CURRICULUM VITAE

Los Angeles, CA, July 8, 2025.

ADDRESS

Department of Mechanical Engineering
California State University, Los Angeles
E&T A-410
Los Angeles, CA 90032

Tel.: (323) 343-4492
Fax: (323) 343-5004
E-mail: apacheco@calstatela.edu
URL: http://www.calstatela.edu/faculty/apacheco

EDUCATION

Ph. D., Mechanical Engineering — May 2002
University of Notre Dame.
Department of Aerospace and Mechanical Engineering.
Concentration: Fluid Mechanics and Heat Transfer.

M. E., Mechanical Engineering — August 1996
Universidad de Guanajuato, México.
Concentration: Mechanical Design.
Minor: Fluid Mechanics.

B. S., Mechanical and Electrical Engineering — July 1988
Universidad Iberoamericana, México.
Concentration: Fluid Mechanics and Heat Transfer.

PROFESSIONAL EXPERIENCE

APPOINTMENTS

Co-coordinator, Louis Stokes Alliance for Minority Participation (LSAMP), Bridge to the Doctorate, California State University, Los Angeles. — (Fall 2023–Spring 2024)

Director, Sikand Center for Sustainable and Intelligent Infrastructure (SITI), California State University, Los Angeles. — (Spring 2023–To date)

Faculty Director of Research, College of Engineering, Computer Science and Technology, California State University, Los Angeles. — (Winter 2023–To date)

Director, CREST Center for Advancement toward Sustainable Urban Systems (CATSUS), California State University, Los Angeles. — (2022–To date)

Faculty Fellow, STEM-NET Program (two one-year terms), The California State University, Office of the Chancellor. — (2020–2022)

Director, CREST Center for Energy and Sustainability, (2017–2022)
California State University, Los Angeles.

Associate Chair, Department of Mechanical Engineering, (2016–2024)
California State University, Los Angeles.

Full Professor, Department of Mechanical Engineering, (2014–To date)
California State University, Los Angeles.

Associate Director, CREST Center for Energy and Sustainability, (2013–2017)
California State University, Los Angeles.

Associate Professor, Department of Mechanical Engineering, (2011–2014)
California State University, Los Angeles.

Assistant Professor, Department of Mechanical Engineering, (2008–2011)
California State University, Los Angeles.

Associate Professor, Faculty of Chemical Sciences, (2004–2008)
Universidad Autónoma de San Luis Potosí, México.

Assistant Professor, Faculty of Chemical Sciences, (2003–2004)
Universidad Autónoma de San Luis Potosí, México.

VISITING POSITIONS

Visiting Assistant Professor, Dept. Aerospace and Mechanical Eng., (2002–2003)
University of Notre Dame.

Lecturer, Dept. Aerospace and Mechanical Engineering, (2002)
University of Notre Dame.

RESEARCH

AREAS OF INTEREST

- Simulation and control of thermal systems
- Soft computing/Artificial intelligence technologies
- System and process optimization
- Heat and fluid flow data analysis
- Nonlinear dynamical systems
- Analytical and numerical methods for PDEs
- Micro-scale fluid flow and heat transfer
- Electronic cooling
- Thermal synchronization
- Energy efficiency in building systems
- Fractional differential equations and applications

BOOKS AND CHAPTERS IN BOOKS

Pacheco-Vega, A., Diaz G., Sen M., and Yang K.T., 2018, "Applications of Artificial Neural Networks and Genetic Methods in Thermal Engineering," in : *CRC Handbook of Thermal Engineering*, 2nd Edition, R.P. Chhabra (Ed.), CRC Press, Boca Raton, FL, Section 4.27, pp. 1217–1269.

Pacheco-Vega, A., 2011, "Soft Computing Applications in Thermal Energy Systems," in: *Soft Computing in Green and Renewable Energy Systems*, Studies in Fuzziness and Soft Computing, Vol. 269, K. Gopalakrishnan, S.K. Khaitan, and S. Kalogirou (Eds.), Springer-Verlag, Berlin, Germany, pp. 1–35.

JOURNAL PUBLICATIONS (Refereed)

1. **Pacheco-Vega, A.**, and Sen, M., 2025, "Analytical and numerical steady states for thermal convection in an inclined, slender, two-dimensional enclosure," **Submitted for review** to: *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*.
2. Durantes, R., Moon, J., Pacheco J.R., and **Pacheco-Vega, A.**, 2023, "On an Averaged Energy-balance Method for the Analysis of Wavy Microchannels," *Heat and Mass Transfer*. DOI: 10.1007/s00231-022-03329-5.
3. **Pacheco-Vega, A.**, and Avila, G., 2020, "Algorithmic Performance-Data Classification of Condensing Heat Exchangers," *Numerical Heat Transfer, Part A: Applications*, DOI: 10.1080/10407782.2020.1814596.
4. Li, K.M., Sen, M., and **Pacheco-Vega, A.**, 2018, "Fractional-Derivative Approximation of Relaxation in Complex Systems," *Complexity*, Vol. 2018, Article No. 8318519 (12 pages), DOI: 10.1155/2018/8318519.
5. Wu, A. and **Pacheco-Vega, A.**, 2017, "Cooling System Optimization for a Terahertz Radiation Detector via Parametric Analysis of the Fluid-Solid Interaction Problem," *Applied Mathematical Modelling*, Vol. 45, pp. 1044–1066.
6. **Pacheco-Vega, A.**, Dugast, F., Renault, P. and Tohid, U., 2017, "Numerical Investigation of Engineering Systems: Analysis of Accuracy Reduction Due to Model Over-Simplification," *Heat Transfer Engineering*, Vol. 38, No. 1, pp. 26–36.
7. Romero-Mendez, R., Lara Vazquez, P., Oviedo-Tolentino, F., Duran-Garcia, H.M., Perez-Gutierrez, F.G. and **Pacheco-Vega, A.**, 2016, "Use of Artificial Neural Networks for Prediction of the Convective Heat Transfer in Evaporative Mini-Tubes." *Ingeniería Investigación y Tecnología (Engineering Research and Technology)*, Vol. XVII, No. 1, pp. 23–34.
8. Cobian-Iñiguez, J., Wu, A., Dugast, F., and **Pacheco-Vega, A.**, 2015, "Numerically-Based Parametric Analysis of Plain Fin and Tube Compact Heat Exchangers," *Applied Thermal Engineering*, Vol. 86, pp. 1–13.
9. Baghdasarian, M., **Pacheco-Vega, A.**, Pacheco J.R., and Verzicco, R., 2014, "Mixing in Thermally Stratified Nonlinear Spin-Up With Uniform Boundary Fluxes," *Physics of Fluids*, Vol. 26, Article No. 096602, pp. 1–15.

10. Romero-Mendez, R., Hidalgo Lopez, J.M., Duran-Garcia, H.M., and **Pacheco-Vega, A.**, 2014, Use of Artificial Neural Networks for Prediction of Convective Heat Transfer in Evaporative Units, *Ingeniería Investigación y Tecnología (Engineering Research and Technology)*, Vol. XV, No. 1, pp. 93–101.

