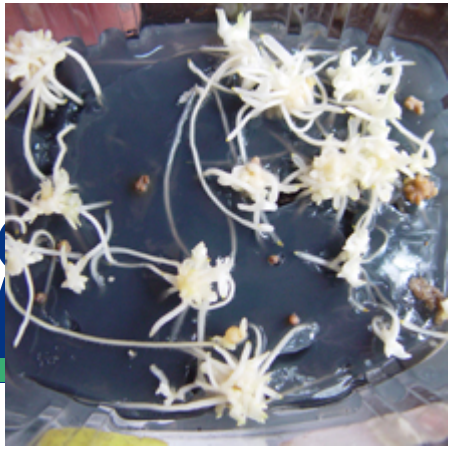


USDA-SBIR

Presentation to the

CSREES Grantsmanship Workshop





SBIR Program

- Started in 1983
- All Federal agencies with more than $100 million in extramural R&D must set aside 2.5% of their extramural R&D funds for an SBIR program
- Only US-owned, for-profit, small business firms located in the United States are eligible
- The PI/PD must work a minimum of 51% for the small business firm during the period of the award

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SBIR Program

- Government-wide program with 11 participating Federal agencies and total budget of >$2 billion
- USDA SBIR budget in FY 2007 = $18.9 million
- Highly competitive program with 10-20% success rate

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Participating SBIR Agencies

- DOD
- HHS (NIH)
- NASA
- DOE
- NSF
- DHS
- USDA
- DOT
- DOC
- EPA
- DoEd

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Features of USDA SBIR Program

- Award Grants Only
- Awards Based on Scientific and Technical Merit
- Ideas are Investigator-Initiated
- Proposals Reviewed by Confidential Peer Review Using Outside Experts From Non-profit Organizations
- Funds Allocated to Topic Areas in Proportion to Number of Proposals Received
- Subcontracting to Universities and USDA Labs Permitted

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Features of USDA SBIR Program

- Phase I Grants = 8 Months/$80,000
- Phase II Grants = 2 Years/$350,000
- Phase III – commercialization stage – non SBIR funding
- 12 Month No-cost Extension Available
- All Applicants Receive Verbatim Copies of Reviews

Topic Areas

- Forests & Related Resources
- Plant Production & Protection - Biology
- Animal Production & Protection
- Water & Soil Resources
- Food Science & Nutrition
- Rural & Community Development
- Aquaculture
- Biofuels and Biobased Products
- Marketing & Trade
- Animal Waste Mgmt.
- Small & Mid-Size Farms
- Plant Production & Protection - Engineering

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Technology Areas Supported by USDA/SBIR Program

- **Information Technology**
- **Robotics**
- **Electronics**
- **Biotechnology**
- **Nanotechnology**
- **Microelectro Mechanical Systems (MEMS)**
- **Acoustics**
- **Remote Sensing**
- **Genetic Engineering**
- **Material/Coatings**
- **Food Safety**
- **Biofuels**
- **Machine Vision**
- **Precision Agriculture**
- **Engineering**
- **Physics**
- **Chemistry**

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History of USDA - SBIR Funding

Year	Budget MM	Phase I	Phase II
2000	15.56	89/480	36/59
2001	16.25	90/480	37/63
2002	15.70	86/449	39/68
2003	17.74	88/656	38/67
2004	18.18	99/582	38/65
2005	19.20	93/557	40/79
2006	19.17	97/650	32/61
2007	18.90	82/549	39/70

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Geographical Location of USDA SBIR Winners FY 83-FY 07

CA		W		NE		NC		S	
CA	231	WA	101	MA	89	MI	75	TX	75
		OR	82	NY	65	WI	59	VA	58
		CO	78	PA	61	MN	47	NC	50
		HI	69	MD	42	OH	47	FL	45
		ID	49	NJ	33	KS	42	GA	30
		MT	45	ME	34	IN	32	LA	25
		AZ	41	CT	30	IL	25	OK	21
		WY	29	VT	22	IA	29	TN	21
		NM	23	DE	13	ND	26	MS	14
		UT	16	NH	10	NE	24	SC	14
		AK	11	WV	6	MO	24	KY	13
		NV	6	RI	5	SD	18	AL	7
				DC	5			AR	10
								VI	1
								PR	1
231		550		415		448		385	
11.3%		27.1%		20.4%		22.0%		18.9%	

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University Involvement in USDA SBIR

- Strongly encouraged
- University faculty may serve as consultants or receive a subcontract (both limited to no more than 1/3 of Phase I award or 1/2 of Phase II award) and continue to work full time at university
- University faculty may serve as principal investigator on the grant, by reducing university employment to 49% for duration of grant and if the SBIR research is performed someplace other than their research lab
- It is usually not acceptable for university faculty to serve as consultants and have all the research done in their lab

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Advice for Phase I

- Give us a **vision** of where you want to be at the end of Phase II
- Focus Phase I research on critical enabling factor(s)
- Sell the importance of your project
- Provide detailed experimental plan
- Provide insight into commercial potential
- Show connectivity with the communities you are intending to serve

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Factors that Improve Chances for Commercial Success

- High Scientific/Technical Merit
- Good Consultants, CRADA
- Business Expertise
- Phase III Partners
- Marketing Plan
- Commercialization Assistance Program

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Solicitation/Proposal Schedule: FY 2007/2008

