ENGR-E484/E584 | Fall 2018
Scientific Visualization
Instructor: William R. Sherman, shermanw@indiana.edu
Monday/Wednesday 4:00–5:15 p.m.
Visualization Lab, Luddy Hall 4012

This 3-credit course teaches basic principles of human cognition and perception; techniques and algorithms for designing and critiquing scientific visualizations in different domains (neuro, nano, bio-medicine, IoT, smart cities); hands-on experience using modern tools for designing scientific visualizations that provide novel and/or actionable insights; 3D printing and augmented reality deployment; and teamwork/project management expertise.

Topics covered:
• Scientific visualization: Past, present, and future trends
• Human cognition and perception
• Techniques and algorithms for neurological sciences, nanotechnologies, bio-medicine, IoT, etc.
• Virtual and augmented reality visualizations
• 3D printing deployment
• Choosing and working with clients
• User and task analysis
• Client-oriented projects

When students complete this course, they will have:
• An understanding of issues involved in designing effective scientific visualizations
• Hands-on laboratory experience designing advanced scientific visualizations
• Knowledge of research challenges and important application areas that drive research and development
• Skills in teamwork with peers working on real-world client projects