Technical Group

62nd Annual Meeting
This year’s International Annual Meeting is being held at the Sheraton Grand Seattle, Seattle, Washington, USA, October 28-November 1, 2019.

PREVIEW EDITION

Visit us @ http://tg.hfes.org/ac tg/
Editor’s Notes

This year we will be releasing two newsletters. The first issue (this one), will provide a preview of the upcoming HFES Annual Meeting complete with everything you need to know to engage in Aug Cog events while you are there (or to stay in the know if, like me, you cannot make it).

At our business meeting during the annual meeting, we will present our Best Student Paper Award, Kollmorgen Spirit of Innovation Award, and Student Grant Award winners as well as provide some statistics on this year's submissions. The meeting will also serve to map out the direction of the Aug Cog TG moving forward.

The second issue will recap the annual meeting events, recap the business meeting, and highlight each award winner. We hope that you will have a chance to join us in Seattle. If not, stay tuned for our recap to be released after the meeting!

Best Regards,
Ryan W. Wohleber
Newsletter Editor & Program Chair

Thank You to Our Submission Reviewers

Mark Becker
Anonymous
Amanda Bond
Brett Borghetti
Anshika Chaudhary
Curtis Craig
Corey Fallon
Anonymous
Manohita Gurram
Anonymous
Cullen Jackson
Shan Lakhmani
Yueqing Li
Jinchao Lin
Olivia Lin
Crystal Maraj
Missie Smith
Grace Teo
Anonymous
Anonymous
Anonymous
Michael Xynidis
Lecture Session
“from state detection to intervention”

1. Improving Pupil Diameter Accuracy in a Remote Eye Tracking System.
   Joseph Coyne, Naval Research Laboratory
   Noelle Brown, Naval Research Laboratory
   Cyrus Foroughi, Naval Research Laboratory
   Ciara Sibley, Naval Research Laboratory

2. Additional Evidence for Pupil Size as a Measure of Within-Task Learning
   Ciara Sibley, Naval Research Laboratory
   Cyrus Foroughi, Naval Research Laboratory
   Cory Moclaire, NAMI NAS
   Kenneth King, NAMI NAS
   Noelle Brown, Naval Research Laboratory
   Joseph Coyne, Naval Research Laboratory

3. Efficacy of Dry Electroencephalography and Cognitive Assessment in Identifying Normobaric Hypoxia in Designated Aviators
   Sabrina Drollinger, Naval Aeromedical Institute
   Steve Linnville, Naval Aeromedical Institute
   Jeff Phillips, Institute for Human Machine Cognition
   Dallas Snider, University of West Florida
   Lee Sciarini, Naval Survival Training Institute

4. Utilizing Steering Entropy as a Measure of Performance in Head-Mounted Augmented
   Kelly Sprehn, Draper
   Tristan Endsley, Draper
   Kimberly Ryan, Draper

5. Diagnosis Behaviors of Physicians and Non-Physicians When Supported by an Electronic Differential Diagnosis Aid
   Makenzie Pryor, North Carolina State University
   Doug Ebert, KBR Wyle
   Vicky Byrne, KBR Wyle
   Khalaeb Richardson, North Carolina State University
   Qua Jones, North Carolina State University
   Richard Cole, University of Texas Medical Branch
   Anne McLaughlin, North Carolina State University

6. Confirmation Bias Estimation from Electroencephalography with Machine Learning
   Micah Villarreal, Air Force Institute of Technology
   Alex Kamrud, Air Force Institute of Technology
   Brett Borghetti, Air Force Institute of Technology

Session Chair:
Jackie Cha
Purdue University
Lecture Session
“trust in automation”

1. Trust in Automation as a Function of Transparency and Teaming
   - William Lehman, Old Dominion University
   - Catherine Angelini, Old Dominion University
   - James Bliss, Old Dominion University

