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EDUCATION

- **Ph.D. Mechanical Engineering** (2000) - University of Notre Dame.
Dissertation: Simulation and control of heat exchangers using artificial neural networks
Advisors: M. Sen, K.T. Yang
- **M.S. Mechanical Engineering** (1999) - University of Notre Dame
- **Mechanical Engineer** (1994) - Universidad de Santiago de Chile.

PROFESSIONAL EXPERIENCE

- **Professor.** University of California, Merced. (2021-present)
- **Graduate Chair of Mechanical Engineering.** University of California, Merced. (2018-2020)
- **Visiting Professor** Universidad de Chile, Santiago, Chile (2016)
- **Co-Director of UC Solar** University of California, Merced. (2013-2019)
- **Director Sustainable Plasma Gasification Lab** University of California, Merced. (2011-present)
- **Chair Mechanical Engineering and Applied Mechanics Graduate Group.** University of California, Merced. (2011-2013)
- **Associate Professor.** University of California, Merced. (2011-2021)
- **Assistant Professor.** University of California, Merced. (2005-2011)
- **Controls Engineer.** Airframe Systems, Honeywell, CA. (2004-2005)
- **Technical Advisor.** Research and Development, Modine Manufacturing Company, WI. (2002-2004)
- **Sr. Research Engineer.** Research and Development, Modine Manufacturing Company, WI. (2001-2002)
- **Research Engineer.** Research and Development, Modine Manufacturing Company, WI. (2000-2001)
- **Instructor of AME327 Thermodynamics I.** Summer session 1998 and 1999, University of Notre Dame.
- **Research assistant,** University of Notre Dame, Notre Dame, IN. (8/95 - 5/00)

HONORS and AWARDS

- Research Member of the Biochar Research Advisory Group for the Governor's Office of Planning and Research (California 2/2017)
- Julio Perez and G. Diaz. Modeling of pressure drop and heat transfer correlation through EES and initial phase commercial scale manufacturing of novel solar thermal collector. In SACNAS Conference, Salt Lake City, UT, SACNAS National Conference Research Presentation Award, October 2017.

- V. Duong and G. Diaz. Performance of an aluminum-based minichannel solar collector for water heating applications. In California Energy Commission 40th Anniversary, San Francisco, CA, January 2015. Showcased technology selected by the California Energy Commission.
- Alexandro Perez-Tovar, Design and G. Diaz, Fabrication, and Calibration of Orifice Plate for Flow Measurements in Plasma Gasification System. First Place and Outstanding Contribution and Research Presentation Award at SACNAS, San Antonio, TX, 2013
- Azucena Robles and G. Diaz, Temperature Measurements of an Electrolytic Tank Under Normal Electrolysis and Glow Discharge, Honorable Mention Medal, NSF CAMP Symposium, UC Irvine 2013.
- Outstanding Graduate Student Teacher Award for Excellence in Teaching. (Notre Dame, 4/2000)
- Harman Fellowship in Engineering. (Notre Dame, 1998)
- Organization of American States Fellowship, PRA-Mechanical Engineering, Number: F50222, (8/96 - 8/98)

References

BOOKS

- [1] Gerardo Diaz. *Voltage-Enhanced Processing of Biomass and Biochar*. John Wiley & Sons and ASME Press, 2022. DOI: <https://doi.org/10.1002/9781119739777>. ISBN: 978-1-119-73973-9.

BOOK CHAPTERS

- [1] G. Diaz. Plasma steam reforming. In J. L. Shohet, editor, *CRC Encyclopedia of Plasma Technology*. Taylor and Francis, 2016.
- [2] A. Pacheco-Vega, G. Diaz, M. Sen, and K.T. Yang. Applications of artificial neural networks, genetic algorithms and programming in thermal engineering. In Raj Chhabra, editor, *CRC Handbook of Thermal Engineering*. Taylor and Francis, 2016.
- [3] G. Diaz and C.F.M. Coimbra. Dynamics and control of nonlinear variable order oscillators. In Todd Evans, editor, *Nonlinear Dynamics*, pages 129–144. INTECH, 2010. **(Accessed more than 6000 times)**.
- [4] G. Diaz. Numerical analysis of a minichannel solar collector for CO₂-based ranking cycle applications. In A. Mammoli and C.A. Brebbia, editors, *WIT Transactions on Ecology and the Environment*, volume 121, pages 23–34. WIT, 2009.

JOURNALS

- [1] Abdulmajeed Alghamdi, Sandra K. S. Boetcher, Leitao Chen, Gerardo Diaz, Hohyun Lee, Peiwen Li, Isabel Melendez, Karl B. Morgan, Aggrey Mwesigye, Hamidreza Najafi, Julia Nicodemus, Juan Ordonez, Forooza Samadi, S.A. Sherif, and Ramon P.P. da Silva. Review of selected heat transfer topics for solar thermal energy utilization and storage. *Accepted in Journal of Solar Energy Engineering: Including Wind Energy and Building Energy*, 2025.
- [2] H. Gomez, M.J. Hawker, E Leal-Quiros, and G. Diaz. Effects of pyrolysis temperature on electron storage capacity during biochar interaction with non-thermal plasma. *Journal of Analytical and Applied Pyrolysis*, 186:106903, 2025. DOI: <https://doi.org/10.1016/j.jaap.2024.106903>.
- [3] Touyee Thao, Vivian D. Lopez, Melinda Gonzales, Asmeret A. Berhe, Gerardo Diaz, and Teamrat A. Ghezzehei. Impact of almond shell biochar properties and application rate on soil physical and hydraulic characteristics. *Sustainable Environment*, 11(1):2485688, 2025. DOI: <https://doi.org/10.1080/27658511.2025.2485688>.

- [4] T. Thao, M.L. Gonzales, R Ryals, R. Dahlquist-Willard, G.C. Diaz, and T.A. Ghezzehei. Biochar impacts on soil moisture retention and respiration in a coarse-textured soil under dry conditions. *Soil Science Society of America Journal*, 88:1919–1931, August 2024. DOI: <https://doi.org/10.1002/saj2.20746>.
- [5] S.K. Mondal, S.K. Hota, H.T. Pedro, C.F.M. Coimbra, E. Leal-Quiros, and G. Diaz. Data-driven optimal placement of minichannel-based solar water heater using satellite-derived and ground-telemetry weather information. *AIP Journal of Renewable and Sustainable Energy*, 16:026301, March 2024. DOI: <https://doi.org/10.1063/5.0194845>.
- [6] B.P. Harrison, S. Gao, T. Thao, M.L. Gonzales, K.L. Williams, N. Scott, L. Hale, T.A. Ghezzehei, G. Diaz, and R. Ryals. Methane and nitrous oxide emissions during biochar-composting are driven by biochar application rate and aggregate formation. *GCB Bioenergy*, 16:e13121, December 2023. DOI: <https://doi.org/10.1111/gcbb.13121>.
- [7] T. Thao, B.P. Harrison, S. Gao, R. Ryals, Dahlquist-Willard R., G. Diaz, and T.A. Ghezzehei. The effects of different biochar-dairy manure co-composts on soil moisture and nutrients retention, greenhouse gas emissions, and tomato productivity: Observations from a soil column experiment. *Agrosystems, Geosciences & Environment*, 6:e20408, July 2023. DOI: <https://doi.org/10.1002/agg2.20408>.
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- [10] N. Indrawan, V. Plotnikov, S. Thapa, G.C. Diaz, A. Kumar, and R.L. Huhnke. Preliminary evaluation of surface dielectric barrier discharge non-thermal plasma for reforming syngas derived from a downdraft gasifier. *Fuel*, 332(126186):1–5, 2023. DOI: <https://doi.org/10.1016/j.fuel.2022.126186>.
- [11] S.K. Hota, S.S. Hada, C. Keske, and G. Diaz. Feasibility of desalination by solar stills for small community scale freshwater demand. *Journal of Cleaner Production*, 379:134595, December 2022. DOI: <https://doi.org/10.1016/j.jclepro.2022.134595>.
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- [14] S.K. Hota, C. Mata-Torres, J.M. Cardemil, and G. Diaz. Techno-economic assessment of carbon-based nanofluid dispersions in solar stills for rural coastal locations in the Northern and Southern hemispheres. *Desalination and Water Treatment*, 245:72–84, 2022. DOI: <https://doi.org/10.5004/dwt.2022.27942>.
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- [42] N. Sharma and G. Diaz. Performance model of a novel evacuated tube solar collector based on minichannels. *Solar Energy*, 85:881–890, 2011. DOI: doi:10.1016/j.solener.2011.02.001.
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CONFERENCE PROCEEDINGS/PRESENTATIONS

- [1] Z. Nasef, N. Nugen, E. Leal-Quiros, and G. Diaz. Powering a TLUD biomass pyrolyzer using its own waste heat and thermoelectric devices. In *Proceedings of ASME SHTC 2024, Paper # SHTC2024-122016*, Anaheim, CA, July 2024.
- [2] S. K. Mondal, I. Teran, and G. Diaz. Effect of pyrolysis temperature on thermal insulation performance of biochars mixed with natural fiber. 2024 North American USBI Biochar Conference, February 2024.
- [3] S.K. Mondal, H. Gomez, Z. Nasef, and G. Diaz. Analysis of sustainable building-insulation material using biochar and natural fiber. In *Proceedings of ASME IMECE 2023, Paper # IMECE2023-113643*, New Orleans, LA, November 2023.
- [4] Z. Nasef, H. Gomez, S.K. Mondal, and G. Diaz. Effect of pyrolysis-front velocity on the properties of biochar produced with a TLUD reactor. In *Proceedings of ASME IMECE 2022, Paper # IMECE2022-95270*, pages 1–5, Columbus, OH, November 2022. ASME.
- [5] Sai Kiran Hota, Marie-Odile Fortier, and Gerardo Diaz. Life cycle assessment of a solar still for community scale desalination. 5th International conference on F&R Energy 2021, (Virtual Presentation), March 2021.
- [6] Hector Gomez, Viacheslav Plotnikov, and Gerardo Diaz. A fundamental parametric study and reaction kinetics of toluene decomposition using non thermal plasma. In *5-6th Thermal and Fluids Engineering Conference (TFEC)*, (Virtual presentation), 2021. American Society of Thermal Fluids Engineers. DOI: 10.1615/TFEC2021.fnd.032461.
- [7] J. Brinkley, B. Widyolar, L. Jiang, Y. Bushal, G. Diaz, J. Palko, and R. Winston. Preliminary experimental results of a novel low cost solar thermal collector with integrated optics for desalination processes. In *Proceedings of SPIE Optical Engineering + Applications, 2020, Online Only*, pages 1–7, doi: 10.1117/12.2570837, September 2020. Vol. 11495.
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- [9] S.K. Hota and G. Diaz. Advection diffusion model for particle assisted solar water evaporation. In *Proceedings of SWC/SHC 2019, International Solar Energy Society, Paper # 765*, Santiago, Chile, November 2019.
- [10] S.K. Hota, J. Perez, and G. Diaz. Analysis of phase change thermal storage configurations for minichannel-based solar collectors. In *Proceedings of ASME IMECE 2018, Paper # IMECE2018-87837*, Pittsburgh, PA, November 2018.

