

Jose F. Espiritu Nolasco

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A. Education:

PhD.	Industrial & Systems Engineering	Rutgers, The State University of New Jersey New Brunswick, NJ	07/07
M.S.	Industrial & Systems Engineering	Rutgers, The State University of New Jersey New Brunswick, NJ	01/05
M.S.	Industrial Engineering	Instituto Tecnológico de Celaya Celaya, Gto. MX	06/02
B.S.	Biochemical Engineering	Instituto Tecnológico de Zacatepec Zacatepec, Mor. MX	01/00

B. Experience:

A. Full Time Academic Experience

Texas A&M University at Kingsville	Associate Professor	Mechanical and Industrial Engineering	01/22–present
The University of Texas at El Paso	Associate Professor	Industrial Manufacturing and Systems Engineering	09/2013–12/2021
The University of Texas at El Paso	Assistant Professor	Industrial Manufacturing and Systems Engineering	09/2007–08/2013

C. Departmental Leadership

The University of Texas at El Paso	IMSE Graduate program director M.S Industrial Engineering, M.S. Manufacturing Engineering and, M.S. Systems Engineering	09/17– 12/2021
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D. Part Time Academic Experience

Rutgers, The State University of New Jersey	Teaching Assistant	Industrial and Systems Engineering	09/06–05/07
Instituto Tecnológico de Celaya Celaya, Gto. MX	Lecturer	Industrial Engineering	08/02–12/02

RESEARCH:

Active grants:

1. J. Espiritu (PI) and K. Cheu. Dynamic Workforce Management at a Network of Screening Facilities. Department of Homeland Security (DHS)/ Center for Accelerating Operational Efficiency – Collaborative Project with Arizona State University and The University of Texas at El Paso. Jorge Sefair -Overall PI and Ron Askin. 09/01/17–12/31/22. Through DHS Center for Operational Excellence. (**\$1,107,636. TAMUK - \$44,970**). (in progress)
2. H. Taboada (PI) and **J. Espiritu**. ALFA-IoT (Alliance For Smart Agriculture in the Internet of Things Era. United States Department of Agriculture (USDA). – *Collaborative Project with The University of Texas at El Paso, New Mexico State University and University of Texas at Arlington*. 09/01/18–08/31/23. (in progress) (**\$1,000,000. TAMUK - \$119,957**). (in progress)
3. J. Espiritu (TAMUK-PI) and H. Taboada. United States Department of Agriculture – AFRI - Developing an Alliance for Training and Apprenticeship in Climate-Smart Agriculture (DATA-Ag). Collaborative Project with The University of Texas at Arlington (Lead Institution, Jianzhong Su-PI), and New Mexico State University. 01/01/22-08/31/21. **\$500,000 Total, (TAMUK - \$158,350.00)**. (in progress)

Under review:

1. J. Espiritu (PI), Consuelo Donato, Francisco O. Aguirre, Francisco Calaça (SENAI-GOIANIA-Brazil) and Tavvs Alves (Instituto Federal Goiano, Brazil). Data Analytics and Entrepreneurship: A Binational (U.S. - Brazil) Faculty and Student Exchange Program. 100,000 Strong in the Americas (100K) Innovation Fund - Partners of the Americas. Sep/22–Sep/23. **\$34,249 + UTEP Cost Share \$38,088, Total: \$72,337**

Closed Grants:

- [F1] A. Lopes (PI), J. Espiritu, B. Tseng, C. Terrazas and I. Renteria. Smart Manufacturing for Small and Medium Manufacturers in a Predominantly Hispanic Workforce Region. Department of Energy - the Clean Energy, Smart Manufacturing, Innovation Institute (CESMII). 2/1/2021–7/31/2022. **\$526,935 (\$263,376 Agency, \$263,559 UTEP cost share)**.
- [F2] H, Taboada (PI) and J. Espiritu. United States Department of Agriculture (USDA) - Hispanic Serving Institutions (HSI). START NOW “Student Training in Agricultural Research Techniques by Novel

Occupational Workshops" Large Collaboration grant (TAMU-Kingsville, Lead; UTEP, FIU, UPR-Mayaguez). 09/01/16-08/31/21. **\$2,000,000 Total, (UTEP Share \$332,000).**

