

IDEA Center e-newsletter

The IDEA Center is home to the Rehabilitation Engineering Research Center on Universal Design and the Built Environment (RERC-UD)

The IDEA Center Awarded the RERC on Accessible Public Transportation (RERC-APT)

The IDEA Center is happy to announce that it has a major role in a new 5 –year grant for a **Rehabilitation Engineering Research Center on Accessible Public Transportation**. Funded by the National Institute on Disability and Rehabilitation Research (NIDRR), the RERC-APT is a partnership between the Robotic’s Institute at Carnegie Mellon University and the IDEA Center, and representatives from the design, computer science, engineering, transportation and disability communities nationwide. Co-directed by Aaron Steinfeld (RI) and Edward Steinfeld (IDEA Center), the RERC-APT will establish an effective and sustainable process to address high priority transportation needs of people with disabilities using enabling technology and universal design.



Photo of person using wheelchair boarding a metro bus.

The Research and Development activities will provide new tools, research findings, guidelines, and products that advance the field of accessible public transportation through universal design. Training and Dissemination activities will increase understanding and build capacity for accessible public transportation for a wide range of stakeholders. Collectively, these projects will generate strategically important deliverables that address high priority needs of transportation users and increase the adoption of universal design within the transportation industry.

Stay tuned for updates on the new RERC-APT!

Global Universal Design Commission (GUDC) Underway

The IDEA Center, with funding from the RERC on Universal Design and the Built Environment grant, is partnering with the Burton Blatt Institute at Syracuse University to develop the Global Universal Design Commission (GUDC), a non-profit organization that will develop standards for universal design of buildings and products. The GUDC mission is to accelerate adoption of the UD philosophy. Design for the range of human performance and preferences must move beyond focus on compliance with law to a vision of good design that provides ease of use without disadvantage to any group or individuals.

After a successful kickoff meeting in Syracuse, NY in May 2008, efforts are now underway to develop voluntary consensus-based Universal Design standards for commercial buildings. All standards will be developed using an ANSI approved process but they will not be ANSI designated standards. The IDEA Center is coordinating the standards development activity, and Professor Edward Steinfeld, Director of the IDEA Center and of the founding board members of the Commission, is Secretary of the Standards Committee. The Standards Committee will be Chaired by Graham Hill of Ice Miller Strategies.

A preliminary standards writing committee has been formed, including:

- John Salmen, Universal Designers and Consultants
- Carmen Jones, Solutions Marketing Group (Board Member)
- Susan Goltsman and Tim Gilbert, MIG, Inc.
- Katy McGuinness and Dave Kessler, Kessler McGuinness Architects
- Korydon Smith, University of Arkansas
- Sally Swanson and Jim Fruit, Sally Swanson Architects
- James Maurer, Foit-Albert Architects
- Tom Riegelman, Sandals
- John Lancaster, National Council for Independent Living (Board Member)
- Jon Sanford, Center on Assistive Technology and Environmental Access
- Richard Duncan, Housing Works/R.L. Mace Universal Design Institute

Working under an accelerated schedule, the committee anticipates a Draft Standard by Nov. 1, 2008, followed by the formation of a formal Consensus Standards Committee and public review. A website is currently under development where the draft standards will be posted and available for review. Please stay tuned for upcoming notices about this project.

New Publications

Ed Steinfeld and Beth Tauke recently had articles published in uiGarden.net, a bilingual on-line magazine. Ed's article, "The Concept of Universal Design" can be found online at <http://www.uigarden.net/english/the-concept-of-universal-design> and in Chinese at <http://uigarden.net/chinese/tong-yong-she-ji-de-gai-nian>. Beth's article, "Universal Design-The Time is Now" can be found <http://www.uigarden.net/english/universal-design-the-time-is-now> and in Chinese at <http://uigarden.net/chinese/tong-yong-she-ji-xian-zai-zheng-shi-shi-hou>.

The IDEA Center is also pleased to announce the release of an AARP Research Report, "Increasing home access: Designing for visitability". This report was co-authored by Jordana Maisel (IDEA Center),



Photo of a visitable home in Atlanta, GA.

Eleanor Smith (Concrete Change) and Ed Steinfeld (IDEA Center). It is sponsored and distributed by AARP Public Policy Institute. Please go to

<http://www.udeworld.com/email/visibilitypaper.html> for a link to the pull press release and the full-text article.

IDEA Center Successfully Launched New Continuing Education Program

The IDEA Center recently completed the first course in its new continuing education program. The topic was **The Nature of Barriers and the New Demographics**. The four week online course received extremely positive feedback from its 17 participants.

The continuing education program is designed for anyone (e.g., advocates, builders/contractors, planners, architects, occupational and physical therapists, and policymakers) interested in learning about the universal design of places, products, and systems with a particular focus on the implications of a life span perspective. In keeping with the concept of human centered design, the courses are designed to have an extensive participatory and discussion element.

