

V. DISSEMINATION AND UTILIZATION

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Goals

1. To disseminate the results of RERC activities
2. To serve as an information resource on wheelchair technology

Approach

Information on wheeled mobility technology was disseminated to consumers, manufacturers and professionals. The planned content and target groups for dissemination and utilization activities are summarized in the diagram below.

Outcomes Summary

The information dissemination and utilization activities continued throughout the five years of the RERC on Wheeled Mobility. These took the form of: peer reviewed journal publications (25); extended abstracts in conference proceeding papers (66); books/chapters (7); technical reports (6); presentations at local, national and international meetings (24); and formally organized instructional courses or workshops (7). A complete reference listing of the above dissemination activities follows. Utilization of many of these activities was facilitated by workshops, focus groups, conferences and direct communication with industry representatives.

In 1995, the RERC also launched its WWW pages as

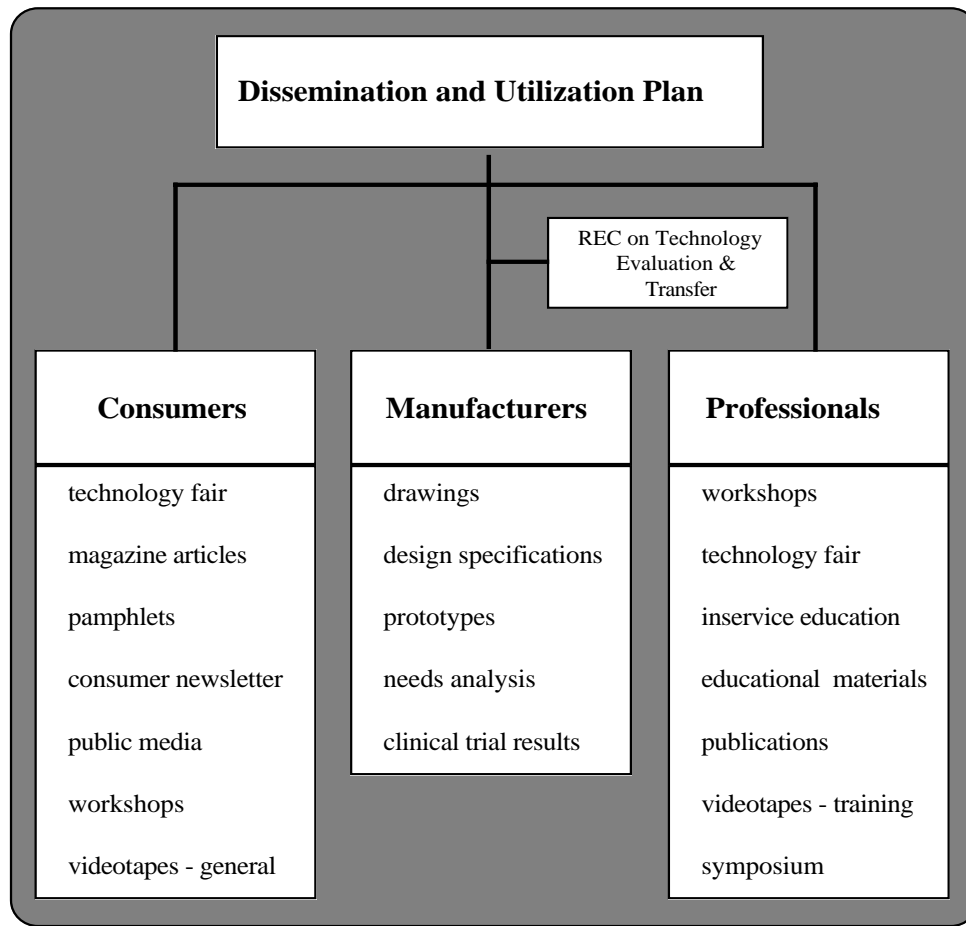


Figure 58 - Dissemination plan focusing on three primary groups

an extension of its dissemination activities. Research activities, status reports, publication listings, downloadable technical reports and standards documents, and contact information were all made available via the RERC's site. Requests for information on varied aspects of wheelchair technology came to the RERC almost daily. Students, researchers, consumers and clinicians all contacted members of the RERC team for information. Electronic communications, such as faxes, emails and the RERC's WWW site postings, all facilitated timely responses to the majority of these requests.

Dissemination Listings:

Publications/Workshops/Grants/Patents and Awards

Peer Reviewed

Angelo J and Trefler E A survey of persons who use integrated control devices, *Asst Technol*, 1998;10:77-83

Angelo, JA, Buning, ME, Schmeler, MR and Doster, S. Identifying best practices in the occupational therapy assistive technology evaluation: An analysis of three focus groups. *American Journal of Occupational Therapy* Accepted and pending publication 1997

Bertocci GE, Digges K, Hobson DA Shoulder Belt Anchor Location Influences on Wheelchair Occupant Crash Protection. *Journal of Rehab Research and Devel* July 1996; 33(3): 279-289.

