized inventory management, procurement, and logistics coordination.
- Fiduciary responsibilities include raising capital (over \$600,000 raised), financing, managing growth, business plan development, and optimizing cash flow.
- Sales responsibilities include seeking and maintaining corporate accounts. Landed sales accounts with Kroger, Winn Dixie, HEB, Barnes & Noble, & Costco that generated over \$2 million per year in sales.

2000 - 2006 **MOTOROLA SEMICONDUCTOR SECTOR (SPS)**

Austin, TX (2000-2003)

Senior Staff Scientist/Division Director

Crolles, France (2003-2006)

- Designed, outfitted, and managed a R&D lab focused on developing, characterizing and testing the feasibility of advanced materials.
 - Managed material development unit (6 engineers and 4 technicians). P&L responsibilities for a \$16 million yearly budget.
 - Products developed and implemented into manufacturing process from this unit include SAM chemistry for CMP, a colloidal suspension for CMP, Cu electroplating chemistry, and an additive for immersion lithography.
- Lead the spinoff and partial sale of the Advanced Materials Lab to DuPont Air Products in 2005. Work included market analysis, developing business plans, and solicitation of bidders.

- Process development engineer in charge of developing, qualifying and then transferring module processes (lithography and CMP) to international manufacturing sites.
- Author or Co-Author of 25 invention disclosures.
- Author of journal articles across multiple fields including: electro-chemical deposition of novel metals, photo and implant lithography, interfacial adhesion, and colloidal science.

EDUCATION

1996 - 2000 **ARIZONA STATE UNIVERSITY** Tempe, AZ
Ph.D. and Masters in Chemical Engineering

- Developed novel techniques to measure and simulate the adhesion interaction between interfaces at the molecular level.
- Published 5 referred journal articles and presented at 7 conferences/invited talks.

1991 - 1995 **GEORGIA INSTITUTE OF TECHNOLOGY** Atlanta, GA

BS, Chemical Engineering, September 1995

BAS, Physics, September 1995

- Graduated with 2 degrees in 4 years with Highest Honors for both degrees.
- Chemical Engineering specialty in chemical, oil, and natural gas manufacturing processes & Applied Physics specialty in acoustics.

Grants (>\$24M in 10 years)

- 2020 – 2025: NSF ATE Initiative: Project Vision, PI, \$3,636,000 (Grant # 2018198)
- 2020 – 2024: DEO Community Development Block Grant Disaster Recovery (CDBG-DR) Workforce Recovery Training Grant, PI, \$2,345,287
- 2019 - 2023: NSF ATE Project for SCADA Systems, CO-PI, \$220,000 (Grant #1901852)
- 2016 – 2020: NSF ATE Center Renewal for RCNET, PI, \$3,000,000 (Grant #1600558)
- 2017 – 2019: Florida Governor’s Growth Grant, PI, \$1,550,00
- 2018 – 2020: DOL YouthBuild Grant, Co-PI, \$867,000
- 2015 - 2018: St. Johns River Water Management District, PI, \$105,000
- 2014 – 2016: Coleman Foundation: Effectuation Grant, Co-PI, \$15,000
- 2014 – 2015: Wells Fargo Foundation: Water Quality Environmental Fund, PI, \$100,000
- 2014 – 2016: Kauffman Foundation: Entrepreneur in Resident (EIR), PI, \$200,000
- 2011 - 2015: NSF ATE Regional Center (RCNET), PI, \$3,150,000 (Grant # 1104238)
- 2011 – 2014: DOE Gateway to Power, Co-PI, \$4,430,000 (Grant # DE-OE0000435)
- 2011 – 2013 EDA: Infrastructure Grant, Center for Competitive Economics and Entrepreneurship, PI, \$3.9M
- 2010 – 2011: NSF Planning Grant RCNET, PI, \$75,000 (Grant #1002817)
- 2010 - 2011: NRC Scholarship Grant, PI, \$90,000 (Grant # 38-10-919)

*** Amount listed is amount received by IRSC

Relevant Presentations

- **Best Practices to Maintain Low Enrollment STEM Programs**, Presentation at the NSF ATE Conference, Washington D.C., October 2019.

