



Small Business Innovation Research

SBIR Workshop

March 26 2009



*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

Federal SBIR Program

- **11 Federal Agencies with SBIR Programs**
- **Set-aside: 2.5% of Extramural R&D Budget**
- **Program utilizes Small Businesses with fewer than 500 employees to Develop Technologies that Agencies Need**
- **Promotes Commercialization**
- **Over \$2+ Billion Total**



11 Participating Agencies

Department of Defense (DOD)

Department of Health & Human Services (HHS)

National Aeronautics & Space Admin (NASA)

Department of Energy (DOE)

National Science Foundation (NSF)

Department of Homeland Security (DHS)

Department of Agriculture (USDA)

Department of Commerce (DOC)

Environmental Protection Agency (EPA)

Department of Transportation (DOT)

Department of Education (ED)

*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

**RESEARCH &
DEVELOPMENT**

*Building a
scientific
foundation
for sound
environmental
decisions*

NSF – EPA Collaboration

Environmental Technology



EPA – NSF Collaboration

EPA Needs New Technology

- EPA and NSF Share Same Goal
 - Technology Commercialization
- No Topic Award Quotas
 - Best Proposals Funded
- NSF SBIR Budget \$185 Million

*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development



EPA – NSF Collaboration Everybody WINS

- EPA – More New Technologies
- NSF – More Success Stories
- BUSINESS – Two Chances for Award
- USA – Economic Growth & More Jobs

*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development



EPA is Helping NSF

- More Outreach to Small Businesses
 - More High Quality Environmental Proposals
- Participate in NSF Peer Reviews
- Access to EPA Mentors
- Find Commercialization Partners
- Promote Use of Technology
 - Environmental Technology Verification (ETV) Testing
 - Industrial/Municipal Permits and Enforcement

*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development



*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

SBIR Phases at EPA

SBIR Phase I

- Proof of Concept
- Competitive (1 in 10 Funded)
- \$70,000 over 6 Months

SBIR Phase II

- Technology Commercialization
- \$225,000 over 2 Years
- Options (Extra \$120,000)



*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

SBIR Phases at NSF

SBIR Phase I

- Proof of Concept
- \$150,000 over 6 Months
- Phase IB (Extra \$50,000)

SBIR Phase II

- Technology Commercialization
- \$500,000 over 2 years
- Phase IIB (Extra \$500,000)



SBIR 2009 Timeline

Phase I Solicitation Open

- March 9 – June 9, 2009 (NSF)
- March 19 – May 20, 2009 (EPA)

Phase I Awards

- December, 2009 (NSF)
- February, 2010 (EPA)

Apply to Both NSF and EPA

- With NSF Award, Withdraw EPA Proposal
- No NSF Award, EPA Award Still Possible

*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development



*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

NSF Solicitation Topics

- Biotechnology and Chemical Technologies
 - BT.3 – Environmental Biotechnology
 - CT.4 – Technologies for Sustainability
- Education Applications
- Information and Communication Technologies
 - IC.4 – Components (Sensors)
- Nanotechnology, Advanced Materials, Manufacturing
 - N.2 – Nanomanufacturing
 - AM.4 – Materials for Infrastructure
 - M.2 – Environmentally-Benign Manufacturing



*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

EPA Solicitation Topics

- ❖ Green Building
- ❖ Innovation in Manufacturing
- ❖ Nanotechnology
- ❖ Greenhouse Gases
- ❖ Drinking Water and Water Monitoring
- ❖ Water Infrastructure
- ❖ Monitoring and Control of Air Pollution
- ❖ Biofuels and Vehicle Emissions Reduction
- ❖ Waste Management and Monitoring
- ❖ Homeland Security

Green Building

- Building Materials and Site Management
- Energy and Indoor Environmental Quality
- Water Use and Management
- Environmental Benefits
 - Energy Savings
 - Lower Water Usage
 - Lower Indoor Pollution

Innovation in Manufacturing

- Environmentally-Benign Techniques
 - Production Process Changes
 - Pollution Prevention & Waste Minimization
 - Improved Production Efficiency
 - New Feedstocks, Solvents, Catalysts

NanoTechnology

- Nanomaterials and Nanoelectronics
 - Multi-Pollutant Monitors and Sensors
 - MicroElectroMechanical Systems
 - Green Coatings and Catalysts
 - Energy Savings and Pollution Prevention

Greenhouse Gases

Reduce CO₂ Capture By-Products

Reduce Emissions Using Renewables

Reduce Impacts of CO₂ Sequestration

CO₂ Source Measurement

Pollutant Reduction

- Methane and non-CO₂ Pollutants
- NOT CO₂ Alone

Drinking Water and Water Monitoring

Small System Processes

Better Water Disinfectants

Detection & Monitoring

- Multiple Pathogens
- Neurotoxins
- Microfluidic Concentrators

Water Infrastructure

Urban Water and Sewage Systems
Leak Detection/Failure Forecasting
Cleaning, Repair and Construction
Reduced Energy Requirements
New Materials and Relining Methods
See www.epa.gov/waterinfrastructure