Bertocci, GE, Digges, K, Hobson, D. Development of Transportable Wheelchair Design Criteria Using Computer Crash Simulation. *IEEE Transactions on Rehabilitation Engineering*, Vol 4, No 3, Sept. 1996: 171-181.

Bertocci, GE, Digges, K, Hobson, DA. Shoulder Belt Anchor Location Influences on Wheelchair Occupant Crash Protection. *Journal of Rehab Research and Devel*, Vol 33, No 3, July 1996:279-289.

Bertocci, GE, Karg, PE, Hobson, DA. Wheeled mobility device database for transportation safety research standards. *Assistive Technology*, pp. 102-115, Vol. 9.2, 1997

Boninger ML, Saur T, Trefler E, Hobson DA, Burdette R, and Cooper RA: Postural Changes with Aging in Tetraplegia, *Archives of Physical Medicine and Rehabilitation*, Vol. 79, No. 12, pp. 1577-1581, December 1998.

Brienza D.M. and Angelo J. A Force Feedback Joystick and Control Algorithm for Wheelchair Obstacle Avoidance. *Disability and Rehabilitation* Mar 1996; 18(3): 123-129.

Brienza DM, Angelo J, Henry K. Consumer Participation in Identifying Research and Development Priorities for Power Wheelchair Input Devices and Controllers. *Assistive Technology* July 1995; 7.1:55-62.

Brienza DM, Chung K-C, Brubaker CE, Wang J, Karg TE A System for the Analysis of Seat Support Surfaces Using Surface Shape Control and Simultaneous Measurement of Applied Pressures. *IEEE Transactions on Rehabilitation Engineering* June 1996; 4(2): 103-113.

Brienza, D.M., Chung, KC, Brubaker, CE, Wang, Jand Karg, PE. A System for the Analysis of Seat Support Surfaces Using Surface Shape Control and Simultaneous Measurement of Applied Pressures, *IEEE Transactions on Rehabilitation Engineering*, Vol. 4, No. 2, pp. 63-67, 1996.

Brienza, DM and Karg, PE. Optimization of seat support surface shape using interface pressure and soft tissue stiffness: A comparison of interface characteristics for spinal cord injured and elderly patients. *Archives of Physical Med and Rehabil* accepted, pending publication 1997

Brienza, DM, Cooper, RA, Brubaker, CE. Wheelchairs and seating. *Current Opinion in Orthopaedics* 1996:7 (vi)

Brienza, DM, Chung, KC, Brubaker, CE, Wang, J, Karg, PE and Lin, CT. A system for the analysis of seat support surfaces using surface shape control and simultaneous measurement of applied pressures. *IEEE Transactions on Rehabilitation Engineering* 1996 4(2) pp.103-113

Brienza, DM, Karg, PE and Brubaker, CE. Seat cushion design for elderly wheelchair users based on minimization of soft tissue deformation using stiffness and pressure measurements. *IEEE Transactions on Rehabilitation Engineering*, 1996 4(4) pp 320-328

Cooper R, Trefler E, Hobson DA. Wheelchairs and Seating: Issues and Practices. *Technology and Disability* 1996; 5(1): 3-16.

Cooper RA. Forging a New Future: A Call for Integrating People with Disabilities into Rehabilitation Engineering. *Technology and Disability* 1995; 4: 81-85.

Cooper RA. Intelligent Control of Power Wheelchairs. *IEEE Engineering in Medicine and Biology Magazine* 1995; 15(4): 423-431.

Cooper, R.A., A Perspective on the Ultralight Wheelchair Revolution, *Technology and Disability*, 1996.

Hobson, D.A. RESNA: Yesterday, Today and Tomorrow, *Assistive Technology*, August 1996

Jones, D, Cooper, R, Albright, S, DiGovine, M. Powered wheelchair driving performance using force and position sensing joysticks, *IEEE*, April 1998

Schmeler, MR. Strategies in documenting the need for assistive technology: An analysis of documentation procedures. *American Occupational Therapy Assoc., Technology Special Interest Section Quarterly* 7(13) pp. 1-4, 1997

Trefler, E. and Angelo, J. Comparison of Anterior Trunk Supports for Children with Cerebral Palsy, *Assistive Technology*, Vol 1, No 9, 1997

VanSickle, D.P., Cooper, R.A., Robertson, R.N. and Boninger, M.L., Determination of Wheelchair Dynamic Load Data for Use with Finite Element Analysis, *IEEE Transactions on Rehabilitation Engineering*, 1996.