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- [12] J. Perez, S.K. Hota, and G. Diaz. Effect of geometric configuration and back plate addition in minichannel solar collectors. In *Proceedings of ASME IMECE 2018, Paper # IMECE2018-87852*, Pittsburgh, PA, November 2018.
- [13] G. Diaz. Low-grade steam generation with non-concentrated minichannel-based solar collector. In *Proceedings of TFEC-IWHT, Paper # TFEC-IWHT2017-18244*, Las Vegas, NV, April 2017. ASTFE.
- [14] A Munoz-Hernandez and G. Diaz. Heat transfer analysis of graphite rods subject to joule heating using a modified semi-conductor formulation. In *Proceedings of TFEC-IWHT, Paper # TFEC-IWHT2017-18529*, Las Vegas, NV, April 2017. ASTFE.
- [15] V. Plotnikov, G. Diaz, and E. Leal-Quiros. Temperature increase in liquids due to high-voltage plasma discharges. In *Proceedings of TFEC-IWHT, Paper # TFEC-IWHT2017-18242*, Las Vegas, NV, April 2017. ASTFE, **Received a Travel Award from ASTFE.**
- [16] E. Leal-Quiros and G. Diaz. Plasma processing of organic materials. In *10th International Conference on Plasma Assisted Technologies*, pages 58–61, Cancun, Mexico, March 2016. International Plasma Technology Center.
- [17] A. Munoz-Hernandez, N. Sharma, and G. Diaz. Dielectric breakdown process for biomass gasification. In *Proceedings of ASME IMECE 2014, Paper # IMECE2014-36402*, Quebec, Canada, November 2014.
- [18] V. Duong and G. Diaz. Performance of an aluminum-based minichannel solar collector for water heating applications. In *Solar 2014*, pages 1–6, San Francisco, July 2014. American Solar Energy Society.
- [19] A. Munoz-Hernandez, N. Sharma, and G. Diaz. Temperature distribution profiles inside biomass under dielectric breakdown conditions. In *HEFAT2014*, pages 386–392, Orlando, FL, July 2014. EDAS/ICHMT.
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POSTER SESSIONS

- [1] H. Gomez and G. Diaz. Non-thermal plasma activation for the enhancement of biochar properties. In *Poster at: CBIO Collaborative Design Forum*, Modesto, CA, October 2023.
- [2] Z. Nasef and G. Diaz. Investigation of variability of biochar physical properties. In *Poster at: CBIO Collaborative Design Forum*, Modesto, CA, October 2023.
- [3] G. Diaz, A.A. Berhe, Y-Q Chen, T. Ghezzehei, C. Keske, R. Ryals, J. Banuelos, H. McLaughlin, and A. Flynn. Mobile biochar production for methane emission reduction and soil amendment. In *Poster at: What should we do with our biogas? , Organized by CITRIS & the Banatao Insitute, University of California, Merced*, Merced, CA, 2019.
- [4] G. Diaz, A.A. Berhe, Y-Q Chen, T. Ghezzehei, C. Keske, R. Ryals, J. Banuelos, H. McLaughlin, and A. Flynn. Mobile biochar production for methane emission reduction and soil amendment. In *Poster at: California Strategic Growth Council Symposium*, Sacramento, CA, 2019.
- [5] V. Plotnikov, H. Gomez, Andres Munoz-Hernandez, and G. Diaz. Non-thermal plasma-assisted steam activation of ponderosa pine biochar. In *Poster at: Biochar Field Day*, Russell Ranch Sustainable Agriculture Facility, Winters, CA, June 2018. CDFa and UC Davis.
- [6] Sai Kiran Hota and G. Diaz. Particle size effects of solar absorbing dispersions in water and convergence of mie solutions. In *Poster at: UC Solar Symposium*, San Francisco, CA, 2018.
- [7] Sai Kiran Hota, Julio Perez, and G. Diaz. Influence of backplate width and port size on the performance of aluminum based minichannel solar collectors. In *Poster at: UC Solar Symposium*, San Francisco, CA, 2018.
- [8] V. Plotnikov, E. Leal-Quiros, and G. Diaz. Pulsed corona plasma in glycerin for fuel gas generation. In *16th Latin American Workshop for Plasma Physics*, Mexico City, Mexico, September 2017.
- [9] A. Munoz-Hernandez, S. Dehghan, V. Plotnikov, G. Diaz, and Y. Chen. Exploring plasma activation of biochar for enhanced properties. In *HENAAC 2016*, Anaheim, CA, October 2016.
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- [11] A. Munoz-Hernandez and G. Diaz. Dielectric breakdown processes for syngas and biochar production. In *Chile California Conference (C3), at UC Davis*, Davis, CA, October 2015.
- [12] V. Plotnikov and G. Diaz. Plasma-catalysis of alkyl alcohols and used vegetable oils into biodiesel. In *Chile California Conference (C3), at UC Davis*, Davis, CA, October 2015.
- [13] V. Duong and G. Diaz. Performance of an aluminum-based minichannel solar collector for water heating applications. In *California Energy Commission 40th Anniversary*, San Francisco, CA, January 2015. **Showcased technology selected by the CEC.**

- [14] V. Duong and G. Diaz. Prediction of two-phase frictional pressure drop in copper minichannel solar water heater. In *Poster at: UC Solar Symposium*, San Francisco, CA, 2014.
- [15] N. Sharma, A. Munoz-Hernandez, G. Diaz, and E. Leal-Quiros. Contact glow discharge electrolysis in the presence of solid organic waste. In *Poster at: XV Latin American Workshop on Plasma Physics*, San José, Costa Rica, 2014.
- [16] G. Diaz, E. Leal-Quiros, H. Sanchez, and S. Truong. Educational outcomes at early involvement of UC Merced undergraduates in plasma related research. In *Poster at: XIV Latin American Workshop on Plasma Physics*, Mar del Plata, Argentina, 2011.
- [17] G. Diaz, E. Leal-Quiros, N. Sharma, S. Pineda, S. Fleming, I. Hussain, and A. Robles. Processing of coffee grounds (borra de cafe) with arc discharge plasma. In *Poster at: XIV Latin American Workshop on Plasma Physics*, Mar del Plata, Argentina, 2011.
- [18] G. Diaz, E. Leal-Quiros, N. Sharma, S. Pineda, S. Fleming, I. Hussain, and A. Robles. Production of synthesis gas with atmospheric pressure plasma processing of coffee grounds (borra de caf) and other organic waste. In *International Workshop and Exhibition on Plasma Assisted Combustion (IWEPAC 2011)*, Las Vegas, Nevada, 2011.
- [19] A. Garcia, J. Wong, G. Diaz, K. Balkoski, and K. Rico. Solar water heater utilizing mini-channel technology. In *Poster at: 2011 UC Solar Research Symposium*, Merced, CA, 2011.
- [20] E. Leal-Quiros and G. Diaz. Atmospheric-pressure magneto-hydrodynamics heat and power generator. In *Poster at: XIV Latin American Workshop on Plasma Physics*, Mar del Plata, Argentina, 2011.
- [21] G. Diaz and E. Leal-Quiros. Sustainable waste management using plasma gasification at the campus of the University of California - Merced. In *Poster at: XXIX International Conference on Phenomena in Ionized Gases (ICPIG)*, Cancun, Mexico, 2009.
- [22] P. Benitez, R. Winston, G. Diaz, L. Reed, J. Cisneros, A. Tovar-Fonseca, A. Ristchel, and J. Wright. Novel high-concentration mirror-based kohler integrating system for tandem solar cells. In *Poster at: 2006 IEEE 4th World Conference on Photovoltaic Energy Conversion*, 2006.
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- [24] G. Diaz, S. Basu, M. Sen, K.T. Yang, and R.L. McClain. Effect of delay in heating and cooling systems. In *Poster at: Proceedings of the Eurotherm No. 53, Advanced Concepts and Techniques in Thermal Modeling*, pages 41–42, 1997.

UNDERGRADUATE POSTER SESSIONS

- [1] Genesis Higueros, Andres Munoz-Hernandez, and G. Diaz. High temperature steam activation of peach pit biochar. In *SACNAS Conference*, Salt Lake City, UT, October 2017.
- [2] Julio Perez and G. Diaz. Modeling of pressure drop and heat transfer correlation through ees and initial phase commercial scale manufacturing of novel solar thermal collector. In *SACNAS Conference*, Salt Lake City, UT, **SACNAS National Conference Research Presentation Award**, October 2017.
- [3] Victor H. Zendejas, Viacheslav Plotnikov, and G. Diaz. Decomposition of toluene and naphthalene (model tars) via application of atmospheric pressure dielectric barrier discharge plasma. In *SACNAS Conference*, Salt Lake City, UT, October 2017.
- [4] Genesis Higueros, Andres Munoz-Hernandez, and G. Diaz. High temperature steam activation of peach pit biochar. In *Poster at: UROC Summer Symposium*, Merced, CA, August 2017.
- [5] Julio Perez and G. Diaz. Modeling and manufacturing of aluminum mini-channel solar water heater. In *Poster at: UROC Summer Symposium*, Merced, CA, August 2017.

- [6] Victor H. Zendejas, Viacheslav Plotnikov, and G. Diaz. Decomposition of toluene and naphthalene (model tars) via application of atmospheric pressure dielectric barrier discharge plasma. In *Poster at: UROC Summer Symposium*, Merced, CA, August 2017.
- [7] K. Saechao, V. Duong, and G. Diaz. Design and test of a copper-based mini channel solar water heating system. In *2015 CAMP Symposium*, Irvine, CA, February 2015.
- [8] A. Robles and G. Diaz. Development of a control logic for an aluminum-based mini-channel solar water heating system. In *2013 SACNAS National Conference*, San Antonio, TX, October 2013.
- [9] D. Linarez and G. Diaz. Regenerative system for generation of superheated steam by induction heating. In *7th Annual Undergraduate Summer Research Symposium*, UC Merced, CA, 2013.
- [10] A. Perez-Tovar and G. Diaz. Design, fabrication, and calibration of orifice plate for flow measurements in plasma gasification system. In *2013 SACNAS National Conference*, San Antonio, TX. **First Place and Outstanding Contribution and Research Presentation Award**, 2013.
- [11] A. Robles and G. Diaz. Temperature measurements of an electrolytic tank under normal electrolysis and glow discharge. In *2013 NSF CAMP Symposium*, Irvine, CA. **Honorable Mention Medal**, 2013.
- [12] S. Telles and G. Diaz. Non-thermal plasma gasification with a planar gliding arc reactor. In *7th Annual Undergraduate Summer Research Symposium*, UC Merced, CA, 2013.
- [13] A. Martin and G. Diaz. Varying electrolyte composition in contact glow discharge electrolysis. In *Society for Advancement of Hispanics/Chicanos and Native Americans in Science National Conference (SACNAS)*, October 2012.
- [14] I. Hussain and G. Diaz. Biomass flowrate measurements for plasma gasification processes. In *2011 SACNAS National Conference*, San Jose, CA, 2011.
- [15] A. Robles and G. Diaz. Analysis of synthesis gas obtained from plasma gasification. In *2011 SACNAS National Conference*, San Jose, CA, 2011.
- [16] J. Lopez and G. Diaz. Solid oxide fuel cell performance in waste to energy conversion. In *2010 UC LEADS Symposium*, Merced, CA, 2010.

