

## Curriculum Vitae

August 18, 2009

### **Edmund Frank LoPresti**

Birth Date: July 20, 1974

Birthplace: Pittsburgh, PA USA

Citizenship: United States of America

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4724 Coleridge St.  
Pittsburgh, PA 15201

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### **Education**

#### Graduate

1996-2001	University of Pittsburgh Pittsburgh, PA	Ph.D. 2001	Bioengineering
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#### Undergraduate

1992-1996	Carnegie Mellon University Pittsburgh, PA	BS, 1996	Electrical and Computer Engineering Minor: Biomedical Engineering
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#### High School

1988-1992	Central Catholic High School Pittsburgh, PA
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### **Appointments and Positions**

#### Industry

9/01-present	<b>AT Sciences.</b> Pittsburgh, PA <i>Research Scientist (9/01-9/02)</i> <i>President (10/02-present)</i> Assistive technology research & development.
10/01-12/05, 9/07-present	<b>Koester Performance Research.</b> Ann Arbor, MI. <i>Computer Systems Specialist</i> Development of software for clinical evaluation of computer access capabilities.
5/95-8/95, 5/96-9/96	<b>AugmenTech, Inc.</b> Pittsburgh, PA <i>Research and Development</i> Custom circuit design and assembly language programming. Developed position monitor to assess risk of pressure sores during prolonged bed rest. Development of an electronic aid to assist people with cognitive disabilities.

Academic

- 7/05 – present **University of Pittsburgh** Pittsburgh, PA  
*Adjunct Assistant Professor*
- 9/96 – 8/01 **University of Pittsburgh** Pittsburgh, PA  
*Whitaker Graduate Fellow*  
Developed a mouse driver with high adjustability to accommodate the needs of people with disabilities; now marketed by Infogrip, Inc. (Ventura, CA) as PointSmart.  
Evaluation and development of head-operated computer interfaces, power wheelchair control systems, electronic prospective memory aids
- 9/94 - 5/96 **Carnegie Mellon University** Pittsburgh, PA  
*Undergraduate Research*  
Statistical modeling of human electromyogram.  
Development of a vocational aid for people with cognitive disabilities.
- 6/93 - 8/93 **Carnegie Mellon University** Pittsburgh, PA  
*Administrative Assistant*  
General office work, desktop publishing.

Clinical

- 3/06-present **University of Pittsburgh** Pittsburgh, PA  
*Learning Technologies Program*  
Clinical and research consulting for the Learning Technologies Program at the Hiram G. Andrews Center, Johnstown, PA
- 9/98-6/01 **Children's Institute** Pittsburgh, PA  
*Clinical Intern, Rehabilitation Engineering, 9/98-11/98*  
*Volunteer 1/99-6/01*  
Performed computer access evaluations and power mobility training  
Prepared computer software and hardware for use by students and clinicians  
Prepared computer hardware and software for use in assistive technology evaluations  
Taught storytelling and oral presentation skills
- 6/98-8/98 **UPMC Center for Assistive Technology** Pittsburgh, PA  
*Volunteer*  
Assisted in assistive technology service provision, including wheelchair evaluations and home modification evaluations
- 5/94 - 7/94 **Magee Women's Hospital** Pittsburgh, PA  
*Research Assistant*  
Conducted research on heart rate, respiration rate, and body temperature in infants.

**Memberships in Professional and Scientific Societies**

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|--------------|--|--|
| 1999-present | Association for Computing Machinery  | Member   |
| 1996-present | Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) | Member<br>Co-Chair, Cognitive Disabilities Special Interest Group, 1999-2004<br>Vice-Chair, Technology Transfer Special Interest Group, 2009-present |
| 1993-present | Institute of Electrical and Electronic Engineers                                     | Member 1993-2006,<br>Senior Member 2006-present  |

## Other Activities

- 2007-present Knights of Columbus (Council Family Chair, 2007-present; Council Secretary 2009-present)
- 2005-present St. Raphael Elementary School Advisory Board
- 1999-present StorySwap (Board of Directors, 2001-2007)
- 1997-1998 CONTACT Pittsburgh Crisis Hotline
- 1994-1996 Carnegie Mellon Newman Club (Vice-President 1994-96)
- 1992-present Society for Creative Anachronism (Regional Coordinator 1998-2000)

