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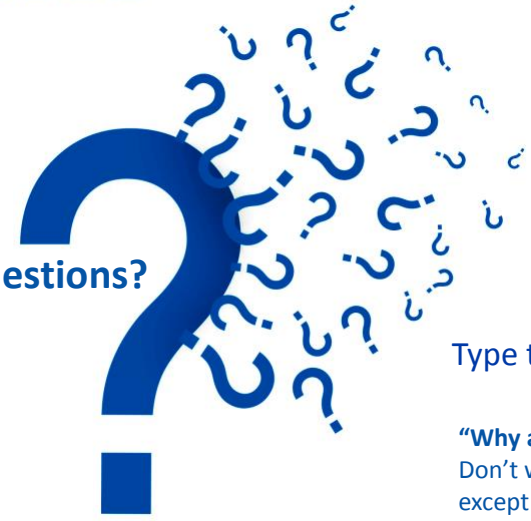
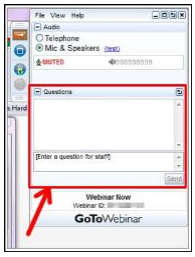


Have Questions?



Type them into questions box!

"Why am I muted?"
Don't worry. Everyone is muted except the presenter and host. Thank you and enjoy the show.

Contact ACS Webinars ® at acswebinars@acs.org

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"I always find these webinars really interesting and this was another great session with plenty of good tips to help get the best out of social media."

Fan of the Week

Mr. Jon Seal,
Investigator

http://bit.ly/SocialMedia102

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ACS visits campuses across the world offering FREE seminars on how to be published, find a job, network and use essential tools like SciFinder. ACS on Campus presents seminars and workshops focused on how to:

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http://acsoncampus.acs.org

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#HeroesofChemistry
ACS Heroes of Chemistry Award

Inspiring Hero Stories

Heroes of Chemistry winner BMS: Carl Decicco presenting the story behind Daklinza® and Sunvepra™

View All Past Recipients >>

*The **ACS Heroes of Chemistry Award** is the Annual award sponsored by the American Chemical Society that recognizes talented industrial chemical scientists whose work has led to the development of successful commercialized products ingrained with chemistry for the benefit of humankind.*

2018 Winners: AstraZeneca, DuPont, Pfizer, SeattleGenetics

www.acs.org/heroes

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An individual development planning tool for you!

https://chemidp.acs.org

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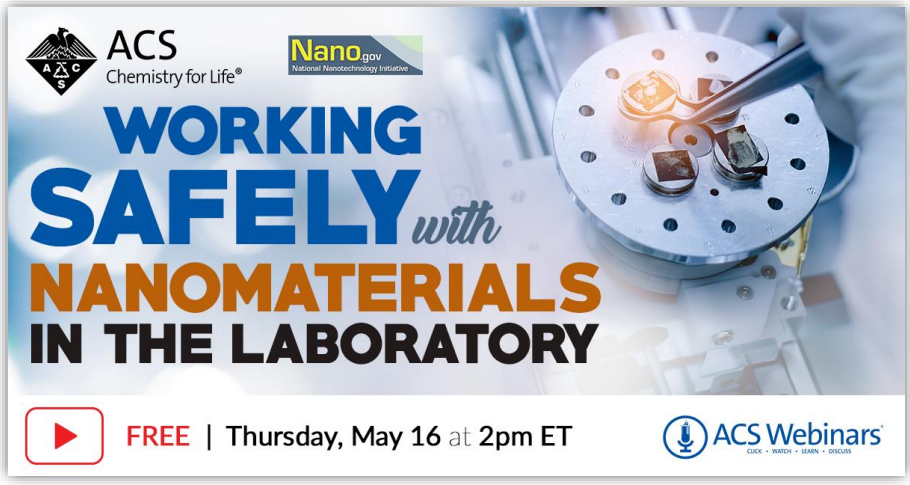

https://www.acs.org/content/acs/en/acs-webinars/technology-innovation/nanotech.html

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ACS Industry Member Programs

ACS Technical Division Small Chemical Business (SCHB)

THIS ACS WEBINAR WILL BEGIN SHORTLY...

