

# JOHN M. MADURA, PHD, PE

www.maduraengineering.com  
(470) 242-4643

## EDUCATION:

**Doctorate of Philosophy in Mechanical Engineering**, December 2018

- University of California, Berkeley

**Master of Science in Mechanical Engineering**, May, 2012

- Worcester Polytechnic Institute

**Bachelor of Science in Mechanical Engineering**, May, 2012

- Worcester Polytechnic Institute

## CERTIFICATIONS

**Professional Engineer**, New Mexico and California

**Management of Technology Innovation Program**, Berkeley, May 2016

## AREAS OF EXPERTISE:

Machine Design

Automotive

Sporting Goods

Materials

Product Design

Root Cause Investigations

Transportation

Intellectual Property

Electric Vehicles

Skiing and Ski Bindings

Mechanical Engineering

Machining

## EXPERIENCE:

**Engineering Consultant**

- Provides engineering expertise on a variety of topics and serves as an expert in cases involving IP Infringement, Product Liability, and Accident Reconstruction
- Completes feasibility studies and provides technology consultation
- Has been retained in over 100 cases and has trial experience

**Senior Mechanical Engineer, R&D Technical Lead**, Monarch Tractor, February 2022-Present

- Technical lead developing a semi-autonomous electric tractor
- Leads teams of 3-5 people on technical and programmatic aspects

**Associate**, Peter R. Thom and Associates, August 2018-Present

- Providing expertise on automotive failures, accident reconstruction, human factors, failure analysis, and metallurgical issues
- Involved in over 100 vehicle collision and product failure investigations

**Senior Member of the Technical Staff, R&D Mechanical Engineering**, Sandia National Laboratories, April 2019-February 2022

- Leads R&D teams sizes 5-20 on both technical and programmatic aspects from initial design through development, product testing, and manufacturing
- Providing expertise on mechanical design, manufacturing, and materials
- Designs for and ensures safe operation in high temperature, high electric potential, and severe mechanical environments.
- **Employee Recognition Award winner for fiscal year 2021**

**2 Time US Rowing National Team Member**, 2012 & 2015

- Competed at the world championships in the men's double and quad
- Key member in the success of the California Rowing Club's campaign for national team selection in 2015

**Lead Engineer**, SF Metalworks, May 2016-September 2016

- Responsible for design decisions on products, as well as all manufacturing planning and estimation
- Responsible for all technical analysis and engineering design on products and projects, including stress analysis, thermal analysis, and load calculations
- Successfully took two new, not operating CNC machines, and turned them into a profitable business asset within 2 months

**PUBLICATIONS:**

- John M. Madura and D. K. Lieu, “Analysis of an Electromechanical Flywheel for use as a Dedicated High-Power Device in a Hybrid Electric Vehicle,” international Journal of Electrical and Electronic Engineering & Telecommunications. Doi: 10.18178/ijeetc.180216
- Madura, J.M., C.A. Brown (2015). Axiomatic Design of Bindings and Plates that can Protect the ACL in Alpine Skiing and reduce the likelihood of inadvertent release. STP 1582 On Skiing Trauma and Safety, 171-186.
- Madura, J.M., C.A. Brown (2014). Protecting the ACL in Alpine Skiing with Load Limiting Binding Plates. ICSS 2Science and Skiing VI, 200-207.
- Madura, J.M., C.A. Brown (2013). A Comparative Study of Decompositions in Axiomatic Design Applied to Safety of the Anterior Cruciate Ligament in Alpine Skiing. ICAD 2013
- Madura, J. M., T. Lufkin, C. A. Brown (2012). Calculated descent time for different radii in ski racing. ICSS Science and Skiing V, 263-271.

**PATENTS**

**Ski Binding Plate**, United States 9,339,719, Issued May 17, 2016

**Rapid Response Ski Binding**, United States 9358447, Issued June 7, 2016

**CONFERENCE PRESENTATIONS:**

- Madura John, D.K. Lieu (2018) Analysis of an Electromechanical Flywheel for use as a Dedicated High-Power Device in a Hybrid Electric Vehicle. Oral Presentation. 2018 CEEPE, Seoul.
- Madura John (2015) A Closed Loop System for Testing the Cooling Efficiency and Condensation Acceleration Potential of micro and nano-structured cooling fins. Poster Presentation. 2015 SinBerBEST symposium. Singapore.
- Madura John, C.A. Brown (2013) Protecting the ACL in Alpine Skiing with Load Limiting Binding Plates. Oral presentation at the 6<sup>th</sup> International Conference of Science and Skiing.
- Madura John, C.A. Brown (2013) Axiomatic Design of Bindings and Plates that Can Protect the ACL in Alpine Skiing and reduce the likelihood of inadvertent release. Oral presentation at the 2013 International Society of Skiing Safety.
- Madura John, C.A. Brown (2013) A Comparative Study of Decompositions in Axiomatic Design Applied to Safety of the Anterior Cruciate Ligament in Alpine Skiing. Oral presentation at the 2013 International Congress on Axiomatic Design.
- Madura John, Pierson Dan (2013). Rowing Foot Stretcher Redesign. Poster presentation at the 2013 International Congress on Axiomatic Design.
- Madura John (2010). Calculated descent time for different radii in ski racing. Oral presentation at the 5<sup>th</sup> International Congress of Science and Skiing in St. Christoph am Arlberg, Austria.

**HOBBIES:**

Fishing  
Skiing and ski racing  
Mountain Biking  
Automotive  
Motorcycles  
Mountain climbing and hiking  
Boating