For more information about the curriculum, please go to <http://www.udeworld.com/education/index.php>.

Please stay tuned for an announcement about the next continuing education course offerings for this fall. Registration will soon be available at <http://www.udeworld.com/education/register.php>.

New Affordable Housing Complex Built with Universal Design

On July 22, 2008 Crosswinds at Hudson, an affordable housing complex, officially opened in Hudson, New York. More than 100 people, including New York State Governor David Patterson, state legislators and local officials attended the ribbon cutting ceremony in the town located approximately 38 miles south of Albany. The complex will help ease the housing shortage in Columbia County by providing 70 affordable apartments, including 13 townhouse style buildings and a community center, to working



Photo of housing in Crossroads on Hudson, a new affordable housing complex in Hudson, NY

families. In addition, there are community laundry facilities, an education room with computers, a community room with a kitchen and two multi-purpose rooms. Realizing that there is no "one size fits all" solution, the community was surveyed about its housing needs before Crosswinds was developed. It became a perfect candidate to include universal design features. Built by 3D Development Group LLC, the IDEA Center served as design consultants on the project.

IDEA/RERC-UD Center's Staff Summer Conference Presentations

Together with the RERC on Technology Transfer, Edward Steinfeld presented a program called "From Proving Ground to Mainstream," at the Rehabilitation Engineering Society of North America's (RESNA) annual conference in Washington, DC, June 28-30. This program demonstrated how assistive technology can be used as a way to test new ideas and concepts for universal designs. Edward Steinfeld and Joe Lane were the presenters. Many examples of assistive technology applications that have been successfully introduced as universal designs for mainstream use were described including email, voice recognitions and captioned television. AT products that have universal design characteristics were described. Opportunities for AT firms and experts to become involved in this emerging field were discussed.

Dr. Steinfeld made a second presentation at RESNA on the Anthropometry of Wheeled Mobility Project, a long range study that is collecting and analyzing data on the sizes and abilities of contemporary wheelchair and scooter users. New data collected in this study, which was originally funded by NIDRR and is now funded by the U.S. Access Board, is now being analyzed. Activities are underway to introduce the findings to standard making bodies to help improve accessibility codes.

Dr. Steinfeld and Jon Sanford of the Department of Design, Georgia Institute of Technology, and Co-Director of the RERC on Work organized a program on Evidence Based Practice in universal design. This was a follow up to a similar but longer program at ICADI. In this program, participants were introduced to the needs and barriers to evidence based practice in the field of universal design. Discussion focused on how to overcome those barriers and how the rehabilitation science community can help to advance the field of universal design. Results of both programs will be reported in the RERC on Universal Design and the Built Environment's State of the Science report.

The RERC on Universal Design and the Built Environment participated in an exposition of RERC research and development work at the Senate Office Building prior to the RESNA conference, an event organized by RESNA.

Recent Conference:



**Human Factors and
Ergonomics Society**

In September, researchers from the RERC-UD held a special session of four paper presentations titled "Moving from Accommodation to Universal Design" at the 52nd Annual Meeting of the

Human Factors and Ergonomics Society. The third event in the RERC-UD's year long State of the Science Program, the goal of the session is to spark increased interest among human factors practitioners, usability testing specialists, designers and engineers about the importance of universal design for the improvement of built environment and products. It demonstrated how the HF/E profession currently contributes to the body of basic and applied research related to how environment and product design affects individuals with disabilities, and challenged the HF/E profession to do more. Both empirical studies and theoretical positions were presented.

Presented Papers:

First Paper - Controllability of Manual and Powered Wheelchairs for Spinal Cord Injury Users

Colin Drury (U. at Buffalo, SUNY), Alicia Koontz (VA Ctr. of Excellence in Wheelchair and Associated Rehabilitation Engineering), David Feathers (U. at Buffalo, SUNY), P. Kankipati (VA Ctr. of Excellence in Wheelchair and Associated Rehabilitation Engineering), Victor Paquet (U. at Buffalo, SUNY), and Jui Lin (U. at Buffalo, SUNY)

This study investigates wheelchair maneuvering control for persons with a spinal cord injury across two protocols, path control and terminal aiming. Thirty-one participants using either a manual or powered wheelchair, performed self-paced longitudinal movements (path control) as well as self-paced stopping actions (terminal aiming) across multiple trials. Results show performance differences across both protocols for manual and power wheelchair user groups. This study exemplifies the use of model-based data for clinical applications. Further research using this approach may help to identify individual control settings for optimal maneuvering performance.