- **STEM Technician Workshop**, Invited Speaker at International Atomic Energy Agency Workshop, Miami, FL, September 2019.
- **Creating a Diverse Nuclear Technician Pipeline**, Keynote Speaker at the Department of Energy Deactivation & Decommissioning Conference, Nashville, TN, June 2019.
- **Best Practices in Creating a Diverse Non-Traditional Workforce**, Invited Presentation at the Waste Management Symposium, Phoenix, AZ, March 2019.
- **All Hands Approach to College's Social Mobility Mission**, Presentation at The League for Innovation Conference, New York City, NY, February 2019.
- **Best Practice Presentation on Robust Approach to Social Mobility**, Florida Career Pathways Network Best Practice, Hutchinson Island, FL, January 2019.
- **Square Root of -1: Redesigning Math to Improve Equity Outcomes**, Invited Workshop and Panelist at NSF HiTEC Conference, Miami, FL, July 2018.
- **The Evolution of a Great Partnership**, Invited Panel at Achieving the Dream Conference, Stuart, FL, March 2018.
- **Knocking Down Equity Barriers – A Math Case Study at IRSC**, Invited Panelist at the Florida's Chancellors Innovation and Excellence Summit, Tallahassee, FL, February 2018.
- **Partnerships a Key Component to Community College Growth and Student Success**, Invited Speaker at the ASPEN Prize Ceremony, Washington D.C., March 2017
- **Go Rogue for Student Success! WHY, WHY, WHY, Why, WHY**, Keynote Speaker at the NSF CTE Conference, Maricopa Center for Learning and Instruction Tempe, AZ, March 2017.
- **Partnerships: The Key to Sustaining College Technical Programs**, Invited Presenter at ATE Central Best Practices Webinar, February 2017.
- **The Future of the Technician Workforce**, Invited Speaker, at the NSF PI Conference, Washington D.C., October 2016.
- **Designing Sustainable Manufacturing Programs**, Invited Presenter at the Sterling Conference, Orlando, FL, May 2016.
- **Let the Data Speak: A Presentation on Novel Methods Towards Student Success**, Presented at the League of Innovation Conference, Boston, MA, March 2015.
- **The College's Role in Economic Development**, Invited Workshop at the National Association of Community College Entrepreneurship, Phoenix, AZ, October 2015.
- **Applied Research: How it helps with Student Success**, Presented at the National Association of Community College Entrepreneurship, Phoenix, AZ, October 2015.
- **STEM Initiatives at IRSC and How they help with Student Success**, Presented at the NISOD Conference, Austin, TX, May 2014.
- **The Future of the Energy Workforce**, Invited Speaker at the NSF PI Conference, Washington D.C., November 2012.
- **Measuring Reaction, Learning, Behavior, and Results**, Invited Speaker at ATE Evaluation Webinar & Symposium, Washington D.C., November 2012.
- **Recruiting Women & Minorities into STEM Fields**, Keynote Speaker at UNCF STEM Workshop, October 2012, Orlando, FL.
- **The 21st Century Role of Community Colleges in Economic Development**, Keynote Speaker at the 50th anniversary of South Puget Sound Community College's Harvest Fest, Olympia, WA, October 2012.
- **Best Practices in Creating a Nuclear Culture at the College**, Invited Speaker at the ANS 2012 Annual Conference, Chicago, IL, June 2012.

- **Best Practices in Building Industry Partnerships**, Speaker at the 2012 AACC Annual Conference, Orlando, FL, April 2012.
- **The Nuclear Workforce Future**, Invited Presentation at the 14th Annual EUEC 2011 - Energy & Environment Conference, Phoenix, AZ, February 2011.
- **The Colleges Role in Workforce & Economic Development**, Keynote Speaker at South Florida Community College's Green Energy, Green Revolution, Green Jobs Symposium, Avon Park, FL, November 2010.
- **Green Initiatives in Florida**, Invited Speaker at OESC Meeting, Orlando, FL, June 2010.
- **The Clean Energy Sector: Training Challenges Ahead**. National Career Pathways Network National Conference, Atlanta, GA, October 2009.
- **Nanotechnology in Manufacturing**, Invited Speaker NYC Toy Fair, New York City, NY, February 2008.
- **Integrated Metrology in Copper CMP for 0.13 μ m and 0.10 μ m CMOS Platform Technologies**. Presentation at the 2005 AEC/APC Symposium XIV, September 2005 Snowbird, Utah.
- **Integration Challenges of 0.1 μ m CMOS Cu/Low-K Interconnect Structures**. Invited Paper at the 2002 IEEE International Interconnect Technology Conference, June 2002 San Francisco, California.
- **Influence of Electrochemical Effects on the Uniformity of Electroplated Copper**. 2001 Advanced Metallization Conference, October 2001 Montreal, Canada.
- **Non-Linear Effects During Electrolytic Deposition of Copper Nanofilms**. 200th Meeting of the Electrochemical Society meeting, September 2001 San Francisco, CA.
- **Nanoparticle Removal from Wafer Surfaces**. Invited Paper at the 2001 International Sematech Wafer Cleaning and Surface Preparation Workshop, May 2001 Austin, TX.
- **Adhesion of Nanoparticles Particles to Semiconductor Surfaces**. Department of Chemical Engineering Seminar Series, University of Nevada at Reno, February 1999 Reno, NV.
- **Simulation of the Adhesion of Asymmetrical Particles**. 1999 Annual AIChE Conference, November 1999 Dallas, TX.