11. Vilchiz-Bravo, L.E., **Pacheco-Vega, A.**, and Handy, B.E., 2013, "Sensor Placement in Temperature-Based Control Strategies to Improve Base-Line Stability in Tian-Calvet Microcalorimeters," *Journal of Thermal Analysis and Calorimetry*, Vol. 111, No. 1, pp. 857–867.

12. Pacheco J.R., **Pacheco-Vega, A.**, and Chen, K.P., 2011, "Mixing-Dynamics of a Passive Scalar in a Three-Dimensional Micro-channel," *International Journal of Heat and Mass Transfer*, Vol. 54, pp. 959–966.

13. Vilchiz-Bravo, L.E., **Pacheco-Vega, A.**, and Handy, B.E., 2010, "Heat-Flow and Temperature Control in Tian-Calvet Microcalorimeters: Toward Higher Detection Limits," *Measurement Science and Technology*, Vol. 21, Article No. 115103.

14. Avila, G., and **Pacheco-Vega, A.**, 2009, "Fuzzy-C-Means-Based Classification of Thermodynamic-Property Data: A Critical Assessment," *Numerical Heat Transfer, Part A: Applications*, Vol. 56, No. 11, pp. 880–896.

15. **Pacheco-Vega, A.**, Ruiz-Mercado, C., Peters, K., and Vilchiz, L.E., 2009, "On-Line Fuzzy-Logic-Based Temperature Control of a Concentric-Tube Heat Exchanger Facility," *Heat Transfer Engineering*, Vol. 30, No. 14, pp. 1208–1215.

16. Ruiz-Mercado, C., **Pacheco-Vega, A.**, and Torres-Chavez G., 2009, "A Takagi-Sugeno Fuzzy Dynamic Model of a Concentric-Tubes Heat Exchanger," *Chemical Product and Process Modeling*, Vol. 4, No. 2, Article No. 10.

17. Pacheco J.R., Chen, K.P., **Pacheco-Vega, A.**, Chen, B., and Hayes, M.A., 2008, "Chaotic Mixing Enhancement in Electro-Osmotic Flows by Random Period Modulation," *Physics Letters A*, Vol. 372, No. 7, pp. 1001–1008.

18. **Pacheco-Vega, A.**, Pacheco J.R., and Rodić, T., 2007, "A General Scheme for the Boundary Conditions in Convective and Diffusive Heat Transfer with Immersed Boundary Methods," *ASME Journal of Heat Transfer*, Vol. 129, No. 11, pp. 1506–1516.

19. Cai, W., **Pacheco-Vega, A.**, Sen, M., and Yang, K.T., 2006, "Heat Transfer Correlations by Symbolic Regression," *International Journal of Heat and Mass Transfer*, Vol. 49, No. 23–24, pp. 4352–4359.

20. Vilchiz, L.E., **Pacheco-Vega, A.**, and Handy, B.E., 2005, "Heat-Flow Patterns in Tian-Calvet Microcalorimeters: Conductive, Convective, and Radiative Transport in Gas Dosing Experiments," *Thermochimica Acta*, Vol. 439, No. 1–2, pp. 110–118.

21. Pacheco, J.R., **Pacheco-Vega, A.**, Rodić, T., and Peck, R.E., 2005, "Numerical Simulations of Heat Transfer and Fluid Flow Problems Using an Immersed-Boundary Finite-Volume Method on Non-Staggered Grids," *Numerical Heat Transfer, Part B: Fundamentals*, Vol. 48, No. 1, pp. 1–24.

22. **Pacheco-Vega, A.**, Sen, M., and Yang, K.T., 2003, "Simultaneous Determination of In- and Over-Tube Heat Transfer Correlations in Heat Exchangers by Global Regression," *International Journal of Heat and Mass Transfer*, Vol. 46, No. 6, pp. 1029–1040.

23. Pacheco, J.R. and **Pacheco-Vega, A.**, 2003, "Analysis of Thin Film Flows Using a Flux Vector Splitting," *ASME Journal of Fluids Engineering*, Vol. 125, No. 2, pp. 365–374.
24. **Pacheco-Vega, A.**, Franco, W., Chang, H.-C. and Sen, M., 2002, "Nonlinear Analysis of Tilted Toroidal Thermosyphon Models," *International Journal of Heat and Mass Transfer*, Vol. 45, No. 7, pp. 1379–1391.
25. Pacheco J.R., **Pacheco-Vega, A.**, and Pacheco-Vega, H.R., 2001, "A Numerical Comparison between Spatial and Temporal Disturbances in a Pipe," *Revista Mexicana de Física* (Mexican Journal of Physics), Vol. 47, No. 4, pp. 339–346.
26. **Pacheco-Vega, A.**, Díaz, G., Sen, M., Yang, K.T., and McClain, R.L., 2001, "Heat Rate Predictions in Humid Air-Water Heat Exchangers using Correlations and Artificial Neural Networks," *ASME Journal of Heat Transfer*, Vol. 123, No. 2, pp. 348–354.
27. **Pacheco-Vega, A.**, Sen, M., Yang, K.T., and McClain, R.L., 2001, "Neural Network Analysis of Fin-Tube Refrigerating Heat Exchanger with Limited Experimental Data," *International Journal of Heat and Mass Transfer*, Vol. 44, No. 4, pp. 763–770.

OTHER REFEREED (JOURNAL-EQUIVALENT) PAPERS

1. Saguilan, A., and **Pacheco-Vega, A.**, 2024, "Assessment of internal and external disturbances on the fuzzy-based thermal control of a sub-scaled building testbed," *Journal of Physics: Conference Series*, Vol. 2766, Article No. 012103. doi:10.1088/1742-6596/2766/1/012103
2. Durantes, R., Moon, J., Pacheco, J.R., and **Pacheco-Vega, A.**, 2021, "Averaged Energy-balance Analysis of Wavy Micro-channels," *Journal of Physics: Conference Series*, Vol. 2116, Article No. 012080. doi:10.1088/1742-6596/2116/1/012080
3. **Pacheco-Vega, A.**, 2016, "Correlation Equations for Condensing Heat Exchangers Based on an Algorithmic Performance-Data Classification," *Journal of Physics: Conference Series*, Vol. 745, Article No. 032052.
4. Tohid, U., Gubitz, K., Genger, C., Accorsi, I., Kaiser, J., and **Pacheco-Vega, A.**, 2015, "Parametric Analysis of a PULSCO Vent Silencer," *Proceedings of Meetings on Acoustics* Vol. 22, Article No. 040003.
5. Hummel, T., and **Pacheco-Vega, A.**, 2012, "Application of Karhunen-Loève Expansions for the Dynamic Analysis of a Natural Convection Loop for Known Heat Flux," *Journal of Physics: Conference Series*, Vol. 395, Article No. 012121.
6. Motamedi, A., **Pacheco-Vega, A.**, and Pacheco, J.R., 2012, "Numerical Analysis of a Multi-Row Multi-Column Compact Heat Exchanger," *Journal of Physics: Conference Series*, Vol. 395, Article No. 012047.
7. **Pacheco-Vega, A.**, Sen, M., Yang, K.T., and McClain, R.L., 1998, "Genetic-Algorithm-Based Predictions of Fin-Tube Heat Exchanger Performance," in: *Proceedings of the Eleventh International Heat Transfer Conference*, Vol. 6, pp. 137–142.

