

## OKLAHOMA NSF EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH

### Oklahoma Receives \$20 Million Award to Boost Climate Research

*To advance understanding of how socio-ecological systems can adapt sustainably to climate change, Oklahoma has been awarded \$20 million over five years from the National Science Foundation (NSF) Experimental Program to Stimulate Competitive Research (EPSCoR).*

The NSF EPSCoR award will facilitate research and learning opportunities for college faculty, college students and K-12 students. The Oklahoma State Regents for Higher Education will provide an annual \$800,000 match.

"This award will strengthen Oklahoma's capacity to perform cutting-edge research that will benefit the state," said Chancellor Glen D. Johnson. "Through EPSCoR, we will be able to broaden participation in the science, technology, engineering and mathematics fields, resulting in a more educated and diverse scientific workforce for our state's economy."

The knowledge gained during the project will

be used to empower managers to effectively adapt socio-ecological systems to climate variability and to educate Oklahomans about the expected consequences of regional environmental change.

"The new program will continue our efforts to develop the capacity and capability to conduct nationally and internationally competitive research in the state of Oklahoma," said Dr. Jerry Malayer, Oklahoma EPSCoR state program director. "In addition, the program integrates research and education, offering research opportunities for undergraduate and graduate students and educational outreach initiatives for K-12 public schools."

The NSF award is a multi-institutional collaborative project that includes researchers from the state's research-intensive institutions (OU, OSU, TU, SRNF), as well as regional colleges, tribal colleges and the state's lone historically black college, Langston University.

The award will be managed by Dr. James Wicksted, principal investigator, OSU professor and director of multidisciplinary research, and Oklahoma EPSCoR associate director. Dr. Alicia Knoedler, associate vice president for research and director of the Center for Research Program Development and Enrichment at OU, will serve as the co-principal investigator.

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**Strengthening Oklahoma's capacity to perform cutting-edge research that will benefit the state.**

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EPSCoR, originally developed by NSF, is designed to expand research opportunities in states that have traditionally received less funding in federal support for university research. Oklahoma EPSCoR is a partnership among colleges and universities, industry and research institutions. Its mission is to make Oklahoma researchers more successful in competing for research funding.

Pictured: OU Vice President for Research Dr. Kelvin Droegemeier at the National Weather Center in Norman, Oklahoma.



NATIONAL SCIENCE FOUNDATION DAY  
Workshop Provides Insight into the NSF's Mission and Funding Opportunities.



NATIONAL AWARD  
Two Students Win National Award for Research They Conducted through the Oklahoma EPSCoR REU Program.

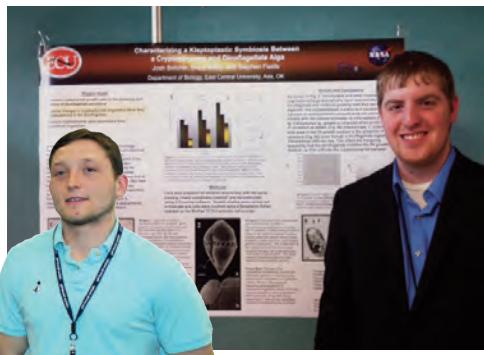


REU FUNDING  
Research Experiences for Undergrads Awarded.



COMANCHE NATION COLLEGE  
Oklahoma's Oldest Tribal College Takes Giant Step Forward in Accreditation Quest.

# Oklahoma EPSCoR REU Students Win National Award



**Two East Central University students have won a national award for research they conducted through the Oklahoma EPSCoR Research Experiences for Undergraduates (REU) program. The students' research could have important implications in biofuels and bioenergy research.**

Josh Belcher of Ada and Brent Biddy of Seminole (pictured above r-l) received the John C. Johnson Award for excellence in undergraduate research presented in a poster session at the May national Beta Beta Beta (Tri-Beta) convention in San Juan, Puerto Rico.

Belcher made the presentation after winning the

Johnson Award at the regional level. The award came with an all-expenses-paid trip to Puerto Rico to compete at the national level.

