

**Brian Bell Ph.D.**  
**Lead Faculty Biomedical Engineering**

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**Experience:**

Lead Faculty Biomedical Engineering Technology at Saint Petersburg College: 2015-Present  
PI of National Science Foundation ATE grant – 4 years  
Triad Leadership at St. Petersburg College – 3 years  
Advanced Manufacturing Lab Teacher – 1 semester  
Robotics and Programming Mechanics Lab2 Lab Teacher – 1 year  
Sustainable Design and Materials Lab Teacher– 1 semester  
Physics Tutor at Stetson University. Deland, Florida – 1 year  
Teacher’s assistant at Stetson University. Deland, Florida – 1 year  
Armstrong Tutoring. Tampa, Florida – 2 years  
Co-organizer of NSF workshop: Faculty Development Needs for Advanced Manufacturing in the USA – 6 months

**Characterization Experience:**

Oscilloscope, Viscometer, Scanning Electron Microscopy, Atomic Force Microscopy, X-Ray Diffraction, Electron Dispersive Spectroscopy Differential Scanning Calorimetry, Thermogravimetric Analysis, and Ellipsometry, Rockwell Hardness Tester

**Processing Experience:**

PCB design, Electrospinning, Sputtering, 3-D Printing, Investment Casting, Lithography, and Machining tools

**Computer Skills:**

Standard: Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Publisher, Adobe Photoshop, ZARA Scientific: Labview, Matlab, JMP SAS, SPSS, SolidWorks, SimaPro, Mathematica, Java

**Testing Equipment:** Electrical safety analyzers, ESU analyzers, gas flow analyzers, multimeters, oscilloscopes, Infusion device testers/flow rate testers, network cable testers,

**Education:**

Ph.D. in Mechanical Engineering, University of South Florida. Tampa, Florida (May 2015)  
Thesis Title: Systems Approach to Producing Electrospun Polyvinylidene Difluoride Fiber Webs with Controlled Fiber Structure and Functionality  
Bachelor of Science in Physics Stetson University, Deland, Florida (2009)

**Grants and Awards:**

- Awarded 619,859.00 for Biomedical Engineering Technology - Pathways to Medical Device Manufacturing, Networking, and Cybersecurity  
Over 4 years the grant served a total of 476 college participants and 736 K-12 participants were impacted by the grant activities. Overall there were approximately 1700 stakeholder from students, faculty, and other school staff impacted by the grant. Through these grant activities opportunities the grant was able to increase opportunities for participants to learn and develop credentials in biomedical engineering technology.
- League of Innovation Excellence Award (2020)
- Awarded \$160,000 for Solar Energy Initiative
- GAANN Fellow – Three years for Doctoral Research
- The Jack Gibson Endowed Physics Research Award

## Certifications and Training

Palo Alto Networks Cybersecurity Academy – Faculty Certificate – Cybersecurity Gateway (2020)  
Palo Alto Networks Cybersecurity Academy – Faculty Certificate – Cybersecurity Foundation (2020)  
Texas State Technical College Certificate in Networking Basics Part 1 and 2 at FBS (2019)  
An Introduction To Defibrillator Testing (2019)  
Quality Matters Rubric Sixth Edition (2018)  
Introduction to Contrast Injector Training Maull Biomedical (2018)  
Fluke Biomedical Introduction to using the ESA615 (2017)  
AMX4+ Preventative Maintenance to OEM Specifications (2016)  
Fluke Advantage Training Medical Device Quality Assurance Infusion Devices (2016)  
Bovie Medical Technical Service Training (2015)  
Technation 10 Best Practices for Electrosurgical Unit Testing Certificate (2015)  
OSHA 30 Certification (awarded 2015)

## Research Experience:

AMBIR (Advanced Materials Bio & Integration Research) Laboratory Research Group – 2 year  
Environmentally Benign Design and Manufacturing Lab - 4 years  
NREC (Nanotechnology Research and Education Center) - 4 years  
I supervised masters and bachelors students working in two labs. My supervision led to a systematic understanding of the electrospinning process using a six sigma approach with statistical software. This optimized processing model reduced material use by over 90% and eliminated production defects. In addition, the piezoelectric properties were controlled and resulted in a 10 fold performance increase.

