

John Valdovinos Ph.D., P.E.

California State University, Northridge
18111 Nordhoff St.
Northridge, CA 91330 USA
Phone: 818-677-7595

Email: john.valdovinos@csun.edu
URL: [CSUN Biomedical Devices Laboratory](#)

Appointments

2021-present	<i>Associate Professor</i> , CSUN Department of Electrical and Computer Engineering
2015-2021	<i>Assistant Professor</i> , CSUN Department of Electrical and Computer Engineering
2014-2015	<i>Postdoctoral Fellow</i> , Yale Department of Surgery

Education

2009	BS in Biomedical Engineering, University of Southern California
2010	MS in Biomedical Engineering, University of California, Los Angeles
2014	PhD in Biomedical Engineering, University of California, Los Angeles

Awards

2021	CSUN CECS Outstanding New Researcher Award
2020	NIH Loan Repayment Recipient in Pediatric Research (2020-2022)
2018	CFA Exceptional Service to Students Award (2018-2019)
2016	Engineer's Council Future Technology Leader Award
2015	American Heart Association Founders Affiliate Postdoctoral Fellowship
2013	ASAIOfyi Fellowship Recipient
2009	UCLA Graduate Opportunity Fellowship

Grants

2019-2022	NIH SC2 Pilot Project - SC2GM131978 (\$435k) Title: Methods to Wirelessly Power Fully Implantable Intravascular Blood Pumps
2017-2018	CSUPERB New Investigator Award (\$15k) Title: Low-Profile Wireless Power Systems for Pediatric Mechanical Circulatory Support
2015	Yale OHSE Grant (\$40k) Title: Design and development of a heart failure recovery system

Publications & Presentations

JOURNAL ARTICLES

- 2022 Kuhnley A., Fisher S., Valdovinos, M., and **Valdovinos J**, “Kinetic and Geometric Considerations in Modeling Screen-Printed Electrode-Based Sensors”. *IEEE Sensors*, Submitted
- 2021 **Valdovinos J**, Russel M., Zahn S., and Levi, DS. “Assessing Fontan Single Ventricle Function using Wave Intensity Analysis”. *Pediatric Cardiology*, DOI: 10.1007/s00246-021-02544-x
- 2018 Waters B, Park J, Bouwmeester JC, **Valdovinos J**, Geirsson A, Sample AP, Smith J., and Bonde P. “Electrical Power to Run Ventricular Assist Devices Using Free-range Resonant Electrical Energy Delivery (FREE-D) System”. *Journal of Heart and Lung Transplantation*, DOI: 10.1016/j.healun.2018.08.007
- 2018 Bouwmeester JC, **Valdovinos J**, and Bonde P. “Wave Intensity Analysis of Right Ventricular Function during Pulsed Operation of Rotary Left Ventricular Assist Devices”. *ASAIO Journal*, DOI: 10.1097/MAT.0000000000000835
- 2017 **Valdovinos J**, Bouwmeester JC, and Bonde, P. “Design and Testing of a Cavo-Arterial Pump (CAP) utilizing Axial Magnetic Couplings”. *Journal of Medical Devices*, DOI: 10.1115/1.4038221.
- 2015 **Valdovinos J** and Carman GP. “Development of a Low-Voltage Piezohydraulic Pump for Compact Hydraulic Systems”. *Smart Materials and Structures*, DOI: 10.1088/0964-1726/24/12/125008
- 2014 Derk G, Laks H., Biniwale R, Patel S, De LaCruz K, Mazor E, Williams RJ, **Valdovinos J**, Levi DS, Reardon L, Aboulhossn J. “Novel Techniques of Mechanical Circulatory Support for the Right Heart and Fontan Circulation”. *International Journal of Cardiology*, DOI: 10.1016/j.ijcard.2014.08.012
- 2014 Derk G, Laks H., Biniwale R, Patel S, De LaCruz K, Mazor E, Williams RJ, **Valdovinos J**, Levi DS, Aboulhossn J. “Creation of a Surgical Fontan Animal Model and the use of a Ventricular Assist Device to Restore Cardiac Output”. *American College of Cardiology*, DOI:10.1016/S0735-1097(14)60591-X
- 2013 **Valdovinos J**, Levi DS, Williams RJ, Carman GP. “Evaluating Piezoelectric Hydraulic Pumps as Drivers for Pulsatile Pediatric Ventricular Assist Devices”. *Journal of Intelligent Material Systems and Structures*, DOI:10.1177/1045389X13504476
- 2013 **Valdovinos J**, Shkolyar E, Carman GP, Levi DS. “Evaluation of an External Compression Device for Fontan Mechanical Assistance: In vitro Study”. *Artificial Organs*, DOI: 10.1111/aor.12152