WORK IN PROGRESS (Journal Publications)

- Baltazar, J., Yarian, A., **Pacheco-Vega, A.**, and Sansui, O., "Current Trends in Energy Efficient Building Desing and Analysis: A Review."

CONFERENCE AND SYMPOSIUM PAPERS (Refereed)

Included: papers of last 8 years. **Total**: 50+ papers.

1. Damas, A., Sen, M., and **Pacheco-Vega, A.**, 2025, "Humidity-driven convection patterns in a horizontal square enclosure," in: *Proceedings of the 10th Thermal and Fluids Engineering Conference (TFEC)*, George Washington University, Washington, DC, USA, Paper No. TFEC-2025-56389.
2. Saguilan, A., and **Pacheco-Vega, A.**, 2024, "Fuzzy controller response to internal and external disturbances in a multi-room building testbed," in: *Proceedings of the 9th Thermal and Fluids Engineering Conference (TFEC)*, Oregon State University, Corvallis, OR, USA, Paper No. TFEC-2024-50484.
3. Lopez, D.S., and **Pacheco-Vega, A.**, 2023, "Fuzzy control of a toroidal thermosyphon for known heat flux heating conditions," in: *Proceedings of the 8th World Congress on Momentum, Heat and Mass Transfer (MHMT'23)*, Lisbon, Portugal. Paper No. ENFHT 133.
4. Lopez, D., and **Pacheco-Vega, A.**, 2022, "Thermal stability analysis of toroidal thermosyphon models with fuzzy controllers," in: *Proceedings of the 7th World Congress on Momentum, Heat and Mass Transfer (MHMT'22)*, Virtual Conference. Paper No. ENFHT 161.
5. Durantes, R., Pacheco, J.R., and **Pacheco-Vega, A.**, 2022, "Two-dimensional approximation of a three-dimensional wavy microchannel," in: *Proceedings of the 7th World Congress on Momentum, Heat and Mass Transfer (MHMT'22)*, Virtual Conference. Paper No. ENFHT 160.
6. Avila, G., and **Pacheco-Vega, A.**, 2021, "ANN-based classification of operating data in humid air-water heat exchangers," in: *Proceedings of the 6th World Congress on Momentum, Heat and Mass Transfer (MHMT'21)*, Virtual Conference. Paper No. ENFHT 302.
7. Durantes, R., Moon, J., Pacheco, J.R., and **Pacheco-Vega, A.**, 2020, "Numerical modeling of single-phase fluid-flow in wavy micro-channels," in: *Proceedings of the COMSOL Conference 2020 North America*, Boston, MA, USA.
8. Moon, J., Pacheco, J.R., and **Pacheco-Vega, A.**, 2019, "Heat transfer enhancement in wavy micro-channels: effect of block material," in: *Proceedings of the 4th World Congress on Momentum, Heat and Mass Transfer (MHMT'19)*, Rome, Italy. Paper No. ENFHT 120.
9. Won, D., Ragusa, G., Menezes, G.B., Sharif, A., Shahverdi, M., Li, N., and **Pacheco-Vega, A.**, 2019, "BOOSTing preparedness through engineering project-based service learning," in: *Proceedings of the American Society for Engineering Education PSW 2019 Conference*, Los Angeles, CA, April 4–6, Paper No. 27879.

10. Baltazar, J., Yarian, A., Clemons, D., and **Pacheco-Vega, A.**, 2019, "On-line fuzzy control of a multi-room building facility," in: *Proceedings of the 4th Thermal and Fluids Engineering Conference (TFEC)*, Las Vegas, NV, USA, Paper No. TFEC-2019-27663.
11. Moon, J., Pacheco, J.R., and **Pacheco-Vega, A.**, 2018, "Heat transfer enhancement in wavy micro-channels through multiharmonic surfaces," in: *Proceedings of 2018 ASME International Mechanical Engineering Conference and Exposition*, Pittsburgh, PA, USA, Paper No. IMECE2018-86425.
12. Li, K.M., Sen, M., and **Pacheco-Vega, A.**, 2018, "Fractional-order-based system identification for heat exchangers," in: *Proceedings of the 3rd World Congress on Momentum, Heat and Mass Transfer (MHMT'18)*, Budapest, Hungary, Paper No. ENFHT 134.
13. Baltazar, J., Yarian, A., and **Pacheco-Vega, A.**, 2018, "Development of P- PD- and PID-fuzzy SISO controllers of a sub-scaled multi-room building test-bed," in: *Proceedings of the 3rd Thermal and Fluids Engineering Conference (TFEC)*, Tampa, FL, USA, Paper No. TFEC-2018-21805.
14. Gomez, H., Tohid, U., and **Pacheco-Vega, A.**, 2017, "Geometrical effects of channel configuration on the performance of membraneless fuel cells," in: *Proceedings of the 2017 ASME International Mechanical Engineering Conference and Exposition*, Tampa, FL, USA, Paper No. IMECE2017-72235.

    Exchangers Based on an Algorithmic Performance-Data Classification," Accepted to the: *7th. European Thermal-Sciences Conference*, Krakow, Poland. Series (JPCS)
15. Gomez, H., and **Pacheco-Vega, A.**, 2016, "Parametric analysis of membraneless fuel cells," in: *Proceedings of the Conference on Advances in Mechanical Engineering*, Istanbul, Turkey, pp. 376–383.
16. Won, D., Ragusa, G., Sharif, A., Menezes, G., and **Pacheco-Vega, A.**, 2016, "Impact of highlighting ethical considerations in the engineering design process through a service-learning-based freshman-to-sophomore bridge," in: *Proceedings of the First Year Engineering Experience (FYEE) Conference*, Columbus, OH, July 21–August 2.
17. Grajeda, E., Dugast, F., Gauthier, C., Pacheco, J.R., and **Pacheco-Vega, A.**, 2015, "Conjugate heat transfer analysis of multi-harmonic wavy-channels," in: *Proceedings of the International Conference on Energy Systems*, Istanbul, Turkey, pp. 1–8.
18. Baghdasarian, A., Ramos, O., Ruvalcaba, J., Talome, S., Wang, F., Sabatier, L., and **Pacheco-Vega, A.**, 2015, "Design and instrumentation of an experimental test-bed for research in energy efficiency in buildings," in: *Proceedings of the 2015 ASME International Mechanical Engineering Conference and Exposition*, Houston, TX, USA, Paper No. IMECE2015-50098.
19. Wu, A., **Pacheco-Vega, A.**, and Cobian, J., 2015, "Thermal convection and stress analysis of the cooling system for a terahertz radiation detector," in: *Proceedings of the 13th Intl. Conference on Nanochannels, Microchannels, and Minichannels*, San Francisco, CA, Paper No. ICNMM2015-48373.