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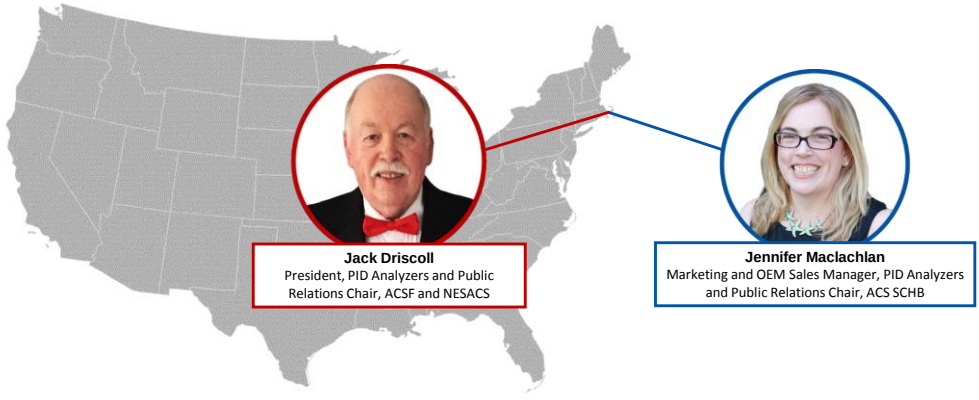
Securing Small Chemical Business Funding with the SBIR/STTR Programs



Jack Driscoll
President, PID Analyzers and Public Relations Chair, ACSF and NESACS

Jennifer Maclachlan
Marketing and OEM Sales Manager, PID Analyzers and Public Relations Chair, ACS SCHB

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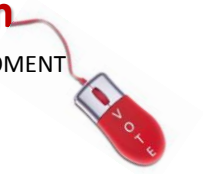
ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



Which ACS member started the SBIR / STTR Program?

- John W. Draper
- Arthur S. Obermayer
- Charles A. Kraus
- Mary L. Good
- Bonnie A. Charpentier

** If your answer differs greatly from the choices above tell us in the chat!*

Brief History of the SBIR

- Arthur Obermayer received his PhD in Chemistry from MIT, was a **60 + year member of the American Chemical Society** (ACS), a member of the Northeastern Section of the ACS, (NESACS) and was chair of NESACS in 1982. Obermayer was an entrepreneur and was a champion for small businesses

- **The Small Business Innovative Research (SBIR) program began with 10 years of effort** by Arthur Obermayer and Senator Kennedy to get the federal government to set aside a percentage of their R&D funding for small businesses

Arthur and Judy Obermayer inducted into the SBA Hall of Fame 2015 for their contributions to the SBIR Program

Arthur and Judith Obermayer speaking at White House ceremony

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1982 SBIR Bill Signing @ the White House

Arthur Obermayer, Judith Obermayer, and Senator Kennedy in Rose Garden

- The Obermayers and Kennedy as the SBIR STTR bill is signed into law
- It took more than 10 years of testimony and pushing this government funding bill for small businesses to get to this point
- **Obermayer received the first SBIR grant**, for $25,000 from NSF for his Company, Moleculon
- Several years later with considerable pressure Obermayer was able to get the Government to give the IP rights to the Company that was involved in the development through the Bush-Dole Patent act in 1983

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Dr Obermayer Talks About SBIR Contributions

- At the **Oct. 2012**, **NESACS meeting** at Nova Biomedical Corp. We (JD, JM, MC) had organized a Small Chemical Business Symposium organized by NESACS & the Small Chemical Business Div. ACS (SCHB)
- Dr. Obermayer wanted to talk about the formation of the SBIR program when he received 60 year ACS pin but no space was available. Fortunately, we found a place for him in our Symposium. Madeline Jacobs, ACS, CEO, graciously gave up her slot
- I am really glad that we did that because **I never realized how the very important SBIR program had started** and what it has become (JND)