- [F3] **J. Espiritu (PI)**, H. Taboada, S. Walker and J. Noveron. *Wheels of Change: A consortium to develop champions in Agriculture in the areas of Sustainable Energy and Natural Resources*. United States Department of Agriculture (USDA). Sep/15–Aug/20. **\$2,000,000.**
- [F4] H. Taboada, **J. Espiritu** and J. Noveron (**PI**). *I-Discover: Collaborative Integration of USDA-Research in the Advancement Teaching Laboratories of STEAM for accelerating Discovery and Student Competitiveness*. United States Department of Agriculture (USDA). Sep/14–Aug/19. **\$1,000,000.**
- [F5] H. Taboada (**PI**), **J. Espiritu** and C. Ferregut. *Engineering Together Sustainable Communities: A US-Mexico Study Abroad Program. Partners of The Americas Foundation*. Sep/14–Sep/15. **\$25,000 + UTEP Cost Share \$12,665, Total: \$37,665**
- [F6] H. Taboada (**PI**), **J. Espiritu**, B. Hargrove, S. Walker, S. Hernandez and J. Noveron. *BGREEN - BuildinG a Regional Energy and Educational Network: A Partnership to Integrate Efforts and Collaboration to Shape Tomorrow's Hispanic Sustainable Energy Leaders*. **United States Department of Agriculture (USDA)**. Sep/11–Aug/15. **\$3,365,000.**
- [F7] C. Ferregut (**PI**), **J. Espiritu**, H. Taboada, N. Vargas-Hernandez, C. Chang, K. Cheu, R. Rincones and N. Minion. *USA/Peru Study Abroad Program: Global and Regional Sustainability Engineering*. **United States Department of State**. Aug/12–Jul/15. **\$552,911.**
- [F8] C. Chang (**PI**), H. Taboada, **J. Espiritu** and T. Fullerton. *Using Fair Division Methods for Allocating Transportation Funds*. **Texas Department of Transportation**. Sep/11–Aug/13. **\$187,185.**
- [F9] H. Taboada (**PI**), **J. Espiritu**, C. Kiekintveld and M. Tambe. *Scheduling Border Security Operations in Uncertain Adversarial Domains – YEAR 4*. **Department of Homeland Security (DHS)/National Center for Border Security and Immigration**. Jul/11–Dec/11. **\$139,000.** *Collaborative proposal with The University of Southern California.*
- [F10] H. Taboada (**PI**), **J. Espiritu**, and V. Gonzalez. *Catalyzing and Supporting Minority Talent Development: An Structured Mentoring Model to Inspire Young Engineering Minds*. **Department of Education**. Oct/10–Sep/13. **\$509,359.**
- [F11] **J. Espiritu (PI)**. *Modeling and Analysis of Energy Storage Systems*. Raytheon. Oct/10–Jan/11. **\$50,000.**
- [F12] **J. Espiritu (PI)**, H. Taboada and V. Gonzalez. *Building Expertise on Energy Sustainability (BEES) – An Integrative Model to Increase Research and Education in Renewable Energy Systems*. United States Department of Agriculture (USDA). Aug/10–Jul/13. **\$290,000.**
- [F13] S. Nazarian (**PI**), **J. Espiritu**. *Modulus-Based Construction Specification for Compaction of Earthwork and Unbound Aggregate*. National Cooperative Highway Research Program. Sep/10–Feb/13. **\$500,000.**

- [F14] H. Taboada (PI), J. Espiritu, C., M. Tambe and F. Ordonez. ***Scheduling Border Security Operations in Uncertain Adversarial Domains – YEAR 3***. Department of Homeland Security (DHS)/National Center for Border Security and Immigration. Jul/10–Jun/11. **\$175,000**. *Collaborative proposal with The University of Southern California*.
- [F15] H. Taboada (PI), J. Espiritu, C. Gomez and N. Vargas. ***An Initiative to Increase Research and Education in Sustainability Engineering***. United States Department of Agriculture (USDA). Aug/09–Jul/12. **\$296,000**.
- [F16] P. Golding (PI), J. Espiritu, and H. Taboada. “UTeach Engineering”. ***NSF/UT Austin***. July/09–Sept/11. **\$100,000**
- [F17] P. Golding (PI), J. Espiritu, and H. Taboada. “UTeach Engineering Laboratory”. ***NSF/UT Austin***. July/09–Feb/10. **\$50,000**
- [F18] J. Espiritu (PI), H. Taboada and R. Pineda. Level of repair analysis (LORA) modeling for Orion subsystems. ***NASA-Orion/ Hamilton Sundstrand***. March/09–Jan/10. **\$167,380**
- [F19] J. Espiritu (PI). Development of a new replacement analysis method for aging electricity transmission and distribution systems. ***University Research Incentive – UTEP***. December/07–Aug/08. **\$5,000**