Extended Abstracts/Proceedings/Articles

Alva P and Hobson DA. Computer Simulation of Powered Wheelchair Electro-mechanical Systems. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 215-216.

Angelo, JA and Trefler E. Surveying Satisfaction of Integrated Control Users. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 212-214.

Bayles G, Ulerich P, Palmer K, Brienza DM. New Battery Technology for Powered Wheelchairs. *Proceedings of the 17th Annual RESNA Conference*, Nashville, TN, June 1994.

Bertocci GE and Hobson DA. The Affects of Securement Point Location on Wheelchair Crash Response. *Proceedings of the RESNA '96 Annual Conference RESNA Press*, Washington DC, June 1996: 49-51.

Bertocci GE. The Affects of Shoulder Belt Anchor Position on Wheelchair Transportation Safety. *Proceedings of the RESNA '95 Annual Conference*. RESNA Press, Vancouver, BC, June 1995: 311-313.

Bertocci, G and Karg, P. Survey of Wheeled Mobility Device Transport Access Characteristics. *Proceedings RESNA Annual Conference*, Pittsburgh, PA, June 1997.

Bertocci, G, Esteireiro, J, Thomas, C, Young, T. Testing and evaluation of wheelchair caster assemblies subjected to dynamic crash loading. *Proceedings 21st Annual RESNA Conference*, Minneapolis, MN, June 1998

Bertocci, G, Hobson, DA, McCartney, M, Rentschler, A. The effects of various vehicle floor surfaces on wheelchair sliding under normal driving conditions. *Proceedings 21st Annual RESNA Conference*, Minneapolis, MN, June 1998

Bertocci, G., Digges, K., Hobson, D.A. The Affects of Wheelchair Securement Point Location on Occupant Injury Risk, *Proceedings RESNA Annual Conference*, Pittsburgh, PA, June 1997.

Boninger ML, Saur T, Trefler E, Hobson D, Burdett R, and Cooper RA: Postural Changes with Aging in Tetraplea, *Proceedings 21st Annual RESNA Conference*, Minneapolis, MN, pp. 155-157, 1998.

Brienza D, Gehlot N, Silverman M. A Reusable Mold for Custom Contour Cushion Manufacturing. *Proceedings of the RESNA '95 Annual Conference*, Vancouver, BC, June 1995: 303-305.

Brienza D, Gehlot N. Concept and Implementation of a Force Feedback Active Joystick. *Proceedings of the RESNA '95 Annual Conference*, Vancouver, BC, June 1995: 325-327.

Brienza D.M. and E. Trefler, "Developments in Contoured Seating Technology", Workshop, 10th International Seating Symposium, Vancouver, BC, Canada, February, 1994.

Brienza DM and Chung K-C. Seat Support Surface Optimization Algorithm Development. *Proceedings of the 1993 ASME Winter Annual Meeting*, New Orleans, LA, 1993; Invited Abstract.

Brienza DM and Brubaker CE. Design and Development of a Wheelchair for Enhanced Access. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 250-252.

Brienza DM, Chung K-C, Lin C-T. A Passive Four Degree of Freedom Digitizing Arm for Seating Surfaces. *Proceedings of the 17th Annual RESNA Conference*, Nashville, TN, June 1994.

Brienza DM. Assisted Control and Navigation of a Powered Wheelchair, *International Ergonomics Association's Conference on Rehabilitation Ergonomics*, August 1994. Invited Abstract.