## Honors

- 2001 Doctoral Consortium, CHI 2001 Conference on Human Factors in Computing Systems
- 2000 Best Student Paper, Assets 2000: International ACM Conference on Assistive Technologies
- 2000 NASA Pennsylvania Space Grant Consortium Fellowship
- 1998 Wellington C. Carl Fund Fellowship
- 1996-2001 Whitaker Graduate Fellowship
- 1996 Carnegie Mellon University Everard M. Williams Award
- 1992-1996 Scholarships: Sons of Italy, Polish Women's Alliance, Miller Charitable Trust, Robert McCurdy, Knights of Columbus, AMVETS, St. Margaret Memorial Hospital, Robert C. Byrd, MCI, Service Merchandise
- 1992 Valedictorian, Central Catholic High School
- Membership in Phi Kappa Phi, Tau Beta Pi, Mortar Board, Eta Kappa Nu, Lambda Sigma

## Publications

### Patents

- LoPresti, E.F.**, Simpson, R.C., Cooper, R.A., Hayashi, S.T., Guo, S., Frisch, R., Martin, A. Power Apparatus for Wheelchairs Patent No. 7,204,328. Awarded April 17, 2007.
- LoPresti, E.F.**, Simpson, R.C., Kirsch, N.L., Schreckenghost, D. Distributed Cognitive Aid with Scheduling and Interactive Task Guidance. Serial No. 60/663,664. Pending; filed March 21, 2005.
- Simpson RC, Sharma V, **LoPresti E**, Mostowy LC, Puhlman J, Olson J. Wheelchair Convoy Devices, Systems, and Methods. Serial No. 60/958,554, Provisional; filed July 6, 2007.
- LoPresti EF**, Simpson RC, Sharma V, Mostowy LC. Sensor and Control System for Powered Vehicles. Provisional; filed June 6, 2009.

### Book Chapters

- Mihailidis A, **LoPresti EF**. (2006), "Cognitive Assistive Technology" In M. Akay (Ed.), Wiley Encyclopaedia of Biomedical Engineering. Hoboken, NJ: John Wiley & Sons, Ltd, ISBN: 0-471-24967-X.
- Simpson R, Schreckenghost D, **LoPresti EF**, Kirsch N. (2006). "Plans and Planning in Smart Homes" in Designing Smart Homes, Augusto JC, Nugent CD, eds., Springer: Berlin, pp. 71-84.
- LoPresti, E.F.** (2007). Assistive Technologies. in *Pervasive Computing in Healthcare*, J.E. Bardram, A, Mihailidis, D. Wan, ed., Boca Raton, FL: CRC Press, pp. 161-188.
- D Ding, RC Simpson, Y Matsuoka, **EF LoPresti**. (2007). "Rehabilitation Robotics." An Introduction to Rehabilitation Engineering. R. Cooper, H. Ohnabe and D. Hobson (Eds). Taylor & Francis: New York, NY.

Journals

- LoPresti, E.F.**, Brienza, D.M., Angelo, J. (2002). Evaluation of Computer Head Control Software to Compensate for Neck Movement Limitations. *Interacting with Computers*. 14(4):359-379.
- LoPresti, E.F.**, Brienza, D.M., Angelo, J., Gilbertson, L. (2003). Neck Range of Motion and Use of Computer Head Controls. *Journal of Rehabilitation Research and Development*. 40(3):199-212.
- Cooper, R.A., Boninger, M.L., Brienza, D.M., van Roosmalen, L., Koontz, A.M., **LoPresti, E.**, Spaeth, D.M., Bertocci, G.E., Guo, S., Buning, M.E., Schmeler, M., Geyer, M.J., Fitzgerald, S.G., and Ding, D. (2003). Pittsburgh Wheelchair and Seating Biomechanics Research Program. *Journal of the Society of Biomechanisms Japan*. 27(3):144-157.
- LoPresti, E.F.**, Mihailidis, A., Kirsch N. (2004). Technology for Cognitive Rehabilitation and Compensation: State of the Art. *Neuropsychological Rehabilitation*. 14(1/2):5-39.
- LoPresti, E.F.**, Brienza, D.M. (2004). Adaptive Software for Head-Operated Computer Controls. *IEEE Transactions on Rehabilitation Engineering*. 12(1):102-111.
- Simpson, R., **LoPresti, E.**, Hayashi, S., Nourbakhsh, I., Miller, D. (2004). The Smart Wheelchair Component System. *Journal of Rehabilitation Research and Development*. 41(3B):429-442.
- Kirsch, N.L., Shenton, M., Spirl, E., Simpson, R., **LoPresti, E.**, Schreckenghost, D. (2004). An assistive-technology intervention for verbose speech after traumatic brain injury: a single case study. *Journal of Head Trauma Rehabilitation*. 19(5):366-377.
- Kirsch, N.L., Shenton, M., Spirl, E., Rowan, J., Simpson, R., Schreckenghost, D., **LoPresti, E.** (2004). Web-based assistive technology interventions for cognitive impairments after traumatic brain injury: A selective review and two case studies. *Rehabilitation Psychology*. 49:200-212.
- Wobbrock, J.O., Aung, H.H., Myers, B.A., **LoPresti, E.F.** (2005). Integrated Text Entry from Power Wheelchairs. *Behaviour and Information Technology*. 24(3): 187-203.
- Simpson RC, **LoPresti EF**, Hayashi S, Guo S, Ding D, Ammer W, Sharma V, Cooper R. (2005). A prototype power assist wheelchair that provides for obstacle detection and avoidance for those with visual impairments. *Journal of NeuroEngineering and Rehabilitation*. 2:30.
- Simpson RC, Koester HH, **LoPresti E.** (2007). Evaluation of an Adaptive Row/Column Scanning System. *Technology and Disability*. 18(3): 127-138.
- Simpson RC, Koester H, **LoPresti E.** (2007). Selecting an Appropriate Scan Rate: The ‘.65 Rule.’ *Assistive Technology*. 19(2):51-60.
- Koester HH, **LoPresti EF**, Simpson RC. (2007). Toward automatic adjustment of keyboard settings for people with physical impairments. *Disability & Rehabilitation: Assistive Technology*. 2(5):261-274.
- LoPresti EF**, Bodine C, Lewis C. (2008). Assistive Technology for Cognition. *IEEE EMBS Magazine*. 27(2):29-39.
- Sharma V, Simpson RC, **LoPresti EF**, Mostowy C, Olson J, Puhlman J, Hayashi S, Cooper RA, Konarski E, Kerley B. (2008). Participatory Design in the Development of the Wheelchair Convoy System. *Journal of Neuroengineering and Rehabilitation*. 5(1).
- Simpson, R., **LoPresti, E.**, Cooper, R. (2008). How Many People Would Benefit From a Smart Wheelchair? *Journal of Rehab. Research & Development*. 45(1).
- McCue M, Hodgins J, **LoPresti E**, Bargteil A. (2008). Telerehabilitation in Employment/Community Supports Using Video-Based Activity Recognition. *Telemedicine Journal and e-Health*, 14, 58.