2. Neural Correlates of Trust During an Automated System Monitoring Task: Preliminary Results of an Effective Connectivity Study
   - Nathan Sanders, North Carolina State University
   - Sanghyun Choo, North Carolina State University
   - Na Young Kim, North Carolina State University
   - Chang S. Nam, North Carolina State University

Session Chair:
Missy Smith
Oakland University

3. Detecting Human Trust Calibration in Automation: A Deep Learning Approach
   - Sanghyun Choo, North Carolina State University
   - Nathan Sanders, North Carolina State University
   - Nayoung Kim, North Carolina State University
   - Wonjoon Kim, North Carolina State University
   - Chang S. Nam, North Carolina State University

POS1
Poster Session

4. Augmented Reality Head-Up Displays Effect on Drivers’ Spatial Knowledge Acquisition
   - Nayara De Oliveira Faria, Virginia Tech University
   - Dina Kandil, Virginia Tech University
   - Joseph Gabbard, Virginia Tech University

5. Differentiating Active and Passive Fatigue with the Use of Electroencephalography
   - Kyle Anthony Bernhardt, University of North Dakota
   - Dmitri Poltavski, University of North Dakota
   - Thomas Petros, University of North Dakota
   - Ric Ferraro, University of North Dakota

6. An Examination of Compensatory Effort in a Vigilance Task Using Transcranial Doppler Sonography
   - Eric Thomas Greenlee, Texas Tech University
   - Tiffany Grace Lui, Texas Tech University

   - Eric Thomas Greenlee, Texas Tech University
   - Emily L. Maw, Texas Tech University
**Business Meeting**

**TG Chair:** Brett Borghetti  
Air Force Institute of Technology

**SENeca**  
Wednesday, October 30th  
5:30 PM - 6:15 PM

**SOCIAL EVENT**

@ krEELs  
IRISH RESTAURANT AND BAR

Hosted by: Brett Borghetti, ACTG  
James Szalma, IDTG

**When:**  
Wednesday, October 30th  
7:30 PM - 9:30 PM

**Where:**  
1916 Post Alley  
Seattle, WA 98101
The Leland S. Kollmorgen Spirit of Innovation Award was instituted in 2007 by the HFES ACTG in honor of Leland S. Kollmorgen, Rear Admiral, U.S. Navy (Ret.). The award recognizes exceptional scientists and engineers who have made substantial and innovative contributions to the field of Augmented Cognition. The recipient will be someone whose extensive endeavors have pushed the frontiers of discovery, innovation, and design in Augmented Cognition transcending the boundaries of human-systems computing and is a true inspiration to the HSI field.

The Leland S. Kollmorgen Spirit of Innovation Award recipient is judged not only on accomplishments in the last year, but also on a career history of efforts contributing to the advancement of the Augmented Cognition field. Other criteria for selection include: resourcefulness and dedication in promoting and accomplishing innovative human-systems computing technologies, demonstrated leadership in forming and promoting teamwork among the various disciplines represented within the Augmented Cognition field, demonstrated professionalism and integrity, and the embodiment of the spirit of innovation and collaboration.

The 2019 winner will be announced at the 2019 HFES ACTG Business Meeting. If you are interested in nominating an individual or nominating yourself, please complete the form below and return to Ryan Wohleber (ryan.wohleber@gmail.com) by August 21, 2020. The recipient will be honored at the 2020 HFES ACTG Business Meeting.

2007 Dylan Schmorrow
2008 Randy Pausch
2009 Glenn Wilson
2010 Raja Parasuraman
2011 Peter Hancock
2012 Joel Warm
2013 Chris Forsythe
2014 Ron Stevens
2015 Joseph Cohn
2016 Kelly Hale
2019 Lauren Reinerman-Jones
2019 To be announced @ 2019 Business Meeting
2020 Send nominations to: ryan.wohleber@gmail.com
The HFES Augmented Cognition Technical Group (AC-TG) is soliciting proposals for the Student Research Grant program. This program supports student research in the application of human factors in Augmented Cognition. Student affiliate HFES members from various universities across the country and around the world are invited to participate.