Second Paper - Usability Study of a Powered Lift for Wheelchair Users

Mahiyar Nasarwanji (U. at Buffalo, SUNY), Victor Paquet (U. at Buffalo, SUNY), David Feathers (U. at Buffalo, SUNY), and James Lenker (U. at Buffalo, SUNY)

Stairways into building or public vehicles are important environmental barriers that limit accessibility to users of wheeled mobility devices. A powered lift is a device that might serve as an alternative to stairs or ramps but has not yet been carefully evaluated for this purpose. The objectives of this study were to characterize the usability of a powered lift device for wheelchair users and demonstrate the value of using a multi-method evaluation approach to identify the design deficiencies. Twenty experienced wheeled

mobility device users either alone (n=11) or with the assistance of a caregiver (n=9) completed tasks using a powered lift. Measurements were made on the unrestricted space required to enter and exit the lift, time required to enter and exit the lift, errors made during the operation of the lift's control, and self-reports of device usability obtained with a questionnaire. Results indicated that the clear space required for the lift was less than what would be expected for a ramp and that the self-reported usability of the device was reasonably good. However, the time required to use the lift was high and participants had difficulty operating the lift's safety-belt. Improvements should be made to the design of the safety-belt to increase usability. Additional studies that include other user populations are recommended to investigate the efficacy of the device as an alternative to stairs or ramps.

Third Paper - Subjective Ratings of Accessibility Using Full-Scale Modeling

David Feathers (U. at Buffalo, SUNY/Cornell University), Edward Steinfeld (U. at Buffalo, SUNY)

Full-scale modeling was used to assess subjective ratings of difficulty for the bathroom environment across four different configurations. Two configurations complied with nationally accepted accessibility standards. One exceeded the standards, representing a "universal design"; the other was representative of a common yet unsupportive design. Participants simulated activities of daily living and offered subjective ratings of each design in general, and for each sub-area (e.g. toilet, shower, and lavatory) for each design. Results demonstrate subjective differences between bathroom configurations. The interaction between humans and the built environment should include a host of diagnostic tools complete with subjective assessments.

Fourth Paper - Evidence-Based Practice in Universal Design

Edward Steinfeld (U. at Buffalo, SUNY)

The ergonomics profession can benefit from adoption of the universal design paradigm. Rather than treat people with differences in abilities and characteristics as special populations, this paradigm views such differences as a universal aspect of human experience. Ergonomics professionals and researchers can play an important role in advancing universal design through development of evidence-based practice. Critical needs are identified and discussed.

RERC-UD Project Updates: Spotlight on R1

Built Environment Research Project's Initial Results and Data Available

Project R1: The Effectiveness of Universal Design

Gary Scott Danford, Michael Grimble, Jordana Maisel

The Built Environment Research Project is a 3-phase online study of designed environments' influences on the activity performance of participants who have varying functional and sensory abilities

(<http://www.udeworld.com/research/index.php>). The first phase establishes the "baseline" incidence of problematic activities in each of three environments (i.e., public buildings, public streets and residential environments) both within and across participant groups. The second phase develops "more inclusive" design solutions for each environment intended to remedy those problematic activities. The third phase "benchmarks" the design solutions' effectiveness by comparing their incidence of problematic activities against the established baselines'.

This initial harvest included 572 surveys on problematic activities in public buildings, 489 surveys on public streets and 490 surveys on residential environments. The first phase surveys' preliminary results are now posted on the Built Environment Message Boards

<http://research.udeworld.com/forum/index.php>) along with additional information about this research project including (1) how participants' survey responses are being analyzed, (2) what the next phases of the research project will involve and (3) how scholars can request access to the original data to conduct further analyses. Visitors may look at any of these message boards. But to post messages (e.g., questions, comments and/or suggestions) you must first register a username and password and then login each time you return.



Employee Update

The IDEA Center would like to congratulate **Danise Levine, R.A.** who recently received her Architecture License from the New York State Department of Education.

The IDEA Center would also like to announce the hiring of a new staff member:

Heamchand Subryan, M.Arch/MFA (August, 2008) has worked at the IDEA Center for five years as a student and recently joined the staff on a full time basis. His responsibilities include graphic design, desktop publishing, exhibit design, and website design. He maintains and expands the IDEA Center website, produces Center publications, and other graphic material. He has extensive experience with computer aided design and visualization methods, Web 2.0 technologies, and web accessibility. He is completing a dual degree program in architecture and media studies with an emphasis on introducing responsive information technology into built environments.

The IDEA Center would also like to congratulate **Dave Feathers, Ph.D.** who recently accepted a position as an Assistant Professor in the Department of Design and Environmental Analysis at Cornell University. Dave worked at the IDEA Center for eight years as a Research Assistant and Post-Doctoral Fellow. We wish him well in his new endeavors.



Universal Designers
& Consultants →

Universal Design Newsletter

Please follow the link below to the latest version of Universal Design Newsletter, published by Universal Designers and Consultants.

<http://www.universaldesign.com/newsletter/archived.php>

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