**LoPresti EF**, Simpson RC, Kirsch N, Schreckenghost D, Hayashi S. (2008). Distributed Cognitive Aid with Scheduling and Interactive Task Guidance. *Journal of Rehab. Research and Development*. 45(4):505-521.

**LoPresti EF**, Koester HH, Simpson RC. Toward Automatic Adjustment of Pointing Device Configuration to Accommodate Physical Impairment. *Disability and Rehabilitation: Assistive Technology*. (in press).

#### Conference Proceedings and Invited Papers

Fairman AD, McCue M, **LoPresti E**, Hodgins J, Bargteil A. (2009). Motion Recognition System for Remote Vocational Support. *Proceedings of the RESNA 2009 Annual Conference*.

Bermudez MJ, **LoPresti EF**, Mostowy C, Sharma V. (2009). Design, Development, and Evaluation, of a Drop-Off Detection System for Robotic Wheelchairs. *Proceedings of the RESNA 2009 Annual Conference*.

Sharma V, Simpson R, Schmeler M, **LoPresti E**, Mostowy C. "Design and Evaluation of an Obstacle Avoidance System for Power Wheelchairs". 25th International Seating Symposium, March 12-14 2009, Orlando, Florida, USA.

Cabassa-Miranda E, **LoPresti EF**, Mostowy C, Sharma V. (2008). Development and Testing of a New Drop-Off Detection System for Powered Wheelchairs. *Proceedings of the RESNA 2008 Annual Conference*.

Kulyukin, V. Kutiyawala, A., **LoPresti, E.**, Matthews, J., and Simpson, R. (2008). Iwalker: Toward a Rollator-Mounted Wayfinding System for the Elderly. To appear in the *Proceedings of the 2008 IEEE International Conference on RFID*, April 16-17, Las Vegas, NV, 2008.

McCue M, Hodgins J, **LoPresti EF**, Bargteil A. (2007). Remote Employment Supports Using Video-Based Activity Recognition. *RERC on Advancing Cognitive Technologies State of the Science Conference*. Denver, CO. October, 2007.

Matthews, JT, **LoPresti, EF**, Simpson, R, Kulyukin, VA, Wang, J, Nalitz, NR. (2007). Preferences for Interface Design for a Navigation Assistant on a Wheeled Walker. *International Conference on Technology and Aging*.

Kulyukin VA, **LoPresti E**, Kutiyawala A, Simpson R, Matthews JT. (2007). A Rollator-Mounted Wayfinding System for the Elderly: Proof-of-Concept Design and Preliminary Technical Evaluation. *Proceedings of the RESNA 2007 Annual Conference*.

Koester HH, Simpson RC, Spaeth D, **LoPresti EF**. (2007). Reliability and Validity of Compass Software for Access Assessment. *Proceedings of the RESNA 2007 Annual Conference*.

