Joseph T. Bonivel Jr., Ph.D.
Subject Matter Expert & Emerging Technology Strategist
www.linkedin.com/in/bonivel

PROFESSIONAL PROFILE

Skilled R&D engineer with a wealth of knowledge and experience in developing and implementing innovation policies and strategic public private partnerships. Program Manager and subject matter expert in advanced materials implementations for military uses at the DoD's Office of the Undersecretary of Defense for Research and Engineering. Senior Fellow in emerging technology at the Atlantic Council's Geotech Center, with expertise in responsible AI governance, national security, and advanced manufacturing. Former program director at National Science Foundation, advising Small Business Innovation Research (SBIR) portfolios. Experienced in guiding innovative engineering technology start-ups and programs from founding through exit or full implementation strategies.

KEY SKILLS

Science and Technology Policy Analyst | Government and Stakeholder Engagement | Tech to Market Transfer | R&D Technology Analyst | National Security Technology Analyst | Responsible AI Policy | Advanced Material Characterization | Semi-Conductor Manufacturing | Nano Material Synthesis | Data Analytics | Program Management | Failure Analysis |

POLICY EXPERIENCE

Project Director, Subject Matter Expert Alexandria, VA
Office of the Under Secretary of Defense Research & Engineering - 2017–Present

- Project lead in the development of interdisciplinary science and technology program focused on innovative technologies sourcing from DoD laboratories to advance the warfighter in critical technology areas
- Conducted advanced tribological testing and simulations to optimize material coatings for dynamic load-bearing applications, directly contributing to the development of next-generation defense systems with enhanced survivability and mission readiness
- Spearheaded collaborations with DoD agencies and defense contractors to ensure compliance with military standards (e.g., MIL-PRF-46010) and improve material performance for high-stakes defense contracts, helping secure critical defense procurement agreements
- Pioneered novel coating systems tailored to withstand extreme temperatures and aggressive environments encountered by military platforms, achieving an 80% reduction in component failure rates for high-stress, high-wear areas, during military operations (e.g., turbine engines, landing gear, and military vehicle components)
- Managed >$10M innovation budget and responsible for project foresight analysis, task delegation, and final deliverables for technical milestones
- Established scientific outreach and technical coalitions reaching all 73 DoD laboratories, University Affiliated Research Centers (UARCs), Federally Funded Research and Development Centers (FFRDCs) and their >250k scientist and engineers advocating for cross branch and sector collaborations on technical challenges in critical technology areas
- Stakeholder engagement liaison focused on translating complex technical issues into actionable insights for senior-level DoD officials
- Evaluated the effectiveness of outreach programs through data analytics collected from surveys and usage metrics
- Completed a comprehensive technical analysis and review of >200 scientific articles on DoD modernizations
- Hired and managed a team of 20 technical scientists and administrative support specialists

Senior Fellow - Emerging Technologies Washington, D.C.
Atlantic Council – Geotech Center 2019 – Present

- Encourages global technology collaborations by engaging policymakers, industry leaders, and research institutions to drive responsible AI and emerging technology governance
- Evaluates optimal technology choices and measurable policy alternatives to explicitly benefit people, global prosperity, and peace
- Recommends positive paths forward to help markets and societies adapt considering technology- and data-induced changes
- Educates world leaders and the public on the implications of global technology competition through thought leadership, policy analysis, and public-private dialogues.
- Subject matter expert delivering forums and published papers on the Data Divide, Connectivity for AI, AI National Security Implications, Emerging Defense Technologies, and The Future of Space

Associate Program Director Washington, D.C.
National Science Foundation – Small Business Innovation Research (SBIR) & Innovation Corps (I-Corps™) 2016 - 2017

- Aligned the national Innovation Corps™ (I-Corps™) program with Congressional milestones set by the America COMPETES Act, ensuring measurable policy impact on technology commercialization and federal innovation strategies
- Developed and strengthened public-private partnerships with I-Corps™ companies, federal agencies, and venture capitalists to enhance commercialization readiness and product-market fit based on the customer discovery program for 1000+ I-Corps™ teams
- Facilitated cross-sector collaboration through the customer discovery program, supporting over 1,000 I-Corps™ teams in translating innovative technologies into viable market solutions
- Expanded and enhanced I-Corps™ programs across federal agencies, collaborating with the Office of Science and Technology Policy (OSTP), NASA, DHS, DOE, NIH, and DoD to foster a cohesive innovation ecosystem
- Drafted, submitted, and assisted in the reauthorization of the America COMPETES Act as Congressional liaison from NSF on the data standardization and collection of SBIR and I-Corps™ programs