PATENTS

1. Hybrid Plasma Gasifier. Inventor: G. Diaz. Provisional Patent Application Docket No. 3891.007PRV.
2. Atmospheric-pressure magneto-hydrodynamic heat and power generator for commercial and residential applications. Inventors: E. Leal-Quiros and G. Diaz. Provisional Patent Application UC Ref.: 2011-610-1 (Pending)
3. Minichannel tube solar collector, Inventor: G. Diaz, N. Sharma. Pub. No. US 10,352,590 B2. Jul. 16, 2019.
4. Trigenation system and method, Inventor: G. Diaz, Pub. No. US 2009/0126381 A1, May 21, 2009

FUNDING

1. *Building the Circular Bioeconomy with Future Feedstocks in the North San Joaquin Valley (BioCirV)*. Sponsor: The Eric and Wendy Schmidt Fund for Strategic Innovation/UC Berkeley. Leading institution: Lawrence Berkeley National Lab. PI: B. Simmons. Subaward to UC Merced. Lead-PI: G. Diaz, Co-PIs: R. Ryals, T. Lempiala Contract # G-24-66487. (04/05/2024 - 04/04/2029)
2. *Living Matter, Artificial Intelligence, and Water Nascency (LAWN) for Regenerative Environments and Equity*. Sponsor: NSF. Lead-PI: M.P. Gutierrez (UCB), Co-PIs: M. Beutel (UCM), G. Diaz (UCM), K.M. Faust (UTexas), H. Li (UHouston). (01/15/2024 - 12/31/2024)

3. *Analysis and Demonstration of Circular Bioeconomy-based Production of Natural Fiber*. Sponsor: UC Merced 2023 Climate Action Research Seed Fund Competition. Lead-PI: G. Diaz, Co-PIs: C. Naughton and R. Ryals. (01/01/2024 - 6/30/2025)
4. *Advancing circular bioeconomy technologies in North San Joaquin Valley (CA)*. Sponsor: NSF. Lead-PI: P. Maglio, Co-PIs: G. Diaz, T. Lempiala. Award #: 2304059. (05/15/2023-04/30/2025)
5. *Center for Methane Emission Research and Innovation (CMERI)*. Sponsor: 2023 UC Merced Climate Action Research Seed Fund Competition. Lead-PI: YQ Chen, Co-PIs: G. Diaz, X. Zhang, S. Kurtz. (06/01/2023-06/30/2026)
6. *Fighting Organic Waste and Greenhouse Gas Emissions with Black Soldier Flies*. Sponsor: 2023 UC Merced Climate Action Research Seed Fund Competition. Lead-PI: M. Cleary, Co-PIs: G. Bennett, G. Diaz. (06/01/2023-06/30/2025)
7. *Natural Fiber Insulation Material from Forest Biochar for Sustainable Fire-Resistant Buildings*. Sponsor: USDA Wood Innovations Program, Lead-PI: G. Diaz (UCM), Co-PI: M-O Fortier (UNLV). Contract #: 22-DG-11052021-257 (9/2022-8/2024)
8. *Development of an autonomous water pre-treatment system for controlled environment agriculture using micro-plasma and AI Machines*. Sponsor: CITRIS, Lead-PI: Sankha Banerjee (CSU Fresno), UCM PI: G. Diaz, Co-PI: V. Ayyaswamy, Contract: # A22-0145-S007, (07/01/2022-12/31/2022)
9. *Mobile biochar production for methane emission reduction and soil amendment*. Sponsor: OPR/Strategic Growth Council. Lead-PI: G. Diaz, Co-PIs: A.A. Berhe, Y.Q. Chen, T.A. Ghezzehei, C. Keske, R. Ryals. Contract: # CCR20014 (05/2019-03/31/2022)
10. *Louis Stokes Alliances for Minority Participation (LSAMP) at the University of California-Riverside*, NSF - National Science Foundation, Contract: # 1826900 (UCR), UCM PI: G. Diaz, (July 2018 - June 2023).
11. *The internal compound parabolic concentrator (ICPC) - a novel low cost solar thermal collection system for desalination processes* Sponsor: U.S. Department of Energy. Lead-PI: R. Winston, Co-PIs: J. Palko, G. Diaz. Contract: # DE-EE0008399 (10/01/2018-09/30/2020)
12. *Laboratory Testing of Forest Biochar Treatments for the Wood Based Biochar as an Alternative Adsorption Material for the Control of Off-Gasses at Wastewater Treatment Plants*. Sponsor: U.S. Forest Service/California Association of Sanitation Agencies (CASA). Lead-PI: Greg Kester (CASA), UCM PI: G. Diaz. Contract: # 17-DG-11052021 (07/01/2017-06/30/2020)
13. *A Novel Low-Cost, High-Efficiency Solar Powered Micro-CHP System for Electricity, Hot Water, and Space Heating* Sponsor: California Energy Commission. PI: R. Winston, Co-PI: G. Diaz. Contract # GFO-16-503 (4/16/2017-10/03/2019)
14. *Demonstration of solar thermal water heating systems that utilize mini-channel technology in existing residential, commercial, and/or industrial buildings* Sponsor: California Energy Commission. PI: G. Diaz. Contract # 500-15-006 (4/01/2017-3/30/2021)
15. *Low Temperature Plasma Gasification to Utilize Diverse Carbonaceous Feedstocks* Sponsor: Oklahoma State University/USDA NIFA Prime. PI: Ajay Kumar (OSU), Co-PI: G. Diaz. (UCM sub-award). Award #: 2014-38502-22598 (OK State Sub # 3TC640) Performance Period: 9/1/2016- 8/31/2017. Total:
16. *Agriculture Waste Utilization through Low-Cost Activated Carbon Produced from Local Biochar* Sponsor: USDA AFRI. PI: Diaz, Co-PI: YQ Chen. Award # 2015-67021-24117 (July 2015 - June, 2018)
17. *North Fork Community Power Forest Bioenergy Facility Demonstration* Leading institution: The Watershed Research and Training Center. Contract # EPC-14-033. PI Subcontract to UC Merced: G. Diaz. Subcontract award. Sponsor: California Energy Commission. (Sept. 2015 - March 31, 2024)

18. *Biodiesel Production from Plasma-Processed Waste Oils for Distributed Power Generation*, PI: A. Martini, Co-PIs: G. Diaz, W. Rogge. UC Merced Committee on Research (COR). (May 2014 - June 1, 2016). (One year no-cost extension granted)
19. *Mini-Channel Technology to Improve Solar Water Heaters, Extension with additional funding* PI: G. Diaz. Sponsor: California Institute for Energy and Environment. (06/30/2014-12/31/2014). Contract # (MCA) POEF01-M04.
20. *Atmospheric Pressure Glow Discharge Utilization for Energy Efficient Steam Generation from Liquid Waste: Process Innovations in Energy-Water Nexus* PI: G. Diaz, Sponsor: Research, Travel and/or Shared Equipment Grant, Graduate Research Council, U.C. Merced. (3/21/2012–3/20/2013)
21. *2011-2016 California Louis Stokes Alliance for Minority Participation (CAMP) Senior Level Alliance*, PI: Michael V. Drake (UCI), Sub Award to Merced: PI: C.F.M. Coimbra, Co-PI G. Diaz, Sponsor: NSF. (7/1/11–6/30/2016). Award: HRD-1102531
22. *Mini-Channel Technology to Improve Solar Water Heaters*, PI: G. Diaz. Sponsor: California Institute for Energy and Environment . (7/20/2011– 06/30/2014). Contract # POEF01-M04.
23. *Syngas generation from organic waste with plasma steam reforming* PI: G. Diaz, Sponsor: Research, Travel and/or Shared Equipment Grant, Graduate Research Council, U.C. Merced. (4/8/2010–6/30/2011)
24. *Numerical analysis of a minichannel solar collector for CO₂-based Rankine cycle applications* PI: G. Diaz, Sponsor: Research, Travel and/or Shared Equipment Grant, Graduate Research Council, U.C. Merced. (4/29/09–6/30/2010)
25. *Piloting a Integrated a Renewable Energy Portfolio for the UC Merced Community*, PI: C.F.M. Coimbra, Co-PI: G. Diaz. Sponsor: Renewable-based energy secure communities program from the California Energy Commission (Contribution 33%). (9/1/2009–8/30/2012) . Contract # PIR-08-036. (PI: Diaz, Co-PI: C.F.M Coimbra since 08/2011)
26. *Combustion Analysis in Alternative Fuel Homogeneous Charge Compression Ignition Engines*, P.I.: G. Diaz. Sponsor: Lawrence Livermore National Security, LLC. (12/01/2007–11/30/2009) Contract #:B570250.
27. *Integrated hybrid refrigeration system using liquid desiccants*, PI: G. Diaz, Co-PI: R. Winston. Sponsor: PIER Food Industry Energy Research Program from the California Energy Commission (5/1/2007–6/30/2009) Contract #: 500-02-004, WA# MR-062.
28. *Combustion Analysis in Alternative Fuel Homogeneous Charge Compression Ignition Engines*, P.I.: G. Diaz. Sponsor: LLNL Intra-University Transaction. (11/21/2006–09/30/2007) Contract # W-7405-ENG-48.

INVITED PRESENTATIONS

1. Presented paper “BioCircular Valley” and gave demo at NSF Roadmap summit together with Dr. James Gardner from LBNL. Invitation from NSF to UC Merced, BEAM Circular, and LBNL. Washington, DC (December 3-4, 2024)
2. Panelist discussing “Perspectives & Stories from the Field: Circular Bioeconomy Panel.” Topic: How can local universities support innovation? (Spotlight on biochar lab at UCM). BEAM Circular Community Symposium. UC Merced. May 22, 2024.
3. “Biochar and Climate Change Innovations in Ag and Industry”, presented at CITRIS due to a donor visit. UC Merced, June 29, 2023.

