



# Children's Issues Technical Group

## Newsletter 03 [Oct 2018]



**Human Factors and  
Ergonomics Society**

### Our purpose

The Children's Issues Technical Group (CITG) consists of individuals interested in research, design, and applications concerning human factors and ergonomics (HFE) issues related to the children's emerging development from birth to adulthood including their caregivers. Example application areas include injury prevention, product usability, physical and cognitive maturation, mental workload and decision-making, in home, school, work, recreation, and vehicle environments.

One of the goals of the CITG is to keep members informed of current issues and developments in the area through its newsletter and its technical sessions at the annual HFES meeting. The group also maintains, through activities of its members, relationships with other safety organizations and standards-making bodies.

### MEMBERSHIP

The CITG consists of individuals who work in various areas pertaining to children's issues. The CITG seeks to foster the exchange of information among members and to promote the development and application of human factors data and principles to improve children's HFE. Although most CITG members are also members of the Human Factors and Ergonomics Society, CITG membership may be obtained separately as well.

**Joining CITG costs only \$5.00 USD/year. You do not have to be a member of HFES in order to be a member of CITG, though we encourage society membership. Additional information on the CITG can be obtained by contacting HFES.**

### Children's Issues TG during HFES 2018

This year CITG has two sessions, both on October 2, afternoon.



#### **K1 - Trends in Infant Sleep: What Do the Data Show? What Are Caregivers Thinking?**

October 2, 1:30-3:00pm | Discussion Panel  
Chair: Carol Pollack-Nelson

Panelists: Rana Balci-Sinha, Suad Nakamura, Celestine Kish, Hope Nesteruk, US Consumer Product Safety Commission

#### **K2 - Children's Issues**

October , 3:30-5:00pm

Chair: Karen Jacobs, Boston University

*An examination of icons, signal words, color, and messages in warning for children on the internet.*

Authors: Helen Zaikina-Montgomery & N. Silver

*Who would out their child alone in an autonomous vehicle? Preliminary look at gender differences.*

Authors: Somer Hand & Yi-Ching Lee

*Evaluating children's interactions with touchscreens from 0 to 8 years old.*

Authors: Sommayah Soliman & Dan Nathan-Roberts

**Business Meeting**

The CITG will be holding a joint business meeting with METG and EDTG on Wednesday, October 3 3:30-4:45pm. There will be a panel discussion on preventing school violence. Thus far, the panelists are Dr. Brian M. Kleiner, Director & Bogle Professor of Industrial & Systems Engineering, Virginia Tech and Kathy Kotchick, a teacher from the French International School of Philadelphia. Prof. Karen Jacobs will moderate the discussion.

**Technical Tour**

During HFES registration, you can include **T5 - Children's Hospital of Philadelphia (CHOP) Center for Simulation, Advanced Education and Innovation, University of Pennsylvania Perelman School of Medicine** Thursday, October 4, 1:30 to 4:45 p.m., \$55  
Maximum attendees: 20  
Government-issued ID required.  
No video or audio of patients, families, or patient care permitted. Photos, video, audio, and tweets only of the Sim Center and its activities are invited and encouraged, with proper verbal permission of any people who are included in images or recordings. Wear comfortable shoes. ADA accessible.

Simulation for health care professionals is an exciting, rapidly evolving field with enormous potential for use by human factors experts. The Children's Hospital of Philadelphia (CHOP) has been a leader in developing health care simulation, including in situ or point-of-care learning. The CHOP tour will include demonstrations of a variety of full-scale high- and low-technology adult, pediatric, and infant realistic computerized manikin robots that "breathe" and respond to medical interventions in real time. Also covered in the tour are task trainers representing a variety of body parts used to learn procedures, and CHOP's unique "Operating Room 12," which is a real, functioning OR with built-in simulation enhancements. Presentations will address the use of simulation to develop the skills of individuals and teams as well as to develop and test system improvements and the evolution to a peak performance laboratory. Depending on clinical circumstances, the tour may include visits to the simulation-enabled Neonatal Education and Simulation Training Center (NEST) and the Emergency Department Trauma Bay, where live-capture audio-video analysis of both simulated and real clinical emergency events can be captured, re-enacted, analyzed, and improved. Attendees will have an opportunity to brainstorm about the intersection of human factors and health care...a tour of the learning system and ward of the next century.

*We invite members to submit articles, comments, and relevant research references for inclusion in the website and newsletter! Send your contributions to [citg.hfes@gmail.com](mailto:citg.hfes@gmail.com)*

**NEWS*****New reports from NHTSA***

In the first semester of this year, 2018, U.S. Department of Transportation, National Highway Traffic Safety Administration published 2 reports about research related to children safety, both from University of Michigan Transportation Research Institute teams.

In April, 2018, NHTSA published *Toddler Lower Extremity Posture in Child Restraint Systems*, by Sheila M. Ebert, Kathleen D. Klinich, Miriam A. Manary, Laura A. Malik, and Matthew P Reed.

