

## **JONATHON ZIMMER SCHUCH, M.Eng., P.E.**

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### **EDUCATION:**

Master of Engineering, Biomedical Engineering, University of Virginia, Charlottesville, Virginia, 1984.  
Awarded scholarship for academic excellence covering tuition, fees and stipend.

Bachelor of Science, Biological Sciences, North Carolina State University, Raleigh, North Carolina,  
1981. Graduated with honors.

### **EMPLOYMENT:**

September, 2007 – present  
Director, Rehabilitative Services and UVA-WorkMed  
University of Virginia Health System, Charlottesville, Virginia

Responsible for the strategic planning, program development, and operational management of the Occupational Therapy, Physical Therapy, Speech Language Pathology, Rehabilitation Engineering, and UVA-WorkMed programs within the Health System. Develop and oversee budgets that exceed \$6 million dollars. Oversee programs that employ more than 80 employees. Oversee clinical research and grant funded activities performed by rehabilitation, occupational-medicine, and health/wellness clinicians.

November, 2004 – present  
Manager, UVA-WorkMed  
University of Virginia Health System, University of Virginia, Charlottesville, Virginia.

Responsible for the management and development of a comprehensive occupational health and medicine program at the University of Virginia. Develop and oversee an annual budget that approaches \$700,000 per year. Manage clinical and non-clinical personnel. Develop and implement service contracts with businesses located throughout Central Virginia. Coordinate services between collaborating clinical entities located within the University of Virginia Health System. Oversee program improvement and expansion activities.

December, 1989 - present  
Manager, Rehabilitation Engineering Services  
University of Virginia Health System, University of Virginia, Charlottesville, Virginia.

Responsible for the establishment, management and ongoing development of a free-standing rehabilitation engineering program within the University of Virginia Health System. Manage the clinical, educational, and research activities of the program. Write and manage grants; develop and fulfill service contracts; collaborate with other academic departments, governmental agencies, and industry on special projects. Teach graduate and undergraduate engineers, medical residents, allied health students, and healthcare professionals.

June, 1985 - December, 1989

**Rehabilitation Engineer, Department of Orthopaedics and Rehabilitation  
School of Medicine, University of Virginia, Charlottesville, Virginia.**

**Established a nationally recognized wheelchair seating program within the Division of Prosthetics and Orthotics. Developed and implemented strategies to maximize the program's clinical effectiveness and financial strength. Provided clinical education and supervision to graduate biomedical engineers enrolled in the University's federally-funded Rehabilitation Engineering Training Program. Participated in the clinical evaluation and refinement of new products developed by the University of Virginia's Rehabilitation Engineering Center on Wheeled Mobility.**

**June, 1983 – June, 1985**

**Director, Rehabilitation Engineering Services  
Woodrow Wilson Rehabilitation Center, Fishersville, Virginia.**

**One of only two service-oriented rehabilitation engineers employed at that time by the Commonwealth of Virginia. Coordinated, both administratively and clinically, in-house and field rehabilitation engineering consultation, design and fabrication services. As an applied biomedical engineer, implemented, utilizing human factors design, assistive devices and equipment that maximized individuals' employability, physical independence, and quality of life. Managed an allied medical department and professional service in a manner that complied with both rehabilitation and hospital association standards.**

#### **ACADEMIC APPOINTMENTS**

- 2002-present** Assistant Professor of Medical Education, Department of Physical Medicine and Rehabilitation, School of Medicine, University of Virginia
- 1992-2000** Assistant Professor of Medical Education, Department of Physical Medicine and Rehabilitation, School of Medicine, University of Virginia
- 1989-1992** Instructor, Department of Physical Medicine and Rehabilitation, School of Medicine, University of Virginia
- 1985-1989** Instructor, Department of Orthopaedics and Rehabilitation, School of Medicine, University of Virginia