**LoPresti EF**, Koester HH, Simpson RC. (2006). Measuring Keyboard Performance for People with Disabilities. *Proceedings of the RESNA 2006 Annual Conference*.

Koester HH, **LoPresti EF**, Simpson RC. (2006). Factors Influencing User Performance with Pointing Devices. *Proceedings of the RESNA 2006 Annual Conference*.

Koester HH, **LoPresti EF**, Simpson RC. (2006). Measurement Validity for Compass Assessment Software. *Proceedings of the RESNA 2006 Annual Conference*.

Simpson RC, Koester HH, **LoPresti EF**. (2006). Selecting an Appropriate Scan Rate: The ".65 Rule". *Proceedings of the RESNA 2006 Annual Conference*.

Kutiyawala, A, Kulyukin, V, **LoPresti, E**. (2006). A Rollator-Mounted Wayfinding System for the Elderly: A Smart World Perspective. *Proc. ACM SIGACCESS*, 245-246.

- LoPresti, E.F.**, Simpson, R., Kirsch, N., Schreckenghost, D. Solo: Interactive Task Guidance. Proceedings of Assets 2005. pp. 190-191.
- Simpson, R., **LoPresti, E.**, Schreckenghost, D., Kirsch, N., Hayashi, S. (2005). Solo: A Cognitive Orthosis. AAAI.
- LoPresti, E.F.**, Simpson, R., Kirsch, N., Schreckenghost, D., Hayashi, S. (2005). Distributed Cognitive Aid with Scheduling and Interactive Task Guidance. Proceedings of the RESNA 2005 Annual Conference.
- Simpson, R., **LoPresti, E.**, Schreckenghost, D., Kirsch, N., Hayashi, S. (2005). Solo: A Cognitive Orthosis. *American Association for Artificial Intelligence Spring Symposium*. April 2005.
- LoPresti, E.F.**, Osborn, J. Panzarella, T., Panzarella, T., Spletzer J. (2005). Automatic Transport and Retrieval System for Power Wheelchairs. Proceedings of the RESNA 2005 Annual Conference.
- Ding D, Guo S, Hayashi S, **LoPresti EF**, Simpson R, Cooper RA. (2005). Software Design of the Smart Power Assistance Module for Manual Wheelchairs. Proceedings of the RESNA 2005 Annual Conference.
- Authier EL, Wyszomierski S, Zipfel E, Puhlman J, Guo S, Cooper R, **LoPresti EF**, Simpson R. (2005). Smart Power Assistance Module Mechanical Hardware Suitable for User Testing. Proceedings of the RESNA 2005 Annual Conference.
- Zipfel E, Cooper R, Authier E, **LoPresti EF**, Puhlman J, Simpson R, Wyszomierski S (2005). A Novel Sensor Housing Design for the Smart Power Assistance Module (SPAM). Proceedings of the RESNA 2005 Annual Conference.
- Simpson R, **LoPresti E**, D. Schreckenghost, N. Kirsch and S. Hayashi. "Solo: A Cognitive Orthosis" Proceedings of the AAAI Spring Symposium on Persistent Assistants: Living and Working with AI, Stanford, CA, March, 2005
- Wobbrock, J.O., Myers, B.A., Aung, H.H., **LoPresti, E.F.** Text Entry from Power Wheelchairs: EdgeWrite with Joysticks and Touchpads. Proceedings of Assets 2004: The Sixth International ACM Conference on Assistive Technologies. October 2004.
- LoPresti, E.F.**, Romich, B.A., Hill, K.J., Spaeth D.M. Evaluation of Mouse Emulation Using the Wheelchair Joystick. Proceedings of the RESNA 2004 Annual Conference. June 2004.
- Sharma, V.K.. Hayashi, S. Martin, A. **LoPresti, E.F.**, Simpson, R.C. Composite Sensor for Drop-off detection in Intelligent Mobility Aids. Proceedings of the RESNA 2004 Annual Conference. June 2004.
- Frisch, R.F., Guo S, Cooper R, **LoPresti EF**, Simpson R, Hayashi S, Ammer W. Hardware Design of the Smart Power Assistance Module for Manual Wheelchairs. Proceedings of the RESNA 2004 Annual Conference. June 2004.
- LoPresti, E.F.**, Simpson, R.C., Hayashi, S.T., Nourbakhsh, I., Miller, D. Development of a smart wheelchair component system. Proceedings of the RESNA 2003 Annual Conference. June 2003.
- Hayashi, S.T., **LoPresti, E.F.**, Simpson, R.C., Nourbakhsh, I., Miller, D. An Inexpensive, Alternative, Drop-off Detection Solution. Proceedings of the RESNA 2003 Annual Conference. June 2003.
- Ding, D., **LoPresti, E.F.**, Simpson, R.C., Cooper, R.A. Interpreting Joystick Signals for Wheelchair Navigation. Proceedings of the RESNA 2003 Annual Conference. June 2003.
- Simpson, R., **LoPresti, E.**, Hayashi, S., Guo, S., Ding, D., Cooper, R. Smart Power Assistance Module for Manual Wheelchairs. *Proceedings of the RESNA 2003 Annual Conference*. June 2003.