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16

SBIR Program in Summary

- When Arthur Obermayer was inducted into SBIR Hall of Fame at the White House in 2015, he stated that **"Next to the GI Bill after WWII, SBIR was one of the most significant pieces of legislation ever passed by Congress".**
- The program that started with a $25,000 grant to Moleculon has grown to be 1.7% of the 135 billion dollar US R&D budget in 2018
- **For 2018, this amounts to $2,300,000,000 for small business research & development**
- I have asked a number of companies primarily involved in SBIR funding and none of them ever heard of the Obermayers. We should do something about that!
- We will get the ACS small chemical business program restarted and provide information to ACS members about **"America's Seed Fund"**

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https://www.sbir.gov/about/about-sbir

17

SBIR / STTR R&D Programs

- **Small Business Innovative Research** - for small businesses- Government agencies set aside a % of their R&D budget for small businesses

  Started in 1982 with first Award to Arthur Obermayer at Moleculon

  https://www.sbir.gov/about/about-sbir
- **Small Business Technology Transfer** - The unique feature of the STTR program is the requirement for the small business to formally collaborate with a research institution (such as a University) in Phase I and Phase II. STTR's most important role is to bridge the gap between performance of basic science and commercialization of resulting innovations.

  https://www.sbir.gov/about/about-sttr
- Since its inception nearly **25,000 awards** have been made by government agencies

Content courtesy of John Williams, Director of Innovation & Technology at the SBA in Washington, D.C.

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Differences between SBIR and STTR:

	SBIR	STTR
Partnering Requirement	Permits partnering	Requires a non-profit research institution partner
Principal Investigator	Primary employment (>50%) must be with the small business	PI may be employed by either the research institution partner or small business (check solicitation)
Work Requirement	May subcontract up to 33% (Phase I), 50% (Phase II)	40% Small Business, 30% Research Institution Partner
Program Size	FY15-$2.25B	FY15-$296M
Majority VC Ownership	Allowed by some agencies	Not Allowed
Participating Agencies	11 agencies (extramural R&D budget >$100M)	5 agencies (extramural R&D budget >$1B)

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Mission of the SBIR and STTR Programs

To support scientific excellence and technological innovation through the investment of Federal research funds in critical American priorities to build a strong national economy… one small business at a time.

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Who Qualifies as a Small Business?

- Organized as for-profit **U.S. business**
- 500 or fewer employees including affiliates
- Work must be done in the **U.S.** (with few exceptions)
- Greater than 50% **U.S.-owned** by individuals and independently operated with some exceptions

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The Small Business Innovation Research (SBIR) Program

- A set-aside program for small business to engage in Federal R&D with potential for commercialization
- 3.0% of the extramural research budget (FY2015 ~2.0 Billion in summation) for all agencies with a budget greater than **$100M per year**. Growing to 3.2% by 2017

FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
2.5%	2.6%	2.7%	2.8%	2.9%	3.0%	3.2%

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https://www.sbir.gov/about/about-sbir

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4 Goals of the Program

1. Meet **Federal research and development needs**
2. Increase private-sector commercialization of innovation derived from Federal research and development funding
3. Stimulate technological **innovation**
4. Foster and encourage participation in innovation and entrepreneurship by **socially and economically**

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https://www.sbir.gov/about/about-sbir

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Why the SBA works on America's Seed Fund?

Front row seat to the future...

23andMe

biogen idec

iRobot

ecovative

LIFT labs

Symantec

QUALCOMM

MADE IN SPACE

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Typical Application Process

Solicitation Topics → **Proposal Submission** → **Evaluation** → **Phase I or II Award**

https://www.sbir.gov/sbirsearch/solicitation/current

- Business Plan
- Executive summary
- Cost Proposal
- Technical Proposal

https://www.sbir.gov/awardee

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Why should I apply for an SBIR Award?