Senior Data Policy Scientist Washington, D.C.
United States Agency for International Development (USAID) – Global Development Lab 2015 – 2016

- Designed, integrated, and scaled open-source data science platforms and mobile health information systems (mHIS) to enhance interoperability and epidemic response capabilities in Liberia, Sierra Leone, and Guinea
- Leveraged advanced data analytics to track and model disease spread, optimizing real-time decision-making during the Ebola epidemic
- Managed Congressionally mandated funding exceeding $30 million to implement data-driven policies that improved public health resilience and emergency preparedness
- Facilitated multi-stakeholder with government ministries of health, NGOs, and philanthropic organizations to align strategic interests, develop policy frameworks, and implement solutions that enhanced cross-border health data integration and coordination
- Conducted policy analysis on the impact of predictive data mining techniques in assessing U.S. government influence on foreign governments and NGOs
- Evaluated data-driven approaches to inform policy decisions, enhance governmental accountability, and improve strategic international engagement

PROFESSIONAL ENGINEERING EXPERIENCE

Digital Business Initiatives and Data Analytics Specialist East Hartford, CT
United Technologies Corporation Research Center. 2013 – 2016

- Conducted comprehensive portfolio assessments on UTC business units, identifying critical areas for business development and engineering solutions, resulting in securing an additional $3 million in federal funding for UTC.
- Assessed R&D investments ($50K - $2M) for strategic alignment within UTC
- Drove digital business strategy through leadership of $1M+ research proposals, securing funding for projects with national, commercial, and academic stakeholders
- Accelerated innovation within UTC businesses by overseeing TRL assessments, technical audits, and performance evaluations of R&D programs

Senior Research Engineer East Hartford, CT
United Technologies Corporation Research Center (Raytheon Technologies) 2011 – 2013

- Developed and standardized test protocols to assess the performance and reliability of advanced materials, components, and structures across all UTC business units
- Subject matter expert in tribological analysis of materials (metals, composites, polymers) for critical systems, including Otis Gen2 elevator systems and UTC Aerospace landing gear
- Optimized metal and ceramic components for aerospace applications (Pratt & Whitney, UTC) using advanced nano-mechanical testing and analysis
- Expert in ASTM and novel mechanical testing, determining critical material properties (tensile, hardness, fracture, creep, failure)
- Pioneered and implemented advanced manufacturing models (hybrid/additive, deep rolling, cold spray, high-speed machining) now licensed by UTC

EDUCATION

Ph.D., Engineering Science: Materials Science & Mechanical Engineering
University of South Florida
Dual Focus: Mechanical and Material Science Engineering
Dissertation**:** *Consumable Process Optimization for Chemical Mechanical Planarization of Patterned Media Storage Fabrication*

M.S., Mechanical Engineering
Carnegie Mellon University
Dual Focus: Mechanical and Material Science Engineering
Thesis**:** *The Effects of Microstructure on Chemical Mechanical Planarization of Thin Films*

M.S., Biomedical Engineering
University of South Carolina
Thesis**:** *Dynamic Simulation of Human Gait for Design of Trans-Tibial Prosthetic Amputees*
B.S., Mechanical Engineering
University of South Carolina
Thesis**:** *Enhancing Performance of Combustion Engines Camless Engine Integration*

AWARDS

AAAS Science and Technology Policy Fellow (2015-2017) | SNEATP Technologist of the Year (2015) | Black Enterprise (BE) Magazine Modern Man
UTC Senior Vice President Award of Excellence | Barry University Faculty Member of the Year | NSF Fellow NSF CMMI Award NSF-MRI Fellow| Alfred P. Sloan Minority Ph.D. Scholar | Bridge to Doctorate Fellow | MRSEC Fellow
Exxon Mobile Fellow | RCS Fellow | Life Scholar Fellow | Graduation Honor Distinctions (USC, CMU,USF)

PROFESSIONAL MEMBERSHIPS

American Association for Advancement Science| American Society of Mechanical Engineers | National Society of Black Engineers | Society of Tribology and Lubrication Engineers | Society of Manufacturing Engineers | Institute of Electrical and Electronics Engineers | The Minerals, Metals, and Materials Society

CERTIFICATIONS

Achieving Competitive Excellence (ACE) Associate | UTC Six Sigma | UTC Business Development | PMP Certification in progress (2023)