4. Panelist discussing “Mobile Biochar Production for Methane Emission Reduction and Soil Amendment”, presented at the Climate Change Research Program Research Round Table: Integrating Community Perspectives in Research, Organized by California’s Strategic Growth Council. Location: UC Merced (August 31, 2022)
5. “SGC project status”, Zoom presentation at Biochar Workshop. Organized by the California Biomass Cooperative. (March, 2021)
6. “Research Group Description”, Presentation to San Jose State University/UC Merced SOE Flash Talks. October 2021.
7. “Innovative Solar Water Heating for Residential, Commercial and Industrial Facilities”, presentation and panel discussion (via Zoom). California Energy Commission Solar Thermal Workshop. October 15, 2020.
8. “Energy-Efficient Building HVAC as a Response to COVID-19”, presentation for California Energy Commission Staff (via Zoom). September 22, 2020.
9. “Biochar and GAC for Methane Emission Reduction and Soil Amendment” at SNRI Research Symposium, UC Merced, March 2, 2020.
10. “Progress in Mobile Biochar Production for Methane Emission Reduction and Soil Amendment” at 3rd Annual Biochar Workshop, Butte College, Oroville, CA. February 27, 2020.
11. “Panel: Climate Change Solutions: Capturing Greenhouse Gas Emissions in Land.” Panelist at 2020 AAAS annual meeting, Seattle, WA. Presented ”Mobile Biochar Production for Methane Emission Reduction and Soil Amendment.” Organized by: Prof. Benjamin Houlton, UC Davis. February 14, 2020.
12. “Panel: Research Innovations for Natural and Working Lands.” Panelist at 2019 SGC Climate Change Research Showcase for State Staff. California Energy Commission, CA. Organized by California Strategic Growth Council. November 6, 2019.
13. “Biochar and GAC for Methane Emission Reduction and Soil Amendment”, CITRIS Ag-Food-Tech Roundtable, UC Merced, October 24, 2019. Organizer: Prof. Josh Viers.
14. “Methane: Opportunities and Challenges.” MIST seminar series. UC Merced, October 2, 2019. Organizer: Prof. Paul Maglio.
15. “Mobile Biochar Production for Dairy Manure.” 1st Annual Scientific Summit on Dairy Methane Management Research. The Conference Center at UC Davis. Coordinated by: UC Division of Agriculture and Natural Resources and UC Davis California Dept. of Food and Agriculture and Institute for Gas Innovation and Technology, June 11-12, 2019
16. “Mobile biochar production for methane emission reduction and soil amendment.” Almond Board of California, Biomass Working Group, March 22, 2019.
17. “New perspectives in solar thermal energy for the residential and commercial sector” (In Spanish), in Symposium on Solar technologies for process heat, University of Chile, December 7, 2018. Funded by collaborative project: New concepts for solar collectors in applications of process heat and solar refrigeration. CONICYT, Contract # REDI170176. PI: J.M. Cardemil.
18. “Panel 4: Updates in Biochar and Activated Carbon.” Panelist at Western Statewide Wood Energy Team Forum. Fresno, CA. Organized by The Watershed Research and Training Center. November 15, 2017.
19. “Physical and Plasma Activated Carbon.” CWEA’s Biosolids & Renewable Energy Innovation Technology Seminar. Berkeley, CA. Organized by Greg Kester from California Association of Sanitary Agencies (CASA). November 14, 2017

20. "Solar Powered Water Heating Technology Research." American Council for an Energy-Efficient Economy (ACEEE) 2017 Hot Water Forum, Portland, OR.
21. "Perspectives on Graduate School in the U.S.A. and Current Research at Diaz's Group" (In Spanish). Location: Universidad de La Serena, La Serena, Chile. November 2017
22. "Trends, Research, and Development of Sustainable Energies." (In Spanish). Location: Universidad de Chile, Santiago, Chile. October 2017
23. "Piloting and Integrated Renewable Energy Portfolio for the UC Merced Community." Presented at California Energy Commission Workshop - Energizing California's Communities with Renewables: A Central Valley Perspective. Location: San Joaquin Valley Air Pollution Control District, Fresno, CA, September 23, 2015
24. "Piloting and Integrated Renewable Energy Portfolio for the UC Merced Community." Presented at July 29th Energy Commission Staff Workshop - Energizing California's Communities with Renewables. Location: California Energy Commission, July 2015
25. "Alternative paths toward Carbon Neutrality: biomass gasification and bio-methane generation". Presented at Research Week Symposium organized by Sierra Nevada Research Institute, UC Merced, March 2015.
26. "Minichannel Solar Collectors." Presented at UC Solar Meeting, UC Davis, Feb 18, 2015.
27. "Performance of an aluminum-based minichannel solar collector for water heating applications." V. Duong (presenter) and G. Diaz. California Energy Commission 40th Anniversary, San Francisco, CA, January 2015. Showcased technology selected by the CEC.
28. "Energy Conversion of Biomass using Industrial Plasma Discharges". Seminar series for the Center of Energy and Sustainability (CEaS), CSU Los Angeles, February 7, 2014.
29. "Contact glow discharge electrolysis in the presence of solid organic waste." N. Sharma, A. Munoz-Hernandez, G. Diaz, E. Leal-Munoz (presenter). LAWPPP 2014. San José, Costa Rica.
30. "Industrial Plasma Processes for Sustainable Energy Conversion", UC Riverside Mech. Eng. Seminar, November 8, 2013
31. "Plasma Applications for Filtration Processes", Parket Hannifin visit to UC Merced, October 25, 2013
32. "Plasma Gasification of Biomass", CSU Fresno, Physics Colloquium, April 12, 2013
33. "New Approaches to Solar Thermal - From 50 to 250 oC", 2013 UC Solar Research Symposium, UC Davis, May 2013.
34. "Topics in Sustainable Energy and Fractional Calculus", Universidad de La Serena, Chile, La Serena, June 2012.
35. "The Potential and Contribution of Waste for Reaching Zero Net Energy and Zero Landfill-waste," i4Energy seminar, Banatao Auditorium, Sutardja Dai Hall, UC Berkeley, April 2011
36. "Piloting an Integrated Renewable Energy Portfolio for the UC Merced Community" progress report at UC Davis, 2011 RESCO Experts symposium (February 2011)
37. "Energy of the future," Invited talk for Frontiers of Science and Engineering. Challenger Learning Center (Atwater), October 2008.
38. "Numerical simulations of evacuated-tube solar collectors," Solar Energy: Today and Tomorrow Symposium at UC Merced, September 2008.
39. "Energy efficiency at UC Merced," California Public Utilities Commission visit at UC Merced, June 2008.
40. "Energy of the future," Invited talk CORE 1, April 2008.

41. "Energy of the future," Invited talk for CORE 100, December 2007.
42. "Energy research at UC Merced," UC - Canada Workshop at UC Davis, March 2007.

ARTICLES, RADIO or TV APPEARANCES

1. UC Merced Newsroom. NSF-Funded Project Promotes Reuse of 'Greywater' in Households Integrating AI Toward Equity. (July 8, 2024) (<https://news.ucmerced.edu/news/2024/nsf-funded-project-promotes-reuse-greywater-households-integrating-ai-toward-equity>)
2. AIP Publishing Scilight. Researchers identify best spots for Californian solar water heaters (April 26, 2024). (<https://doi.org/10.1063/10.0025864>)
3. The Western Producer (Canada). Biochar helps cut manure emissions. (January 12, 2023). (<https://www.producer.com/livestock/biochar-helps-cut-manure-emissions/>)
4. UC Merced Newsroom. Dramatically Reducing Dairy Farmers' Climate Impact. (Nov. 28, 2022). (<https://ucm.edu/YzLwAt>)
5. ABC News San Francisco. New strategies could help California meet methane goals. <https://abc7news.com/california-methane-research-climate-change-global-warming-biochar/11191921/>. (Nov. 2021)
6. Keske Publication Shows Central Valley Ripe for Biochar Studies. By Elizabeth Arakelian, UC Merced. (Oct. 2021)
7. ABC News San Francisco. West Coast researchers turn to biochar in fight against climate change. <https://abc7news.com/biochar-wildfires-agriculture-methane/11062106/>. (Sept. 2021)
8. CBS47 and KSEE24 News Fresno. UC Merced research aims to use biochar to reduce methane emissions from dairies. <https://www.yourcentralvalley.com/news/uc-merced-research-aims-to-use-biochar-to-reduce-methane-emissions-from-dairies/1818853350/>. (Feb. 2019)
9. UC Merced Newsroom. Researchers Hope to Tackle Methane Emissions in Manure Through Use of Biochar. <https://news.ucmerced.edu/news/2019/researchers-hope-tackle-methane-emissions-manure-through-use-biochar>. (Feb. 2019)
10. UNAM Mexico. Homenaje al doctor Mihir Sen. https://www.comunicacionfi.unam.mx/mostrar_noticia.php?id_noticia=1098. (Jul. 2017)
11. UC Merced Newsroom. Researcher's Solar-Powered Water Heaters Could Save Energy and Money. By Lorena Anderson. (Sept. 2016)
12. UC Merced Newsroom. Professors's Energy Ventures Address Multiple Critical Issues. By Lorena Anderson. (Oct. 2015)
13. UC Merced Newsroom. Impact: Burning Biomass for Energy. <https://www.youtube.com/watch?v=cHGwlmW1fUM>. (Apr. 2014)
14. Sacramento Bee and Merced Sun Star. Team adapts technology for solar collection. (Sept. 2013)
15. UC Merced Newsroom. Well-known Technology Gets New Use in Solar Collection at UC Merced. By Lorena Anderson. (Jul. 2013)
16. Merced Sun Star, Energy Central, Canadian Biomass Magazine. UC Merced team explores use of plasma with biomass. (Jul. 2012)

NON-TECHNICAL PRESENTATIONS

1. Fiat Lux Faculty Reception, April 2014
2. "Engineering" Merced High School to English as a Second Language students, March 2011

3. "What it's like to be an engineer" Service Learning Students, October 2010
4. "Engineering Associations," Vanguard recruiting event, UC Merced, February 2010.
5. "Job Options," Service learning skill session, November 2009.
6. "Waste-to-Energy Research at UC Merced," to 4-H high school students, August 2009.
7. "Mechanical Engineering at UC Merced," to CSU Fresno faculty, April 2009.
8. "Mechanical Engineering at UC Merced," Orientation day for School of Engineering, July 2008.
9. "SEA/SHPE at UC Merced," SEA/SHPE Workshop for high-school students, February 2008.
10. "Staying active in school," SHPE Academic Excellence Month at UC Merced, November 2007.
11. "Mechanical Engineering at UC Merced," Recruiting efforts SoE - UCM, August 2007.
12. "Undergraduate program in Mechanical Engineering at UC Merced," Universidad Austral, Valdivia, Chile. June 2007. National Laboratory (CFD group), April 2006.
13. "Mechanical Engineering at UC Merced," Lawrence Livermore
14. "Engineering at UC Merced," Merced College, October 2005.