Remember that:

- The **SBIR Grant or Award money is free**. The Government does not take a portion of your company for this cash infusion
- Any **patents** on your innovations **belong to your company**
- You have an **opportunity to commercialize your new product** through phase II or phase III SBIR funding and also **develop customers in the government**

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Proposal Topics…NSF Accepts in any area of Tech

America's SEED FUND SBIR.STTR

Each year, NSF funds roughly 400 companies across nearly all technology and market sectors.

Download a searchable PDF of the full list of technology topic areas that also includes descriptions of the subtopics.

https://seedfund.nsf.gov/assets/files/applicants/combined-topics-02-2019.pdf

TECHNOLOGY TOPIC AREAS

- Advanced Manufacturing (M)
- Advanced Materials (AM)
- Artificial Intelligence (AI)
- Biological Technologies (BT)
- Biomedical Technologies (BM)
- Chemical Technologies (CT)
- Digital Health (DH)
- Distributed Ledger (DL)
- Educational Technologies and Applications (EA)
- Energy and Power Systems (EP)
- Environmental Technologies (ET)
- Information Technologies (IT)
- Instrumentation and Hardware Systems (IH)
- Internet of Things (I)
- Medical Devices (MD)
- Nanotechnology (N)
- Other Topics (OT)
- Photonics (PH)
- Quantum Information Technologies (QT)
- Robotics (R)
- Semiconductors (S)
- Sensors (SE)
- Space (SP)
- Wireless Technologies (W)

* Except drug development

https://seedfund.nsf.gov/portfolio

Content courtesy of Dr. Anna Brady-Estavez

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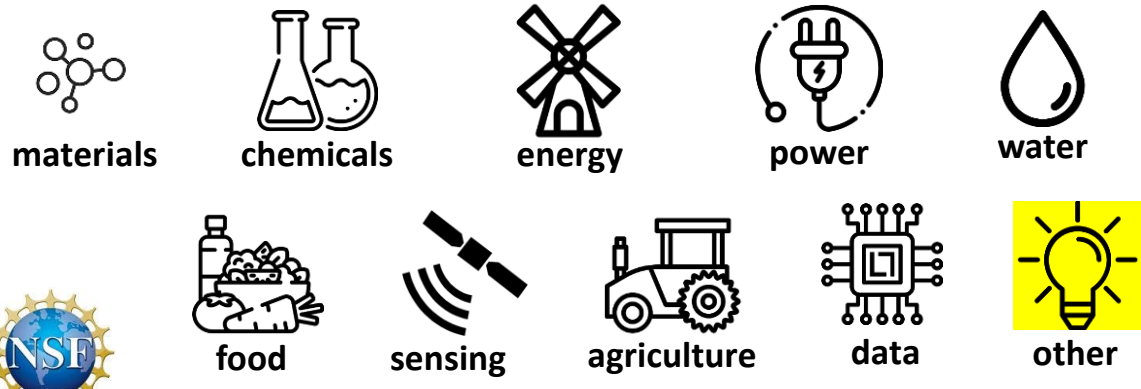
27

America's SEED FUND SBIR.STTR

Chemicals Portfolio: Show Us Your Idea!



Content courtesy of Dr. Anna Brady-Estavez

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First Step = The Project Pitch New from NSF

- The required **Project Pitch** allows startups and small businesses to get **quick feedback** at the start of their application for Phase I funding from America's Seed Fund powered by NSF
- Startups or entrepreneurs who submit a **three-page Project Pitch will know within three weeks** if they meet the program's objectives to support innovative technologies that show promise of commercial and/or societal impact and involve a level of technical risk
- They will also **get additional guidance and feedback** from NSF staff

Content courtesy of Dr. Anna Brady-Estavez

https://seedfund.nsf.gov/project-pitch

29

SBIR Schedule

- New Federal Budget starts on **Oct.1**
- Government Agency Requests for projects start in **Nov./Dec.** and **May/June**
- This info is also published in the Federal Register https://www.federalregister.gov
- Go to: www.sbir.gov or search www.sbir.gov for project topics and look at each agency