In this report, the postures of 28 toddlers 18 to 36 months old were analyzed in conditions simulating rear-facing and forward facing child restraints. Rear-facing conditions included a narrow and wide child restraint configuration, while the forward-facing conditions used a shorter and longer cushion length. Data collected include 3D coordinates of key body landmarks as well as surface scans focusing on the lower extremities. In addition, standard anthropometry measures and full body scans in standing and seated postures were collected for each subject. An overhead photo of each child's posture was taken at one-second intervals throughout the test session. The number of different postures for each subject was tabulated and categorized. For rear-facing test conditions, the most common lower-extremity postures were legs relaxed, feet together with knees bent outward, knees pulled back towards torso, and both legs straight and elevated. For the forward-facing test conditions, the most common lower extremity postures were legs relaxed, feet together with knees bent and rotated outward, one leg bent and one leg straight, and legs crossed. There were no distinct trends with selected posture and the subjects' age or size. Analysis of the measured subject postures showed variations in lower-extremity posture with child restraint condition. The narrow rear-facing condition more often had subjects with lower extremities in a relaxed posture, while the wide condition had more children with their feet flat together or their legs extended. For forward-facing, there was less variation in posture with the shorter cushion length; more children chose the frog leg or extended leg postures with the longer cushion length. Distribution of measured lower-extremity postures varied with age group.

An attempt was made to position the lower extremities of the III 3YO and 18MO ATDs in the most common rearfacing configurations chosen by the subjects. Although the more limited range of motion of the ATDs did not allow them to be placed in the most extreme positions chosen by subjects, the ATD posture could be adjusted to several postures commonly chosen by subjects without modifications to the ATD.

You can find this full report at NHTSA website:  
[https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/11710\\_toddlerlowerextremityposture\\_040218-v3-tag.pdf](https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/11710_toddlerlowerextremityposture_040218-v3-tag.pdf)

In May 2018, NHTSA published the report *Assessment of ATD Selection And Use for Dynamic Testing of Rear-Facing Child Restraint Systems for Larger Infants and Toddlers*, authored by Miriam Manary, Kathleen Klinck and Nichole R. Orton, from University of Michigan Transportation Research Institute.

This report documents a test series that explored methods for using currently available child anthropomorphic test devices (ATDs/crash test dummies) to dynamically evaluate child restraint systems (CRS) for children more than 1 year old facing rearward in motor vehicles. These CRS are more typically rear-facing convertible seats but also can be infant-only rear-facing seats. The study evaluated five installation methods using the Hybrid III 3-year-old ATD and the CRABI 18-month-old ATD. Three child restraint system models were evaluated using the current FMVSS No. 213 test bench. None of the ATD conditions produced a systematic change in the dynamic response criteria evaluated by FMVSS No. 213, but some methods were easier to implement in the laboratory. The report documents each method and their potential advantages and disadvantages.

You can find the full report at NHTSA website:  
[https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812469\\_assess-atd-selection-and-use-testing-rear-facing-child-restraint-systems-larger-infants-and-toddlers.pdf](https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812469_assess-atd-selection-and-use-testing-rear-facing-child-restraint-systems-larger-infants-and-toddlers.pdf)



Check the article *Inside the Rise of “Risky” Playground Design*, by Elizabeth Wallace, published on ARCHITECTURE + DESIGN posted May 1, 2018. Author discusses that child recreation areas with exposed nails and steep drops—placed deliberately—have caught on in the U.K. and are coming to America.

## Some research articles published about Children's safety in 2018

### *Children's Control/Display Stereotypes*

Errol R. Hoffmann, Alan H. S. Chan, Judy P. C. Tai  
 Human Factors 2018, vol. 60 (4), pp. 538-555.

### *Factors Associated With Child Restraint Use in Motor Vehicle Crashes*

Franklin Privette, Ann Nwosu, Caitlin N Pope, Jingzhen Yang, Joyce C Pressley, Motao Zhu  
 Clinical Pediatrics 2018, July 2018, Vol. 1(1), pp. 1–9.

How modernity's futurism puts children in the front line  
 Sharon Jessop,  
 Childhood 2018, Jun 2018, Vol. 1(1), pp. 1–15.

### *More a marathon than a hurdle: towards children's informed consent in a study on safety*

Tim P Moore, Morag McArthur, Debbie Noble-Carr.  
 Qualitative Research 2018, Vol. 18(1), pp. 88–107.

### *Playing it safe: toy safety and conformity assessment in Europe and the United States*

Derek B. Larson, Sara R. Jordan  
 International Review of Administrative Sciences 2018, April 2018, Vol 1(1), pp. 1–17.

### *Reporting Fatal Neglect in Child Death Review*

Debbie Scott  
 Trauma, Violence, & Abuse 2018, Apr 2018, Vol. 1(1), pp. 1–11.

### *School-Based and Community-Based Gun Safety Educational Strategies for Injury Prevention*

Cheryl Holly, Sallie Porter, Mary Kamienski, Aubrianne Lim  
 Health Promotion Practice, May 2018, Vol. 1(1), pp. 1–10.

Mark your calendar...HFES Meeting in 2019

63rd International Annual Meeting, 63rd International Annual Meeting, Sheraton Seattle, Seattle, Washington, USA, October 28-November 1, 2019