PROFESSIONAL SERVICE

Editorships

- Deputy Editor, AIP Journal Renewable & Sustainable Energy (2023 - 2024)
- Associate Editor, ASME Open Journal of Engineering (2022 - 2024)
- Associate Editor, AIP Journal Renewable & Sustainable Energy (2020 - 2023)
- Associate Editor, ASME Journal of Solar Energy Engineering (2017 - 2020)

Reviewer

Journals

- ACS Industrial & Engineering Chemistry Research
- ACS Journal of Physical Chemistry
- AIAA Journal of Aircraft
- AIP Journal of Applied Physics
- Applied Energy
- Applied Thermal Engineering
- ASHRAE International Journal of HVAC&R Research
- ASME Heat Transfer Engineering
- ASME Journal of Heat Transfer
- ASME Journal of Solar Energy Engineering
- ASME Journal of Thermal Science and Engineering Applications
- Chemical and Biochemical Engineering Quarterly
- Chemical Engineering and Processing: Process Intensification

- Chemical Product and Process Modeling
- Communications in Nonlinear Science and Numerical Simulations
- Control and Intelligent Systems journal
- Energy Conversion and Management
- Environmental Engineering Science
- Fuel
- Heat Transfer Engineering
- Industrial & Engineering Chemistry Research
- International Journal of Chemical Reactor Engineering
- International Journal of Engineering, Science and Technology
- International Journal of Heat and Mass Transfer
- International Journal of Hydrogen Energy
- International Journal of Numerical Methods for Heat and Fluid Flow
- International Journal of Thermal Sciences
- International Review of Chemical Engineering
- Journal of Advanced Research
- Journal of Applied Physics
- Journal of Renewable and Sustainable Energy
- Journal of Thermal Analysis and Calorimetry
- Latin American and Caribbean Journal of Engineering Education
- Numerical Methods for Partial Differential Equations
- Optics Express (Energy Express supplement)
- PLOS ONE
- Progress in Fractional Differentiation and Applications
- Recent Patents in Mechanical Engineering
- Sensors and Actuators: A. Physical
- Sustainable Energy Technologies and Assessments

Book Publishers

- Oxford University Press
- Elsevier

Funding Institutions

- American Chemical Society Petroleum Research Fund
- Roadmap for the California Energy Commission's Public Interest Energy Research Advanced Generation (PIER AGen) Program
- DOE SBIR/STTR Phase I Program
- NRC Research Associateship Program

- National Academies SAT Program
- NSF CAMP, UC LEADS, McNair Programs (UC Merced)
- NSF CBET Thermal Transport Processes
- DOE Technology Commercialization Fund (TCF)

Professional

1. National Science Foundation member of proposal review panel CBET (January 2025)
2. Session Co-organizer and Chair for ASME SHTC, Sessions K6-08: Heat Transfer in Energy Systems - Waste Heat I, and K6-09: Heat Transfer in Energy Systems - Waste Heat II. Part of K-6 sessions (July 2024)
3. Waste Management & Research, Reviewer (March, 2022)
4. Session Chair for virtual ASME IMECE 2021: 11-06-01 Heat Transfer in Solar and Renewable Energy Systems - Concentrated Solar Power and Thermal Storage. Part of K-6 sessions (November 2021)
5. Applied Physics Letters, Reviewer (November, 2021)
6. Reviewer, ASME IMECE 2021. Manuscripts: #66983, #69716, #71491, #72889, #67195, #69681. (May 2021)
7. Reviewer, Heat Transfer (Wiley). HTJ-04-2021-OA-0284 (May 2021)
8. Reviewer, AIP Journal of Renewable and Sustainable Energy. Manuscript #JRSE21-AR-00221 (March 2021)
9. Reviewer, Waste Management & Research. Manuscript WMR-21-0084. (March 2021)
10. AIP Journal of Renewable & Sustainable Energy, Associate Editor, Compensated, January 2020 - Current.
11. American Society of Mechanical Engineers IMECE 2020, Reviewer (June 2020).
12. ASME Journal of Solar Energy Engineering, Associate Editor (2017 - 2020)
13. ASME Journal of Heat Transfer, Reviewer. (September 2017).
14. International Journal of Heat and Mass Transfer, Reviewer. (November 2017).
15. DOE Office of Technology Commercialization, Proposals, Reviewer, National. (February 2020).
16. UC Solar, Associate Director, Elected. (February 2013 - 2019).
17. ACS Applied Materials & Interfaces, Reviewer. (August 2019).
18. International Journal of Heat and Mass Transfer, Reviewer (July 2019).
19. Waste Management & Research, Reviewer. (May 2019).
20. Solar World Congress 2019, Reviewer manuscripts: -9695, -2462, -4779. (May 2019).
21. International Journal of Heat and Mass Transfer, Reviewer. (February 2019).
22. Journal of Renewable and Sustainable Energy, Reviewer. (February 2019).
23. Waste Management & Research, Reviewer. (February 2019).
24. CONICYT Proposal reviewer, Proposal: Advancing Fundamental Understanding of Soot Formation in Steady and Acoustically Forced Non-Premixed Flames of Liquid Fuels and Biofuels. For CONICYT Chile. (December 2018).

25. Environmental Engineering Science, Reviewer. (December 2018).
26. International Journal of Heat and Mass Transfer, Reviewer. (November 2018).
27. Technical Advisory committee (TAC) for Lawrence Berkeley National Lab, Member, Elected, State. (July 2018 - October 2018).
28. Delegate for 2018 Global Climate Action Summit, Attendee, San Francisco, CA, United States, Elected (September 2018).
29. Complexity, Reviewer. (August 2018).
30. Nonlinear Dynamics journal, Reviewer. (August 2018).
31. International Journal of Heat and Mass Transfer, Reviewer. (June 2018).
32. American Society of Mechanical Engineers, Reviewer IMECE2018-88180 (June 2018).
33. American Society of Mechanical Engineers, Reviewer IMECE2018-86404 (June 2018).
34. International Journal of Heat and Mass Transfer, Reviewer. (May 2018).
35. International Journal of Heat and Mass Transfer, Reviewer. (April 2018).
36. National Science Foundation proposal review panel CBET. FY18, Proposal Panel, FY18 UNS 1406 TTP Panel ID: P181598. Program Manager: Jose Lage (March 2018).
37. Journal of Thermal Science and Engineering Applications, Reviewer. (March 2018).
38. BioResources journal, Reviewer. (February 2018).
39. Journal: Energy & Fuels, Reviewer. (June 2017).
40. ASME Journal of Solar Energy Engineering (SOL-17-1155), Associate Editor. (May 2017).
41. ASME Journal of Heat Transfer, Reviewer. (May 2017).
42. American Society of Thermal and Fluids Engineers, Member, Las Vegas, NV, U.S.A., International. (September 2016 - April 2017).
43. Reviewed Journal of Solar Energy Engineering: Including Wind Energy and Building Energy Conservation, Reviewer. (April 2017).
44. Journal of Solar Energy Engineering: Including Wind Energy and Building Energy Conservation, Reviewer. (April 2017).
45. 4th International Workshop on Heat Transfer (IWHT), Session Chair, Las Vegas, NV, USA (April 2017).
46. 4th International Workshop on Heat Transfer (IWHT), Organizer, Las Vegas, NV, USA (April 2017).
47. International Journal of Heat and Mass Transfer, Reviewer. (March 2017).
48. California Biochar Association, Organizer, Atwater, CA, Elected, State. (March 2017).
49. California Biochar Association, Organizer, Atwater, CA, Elected, State. (February 2017).
50. Governor's Office of Planning and Research (OPR), Member, Sacramento, CA, U.S.A., Appointed, State. (January 2017).
51. Solar Energy Engineering:, Reviewer. (December 2016).
52. Solar Energy Engineering, Reviewer. (November 2016).
53. Waste Management & Research, Reviewer. (November 2016).
54. Solar Energy, Reviewer. (October 2016).

55. Plasma Chemistry and Plasma Processing, Reviewer. (August 2016).
56. Hydrogen Energy, Reviewer. (August 2016).
57. Journal of Solar Energy Engineering: Including Wind Energy and Building Energy Conservation, Reviewer. (June 2016).
58. Elsevier, Reviewer Book Proposal: Hydrogen Generation From Ethanol Using Plasma Reforming Technology, Author: Changming Du (April 2016).
59. International Conference of Plasma Assisted Technologies, Chair. (March 2016).
60. Journal of Solar Energy Engineering: Including Wind Energy and Building Energy Conservation, Reviewer. (February 2016).
61. American Chemical Society Petroleum Research Fund, Reviewer. (February 2016).
62. Modelling and Simulation, Reviewer. (February 2016).
63. Waste Management & Research, Reviewer. (January 2016).
64. ASME Journal of Thermal Science and Engineering Applications, Reviewer. (December 2015).
65. International Journal of Heat and Mass Transfer, Reviewer. (November 2015).
66. Cogent Engineering, Reviewer. (November 2015).
67. AIP Journal of Renewable and Sustainable Energy, Reviewer. (November 2015).
68. Journal of Solar Energy Engineering: Including Wind Energy and Building Energy Conservation, Reviewer. (November 2015).
69. Waste Management & Research, Reviewer. (November 2015).
70. Waste Management & Research, Reviewer. (November 2015).
71. PLOS ONE, Reviewer. (September 2015).
72. ASME Journal of Thermal Science and Engineering Applications, Reviewer. (September 2015).
73. Sensors and Actuators: A. Physical, Reviewer. (August 2015).
74. Fuel, Reviewer. (August 2015).
75. ACS Journal of Physical Chemistry, Reviewer. (June 2015).
76. International Conference on Computing in Mechanical Engineering, Member, Kochi, India (June 2015).
77. International Conference on Computing in Mechanical Engineering, Reviewer, Kochi, India (June 2015).
78. Progress in Fractional Differentiation and Applications, Reviewer. (March 2015).
79. Journal of Applied Physics, Reviewer. (September 2014).
80. ASME Journal of Thermal Science and Engineering Applications, Reviewer. (September 2014).
81. ASME IMECE, Reviewer. (May 2014).
82. JOURNAL OF APPLIED PHYSICS, Reviewer. (May 2014).
83. ASME TSEA Journal, Reviewer. (March 2014).
84. Applied Energy, Reviewer. (February 2014).
85. HEFAT2014, Reviewer. (February 2014).
86. International Journal of Hydrogen Energy, Reviewer. (January 2014).