20. Rodriguez-Nikl, T., Won, D.S., Menezes, G.B., **Pacheco-Vega, A.**, Sharif, A., and Ragusa, G., 2015, "Integrated project for sophomore-level engineering course contextualization," in: *Proceedings of American Society for Engineering Education Annual Conference and Exposition 2015*, Seattle, WA, June 14–17, Paper No. 13717.
21. Menezes, G.B., Sharif, A., **Pacheco-Vega, A.**, Won, D.S., Rodriguez-Nikl, T., Ragusa, G., and Khachikian, C.S., 2015, "Sophomore Unified Core Curriculum for Engineering Education (SUCCEEd) at Cal State LA," in: *Proceedings of American Society for Engineering Education Annual Conference and Exposition 2015*, Seattle, WA, June 14–17, Paper No. 13705.

PRESENTATIONS AND ABSTRACTS WITHOUT PROCEEDINGS

Included: presentations of last 6 years. **Total**: 25.

- "Numerical Simulations of a Paper-Based Fuel Cell System," D. Clemons, and **A. Pacheco-Vega**, *5th Thermal and Fluids Engineering Conference (TFEC)*, New Orleans, LA, April 2020.
- "Conjugate Heat Transfer Analysis of Multi-Harmonic Micro-Wavy Channels," J. Moon, J.R. Pacheco, and **A. Pacheco-Vega**, *70th Annual Meeting of the Division of Fluid Mechanics, American Physical Society*, Denver, CO, 2017.

RESEARCH GRANTS AND CONTRACTS

EXTERNAL FUNDS

- Fulbright-Czech Technical University Distinguished Scholar: "Toward the Effective Use of Energy in Multi-room Buildings with Physics-Informed and AI Methods," IIE Fulbright U.S. Scholar Program, September 2025-July 2026, Role: PI.
- "Collaborative Research: CyberTraining: Implementation: Medium: Cybertraining for Democratizing the Use of Digital Twin Technologies in Robotics." National Science Foundation, January 2025. Role: co-PI (with PI: D. Negrut, and co-PIs: S. Rojas, M. Medina, A. Mejia, N. Robson, J. Valdovinos), **Under review**, $173K Dlls to Cal State LA.
- "Conference: 2024-2026 NSF CREST/HBCU-RISE/PRP PI Meeting." National Science Foundation, July 2024-June. 2026. Role: co-PI (with PI: C. Tarawneh, and co-PIs: K. Cousings, P. Tyagi, M.C. Tamargo), $330K Dlls.
- CREST Partnership Supplement: "Towards a Sustainable use of Polymeric Materials." HRD-CREST, National Science Foundation; Aug. 2023-Mar. 2024. Role: PI (with co-PIs: M. Brieu, P. Vozka, and Y. Wang), $100K Dlls.
- CREST Center: "CREST Center for Advancement toward Sustainable Urban Systems." HRD-CREST, National Science Foundation, Aug. 2022-Mar. 2027. Role: PI (with co-PIs: G. Menezes, S. Lopez, J. Santner, Y. Wang), $5M Dlls.
- NSF INCLUDES Planning Grant: "An NSF CREST Centers Collaboration to Advance Minority Undergraduate Student Researchers in STEM (previously titled: Alliance for Research Centers and Labs for the Advancement of Minorities in STEM – ARCLAMS)." HRD-NSF INCLUDES, National Science Foundation, Nov. 2020-Oct. 2021. Role: co-PI (with PI: G. Menezes, and co-PIs: J. Serrato, O.M. Suarez, M.C. Tamargo), $99.9K Dlls.

- CREST Partnership Supplement: "Development of Sustainable Water Management Technologies in Mediterranean Climate Urban Areas." HRD-CREST, National Science Foundation; Aug. 2019-Mar. 2021. Role: PI (with co-PIs: G. Menezes, S. Lopez, W.S. Kwan, J. Petrie), $100K Dlls.
- CREST Partnership Supplement: "Development of Clean Power Technologies." HRD-CREST, National Science Foundation, Jul. 2018-Mar. 2021. Role: PI (with co-PIs: N. Li, J. Kuo, J.C. Bachman, J.S. Santner), $100K Dlls.
- "CREST Center for Energy and Sustainability at California State University, Los Angeles," HRD-CREST, National Science Foundation, Apr. 2016-Mar. 2022. Role: PI (with Co-PIs: F. Zhou, F. Gomez, M. Selke, G.-M. Zhao), $5M Dlls.
- "BOOST: Bridge Opportunities Offered for the Sophomore Transition," IUSE-EHR, National Science Foundation, Aug. 2015-Jul. 2017. Role: Co-PI (with PI: D. Won, and Co-PIs: G. Menezes, A. Sharif), $249K Dlls.
- "Development and Implementation of a Novel Approach to Teaching Engineering Fundamentals to Engineering Students at CSULA," DUE-TUES, National Science Foundation, Sept. 2013-Aug. 2016. Role: Co-PI (with PI: G. Menezes, and Co-PIs: C. Khachikian, F. Evangelista, T. Rodriguez-Nikl, A. Sharif, D. Won), $199K Dlls.
- "Proposal to Establish the Modeling Component of the CREST Center for Energy and Sustainability" (CREST Supplement). EEC-ARI–National Science Foundation, Sept. 2011-Apr. 2016. Role: PI (with co-PIs: F. Zhou, V. Crespi, G. Menezes, V. Gajic), $100K Dlls.
- "Renovating a Core Facility to Support Research in the Newly Funded CREST Center for Energy and Sustainability." National Science Foundation, Sept. 2010-Aug. 2013. Role: PI (with Co-PIs: C. Khachikian, D. Maurizio), $1.7M Dlls.
- "Educational Particle Image Velocimetry Suites" (SBIR Phase II with Interactive Flow Studies). National Science Foundation, Mar. 2010–Aug. 2012. Role: PI, $105K Dlls.
- "A Novel Imaging Device for Infrared and Terahertz Radiation Beams Utilizing Liquid Crystal Materials" (SBIR Phase II with RadiaBeam Technologies). National Science Foundation, Mar. 2010–Oct. 2011. Role: PI (with Co-PI: A. Sharif), $105K Dlls.
- "CREST Center for Energy and Sustainability," HRD-CREST. National Science Foundation, Aug. 2009–Apr. 2016. Role: Co-PI (with PI: F. Zhou, and Co-PIs: F. Gomez, D. Guillaume, T. Pham) $5M Dlls.
- "Increase in Efficiency of Energy Transport in Heat Exchangers via Numerical Optimization of their Geometry." CONACyT (National Council of Research and Technology of the Mexican Government), Jul. 2006–Mar. 2008. Role: PI, $90K Dlls.
- "Application of Soft Computing Technologies in Simulation and Control of Thermal Systems." PROMEP-Mexican Government Agency. Nov. 2003–Mar. 2008. Role: PI, $55K Dlls.

INSTITUTIONAL FUNDS

- "Numerical Simulations of Humidity-driven Natural Circulation Patterns of Air in a Room." Research, Scholarship and Creative Activity, Cal State LA, January 2025, Role: PI, *Assigned Time*: $13K Dlls.

