

David P. Larson

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| CONTACT INFORMATION | Ph.D. Student Department of Mechanical and Aerospace Engineering University of California, San Diego 9500 Gilman Drive La Jolla, CA 92093-0411 dplarson@ucsd.edu |
| RESEARCH INTERESTS | Evolutionary Methods, Genetic Algorithms, Shape Optimization, Bio-inspiration, Fluid Mechanics of biological locomotion, Fractional and Variable Order Methods |
| EDUCATION | University of California, San Diego , La Jolla, CA Ph.D., Mechanical and Aerospace Engineering , June 2012–present <ul style="list-style-type: none">• Adviser: Professor Carlos F.M. Coimbra• Area of Study: Fluid Mechanics University of California, Merced , Merced, CA B.S., Mechanical Engineering , August 2008–May 2012 <ul style="list-style-type: none">• Fluid Mechanics specialization |
| RESEARCH EXPERIENCE | Graduate Student Research 2012–present <ul style="list-style-type: none">• Lab: Coimbra Group• Location: University of California, San Diego• Investigating the application of Fractional and Variable Order Methods to Nonlinear Chaos Dynamics Visiting UC LEADS Scholar Summer 2011 <ul style="list-style-type: none">• Lab: Animal Flight Lab• Location: University of California, Berkeley• Host Program: Cal NERDS• Investigated effects of turbulent air flow on hummingbird kinematics and metabolism• Developed Particle Image Velocimetry (PIV) data analysis scripts for turbulent air flows UC LEADS Scholar Summer 2010 <ul style="list-style-type: none">• Lab: Coimbra Group• Location: University of California, Merced• Investigated aerodynamic trends of flapping flight |

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| | <p>Lab Manager 2010–2012</p> <ul style="list-style-type: none"> • Lab: Coimbra Group • Location: University of California, Merced • Oversaw research lab safety • Managed group computer network and servers • Trained group members on proper lab equipment use |
| | <p>Undergraduate Student Researcher 2009–2012</p> <ul style="list-style-type: none"> • Lab: Coimbra Group • Location: University of California, Merced • Deployed high-fidelity irradiance and weather instrumentation across California and Washington • Tested long term degradation of anti-dust glass coating for solar panels • Analyzed animal flight data to determine underlying aerodynamic trends-something |
| | <p>Undergraduate Student Researcher 2008–2009</p> <ul style="list-style-type: none"> • Hirst Group • Location: University of California, Merced • Investigated phase separation in lipid tubules |
| | <p>Lab assistant 2007–2008</p> <ul style="list-style-type: none"> • Lab: MEMS Lab • Location: University of California, Santa Cruz • Developed prototype printable RF-ID tag for tracking of dragonflies • Trained undergraduates to continue printable RF-ID tag research |
| PROFESSIONAL MEMBERSHIPS | <p>American Society of Mechanical Engineers (ASME), Member, 2009–present</p> <p>Engineers for a Sustainable World (ESW), Member, 2011–present</p> |
| HARDWARE AND SOFTWARE SKILLS | <p>Computer Programming:</p> <ul style="list-style-type: none"> • MATLAB, Mathematica, Python, PHP, MySQL, Unix shell scripting, Ruby <p>Version Control and Software Configuration Management:</p> <ul style="list-style-type: none"> • Distributed Revision Control Systems (Git) <p>Computer Aided Design (CAD):</p> <ul style="list-style-type: none"> • Pro/ENGINEER, Autodesk Inventor <p>Multi-Physics Simulations:</p> <ul style="list-style-type: none"> • Pro/ENGINEER Mechanical, COMSOL, Autodesk Multiphysics Simulation <p>Prototyping Tools</p> <ul style="list-style-type: none"> • Computer Numerical Control (CNC) and manual mill, lathe, and drill press machining • 3D printing using a ZCorp ZPrinter 650 |

Irradiance and Weather Instrumentation:

- [Yankee Environmental Systems](#) (YES) Multi-Filter Rotating Shadowband (MFR-7) and Total Sky Image (TSI-880)
- [Eppley Laboratory](#) Precision Spectral Pyranometer (PSP), Normal Incidence Pyrliometer (NIP), Precision Infrared Radiometer (PIR), Total Ultraviolet Radiometer (TUVR), and Automatic Solar Tracker (SMT-3)
- [Campbell Scientific](#) CR1000 Data Logger
- [Irradiance, Inc.](#) Rotating Shadowband Radionometer (RSR2)
- [Vaisala](#) Weather Transmitter (WXT520)

Particle Image Velocimetry:

- [LaVision DaVis](#) image software, high speed cameras, q-switched lasers, wind tunnels

Information/Internet Technology:

- Networking (UDP, TCP), Services (Apache, SQL, POP, IMAP, SMTP)

Productivity Applications:

- \TeX (\LaTeX , \BibTeX), Vim, most common productivity packages (for Mac OS X, Windows, and Linux platforms)

Operating Systems:

- Mac OS X, Windows, Linux

AWARDS

[Innovate to Grow Competition](#)

May 2012

- 1st Place (tied) People's Choice
- Entry Title: Harvesting Energy from Irrigation Canals
- Team Members: David Larson, Daniel Leong, Steven Fleming, Samuel Isaiah

[Distributed Power Generation Project](#)

2011

- Sponsors: ESW, SunEdison/MEMC, Autodesk
- Entry Title: Solar Powered Cargo Ship
- Funding Amount: \$8150

[CITRIS Big Idea Competition](#)

Apr 2010

- Honorable Mention
- Entry Title: Distributed Computing for Open Access Solar Forecasting
- Award Amount: \$1000

[ASME Old Guard Oral Presentation Competition](#)

Apr 2012

- 5th Place, District D
- Entry Title: Distributed Computing for Open Access Solar Forecasting

[University of California, Merced](#)

- Dean's Undergraduate Research Scholar, 2008–2009
- 2nd Place Service Learning Final Presentation, Dec 2009

- 1st Place Service Learning Final Presentation, May 2009
- 1st Place Service Learning Final Presentation, Dec 2008