Hint: *grants.gov is a good place to start looking for SBIR/STTR program opportunities. Just type "SBIR" in the basic search, and off you go!*

Dept of Defense
sbir.defensebusiness.org
sbirhelp@bytecubed.com

Dept of Homeland Security
sbir2.st.dhs.gov
stsbir.program@hq.dhs.gov

Dept of Health & Human Services
sbir.nih.gov
sbir@od.nih.gov

Dept of Education
ies.ed.gov/sbir/
edward.metz@ed.gov

Dept of Energy
science.energy.gov/sbir
sbir-sttr@science.doe.gov

Dept of Transportation
volpe.dot.gov/sbir
dotsbir@dot.gov

NASA
sbir.nasa.gov
sbir@reisystems.com

National Science Foundation
seedfund.nsf.gov
sbir@nsf.gov

Dept of Commerce

NOAA
techpartnerships.noaa.gov/SBIR
vincent.garcia@noaa.gov

NIST
nist.gov/tpo/sbir/
mary.clague@nist.gov

USDA
nifa.usda.gov/sbir
sdockum@nifa.usda.gov

EPA
epa.gov/sbir
richards.april@epa.gov

30

Agency Budgets

- Only Government Agencies with budgets **> $100 million** participate
- The **DOD and NIH have the largest R&D budgets** and **each contributes about 40%** of the SBIR Annual budget
- The **other agencies have the remainder** (**20%**) of the budget

31

11 Agencies Involved in SBIR / STTR Programs

1. SBA
https://www.sbir.gov/agencies/small-business-administration

2. USDA
https://www.sbir.gov/agencies/department-of-agriculture

3. Department of Commerce, NIST, NOAA
https://www.sbir.gov/agencies/department-of-commerce

4. Department of Defense
https://www.sbir.gov/agencies/department-of-defense

4. Department of Education
https://www.sbir.gov/agencies/department-of-education

5. Department of Energy
https://www.sbir.gov/agencies/department-of-energy

6. Department of Health & Human Services, NIH
https://sbir.nih.gov

7. Department of Homeland Security
https://sbir2.st.dhs.gov/portal/SBIR

8. Department of Transportation
https://www.sbir.gov/agencies/department-of-transportation

9. Environmental Protection Agency
https://www.sbir.gov/agencies/environmental-protection-agency

10. NASA
https://www.sbir.gov/agencies/national-aeronautics-and-space-administration

11. NSF
https://www.sbir.gov/agencies/national-science-foundation

32

SBIR / STTR 3-Phase Competition Program

PHASE I
Proof-of-Concept
6-12 months | ~ $150,000 (**SBIR** - 6 months, $150K; **STTR** – 12 months, $150K)

PHASE II
Full R&D
24 months | ~ $1,000,000 (**Sequential Phase II up to $1M**)

PHASE III
Commercialization
Non-SBIR/STTR funds (public or private) (**Key Goal of the Program**)

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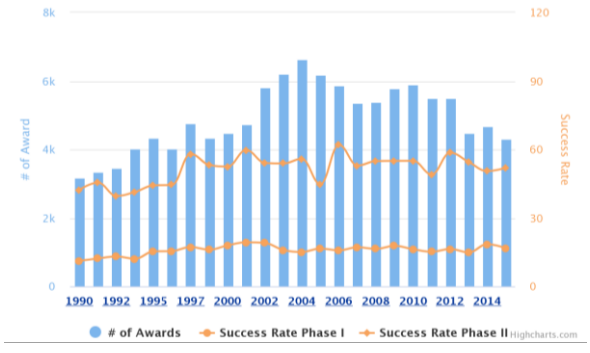
SBIR Awards

