

# Roy J. Lycke

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## Education

<b>Doctorate of Philosophy</b>	2012 - May 2019
Purdue University	West Lafayette, IN
Biomedical Engineering	
<b>Masters of Science</b>	2011 - 2012
Iowa State University	Ames, IA
Computer Engineering	
<b>Bachelors of Science</b>	2006 - 2011
Iowa State University	Ames, IA
Computer Engineering	

## Research Interests

Brain-machine Interfaces, Neuroprostheses, Sensory Repair and Analysis, Neural Coding and Plasticity, Image Segmentation, MRI Analysis, Mechanical Modeling and Simulation

## Research Experience

<b>Graduate Research Assistant</b>	August 2014 - Present
Purdue University	West Lafayette, IN
School of Mechanical Engineering	Advisor: Dr. Eric Nauman

Performed intra-lab and interdisciplinary, cross-college research projects investigating: traumatic brain injury, cellular mechanics, tissue & organ structure, athletic injury prevention, electrode design, and brain biomechanics. Developed novel software for analyzing and segmenting MRI brain scans, MicroCT tissue samples, and histological slices. Analyzed micro and macro biological systems utilizing finite element software. Mentored undergraduate and graduate researchers, performed cadaver dissections, developed course materials, invented sensed sports equipment, and rapid prototyped braces for Purdue Men's Basketball team.

<b>Graduate Research Assistant</b>	August 2012 – August 2014
Purdue University	West Lafayette, IN
School of Biomedical Engineering	Advisor: Dr. Kevin Otto

Designed and conducted in vivo animal studies investigating novel neural implants, their performance, and subsequent immune response. Developed new surgical techniques for device implementation and programs for analyzing recorded brain activity. Mentored undergraduate research students, designed research plans & experiments, and managed laboratory assets.