Relevant Patents

- US 8,097,535: Fabrication of Self-Assembled Nanowire-Type Interconnects on a Semiconductor Device.
- US 7,837,762: Method of Distancing a Bubble and Displacement Apparatus.
- US 7,948,607: Immersion Lithography Apparatus and Method of Performing Immersion Lithography.
- EP2064736: Fabrication of Self-Assembled Nanowire Type Interconnects. Utility patent filed in the EU, June 2009.
- EP1966652: Immersion Lithography Apparatus and Method of Performing Immersion Lithography. Utility patent filed in the European Union, September 2008.
- EP1875490: Apparatus for Cleaning of Circuit Substrate. Utility patent filed in the European Union, January 2008.
- WO2007107176: Method of Reducing the Risk of Delamination of a Layer of a Semiconductor Device. Utility patent filed in the European Union, September 2007.
- WO2007087830: Initiating Chemical Mechanical Polishing with Slurries Having Small Abrasive Particles. Utility patent filed in the European Union, August 2007.
- WO2006122578: Contaminant Removal Apparatus and Method Therefore. Utility patent filed in the European Union, November 2006.
- US 7,456,105 B1: CMP metal polishing slurry and process with reduced solids concentration.
- US 7,387,970 B2: Method of using an aqueous solution and composition thereof.
- US 7,188,630 & US 7,579,279: Method to passivate conductive surfaces during semiconductor processing.

Relevant Publications

- **Predictive Maintenance Architecture Development for Nuclear Infrastructure using Machine Learning.** Nuclear Engineering and Technology. 53(1): 120-128 · *January 2020*
- **Predictive Maintenance Framework for Nuclear Infrastructure Using Machine Learning.** American Research Journal of Computer Science and Information Technology. Volume 4, Issue 1, pp: 1-11.
- **Predictive Analytics with Big Data-Spark Framework,** Nuclear Power Plant Journal. 36(2):29-31 · *March 2018.*
- **Steam explosion and Fermentation of Sugar Beets from Southern Florida and the Midwestern United States,** J. Biocatalysis and Agricultural Biotechnology. Volume 11, July 2017, Pages 26-33.
- **Alignment robustness for the 90 nm and 65 nm node through copper mark integration optimization.** Proceeds of 2005 SPIE Conference, March 2005, San Francisco, California.
- **Wafer-Scale Profile Evolution of Electrochemically Deposited Nano Films.** J. Electrochem. Soc. 150, (2003).
- **Effects of Nanoparticle Concentration on Semiconductor Processing.** Electrochem. Solid State Letters 5, G109 (2002).
- **Integrated Metrology in Copper CMP for 0.13 μ m and 0.10 μ m CMOS Platform Technologies.** Proceeds of 2003 SPIE Conference, March 2003, San Francisco, California.
- **Integration Challenges of 0.1 μ m CMOS Cu/Low-K Interconnect Structures.** Proceedings of the 2002 IEEE International Interconnect Technology Conference, June 2002 San Francisco, California.
- **Adhesion of Nano Particles to Thin Films.** J. Electrochem. Soc. 149, G239 (2002).
- **Influence of Electrochemical Effects on the Uniformity of Electroplated Copper.** Proceedings of the 2001 Advanced Metallization Conference, October 2001 Montreal, Canada.
- **Simulation of Particle Adhesion: Implications in CMP and Post-CMP Cleaning.** J. Electrochem. Soc. 148, G662 (2001).
- **Simulation of the Adhesion of Particles to Surfaces.** J. Colloid Interface Sci. 234, 284 (2001).
- **Substrate Morphology and Particle Adhesion in Reacting Systems.** J. Colloid Interface Sci. 228, 213 (2000).

Key Industry Partners

- FP&L and NextEra Energy Inc.
- Westinghouse
- Lockheed Martin
- Northrup Grumman
- EA Sports
- St. Lucie County IT Department
- Sunrise Theatre
- Islamorada Beer Company
- St. Lucie County Economic Development Council (Also Martin County BDB)
- Indian River Biodiesel
- Center for Toxicology & Environmental Health
- KurtOx
- Gunner Technology
- TAMCO
- BHI and Bartlett Energy
- Paradigm Precision
- Pharus Group
- Level 3 Inspection
- ORCA and Harbor Branch

Key Academic Partnerships

- Florida International University
- Chattanooga State Community College
- Columbia Basin Community College
- Augusta Technical College
- University of Florida
- Louisiana State University

- Central Carolina Community College
- Tri-County Technical College
- Lakeside Community College

Key Foundation, Agency, Other Partnerships

- National Science Foundation
- Nuclear Regulatory Agency
- Institute of Nuclear Power Operations
- Nuclear Energy Institute
- American Association of Community Colleges
- Department of Energy (Savannah River Nuclear Labs)
- National Association of Community College Entrepreneurs
- Kauffman Foundation

Key Country Partnerships

- United Kingdom
- United Arab Emirates
- Canada
- Chile