- Brienza, D.M.: EE Undergraduate Seminar on Rehabilitation Engineering Research, Pittsburgh, PA, November, 1993.
- Brienza, DM, and Brubaker, CE. A Four Wheel Steering Mechanism for Short Wheelbase Vehicles. *Proceedings Resna Annual Conference*, Pittsburgh, PA, June 1997.
- Brienza, DM, Karg, PE. A method for contoured cushion design using pressure measurements. *Proceedings 21st Annual RESNA Conference*, Minneapolis, MN, June 1998
- Cooper RA and McGee H. Wheelchair Related Accidents and Malfunctions. *Proceedings of the RESNA '95 Annual Conference*, Vancouver, BC, June 1995: 334-336.
- Cooper RA, Cooper R, Selecting a Rural Outdoor Mobility Device, *Proceedings 21st Annual RESNA Conference*, Minneapolis, Minnesota, June 1998
- Cooper RA, McGee H, Apreleva M, Albright SJ, VanSickle DP, Wong E, Boninger ML. Static Stability Testing of Stand-up Wheelchairs. *Proceedings of the RESNA '95 Annual Conference*, Vancouver, BC, 1995: 349-351.
- Cooper RA, Robertson RN, Boninger ML. A Biomechanical Model of Stand-Up Wheelchairs. *Proceedings 17th Annual IEEE/EMBS International Conference*, Montreal, Canada, 1995.
- Cooper, R, Cooper, RA, O'Connor, T, Axelson, P. Back Support System Effects on Seating During Manual Wheelchair Propulsion. *Proceedings RESNA Annual Conference*, Pittsburgh, PA, June 1997.
- Cooper, R.A., Gonzalez, J., Robertson, R.N., and Bonginer, M.L., New Developments in Wheelchair Standards, *Proceedings 18th Annual IEEE/EMBS International Conference*, Amsterdam, Netherlands, CD-ROM, 1996.
- Evans, J, Hobson, DA, vanRoosmalen, L, Bertocci, G. Testing of a low 'g' prototype securement device. *Proceedings 21st Annual RESNA Conference*, Minneapolis, MN, June 1998
- Garand SA and Shapcott N. Computer Aided Wheelchair Prescription System (CAWPS). *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 209-211.
- Geyer, MJ, Brienza, DM, Kelsey, S, Karg, PE, Trefler, E. Efficacy of seat cushions in preventing pressure ulcers for at-risk elderly nursing home residents: research issues. *Proceedings 21st Annual RESNA Conference*, Minneapolis, MN, June 1998
- Gonzalez, J, Cooper, RA, Rentschler, A, Lawrence, B. Frame Failure of Welded Manual Wheelchairs. *Proceedings RESNA Annual Conference*, Pittsburgh, PA, June 1997.
- Hobson DA, Trefler E, Malagodi MS. Redefined Work and the Role of Assistive Technology. *Proceedings of the 2nd Pittsburgh Employment Conference for Augmentative and Alternative Communication Users*, August 1994.
- Hobson DA. 10542-Wheelchair Tiedowns and Occupant Restraint Systems for Use in Motor Vehicles. *ISO/TC173/SC1/WG-6 Working Document*, March 1994.
- Hobson DA. Wheelchair Transport Standards: What Are They All About? *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 204-206.
- Hobson DA. Proposal for the Development of a National Standard for Transport Wheeled Mobility Devices. March 1993.
- Hobson DA. Securement of Wheelchairs in Motor Vehicles. Is It Time for a Universal Solution? *Proceedings of the RESNA '95 Annual Conference*, Vancouver, BC, June 1995: 87-89.
- Hobson, D.A. Bertocci, G., Bernard, R. McCartney, M. Wheelchair Transit Safety: A Conceptual Case for a low 'g' Securement Approach, *Proceedings RESNA Annual Conference*, Pittsburgh, PA, June 1997.
- Jones DK, Albright SJ, Cooper RA, Boninger ML, Computerized Tracking Using Force- and Position-Sensing Joysticks, *Proceedings 21st Annual RESNA Conference*, Minneapolis, Minnesota, June 1998
- Karg TE, Brienza DM, Brubaker CE, Wang J, Lin CT. A System for the Design and Analysis of Seat Support Surfaces. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 226-228.
- Karg TE, Brienza DM, Chung K, Brubaker CE. Evaluation of a Surface Shape Optimization Technique for Custom Contoured Cushion Design. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 229-231.
- Karg, P., Bertocci, G., Hobson, D.A. Universal Interface Hardware Design Standard for Mobility Device Transport Docking Systems, *Proceedings RESNA Annual Conference*, Pittsburgh, PA, June 1997.