#### **SELECT PROFESSIONAL ACHIEVEMENTS**

- 2007** Appointed Interim Director of Occupational Therapy, Physical Therapy, and Speech Language Pathology for the University of Virginia Health System. Manage over 80 employees and combined budgets that exceed \$6,000,000. Responsible for the management, strategic planning, and development of these three significant clinical programs.
- 2006** Co-authored the City of Charlottesville's "Assistance to Firefighters" grant. The \$160,721 grant, funded by the U.S. Department of Homeland Security, expands upon an existing collaboration between the City of Charlottesville and UVA-WorkMed to provide health and wellness services and programs to members of the City of Charlottesville Fire Department
- 2006** In collaboration with the Therapy Services Administrator and the UVA-WorkMed

**team, conceptualized and implemented numerous operational improvements in UVA-WorkMed, resulting in a 100% growth of clinical activities and a 200% growth in revenues.**

- 2006** Consultant with the University of Virginia's Healthcare Product Evaluation Center to provide ergonomic analyses and recommendations pertaining to the design of a new generation of bedside patient chairs. This work was requested by an internationally renowned manufacturer of ergonomic office chairs.
- 2002- 2004** Project manager for the development and implementation of a comprehensive occupational medicine program at the University of Virginia Health System. Coordinated and facilitated the clinical, administrative, financial, and technical development activities. Assisted in the development of the Pro Forma, resulting in the creation of UVA-WorkMed.
- 2001** Reviewer, RESNA 2001 Student Scientific Paper Competition.
- 2000** Registered Professional Engineer, having successfully passed, on first attempt, the Principles and Practices of Engineering exam.
- 2000** Reviewer, RESNA 2000 Student Scientific Paper Competition and Pre-Conference Educational Programs.
- 1999** Developed a comprehensive database for the Rehabilitation Engineering Program to document and track key operational components of the program.
- 1999** Reviewer, RESNA '99 Student Scientific Paper Competition.
- 1998-99** Developed a one-day educational course entitled "Practical Approaches to Seating and Positioning" for clinicians who provide services to individuals with disabilities. Delivered the training throughout the Mid-Atlantic States.
- 1997** Elected to the Professional Advisory Board of the Epilepsy Foundation of America. This represents the first time ever that an engineer has been elected to the Board.
- 1997** Successfully passed, on the first attempt, the "Fundamentals of Engineering" exam, the first of two comprehensive exams administered by the Commonwealth of Virginia for registration as a Professional Engineer.
- 1997** Co-authored a \$50,000 contract from the Virginia Department of Rehabilitative Services to provide management and technical support of the Department's statewide rehabilitation engineering and assistive technology programs.
- 1996** Co-author of the University of Pittsburgh's grant-funded curriculum for the Assistive Technology Training Program for Rehabilitation Technology Suppliers. Lead author of the Engineering Principles and Biomechanics components of the curriculum.
- 1996** Co-author of CARTE, The Center for Assistive and Rehabilitation Technology Training and Evaluation, a one-year project funded by the Virginia Department of Rehabilitative Services to increase the availability of assistive technology evaluation services in

Central Virginia. Served as Training Coordinator for the Center. Amount of award: \$125,000.

