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# Small Business Innovation Research (SBIR) Program

Environmental Restoration Program  
Edwards AFB, CA

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# SBIR Program



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- **Small Business Innovation Research (SBIR)**
  - Enacted in 1982, as part of the Small Business Innovation Development Act
  - Currently operating under continuing resolution
    - *SBIR Reauthorization Act of 2000*
  - Intended to help small businesses compete for federal research and development awards
  - Funded by a 2.5% tax on government research and development budgets over \$100 million

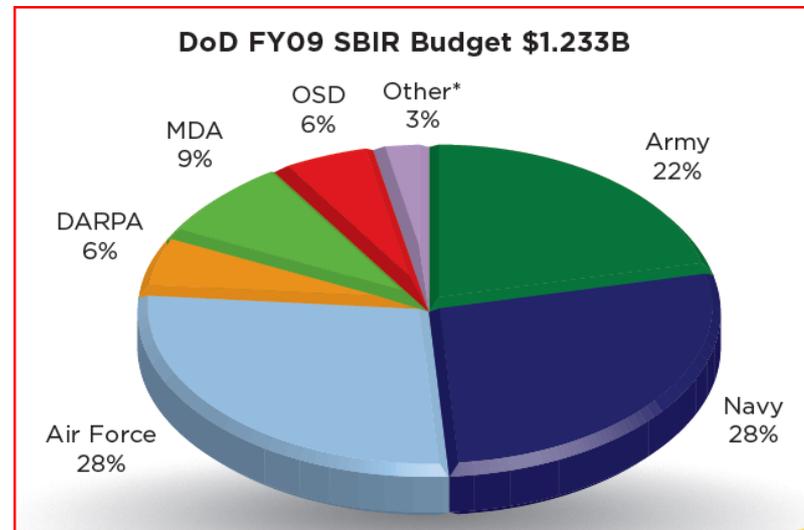


# SBIR Budget



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- The 2009 Department of Defense (DOD) SBIR budget was \$1.23 billion



- Air Force 2009 SBIR budget was \$340 million
- Edwards AFB fiscal year 2009 (FY2009) SBIR budget was \$9 million



# SBIR Process



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- **Phase I – Feasibility Study**
  - Three to five companies participate
  - Awards up to \$100,000
  - Evaluate the scientific and technical merit of project
- **Phase II – Builds on Phase I**
  - Awarded to one company
  - Awards up to \$750,000
  - Should result in a prototype
- **Phase III – Commercialization**
  - Requires private sector or non-SBIR federal funding



# How SBIR Benefits Environmental Management



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- **Environmental Management recognizes a technology gap is created by current or pending regulatory requirements**
- **Utilizes SBIR to fund research and development of new technology to address gap**
  - SBIR funds are not part of the Environmental Management budget
- **Environmental Management currently has eight active Phase II's and two Phase I's (FY2009)**
  - Compliance and Conservation



# SBIR Project Process



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- Annual topic call sent out by the Plans and Programs Office (AFFTC/XPR) on base
- Environmental Management develops topics and submits them to AFFTC/XPR for validation
- AFFTC/XPR prioritizes topics through Test Wing Engineering Council
- Prioritized Topic List submitted to the Center Technology Council for approval and submission to Wright-Patterson AFB
- Wright-Patterson AFB reviews and approves the topics, then forwards them to Air Staff (Pentagon)
- The Director of Defense Research and Engineering reviews and approves topics for Air Force SBIR solicitation



# FY2010 SBIR Edwards AFB Projects



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- **Edwards AFB submitted seven projects for approval**
  - Four projects from Electronic Warfare
  - Two projects from Environmental Management
  - One project from Information Technology
- **Environmental Management projects**
  - Compliance: High-Density Hydrogen Storage with Nano-material Hybrids
  - Restoration: Continuous Indoor Vapor Monitoring System for Volatile Organic Compounds (VOCs)



# Restoration SBIR Project



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- **Objective**
  - Develop continuous, field-portable, low-cost, rapid-response monitoring unit to quantitatively measure VOCs in indoor air
- **Operational driver**
  - VOC indoor air concentrations have been reported at Edwards AFB
- **Technology Uses**
  - Protect human health
  - Provide data for risk management decisions
  - Monitor effectiveness of mitigation technologies



# Restoration SBIR Project



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- **Instrument parameters**
  - Identify VOCs
    - Specifically benzene and trichloroethene (TCE)
  - Detection limit for targeted VOCs of 1 part per billion (ppb)
  - Range of 1-100 ppb
  - Operate at temperatures between 50-104°F
  - Sensitivity  $\pm 0.5$  ppb
  - Measure and record hourly
  - Little or no maintenance



# Restoration SBIR Project



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- **Phase I**
  - Demonstrate design feasibility
- **Phase II**
  - Develop and demonstrate a prototype device suitable for measuring quantitative VOC concentrations
- **Phase III: Dual-Use Applications**
  - Military application
  - Commercial application



# Restoration SBIR Project



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- **Benefits of a successful project**
  - Expedite evaluating and responding to potential vapor intrusion issues within buildings
  - Reduce required manpower to perform indoor air sampling
  - Reduce sampling cost
  - Provide real-time evaluation of mitigation measures
  - Applied DOD-wide and have a large commercial market
  - Protective of human health



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**Questions or Comments?**