- Karg, PE, Bertocci, G, Hobson, DA. Status of universal interface design standard for mobility device docking on vehicles. *Proceedings 21st Annual RESNA Conference*, Minneapolis, MN, June 1998
- Lawrence B, Cooper RA, Robertson RN, Boninger ML, Gonzalez J, VanSickle DP. Manual Wheelchair Ride Comfort. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 223-225.
- Malagodi MS, Hobson DA, Robinson CJ. Technical Identification of a Non-Invasive Spinal/Pelvic Alignment Monitoring System for Individuals Seated in Personal Wheeled Mobility Devices. *Proceedings of the 17th Annual Resna Conference*, Nashville, TN, June 1994.
- Malagodi, M.D., "Technical Identification of a Non-Invasive Spinal/Pelvic Monitoring System for Individuals Seated in Personal Wheeled Mobility Devices". Poster Presentation. 17th Annual RESNA Conference, Nashville, TN. June 1994
- Nho WC, Brienza DM, Boston R. The Development of AC Motor Drive in Power Wheelchair. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 196-198.
- Rushmore, H and Trefler, E. Consumer Participation in Identifying Manual Wheelchair Prescription Process Priorities. *Proceedings RESNA Annual Conference*, Pittsburgh, PA, June 1997
- Rushmore, H and Trefler, E. Consumer Satisfaction in Multidisciplinary and Nonmultidisciplinary Team Approaches in Manual Wheelchair Prescriptions. *Proceedings Resna Annual Conference*, Pittsburgh, PA, June 1997.
- Saur TA, Garand SA, Shapcott N. Computer Assisted Wheelchair Prescription Program (CAWPS) Survey. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 207-208.
- Saur, T, Boninger, M, Hobson, D.A., Trefler, E. A Comparison of Individuals with New C5-7 Injuries vs. Individuals with Old C5-7 Injuries, *Proceedings Resna Annual Conference*, Pittsburgh, PA, June 1997.
- Shapcott N, Cooper D, Gonzalez J, Haddow A, Heinrich M, Hopley D, Savage D. A Proposed Low Cost Cushion Design for Individuals with Spinal Cord Injury in Developing Countries. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 417-419.
- Trefler E, Ed. Seating the Disabled, *Proceedings of the Thirteenth International Symposium* (1997) University of Pittsburgh Press.
- Trefler E. Single Subject Research: A Research Method for Seating and Mobility Clinicians. Comparison of Anterior Trunk Supports for Children with Cerebral Palsy. *Proceedings: The Canadian Seating and Mobility Conference*, Toronto, Canada, Sept 1995:115-117.
- Trefler E. Single Subject Research: A Research Method for Seating and Mobility Clinicians. "Comparison of Anterior Trunk Supports for Children with Cerebral Palsy. *Proceedings: ARATA Conference*, Adelaide, Australia. Oct 1995: 293-295.
- Trefler, E. "Assessment and Training Strategies for Seating, Positioning and Mobility", Conference on Everyday Lives, March, 1994.
- Trefler, E. "Partnerships in Community Applications of Assistive Technology", Canadian-American Occupational Therapy Annual Conference, Boston, July, 1994.
- Trefler, E. "Adding Technology to Your Bag of Tricks", Austin, TX, March, 1994 and Columbus, OH, May, 1994.
- Trefler, E. "Wheelchair and Specialized Seating", session, Assistive Technology for Rehabilitation Counselors, Harrisburg, PA, October, 1993.
- Ulerich P, Palmer K, Stampahar M, Brubaker C. Design and Development of a Wheelchair for Enhanced Access. Paralyzed Veterans of America, Spinal Cord Research Foundation, Grant # 1228-01, March, 1994.
- van Roosmalen, L, Bertocci, GE, Karg, PE, Young, T. Belt fit evaluation of fixed vehicle-mounted shoulder restraint anchor across mixed occupant populations. *Proceedings 21st Annual RESNA Conference*, Minneapolis, MN, June 1998
- Wang J, Brienza DM, Brubaker CE, Yuan Y. Design of an Ultrasound Soft Tissue Characterization System for the Computer-Aided Seating System. *Proceedings of the RESNA '96 Annual Conference*, Salt Lake City, Utah, June 1996: 492-494.
- Wang, J, Brienza, DM, Yuan, Y, Karg, P, Brubaker, CE. A Compounding Sensor for Biomechanical Analysis for Load-Bearing Soft Tissue. *Proceedings RESNA Annual Conference*, Pittsburgh, PA, June 1997.

Books/Chapters

Brienza, DM, Ostrander, LE. Mechanical loading and pressure ulcers. Surgical Management of cutaneous ulcers and pressure sores, eds. Lee and Herz, chapter 10, 1997

Christiansen, Baum, Slack, Trefler, Hobson, eds. Assistive Technology Issues and Application, Occupational Therapy Practice in Occupational Therapy, *Achieving Human Performance Needs in Daily Living*, Book Chapter, 1997.

Hobson DA, Trefler E. Rehabilitation Engineering Technologies-Principles of Application. Chapter, *Biomedical Engineering Handbook*, ed. Joseph Bronzino, 1994.

Hobson DA. Development of Wheelchair Technology. Chapter in: *Seating and Mobility for Persons with Physical Disabilities*, Ed. E. Trefler, Therapy Skill Builders, 1993.

Hobson DA. Standardization of Terminology and Descriptive Methods for Specialized Seating. Chapter in: *Seating and Mobility for Persons with Physical Disabilities*, Ed. E. Trefler, Therapy Skill Builders, 1993.

Hobson DA. Technology Overview and Classification. Chapter in: *Seating and Mobility for Persons with Physical Disabilities*, Ed. E. Trefler, Therapy Skill Builders, 1993.

Trefler, E and Hobson, DA. Enabling function and well-being, *Assistive Technology*, eds. Christiansen and Baum, 2nd ed chapter 20, 1997.

Presentations and Seminars

Bertocci GE. "Special Needs in Student Transportation", Pupil Transportation Association of Pa. 25th Anniversary Conference, State College, PA, June 1996.

