

David Philip Larson

CONTACT INFORMATION	Ph.D. Student Mechanical and Aerospace Engineering University of California, San Diego 9500 Gilman Drive La Jolla, CA 92093-0411	dplarson@ucsd.edu
RESEARCH INTERESTS	Solar Forecasting, Non-Integer Order Methods, Nonlinear Chaos, Machine Learning	
EDUCATION	University of California, San Diego <i>Ph.D. in Mechanical Engineering</i> Advisor: Carlos F.M. Coimbra	2012–present
	University of California, Merced <i>B.S. in Mechanical Engineering</i>	2008–2012
CITIZENSHIP	U.S.	
ACADEMIC RESEARCH EXPERIENCE	Lab Manager	2012–present
	<ul style="list-style-type: none">• Lab: Coimbra Group• Location: University of California, San Diego• Oversee research lab safety• Manage group computer network and servers	
	Graduate Student Researcher	2012–present
	<ul style="list-style-type: none">• Lab: Coimbra Group• Location: University of California, San Diego• Investigating the application of Non-Integer 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	
	Lab Manager	2010–2012
	<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	

	Undergraduate Student Researcher	2009–2012
	<ul style="list-style-type: none"> • Lab: Coimbra Group • Location: University of California, Merced • Deployed high-fidelity irradiance and weather instrumentation at sites across CA and WA state • Tested long term degradation of anti-dust glass coating for solar panels • Analyzed animal flight data to determine underlying aerodynamic trends 	
	Undergraduate Student Researcher	2008–2009
	<ul style="list-style-type: none"> • Hirst Group • Location: University of California, Merced • Investigated phase separation in lipid tubules 	
	Lab assistant	2007–2008
	<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	American Society of Mechanical Engineers Student Member	2009–present
	Engineers for a Sustainable World Student Member	2011–present
TECHNICAL SKILLSETS	<p>Programming:</p> <ul style="list-style-type: none"> • MATLAB, Python, Mathematica, PHP, MySQL, Unix shell scripting <p>Version Control:</p> <ul style="list-style-type: none"> • Git • Gitlab <p>Rapid Prototyping:</p> <ul style="list-style-type: none"> • CAD/CAE: Pro/ENGINEER, Autodesk Inventor • Machining: mill, lathe, and drill press machining • 3D printing <p>Irradiance and Weather Instrumentation:</p> <ul style="list-style-type: none"> • Yankee Environmental Systems (YES) Multi-Filter Rotating Shadowband (MFR-7) and Total Sky Image (TSI-880) • Eppley Laboratory Precision Spectral Pyranometer (PSP), Normal Incidence Pyrhemeter (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) <p>Particle Image Velocimetry:</p> <ul style="list-style-type: none"> • LaVision DaVis image software, high speed cameras, q-switched lasers, wind tunnels <p>Productivity Applications:</p> <ul style="list-style-type: none"> • TeX (LaTeX, Bibtex), Vim, most common productivity packages (for Mac OS X, Windows, and Linux platforms) 	

Operating Systems:

- Mac OS X, Linux, Windows

AWARDS

Innovate to Grow Competition

May 2012

- 1st Place (tied) People's Choice
- Entry Title: Harvesting Energy from Irrigation Canals
- Authors: 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
- Authors: Ricardo Marquez, David Larson, Hugo Pedro
- Award Amount: \$1000

ASME Old Guard Oral Presentation Competition

Apr 2010

- 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