Monitoring & Control of Air Pollution

Multiple Pollutant Reduction

- Biomass Power Plants, Pulp&Paper, Cement

Sectors with Many Small Sources

- Industrial Boilers
- AutoBody & Paint Shops
- Restaurants

Air Pollution Monitoring

- Stationary Source Instruments for PM
- Multi-Pollutant Sensors and more

Biofuels & Vehicle Emissions Reduction

New Tank Coatings & Storage Additives

Glycerin Recycle/Reuse in New Products

Better Biodiesel Production Methods

Wood, Cellulosic Waste, Biomass

Diesel Construction and Truck Retrofits

Waste Management & Monitoring

Cleanup of Contaminated Sediments

Waste-to-Energy Systems

- Gasification Systems (Limited Oxygen)
- Anaerobic Digestion

Hazardous Waste Monitoring

Homeland Security

Building Decontamination

- Biological and Chemical Systems

Detection and Microbial Viability

- Emergency Response Field Kits

Drinking Water & WasteWater

- Early Warning "Smart" Systems
- Hand-Held and In-Line Detectors



SBIR Schedule

EPA Phase I Solicitation

- Now Open
- Closes May 20, 2009

NSF Phase I Solicitation

- Now Open
- Closes June 9, 2009

*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

**RESEARCH &
DEVELOPMENT**

*Building a
scientific
foundation
for sound
environmental
decisions*

Additional Information

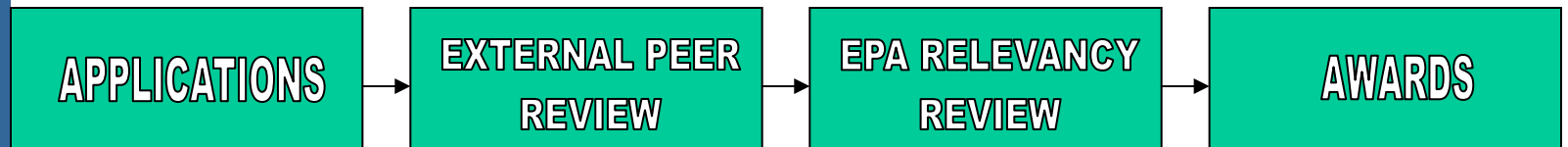


EPA Proposal Review

*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development



EPA Proposal Review

External Peer Review

- Panels of Outside Experts
- EPA, USDA, NSF, NIH, ED

Inside Line Review

- Mission Agency Looking for Product for Specific Need
- DOD, NASA, DOE, DOT

RESEARCH &
DEVELOPMENT

*Building a
scientific
foundation
for sound
environmental
decisions*

Environmental Technology Verification Program

ETV Provides Performance Information for Commercial-Ready Technology Critical for EPA, Other Federal Agencies, State and Local Agencies, and Purchasers of New Technology

www.epa.gov/etv

RESEARCH &
DEVELOPMENT

*Building a
scientific
foundation
for sound
environmental
decisions*

Environmental Technologies Opportunities Portal (ETOP)

One Stop Shop for Information about
EPA Technology Programs
Links to Green Venture Capital Firms

www.epa.gov/etop



*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

2008 EPA Phase 1 Awards

- ❖ Improved Systems for BioFuels
- ❖ Nano-Immunosensor for Water Monitoring
- ❖ Recycling Spent Perchlorate Brine
- ❖ Adsorbant for Cooking Emissions
- ❖ Compact Ammonia Monitor
- ❖ Off-Road NOx Abatement
- ❖ E-Waste Removal of BR Flame Retardants
- ❖ Alaska MSW Combustors
- ❖ Water Security Monitor
- ❖ First Responder Decontamination Wipes



*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

More EPA Information

- EPA Contacts:
 - James Gentry – gentry.james@epa.gov
 - Jim Gallup – gallup.james@epa.gov
 - April Richards – richards.april@epa.gov
- EPA Website: www.epa.gov/ncer/sbir



*Building a
scientific
foundation
for sound
environmental
decisions*

National
Center for
Environmental
Research

Office of
Research and
Development

More NSF Information

- NSF Contacts:
 - Greg Baxter – gbaxter@nsf.gov
 - Cynthia Znati – cznati@nsf.gov
 - Juan Figueroa – jfigueroa@nsf.gov
 - Bill Haines – whaines@nsf.gov
 - Joseph Hennessey – jhennessey@nsf.gov
 - Cheryl Albus – calbus@nsf.gov
- NSF Website: www.nsf.gov/eng/iip/sbir