- 1996 Collaborated in the design of an automatic braking system for manual wheelchairs. This design has been submitted to the University of Virginia Patent Foundation for potential commercialization.
- 1996 Designed the front-latch subbasis bar hardware and small-diameter subbasis bar. Collaborated with Metalcraft Industries, a manufacturer of assistive technologies, in the technology transfer process which resulted in the commercialization of these products.
- 1995-1996 Co-author of the RESNA document "Guidelines for Advanced Curriculum Development for Seating and Mobility Assistive Technology Practitioners". This work was supported by a grant from NIDRR.
- 1995-1996 As an activity of the Virginia Rehabilitation Technology Training Project, developed and delivered twenty high-level seminars focusing on the state-of-the-art in clinical and research practices within the rehabilitation technology arena. Areas of focus included: specialized seating and positioning; mobility; augmentative and alternative communication; technology for personal vehicle transportation; robotics applications; assistive technology for older adults; computer applications and adaptations; human factors engineering; and, exemplary service models. Subject matter was delivered by nationally-recognized clinical and research leaders to an audiences made up of professionals from a variety of backgrounds.
- 1995-present Developed and implemented a rehabilitation engineering service contract with the Piedmont Regional Educational Program, a private non-profit corporation that provides assistive technology services to six school districts in Central Virginia. Contract has been continued each successive school year.
- 1994 Author of the University of Virginia's proposal for its fourth Rehabilitation Long-Term Training Program in Rehabilitation Engineering/Technology. Proposal was funded in the fall of 1995. Served as Co-Project Director. Amount of award: \$289,017.
- 1994 Assisted the Virginia Department of Rehabilitative Services in the development of a statewide counselor training program focusing on assistive and rehabilitation technology training. Training modules were developed for virtually every aspect of technology. Chosen as one of the trainers for delivering the module on Seating and Mobility.
- 1993-1994 Developed and managed a \$70,000 contract with the Virginia Department of Rehabilitative Services to provide management support to the Department's rehabilitation engineering program. Developed a CQI Plan and a Technical Supervision Plan for the Department.
- 1991-1994 Reviewer of Scientific Papers submitted to RESNA for presentation at the 1992-1995 Annual RESNA Conferences and publication in the Conference Proceedings.
- 1991 Developed a Five-Year Business Plan for the Department of Rehabilitation Engineering Services. This plan was used for the on-going development and expansion of the service at the University of Virginia.

- 1989-1996 Participated in the clinical training of twenty-eight residents in Physical Medicine and Rehabilitation.
- 1983-1996 Trained and supervised 35 graduate biomedical and rehabilitation engineers enrolled in the University of Virginia's federally-funded Rehabilitation Engineering Training Program
- 1990-1991 Managed the fiscal operations of the Rehabilitation Engineering Service. Finished the Service's first year under budget, with charges exceeding costs by \$20,000.
- 1989 Successfully established the University of Virginia's first Department of Rehabilitation Engineering Services. Developed the formal program proposal for the creation of the department and presented it to the executive management of the University's Health Sciences Center.
- 1989 Co-authored the University of Virginia's proposal for its third Rehabilitation Long-Term Training Program in Rehabilitation Engineering. Proposal was funded in the fall of 1990. Served as clinical coordinator and educator for the project. Amount of award exceeded \$300,000.
- 1988 Developed new strategies to improve the fit and function of the Contour U seating system manufactured by Pin Dot Products. Collaborated with the manufacturer to transfer these strategies to a commercial domain. These strategies continue to be used.
- 1987 Developed a proposal to establish a Rehabilitation Engineering Consortium in Richmond, Virginia. Proposed a model concept of the "sharing" of a rehabilitation engineering service program by the principle rehabilitation hospitals in Richmond. Each hospital would fund the percentage of the rehabilitation engineering program that it utilized. While proposal was not funded, the consortium concept has been successfully implemented by others.
- 1986-1988 As an invited speaker, presented rehabilitation engineering services at the University of Virginia to United States congressional aides.
- 1985-1991 Professional staff member of the RSA-funded Rehabilitation Engineering Training Program and of the NIDRR-funded Rehabilitation Engineering Center on Seating and Wheelchair Design.
- 1985 Established the Commonwealth's first comprehensive wheelchair seating program. This program quickly earned a national reputation for its ability to successfully solve complex seating problems.
- 1984 Provided the technical lead in a three day study of the feasibility of rehabilitation engineering technologies applied in a total care facility at the Richfield Retirement Communities in Salem, Virginia.
- 1984 Awarded \$15,000 contract from West Virginia's Department of Mental Health and Mental Retardation to introduce rehabilitation engineering technologies to the state and to assess all residents in the state's MHMR facilities who possess multiple disabilities.

- 1984 Authored a proposal to establish the nation's first mobile rehabilitation engineering laboratory. Received \$50,000 grant from the Virginia Office of the Secretary of Human Resources for this project. Successfully developed the mobile laboratory that same year.
- 1983-1985 Marketed DRS rehabilitation engineering statewide, speaking with consumers, employers, public health nurses, field counselors, and other professionals in the public and private sectors.
- 1983 Developed WWRC's first policies and procedures for rehabilitation engineering.

