

**BIOGRAPHICAL SKETCH**

Provide the following information for the Senior/key personnel and other significant contributors.  
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: SANFORD, Jon A.

eRA COMMONS USER NAME (credential, e.g., agency login): JON.SANFORD

POSITION TITLE: Research Director, Dept. of Occupational Therapy, Georgia State University

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
Duke University, Durham, NC	B.S.	09/1970	05/1974	Psychology
Georgia Institute of Technology, Atlanta, GA	B.S.	08/1977	05/1979	Architecture
Georgia Institute of Technology, Atlanta, GA	M. Arch.	08/1979	05/1983	Architecture

**A. Personal Statement**

I have a broad background in psychology, architecture, product design, and environmental design with specific training and experience in key research areas for this application, including environmental assessment to reduce falls risk and reduce environmental barriers to activity performance. I have a 30-year history of research at GA Tech, including serving as the Director for the Center for Assistive Technology and Environmental Access (CATEA) for 10 years and the Atlanta VA Rehab R&D Center, where I served as the Associate Director for 5 years. Beginning Jan. 1, 2022, I accepted the position of Research Director in the Department of Occupational Therapy (OT) at GA State University.

My work is primarily focused on universal and accessible design and technologies to support successful aging in place, including serving as a Co-Director of the current NIDILRR-funded Rehabilitation Engineering Research Center (RERC) Technologies to Support Successful Aging with Disability (TechSage). I have served as PI or co-PI on 30+ externally-funded, peer-reviewed, interdisciplinary research projects focused on assistive technologies and environmental modifications to promote community mobility and aging in place, including a 20-year history investigating the use of interactive assistive tele-technology interventions (beginning with landline videophones) to provide in-home assessment and rehabilitation services to reduce falls risk and enhance activity performance. In addition, I have conducted numerous projects for the U.S. Access Board, which have resulted in changes to the ADA Accessibility Guidelines and more recently, the International Code Council ANSI A117.1 accessibility standards. I was one of the founding members of the Center for Universal Design at NC State and I am a co-author of the Principles of Universal Design, which are widely recognized throughout the world as the definitive guidelines for designing for individuals of all abilities. Most recently I have published a text about universal design for rehabilitation specialists: *Design for the Ages, Universal Design as a Rehabilitation Strategy* published by Springer Publishing. My experience as Director of a \$3.5 million interdisciplinary applied research center at GA Tech and as co-Director of RERC TechSage speaks to my ability to participate in large-scale interdisciplinary projects and collaborate successfully with other project staff. In addition I have served as member of several interdisciplinary panels at the the National Academies of Sciences, Engineering and Medicine and have recently been invited to serve on its Forum on Aging, Disability and Independence.

Ongoing and recently completed projects that I would like to highlight include:

NIH SBIR                      R43 AG073008-01                      Tenenbaum (PI)                      2021

Sponsor: National Institute on Aging

Title: HomesRenewed Ventures interactive APP for grab bar installation

Goals: Develop and test a mobile home environment assessment tool to facilitate proper installation of bathroom grab bars to meet the needs of older adults.

Role: Consultant

NIDILRR Award 90REGE0006-01-00 Sanford (PI) 2018 – 2023  
Sponsor: Department of Health and Human Services Administration for Community  
Title: RERC on Technologies to Support Aging-in-Place for People with Long-Term Disabilities Aging  
Goals: To provide innovative technological solutions, new knowledge, and new concepts that will improve the health and functioning and community living and participation of individuals who are aging with disability.  
Role: Principal Investigator

NIDILRR Award 90IFRE0005 Lee (PI), Sanford 2018 – 2022  
Sponsor: Department of Health and Human Services Administration for Community Living  
Title: Environmental Barriers and Facilitators to Assisted Toilet Transfers by People Aging with Disability and their Informal Caregivers.  
Goal: To identify environmental factors that create barriers and facilitators to caregiver assisted transfers for individuals aging with disability to inform the development of dyadic-centered toilet transfer interventions.  
Role: Co-Principal Investigator

NIDILRR Award 90IF0123 Sanford (PI) 2016 – 2021  
Sponsor: Department of Health and Human Services Administration for Community  
Title: ALIGN 2.0: Identification and Quantification of Real-Time Barriers to Community Mobility to Enhance the Effectiveness of the Application for Locational Intelligence and Geospatial Navigation  
Goals: To produce a prototype of ALIGN 2.0 that will enhance the effectiveness and extend the utility of the existing database and routing algorithm through the inclusion and application of real-time barriers to community mobility.  
Role: Principal Investigator