SBIR Averages Around 5,000 Awards Per Year



https://www.sbir.gov/awards/annual-reports

- SBIR programs have awarded over **$50 billion** to research-intensive American small businesses since 1982
- The **450,000 engineers and scientists** involved are one of the largest STEM talent concentrations in the world
- Key catalysts for **tens of thousands** of small businesses

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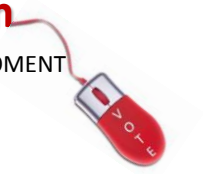
34

Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT

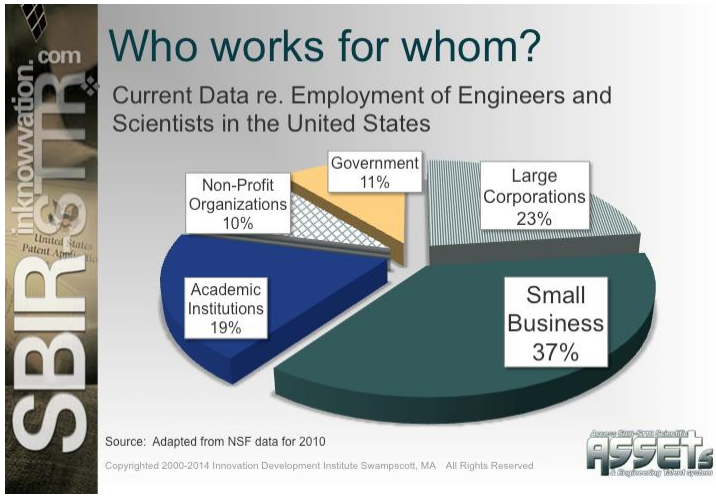


What percentage of engineers and scientists are estimated to be currently employed by small business?

- About ten percent
- About twenty percent
- About thirty percent
- About forty percent
- About fifty percent

** If your answer differs greatly from the choices above tell us in the chat!*

Small Business Employed 15% in the Early 80's



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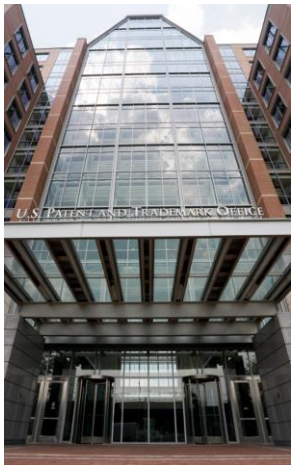
SBIR / STTR Issued U.S. Patents (as of June 2017)



- **136,383** issued U.S. Patents
- **20,651** U.S. Patent applications
- An estimated average of **14-15** U.S. Patents are issued to SBIR / STTR involved firms everyday, 365 days a year.

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Data courtesy of inKnowVation.com ...realizing the value of SBIR

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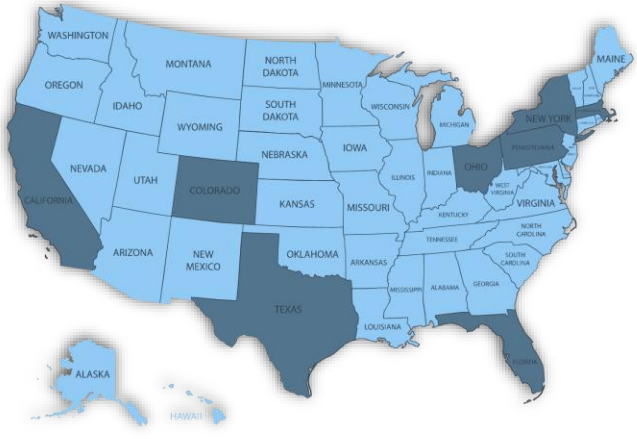
Top Total Award Dollars went Primarily to 10 States

- California
- Massachusetts
- Virginia
- New York
- Maryland
- Colorado
- Pennsylvania
- Texas
- Ohio
- Florida



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38

SBIR / STTR by the Numbers (as of August 2018)

Life of Program (1982-Present)