87. National Academies (SAT program), Referee. (September 2013).
88. Journal of Renewable and Sustainable Energy, Reviewer. (August 2013).
89. ASME K-6 Technical Committee (Heat Transfer in Energy Systems). (July 2013).
90. International Journal of Engineering, Science and Technology, Reviewer. (July 2013).
91. Energy Conversion and Management Journal, Reviewer. (July 2013).
92. Sustainable Energy Technologies and Assessments Journal, Reviewer. (July 2013).
93. Energy Conversion and Management Journal, Reviewer. (May 2013).
94. American Society of Mechanical Engineers IMECE 2013, Reviewer. (May 2013).
95. Innovate to Grow Capstone Design at UCM School of Engineering, Referee. (May 2013).
96. International Conference of ECOS 2013, Reviewer. (April 2013).
97. UC Merced, Reviewer applications for CAMP, UCLEADS, and PG&E for undergraduate summer fellowships. (April 2013).
98. Latin American and Caribbean Journal of Engineering Education, Reviewer. (February 2013).
99. Journal of Advanced Research, Reviewer. (January 2013).
100. Int. J. Heat and Mass Transfer, Reviewer. (November 2012).
101. Sierra Nevada Research Institute, Member. (October 2012).
102. National Research Council, Reviewer. (September 2012).
103. Latin American and Caribbean Journal of Engineering Education, Reviewer. (May 2012).
104. National Academies (SAT program), Referee, Irvine, CA, United States. (March 2012).
105. NSF - UC CAMP Grant (UC Irvine), Referee, Irvine, CA, Pro Bono. (February 2012).
106. 16th IFAC Symposium on System Identification (SYSID 2012), Reviewer. (December 2011).
107. Journal: Environmental Engineering Science, Reviewer. (December 2011).
108. ASME Journal of Heat Transfer, Reviewer. (December 2011).
109. Journal of Thermal Analysis and Calorimetry, Reviewer. (November 2011).
110. Journal: Numerical Heat Transfer, Reviewer. (September 2011).
111. Journal: Applied Energy, Reviewer. (September 2011).
112. International Journal of Thermal Sciences, Reviewer. (June 2011).
113. American Society of Mechanical Engineers, Reviewer. (June 2011).
114. Journal: Industrial & Engineering Chemistry Research, Reviewer. (April 2011).
115. International Journal of Thermal Sciences, Reviewer. (March 2011).
116. ICAE 2011 International Conference on Applied Energy, Reviewer. (March 2011).
117. Department of Energy SBIR/STTR Phase I Program, Reviewer. (February 2011).
118. ICAE 2011 International Conference on Applied Energy, Reviewer. (February 2011).
119. ASME Journal of Heat Transfer, Reviewer. (February 2011).
120. ICAE 2011 International Conference on Applied Energy, Reviewer. (February 2011).

121. Advanced Energy System Division technical Committee of ASME, Member, Appointed, National. (2010).
122. International Journal of Hydrogen Energy, Reviewer. (December 2010).
123. Journal of Aircraft, Reviewer. (October 2010).
124. Fourth IFAC Workshop on Fractional Derivatives and Applications (IFAC FDA2010), Reviewer. (June 2010).
125. Optics Express (Energy Express supplement), Reviewer (March 2010).
126. Oxford University Press, Reviewer. (March 2010).
127. California Energy Commission, Reviewer, Appointed, State. (September 2009).
128. International Review of Chemical Engineering, Reviewer (May 2009).
129. Heat Transfer Engineering, Reviewer (March 2009).
130. Chemical Product and Process Modeling, Reviewer (January 2009).
131. Communications in Nonlinear Science and Numerical Simulations, Reviewer (December 2008).
132. Chemical Engineering and Processing: Process Intensification, Reviewer (November 2008).
133. International Journal of Numerical Methods for Heat and Fluid Flow, Reviewer (October 2008).
134. International Journal of Hydrogen Energy, Reviewer (August 2008).
135. Mechanical Engineering Journal, Reviewer (June 2008).
136. Chemical and Biochemical Engineering Quarterly, Reviewer (March 2008).
137. International Journal of Heat and Mass Transfer, Reviewer (March 2008).
138. International Journal of Chemical Reactor Engineering, Reviewer (November 2007).
139. International Journal of Heat and Mass Transfer, Reviewer (July 2007).
140. International Journal of Heat and Mass Transfer, Reviewer (April 2007).
141. ASHRAE International Journal of HVAC&R Research, Reviewer (March 2007).
142. International Journal of Heat and Mass Transfer, Reviewer (February 2006).
143. Control and Intelligent Systems Journal, Reviewer (August 2005).
144. Numerical Methods for Partial Differential Equations, Reviewer (2003).

CAMPUS SERVICE

Department Service

1. Co-organizer for seminar series for Env Systems program, Co-Coordinator, Pro Bono. (Aug, 2023 - May, 2024). Co-leading seminar series with Abel Chuang for Env. Systems program
2. Preliminary exam for Heat Transfer for ME graduate students. (March 24, 2023).
3. Merit review committee ME Associate Professor, Chair, Appointed, Pro Bono (September 27, 2022 - November 16, 2022).
4. Member, Preliminary exam for Heat Transfer (Spring 2022)
5. Member, Merit review committee for ME Associate Prof. (Oct. 2021)
6. Member, Search committee for spousal hiring faculty position in Mechanical Engineering (June 2021)

7. Member, Preliminary exam for Heat Transfer (Fall 2021)
8. Chair, Merit review committee for ME Associate Professor. (Feb. 2021)
9. Chair, Graduate Chair for Mechanical Engineering. (July 2018 - June 2020)
10. Chair, Merit review committee for ME Professional Researcher. (Fall 2020)
11. Chair, Tenure review committee for ME Assistant Professor. (Fall 2020)
12. Chair, Merit review committee for ME Adjunct Professor. (April 2020)
13. Member, Preliminary exam for Thermodynamics, ME graduate students. (March 2020)
14. Member, Tenure review committee for ME Assistant Professor. (August 2019 - February 2020)
15. Organizer, Visit of CSU Fresno faculty and graduate students. (December 2019)
16. Chair, Merit review committee ME Associate Professor. (October 2019)
17. Chair, Merit review committee for ME Assistant Professor. (October 2018)
18. Chair, Merit review committee for ME Assistant Professor. (September 2018)
19. Member, Search committee for Env. Civil Engineering. (August 2017 - June 2018)
20. Member, Merit review committee for ME Adjunct Professor. (February 2018)
21. Member, Merit review committee for ME lecturer. (January 2018)
22. Chair, Chair of Merit Review committee for ME Professional Scientist. (November 2017)
23. Member, Reviewer ME Dissertation Fellowships. (September 2017)
24. Member, Preliminary exam for ME graduate students. (September 2017)
25. Chair, ME faculty position in Eng. Systems for Agriculture. (August 2015 - September 2016)
26. Chair, ME faculty position in Eng. Systems for Agriculture. (May 2016)
27. Member, Preliminary exam for ME graduate students. (April 2016)
28. Member, Graduate Student Opportunity Fellowship for Mech. Eng. Graduate students. (January 2016)
29. Chair, Admission committee for Env. Systems graduate program. (December 2015 - January 2016)
30. Chair, Merit review committee for ME Assistant faculty. (September 2015 - October 2015)
31. Chair, Search Committee for ME faculty positions in Thermal Fluids. (October 2014 - July 2015)
32. Chair, Merit review committee for ME Associate faculty. (September 2014 - November 2014)
33. Member, Merit and Mid Career review committee for ME Assistant faculty. (September 2014 - October 2014)

School Service

1. Member, Environmental Systems graduate program. (2006 - present)
2. Attendee, Dean's Council Chairs meetings. (July 2018 - December 2019)
3. Member, Machine Shop Manager position search committee. (August 2019)
4. Member, Executive Committee in SoE. (August 2015 - May 2016)
5. Member, Machine Shop position search committee. (February 2016 - March 2016)
6. Member, Engineering CFAO Position. (February 2016)

7. Member, Contracts and Grants Analyst Position in SoE search committee. (January 2015)
8. Member, Machine Shop position search committee. (September 2014)
9. Member, ME Sustainable energy search committee. (August 2013 - May 2014)
10. Judge, Service Learning. (May 2014)
11. Qualifying Examination EECS. (February 2014)
12. Member, Comprehensive Exam for ME. (February 2014)
13. Member, Mechanical Engineering and Applied Mechanics graduate program. (2007 - 2013)
14. Chair, Mechanical Engineering and Applied Mechanics graduate group. (August 2011 - July 2013)
15. Member, Committee for the development of the Mechanical Engineering and Applied Mechanics graduate program. (2007 - July 2013)
16. Member, Preliminary Exam committee. (June 2013)
17. Chair, Merit Review Committee. (October 2012 - May 2013)
18. FAO, FAO for Mechanical Engineering program review. (March 2012 - May 2013)
19. Judge, Innovate to Grow Capstone Design SoE. (May 2013)
20. Member, Summer Instructor Position SoE. (April 2013)
21. Member, Lecturer Position SoE. (April 2013)
22. Member, ME Graduate Group Summer Fellowships. (March 2013)
23. Member, Preliminary Exam committee. (January 2013)
24. Member, Mechanical Engineering and Applied Mechanics graduate group. (December 2012 - January 2013)
25. Coordinator, ABET Process for Mechanical Engineering. (August 2011 - July 2012)
26. Member, Preliminary Exam committee. (July 2012)
27. Interviewer, Director of Development SOE/NS. (November 2011)
28. Member, Preliminary Exam committee. (July 2011)
29. Member, Search Committee for MEAM Computational Mechanics. (July 2010 - June 2011)
30. Member, Academic Personnel Committee. (July 2009 - June 2011)
31. Interviewer, SoE Lab Support Staff person search committee. (May 2011)
32. Chair, Curriculum committee for MEAM graduate group. (February 2008 - 2010)
33. Guest Speaker, Service Learning. (October 2010)
34. Guest Speaker, No Impact Week. (September 2010)
35. Member, Search Committee for MEAM Computational Mechanics. (July 2009 - June 2010)
36. Guest Speaker, Engineering Associations. (February 2010)
37. Judge, Professional Seminar evaluation projects. (July 2009 - December 2009)
38. Guest Speaker, Job Options. (November 2009)
39. Member, Resources Committee. (July 2008 - June 2009)
40. Guest Speaker, Mechanical Engineering at UC Merced. (July 2008)

41. Member, Search Committee for Complex Systems position (ME7). (January 2008 - June 2008)
42. Member, Search Committee for Multiscale modeling position. (January 2008 - June 2008)
43. Member, Mechatronics Working Group. (July 2007 - June 2008)
44. Member, Resources Committee. (July 2007 - June 2008)
45. Guest Speaker, SEA/SHPE at UC Merced. (February 2008)
46. Guest Speaker, Staying active in school. (November 2007)
47. Guest Speaker, Mechanical Engineering at UC Merced. (August 2007)
48. Member, Committee to start Mechanical Engineering Applied Mechanics graduate group. (July 2006 - June 2007)
49. Member, Resources Committee. (July 2006 - June 2007)
50. Member, Search committee for Materials faculty position. (July 2006 - June 2007)
51. Chair, Search committee for ME2 Senior Level Position. (July 2006 - June 2007)
52. Member, Search committee for ME4 senior level faculty position. (July 2006 - June 2007)
53. Chair, Search committee for ME3 Assistant Level Position. (July 2005 - June 2006)
54. Member, Development of Mechanical Engineering Program. (2005)