- FY 2008 Solicitation was Released 7/3/07
- Phase I Proposal Deadline Date was 9/12/07
- Panels Meet in January & February of 2008
- Award Decisions Made by 3/1/08
- Phase I Grant Period will be from 5/1/08 to 12/31/08
- FY 2008 Phase II Deadline Date will be 2/1/08

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Electronic Submission

- Mandatory electronic submission
- You must register with grants.gov
  - www.grants.gov/assets/Grants.govRegistrationBrochure.pdf

U.S. Department of Agriculture
Small Business Innovation Research Program

Dr. Peter Burfening
Animal Production and Protection;

Dr. Charles Cleland
Forests and Related Resources; Air, Water, and Soil; Aquaculture; Small and Mid-Size Farms

Dr. William Goldner
Plant Production and Protection – Biology; Biofuels and Biobased Products; Plant Production and Protection – Engineering;

Dr. Richard Hegg
Animal Manure Management

Dr. Suresh Sureshwaran
Food Science and Nutrition; Rural and Community Development, Marketing and Trade

Dr. Dionne Toombs
Food Science and Nutrition

Scott Dockum
Program Specialist - SBIR

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USDA SBIR HOMEPAGE
www.csrees.usda.gov/fo/sbir

- Program Information
- Solicitation (Request for Applications)
- Technical Abstracts
- Link to SBA and Other SBIR Programs
- Upcoming SBIR Conferences

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U.S. Department of Agriculture
Small Business Innovation Research Program

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Web Site: www.csrees.usda.gov/fo/sbir

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Success Stories:
Rainbow Organic Farms Company

"SBIR provided the necessary funding to create a new economic future for our local small family farms". -- Diana Endicott

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Success Stories: Rainbow Organic Farms Company

Innovation:

- Developed the first USDA ISO 9000 based Quality System Verification Program (QSVP) for Good Natured Family Farms (GNFF) all-natural beef and free-range poultry raised on local small family farms.

- QSVP model provides comprehensive *standard operating procedure* (SOPs) for identification, traceability and label claim verification for production, processing, and retail sales.

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Success Stories: Rainbow Organic Farms Company

Impact:

- Developed and trademarked ‘Good Natured Family Farms’ all-natural branded food product line and achieved wholesale gross sales in 2004 of 2.5 million dollars.
- The 40 Good Natured Family Farms Alliance members farm over 16,000 acres of farmland.
- Recognized for two major awards including: Kansas City BTG Environmental Excellence Award and the National Agriculture Center and Hall of Fames’ Farmers Honor Acre Award.

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- Alternative Approaches -

Plant Production and Protection – Biology

CEA Systems, Ithaca, NY

Bimolecular Farming System for Industrial Pharmaceutical and Other Non-food Products

- Optimizing protein production with environmental control

Industrial Applications (8.8)

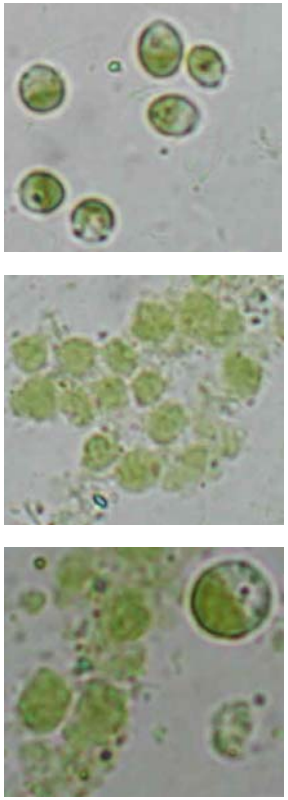
Kuehnle Agrosystems, Co.
Honolulu, HI

Enabling Transplastomic *Dunaliella* as Green Biofactories

Uses magnetophoresis system developed from previous USDA SBIR PI and PII grants

Potential Impact:

Developing transgenic algae grown in bioreactors to produce a wide-range of high-value chemicals



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Success Stories:

Resodyn Corporation
www.resodyn.com

Innovation:

Developed a unique process for the conversion of low value feedstock to biodiesel which can be produced at costs competitive to traditional diesel fuel

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Success Stories:

Resodyn Corporation
www.resodyn.com

Pilot plant for biodiesel production

Impact:

- Consistent production of both high quality biodiesel and a glycerin by-product
- Lowest production costs in the industry
- Competitively priced capital investments
- Elimination of waste water discharge
- Complete solvent recovery

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USDA - Small Business Innovation Research (SBIR) Program

Bottom Line

- SBIR projects are effective technology transfer mechanisms moving publicly developed technology into private sector applications that benefit different aspects of American agriculture and rural America
- Royalties and licensing revenues from many SBIR projects accrue to our university partners and other public technology developers (e.g. ARS)
- Projects need to culminate in commercially viable enterprises.
- Priorities: manufacturing, alternative energy, and homeland security.

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Food Science/Nutrition FY 2009 Research Priorities

1) Developing novel or rapid assay, bioassay techniques, or field tests to measure nutrients and food interactions;

2) Developing innovative food processing and packaging technologies;

3) Developing sensor technologies for the detection of microorganisms and improved methods for detection of microorganisms during post-harvest, processing, and distribution;

Examples of common food-borne bacteria:

- *E coli* 0157:H7 associated with fruits and vegetables
- *Listeria* associated with ready-to-eat foods
- Vibrio species associated with seafood
- Salmonella species and Campylobacter species associated with poultry and swine

USDA - Small Business Innovation Research (SBIR) Program

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