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

Research Experience via Active Collaboration with High Schools (REACH)

Sharmistha Basu-Dutt  
*University of West Georgia*

Megumi Fujita  
*University of West Georgia*

Victoria Geisler  
*University of West Georgia*

Douglas Stuart  
*University of West Georgia*

Follow this and additional works at: [https://digitalcommons.georgiasouthern.edu/stem](https://digitalcommons.georgiasouthern.edu/stem)  
Part of the [Scholarship of Teaching and Learning Commons](https://digitalcommons.georgiasouthern.edu/stem), and the [Science and Mathematics Education Commons](https://digitalcommons.georgiasouthern.edu/stem)

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. 47.  
[https://digitalcommons.georgiasouthern.edu/stem/2013/2013/47](https://digitalcommons.georgiasouthern.edu/stem/2013/2013/47)

This event is brought to you for free and open access by the Conferences & Events at Digital Commons@Georgia Southern. It has been accepted for inclusion in Interdisciplinary STEM Teaching & Learning Conference by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.
Research Experience via Active Collaboration with High Schools (REACH)

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

Enrichment program for high school students and teachers

- 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

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

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

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.

Symbiotic and sustained collaborative “research group” environment

- 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.

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.

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

Acknowledgments

- 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

"This program was a great experience. I found the project I chose to do. Without the REACH program, I would not have been able to do this project." "I feel very comfortable. I completely understand the science behind the procedure and information that I personally researched." "I feel a lot more comfortable than I did going into the reach program. I now understand it’s ok to make a mistake, just make sure you learn from it."