

MATTHEW A. WILLARD

A. Professional Preparation

Carnegie Mellon University	Pittsburgh, PA	Materials Science and Engineering, B. S.	1995
Carnegie Mellon University	Pittsburgh, PA	Materials Science and Engineering, M. S.	1997
Carnegie Mellon University	Pittsburgh, PA	Materials Science and Engineering, Ph. D.	2000
Naval Research Laboratory	Washington, DC	National Research Council Associateship,	2000-2003

Topic: Nanocrystalline Magnetic Alloys

B. Appointments

Case Western Reserve University, Cleveland, OH (2012 to Present)

2012 – Present	<i>Associate Professor, Materials Science and Engineering</i>
2013 – Present	<i>FEF Key Professor and Faculty Director, Case Metals Casting Lab</i>

U.S. Naval Research Laboratory, Washington, DC (2000 to 2012)

2010 – 2012	<i>Section Head, Magnetic Materials and Nanostructures</i>
2003 – 2010	<i>Research Scientist</i>
2000 – 2003	<i>NRC Postdoctoral Associate (lab director-sponsored)</i>

Carnegie Mellon University, Pittsburgh, PA (1996 to 2000)

1996 – 2000	<i>Research Assistantship</i>
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C. Short Biography

Prof. Matthew A. Willard is an Associate Professor in the Materials Science and Engineering Department (MSE) at Case Western Reserve University where he leads research in the areas of magnetic materials and non-equilibrium processing. His research interests include materials design and the study of processing, structure, and performance of magnetic materials designed for energy efficiency and size/weight reduction - with specific focus on Naval power applications. ONR, DARPA, Google, and ARPA-E have funded Prof. Willard's work on magnetic materials and their integration into devices (over \$5.7M career funding as PI/co-PI). He is an active researcher having over 75 peer-reviewed publications in top national & international journals.

His work has been recognized by numerous awards, including: Brimacombe Medalist, TMS, 2015; Reimagining Education – Semifinalist, Wharton School (U Penn), 2015; Glennan Fellowship, CWRU, 2014; Invited Speaker, 2012 U.S. Frontiers of Engineering (sponsored by NAE); Invited Participant, 13th Japanese-American Kavli Frontiers of Science (sponsored by NAS), 2012; Berman Research Publication Awards, NRL 2004 & 2009. He has been an active member of the materials and physics communities having served as: Publications Chair, Magnetism & Magnetic Materials (MMM) Conference, 2010; Publications Editor, MMM Conference, 2004-10 & 2014; Chairman, Magnetic Materials Committee, TMS 2008-12. Prof. Willard is the FEF Key Professor and Faculty Director of the Case Metals Processing Laboratory and a Senior Member of IEEE.

D. Facilities

Case Western Reserve University (CWRU) has a strong infrastructure for materials processing and characterization. The students and staff in Dr. Willard's group have the expertise and access to the processing facilities, magnetic property and structure measurement, necessary for this project including: arc melter, melt spinner, furnaces, differential thermal analyzers, X-ray diffractometers, electron microscopes, and magnetometers. A vibrating sample magnetometer is available for magnetic property measurements in the Prof. Willard's lab.