

DoD Multiple Sclerosis Research Program (MSRP)

Each year, the Department of Defense's office of the Congressionally Directed Medical Research Programs (CDMRP) assesses scientific opportunities to advance research in specific areas. The investigators supported by individual programs are making significant progress against targeted diseases, conditions, and injuries. This list is not intended to be a full representation of accomplishments, but rather a sampling of the broad portfolio of research and advances resulting from congressional appropriations.

Year	MSRP Research Contributions	Additional Information and Hyperlinks
2009	Dr. John Chen developed a myeloperoxidase-targeted magnetic resonance imaging (MRI) agent (myeloperoxidase-gadolinium) for the detection of early, preclinical, and subclinical disease activity (both with and without treatment) in an experimental autoimmune encephalomyelitis mouse model of multiple sclerosis.	<ul style="list-style-type: none"> • MSRP Research Highlight
2009	Dr. Nancy Scotte developed a metric modeling morphometry of the corpus callosum with diffusion tensor imaging to study changes in relapsing remitting multiple sclerosis.	
2009	Drs. Yanming Wang and Robert Miller developed a near-infrared fluorescence imaging technique capable of direct quantification of myelination in vivo.	<ul style="list-style-type: none"> • MSRP Research Highlight
2009	Dr. Stephen Elledge and his team developed a new technology that combines synthetic biology and DNA sequencing—Phage Immunoprecipitation Sequencing (PhIP-Seq). This new technology identifies novel MS-specific autoantigens in hopes of finding new therapeutic targets for treating MS.	<ul style="list-style-type: none"> • MSRP Research Highlight
2009	Dr. Larry Sherman and Dr. Paul Weigel found that digestion products of a particular enzyme, PH20 hyaluronidase, inhibit oligodendrocyte progenitor cell (OPC) maturation, which is a necessary process for neuron remyelination. Identifying PH20 as a promising molecular target has the potential to lead to therapeutics to promote remyelination in MS patients.	<ul style="list-style-type: none"> • MSRP Research Highlight
2010	Dr. Maria Irene Givogri studied the plasma sulfatide levels of MS patients to determine if they could serve as a diagnostic of MS-related demyelination. She observed that specific types of sulfatides correlated with the severity of a patient's relapse, and his/her age and time since last relapse.	<ul style="list-style-type: none"> • MSRP Research Highlight

Year	MSRP Research Contributions	Additional Information and Hyperlinks
2010	Dr. Brian Zabel identified that a small molecule, 2-(α -naphthoyl) ethyltrimethyl ammonium iodide (α -NETA), inhibits the interaction between chemerin and its receptor, chemokine-like receptor 1 (CMKLR1). This inhibition prevents immune cell migration to the brain and delays the onset of symptoms in a mouse model of MS.	<ul style="list-style-type: none"><li data-bbox="1108 180 1402 212">• MSRP Research Highlight
2011	Dr. Sheng-Kwei Song developed an advanced MRI technology called diffusion basis spectrum imaging (DBSI). DBSI models tissue water diffusion in and around nerve axons, providing a clear picture of nerve health without other cellular interference. This advanced technology enhances the use of imaging for diagnosing MS and tracking the efficacy of potential treatments.	<ul style="list-style-type: none"><li data-bbox="1108 347 1402 380">• MSRP Research Highlight