- Ashlock, G., Koester, H.H., **LoPresti, E.F.**, McMillan, W.W., Simpson, R.C. User-centered design of Software for Assessing Computer Usage Skills. *Proceedings of the RESNA 2003 Annual Conference*. June 2003.
- Koester, H.H., **LoPresti E.F.** Compass: Software for Computer Skills Assessment. *CSUN's 18<sup>th</sup> Annual Conference "Technology and Persons with Disabilities"*. March 2003.
- Romich, B.A., **LoPresti, E.F.**, Hill, K.J., Spaeth, D.M., Young, N.A., Springsteen, J.P. Mouse Emulation Using the Wheelchair Joystick: Preliminary Performance Comparison Using Four Modes of Control. *Proceedings of the RESNA 2002 Annual Conference*. pp. 106-108. June 2002.
- LoPresti, E.F.**, Brienza, D.M. Automatic Customization Software for Computer Head Controls. *Proceedings of the RESNA 2002 Annual Conference*. pp. 109-111. June 2002.
- LoPresti, E.F.**, Simpson, R.C., Miller, D., Nourbakhsh, I. Evaluation of Sensors for a Smart Wheelchair. *Proceedings of the RESNA 2002 Annual Conference*. pp. 166-168. June 2002.
- Hill, K., Romich, B.A., **LoPresti, E.F.**, Spaeth, D.S., Thiel, J., Creech, R., Hobson, D. A Survey to Support the Development of an Interface Device for Integrated Control of Power Wheelchairs, Computers, and Other Devices. *Proceedings of the RESNA 2001 Annual Conference*. pp. 68-70. June 2001.
- LoPresti, E.F.**, Romich, B.A., Spaeth D.M., Hill, K.J., Hobson, D. Toward Development of an Interface Device for Proportional Mouse Emulation through a Power Wheelchair Controller. *Proceedings of the RESNA 2001 Annual Conference*, pp. 71-73. June 2001.
- LoPresti, E.F.**, Brienza, D.M., Angelo, J. Comparison of Five Software Interfaces for Computer Head Controls. *Proceedings of the RESNA 2001 Annual Conference*. pp. 83-85. June 2001.
- LoPresti, E.** Effect of Neck Range of Motion Limitations on the Use of Head Controls. *Extended Abstracts of the CHI 2001 Conference on Human Factors in Computing Systems*. April 2001.
- LoPresti, E.**, Brienza, D.M., Angelo, J. Computer Head Control Software to Compensate for Neck Movement Limitations. *Proceedings of the First ACM Conference on Universal Usability*. pp. 147-148. November 2000.
- LoPresti, E.**, Brienza, D.M., Angelo, J., Gilbertson, L., Sakai, J. Neck Range of Motion and Use of Computer Head Controls. *Proceedings of Assets 2000: The Fourth International ACM Conference on Assistive Technologies*. pp. 121-128. November 2000.
- Protho, J.L., **LoPresti, E.F.**, Brienza, D.M. An Evaluation of an Obstacle Avoidance Force Feedback Joystick. *Proceedings of the RESNA 2000 Annual Conference*, June 2000.
- LoPresti, E.F.**, Angelo, J., Brienza, D.M., Sakai, J., Gilbertson, L. Computer Head Controls: Ergonomics and Effect of Neck Movement Limitations. *CSUN's 15<sup>th</sup> Annual Conference "Technology and Persons with Disabilities"*. March 2000.
- LoPresti, E.F.**, Brienza, D.M., Angelo, J. Neck Movement Patterns and Functional Performance for Computer Head Controls. *BMES-EMBS 1<sup>st</sup> Joint Conference*. p. 591. October 1999.
- LoPresti, E.** Effect of Neck Range of Motion Limitations on Use of Computer Head Controls. *The Whitaker Foundation Biomedical Engineering Research Conference*. p. 160. August 1999.
- LoPresti, E.F.**, Spaeth, D.M. Software for Functional Assessment of Computer Access. *Proceedings of the RESNA 1999 Annual Conference*. pp. 80-82. June 1999.
- LoPresti, E.F.**, Friedman, M.B., Hages, D. Electronic Vocational Aid for People with Cognitive Disabilities. *Proceedings of the RESNA 1997 Annual Conference*, pp. 514-516, June 1997.

