Georgia Southern University

Georgia Southern Commons

Interdisciplinary STEM Teaching & Learning Conference (2012-2019) 2013 Interdisciplinary STEM Conference (March 8, 2013)

Mar 8th, 11:55 AM - 12:15 PM

Research Experience via Active Collaboration with High Schools (REACH)

Sharmistha Basu-Dutt University of West Georgia, sbdutt@westga.edu

Megumi Fujita University of West Georgia, mfujita@westga.edu

Victoria Geisler University of West Georgia, vgeisler@westga.edu

Douglas Stuart University of West Georgia, dstuart@westga.edu

Follow this and additional works at: https://digitalcommons.georgiasouthern.edu/stem

Part of the Scholarship of Teaching and Learning Commons, and the Science and Mathematics Education Commons

Recommended Citation

Basu-Dutt, Sharmistha; Fujita, Megumi; Geisler, Victoria; and Stuart, Douglas, "Research Experience via Active Collaboration with High Schools (REACH)" (2013). *Interdisciplinary STEM Teaching & Learning Conference (2012-2019)*. 47.

https://digitalcommons.georgiasouthern.edu/stem/2013/2013/47

This event is brought to you for free and open access by the Conferences & Events at Georgia Southern Commons. It has been accepted for inclusion in Interdisciplinary STEM Teaching & Learning Conference (2012-2019) by an authorized administrator of Georgia Southern Commons. For more information, please contact digitalcommons@georgiasouthern.edu.

Research Experience via Active Collaboration with High Schools (REACH)



Enrichment program for high school students and teachers

Strategies

Problem based learning (PBL)

Peer-led team learning (PLTL)

Process oriented guided inquiry learning (POGIL)

100 hour program

50 hours of group work to learn about scientific method

50 hours of individual work to develop individual science fair projects





Collaborative learning environment built confidence to do individual and group work.

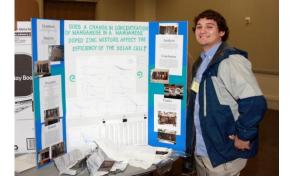






REACHing new heights!

22 students presented at REACH finale. 12 students placed at the school level. 7 students moved on to regional competitions. 5 students placed in the regional competition. 2 students placed at the 2012 state science fair. 1 student represented GA at the national Youth Science Camp.





Participants

24 high school students, 92% finished

9 high school teachers – 3 counties and 5 schools

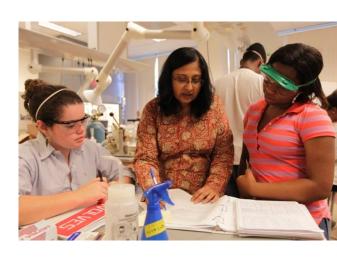
4 UWG chemistry undergraduate students

4 UWG Chemistry faculty

















'This program was great experience. loved the project I chose to do. Nithout the REACH program, I would not have been able to do this project."

Sharmistha Basu-Dutt, Megumi Fujita, Victoria Geisler, and Douglas Stuart Department of Chemistry, University of West Georgia, Carrollton, GA

Symbiotic and sustained collaborative "research group" environment

Roles

HS students and UWG students mentors developed academic (content and conceptual knowledge) and non-academic (teamwork, leadership, problem solving, higher order and critical thinking) skills. HS students and HS teachers accessed advanced chemical instrumentation, laboratory facilities, and library resources resulting in competitive science fair projects.