- "Synchronization of Air Temperature in Building Structures." Research, Scholarship and Creative Activity, Cal State LA, March 2023, Role: PI, *Assigned Time*: \$12K Dlls.
- "Fuzzy Control of a Thermosyphon for Solar-based Heating Applications." Research, Scholarship and Creative Activity, Cal State LA, March 2022, Role: PI, *Assigned Time*: \$12K Dlls.
- "On the Energy Exchange Mechanisms in Buildings." Research, Scholarship and Creative Activity, Cal State LA, Aug. 2021–Jun. 2022. Role: PI, *Assigned Time: \$11K Dlls.*
- "Deep-Learning-Based Data Classification of Compact Heat Exchangers." Research, Scholarship and Creative Activity, Cal State LA, Aug. 2020–Jun. 2021. Role: PI, *Assigned Time: \$11K Dlls.*
- "Intelligent Thermal Control of a Multi-Room Building Facility." Research, Scholarship and Creative Activity, Cal State LA, Aug. 2019–Jun. 2020. Role: PI, *Assigned Time: \$10.5K Dlls*, and *Minigrant: \$5K Dlls.*
- "Experiments and Numerical Simulations of Energy Usage in Buildings." Research, Scholarship and Creative Activity, Cal State LA, Aug. 2018–Jun. 2019. Role: PI, *Assigned Time*, and *Minigrant* \$5K Dlls.
- "Energy Usage in Buildings: Analysis Towards More Efficient Systems." Research, Scholarship and Creative Activity, Cal State LA, Aug. 2017–Jun. 2018. Role: PI, *Assigned Time*, and *Minigrant* \$5K Dlls.
- "Analysis of Energy Usage in Buildings: Towards Urban Sustainability." Research, Scholarship and Creative Activity, Cal State LA, Aug. 2016–Jun. 2017. Role: PI, *Assigned Time*, and *Minigrant* \$5K Dlls.
- "Numerical Optimization of Fuel Cell Systems: Improving Energy Conversion Towards Urban Sustainability." Research, Scholarship and Creative Activity, Cal State LA, Dec. 2015–Jun. 2016. Role: PI, *Assigned Time*, and *Minigrant* \$5K Dlls.
- "Towards Urban Sustainability: Improving Energy Efficiency in Buildings from Both the Component and System Perspectives." Research, Scholarship and Creative Activity, Cal State LA, Dec. 2014–Jun. 2015. Role: PI, *Creative Leave.*
- "Numerical Optimization of Heat Exchangers: Improving Energy Efficiency Towards Urban Sustainability." Research, Scholarship and Creative Activity *Minigrant*, Cal State LA, Dec. 2014–Jun. 2015. Role: PI, \$5K Dlls.
- "Numerical Analysis of Compact Heat Exchangers: Towards Improving Energy Efficiency in Buildings." Research, Scholarship and Creative Activity *Minigrant*, Cal State LA, Dec. 2013–Jun. 2014. Role: PI, \$5K Dlls.
- "Parametric Studies of Fuel Cells and Heat Exchanger Systems." Research, Scholarship and Creative Activity *Minigrant*, Cal State LA, Jul. 2012–Jun. 2013. Role: PI, \$4.3K Dlls.
- "Analysis of Heat Exchangers: A Clustering Approach." Research, Scholarship and Creative Activity *Minigrant*, Cal State LA, Jul. 2008–Jun. 2009. Role: PI, \$5K Dlls.

- "Fuzzy Logic Control of a Concentric-Tubes Heat Exchanger." Internal Support Research Fund (FAI), Universidad Autónoma de San Luis Potosí. Apr. 2003–Apr. 2004. Role: PI, $4K Dlls.

REPORTS

- CREST Center for Energy and Sustainability: Phase II. Final report to: National Science Foundation, 2022.
- - CREST Center for Energy and Sustainability: Phase I. Final report to: National Science Foundation, 2016.
- - Renovating a Core Facility to Support Research in the Newly Funded CREST Center for Energy and Sustainability. Final report to: National Science Foundation, 2014.
- - Educational Particle Image Velocimetry Suits. Final report to: Interactive Flow Studies LLC, and National Science Foundation, 2012.
- - A Novel Imaging Device for Infrared and Terahertz Radiation Beams Utilizing Liquid Crystal Materials. Final report to: RadiaBeam Technologies LLC, and National Science Foundation, 2011.
- - Development of a Fuzzy Logic Control Strategy for Temperature Control of a Concentric-Tubes Heat Exchanger. Final report for: Internal Support Research Fund (FAI) to Universidad Autónoma de San Luis Potosí, 2005.
- - Steady-State Performance of Compact Heat Exchangers via Global Regression and Soft computing Technologies. Internal report to: University of Notre Dame, 2000.

STUDENTS SUPERVISED

GRADUATE

- Universidad Autónoma de San Luis Potosí
  - C.A. Ruíz-Mercado, M.S., "Temperature Control of a Concentric-Tubes Heat Exchanger based on Fuzzy Logic," 2005.
  - M.G. Ramírez-González, M.S., "Numerical Study of the External-Side Heat Transfer in a Fin-Tube Heat Exchanger," 2006.
  - K. Villarreal-Fonz, M.S., "A Proper-Orthogonal-Decomposition-Based Dynamic Model of a Toroidal Thermosyphon with Known Wall Temperature," 2006.
  - L.E. Vilchiz-Bravo, Ph.D., "Design, Modeling and Control of Tian-Calvet Heat Flux Calorimeters," [Co-director with B. Handy], 2007. **Current position**: Associate Professor at Dept. Chemical Engineering, Universidad Autónoma de Yucatán, México.
  - G. Avila de la Rosa, M.S., "Identification of the Operating Conditions in Compact Heat Exchangers with Cluster Analysis," 2008.
  - C.A. Ruíz-Mercado, Ph.D., "Dynamic Simulations and Fuzzy-Logic Control of a Concentric-Tubes Heat Exchanger," 2010. **Current position**: Associate Professor at Dept. Chemical Engineering, Universidad Autónoma de Yucatán, México.