The program is open to all HFES student members and Augmented Cognition International Student Affiliates as well. We offer financial support for research expenses including, but not limited to, purchase of research materials, paying participants, partial payment for equipment, etc. This year, the ACTG will offer one award of $500. Each submitted proposal will be evaluated on the following criteria:

- Clarity in presentation of ideas
- Clarity of research methods and methodology appropriateness
- Relevance of project to current psychological theory
- Project’s potential to advance research in a specified area (theoretical and practical)
- Budget match for scope and requirements of the research

Submission Process

To have the grant proposal considered, the following information needs to be submitted:

1. Cover Letter. Include the following information:
   - Name and current mailing address
   - Telephone number and e-mail address
   - Area of research
   - University affiliation

2. Letter from Faculty Sponsor. This letter should describe:
   - The amount of faculty involvement in the project
   - An assessment of the student’s capabilities in completing the project
   - The degree of independence exhibited by the student in developing the research idea

3. Proposal Narrative. Complete a typewritten (single-spaced, no more than 4 pages) project description summarizing the purpose and methodology of the proposed project. This summary should include the research project’s title (without author’s name) at the top of each page and must include text on the following:
   - A synopsis of previous related research
   - A short description of the theoretical implications of the research
   - A short description of the practical implications of the research
   - Specific objectives of the current project
   - Clearly stated hypothesis or set of hypotheses (if relevant)
   - Proposed methodology
   - Budget (budget justification explaining costs and why the proposed expenditures are necessary)

4. Submit proposals to Ryan Wohleber at ryan.wohleber@gmail.com
   
   Additionally, reviewers for this award are still welcome. If you are interested in being a reviewer for this award, please contact Ryan

5. Award Deadlines for 2019:
   - Call for grant proposals closes on 11/31/2019
   - Review process concludes on 12/14/2019
   - Financial Award – up to $500
   - Anticipate a research update from the winner (attendance not required) to be presented at the 2020 HFES ACTG Business Meeting

More information @ tg.hfes.org/actg/pdfs/ACTG_Call_for_Student_Grant.pdf
**About**

**Get Involved!**

**Newsletter Submissions**

If you are doing Aug Cog related work, we want to hear from you!

Submit any of your work (published, unpublished, complete, or incomplete) to be included in this year's edition of the ACTG Newsletter. We are only looking for roughly 500 words (plus figure) to give the community a glimpse into the work going on around the Aug Cog community. This could mean research oriented papers, discussions of current issues, or just reports of research currently underway. Please let me know if you have any questions about submission topics.

All articles for 2019 Issue 2 should be submitted by December 7th with subject line "AugCog Newsletter Submission" to ryan.wohleber@gmail.com.

Conference attendance is NOT required to share your work. Submissions are reviewed for fit and I may respond with edit requests.

Example articles from previous years: [http://tg.hfes.org/actg/actgnewsletter.htm](http://tg.hfes.org/actg/actgnewsletter.htm)

**Announcements**

Email Ryan at ryan.wohleber@gmail.com with anything you would like to share with the community (job announcements, funding opportunities, scholarships, questions, etc.)

**Online**

Also, be sure to check out our updated website: [http://tg.hfes.org/actg/](http://tg.hfes.org/actg/)

Join the Augmented Cognition LinkedIn Group: [https://www.linkedin.com/groups/Augmented-Cognition-International-ACI-2579497/about](https://www.linkedin.com/groups/Augmented-Cognition-International-ACI-2579497/about)

### 2018-2019 ACTG Officers:

**Technical Group Chair:**

Brett Borghetti  
Air Force Institute of Technology

**Program Chair & Public Relations:**

Ryan Wohleber  
University of Central Florida

**Student Outreach & Program Chair Elect:**

Eric Fichtel  
Google