Brienza D.M., Schuch J, and Sprigle S. "Wheelchair Seating and Positioning: Improving Your Services from Assessment Through Follow Up." University of Virginia, Charlottesville, VA, September 22 and 23, 1995. Continuing Education Workshop.

Brienza, D.M. RESNA Annual Conference, Session Chair, "Seating and Positioning Technology." Salt Lake City, Utah, June 1996.

Cooper, RA, Approach to rehabilitation, Ankara Numune Hospital & University of Pittsburgh Medical Center 1st Joint Symposium, Ankara, Turkey, May 1997

Cooper, RA, Wheelchair Selection-Using Standards Information in the Process, RESNA '97, Pittsburgh, PA '97

Cooper, RA Design of Power Wheelchairs, Int. Conf on Wheelchairs and Seating, Dundee, Scotland, Sept 1997

Cooper, RA Design of High Performance Manual Wheelchairs, International Conference and Seating, Dundee, Scotland, Sept 1997

Cooper, RA Secondary Disability and Wheelchair Use, International Conference on Wheelchairs and Seating, Dundee, Scotland, Sept 1997

Cooper, RA Sports fitness equipment for people with disabilities, Sports and Fitness for Individuals with Disabilities, Springfield College, Springfield, MA May 1997

Hobson, D.A. and Bertocci, G. Wheelchair Transportation Safety Workshop, RESNA Conference, Pittsburgh, PA, June 20, 1997.

Hobson, D.A. and Bertocci, G.E. Transporting Students with Disabilities: Wheelchair Safety, Education Service Center, Houston, TX, February 21, 1997.

Hobson, D.A. and Bertocci, GE. Wheelchair Transportation Industry Update, RESNA, 1996 Mid Atlantic Regional Planning Committee Conference, Philadelphia, PA, November 16, 1996.

Hobson, D.A. Overview of Activities in the Rehabilitation Engineering Program, Disability Awareness Days, Pittsburgh, PA, October 4, 1996.

Hobson, D.A. Wheelchair Standards, Assistive Technology Training Program, University of Pittsburgh, Pittsburgh, PA, March 13-15, 1977.

Hobson, D.A., Bertocci, G.E. and Karg, P.E. Wheelchair Transportation Safety Seating Symposium Preconference Workshop, ISS, Pittsburgh, PA, January 22, 1997.

Hobson, DA, Bertocci, G, Karg, PE. "Wheelchair Transportation Safety Workshop", Transporting Students with Disabilities Conference, March 5-6, 1996, Birmingham, AL.

Hobson, DA, Bertocci, G. "Factors Influencing Wheelchair Transportation Safety", Vancouver International Seating Symposium, March 1996.