- Universidad de Colima
  - L.A. García Páez, M.S., "On-Line Monitoring of the Pectinase Enzyme Activity in a Bioreactor Based on the Optimum Impeller Geometry," [Co-advisor with V. Ibarra-Junquera], 2014.
- California State University, Los Angeles
  - R. Padilla, M.S., "Estimation of the Boundary Conditions for Cryogenic Cooling of Tissues during Laser Therapy," September, 2010.
  - E. Lipari, M.S., "Numerical Simulations of Thermal Convection in Engineering Systems by COMSOL Multiphysics," March, 2011.
  - A. Motamedi, M.S., "Parametric Analysis of a Multi-Column Multi-Row Compact Heat Exchanger," September, 2012.
  - U. Tohid, M.S., " Comparative Study of Single-Phase and Two-Phase Models of Direct Methanol Fuel Cells," May, 2013.
  - J. Cobian, M.S., "Numerically-Based Parametric Study of a Compact Fin and Tube Heat Exchanger," June, 2014.
  - E. Grajeda, M.S., "Numerical Analysis of Fluid Flow and Heat Transfer in a Wavy Micro-Channel," September, 2014.
  - M. Baghdasarian, M.S., "Mixing in Thermally Stratified Nonlinear Spin-Up Flows with Uniform Boundary Sources," [Co-advisor with J.R. Pacheco], October, 2014.
  - A. Wu, M.S., "Parametric Studies Towards the Optimization of Thermal Systems," July, 2016.
  - H. Gomez, M.S., "On the Effect of Topology on the Performance of Membraneless Fuel Cells," August, 2017.
  - K.M. Li, , M.S., "Modeling of Thermal Systems with Non-Integer Order Differential Equations," August, 2018.
  - J. Baltazar, M.S., "Toward the Intelligent Control of Multi-Room Buildings: A Fuzzy Logic Approach," August, 2018.
  - J. Moon, M.S., "Analysis of Heat Transfer Enhancement Through Multiharmonic Wavy Microchannels," May, 2019.
  - R. Durantes, M.S., "Numerical Analysis of Microchannel Systems," December, 2021.
  - D. Lopez, M.S., "Dynamics and Control of a Toroidal Natural Convection Loop," August, 2022.
  - A. Saguilan, M.S., "Online Fuzzy Thermal Control of Complex Mechanical and Thermal Systems," May, 2024.
  - A. Damas, M.S., "Numerical Simulations and Experiments with Convection Patterns in Air due to Humidity," (In progress: 2025).
  - G. Contreras, M.S., "Thermal Synchronization in Buildlings: Simulations and Experiments," (In progress: 2027).

UNDERGRADUATE

- Universidad Autónoma de San Luis Potosí
  - J.A. Moreno-Villanueva, B.S., "A Numerical Analysis between Spatial and Temporal Axisymmetric Disturbances in a Pipe," [Co-advisor with J.R. Pacheco], 2003.
  - G. Avila de la Rosa, B.S., "A Critical Assessment of the C-Means Clustering Algorithm Using Fluid Flow and Thermodynamic Data," 2006.
- California State University, Los Angeles
  - T. Hummel, B.S., "Development of Low-Dimensional Models of a Natural Convection Loop with Karhunen-Loève Expansions for Known Heat Flux Conditions," (first undergraduate thesis of the college of engineering) 2011.
  - A. Kam, B.S., "Analysis and Design of an HVAC System for a Subscaled Multi-room Building Testbed," Honors College, 2020.

HONORS, AWARDS AND ACHIEVEMENTS

- 2016-2017 Outstanding Professor Award, California State University–Los Angeles, Los Angeles, CA (2017).
- Distinction as National Researcher Level I by the National Research System (SNI) of the Government of México for Active Scholarly Research (2004–2007, 2007–2011, 2012–2015, 2015–2019, 2019–2023, 2023–Present).
- Outstanding Mentorship and Commitment to Students Engaged in Research, Scholarship and Creative Activity, California State University–Los Angeles, Los Angeles, CA (2014).
- Faculty of the Year, College of Engineering, Computer Science and Technology, California State University–Los Angeles, Los Angeles, CA (2012).
- Kaneb Outstanding Graduate Student Teacher Award for Excellence in Teaching, University of Notre Dame, Notre Dame, IN (2002).
- Donald K. Dorini Fellowship in Hydronics, University of Notre Dame, Notre Dame, IN (2000-2002).
- Fulbright-CONACyT Garcia-Robles Fellowship, Institute of International Education, USA Department of the State and the National Council of Research and Technology of México (1996-2000).
- Diploma for the Best GPA as a M.S. Student in Academic Years 1994-1995 and 1995-1996, in the Department of Mechanical Engineering, Universidad de Guanajuato, Salamanca, México (1996).
- CONACyT Fellowship, National Council of Research and Technology (CONACyT) of the Government of México (1994-1996).
- Honors Mention for Best Undergraduate Thesis, Universidad Iberoamericana, León, México (1994).
- Diploma for the Best GPA as a B.S. Student in Academic Years 1984-1988, in the College of Mechanical and Electrical Engineering, Universidad Iberoamericana, León, México (1988).

- Merit Scholarship from Secretary of Public Education (SEP) of the Government of México, León, México (1984-1988).

INVITED LECTURES AND SEMINARS

1. "CREST Center for Energy and Sustainability at Cal State LA," Webcast on Major Institutional Grants, *Office of the Chancellor, California State University*, Los Angeles, CA, USA, Mar. 11, 2020.
2. "On the Role of Artificial Intelligence (AI) in Thermal Engineering," *Institute of Renewable Energy, UNAM*, Cuernavaca, México, May. 23, 2019.
3. "On the Role of Artificial Intelligence (AI) in Thermal Engineering," *National Autonomous University of Mexico*, Mexico City, México, May. 21, 2019.
4. "Requirements for Graduate Education in Engineering," Discipline Panel, *Southern California Forum for Diversity in Graduate Education*, San Diego, CA, Oct. 27, 2018.
5. "Who am I and How I Got There," Hispanic Heritage Month *U.S. Army Corps of Engineers*, Los Angeles, CA, Sep. 20, 2018.
6. "Heat Exchanger Analysis and Control: A Learning Journey with Mihir Sen," *National Autonomous University of Mexico*, Mexico City, México, Jul. 28, 2017.
7. "Requirements for Graduate Education in Engineering," Discipline Panel, *Southern California Forum for Diversity in Graduate Education*, Pomona, CA, Apr. 26, 2014.
8. "Requirements for Graduate Education in Engineering," Discipline Panel, *Southern California Forum for Diversity in Graduate Education*, San Diego, CA, Apr. 14, 2012.
9. "SBIR projects of the Center of Energy and Sustainability," Panel on SBIR/ STTR Partnerships, *National Science Foundation*, Washington DC, Jun. 8, 2011.
10. "Simulation and Control of Thermal Systems," *California Institute of Technology*, Pasadena, CA, Nov. 16, 2009.
11. "Simulation and Control of Thermal Systems," *INTEL Corporation* (Research Department), Portland, OR, Oct. 19, 2007.
12. "Simulation and Control of Thermal Systems," *California State University–Los Angeles* (Dept. Mechanical Engineering), Los Angeles, CA, Sept. 13, 2007.
13. "Steady-State Performance and Control of Heat Exchangers," *University of Waterloo* (Dept. Mechanical Engineering), Waterloo, Canada, Mar. 02, 2006.
14. "Application of Artificial Intelligence to the Simulation and Control of Thermal Systems," *Mexican Institute for Chemical Engineers* (IMIQ), San Luis Potosí, México, May. 06, 2004.
15. "Application of Artificial Neural Networks to the Simulation of Heat Exchangers," *Center for Energy Research* (UNAM), Cuernavaca, México, Sept. 24, 2003.
16. "Global Regression and Neural Networks in the Modeling of Heat Exchangers," *Universidad Autónoma de San Luis Potosí* (Faculty of Chemical Sciences), San Luis Potosí, México, Aug. 22, 2003.
17. "Global Regression and Neural Networks in the Modeling of Heat Exchangers," *Universidad Autónoma de San Luis Potosí* (Physics Institute), San Luis Potosí, México, Mar. 20, 2003.