- Willkomm, T., **LoPresti, E.** Evaluation of an Electronic Aid for Prospective Memory Tasks. *Proceedings of the RESNA 1997 Annual Conference*, pp 520-522, June 1997.
- LoPresti, E.**, Willkomm, T. Comparison of Commercially Available Electronic Prospective Memory Aids. *Proceedings of the RESNA 1997 Annual Conference*, pp 523-525, June 1997.
- LoPresti, E.F.**, Jesinger, R.A., Stonick, V.L. Identifying Significant Frequencies in Surface EMG Signals for Localization of Neuromuscular Activity. *Engineering in Medicine and Biology Society Conference*, September 1995.
- Scher, M.S., Landes, R., **LoPresti, E.**, Steppe, D.A., Gong, D., Sclabassi, R.J. Dynamics of Cardiac Heart Rate Compared with EEG Sleep Patterns in Healthy Preterm and Fullterm Neonates. *Pediatric Research Program Issue*, April 1995.

Invited or Refereed Presentations

- LoPresti, EF.** “Windows and Mac Accessibility.” Virtual Abilities, Second Life. May 6, 2009.
- Kirsch N, Scherer M, **LoPresti E.** “Context Appropriate Behavioral Cueing.” Coleman Conference. Boulder, CO. October 16, 2008.
- LoPresti, EF.** “Robotics in Rehabilitation Applications.” Pennsylvania Association of rehabilitation Facilities. State College, PA. September 24, 2008.
- Gentry T, Bodine C, Favela J, Gianola K, **LoPresti E**, Mihailidis, A. “The Future of Smart Home Technology for the Cognitively Impaired.” RESNA 2008 Annual Conference Workshop Session. Crystal City, VA. June 30, 2008.
- Hill K, **LoPresti E.** “AAC Assistive Technology Research Potholes: Avoiding Hazards in the Road.” RESNA 2008 Annual Conference Workshop Session. Crystal City, VA. June 30, 2008.
- LoPresti, EF.** “Cognitive Assistive Technology.” Carnegie Mellon University. December 13, 2007.
- LoPresti EF**, Kirsch N, Schreckenghost D, Simpson R. “Distributed Cognitive Aid with Scheduling and Interactive Task Guidance,” RERC on Advancing Cognitive Technologies State of the Science Conference. Westminster, CO. October 26, 2007.
- LoPresti EF**, McCue M, Endres D. “Therapeutic Use of Life Simulation Games for People with Cognitive Impairments,” RERC on Advancing Cognitive Technologies State of the Science Conference. Westminster, CO. October 26, 2007.
- Lewis C, Bodine C, **LoPresti EF.** “Including people with cognitive disabilities in user testing of technology,” RESNA 2006 Annual Conference Workshop Session. Atlanta, GA. June 26, 2006.
- Koester HH, **LoPresti EF**, Simpson RC, Ashlock G. “Evidence-Based Practice in Access Assessment,” RESNA 2006 Annual Conference Workshop Session. Atlanta, GA. June 24, 2006.
- LoPresti, E.F.** “Software for Assessment of Computer Access Skills” and “Cognitive Assistive Technology”. University of Pittsburgh. Pittsburgh, PA. March 1, 2005
- Palmer, S., **LoPresti, E.F.** Barriers to Technology Use for People with Cognitive and Intellectual Disabilities. RESNA 2004 Annual Conference Workshop Session. Orlando, FL. June 21, 2004.
- LoPresti, E.F.**, Gentry, L., Jinks, A., Willkomm, T. Cognitive Assistive Technology Expo. RESNA 2004 Annual Conference Workshop Session. Orlando, FL. June 21, 2004.
- LoPresti, E.F.** Prospective Memory Aids: Current Systems and Future Directions. Assets 2002: The Fifth International ACM Conference on Assistive Technologies. Edinburgh, Scotland. July 10, 2002.

**LoPresti, E.F.**, Koester, H.H., McMillan, W.W., Moore, P., Ashlock, G., Simpson, R.C. Compass: Software for Computer Skills Assessment. Assets 2002: The Fifth International ACM Conference on Assistive Technologies. Edinburgh, Scotland. July 9, 2002.

Koester, H.H., Ashlock, G., **LoPresti, E.F.** Tools and Methods for Assessment in Computer Access. RESNA 2002 Annual Conference Concurrent Session. Minneapolis, MN. June 28, 2002.

**LoPresti, E.F.** Software to Compensate for Movement Limitations in the Use of Computer Pointing Devices. Pittsburgh Ambassadors Program. Pittsburgh, PA. September 21, 2001.

