

NIDRR Scholar: Shingo Takemoto

R. J. Garrick, PhD



Mr. Shingo Takemoto

Shingo Takemoto comes to NUPOC as a **National Institute for Disability Rehabilitation Research Scholar** (NIDRR). From Gallaudet University (2007), he graduated with a BS in Mechanical Engineering (2010) from University of Maryland, Baltimore County Baltimore, MD. Experienced in Matlab, AutoCad and LabView software, he focuses on rehabilitation engineering with respect to prosthetics and orthotics. At NUPOC, Mr. Takemoto will work on design modifications to the NUPOC prosthetic ankle that

adapts to surface slope.

He helped design rehabilitation devices at Kansai Hospital for Rehabilitation (Japan), was a wheelchair mechanic at Chesapeake Rehabilitation Equipment (2009-2011), and applied his knowledge internationally at a hospital in Lima (Peru) where he built and adapted wheelchairs.

No stranger to disability, Mr. Takemoto is deaf. He has developed multi-cultural and multi-lingual proficiency that enable him to communicate well in written and spoken Japanese and English, as well as in Japanese, Korean, and American Sign Language (ASL). Educated in mainstream and deaf schools, he is an excellent lip-reader. He attributes some of his success to his mother's resolve that he achieve equally well in both hearing and deaf societies. Smiling ruefully, Mr. Takemoto reflected, *"Most of my childhood memories are not about playing and having fun. Instead, I spent double-duty learning in conventional schools and also in a school for deaf education. I spent most of my time studying!"*

Resourceful and sociable, deafness does not prevent his direct interaction with people. He is an avid traveler and has visited Korea, Mexico, and Viet Nam. As a volunteer, he helped develop Deaf Education programs in the Philippines. At Gallaudet University, he was Vice President of the English Language Institute Student Organization (ELISO). He loves to play basketball and also works out running, biking and swimming. He notes, *"I want to train hard because one of my future goals is to try out for the Japan Team of the Deaf Olympics."*

Mr. Takemoto says, *"Now I am evaluating master's programs to find the best match. I am interested in P&O, so I may apply to the NUPOC Master's in Prosthetics and Orthotics (MPO)."* He aims to use his engineering skills to improve the lives of those who live with physical disabilities. He notes, *"Energy is always expensive, so I want to design assistive devices that do not require electronic elements."* NUPOC is delighted to welcome NIDRR Scholar Shingo Takemoto!

NUPOC Extern: Tina Amirtha

R. J. Garrick, PhD

Tina Amirtha is conducting a 2-month externship at NUPOC. Ms. Amirtha graduated from Northwestern University (BS, 2006) and is an MSc candidate in Biomechanics, Mechanical Engineering, Delft University (Netherlands). Her learning objectives while at NUPOC are twofold: 1) to become familiar with methods used for gait stability analysis; and 2) to work with orthotics-assisted gait studies.



Ankle-Foot Orthosis

She will participate in the NUPOC research project that investigates stroke patients' stability during gait, specifically to determine the contribution of Ankle-Foot Orthoses (AFO) to gait stability.

Ms. Amirtha plans to conduct her master's research under the mentorship of **Jaap Harlaar**, PhD, Human Movement Laboratory, Department of Rehabilitation Medicine, Research Institute MOVE, VU Amsterdam Medical Center. While there, she will focus on gait stability in children with cerebral palsy.

As a Northwestern undergraduate, Ms. Amirtha was awarded a Gates Millennium Scholarship for leadership and merit, enabling her to spend her junior year at École Polytechnique (Palaiseau, France) where she focused on Applied Mathematics. After graduation, Ms. Amirtha spent four years working in industrial engineering where she managed projects that include development of automated testing of medical valves; quality improvement in the pneumatics performance of an apheresis device; and revisions to a financial planning tool.

Ms. Amirtha grew up in the Chicago area where her mother fostered her interest in mathematics; and her father, also an engineer, encouraged her to learn how things work and to address and answer difficult questions. She enjoys re-discovering her cultural roots through cooking fusion cuisine of Andhra Pradesh. A violinist since childhood, she is learning to play the guitar. Living in the Netherlands has engendered her advocacy of biking to lessen environmental pollution. International in her experience and perspectives, Ms. Amirtha enjoys a network of caring, cosmopolitan friends.

We are delighted that Ms. Amirtha has selected NUPOC for her externship. Welcome Tina Amirtha!