18. "Simulation of Heat Exchangers Using Global Regression and Neural Networks," *University of British Columbia* (Dept. Mechanical Engineering), Vancouver, Canada, Jul. 26, 2002.
19. "Simulation of Heat Exchangers by Global Regression and Neural Networks," *Mexican Petroleum Institute* (IMP), Veracruz, México, Jun. 7, 2002.
20. "Simulation of Heat Exchangers by Global Regression and Neural Networks," *Universidad Autónoma de San Luis Potosí* (Faculty of Chemical Sciences), San Luis Potosí, México, Jun. 3, 2002.
21. "Heat Rate Predictions in Humid-Air-Water Heat Exchangers by Artificial Neural Networks," *Center of Research in Mathematics* (CIMAT), Guanajuato, México, Jun. 3, 2002.
22. "Heat Rate Predictions in Humid-Air-Water Heat Exchangers by Artificial Neural Networks," *Queen's University* (Dept. Mechanical Engineering), Kingston, Canada, Nov. 22, 2001.

TEACHING EXPERIENCE

AT: CALIFORNIA STATE UNIVERSITY, LOS ANGELES

- **Graduate**
  - Heat Conduction
  - Heat Convection
  - Energy Systems
  - Mechanical Engineering Analysis
  - Advanced Mechanical Engineering Analysis
  - Seminar in Interdisciplinary STEM Research
- **Undergraduate**
  - Dynamics I
  - Thermodynamics I and II
  - Control of Mechanical Systems
  - Fluid Mechanics I and Laboratory
  - Heat Transfer I
  - Matrix Algebra for Engineers
  - Numerical Methods for Engineers I

AT: AUTONOMOUS UNIVERSITY OF SAN LUIS POTOSI

- **Graduate**
  - Advanced Thermodynamics
  - Mathematical Methods in Heat Transfer
  - Advanced Mathematical Methods
  - Responsible for Research Seminar Series
  - Soft Computing Techniques to Characterize Thermal Systems

- **Undergraduate**
  - Applied Mathematics II
  - Fluids
  - Heat Transfer
  - Applied Mathematics I

AT: UNIVERSITY OF NOTRE DAME

- **Undergraduate**
  - Differential Equations and Applied Mathematics
  - Thermodynamics I
  - Introduction to Mechanical Engineering on the design of a thermal-fluid-control system)

AT: UNIVERSITY OF GUANAJUATO

- **Undergraduate**
  - Introduction to Physics

AT: UNIVERSIDAD IBEROAMERICANA

- **Undergraduate**
  - Calculus I (Differential and Integral Calculus)
  - Applied Mechanics I and Laboratory

SHORT COURSES AND WORKSHOPS

- The Role of NSF Research Centers in Broadening Participation and Closing the Gap in Science and Engineering, ASEE PSW 2019 Conference, Workshop at the California State University Los Angeles, USA, April 5, 2019.
- Thermodynamics and Heat Transfer, Fundamentals of Engineering (FE) Review Courses in Mechanical Engineering, Workshop at the California State University Los Angeles, USA, 2016–2020 (three times per academic year).
- Mentoring Graduate Students: Best Practices?, ECST Teaching and Learning Academy, Workshop at the California State University Los Angeles, USA, September 17, 2015.
- Simulation and Control of Thermal Systems: Modeling by First Principles and Empirical Data, Workshop at the Universidad Autónoma de Yucatán, México, June 27–29, 2012.
- Applications of Artificial Intelligence and Soft Computing in Heat Transfer, five-day national course for graduate students, Universidad Autónoma de San Luis Potosí, San Luis Potosí, México, June 13–17, 2005.

- Applications of Artificial Intelligence and Soft Computing in Heat Transfer, five-day national course for graduate students, Universidad Autónoma de San Luis Potosí, San Luis Potosí, México, July 14–18, 2004.
- Applications of Artificial Intelligence and Soft Computing in Heat Transfer, five-day national course for graduate students, Universidad Autónoma de San Luis Potosí, San Luis Potosí, México, August 12–16,2003.
- Tutorial in LaTeX, Matlab, Fortran and IslandDraw, intersemestral course for students, University of Notre Dame, Notre Dame, IN, August–December, 2000.

UNDERGRADUATE SPECIAL PROJECTS DIRECTED

- California State University, Los Angeles
  - Senior design project for: NSF-CEaS. "Design of a 2nd Generation Energy-Efficient Building Testbed," A. Kam, E. Conde, E. Luu, D. Hernandez, and B. Gaytan. Academic year 2019–2020.
  - Senior design project for: NSF-CEaS. "Design of an Efficient Heating and Cooling System," D. Brown, F. Barrios, E. Palma and D. Huang. Academic year 2018–2019.
  - Senior design project for: NSF-CEaS. "Design of Energy Efficient Buildings," J. Baltazar, A. Lopez and C. Enriquez. Academic year 2015–2016.
  - Senior design project for: NSF-CEaS. "Instrumentation and Control of a Building Testbed: Towards Energy Efficient Buildings," A. Baghdasarian, O. Ramos, J. Ruvalcaba, S. Talome and F. Wang. Academic year 2014–2015.
  - Senior design project for: Southern California Gas Company. "Zero-Net Energy Buildings,"N. Aghaganian, F. Gutierrez, M. Prieto and L. Santana. Academic year 2014–2015.
  - Senior design project for: ECST-CSULA. "Thermal Sciences Energy Efficient Buildings–Testbed," A. Salas, M. Garcia and M. Baghdasarian. Academic year 2013–2014.
  - Senior design project for: ECST-CSULA. "SAE Aero Design," A. Llanto, A. Romero and J. Mora. Academic year 2009–2010.
  - Senior design project for: Thermofluids Group, CSULA. "Experimental Core Facility for the Analysis and Control of Fluid-Thermal Research," T. Hummel, M. Olguín and U. Tohid. Academic year 2009–2010.
  - Senior design project for: Pratt & Whitney Rocketdyne. "Study on the Reliability of a High-Temperature Probe," C. Nguyen, E. Thomas and J. Pahed. Academic year 2008–2009.
  - Senior design project for: Los Alamos National Laboratory. "Development of a Diagnostic Wire Scanner for a Linear Particle Accelerator," G. Magaña, J. Celada and S. Rodriguez (in collaboration with Harvey Mudd College). Academic year 2008–2009.