University Service

1. Member Reserve Committee on Academic Personnel (R-CAP) (Spring 2022)
2. Member of General Education committee (Fall 2021, Spring 2022)
3. Faculty directors interview with NSF CAMP program managers. Organized by UCR with participation of 9 UC campuses. (September 2021)
4. Member of Procurement Task Force. Requested by Interim Vice Chancellor and Chief Financial Officer, Kurt Schnier (Fall 2021)
5. Judge at virtual CAMP symposium (Organized by UCR) (Feb. 2021)
6. Reviewer, Central Valley Fellowship. (August 2019)
7. Organizer, Roundtable and Listening session for Strategic Growth Council (SGC). (May 2019)
8. Member, Chief Diversity Officer. (February 2019)
9. Advisor, Science and Engineering Association (SEA-branch of SHPE). (2005 - January 2019)
10. Member, UC Merced Undergraduate Council. (July 2017 - June 2018)
11. Member, University of Chile, PhD dissertation committee. (May 2018)
12. Reviewer, Senate Teaching Awards. (March 2018)
13. Reviewer, Associate Project Scientist position at UC San Diego. (September 2017)
14. Member, Sustainability SAF steering committee. (August 2015 - May 2016)
15. Member, Climate neutrality workshop. (March 2016 - May 2016)
16. Reviewer, Proposals for Senate grants. (March 2016 - April 2016)
17. Member, Student mobility UC/Mexico Initiative task force. (January 2015 - March 2016)
18. Reviewer, Proposals for Interdisciplinary Small Grants from Graduate Division. (May 2015)

19. Reviewer, Assistant Project Scientist at UC San Diego. (April 2015 - May 2015)
20. Reviewer, Internal pre proposals for NSF PIRE program. (September 2014)
21. Member, UC Merced - Graduate Dean Search Committee. (August 2013 - May 2014)
22. Reviewer, Assistant Project Scientist position at UC San Diego. (May 2014)
23. Judge, UC CAMP Symposium. (February 2014)
24. Member, AVC for Research Position. (January 2014)
25. Member, UC Merced - Graduate Dean Search Committee. (October 2012 - May 2013)
26. Reviewer, Summer Undergraduate research applications CAMP, UC LEADS, McNair programs. (April 2013)
27. Member, Committee on Committee. (August 2010 - July 2012)
28. Reviewer, Summer Undergraduate research applications CAMP, UC LEADS, McNair programs. (April 2012)
29. Reviewer, Fred Spiess Awards for Senate Distinguished Public Scholarly Service and for Senate Service. (March 2012)
30. Judge, UC CAMP Symposium. (February 2012)
31. Special Assignment, Faculty Assessment Officer (FAO) for Mechanical Engineering. (August 2011)
32. Chair, UCMERI Fellowships. (August 2011)
33. Member, Chancellor Advisory Committee on Environmental Sustainability. (2007 - 2010)
34. Member, Campus Planning Committee. (2007 - 2009)
35. Member, Steering Committee for the Merced Energy Research Institute. (July 2007 - June 2008)
36. Member, Subcommittee on Courses from UGC. (July 2006 - June 2007)
37. Member, Undergraduate Council. (July 2005 - June 2007)
38. Member, Search committee for Solar Energy Position. (July 2005 - June 2006)
39. Member, Subcommittee on Courses from UGC. (July 2005 - June 2006)
40. Member, General Education Committee. (2005)
41. Member, Laboratory Space Committee. (2005)

Public Service

1. Guest Speaker, Fiat Lux Faculty Receptions. (March 2014)
2. Guest Speaker, Waste-to-Energy Research at UC Merced. (August 2009)
3. Guest Speaker, Mechanical Engineering at UC Merced, Fresno, CA. (April 2009)
4. Guest Speaker, Undergraduate program in Mechanical Engineering at UC Merced, Valdivia. (April 2006)
5. Guest Speaker, Engineering at UC Merced, Merced, CA. (October 2005)
6. Guest Speaker, Mechanical Engineering at UC Merced, Livermore, CA. (October 2005)

TEACHING and DIRECTED RESEARCH

University of California - Merced

1. ENGR 130, Thermodynamics. (Fall 2024)
2. ME 295, Graduate Research. (Fall 2024)
3. ME 195, Upper Div Undergrad Research. (Fall 2024)
4. ME 190, Intermediate Thermodynamics. (Spring 2024)
5. ME 202, Transport Phenomena. (Spring 2024)
6. ME 231, Conduction Heat Transfer. (Fall 2023)
7. ME 195, Upper Div Undergrad Research. (Spring 2023)
8. ME 202, Transport Phenomena. (Spring 2023)
9. ME 295, Graduate Research. (Spring 2023)
10. ENGR 130, Thermodynamics. (Fall 2022)
11. ENGR 190, Capstone Design. (Spring 2022)
12. ME 295, Graduate Research. (2022)
13. ENGR 190, Capstone Design. (Fall 2021, Remote)
14. ENGR 135, Heat Transfer. (Fall 2021, hybrid)
15. ME 202, Transport Phenomena. (Spring 2021, Remote)
16. ME 295, Graduate Research. (2021)
17. ENGR 130, Thermodynamics. (Fall 2020, Remote)
18. ENGR 190, Capstone Design. (Fall 2020, Remote)
19. ME 231, Conduction Heat Transfer. (Spring 2020, Remote)
20. ME 231, Conduction Heat Transfer. (Spring 2020)
21. ME 295, Graduate Research. (Spring 2020)
22. ENGR 135, Heat Transfer. (Fall 2019)
23. ME 195, Upper Div Undergrad Research. (Fall 2019)
24. ME 295, Graduate Research. (Fall 2019)
25. ME 295, Graduate Research. (Spring 2019)
26. ENGR 130, Thermodynamics. (Fall 2018)
27. ME 295, Graduate Research. (Fall 2018)
28. ENGR 95, Lower Div Undergrad Research. (Summer 2018)
29. ME 231, Conduction Heat Transfer. (Spring 2018)
30. ME 295, Graduate Research. (Spring 2018)
31. ME 202, Transport Phenomena. (Fall 2017)
32. ME 295, Graduate Research. (Fall 2017)
33. ENGR 95, Lower Div Undergrad Research. (Summer 2017)

34. ME 195, Upper Div Undergrad Research. (Spring 2017)
35. ME 295, Graduate Research. (Spring 2017)
36. ME 195, Upper Div Undergrad Research. (Fall 2016)
37. ME 295, Graduate Research. (Fall 2016)
38. ENGR 190, Capstone Design. (Spring 2016)
39. ME 195, Upper Div Undergrad Research. (Spring 2016)
40. ME 295, Graduate Research. (Spring 2016)
41. ENGR 130, Thermodynamics. (Fall 2015)
42. ENGR 197, Instructional Lab 2. (Fall 2015)
43. ENGR 97, Instructional Lab 2. (Fall 2015)
44. ME 195, Upper Div Undergrad Research. (Fall 2015)
45. ME 295, Graduate Research. (Fall 2015)
46. ME 195, Upper Div Undergrad Research. (Summer 2015)
47. ENGR 197, Instructional Lab 2. (Spring 2015)
48. ENGR 97, Instructional Lab 2. (Spring 2015)
49. ME 202, Transport Phenomena. (Spring 2015)
50. ME 295, Graduate Research. (Spring 2015)
51. ENGR 135, Heat Transfer. (Fall 2014)
52. ENGR 197, Instructional Lab 2. (Fall 2014)
53. ENGR 97, Instructional Lab 2. (Fall 2014)
54. ME 195, Upper Div Undergrad Research. (Fall 2014)
55. ME 295, Graduate Research. (Fall 2014)
56. ENGR 130, Thermodynamics. (Summer 2014)
57. ME 195, Upper Division Undergrad Research. (Spring 2014)
58. ME 202, Transport Phenomena. (Spring 2014)
59. ME 295, Graduate Research. (Spring 2014)
60. ENGR 135, Heat Transfer. (Fall 2013)
61. ME 195, Upper Div Undergrad Research. (Fall 2013)
62. ME 295, Graduate Research. (Fall 2013)
63. ENGR 195, Upper Div Undergrad Research. (Spring 2013)
64. ME 195, Upper Div Undergrad Research. (Spring 2013)
65. MEAM 202, Transport Phenomena. (Spring 2013)
66. MEAM 295, Graduate Research. (Spring 2013)
67. ENGR 130, Thermodynamics. (Fall 2012)
68. ME 195, Upper Div Undergrad Research. (Fall 2012)
69. MEAM 295, Graduate Research. (Fall 2012)

70. ENGR 135/ES 235, Heat Transfer. (Fall 2011)
71. ME 195, Upper Division Undergraduate Research. (Fall 2011)
72. MEAM 295, Graduate Research. (Fall 2011)
73. MEAM 299, Directed Independent Study. (Fall 2011)
74. ME 195, Upper Division Undergraduate Research. (Spring 2011)
75. MEAM 202, Transport Phenomena. (Spring 2011)
76. MEAM 295, Graduate Research. (Spring 2011)
77. ENGR 130, Thermodynamics. (Fall 2010)
78. MEAM 295, Graduate Research. (Fall 2010)
79. MEAM 202, Transport Phenomena. (Spring 2010)
80. MEAM 295, Graduate Research. (Spring 2010)
81. ENGR 135, Heat Transfer. (Fall 2009)
82. ES 235, Heat Transfer. (Fall 2009)
83. MEAM 295, Graduate Research. (Fall 2009)
84. ME 170, Capstone Design. (Spring 2009)
85. MEAM 295, Graduate Research. (Spring 2009)
86. ENGR 130, Thermodynamics. (Fall 2008)
87. MEAM 295, Graduate Research. (Fall 2008)
88. MEAM 202, Transport Phenomena. (Spring 2008)
89. MEAM 295, Graduate Research. (Spring 2008)
90. ENGR 130, Thermodynamics. (Fall 2007)
91. MEAM 295, Graduate Research. (Fall 2007)
92. ES 295, Graduate Research. (Spring 2007)
93. ME 210, Linear Control Systems. (Spring 2007)
94. ENGR 130, Thermodynamics. (Fall 2006)
95. ES 295, Graduate Research. (Fall 2006)
96. ENGR 135/ES 235, Heat Transfer. (Spring 2006)
97. ENGR 130, Thermodynamics. (Fall 2005)

POSTDOCTORAL SCHOLARS SUPERVISED

1. 2021 - 2022, Si Gao, Co-Supervised with Prof. Rebecca Ryals
2. 2021 - 2022, John Ngombe, Co-Supervised with Prof. Catherine Keske

MS THESES SUPERVISED

- Development and demonstration of a novel solar thermal collector for low temperatures, Julio C. Perez, ME, 2020

- Minichannel-tube solar thermal collectors for low to medium temperature applications, Van T. Duong, ME 2015.
- Analytical and experimental study of a liquid desiccant heat and mass exchanger operating near water freezing temperature, Sergio M. Pineda, MEAM 2009.
- Performance assessment of three concentrating solar thermal units designed with XCPC reflectors and evacuated tubes, using an analytical thermal model, Alfonso Tovar, ES 2008.

