



THE Ames Laboratory
Creating Materials & Energy Solutions



Engaging Innovative and Entrepreneurial Thinking -
A Partnership with Iowa State University

FLC Far West/MidContinent Regional Meeting
Monterey, CA August 30-31, 2011
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IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

In the beginning...

- ISU's Women Enrichment Program issued a competitive internal FOA
- Partners
 - Ames Laboratory Directors' Office
 - Iowa State University Research Foundation/Office of Intellectual Property and Technology Transfer
 - ISU Pappajohn Center for Entrepreneurship



Pappajohn Center for Entrepreneurship

- **A gateway**
 - ISU faculty, researchers, and students become connected to the entrepreneurial world.
 - Iowa's business and entrepreneurial community gain access to an array of ISU resources and information.
- **A catalyst** that brings together the people and ideas necessary for launching or growing successful enterprises
- **Mission:** to create a culture that encourages entrepreneurship and innovation, and to provide the tools necessary for building and improving Iowa's businesses.



The Need

- Women and Minorities are underrepresented as technology start-up company entrepreneurs
 - Women own 28.7% and Minorities 21.3% of all US non farm businesses
 - US Census (2002) indicated that 4% of all women owned businesses are in professional, scientific, technological areas
- Female scientists are less comfortable selling themselves and their science in the entrepreneurial manner needed
- % of Females granted Patents significantly lower than Males¹

¹"Economic security: expanding women's participation in US science," Rosser, Sue V., Harvard International Review • Fall, 2008
 • PERSPECTIVES, from www.entrepreneur.com.



2007 US Census Data

	% Non-farm Owned by	Receipts % (Non-farm)	Professional, Scientific and Technical Companies %
Males	51.3	28.2	14.8
Females	28.7	3.9	14.1
Equally Owned	17.0	4.2	NA
Blacks	7.1	0.5	8.5
Hispanic	8.3	1.1	0
Asian	5.7	1.7	13.8



“Taking Technology to Market” Seminar Series

- Grant was funded in 2009-2010
- Series of Seminars throughout the School Term
 - Tailored to New Scientific Staff/Faculty and Student Population
 - Brought in Speakers who were successful inventors, entrepreneurs, patent counsel and licensing managers



Outcome

- Seminar Series was considered a success
- Interest was very good
- Targeted audience was engaged
- Attendance by Women ranged from 17-32% of audience
- Continued the series in 2010-2011; plan to continue series each year
 - Series may include: Lab Research Notebooks; Inventorship; Patenting 101; Licensing; Views from an Entrepreneur

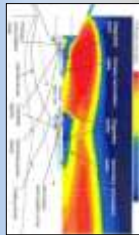


Low Cost Titanium Powder

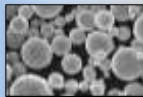
Basic Science

DOE-BES support, included equipment funds, permitted novel experimental gas atomization (GA) system.

- Intense Mach shock effects produces fine powders efficiently.
- Novel discrete jet GA nozzles controls powder size.



- Melt flow orifice shaping promotes droplet uniformity and size.
- Surface engineering by reactive gas additions.



These results were published widely and converted into 16 US Patents.

Applied R&D

BES-Fossil Energy

- Highly porous flexible alloy tubes for hot gas filtration
- Planar substrates for hydrogen separation
- Simplified synthesis route for ODS ferritic stainless steel



BES/FE-DOD (Western Illinois U; Quad Cities Manufacturing Lab

Accelerate the availability of affordable high-performance powder-based titanium components for military and biomedical uses.



Manufacturing/Commercialization

Ames Laboratory - Iowa Powder Atomization Technologies (IPAT)



- Option to License (America's Next Top Energy Innovator)
- Energy efficient powder production
- When DOD milestones are achieved, QCML will help IPAT establish production facilities at the Rock Island Arsenal in Rock Island, Illinois



Thank you