- **24,728** SBIR Awardees to Date
- **11,6459** Phase 1 projects ($12.32B)
- Of which, **46,181** have converted to Phase II ($35.45B)

Currently Active (Phase I 2015 – Phase II 2014)

- **5,809** SBIR Awardees to Date
- **14,557** Phase 1 projects ($2.49B)
- Of which, **5,511** have converted to Phase II ($5.89B)

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Data courtesy of InKnowVation.com ...realizing the value of SBIR

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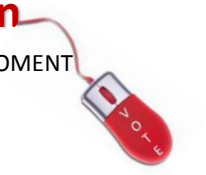
ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



After this introduction to SBIR and STTR Programs, as an small chemical business owner how likely are you to apply for an award?

- I am very interested in applying for a SBIR or STTR award
- I may apply for a SBIR or STTR award
- I do not know if I will apply or I am here out of curiousity
- I do not believe I will apply for a SBIR or STTR award
- I definitely will not apply for a SBIR or STTR award

** If your answer differs greatly from the choices above tell us in the chat!*

Summary

- **Why shouldn't you apply for an SBIR or STTR Grant?** It is a great program for small businesses!
- **More than 17 countries** have copied the US SBIR program
- With less than 1.7 percent of the Federal R&D budget, **SBIR/STTR has created 22 percent of America's key innovations**
- After the research for the Obermayer Symposium at the ACS National Meeting in Aug. 2018, I was so impressed that **my company, PID Analyzers, LLC applied for our first SBIR Award in January 2019** for development of oceanographic sensors for NOAA
- We will see what happens but it also gave us some ideas for a new product line that we will probably follow up with even if we do not get the Award.

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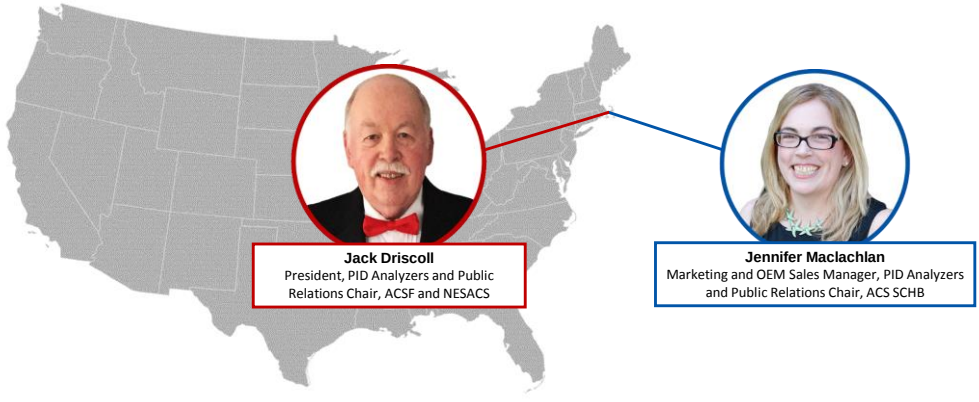

Jack Driscoll
President, PID Analyzers and Public Relations Chair, ACSF and NESACS

Jennifer Maclachlan
Marketing and OEM Sales Manager, PID Analyzers and Public Relations Chair, ACS SCHB

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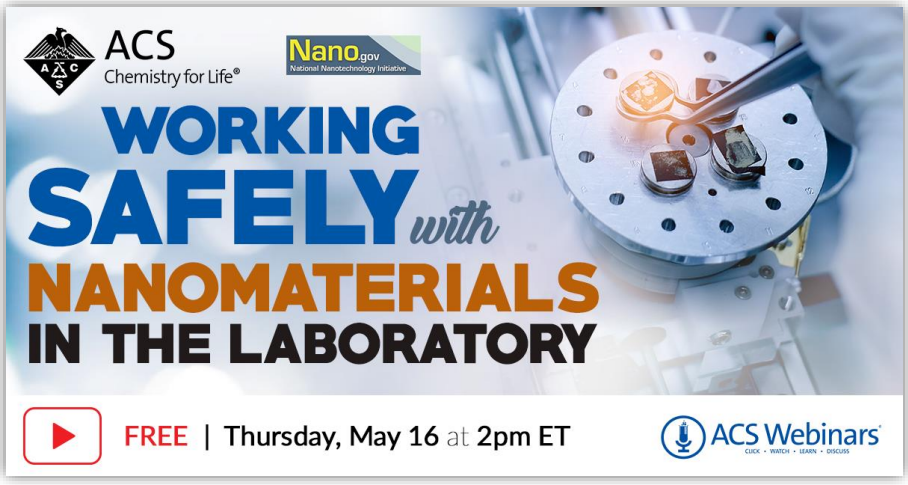