- Hobson, D.A., "Australian Conference on Technology for People with Disabilities", keynote address, Adelaide, Australia, July 1993.
- Hobson, D.A., "Principles of Proper Seating for Persons with Disabilities", Expo '94 Conference, Ohio Technology Related Assistance Information Network (T.R.A.I.N.), Columbus, OH, May, 1994
- Hobson, D.A., "Service Delivery Models for Assistive Devices". Annual Conference of Pennsylvania, Association of Rehabilitation Facilities, Pittsburgh, PA, September 23, 1993
- Hobson, D.A., "Status Report on Development of Center for Assistive Technology", SHRS, Board of Visitors, Rehabilitation Technology Program Development, Spring, 1994
- Karg, P. "Update on Wheelchair Transportation Standards", Breakout Session-5th National Conference and Exhibition on Transporting Students with Disabilities, Birmingham, AL, March 1996.
- Karg, P. Session Chair, "Wheelchair and Seating Biomechanics", RESNA 19th Annual Conference, Salt Lake City, UT, June 1996.
- Karg, P., Bertocci, G., "Wheelchair Transportation Safety Standards Update and Factors Influencing Wheelchair Transportation Safety", Pittsburgh Assistive Technology Association (PATA) Meeting, February 1996.
- Schmeler, M.R. et al. Introduction to wheelchair seating and mobility. Preconference workshop, ISS, Pittsburgh, PA January 1997.
- Schmeler, M.R. Wheelchair seating and mobility in long-term care facilities. Vencor, Inc. therapists and rehabilitation managers, Clarkston, WA, May 1997.
- Schmeler, M.R. Wheelchair seating and mobility. Beverly Health Systems rehabilitation managers. Spokane, WA. October 1996.
- Schmeler, M.R. "Powered Mobility: Alternative and integrated controls." NYSOYA Annual Conference, Fishkill, NY, October 1995.
- Schmeler, M.R. "Reasonable accommodations: Providing assistive technology assessments and interventions in the workplace." Westchester Consortium of Vocational Counselors, White Plains, NY, September 1995.
- Schmeler, M.R. "Strategies for powered mobility evaluation and readiness training." AOTA 76th Annual Conference, Chicago, IL, April 1996.
- Schmeler, M.R. et al. Rehabilitation Technology Supplier Modular Training Course. University of Pittsburgh, Pittsburgh, PA. March 1997.
- Schmeler, M.R., "Positions for Function: Seating and workstations in the classroom." RESNA 19th Annual Conference, Salt Lake City, UT, June 1996.
- Schmeler, M.R., Angelo, J.A., Doster, S., Larson, B., Ellexson, M. and Armstrong, F. Assistive Technology as a reasonable accommodation. AOTA 77th Annual Conference, Orlando, FL, April 1997.
- Schmeler, M.R., Brienza, D. and Shapcott, N. Wheelchair seating: Seat cushion selection. RESNA Mid-Atlantic Regional Conference, Philadelphia, PA November 1996.
- Schmeler, M.R., Shapcott, N. Dugan, J. Petersen, B., Pelleschi, T. Sanna J. and Lego, F. Strategies for providing model assistive technology services within vocational rehabilitation. RESNA Annual Conference, Pittsburgh, PA June 1997
- Schmeler, M.R., Shapcott, N. Pelleschi, T. and Dugan, J. Assistive Technology Service Delivery. Mt. Aloysius College OT/PT faculty. Cresson, PA. August 1996
- Trefler, E. "Single Subject Research: A Research Method for Seating and Mobility Clinicians. "Comparison of Anterior Trunk Supports for Children with Cerebral Palsy." The Canadian Seating and Mobility Conference, Toronto, Canada, Sept 1995.
- Trefler, E. and Angelo, J. "Surveying Users of Integrated Controls - A Pilot Study." Proceedings, ARATA pp. 17-19. Adelaide, Australia, Oct 1995.
- Trefler, E. "Single Subject Research: A Research Method for Seating and Mobility Clinicians. "Comparison of Anterior Trunk Supports for Children with Cerebral Palsy." ARATA Conference, Adelaide, Australia. Oct 1995.
- Trefler, E., "The Use of Integrated Controls: Comparison of Anterior Trunk Supports for Children with Cerebral Palsy". ISS 12th Annual Conference, Vancouver, BC, Feb 1996.

Technical Reports

Bayles G. New Power Source Technologies for Electric Wheelchairs. *Technical Report #2*, University of Pittsburgh RERC on Wheelchair Mobility, Pittsburgh, PA, Sept 1994.

Bertocci G, Hobson DA, Digges K. The Affects of Shoulder Belt Anchor Position on Wheelchair Transportation Safety. *Technical Report #4*, University of Pittsburgh RERC on Wheeled Mobility, Pittsburgh, PA, Jan 1995.

Bertocci GE, Karg P, Hobson D. Wheelchair Classification System and Database Report. *Technical Report #6*, University of Pittsburgh RERC on Wheeled Mobility, Pittsburgh, PA, Apr 1996.

Digges K and Hobson DA. Fitting Motor Vehicle Shoulder Belts to Wheelchair Occupants. *Technical Report #1*, University of Pittsburgh RERC on Wheeled Mobility, Pittsburgh, PA, Jul 1994.

Digges K, Bertocci G. Application of the ATB Program to Wheelchair Transportation". *Technical Report #3*, University of Pittsburgh RERC on Wheeled Mobility, Pittsburgh, PA, Nov 1994.

Malagodi M and Hobson DA. Spinal/Pelvis Alignment Monitoring of Wheelchair Users. *Technical Report #5*, University of Pittsburgh RERC on Wheeled Mobility, Pgh, PA, Mar 1996.

Standards Documents

Digges K. Modeling Wheelchair Tiedowns with Wheel Stiffness Variations. *ISO TC173/SC-1/WG-6*. April, 1994.

Hobson DA. WD 7176/19, Wheelchairs-Wheeled Mobility Devices for Use in Motor Vehicles. *ISO/TC173/SC1/WG-6 Working Draft*, March 1994.

Hobson DA. Wheelchair Tiedowns and Occupant Restraint Systems for Use in Motor Vehicles. *SAE Working Document*, March 1994.

Grants

Bertocci, G, Crash Performance Evaluation Injury Risk Assessment and Recommendations for Wheelchair Seating Systems Used in Motor Vehicles, Center for Disease Control and Prevention, \$615, 550, 9/1/98-8/31/03

Bertocci, G, Development of a Gait Powered Battery Charged System, SBIR, 9/96-1/97, \$100,000

Bertocci, G, Influence of Wheelchair Seating System Characteristics/Positioning on Wheelchair Occupant Injury Risk, \$216,836, PVA, 1/1/99-12/31/01

Brienza, D., Scientific Visits To National and International Seating Labs, Barco Faculty Development Funds, School of Health and Rehabilitation Sciences, 1995-96, \$5,000.

