EPSCoR FUNDING IMPACT IN ALABAMA

Science and Engineering

- NSF EPSCoR neurobiologists and opthalmologists are working to develop improved MRI instrumentation to better understand brain complexity.
- NSF EPSCoR brain researchers are focusing on understanding the initiation of epileptic brain seizures and their impact on long-term memory.

- Neurobiologists are investigating low-dosage X-rays as a means to activate brain neurons for treating neurological disorders such as Parkinson's disease.
- Chemists are developing low-cost, highly-efficient methods using sunlight to generate fuels and fertilizer.
- Researchers are working to develop advanced polymer-based sensing technologies to detect and analyze pollutants in Gulf Coast aquatic ecosystems.
- Chemists are investigating light production in bioluminescent microorganisms.

Space

- Alabama NASA EPSCoR researchers are working to develop dust-free CO_2 absorbers for spacecraft air revitalization systems.
- Alabama researchers are developing nanoelectric technologies that are survivable in extreme space.

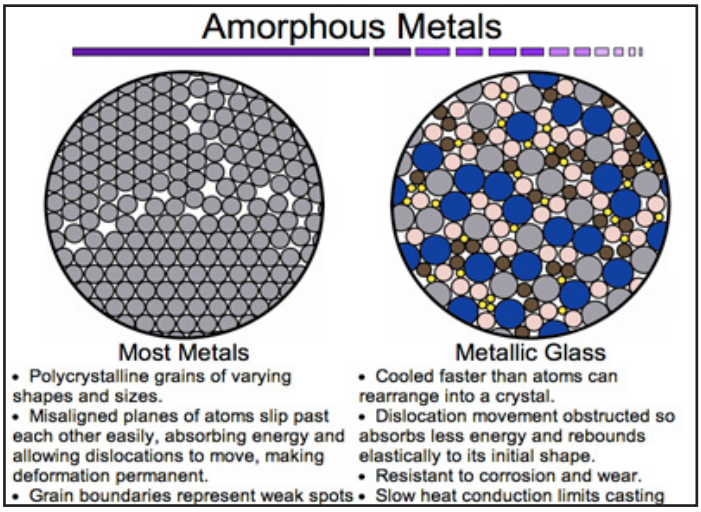
Agriculture

- USDA EPSCoR biologists are developing technologies to study the catfish genome for improved disease resistance.

- Biologists are working to make it easier and cheaper to produce hybrid catfish.

Energy

- DOE EPSCoR engineers are investigating metallic glasses which are one of the strongest materials known to man, and are able to be shaped and molded like plastics.



Commercialization

- EPSCoR research has developed new laser based systems for biomedical and industrial applications, leading to a new Birmingham start-up company, Photonics Innovations (part of IPG Photonics).
- EPSCoR Cyber research has created a data-analytics method for identifying and minimizing infection outbreaks, which has been commercialized in Birmingham by MedMined, part of CareFusion.

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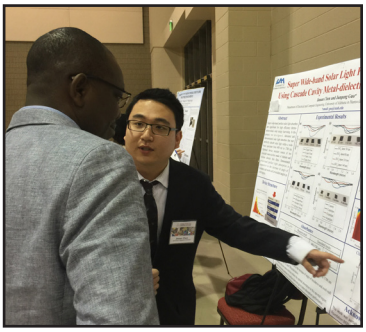
- EPSCoR nanomagnetic research has discovered that iron oxide nanoparticles can make MRIs safer for certain population segments, leading to a new Tuscaloosa based start-up company, MagnnPro, LLC.
- EPSCoR researchers are replacing metal machine parts with lightweight, longer lasting composite materials, leading to a new start up company, Innovative Composite Solutions, LLC in Leeds, AL.
- EPSCoR funded protein research led to a new startup company, Foresight Biosciences, dedicated to the development of new protein based drug therapies located in Huntsville, AL.
- EPSCoR funded research led to the development of PhageCon LLC, a company commercializing contraceptives for feral (wild) pigs in Auburn, AL.

Outreach



- The Annual Science and Technology Open House hosted by Tuskegee University and Alabama EPSCoR included 334 participants, the poster contest included 57 PhD students, 17 MS students and 31 undergraduates. 142 middle school participants were accompanied by 30 middle school teachers and 4 admininstrators who participated in numerous introductory science and technology hands-on research activities.
- An NSF CAREER award winning researcher will create programs to teach middle and high school students how the molecular and whole-animal's response to stress is interconnected; how stress relates to disease, obesity and socioeconomic status; and ways to overcome stress. The program will provide opportunities for science fair entries while increasing scientific literacy and inspiring STEM careers.
- NSF CAREER award winner will take bioluminescense, an exciting natural phenomenon, into K-12 schools and include this topic during the Auburn University Summer Science Institute and AU Explore Program.

Auburn Chemist, Dr. Steven Mansoorabadi is studying dinoflagellate bioluminescence.

Workforce Development

- The State-funded Alabama EPSCoR Graduate Research Scholars Program (GRSP) supports graduate students pursuing both MS and PhD degrees doing EPSCoR related research. This program has resulted in approximately 146 EPSCoR related PhDs and 48 EPSCoR related MS degrees since its inception in 2006. Thirty-six students are currently being supported.

Alabama EPSCoR NSF RII Current Track 1 Outcomes 2008-2016				
Number of NSF Track 1 Awards	Award Total	New Non-EPSCoR Federal Funding Generated	Patents	New Companies Started
2	$17.25M	$74M	19, 2 licensed	5

Alabama EPSCoR Award History 2009-2016			
Agency	Type of Award	QTY	Awards
NSF	Infrastructure (Tracks 1, 2 and 3)	12	$29.5M
	Co-funding (EPSCoR and Directorate)	139	$67.7M
DOE	Implementation Grant	2	$2.2M
	State Lab Partnership	2	$921K
NASA	Cooperative Agreement Notice (CAN)	4	$300K
	Research Infrastructure Development (RID)	5	$925K
USDA	Strengthening	0	$11.8M
Total		164	113.3M