## Paper and Presentations:

- Brian Bell (2020). Build or Expand your Program: Pathways in Biomedical Engineering Technology. HI-TEC. Virtual.
- Brian Bell (2020). Digital Credentials: Where industry and education converge. MD EXPO. Tampa FL.
- Brian Bell (2021). Microcredentials/Badging for Engineering Technology in Healthcare. HI-TEC 2020. Virtual.
- Brian Bell and Lara Sharp (2020). New Career Pathways and Microcredentials in Medical Device Networking, Security, and Manufacturing. National Career Pathways Network 2020. Virtual.
- Brian Bell Laura Malave (2019). Pathways into Medical Device Networking and Cybersecurity for Biomedical Engineering Technicians. High Impact Technology Exchange 2019. St. Louis. Status
- Lara Sharp Laura Malave (2019). STEM Camp Hero: Biomedical Engineering, Video Games, and Robots. ATE Conference 2019. Washington DC
- Brian Bell (2020). Youtube - Build a Great Technology Channel without Spending Money. ATE 2020: Resilience and New Frontiers. Virtual.
- Bell, B., Sharp, L., Mortellaro, D., "Micro-credentialing Course Competencies with Badges". Discovery Day St. Petersburg College Tampa FL.
- Bell, B., Libros, R, Sharp, L. "Establish and Grow a Biomedical Engineering/Equipment Technology Program". HI-TEC Conference 2018. Miami, FL.
- Bell, B., Sharp, L., and Taylor, G. "Collaborative Approach to Biomedical Engineering Technology at St. Petersburg College". HI-TEC Conference 2016. Pittsburgh, Pa.
- Bell, B., "Systems Approach to Producing Electrospun Polyvinylidene Difluoride Fiber Webs with Controlled Fiber Structure and Functionality" (2015). Graduate Theses and Dissertations.
- <http://scholarcommons.usf.edu/etd/5859>
- Bell, B., Thomas, S., Abbasi, S., Durham, D., "Variations in Producibility of Polyvinylidene Difluoride Electrospun Fibers due to Competitive Interrelationships of Electrospinning Parameters", (Accepted for the Proceedings of the ASME 2015 International Manufacturing Science and Engineering Conference, MSEC 2015, Jun 8-12, 2015, Charlotte, North Carolina, USA)

- S. W. Thomas, B. Bell, N. Alcantar, D. Durham, and S. Perez, "Framework for Structural, Processing, and Environmental Assessment of Micro to Nano Scaled Integrated Circuit Structures" ECS Trans. 2014 volume 61, issue 6, 141-153 doi: 10.1149/06106.0141
- B. Bell, "Characterization and Prediction of Nanofiber Defects using a Surface Response Technique", NANOSMAT 2014, 9<sup>th</sup> International Conference on Surfaces, Coatings and Nano-Structures Materials. Dublin, Ireland.
- S., Abbasi, Bell, B., Durham, D., "Exergy Method for Improvement of Nanomanufacturing Processes via an Application to Electrospun Polyvinylidene Difluoride Nanofibers", 3rd Sustainable Nano Conference, Boston 2014.
- Bell, B., Thomas, S., Abbasi, S., Durham, D., "Manufacturing Polyvinylidene Fluoride Fibers for Energy Generation" Materials Science, MEMS/NEMS, Nanotechnology, Biomedical, and Health Research Day 2014. Tampa, FL
- B. Bell, "Manufacturing Polyvinylidene Fluoride Fibers for Energy Generation"IDEA conference 2013. Tampa, FL.
- B. Bell, "Enhanced Stepper Motor Control" REU symposium 2009. Lincoln, Nebraska.