

**Brian Johns, Ph.D.**  
Teaching Professor  
Department of Mechanical Engineering, Colorado State University

## EDUCATION

- 2014 Ph.D. Industrial Engineering, The University of Iowa, Iowa City, IA  
Advisor: Geb Thomas  
Dissertation: *The Creation and Validation of an Augmented Reality Orthopaedic Drilling Simulator for Surgical Training*
- 2010 M.S. Mechanical Engineering, The University of Iowa, Iowa City, IA  
Advisor: Jia Lu  
Thesis: *Experimental verification of pointwise identification method for capturing heterogeneous properties in membranes*
- 2007 B.S. Mechanical Engineering with Honors, The University of Iowa, Iowa City, IA  
Honors Thesis: *Designing a Mobile Wind Turbine*

## PROFESSIONAL/ACADEMIC POSITIONS

2025-	<b>Teaching Professor</b>	<b>Mechanical Engineering, Colorado State University</b>
2023-2025	Assistant Professor	Systems Engineering, U.S. Air Force Academy, CO
2022-2023	Department Chair	Physics & Engineering, Cornell College, Mt Vernon, IA
2021-2023	Associate Professor	Engineering, Cornell College, Mt Vernon, IA
2021-2022	Visiting Professor	Engineering, Colorado School of Mines, Golden, CO
2015-2021	Assistant Professor	Engineering, Cornell College, Mt Vernon, IA
2014-2015	Visiting Professor	Industrial Engineering, Monterrey Institute of Technology
2013-2014	Adjunct Instructor	Kirkwood Community College, Cedar Rapids, IA

## SERVICE

2023-	Curriculum Chief	Systems Engineering, U.S. Air Force Academy
2023-	ABET Coordinator	Systems Engineering, U.S. Air Force Academy
2022-2023	Member	Reaccreditation Committee, Cornell College
2019-2021	Faculty Representative	Athletics Subcommittee, Cornell College
2019	Faculty Representative	Digital Art Professor Search Committee, Cornell College
2019	Faculty Representative	Geology Professor Search Committee, Cornell College
2018-2019	Chair	Admission Committee, Cornell College
2018-2020	Member	Young Alumni Engineering Board, The University of Iowa
2018	Faculty Representative	VP of Admission and Enrollment Search Committee
2017	Member	Enrollment Task Force, Cornell College
2016-2018	Member	Admissions Committee, Cornell College
2016-2017	Member	Inst. Research & Assessment Committee, Cornell College
2016-2017	Member	Committee on Administration, Cornell College
2014-2020	Member	Institute of Industrial and System Engineers (IISE)
2014-2020	Member	American Society of Mechanical Engineers (ASME)

## TEACHING EXPERIENCE

### Colorado State University

Mechatronics I  
Mechatronics II

### US Air Force Academy

Intermediate Systems Engineering Methods  
Model-Based Systems Engineering  
Optimization Theory with Design Applications  
Engineering Capstone Design I  
Engineering Capstone Design II

### Cornell College

Engineering Circuits  
Engineering Design Project (Senior Design Project)  
Engineering Materials  
Engineering Mechanics (Statics & Dynamics)  
Engineering Product Design  
Engineering Thermodynamics  
Experimental Engineering & Quality Control  
Introduction to Engineering Design  
Introductory Physics  
Manufacturing Processes  
Mechanics of Deformable Bodies

### Monterrey Institute of Technology (*Instituto Tecnológico y de Estudios Superiores de Monterrey*)

Analysis of Manufacturing Systems  
Discrete-Event Simulation  
Logistics Systems

Manufacturing Processes  
Quality Management Strategies  
Statistical Engineering

Kirkwood Community College

Astronomy  
Dynamics  
Kinematics

The University of Iowa

Design for Manufacturing (Lab Instructor)  
Dynamics (Teaching Assistant)

**PUBLICATIONS**

1. **Johns B**, Carroll K, Medina C, Lewark R, Walliser J. *AI Systems Modeling Enhancer (AI-SME): Initial Investigations into a ChatGPT-enabled MBSE Modeling Assistant*. INCOSE International Symposium. 2024;34(1):1149-1168. doi:10.1002/iis2.13201.
2. Kho, JY, **Johns BD**, Thomas GW, Karam MD, Marsh JL. *A Hybrid Reality Radiation-free Simulator for Teaching Wire Navigation Skills*. Journal of Orthopaedic Trauma. 2015; 29(10): 385-390.
3. Thomas GW, **Johns BD**, Kho JY, Anderson DD. *The validity and reliability of an augmented reality simulator for wire navigation in orthopaedic surgery*. IEEE Transactions on Human-Machine Systems. 2015; 45(1): 119-125.
4. Thomas GW, **Johns BD**, Marsh JL, Anderson DD. *A Review of the Role of Simulation in Developing and Assessing Orthopaedic Surgical Skills*. Iowa Orthopaedic Journal. 2014; 34: 181–189.

**CONFERENCE PROCEEDINGS**

1. **Johns B**, Thomas GW, Kho JY, Karam MD, Marsh JL, Anderson DD. *The advantage of instantaneous versus delayed feedback in orthopaedic simulation*. 2013 Industrial and Systems Engineering Research Conference, May 18–22, 2013, San Juan, Puerto Rico.
2. **Johns B**, Thomas GW, Kho JY, Karam MD, Marsh JL, Anderson DD. *A novel augmented reality simulator for teaching wire navigation skills in treating intertrochanteric hip fractures*. 37th Annual Meeting of the American Society of Biomechanics, September 4-7, 2013, Omaha, NE.
3. Kho JY, **Johns B**, Thomas GW, Karam MD, Anderson DD, Marsh JL. *Wire-navigation simulator training in a proximal femur model*. UIHC Graduate Medical Education Leadership Symposium. May 17, 2013, Iowa City, IA.

4. Marsh JL, Kho JY, **Johns B**, Thomas GW, Karam MD, Anderson DD. *A novel approach to teaching visual-spatial skills in wire navigated orthopaedic procedures*. 126th Annual Meeting of the American Orthopaedic Association, June 11–15, 2013, Denver, CO.
5. Thomas GW, Anderson DD, Karam MD, **Johns B**, Murillo SR, Lawrence Marsh JL. *A flexible orthopaedic trauma surgery box skills trainer*. 37th Annual Meeting of the American Society of Biomechanics, September 4-7, 2013, Omaha, NE.
6. Thomas G, Polgreen P, Herman T, Sharma D, **Johns B**, Chen H, et al., *Improving patient safety with hand hygiene compliance monitoring*. Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 2011, pp. 823-827.