

## ABOUT APEX:

APEX is an United States Air Force (USAF) Partnership Intermediary through Wright State Applied Research Corporation (WSARC). APEX cultivates innovation by expanding the American research enterprise for the USAF and does this by engaging and collaborating with innovators across academia, industry and the Department of Defense (DoD) who possess science and technology (S&T) of interest to the USAF; utilizing data analytics to identify transformational operational defense solutions in academia, industry and government sectors; providing high-touch coaching for business startups and proposals; and engaging with DoD programs to connect universities, businesses and government entities in a way that moves defense technology from discovery to reality.

## ABOUT APEX ANALYTICS:

APEX analytics seeks to identify potential investigators from academia, small business and nontraditional industry whose research is poised to impact USAF challenges and requirements well in advance of potential solicitations and recruit them into the defense research and development (R&D) ecosystem.

The goal is to ensure that the right eyeballs hit the right solicitation at the right time; and that when they do, those investigators are well-versed in USAF needs, have a network of contacts for teaming, commercialization and transition within the proper domain, and are educated in proposal submission requirements that differ significantly from their traditional funding sources.

APEX believes investigator identification via big data will diversify and accelerate the transition pipeline, moving from innovation to impact on more operational timescales.

In order to provide accurate, highly targeted investigator recommendations, APEX seeks to instrument the entire scientific knowledge generation and R&D venture creation processes. This requires copious data from diverse sources.

APEX applies machine learning techniques from Natural Language Processing, Topic Modeling, Deep Learning, Network Science and other Scientometric and statistical domains to these data to identify investigators and institutions best-suited to areas of USAF interest.

## CONTACT:

Bruce Howard  
Director of Analytics  
bruce.howard@wright.edu

In addition to investigator identification, our USAF customers have used or have expressed interest in using APEX analytics to facilitate the following:

- **Horizon Scanning** to identify emerging technologies, innovations and trends
- **Blue Sky Discovery and Planning** to identify technology focus and gaps, and optimal participant and organizational expertise
- **Team Building** to optimize team performance via analysis of team member expertise, prominence, collaboration history and requirements
- **Institutional, Investigator and Geographic Analyses** to identify prominence of individuals, investigators and regions at very high resolution, e.g. down to the protein, or waveform
- **Workforce Development** to identify strengths, gaps, demographic and pipeline needs and supply for the national security technology workforce
- **Portfolio Management** to deliver insight into ongoing S&T development relative to USAF extramural investment portfolio for reduced risk and increased return on investment
- **Program Development** for technology gap analysis and maturity modeling for S&T program planning, metric benchmarking and solicitation development
- **Lead-Leverage-Watch Analysis** for scientometric analysis of the government research entity prominence in a field, as well as the prominence of their extramurally-funded performers
- **Funding Analyses** to identify areas of USAF need insufficiently funded by other federal R&D organizations
- **Requirements Clustering** for automated analysis of trans-directorate, program, and program executive officer requirements documents to identify similar requirements for improved resource utilization and reduced duplication of research, development, test and evaluation funding
- **International Analysis** for bibliometric/scientometric analyses of international and foreign language publications to assess research trends in overlooked literature, targeted by country, region or institution