Brienza, D, An Ultrasound Device for Distortion Measurement and Biomechanical Analysis of in vivo Load Bearing Soft Tissue, Paralyzed Veterans of America, Spinal Cord Research Foundation, October 1995 to June 1998, \$150,000.

Brienza, D, Seat Design for Optimal Load Transfer to Soft Tissues, National Institutes of Health, NCHHD, NCMRR, R01 HD30161, Oct. 1992 to August 1995. \$330,000

Brienza, D, An Innovative Wheelchair Cushion Contour Generator, Ben Franklin Technology Center of Western Pennsylvania, SW.S11514R-1, Sept. 1994 to August 1995. \$34,797

Brienza, D, A Pilot Study for the Clinical Evaluation of Pressure Relieving Seat Cushions for Elderly Stroke Patients, Dept of Ed, \$249,249, July 1997-June 1999

Brubaker, C and Brienza, D, Research Training in Rehabilitation Science with Special Emphasis on Disability Studies, Dept of Ed, \$706,525, Sept 1997-August 2002

Cooper, R, Robinson, C, Robertson, Boninger, Albright, VanSickle, Design and Selection Guidelines for Wheelchair Ride Comfort, \$465,000, 1994-1997, U.S. Department of Veterans Affairs

Cooper, R, 7 Speed Coaster – Brake Hub System for Manual Wheelchairs, April 14, 1997-October 31, 1998, \$31,975, ARTSCO, NIH

Cooper, R, Center for Injury Research Control, \$265,000, January 1998-August 2003

Cooper, R, Boninger, M and Robertson, R, 1996-1999. Manual Wheelchair User Upper Extremity Pain, B869-RA, U.S. Department of Veterans Affairs, \$503,300, Wheelchair Propulsion Biomechanics and Arm Pain, National Institutes of Health - NCMRR Clinical Investigator Award, \$356,750, (Principal Investigator: Boninger, Faculty Mentors: Cooper, Fu, Co-Investigators: Robertson, Towers, 1995-2000.

Cooper, R Angelo, J and Trefler, E, Rehabilitation Engineering and Assistive Technology Training, H129E50008, U.S. Department of Education, \$310,000, 1995-1998.

Hobson, DA and Brubaker, C, Rehabilitation Engineering and Research Center on Technology to Improve Wheeled Mobility, National Institute on Disability and Rehabilitation Research, HE133005, \$3,500,000, August 1993 to July 1998.

Hobson, DA, Development of a Docking System for Wheelchair Securement, SBIR, 11/29/95, NIH, \$57,384, Oct 97-Sept 98

Hobson, DA, Evaluation of a Wheelchair-Integrated Restraint System, SBIR, 10/1/97-3/31/97

Hobson, DA, Spinal Pelvic Alignment Monitoring of Wheelchair Users, ARTSCO, NIH, \$99,780, October 1997-March 1998

Shapcott, N and Robinson, C, Computer Aided Wheelchair Prescription System, Rehabilitation Research and Development Service, 1994-1996, \$262,000, Department of Veterans Affairs

Trefler, E, Staff Development for Rehab Technology Supplier Education, Barco Faculty Development Funds, School of Health and Rehabilitation Sciences, 1995-96, \$20,000.

Trefler, E, Rehabilitation Supplier Education, Frost Foundation, 1995-96, \$20,000.

Honors and Awards

Bertocci, Gina - RESNA/Whitaker Scientific Paper Competition Award, June 1997

Brienza, David - RESNA Sore Butts Cushion Design Competition, First Place, June 1996

Brienza, David - The PinDot Award for outstanding paper published in *Assistive Technology*, 1995

Cooper, Rory – PVA John Farkas Leadership Award, '97

Cooper, Rory – Certificate of Recognition, Federal Employee Disability Program Committee, Federal Executive Board, Pittsburgh, PA, '97

Cooper, Rory – American Institute of Medical and Biological Engineering (AIMBE) Fellow '98

Hobson, Douglas - Everest & Jennings Distinguished Lecturer Award, RESNA, '96

Trefler, Elaine - Mundy Award, Canadian Adaptive Seating and Mobility Association, '95

Trefler, Elaine – Fellow, RESNA, '96

Patents

C. E. Brubaker, D.M. Brienza and M.J. Brienza, "Reusable Die Shape for the Manufacture of Molded Cushions," Patent No. 5,470,590, Nov. 28, 1995.

D.A. Hobson, Low "g" Wheelchair Securement Device, patent pending, 1997.

Disclosures

D.A. Hobson, High "g" wheelchair securement device, 1998.