PROFESSIONAL MEMBERSHIP AND SERVICE *MEMBERSHIPS*

- Society for Industrial and Applied Mathematics (SIAM), Member since 2013.
- American Physical Society (APS), Member since 2007.
- American Society of Mechanical Engineers (ASME), Student Member from 1994–2002, Member since 2002.
- Mexican Society of Mechanical Engineers (SOMIM), Member since 1995.
- Mexican Society of Physics (SMF), Member since 1999.
- Pi-Tau-Sigma Honorary Mechanical Engineering Society
- Tau-Beta-Pi Honor Engineering Society

TECHNICAL REVIEWER

- Journal Manuscripts
  - AMRob (Mexican Robotics Association)
  - Applied Mathematical Modelling
  - Archives of Thermodynamics
  - ASME Journal of Heat Transfer
  - ASME Journal of Thermal Science and Engineering Applications
  - ASME Journal of Solar Energy Engineering: Including Wind Energy and Building Energy Conservation
  - Chemical Engineering Communications
  - Chemical Industry & Engineering Quarterly
  - Computation Journal
  - Control and Intelligent Systems Journal
  - Energies Journal
  - Engineering and Computational Mechanics
  - Eurotherm (European Thermal Sciences and Heat Transfer)
  - Heat and Mass Transfer (Wärme-und Stoffübertragung)
  - Heat Transfer Engineering
  - Heliyon Journal
  - HVAC&R Research (ASHRAE)
  - International Journal of Heat Exchangers
  - International Communications in Heat and Mass Transfer
  - International Journal of Heat and Mass Transfer
  - International Journal of Thermal Sciences
  - Journal of Applied Physics
  - Journal of Flow, Turbulence and Combustion
  - Journal of Intelligent and Fuzzy Systems

  - Journal of Process Mechanical Engineering
  - Journal of Thermal Analysis and Calorimetry
  - Microfluidics and Nanofluidics
  - Physics of Fluids
  - Review of Scientific Instruments
  - SOMIM (Mexican Society of Mechanical Engineers) Journal

- Proposals
  - National Science Foundation (NSF)
  - Mexican National Council for Science and Technology (CONACyT)
  - Texas A&M University–CONACYT: Collaborative Research Grant Program
  - Universidad Autónoma de San Luis Potosí Faculty Research Program
  - Universidad de Guanajuato Faculty Research Program

CONFERENCE AND COURSE ORGANIZATION

1. Workshop: "The Role of NSF Research Centers in Broadening Participation and Closing the Gap in Science and Engineering," ASEE PSW 2019 Conference at Cal State LA, Los Angeles, CA, Apr 4–6, 2019. Role: Co-organizer (with G. Menezes, N. Li and G. Ragusa).
2. Mini-symposium: "Application of Dynamical-Systems Methods to Complex Systems in Practice," 2013 SIAM Conference on Dynamical Systems, Snowbird, UT, May 19–23, 2013. Role: Organizer (with M. Speetjens).
3. Summer School: "Modern Trends in Heat Transfer," Universidad Autónoma de San Luis Potosí, México, Jun. 6-10 2005. Role: Organizer.
4. Short Course: "Introduction to the GNU/LINUX Operating System," Universidad Autónoma de San Luis Potosí, México, Jan. 24-29, 2005.
5. Member of the Organizing Committee, Summer School: "Modern Trends in Heat Transfer," Universidad Autónoma de San Luis Potosí, México, Aug. 5-9, 2003, and Jul. 4-8, 2004. Role: Organizer (with R. Romero).
6. Short Course: "Data Acquisition Using LabVIEW," Universidad Autónoma de San Luis Potosí, México, Jul. 7-11, 2003. Role: Organizer.
7. Conference: "2000 Aerospace and Mechanical Engineering (AME) Graduate Student Conference," University of Notre Dame, Notre Dame, IN, Oct. 20, 2000. Role: Organizer (with S. Olson).

UNIVERSITY SERVICE

AT: CALIFORNIA STATE UNIVERSITY, LOS ANGELES

- Member of the ECST Dean Search Committee, 2022.
- Member of the NSS Dean Search Committee, 2022.

- Member of the Resuming On-campus Research Activities Group (RORAG), Apr. 2020–To date.
- Chair of the ECST Research Committee, Sept. 2019–To date.
- Appointed to the ORSCA Faculty Advisory Committee, Nov. 2019–To date.
- Member of the Steering Committee of the Sikand Center for Sustainable and Intelligent Infrastructure (Sikand SITI Center), ECST, May. 2019–To date.
- Member of Review Committee for The Gunjit S. Sikand Faculty Endowment for Research in Urban Sustainability, ECST, 2018 (Chair).
- Associate Chair of Department of Mechanical Engineering, 2017-2023.
- Member of the Associate Vice President of research Committee, 2017.
- Appointed as Principal Academic Advisor for the ME Graduate Program, Aug. 2016–Dec. 2019.
- Member of the Associate Dean Search Committee, 2015 and 2016.
- Appointed to the Council of International Programs, Mar. 2014–To date.
- Appointed to the Graduate Studies Committee, Sept. 2014–To date.
- Appointed to the ECST Resource Allocation Committee, 2014–2016; 2018–2019.
- Appointed to ME Faculty Hiring Committee, Sept. 2014–To date (Chaired it in 2014–2015, and 2022–2023).
- Appointed to the RTP ME and ECST Committees, Sept. 2014–To date.
- Appointed to the ME Chair Selection Committee, 2014, 2016 (Chaired it in 2014).
- Appointed to the University Fiscal Policy Committee, Sept. 2013–2015 and 2015–To date.
- Member of the ECST Dean Search Committee, 2013.
- College Representative to the Academic Senate, January–April, 2012.
- Judge at Cal State LA Student Symposium on RSCA (2010–2014)
- Marshal at ECST Commencement and Honor Convocation, 2010–2016.
- Member to the ECST Research Task Force, Sept. 2010–2013 and 2014–To date (Chaired 2020).
- Appointed to the Student Educational Equity Advisory Committee, May 2009–2014.
- Appointed to the University Honors Convocation and Commencement Committee, 2008–2010.

AT: UNIVERSIDAD AUTONOMA DE SAN LUIS POTOSI

- Appointed member of the Committee for Curricular Revision for the Chemical Engineering undergraduate program, 2005–2008.
- Appointed member of the Research and Technological Development Committee of the UASLP, 2005–2008.
- Appointed Project Director for Advanced Computing. Faculty of Chemical Sciences (Budget 45k Dlls.), 2003–2008.

- Appointed "Coordinator" for the Graduate Seminar Series, 2004–2005.
- Member of Graduate Admissions Committee, 2003–2008.
- Member of Qualifier Examination Board for Graduate Students Admittance to the Doctoral Program, 2003–2008.
- Member of the Committee of Graduate Studies, Department of Chemical Engineering, 2003–2008.

OTHER EXPERIENCE

CEMEX Co.
León, GTO., México

DESIGN AND PROJECT ENGINEER: (1989-1993)

In charge of the planning, management, and evaluation of projects directed to improve: (a) industrial facilities, (b) production efficiency and (c) product quality.

- Design, construction, commissioning, and performance evaluation of mechanical machinery, e.g., belt conveyors (cap. 125 Ton/hr), bucket elevators, etc.
- Installation and performance evaluation of miscellaneous equipment, e.g., CO and O_2 gas analyzers, devices for particle measurement, industrial scales, etc.
- Studies of technical and economical feasibility, fault analysis, etc.
- Technical supervision of construction and production personnel.

LANGUAGES Fluent in English and Spanish.