Mar 8th, 9:00 AM - 9:20 AM

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](https://digitalcommons.georgiasouthern.edu/stem)

Part of the [Scholarship of Teaching and Learning Commons](https://digitalcommons.georgiasouthern.edu/teachinglearning) and the [Science and Mathematics Education Commons](https://digitalcommons.georgiasouthern.edu/education)

**Recommended Citation**

[https://digitalcommons.georgiasouthern.edu/stem/2013/2013/11](https://digitalcommons.georgiasouthern.edu/stem/2013/2013/11)

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 (2012-2019) 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

- 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

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.

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

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

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.

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.

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

Strategies
- Problem based learning (PBL)
- Peer-led team learning (PLTL)
- Process oriented guided inquiry learning (POGIL)