NIDILRR Award 90RE5016-01-00 Sanford (PI) 2013 – 2018  
Sponsor: Department of Health and Human Services Administration for Community  
Title: RERC on Supportive Technologies for Successful Aging with Disability  
Goals: To provide innovative technological solutions, new knowledge, and new concepts that will improve the health and functioning and community living and participation of individuals who are aging with disability.  
Role: Principal Investigator

NIDILRR Award 90DP0049-01-00 Sanford (PI) 2012 – 2019  
Sponsor: Department of Health and Human Services Administration for Community Living  
Title: Disability Rehabilitation Research Project (DRRP) on Universal Design to Enhance Work Outcomes  
Goals: To develop a universal design assessment instrument and determine the effectiveness of universal in facilitating positive work outcomes among people with disabilities.  
Role: Principal Investigator

#### Citations:

1. Calkins, M., Sanford, J.A., and Proffitt, M., "Universal Design and Dementia Design," in Manual of Universal Design, pp. 22.1-22.24, New York: McGraw Hill (2001).
2. Sanford, J.A. Design for the Ages: Universal Design as a Rehabilitation Strategy. NY: Springer Publishing (2012).
3. Sanford, J.A. and Remillard, E. G. (2020). Design for one is design for all: The past, present and future of universal design as a strategy for aging-in-place with disability, in M. Putnam & C. Bigby, (Eds.), *Handbook of Aging with Disability*, Abington-on-Thames, UK: Routledge Press.
4. Sanford, J. (in press, March 2022). Product usability testing: What works? For whom? and Why? in A. Mihailidis & R. Smith, (Eds.), *Rehabilitation Engineering Principles and Practice*, CRC Press, Boca Raton, FL.

## **B. Positions, Scientific Appointments and Honors**

### **Positions**

2022 – present Research Professor and Research Director, Dept of Occupational Therapy, GSU

- 2022 – present Adjunct Professor, College of Design, GA Tech
- 2021 – present Research Associate, HomesRenewed Inc.
- 2016 – 2021 Professor, College of Design (formerly College of Architecture), GA Tech
- 2010 – 2015 Associate Professor, College of Architecture, GA Tech
- 2008 – 2019 Director, Center for Assistive Technology and Environmental Access, College of Architecture, Georgia Tech, Atlanta, GA
- 2002 – 2009 Senior Research Scientist, Adjunct Assoc. Prof of Architecture, Co-Director, RERC on Workplace Accommodations, Center for Assistive Technology and Environmental Access, College of Architecture, Georgia Tech, Atlanta, GA
- 2001 – 2004 Consultant, Center for Universal Design, NC State University, Raleigh, NC
- 1989 – 1999 Program Coordinator, Evaluation Program, RERC for Accessible and Universal Design in Housing, North Carolina State University, Raleigh, NC
- 1988 – 2006 Research Architect, Rehabilitation Research and Development Center, Atlanta Veterans Affairs Medical Center, Decatur, GA (Associate Director, 1995-1997; Assistant Director, 1997-2000)
- 1981 – 1988 Research Scientist, College of Architecture, Georgia Tech, Atlanta, GA

### **Scientific Appointments**

- 2021 – present Member, Forum on Aging, Disability and Independence, National Academies of Sciences, Engineering and Medicine.
- 2020 – 2021 Member, Accessible Toilet and Bathing Task Group, International Code Council/American National Standards Committee, ICC/ANSI A117.1.
- 2019 – present Member, AGE-WELL National Center of Excellence Canada, International Scientific Advisory Committee.
- 2018 – present Member, Expert panel on Promoting Aging in Place by Enhancing Access to Home Modifications, USC Leonard Davis School of Gerontology.
- 2017 – 2021 Member, Advisory Council, Dept. of Occupational Therapy, GA State University
- 2017 Member, Committee on Use of Selected Assistive Products and Technologies in Eliminating or Reducing the Effects of Impairments Health and Medicine Division, National Academies of Sciences, Engineering and Medicine
- 2015 – present Commissioner, Leading Age, Center for Aging Services Technologies Board of Commissioners
- 2012 Member, Peer Review Panel NIDRR Research Fellowship Program
- 2011 Member, DHHS Technical Expert Panel on Accelerating Adoption of Assistive Technology to Reduce Physical Strain Among Family Caregivers of Chronically Disabled Elderly Living at Home
- 2010 – 2011 Member, CDC Older Adult Safe Mobility Assessment Advisory Panel
- 2010 – 2018 Member, Birmingham/Atlanta Geriatric Research and Education Clinical Center (GRECC) Advisory Board
- 1996 – 1997 Member, Special Study Section 5, NIH SBIR Program
- 1994 – present Member, Rehabilitation Engineering and Assistive Technology Society of North America
- 1993 – 2010 Member, American Society on Aging (Network on Environments, Services and Technologies, Chair, 2007-2010; Board member, 2007-2010)
- 1989 – present Member, Gerontological Society of America (Physical Environments and Aging Interest Group, Chair, 2006-2007; Technology and Aging Interest Group);
- 1975 – 2009 Member, Environmental Design Research Association (Gerontology Network)