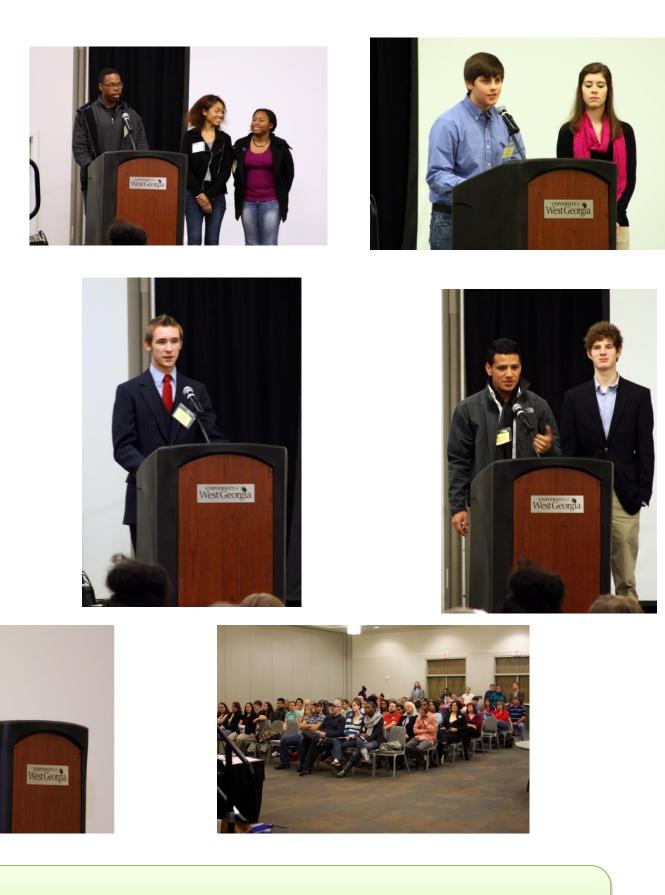
HS teachers experienced new pedagogical techniques such as PBL, PLTL and POGIL to implement in their own classrooms.

UWG faculty helped to prepare and recruit more prepared HS students to major in as well as retain and graduate more skilled undergraduate from the Chemistry program at UWG.







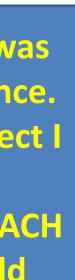






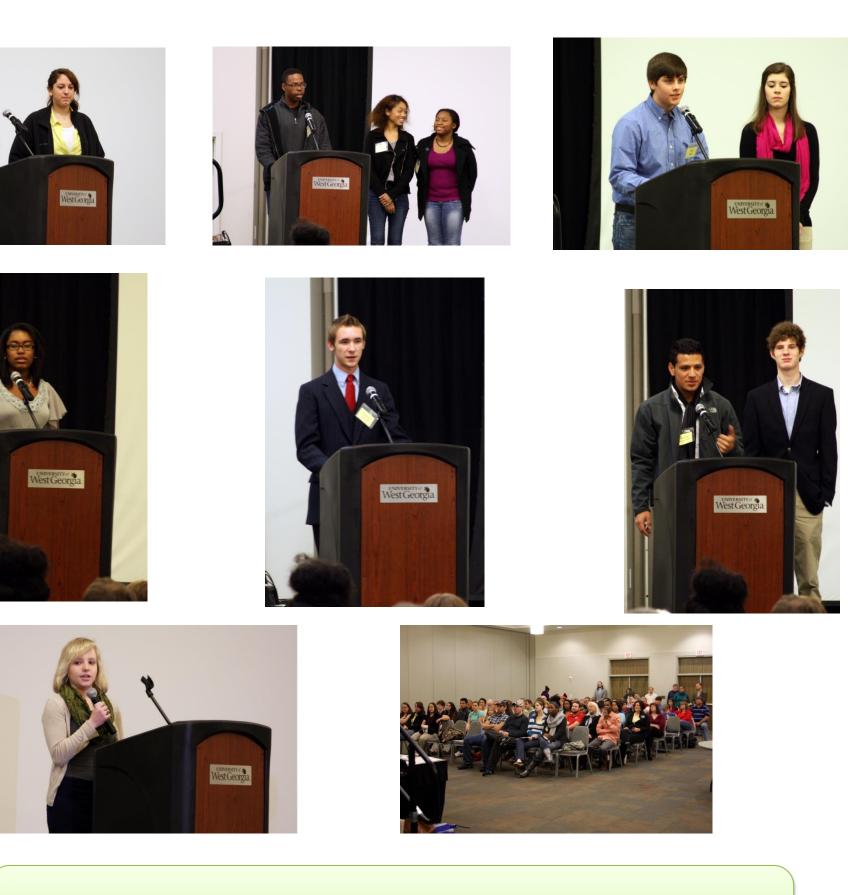


Communication with peers, mentors and a large audience was a central component of the program.



"[I feel v]ery comfortable. I completely understand the science behind the procedure and information that I personally researched."

"[I feel a] lot more comfortable than I die oing into the reach program. I now understand it's ok to make a mistake, just make sure you learn from it."





Camille and Henry Dreyfus Foundation Community Foundation of West Georgia's Alice Huffard Richards Fund Georgia Power Foundation University of West Georgia Student Research Assistant Program

Acknowledgments