## **SELECT LECTURES**

- 2006 "Solving Difficult Seating Cases Associated with Neuromuscular Disease." 12<sup>th</sup> Annual Conference: Management Strategies For Motor Impairments In Children With Neuromuscular Conditions. Co-Presenter with Alan Donaldson, OTR/L, ATP
- 2004 "Complex Seating For the Involved Patient." Kluge Children's Rehabilitation Center Grand Rounds. Co-Presenter
- 1995-1998 "Introduction to Rehabilitation Engineering." A three-hour credit graduate biomedical engineering course taught at the University of Virginia.
- 1996 "Meeting the Seating Needs for Individuals with Spinal Cord Injury." Management of the Patient with Spinal Cord Injury, New Challenges - New Approaches to Recurring Problems in Spinal Cord Injury Care, The Ninth Annual Advanced Conference for Health Professionals, Williamsburg, Virginia.
- 1996 "Liability and Warranty - What are the Risks to the Users and Vendors." Tri-State Assistive Technology Conference, Alexandria, Virginia (co-presenter).
- 1996 "Developing a Model Community-Based Assistive Technology Evaluation Service Delivery System." Tri-State Assistive Technology Conference, Alexandria, Virginia (co-presenter).
- 1996 "Exemplary Service Models and Approaches." A two-day workshop focusing on model programs and approaches to delivering assistive technology services, Fishersville, Virginia (co-presenter).
- 1995 "Wheelchair Seating and Positioning: Improving your Services From Assessment through Follow Up." A two-day seminar focusing on state-of-the-art in clinical and research practices, delivered as an activity of the Virginia Rehabilitation Technology Training Project, Charlottesville, Virginia.
- 1992 "Fundamentals of Seating." A one-day workshop on seating principles and applications for physical and occupational therapists.
- 1991 "Funding and Reimbursement Issues for Assistive Technologies." 2nd Mid-Atlantic Regional Conference on Rehabilitation Engineering, Newark, Delaware.

- 1990 "Options in Custom Seating For Solving Difficult Seating Problems." 1st Mid-Atlantic Regional Conference on Rehabilitation Engineering, Charlottesville, Virginia.
- 1989 "Sit Right." A two-day workshop on seating principles and applications for Virginia's Department of Mental Health and Mental Retardation, Petersburg, Virginia.
- 1988 "Design for Success." A two-day workshop on effective design of assistive devices for Virginia's Department of Mental Health and Mental Retardation, Lynchburg, Virginia.
- 1988 "Custom Seating at the University of Virginia." American Academy of Orthotists and Prosthetists Continuing Education Conference on Spinal Orthotics and Seating, Kansas City, Missouri.
- 1987 "Custom Seating at the University of Virginia." American Academy of Orthotists and Prosthetists Continuing Education Conference on Upper Extremity Prosthetics and Orthotics, Alexandria, Virginia.
- 1987 "Options in Customized Seating For Severely-Involved Residents." A multiweek training symposium on the selection; fabrication; and fitting of customized seating for residents at Central Virginia Training Center, Lynchburg, Virginia.
- 1987 "Rehabilitation Engineering at the University of Virginia." Invited lecturer for the Department for the Visually Handicapped, Virginia Chapter Association For Education and Rehabilitation of the Blind and Visually Impaired, Charlottesville, Virginia.
- 1986 "Seating Fundamentals and Applications." A one-day workshop for the Richmond Pediatric Interest Group, Richmond, Virginia.
- 1986 "Customized Seating for Persons with Head Injuries, Principles and Applications." Virginia Commonwealth University, 10th Annual Postgraduate Course on Rehabilitation of the Brain-Injured Adult and Child, Williamsburg, Virginia.
- 1985 "Rehabilitation Engineering at WWRC." Virginia Rehabilitation Association, Annual Conference on Rehabilitation, Williamsburg, Virginia.
- 1984 "Rehabilitation Engineering at WWRC." Virginia Rehabilitation Association, Annual Conference on Rehabilitation, Virginia Beach, Virginia.
- 1984 "Rehabilitation Engineering at WWRC." National Rehabilitation Association, Annual Conference on Rehabilitation, Atlanta, Georgia.
- 1984 "Worksite Modification for Effective Job Placement." West Virginia Department of Vocational Rehabilitation, Conference on Employment of Persons With Disabilities, Charleston, West Virginia.
- 1983 "Rehabilitation Engineering Applications for Persons with Cerebral Palsy." United Cerebral Palsy Association, Maryland District, Conference on Rehabilitation Technologies, Bowie, Maryland.