### **Honors**

- 2016 Atlanta Magazine Groundbreaker Award
- 2008 Research Award, College of Architecture, GA Tech
- 1998 Pin Dot Outstanding Paper Award Presented by Rehab Engineering Society of North America;
- 1986 U. S. Government Interagency Committee on Handicapped Research

### C. Contributions to Science

1. **Novel tools and procedures for remote home assessment.** In-home rehabilitation services have been found to be an important intervention strategy to manage chronic health care conditions, maintain or improve functioning, increase independence, ensure safety, and minimize the cost of personal care services. However, for a variety of practical reasons, including cost, lack of trained providers, and long travel distances for service providers, in-home rehabilitation is highly underutilized. To overcome these barriers, I engaged in a program of research to facilitate in-home rehabilitation by using remote techniques and technologies to provide therapists with access to patients' homes. My earliest efforts focused on developing and demonstrating feasibility of novel remote assessment tools and procedures, that enabled home modification experts obtain critical data about the homes in order to develop intervention plans. These tools are either in wide used in the field today or have become the basis for more advanced applications as technology has become more sophisticated (e.g., disposal cameras to video cameras, to videophones to tablets to augmented reality tools).
  - a) Sanford, J.A, Pynoos, J., Gregory, A. and Browne, A., "Development of a comprehensive assessment to enhance delivery of home modifications," *Journal of PT and OT in Geriatrics*, v. 20, n. 2, pp. 43-56, 2002.
  - b) Sanford, J.A., Jones, M.L., Daviou, P., Grogg, K., Butterfield, T., "Using telerehabilitation to identify home modification needs," *Assistive Technology*, vol. 6, no. 1, pp. 43-53, Summer 2004.
  - c) Sanford, J.A. and Butterfield, T., "Using remote assessment to provide modification services to underserved elders," *The Gerontologist*, vol. 45, no. 3, pp. 389-398, June 2005.
  - d) Romero, S, Lee, M.J., Simic, I., Levy, C., Sanford, J.A.. Development and validation of a remote home safety protocol. *Disability and Rehabilitation: Assistive Technology*, pp. 1-7, (2017).
  
2. **Teletechnologies for in providing in-home-rehabilitation:** Following the early assessment studies, I led a series of collaborative efforts that pioneered the use of remote teleconferencing technologies using videophones and wireless video cameras that enabled clinical therapists to not only conduct interactive and cost-effective home assessments with post-discharge patients in their own homes, but also to continue monitoring and training after implementation of home modifications.
  - a) Sanford, J.A. & Hoenig, H. "Efficacy of Video-Teleconferencing to Provide Rehabilitation Interventions, in *Proceedings of the RESNA 2005 Annual Conference*, Atlanta, GA: p. NP (electronic), 2005.
  - b) Sanford, J.A., Griffiths, P.M., Richardson, P., Hargraves, K., Butterfield, T., Hoenig, H., "The Effects of in-home rehabilitation on task self-efficacy in mobility impaired adults: A randomized clinical trial," *Journal of American Geriatrics Society*, vol. 54, pp. 1641-1648, November 2006.
  - c) Hoenig, H., Sanford, J.A., Griffiths, P.M., et. al, "Development of a tele-technology protocol for in-home rehabilitation," *Journal of Rehabilitation R&D*, vol. 43, no. 2, pp. 287-298, March/April 2006.
  - d) Sanford, J.A., Griffiths, P.M., Richardson, P., Hargraves, K., Butterfield, T., Hoenig, H., "A comparison of televideo and traditional in-home rehabilitation in mobility impaired older adults," *Journal of Physical and Occupational Therapy in Geriatrics*, vol. 25, no. 3, pp. 1-18, 2007.
  