**LoPresti, E.F.** Neck Movement Limitations and the Use of Head-Operated Computer Controls for People with Disabilities. Department of Biomedical Engineering, Virginia Commonwealth University. Richmond, VA. July 9, 2001.

**LoPresti, E.F.** Effect of Neck Movement Limitations on the Use of Head Controls. Department of Biomedical Engineering, Louisiana Tech University. Ruston, LA. April 19, 2001.

**LoPresti, E.F.** Cognitive Disabilities and Assistive Technology. Hiram G. Andrews Center, Johnstown, PA. February 21, 2001.

### Teaching and Curriculum Development

1/00-5/00, **Carnegie Mellon University**, Pittsburgh, PA

1/01-5/01 Spring 2000, Spring 2001:

Biomechanics (42-652)

Lecturer, seven week Musculoskeletal Biomechanics component

9/97-2004 **University of Pittsburgh** Pittsburgh, PA

Fall, 1997-2004:

Fundamentals of Rehabilitation Technology I (HRS 2704)

Guest Lecturer: "Electronic Information Resources", "Cognitive Disabilities and Assistive Technology", "Telerehabilitation"

Spring, 1999-2002:

Bioinstrumentation (BIOE 1010), Bioinstrumentation Lab (BIOE 1011)

Teaching Intern, 1999-2000

Guest Lecturer, 2002

### Committee Membership:

**Robert Mankowski**, Masters of Science in Rehabilitation Science and Technology, University of Pittsburgh, 2009.

**Vinod Sharma**, PhD in BioEngineering, University of Pittsburgh, 2009.

**Jennifer Smith**, Masters of Science in Rehabilitation Science and Technology, University of Pittsburgh, 2007.

**Roland Frisch**, Masters of Science in Mechanical Engineering, Budapest University of Technology and Economics, 2004.

## Grants and Contracts

### Ongoing Research Support

<p>1R43HD045015-02 \$750,000 Adaptive Software for Computer Input Devices Develop software which will adapt the settings for a computer's input devices in response to the user's performance. Location: Ann Arbor, MI Role: Investigator (10% FTE)</p>	<p>Koester (PI)</p>	<p>9/1/07 - 8/31/10  NIH/NCMRR</p>
<p>\$4,250,000 RERC-Advancing Cognitive Technologies Investigate assistive technology use by people with traumatic brain injury. Role: Consulting Investigator (20% FTE)</p>	<p>Bodine, Lightner (co-PI's)</p>	<p>11/01/04 – 10/31/09 Dept. Ed./NIDRR</p>
<p>\$4,250,000 RERC-Telerehabilitation Develop a sensor-based system to identify client behaviors and provide prompts as needed. Role: Consulting Investigator (15% FTE)</p>	<p>Brienza (PI)</p>	<p>12/01/04 – 11/30/09 Dept. Ed./NIDRR</p>
<u>Completed Research Support</u>		
<p>“New Discoveries” Grant \$10,000 Compensatory Software for People with Neck Range of Motion Limitations Determine the relationship between active neck range of motion limitations and the ability to use head-operated computer controls, and determine whether changes in the proportional gain of the head control system can improve the system's usability Role: Investigator (100% FTE, funded by Whitaker Fellowship)</p>	<p>Angelo (PI)</p>	<p>04/01/00 - 03/31/01  Microsoft Corporation</p>
<p>1R43HD040023-01A1 \$100,000 Smart Wheelchair Component System Develop a set of components (e.g., sensors, processor) that can be added to a standard power wheelchair to provide navigation assistance to the wheelchair user Role: Principal Investigator (50% FTE)</p>	<p>LoPresti (PI)</p>	<p>09/01/01 - 08/31/02  NIH/NICHD</p>
<p>2R42NS-36252-02A1 \$189,601 Software for Assessing Computer Usage Skills Develop a telerehabilitation hardware/software package for providing remote augmentative communication and computer access assessment services. Role: Investigator (50% FTE)</p>	<p>Koester (PI)</p>	<p>8/01/01 - 7/30/03  NIH/NICHD</p>
<p>RERC \$634,500 Seating and Wheeled Mobility Develop an adapter to interface between various proportional wheelchair controller standards in common use and external devices such as computers and voice-output communication aids Role: Consultant (5% FTE)</p>	<p>Hobson and Brubaker (Co-PIs)</p>	<p>01/01/99 - 12/31/03  Dept. Ed./NIDRR</p>