PUBLICATIONS:

- [P-1] Eduardo J. Castillo Fatule, Jose F. Espiritu and Yuanrui Sang. Reducing the Global Warming Potential of Power Systems by Optimally Allocating DFACTS Using Metaheuristics. *International Journal of Electrical Power and Energy Systems*. (under review, submitted 07/2021).
- [P-2] Izaz Zunnurain, Yuanrui Sang, Jose F. Espiritu, Paras Mandal and Miguel Velez-Reyes. Improving the Resilience of Large-Scale Power Systems Using Distributed Static Series Compensators. *International Journal of Electrical Power and Energy Systems*. (under review, submitted 03/2021)
- [P-3] Heidi Taboada, Yasser A. Davizon, Jose F. Espiritu and Jaime Sanchez-Leal. (2022). Mathematical Modeling and Optimal Control for a Class of Dynamic Supply Chain: A Systems Theory Approach. *Applied Sciences*. 2022, 12, 5347. <https://doi.org/10.3390/app12115347>.
- [P-4] Ana Cram, Jose Espiritu, Heidi Taboada, Delia J. Valles-Rosales, Young Ho Park, Efren Delgado and Jianzhong Su. (2022). Multi-objective biofuel feedstock optimization considering different land-cover scenarios and watershed impacts. *Clean Technologies and Recycling*. Volume 2, Issue 2: 103-118. <https://doi.org/10.3934/ctr.2022006>
- [P-5] Eduardo J. Castillo Fatule, Yuanrui Sang, Jose F. Espiritu and Heidi Taboada. Fine-Tuning the Parameters for Solving the Multi-Objective D-FACTS Allocation Problem. Proceedings of the 7th North American International Conference on Industrial Engineering and Operations Management, Orlando, Florida, USA, June 12-14, 2022.

- [P-6] Eduardo J. Castillo Fatule, Yuanrui Sang, Jose F. Espiritu and Heidi Taboada. (2021). Co-Optimizing Operating Cost and Renewable Energy Curtailment in D-FACTS Allocation. The 53rd North American Power Symposium (NAPS), Texas A&M University, College Station, Texas. November 14–16, 2021.
- [P-7] Trinidad Reyes and Jose F. Espiritu. Microgrid Supplier Selection Problem Considering Euclidean Distance and Ideal Vector System. 6th North American Conference on Industrial Engineering and Operations Management. Monterrey, Mexico, November 3-5, 2021.
- [P-8] Eduardo J. Castillo Fatule, Yuanrui Sang, Jose F. Espiritu and Heidi Taboada. (2020). A Computationally Efficient Evolutionary Algorithm for Stochastic D-FACTS Optimization. The 52nd North American Power Symposium, Tempe, AZ, October 11-13, 2020.
- [P-9] Tongdan Jin, Heidi A. Taboada, and Jose F. Espiritu. (2020). Variance of Reliability Estimate for K-Out-Of-N System with Cold Standby Units. 2020 Asia-Pacific International Symposium on Advanced Reliability and Maintenance Modeling (APARM). Vancouver, Canada, August 20-23, 2020.
- [P-10] Leticia Rodriguez, Jose F. Espiritu and Heidi A. Taboada. (2019) Comparative LCA of glass containers made from recycled and virgin raw material. In Proceedings of the Industrial and Systems Engineering Research Conference. Orlando, Fl. May 18-21, 2019
- [P-11] Ana C. Cram, Jose F. Espiritu and Heidi A. Taboada. (2019) Optimal Land Use Allocation for Biofuel Feedstock Production. In Proceedings of the Industrial and Systems Engineering Research Conference. Orlando, Fl. May 18-21, 2019.
- [P-12] Ana Cram, Heidi Taboada, **Jose Espiritu** and Shane Walker. Environmental Performance of a WWTP Applying Life Cycle Assessment Methodology. Proceedings of the Industrial and Systems Engineering Research Conference. Orlando, Fl. May 19-22, 2018.
- [P-13] Luis Ramirez, **Jose Espiritu**, Heidi Taboada. Multiple Objective Optimization of Flexible Manufacturing Systems Considering Carbon Dioxide Emissions. Proceedings of the Industrial and Systems Engineering Research Conference. Orlando, Fl. May 19-22, 2018.
- [P-14] Eduardo Castillo and **Jose Espiritu**. Using Metaheuristics to Solve a Stochastic Centralized Carrier Collaboration Problem. Proceedings of the Industrial and Systems Engineering Research Conference. Orlando, Fl. May 19-22, 2018.)
- [P-15] **Jose Espiritu**, Ana Cram, Heidi Taboada, Noe Vargas Hernandez and Isaac Azuz Adeath. Development of a Multi Objective Optimization Algorithm for Biofuel Feedstock Production Considering Watershed Impacts and Land Cover Scenarios. In Proceedings of the 47th International Conference on Computers and Industrial Engineering, Lisboa, Portugal. October 11-13, 2017.
- [P-16] Isaac Azuz Adeath, Jose Espiritu, Heidi Taboada, Noe Vargas Hernandez and Socorro Lomeli. Modeling Decadal Climate Variability as a Quality Component for Manufacturing Wood-Based Musical Instruments. In Proceedings of the 47th International Conference on Computers and Industrial Engineering, Lisboa, Portugal. October 11-13, 2017.

