



Working toward
universal access
through research,
design & education

December 2002

Dear Friends & Supporters

As 2002 comes to a close, we at Beneficial Designs wish to reflect on another rewarding year.

The Beneficial Designs team, compiled of three offices and several consultants, worked together this year to complete projects and open doors to new ones.

Our Minden headquarters has continued to settle into place this year, while our busy schedule has taken us to Hong Kong, Japan, France, and throughout the US.

We would like to share with you a few of the projects we have been working on this past year. Thank you for your continued support and interest in our work. All of us here at BD would like to wish you a joyful holiday season.

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UTAP Coordinator Workshops

Kathy, Peter and consultants
Patti & Jenny



This year 77 individuals were trained to lead assessments using the Universal Trail Assessment Process. The UTAP Coordinator Workshops were held in Arizona, Florida, and Nevada and also in the Canadian provinces of Manitoba and Ontario. Workshop participants included trail professionals, college students, and volunteers. Presentations introducing the benefits of UTAP to land managers were made at the National Association of Recreation Resource Planners Annual Conference and the National Trails Symposium. Several UTAP Workshops are being planned for 2003 to be held in Arizona, California, Nevada, Pennsylvania, Rhode Island, and Virginia. Contact <trails@beneficialdesigns.com> for workshop dates and locations.

TrailWare: UTAP Software

NIH/NICHD SBIR Phase II Grant #2 R44 HD36538-02
Kathy, Seanna, Peter and consultants Jenny, Patti & Joan

TrailWare, the data processing software for the UTAP, is in its final stages of development. Several agencies and organizations have been participating in beta-software evaluations to assist in creating an effective data analysis tool. Future plans include adding modules that will identify compliance with design guidelines; reports for trail managers and users; and the use of a hand held data collection device.

Training Program for UTAP Trainers

USDA SBIR Phase II Grant #00-33610-9415
Kathy, Peter and consultants Patti & Jenny

Phase II was completed this year for the UTAP Train-the-Trainer project. Materials for training Certified Trail Assessment Coordinators to become UTAP Trainers were developed during the project. Two Trainer Courses were held this year, training 22 UTAP Coordinator Workshop Trainers. Eighteen individuals achieved Level II Trainer Certification over the course of the two-year project and are eligible to teach UTAP Coordinator Workshops.

Trail Explorer Website

DEd SBIR Phase II Grant #ED-98-CO-0046
Kathy, Peter and consultants Patti & Joan

The Trail Explorer Website continues development as a searchable on-line database to provide Trail Access Information on hiking trails nationwide. TrailWare will soon allow data collected from the UTAP to be imported to the Trail Explorer Website <www.trailexplorer.org>.

Wheelchair Training Guides

Denise, Peter & consultant Jenny

The Powered Wheelchair Training Guide was completed in June. Peter and Denise introduced the book at wheelchair skills courses at the RESNA conference and in Japan, where they trained 80 clinicians. It is now available for purchase, along with the Manual Wheelchair Training Guide, through PAX Press, a division of BD.



Canoe Seating System

NIH/NICHD SBIR Phase II Grant
#2 R44 HD36944-02A1
Allen, Denise, Seanna & Peter

Funding for Phase II was awarded in September. BD will be working with Wilderness Inquiry in Minneapolis to refine the canoe seat design and conduct evaluations. The canoe seat attaches to the standard bench-style seat and provides back and side support to improve balance and comfort.

Sidewalk & Trail Design for Access

DOT FHWA Contract #DTFH61-97-C00028

BD created two books for the FHWA, "Designing Sidewalks and Trails for Access: A Best Practices Design Guide" and "A Review of Existing Guidelines and Practices". Both are available through wwwcf.fhwa.dot.gov/environment/rt_pubs.htm

Surface Accessibility

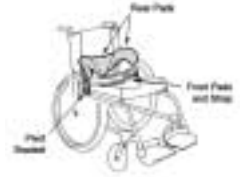
NIH SBIR Phase II Grant
#2 R44 HD30979-02
Denise & Peter

The Rotational Penetrometer is still being distributed by Beneficial Designs. This portable tool can measure the firmness and stability of trail surfaces, carpet, and other pedestrian routes. Denise is chairing the RESNA Committee that is developing a national standard test method for surface firmness and stability. Beneficial Designs continues to conduct playground surface accessibility testing (ASTM F1951) on a contract basis for surface manufacturers.



HipGrip

NIH/NICHD Phase II Grant
#2R44 HD36156-02A2
Allen, Denise, Seanna & Peter, and consultants Amy & Jamie



The HipGrip is a spring-loaded pelvic support device that allows persons with difficulty maintaining pelvic positioning to extend and then the device gently assists them back into an upright position. BD is currently in the Phase II development of the HipGrip pelvic stabilization device for wheelchair users. Current work includes refining the design of a prototype device and clinical trials. Research study subjects are using the HipGrip for 3 to 6 months.

FlexRim

NIH/NICHD Phase II Grant #2 R44 HD36533-02A2
Mark & Peter and consultant Jamie

The FlexRim is a compliant handrim that replaces the rigid interface between the wheelchair wheel and the handrim, adding flexibility to reduce the impact forces experienced by users. The project is currently in Phase II and is expected to be completed in 2004.