1R43EY014490-01 \$459,527 Smart Power Assistance Module for Manual Wheelchairs Develop a navigation assistance module utilizing sensors and obstacle-avoidance software in conjunction with power-assist hubs which are compatible with manual wheelchairs. Role: Principal Investigator (15% FTE)	LoPresti (PI)	9/01/02 - 8/31/04  NIH/NEI
Department of Community and Economic Development Automatic Transport and Retrieval System for Power Wheelchairs  Develop a system to automatically guide a power wheelchair to and from a power lift at the rear of a mini-van. Role: Investigator (10% FTE)	Spletzer (PI)	10/01/04 - 6/30/05  Commonwealth of Pennsylvania
1R43HD44277-01 \$199,771 Cognitive Orthosis with Interactive Task and Activity Planning Develop software which supports individuals with cognitive impairments by tracking schedules and providing reminders over a wireless connection to a handheld device Role: Principal Investigator (40% FTE)	LoPresti (PI)	9/1/03 - 3/31/05  NIH/NICHD
1R43HD045015-01 \$200,000 Adaptive Software for Computer Input Devices Develop software which will adapt the settings for a computer's input devices in response to the user's performance. Location: Ann Arbor, MI Role: Investigator (35% FTE)	Koester (PI)	4/1/04 - 3/31/06  NIH/NCMRR  Total Award Amount: \$200,000
H133A020502 \$1,813,484 Traumatic Brain Injury Model System Develop a web-based information resource for people with traumatic brain injury and their caregivers in western Pennsylvania; and test the efficacy of the resource. Role: Consulting Investigator (10% FTE)	Zafonte (PI)	10/01/02 – 9/30/07  Dept. Ed./NIDRR
1R43HD049161-01A1 \$100,000 Navigation Assistant for a Wheeled Walker Develop a system that provides navigation cues for people with memory impairments using a wheeled walker. Role: Principal Investigator (40% FTE)	LoPresti (PI)	9/20/05 - 3/31/07  NIH/NICHD
\$150,000 Virtual Tram  Develop a control module which enables a wheelchair to automatically follow an attendant, a preceding wheelchair, or a track. Role: Investigator (10% FTE)	Simpson (PI)	8/1/05 - 7/31/06 The Technology Collaborative
W31P4Q-08-C-0347	LoPresti (PI)	07/14/08 - 1/13/09

\$99,000

Integrating Instrumentation with Context Sensitive Task Guidance DARPA  
 Develop an architecture to incorporate arbitrary sensors into task guidance software for people with cognitive impairments.  
 Role: Principal Investigator (45% FTE)

5R44HD040023-03 LoPresti (PI) 06/01/06 - 05/31/09  
 \$750,000

Smart Wheelchair Component System NIH/NICHD  
 Develop a set of components (e.g., sensors, processor) that can be added to a standard power wheelchair to provide navigation assistance to the wheelchair user  
 Role: Principal Investigator (10% FTE)

### Service

#### Committee Membership

- 10/01-9/04 **Beach Center on Disability**, Lawrence, KS  
 Expert Panel  
 Disability Rehabilitation Research Center on Assistive Technology and Cognitive Disability
- 9/95-5/96 **Carnegie Mellon University**, Pittsburgh, PA  
 Student Advisory Board for Undergraduate Research

#### Conference Organization

- 7/06 **National Storytelling Network**, Pittsburgh, PA  
*Fundraising Chair*
- 5/99 **Stakeholder Forum on Wheeled Mobility**, Pittsburgh, PA  
*Power Monitoring and Management Technology Group Staff*
- 12/95 **National Catholic Student Coalition Annual Conference**, Pittsburgh, PA  
*Public Relations Coordinator*
- 9/95 **Carnegie Mellon University Technical Opportunities Conference**, Pittsburgh, PA  
*Chair*

#### Peer Review

- 1997-present **RESNA**  
*Reviewer for annual conference proposals*  
*Ad-hoc Reviewer for the journal Assistive Technology*
- 2002 **Neuropsychological Rehabilitation**  
*Ad-hoc reviewer for special issue on assistive technology.*
- 2002-present **IEEE Trans. on Rehabilitation Engineering and Trans. on Biomedical Engineering**  
*Ad-hoc Reviewer.*
- 2003, **ACM**  
 2005-2008 *Member of program committee for UbiHealth 2003: The 2nd International Workshop on Ubiquitous Computing for Pervasive Healthcare Applications*  
*Member of program committee for Assets 2005, 2006, 2007*  
*Reviewer for 2008 special issue of ACM Transactions on Accessible Computing (TACCESS)*
- 2004 **Physiological Measurement**

2008-2009 *Ad-hoc Reviewer*  
**Disability and Rehabilitation: Assistive Technology**  
*Ad-hoc Reviewer*

3/04 **NIH**  
*SBIR Grant Review*

3/05 **NSF**  
*Grant Review*

Website Management

6/99-7/04 **RESNA**  
Webmaster, Cognitive Disabilities and Assistive Technology Special Interest Group

10/02-8/06 **University of Pittsburgh**  
Webmaster, Traumatic Brain Injury Model System