CONFERENCE PROCEEDINGS

- 2021 Hofmann A, Tran V, Eng N and **Valdovinos, J**. Graphical User Interface for Calculating Wave Intensity from Cardiac Catheterization Measurements. 43rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC’21), pp. 5663-5667, doi: 10.1109/EMBC46164.2021.9629931

2018 Nagra S, Hussain F, Alvarez I, and **Valdovinos J**. Feasibility of a Post-Auricle Wireless Power System for Pediatric Mechanical Circulatory Support Pumps. 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'18), July 17th, Honolulu, HI

2012 **Valdovinos J**, Levi DS, Williams RJ, Carman GP. Feasibility of using Piezohydraulic Pumps as Motors for Pediatric Ventricular Assist Devices. 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'12), August 28th, San Diego, CA

BOOK CHAPTERS

2020 **Valdovinos J**, Park J, Smith J, Bonde P. Progress on Wireless LVAD and Energy Sources for Mechanical Circulatory Systems. *Mechanical Support for Heart Failure*. 2020:609-20.

CONFERENCE PRESENTATIONS

2022 **Valdovinos J**. From TETs to Long-range and Deep-tissue Wireless Energy Transfer. ASAIO 67th Annual Conference - MCS VAD University, June 8th, 2022, Chicago, IL.

2022 Flores J, **Valdovinos J**. Development of a Catheter-deliverable Implantable Intravascular Blood Pump Speed Controller. ASAIO 67th Annual Conference, June 9th, 2022, Chicago, IL.

2021 **Valdovinos J**. Current Status and Future Directions of Percutaneous Energy Transfer. ASAIO MCS VAD University, May 15th, 2021.

2020 **Valdovinos J**. Characterization Of The Hysteretic Behavior Of A Pediatric Left Ventricular Assist Device. ASAIO Virtual On Demand Oral/Poster Abstract Sessions, June 21st, 2020

2015 **Valdovinos J** and Bonde P. Cavo-arterial Pump (CAP): A Catheter-deliverable Right Ventricular Assist Device for Right Heart Dysfunction. ASAIO 61st Annual Conference, June 25th, 2015, Chicago, IL.

2015 Bouwmeester JC, **Valdovinos J**, Waters BH, Lysy T, Tchouta L, Sekar R, Smith JR, and Bonde P. Effect of Pulsed Operation of a Continuous Flow Left Ventricular Device on the Right Ventricle during Increased Afterload and Preload Conditions. ASAIO 61st Annual Conference, June 26th, 2015, Chicago, IL

2013 **Valdovinos J**, Levi DS, Shkolyar E, Carman GP. In Vitro Evaluation of an External Compression Device for Fontan Mechanical Assistance. ASAIO 59th Annual Conference, June 13th, 2013 Chicago, IL

2011 **Valdovinos J**, Levi DS, Williams RJ, Carman GP. Feasibility of using Piezohydraulic Pumps as Motors for Pediatric Ventricular Assist Devices. 3rd International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, May 1st, 2011, Stanford, CA

Teaching

- ECE 603 - Biomedical Signal Processing
- ECE 602 - Computational Models in Biomedical Engineering
- ECE 503 - Biomedical Instrumentation
- ECE 501 - Introduction to Biomedical Engineering
- ECE 492/493 - Senior Design
- ECE 350 - Linear Systems
- ECE 280 - Applied Differential Equations in Electrical Engineering
- ECE 240 - Electrical Engineering Fundamentals
- ECE 101/L - Introduction to Electrical Engineering and Lab

Service to the profession

UNIVERSITY SERVICE

2021-present	Faculty Equity Compliance Representative
2021-present	College Personnel Committee
2021-present	New Faculty Foundations Committee
2020-present	President's Commission on Diversity and Inclusion
2019-present	Educational Equity Committee
2018-present	Faculty Senator

EXTERNAL SERVICE

2019-present	CSUPERB Faculty Consensus Group
2015-present	American Society for Artificial and Internal Organs (ASAIO) Journal Editorial Board
2016-2019	Biomedical Engineering Society Diversity Committee