The students' research, titled "Characterization of a Temporary Cryptophycean Endosymbiont of the Freshwater Dinoflagellate, Gymnodinium acidotum," was conducted in collaboration with Dr. Stephen Fields, East Central University assistant professor of biology.

One of the main goals for the project, Belcher said, was to be able to show that in the presence of G. acidotum secretions, growth rates for its algal prey are increased.

"We were able to prove this through extensive growth studies on the prey that involved different concentrations of the G. acidotum secretions in its growth medium. On a broader scale," he explained, "if we can isolate this compound from the secretions and subject other algal species to it, hopefully their growth rates will also increase. This would have implications in biofuels and bioenergy research utilizing algae as a way to produce fuels."

"It is a great privilege and honor to receive these awards," Belcher said, "and we would

like to thank Dr. Stephen Fields and the biology department at ECU for giving us the opportunity to work on this project for the past year."

The research was initiated last summer through two Oklahoma EPSCoR REU awards that were issued to Fields and Biddy. Other ECU students are continuing the research this summer at ECU through the same EPSCoR grant.

The EPSCoR REU program strengthens and encourages undergraduate students' early participation in the university and scientific communities. Students experience hands-on STEM research and one-on-one guidance from faculty mentors at Oklahoma's research institutions through the program.

With their interest in research whetted through the REU program, Biddy and Belcher have continued to seek out new research experiences. Biddy recently completed an internship at the University of Texas Southwestern Medical Center in Dallas, and Belcher is in the Environmental Research Apprenticeship Program through ECU at the U.S. Environmental Protection Agency at the Robert S. Kerr Research Center in Ada.



## NATIONAL SCIENCE FOUNDATION DAY

The National Science Foundation (NSF) and the Oklahoma Experimental Program to Stimulate Competitive Research (EPSCoR) held Oklahoma NSF Day on Jan. 8, 2013, on The University of Tulsa campus to provide Oklahoma researchers with insight into the Foundation, its mission, priorities and funding opportunities. More than 150 people from institutions across the state participated.

NSF presenter George Wilson shared information about the NSF proposal and merit review process with attendees, while representatives from the seven NSF directorates, the Office of International Science and Engineering, and the Office of Integrative Activities made presentations on their individual programs. Topics included: biological

sciences, education and human resources, engineering, geosciences, mathematical and physical sciences, social and economic sciences, computer and information science and engineering, as well as cross-disciplinary and special interest programs.

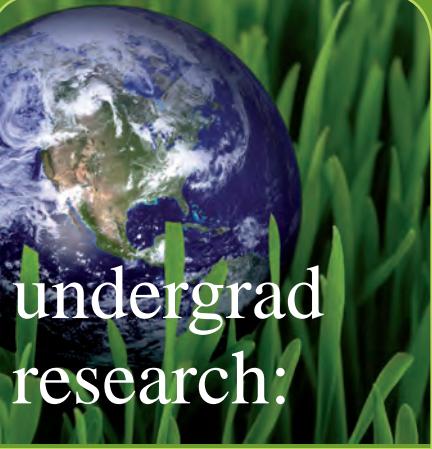
Program directors hosted afternoon breakout sessions related to their NSF focus areas, and workshop attendees had the opportunity to informally discuss potential research proposals with NSF staff during those sessions.

"This was my first EPSCoR NSF Day," shared attendee Marilyn Korhonen, "The topics were perfect. It was wonderful to have so many program officers there at one time; they were very inviting and approachable," she said.

Fellow attendee Dr. Joshua Li, Oklahoma State University professor of civil and environmental engineering, said he viewed his NSF Day experience as a valuable educational opportunity.

"As a new faculty member, I learned a lot from the workshop. Now it is much clearer to me how I can fit in the NSF programs," Li said.

Oklahoma EPSCoR was established by the National Science Foundation in 1985 to strengthen Oklahoma's exploration and growth in science, technology, engineering and mathematics. The program is also funded through an award from the Oklahoma State Regents for Higher Education.