Ph.D. THESES SUPERVISED

- Sergio M. Pineda (2013) Effects of heat and mass transport on the hydrodynamics and stability of liquid desiccant films
 - Graduate Research Council fellowship (UC Merced) \$ 6,000. 6/2010–8/2010.
 - 2010-11 Miguel Velez Fellowship, Graduate Division, UC Merced, \$ 10,000.
 - Graduate Summer Fellowships (UC Merced) \$ 7,500. Summer 2012.
- Neeraj Sharma (2014) Contact glow discharge electrolysis for liquid waste processing
 - Edward Hildebrand Fellowship (UC Merced) \$ 7,347. Fall 2010 semester.
 - Graduate Summer Fellowships (UC Merced) \$ 7,000. Summer 2012.
 - School of Engineering Fellowship (UC Merced) \$ 10,000. Summer 2013.
 - Graduate Division General Fellowship AY 2012-13 (UC Merced) \$ 900.
- Andres Munoz-Hernandez (2018) Charge and joule heat transport in carbonaceous materials and activation of biochar
 - UC Merced Mechanical Engineering Summer Bobcat Fellowship, 2014, 2018
 - Hispanic Scholarship Fund, Sponsored by Wells Fargo & Company, 2017
 - UC Merced Mechanical Engineering Bobcat Travel Fellowship, Spring 2014, 2017
 - HENAAC Scholarship, Sponsored by Edison International, 2016
 - UC Merced Outstanding Graduate Student Award Finalist, April 2016
- Viacheslav Plotnikov (2019) Development of high-voltage systems for direct and surface plasma treatment of liquids in sustainable energy
 - Graduate Dean’s Dissertation Fellowship (UC Merced), \$ 11,000, 2019
 - ASTFE, Travel Award, 2017
- Sai Kiran Hota (2021) Photo-thermal effect of carbon dispersions in water: augmenting community scale desalination with solar stills
 - Summer 2020 ME Summer Fellowship
 - Fall 2019 ME Travel Award
 - Summer 2019 ME Bobcat Fellowship II

CURRENT GRADUATE STUDENTS

- Hector Gomez (Ph.D. program)
- Ziad Nasef (Ph.D. program)

- Sourov K. Mondal (Ph.D. program)
- Isaias Teran (Ph.D. program)

DOCTORAL QUALIFYING COMMITTEES

December 2022, Ziad Nasef, Member. Advisor: G. Diaz.
 November 2022, Di An, Member, Member, EECS, Advisor: Y-Q Chen
 January 2022, Edgar Perez-Lopez, Member. Advisor: V. Ayyaswamy.
 January 2022, Edgar Perez-Lopez, Member, Mech. Eng., Advisor: V. Ayyaswamy
 January 2022, Derek Hollenbeck, Member, Mech. Eng., Advisor: Y-Q Chen
 January 2022, Saurav Gautam, Member, Mech. Eng., Advisor: V. Ayyaswamy
 January 2022, Edgar Perez-Lopez, Member, Mech. Eng., Advisor: V. Ayyaswamy
 January 2022, Derek Hollenbeck, Member, Mech. Eng., Advisor: Y-Q Chen
 December 2021, Sina Dehghan, Member, Mech. Eng., Advisor: Y-Q Chen
 October 2020, Diego Rivera Aguilera, PhD student at University of La Serena, Chile. Advisor: Prof. Nelson Moraga
 August 2021, Souvik Roy. Member, Mech. Eng. Advisor: James Palko
 March 2020, Marc Labata, Member Environmental Systems. Advisor: A. Chuang
 September 2019, Sai Phani Kiran Hota, Member, Advisor: G. Diaz
 May 2019, Sina Dehghan, Member, Advisor: YQ Chen
 May, 2019, Jonathan Ferry, Chair, Advisor: R. Winston
 December 2018, Abhishek Verma, Member, Advisor: V. Ayyaswamy
 October 2017, Duval Johnson, Member, Advisor: A. Martini.
 August 2017, Andres Munoz-Hernandez, Member, Advisor: G. Diaz
 May 2017, Viacheslav Plotnikov, Member, Advisor: G. Diaz
 December 2016, Mac Panah, Member, Advisor: F Blanchette
 October 2016, Wenjun Ge, Member, Advisor: M. Modest
 August 2014, Tao Ren, Member, Advisor: M. Modest
 February 2014, Hongyu Gao, Member, Advisor: A. Martini
 February 2014, Zhuo Li, Member, Advisor: JQ. Sun
 July 2012, Lun Jiang, Chair, Advisor: R. Winston
 April 2010, Neeraj Sharma, Member, Advisor: G.Diaz
 May 2009, Sergio Pineda, Member, Advisor: G. Diaz

DOCTORAL DISSERTATION COMMITTEES

Sept. 2021, Diego Rivera Aguilera, PhD candidate at University of La Serena, Chile. Advisor: Prof. Nelson Moraga
 Oct. 2020, Abhishek Kumar Verma, Chair. Advisor: V. Ayyaswamy
 August 2020, Jordyn Brinkley, Chair, Advisor: R. Winston
 May 2020, Jonathan Ferry, Chair, Advisor: R. Winston
 April 2020, Ali Hassanzadeh, Member Environmental Systems. Member, Advisor: R. Winston
 August 2019 - May 2019, Viacheslav Plotnikov, Member, Advisor : G. Diaz
 August 2018, Ali Hassanzadeh, Member Environmental Systems. Advisor: R. Winston.
 December 2018, Arghavan Alamatsaz, Member, Advisor: V. Ayyaswamy
 August 2013 - May 2018, Andres Munoz-Hernandez, Member, Advisor: G. Diaz
 April 2018, Bennett Widyolar, Member, Advisor: R. Winston.
 April 2018, Duval Johnson, Member, Advisor: A. Martini.
 August 2017, Mac Panah, Member, Advisor: F. Blanchette.
 March 2016, Hongyou Gao, Member, Advisor: A. Martini
 April 2015, Tao Ren, Member, Advisor: M. Modest
 December 2014, Lun Jian, Chair, Advisor: R. Winston
 June 2014, Neeraj Sharma, Member, Advisor: G.Diaz

March 2013, Siyu Wu, Member, Advisor: JQ. Sun
February 2013, Sergio Pineda, Member, Advisor: G. Diaz
April 2012, Ricardo Marquez, Member, Advisor: C. Coimbra
October 2010, Bo Song, Member, Advisor: JQ. Sun

MASTER'S THESIS COMMITTEES

August 2020, Julio Perez, Member, Advisor: G. Diaz
May 2020, Julio Perez, Chair, Advisor: G. Diaz
April 2019, Michael Ades, Member, Advisor: A. Martini
December 2017, Timothy Lincoln, Member, Advisor J-Q Sun
August 2017, Sean Johnson, Member, Advisor: MH Lee
August 2017, Shadi Zaheri Sarabi, Member, Advisor: V. Ayyaswami
July 2016, Arash Tourki Samaei, Member, Advisor: MH Lee
December 2015, Sean Lantz, Member, Advisor: A. Martini
August 2015, Van (Vivian) Duong, Member, Advisor: G. Diaz
November 2014, Christian Moe, Member, Advisor R. Winston
November 2014, Vivian Lopez, Member, Advisor T. Ghezzehei
December 2009, Chungua Wang, Chair, Advisor: R. Winston
December 2009, Jesus Cisneros, Member, Advisor: R. Winston
December 2009, Sergio Pineda, Member, Advisor: G. Diaz
December 2009, Siyu Wu, Member, Advisor: JQ. Sun
January 2009 - June 2009, Bo Song, Member, Advisor: JQ. Sun
December 2008, Alfonso Tovar, Member, Advisor: R. Winston/G. Diaz
August 2008, Luke Reed, Chair, Advisor: R. Winston

SUPERVISED UNDERGRADUATE STUDENTS

Current: Melissa Araiza, Rachel Yu, Jesse Martinez

Former: Nathan Nugen, Jackeline Rizo, Mark Kim, Lindsey Corder, Verenize Sotelo, Ray Aguilar, Kovin Aghassi Lelham, Jesus Salas Hernandez, Gabriel Lamas, Octavio Carranza, Juan De Dios Mariscal, Uriel Paez Reyes, Genesis Higueros, Jose Rubalcaba-Cruz, Andrew de Los Santos, Keith Saechao (CAMP 2014), Sean Johnson, Paulo Jeremias (Federal University Santa Catarina, Brazil), Christian Castillo (CAMP 2014), Azucena Robles (McNair Scholars Program 2011, UCLEADS 2012), Adam Martin (UCLEADS 2012), Jose Guadarrama (CAMP 2012), Alexandro Perez-Tovar (CAMP 2013), Daniel Linares (CAMP 2013), Steven Telles (UCSC, UCLEADS 2013), David Larson, Israr Hussain (McNair Scholars Program 2011), Angel Cuevas, Jeffrey Wong, Sheena Truong, Hugo Sanchez, Stephen Fleming, Josue Lopez (UCLEADS 2010), David Unruh, Robert Smith, Vaughn Emmerson, Huimin Li.

UC MERCED CHAPTER ADVISOR

- UC Merced Campus advisor for *Ingenieros Unidos* (chapter of SHPE) (2005 - 2019)

MEMBERSHIPS

- American Society of Mechanical Engineers (ASME) member
 - K-6 Heat Transfer in Energy Systems technical committee (2012-present)
- Sierra Nevada Research Institute at UC Merced, affiliated faculty (2012-present)

CONSULTING

- Nitto Denko Technical Corporation, Japan (2015-2016)
- San Ramón Hospital. Santiago, Chile (1/94 - 7/94). Sponsored by the World Bank.

- Dr. Sótero del Río Hospital. Santiago, Chile (6/93 - 10/93). Sponsored by the World Bank.

OUTREACH

1. Drafting Technology Advisory Meeting at Merced College, Nov. 2013
2. Merced High School, Feb. 2013
3. Our Lady of Mercy school, 2015
4. El Capitan High School, Merced CA, 2015

CONTINUING EDUCATION COURSES

- Latin American Workshop on Plasma Physics. Center for Nuclear Studies, Santiago, Chile (8/10)
- Compressed Gas Safety Training, UC Merced, Environmental Health and Safety (6/10)
- Lab Safety and Fume Hood use Training, UC Merced, Environmental Health and Safety (5/10)
- FLUENT V6.0 Introductory Training. Modine (01/02)
- Mastering Visual Basic 6 Fundamentals. New Horizons Computer Learning Center, Madison, WI (6/00)
- Simulation tools for vapor compression systems and component analysis. Purdue University, (7/00)
- Simulation of cooling systems with KULI 4.01, Modine (9/00)