Facilitating the Enculturation of Undergraduates into Visualization through Workshops and Research Experiences in Collaborative Data Visualization Applications

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Monday, November 17, 2014
Room 294
• About Me
  – Director of Advanced Visualization
  – Clemson Computing and Information Technology
  – Help Faculty, Students and Staff visualize data
  – Mentor undergraduates in data visualization
  – Broadening Participation in Visualization
• **Visualization**
  – Allows researchers to view the data at various levels of detail,
  – Reveals complex relationships difficult to detect by human visual inspection alone
Where is Visualization?
• What does visualization mean?
• When should you start thinking about visualization?
• What is the purpose of visualization?
• **Visualization** leads to “insight” which fosters discoveries while providing explanations to complex problems

• The need to diversify a field with such far-reaching influences is imperative
Facilitating the Enculturation of Undergraduates into Visualization

BPVIZ[14] WORKSHOP
1st CRA-W/CDC Broadening Participation in Visualization Workshop

Clemson University
Clemson, South Carolina

February 10-11, 2014

Connect With Us:
Twitter: @BPViz
Email: BPViz2014@gmail.com
Facebook: http://www.facebook.com/ BPViz

Partially funded by CRA-W/CDC (Computing Research Association - Women/Coalition to Diversify Computing), NSF Grant ACI-1419415, and Clemson Computing and Information Technology

http://citi.clemson.edu/viz/bpviz2014
**BPViz Goals**

- Broaden participation of women and underrepresented groups in visualization,
- Foster a community of current and future scholars with interests in visualization
- Encourage participants to consider visualization as a career path.
BPViz Objectives Achieved

• Recruiting women and underrepresented groups
• Providing networking and mentoring opportunities
• Enabling communication and collaboration
• Providing a platform to showcase participant research
Lofty Participation Goal

• Highly Competitive
• Over 100 applicants applied
• 10% funded participants
  – Remaining participants: self-funded
• A total of 77 participants
  – Despite the Polar Vortex!

The Weather Channel
Race/Ethnicity Represented
(As Defined by NSF)

- African American
- Caucasian
- Asian Indian
- Vietnamese-American
- Mideastern
- Hispanic
- Native Hawaiian
- Unknown

Self-reported

Self-reported

Enculturation of Undergraduates into Visualization

BPViz2014

BPViz2014 Visualization Panel
Enculturation of Undergraduates into Visualization

Visualization Showcase, Mentoring, Panel Discussion
• BPViz 2014 Poster Competition
  – Poster Topics diverse in content and presentations
  – Raspberry Pi Bundle

Katherine Prutz and Annalise LaBatut (Louisiana School for Math, Science and the arts) winners of poster competition
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VIZREU[14]
REU Site Sponsored by NSF ACI Grant No. 1359223
VizREU Site: Collaborative Data Visualization Applications

• THE GOALS
  – Give students and research mentors a greater appreciation of the visualization process
  – Advance research projects they contribute to.

Designed to broaden participation of undergraduates in visualization.
VizREU Site: Collaborative Data Visualization Applications

- 1 Summer
- 8 Weeks
- Paid Research
- Interdisciplinary

“Students and research mentors gain a greater appreciation of the visualization process and in doing so advance research projects they contribute to.”

Clemson University, Clemson SC
REU SITE: 2014 Research Areas

Geophysics • Sociology • Molecular Modeling & Simulation • Physical and Inorganic Chemistry • Digital Humanities • Parks and Recreation Tourism Management • Computer Science • Anthropology • Biological Sciences • Electrical & Computer Engineering • Genetics & Biochemistry

Many more . . .
**Unique Feature:** Participants gain an appreciation for the visualization process while accelerating discovery and progress in interdisciplinary research.

** Tyler Slonecki, REU Student, Wofford College **
Sapna Sarupria, Assistant Professor, Chemical Engineering, Clemson University, Research Mentor

** Vetria L. Byrd, Director of Advanced Visualization, Clemson Computing and Information Technology, REU Coordinator **

** Jill B. Gemmill, Research Associate, Chief Technology Officer, Clemson University **

** Lori K. Tanner, Director of Education, Outreach, & Workforce Development **

**Digital Resources Laboratory VisWall**
VizREU Site Goes to NSF Supplement -- OSP 201302511-004

XSEDE14 Student Travel Award Recipients & CI-Practitioner Award
“Incorporating HPC in Undergraduate Biology Education Meeting”

http://www.hpcwire.com/2014/07/31/byrd-emphasizes-value-visualization-xsede14/
VizREU Site Among Top 10% of REU Proposals Submitted to NSF

VizREU Student, Michael Bosch (University of South Dakota) and Vetria Byrd (REU PI & Site Coordinator) participating in REU Symposium at NSF, October 26-27, 2014.

Pending: 2015 Posters on the Hill
Washington, DC
What’s Next in Broadening Participation in Visualization

@SC14: Clemson Booth#827
Tuesday, November 18, 2014 11:30AM
Advancing Frontiers of Interdisciplinary Research Through Visualization

Thursday, November 20, 2014 1:30PM – 2PM
Outcomes from the 1st CRA-W/CDC Broadening Participation in Visualization Workshop

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http://citi.clemson.edu/bpviz2014

http://citi.clemson.edu/viz/reu
Thank You