3. **Development and adoption of Principles of Universal Design.** As one of the 10 authors of the Principles of Universal Design (Center for Universal Design, NC State University), universal design is central to my approach to rehabilitation interventions and my design thinking. Although the Principles have been adopted throughout the world and have been translated into numerous languages, universal design continues to be misunderstood and misapplied. As a result, much of my work has focused on building an evidence-base for the application of the Principles in various settings.
  - a) Sanford, J.A., "Assessing Universal Design in the Physical Environment," In T. Oakland and E. Mpofu (Eds.), *Rehabilitation and Health Assessment*, 255-278, New York, NY: Springer (2010).
  - b) Sanford, J.A. & Stark, S. "Universal Design as a Workplace Accommodation Strategy," in I. Söderback (Ed.), *International Handbook of Occupational Therapy Interventions Second Edition*, Springer Publishing, (2016).
  - c) Sanford, J.A. (2016). "Wayfinding Design for All Users," in R. H. Hunter, L. A. Anderson & Belza, B.L. (Eds.), *Community Wayfinding: Pathways to Understanding*, Springer International Publishing.

- d) Sanford, J.A. & Hernandez, S.C. (2017). "Universal Design, Design for Aging in Place, and Habilitative Design in Residential Environments" in *Health and Wellbeing for Interior Architecture*, D. Kopec (ed.), Routledge Publishing, London, UK.

**4. Updating accessibility guidelines for senior residential facilities.** For seniors, toilet transfers are only the most difficult ADL, but also the most crucial to aging in place. The loss of independence in toileting is the most frequent cause for institutionalization. Even for institutional facilities, which must adhere to the ADA Accessibility Guidelines, there is little evidence that guidelines originally developed to meet the needs and abilities of young wheelchair users, are appropriate for seniors who can often stand and bear weight. This has led to a 3 decade-long program of research dedicated to change the accessibility guidelines for senior facilities as well as to provide design guidance for appropriate toilet transfer supports that will facilitate aging in place. While these efforts have received ongoing the support of the American Institute of Architects Task Force on Design for Aging, a significant advance was made in 2019, when the International Code Council (ICC) adopted our recommendations for changes in the for the 2021 IBC (International Building Code), which is the model code that serves as the basis for jurisdictional building codes throughout the world.

- a) Sanford, J.A., Echt, K., and Malassigné, P., "An E for ADAAG: The case for accessibility guidelines for the elderly based on three studies of toilet transfer," *Journal of Physical and Occupational Therapy in Geriatrics*, vol. 16, no. 3/4, pp. 39-58, 1999.
- b) Sanford, J.A., "Time to get rid of those old gray grab bars and get yourself a shiny new pair," *Alzheimer's Care Quarterly*, vol. 3, no. 1, pp. 26-31, Winter 2002.
- c) Sanford, J.A. and Bosch, S.J. (2013). "Non-compliant toilet room design for assisting persons on to and off of the toilet," *Health Environments Research and Design*, 6(2):43-57.
- d) Lee, S.J., Sanford, J., Calkins, M., Melgen, S., Endicott, S., and Phillips, A. (2017). Beyond ADA accessibility requirements: Meeting seniors' needs for toilet transfers, *Health Environments Research and Design Journal*, 1-13.

**5. Identification and measurement of task-relevant design features to assess the impact of environment and technologies on aging in place.** My conceptual writing has focused on creating an awareness in related fields on how to identify and measure task-relevant environmental features and attributes in order to assess the impact of the physical environment/technology on activity and participation. Based on my research, these publications have led to a broader understanding of the contributions of environmental factors in a variety of fields, including Rehabilitation, Home Health, and Occupational Therapy.

- a) Sanford, J. & Bruce, C. Measuring the Impact of the Physical Environment. In T. Oakland and E. Mpofu (Eds.), *Rehabilitation and Health Assessment*, 207-228, New York, NY: Springer (2010).
- b) Sanford, J.A. "The Physical Environment and Home Healthcare." In National Research Council Committee on the Role of Human Factors in Home Healthcare, *Role of Human Factors in Home Healthcare*, Washington, DC: National Academies Press (2010).
- c) Yang, H. & Sanford, J.A. Home and community environmental features, activity performance, and community participation among older adults with functional limitations, *Journal of Aging Research*, (2012), Article ID 625758, 14 pages, 2012.
- d) Stark, S., Sanford, J.A., & Keglovits, M. (2015). "Environmental Performance Enablers and their Impact on Occupational Performance," in E. Xian and C. Baum (Eds.), *Occupational Therapy, Performance, Participation and Well Being*, 4<sup>th</sup> Edition, Slack Incorporated.

**Complete List of Published Work at:** <https://id.gatech.edu/people/jon-sanford>