## 2013 REU AWARD RECIPIENTS

1

**Student Researcher:**  
Molly Stam, OU  
**Faculty Mentor & Lab Site:**  
Kash Barker, OU  
**Award Amount:** \$3,000

2

**Student Researcher:**  
Anjeela Shrestha, Northwestern OSU  
**Faculty Mentor & Lab Site:**  
Aaron J. Place, Northwestern OSU  
**Award Amount:** \$2,272

3

**Student Researcher:**  
Patrick Spears, Southwestern OSU  
**Faculty Mentors & Lab Site:**  
Lisa Castle and Jeff Walker, SWOSU  
**Award Amount:** \$4,500

4

**Student Researchers:**  
Rajah Singh & Jazekka Brewer,  
Langston University  
**Faculty Mentor & Lab Site:**  
Ramamurthy Mahalingam, OSU  
**Award Amounts:** \$4,200 & \$4,200

5

**Student Researcher:**  
Austin Larue, OU  
**Faculty Mentors & Lab Site:**  
Ken Nicholas & Friederike Jentoft, OU  
**Award Amount:** \$4,000

## Oklahoma's Oldest Tribal College Takes Giant Step Forward in Accreditation Quest



**COMANCHE NATION COLLEGE (CNC) GRADUATE SHARON MARCOTTE SPEAKS AT THE MAY 2012 CNC COMMENCEMENT CEREMONY WHERE SHE RECEIVED HER ASSOCIATE OF SCIENCE DEGREE. SEATED LEFT-RIGHT: CNC DEAN OF ACADEMICS JUANITA PAHDOPONY AND CNC DEAN OF STUDENT SERVICES GENE PEKAH.**

**Comanche Nation College (CNC), the first and oldest tribal college in Oklahoma, has reached a milestone in its quest for accreditation. On Nov. 1 the Board of Trustees for the North Central Association-Higher Learning Commission voted to grant Comanche Nation College "the status of candidate for accreditation," according to a letter from NCA-HLC President Sylvia Manning.**

"This journey has taken Comanche Nation College four years to accomplish and is indeed an accomplishment to celebrate, as we are now the first Oklahoma tribal college with initial candidacy," said Consuelo Lopez, college president, in a letter to supporters. "The accreditation will give us the ability to provide students with financial aid, thereby giving us independence to meet the needs of our community and better serve our students."

"With candidate for accreditation status, CNC is now approved to offer

certificates and associate-level degrees to our students," said Gene Pekah, college dean of student services.

Partnerships with programs such as the Oklahoma Experimental Program to Stimulate Competitive Research (OK EPSCoR) have played a significant role in the tribal college's growth and quest for accreditation, according to Pekah.

"Through the EPSCoR partnership, we have been able to build a science department and cyber infrastructure platform that includes equipment most colleges take for granted," explained Pekah. "Without EPSCoR we would not have funds to provide our students with these invaluable resources."

The granting of candidate for accreditation status is based on a self-study written by Comanche Nation College, a report by an evaluation team appointed by NCA-HLC, a report to the NCA-HLC Institutional Actions Council Hearing Committee,

and successful responses by Comanche Nation College to these reports.

Although the period of candidacy is four years, Lopez noted in a letter to college supporters that an application for early initial accreditation may be filed in as few as two years.

"Oklahoma EPSCoR offers CNC our congratulations on this prestigious accomplishment," said James P. Wicksted, Oklahoma EPSCoR associate director. "We look forward to continuing our partnership with the college and assisting in their journey to full accreditation."

OK EPSCoR's central goal is to increase science, technology, engineering and mathematics research in Oklahoma through strategic support of research instruments and facilities, research collaborations, and integrated education and research programs such as those at Comanche Nation College.



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OK EPSCoR is funded through awards from:



**HOW TO GET INVOLVED:**

405.744.9964

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Find us on  
**facebook.**



# Because STEM is a part of Oklahoma's Future.

The Oklahoma Experimental Program to Stimulate Competitive Research (OK EPSCoR) was established by the National Science Foundation in 1985 to strengthen Oklahoma's exploration and growth in science, technology, engineering and mathematics. OK EPSCoR's central goal is to increase the state's research competitiveness through strategic support of research instruments and facilities, research collaborations, and integrated education and research programs.

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