GripRim

NIH/NICHD Phase I Grant #1R43 HD42875-01
Mark, Peter & consultant Jamie

The GripRim is an ergonomic handrim that replaces the aluminum-tubing hoop currently offered for manual wheelchairs. The handrim will improve grip during propulsion thereby reducing demands on the wheelchair user during propulsion.

Wheelchair Standards

Paralyzed Veterans of America
Peter & Denise

As Chair of the RESNA Technical Standards Board, Peter oversees the work of all RESNA standards committees. Peter was also re-elected as Chair and Denise as Secretariat of the RESNA Standards Committee on Wheelchairs. Annual meetings were held this year in conjunction with the RESNA conference in Minneapolis. Peter also continues as Convener of the ISO Working Group on Wheelchair Test Methods. Peter and Denise attended ISO meetings in Hong Kong in May and in France in October.

Wheelchair Seating Standards

Allen, Denise & Peter

Allen passed along the torch this year as chair of the RESNA Standards Committee on Wheelchair and Related Seating. He continues to work on ISO standards. These standards cover terms and definitions, and testing of postural support devices and seat cushions.

Design Consulting

We have continued to provide testing and design services on a consulting basis for the seating and wheeled mobility industry. Peter and Allen have led the design team on several projects this year. BD is currently working with Independence Technology, a Johnson & Johnson company, in the seating design of the iBOT Mobility System <www.indetech.com>.

Ski Area Accessibility

Peter continues to consult for the ski industry, helping to make their facilities and programs more accessible. He is also chair of a RESNA Committee which has developed an adaptive ski equipment document that was approved as a national standard in November. The Committee met in December of this year in conjunction with the annual Ski Spectacular in Breckenridge, Colorado.



Tools for Life

Denise & Peter

Tools for Life is a not-for-profit organization providing information on people and organizations that facilitate the provision of mobility equipment and adaptive seating to persons with disabilities in developing countries. Denise submitted a proposal in November seeking funding to develop a *Tools for Life* Web site.

Funding agencies and other acronyms:

DOT	Department of Transportation
FHWA	Federal Highway Administration
ISO	International Organization for Standardization
NICHD	National Institute of Child Health and Human Development
NIH	National Institutes of Health
RESNA	Rehabilitation Engineering and Assistive Technology Society of North America
SBIR	Small Business Innovation Research
USDA	United States Department of Agriculture



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❖ Meet the BD Team ❖

❖ **Peter Axelson**, founder and Director of R&D, leads BD and spends much of his time traveling throughout the world to attend meetings and present our work. He's also a pilot and avid mono-skier.

❖ **Denise Axelson**, Research Coordinator, oversees the research at BD and assists with technical writing and grant proposals. She loves to play volleyball and cook.

❖ **Allen Siekman**, Director of Seating & Design, oversees the seating and design projects. He restores antique cars and motorcycles and coaches and umpires youth softball teams.

❖ **Mark Richter**, Research Engineer, is working on the FlexRim, the GripRim, and product liability research. He is also working on his doctorate in mechanical engineering at Stanford University.

❖ **Layne Aufdenkamp**, Executive Assistant, oversees office administrative functions. In her free time she trail rides and shows her horses in cutting events.

❖ **Cathay Delp**, Office Assistant, contributes to various office duties. She enjoys the out-of-doors and painting.

❖ **Andrea Forsyth**, Office Assistant, helps with office tasks. She is a senior in high school and will attend college next year where she plans to go into a field that will allow her to help others.

❖ **Kallie Goheen**, Office Assistant, assists with office duties. She is a senior in high school and will attend college next year to become a teacher.

❖ **Amy Hayes**, Physical Therapist, works on the HipGrip project. She enjoys the outdoors, volleyball, hiking, and biking.

❖ **Seanna Kringen**, Research Associate, assists with the research components of our projects. She enjoys swimming and hiking with her husband and three children.

❖ **Patti Longmuir**, Research Scientist, works on accessible recreation projects. She enjoys the outdoors and fixing up her house.

❖ **Kathy Mispagel**, Project Coordinator, organizes UTAP projects and TrailWare development. She enjoys scrapbooking and teaching Sunday school to adults with developmental disabilities.

❖ **Jamie Noon**, Seating Designer, contributes to product development. He also works with non-profit organizations to establish clinics in developing countries that provide rehabilitation technology.

❖ **Carla Shepard**, Bookkeeper, is in charge of BD finances. She enjoys four-wheeling, playing piano, singing, and cross-stitching.

❖ **Jenny Tuohy**, Graphic Artist, provides creative graphics and layout services. She loves photography, road trips, cooking, and her Chocolate Lab, "Moose".

We would like to thank past employees Brent and Linda Armstrong, Ericka MacCabe, and Stacy Rose, whose work on our projects was invaluable. We also wish to thank consultants Ray Buetens, Clay Butler, Julie Kirschbaum, and Joan Lowden, who have made significant contributions to our projects this year. We are grateful to our technical consultants Bill Adams, John Endter, Arne Folkedal, Jeremy Thompson, and Jeff Liebermann, and to Dan Morgan for his helpful handy work around our office.