https://www.acs.org/content/acs/en/acs-webinars/technology-innovation/nanotech.html

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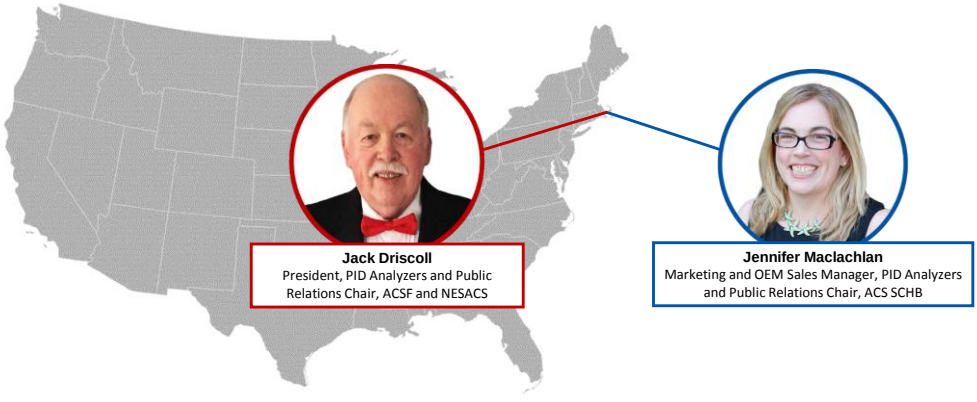

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"I always find these webinars really interesting and this was another great session with plenty of good tips to help get the best out of social media."

Fan of the Week

Mr. Jon Seal,
Investigator

http://bit.ly/SocialMedia102

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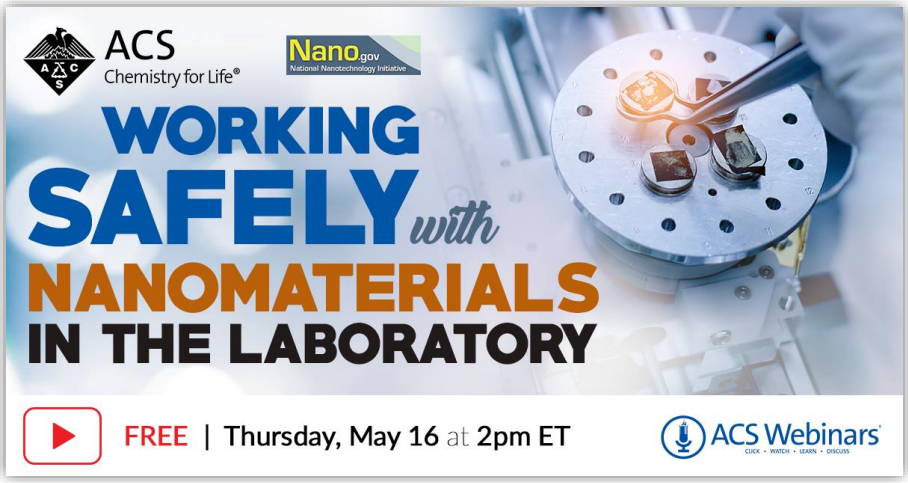

https://www.acs.org/content/acs/en/acs-webinars/technology-innovation/nanotech.html

49