## **PUBLICATIONS**

- 2007 Farrell WJ, et al. Comparison of Pressure-Relieving Characteristics of Mattress Overlays and Head Supports Used In Pediatric Intensive Care Settings. Proceedings of the WOW 2007 National Conference on Advanced Care.
- 2000 Schuch J, Donaldson A, and Baumgartner P. Carving a Niche. Rehab Management. 2000; 13(6):84-90.
- 1996 Schuch J, Breeden B. Managing the Legal Liabilities and Risks Inherent in the Delivery of Assistive and Rehabilitation Technology Services and Devices. Proceedings of the RESNA 1996 Annual Conference. 1996;16:26-28.
- 1996 Schuch J. "Quality Assessment and Improvement Within the University of Virginia's Rehabilitation Engineering Service Program." Technology and Disability. 1996; 5:25-33.
- 1995 Schuch J, Pelegano JP. Development of a Bed Overlay to Control Extensor Tone, Improve Respiration, and Reduce Mattress Interface Pressures. Proceedings of the RESNA 1995 Annual Conference. 1995; 5:5-7.
- 1995 Hughlett NS, Schuch J. Development of a Car Safety Restraining for Children who Escape Commercial Systems. Proceedings of the RESNA 1995 Annual Conference. 1995;15:11-13.
- 1994 Schuch J, Margolis SA.. Modifying the Subasis Bar to Enhance its Performance. Proceedings of the RESNA 1994 Annual Conference. 1994;14:284-286.
- 1994 Hughlett NS, et al. Modifying Commercially-Available Walkers to Meet Individual Needs. Proceedings of the RESNA 1994 Annual Conference. 1994;14:28-31.
- 1993 Sprigle S, Schuch J. Using Seat Contour Measurements During Seating Evaluations of Individuals with SCI. Assistive Technology. 1993;5(1):24-35.
- 1992 Smith J, et al. Prosthetic Management of Hemicorporectomy Patients: New Approaches. Archives of Physical Medicine and Rehabilitation. 1992;73(5):493-497.
- 1990 Schuch J, Sprigle S. Using Seat Contour Measurements as an Evaluation and Prescription Tool for Seating SCI Persons. Proceedings of the Sixth International Seating Symposium. 1990;6: 24-28.
- 1989 Cross L, et al. Multidisciplinary Approach to the Rehabilitation of a Hemicorporectomy Patient. Proceedings of the Fifteenth Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists.
- 1988 Schuch J. Flexible Joint Pipe: An Orthotic/Prosthetic Tool. Proceedings of the Third International Conference on Rehabilitation Technology. 1988;3:110-111.
- 1986 Hope RC, et al. Multidisciplinary Approach To Rehabilitation. Thirteenth Institute on Rehabilitation Issues.

- 1985                    Law D, Schuch, J. The Nation's First Mobile Rehabilitation Engineering Unit. Proceedings of the Eighth Annual Conference on Rehabilitation Technology. 1985;5:189-193.
- 1985                    English J, Knorr K, and Schuch J. Rehabilitation Engineering Technology Applied in a Total Care Facility: A Feasibility Study. Proceedings of the Eighth Annual Conference on Rehabilitation Technology. 1985;5:148-151.
- 1984                    Schuch J, and Law D. REACH: An Innovative Approach To Service Delivery for Rural Rehabilitation. Proceedings of the First International Conference of Rural Rehabilitation Technologies. 1984;1:136-142.