VIZ VIGNETTE

Broadening Participation in Visualization (BPViz) Workshop Newsletter   **August 2016**

Bridging Science, Technology and the Arts Through Visualization

The 2016 CRA-W/CDC CADENS Broadening Participation in Visualization (BPViz'16) Workshop took place August 3-4, 2016. The workshop was co-located at Purdue University in West Lafayette, Indiana and The University of Illinois at Urbana-Champaign. BPViz is designed to bring together persons with an interest in visualization, from novice to experts. The workshop aims to engage and educate participants about the role of visualization across disciplines, create a community that welcomes all interests in data visualization, creates an environment of inclusion where participants present work-in-progress, engage with others in the field, obtain feedback from visualization experts, and discuss research and career interests. This year's theme was, "*Bridging Science, Technology, and the Arts Through Visualization.,*" The workshop began with a panel featuring panelists from academia, industry and research (Figure 1), on " The Many Paths to Visualization," . Panelists were asked to share how they became interested in visualization, what role visualization plays in their professional and/or academic lives, and give some advise to persons in the audience who are interested in data visualization as a career. The workshop included networking opportunities, tours The Envision and VACCINE Centers (Visualization Labs at Purdue University), lightning talks by participants followed by a poster session where participants showcased their work in progress. This served as an excellent opportunity to get to know the work of each participant and for participants to get feedback on their work along with helpful comments from visualization experts in attendance.

BPViz

brings together persons with an interest in visualization to present work-in-progress, engage with others in the field, obtain feedback from visualization experts, discuss research and career interests, and builds a community of persons interested in broadening participation and inclusion across all domains where data visualization drives analysis and discovery.

Figure 1. BPViz'16 Panelists (left to right): Jen Christiansen, Joseph Cottam, Kathleen Kyle, Vetria Byrd (Organizer), Michael smith, Alberto Roca, and Krystal Cooper

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Figure 2. BPViz'16: Meet The Panelists

Meet the Panelist

One of the signature highlights of the workshop is the "Meet the Panelists" session (Figure 2). Participants are given organized into small groups and given an opportunity to speak with each panelist for approximately 20 minutes at a time . The panelists rotate through each group until they have visited every group. Being part of a smaller group gives participants a level of comfort to ask questions and about visualization, professional development or feedback on a topic of interest with the panelist.

Visualization Showcase & Lightning Talks

For many participants, BPViz was their first exposure to a VIS-like conference. To enhance their experience, and facilitate future conversations, participants presented their work-in-progress as either a short presentation or as a poster. Participants, shown below, introduced their research/topic/interesting during their Lightening talks.

Dynamic Keynotes

The workshop included two dynamic keynote presentations.

On day one of the workshop, at Purdue University, Dr. Sheryl Sorby, Professor of Engineering Education at The Ohio State University, presented *"Developing 3-D Spatial Skills: Removing Barriers to Success for Women in STEM."* Dr. Sorby has a well-established research program in spatial visualization and is actively involved in the development of various educational programs.

On day two, at NCSA, Dr. Donna Cox , Director of the Advanced Visualization Laboratory, National Center for Supercomputing Applications (NCSA) University of Illinois Urbana-Champaign, presented, *"The Art of Scientific Visualization,"* a variety of interdisciplinary collaborations between AVL and science teams to create data visualizations that cross the boundaries of art-science and provided stunning examples of an emergent field.

Figure 3. BPViz'16 Participants: Prepare to give Lightning Talks

How Participants intend to use the knowledge gained from the workshop at their home institution

When asked what they would do differently when they go back to their institutions, the majority of participants indicated that they plan to promote the tools they have learned and visualization in general to their colleagues.

"I will inform others and stress the importance of visualizations and how it can strengthen papers, can easily help others interpret data . . ."

"Disseminate the information I've learned and look for ways to implement this new knowledge into the classroom."

Figure 4. BPViz 2016 Group Photo

Hands-on Training

The first day of the workshop at Purdue provided hands-on sessions featuring Paraview (Tsai-wei Wu, Data Scientist), and Sensing for Visualization: A Wiring and Processing workshop to reach and visualize data featuring Processing Software (Esteban Garcia Bravo).

The second day of BPViz hosted at NCSA at the University of Illinois Urbana Champaign and included full day of hands-on visualization training and demonstrations by members of The National Center for Supercomputing Applications' Advanced Visualization Lab (AVL) who, under the direction of Dr. Donna Cox, develops scientific visualizations from supercomputer numerical models. Training included hands-on SciVis workshops featuring VisIt software (Rob Sisneros), and an Information Visualization Presentation (Mark Vanomer). Hands-on demonstrations included the data work flow and Houdini (Kalina Borkiewicz) and Houdini and rendering (AJ Christensen). The day at NCSA concluded with Hands-on demonstrations and interactive presentations from the AVL: Data choreography featuring Virtual Director/Partiview software (Robert Patterson), data exploration using Virtual director/PartiView demonstration (Stuart Levy), Interactive demonstration of preparing NASA data using After Effects software (Jeff Carpenter) and Digital Cultural Heritage Interactive demonstration using Oculus Rift (Colter Wehmeier).

Plenary Talks

Plenary talks at the workshop represented the vast application of visualization with presentations from Jen Christiansen (Senior Graphics Editor at Scientific American) and Michael Smith (Visual Computing Architect and Director of the Intel Software Academic Program for Visual Computing and the Internet of Things.

In their Own Words

Participants were asked to comment on their favorite aspect of the workshop. Here are a few of their anonymous comments.

" Learning about advantages and advancements in the field."

" Networking and seeing what is going on in the field of visualization."

"Visiting the Supercomputing Center in Illinois and the discussion session with the panelists. "

Participants were asked to rate the workshop as a whole:

33% rated the workshop as Good

67% rated the workshop as Excellent

This post-workshop feedback was provided by participants after completing the workshop and returning to their home institutions.

BPViz 2017: Broadening Participation in Visualization *(preparations underway)*

BPViz'16 Participants

20 Participants chose to report their ethnicity: (in percent): African American/Black (14%), Asian (18%), Hispanic/Latino (14%), Multiple Ethnicities (11%), and White (43%).

Professional Positions (self-reported): University Faculty or equivalent (17%), Research Staff (31%), Post-doc (3%), Graduate Student (21%), Undergraduate (10%), Other (10%), More than one position (7%).

Participant information reflect feedback provided on site at end of the workshop on August 4, 2016