- [P-17] Ana Cram, **Jose F. Espiritu** and Heidi Taboada. MOEA-LUCIA: A New Multi-Objective Evolutionary Algorithm for the Evaluation of Land Use Change and Impact Assessment of Biofuel Feedstock Production. In Proceedings of the Industrial and Systems Engineering Research Conference. Pittsburgh, PA. May 20-23, 2017
- [P-18] Jin, T., Taboada, H., **Espiritu, J.** and Liao, H. (2016) Allocation of Reliability-Redundancy and Spares Inventory under Poisson Fleet Expansion. *IISE Transactions*. Volume 49, Issue 7.
- [P-19] Vargas-Hernandez, N., Taboada, H., **Espiritu, J.**, Gomez, C. and Azuz, I. (2016) Engineering Together Sustainable Communities: Sustainability Engineering in Action. In *Proceedings of 2016 Annual American Society of Engineering Education Conference & Exposition (ASEE)*. June, 2016, New Orleans, LA.
- [P-20] Victor Santana-Viera, Jesus Jimenez, Tongdan Jin and **Jose F. Espiritu** (2015). Implementing factory demand response with onsite renewable energy: a design-of-experiment approach. *International Journal of Production Research*. Volume 53, Issue 23.
- [P-21] Victor Santana-Viera, Jesus Jimenez, Tongdan Jin and **Jose F. Espiritu** (2015). Implementing factory demand response with onsite renewable energy: a design-of-experiment approach. *International Journal of Production Research*. Volume 53, Issue 23.
- [P-22] Ana C. Cram and **Jose F. Espiritu**. (2015). Optimal Scheduling of an Anaerobic Digester Considering Multiple Feedstocks Using Genetic Algorithms. *International Conference on Operations Management and Service Excellence*. Orlando, Florida, September 11-12, 2015.
- [P-23] **Jose Espiritu**, Heidi Taboada, Juan Fernandez, Eduardo Castillo, Claudia Valles, and Ileana Delgado. (2015). Global Warming Potential and Cost Minimization for the Centralized Carrier Collaboration and Multi-Hub Location Problem. *International Conference on Operations Management and Service Excellence*. Orlando, Florida, September 11-12, 2015. **Recognized as The Best Research Paper in the Sustainable Engineering Track.**
- [P-24] **Jose F. Espiritu** and Eduardo Castillo-Fatule. Centralized Carrier Collaboration and Multi-Hub Location Optimization Using a Genetic Algorithm. *International Conference on Operations Management and Service Excellence*. Orlando, Florida, September 11-12, 2015.
- [P-25] Carlos M. Ituarte-Villareal and **Jose F. Espiritu**. (2014). Wind Farm Layout Optimization Considering Reliability Using a Viral Systems Algorithm. *International Journal of Applied Evolutionary Computation*.
- [P-26] Carlos Chang-Albitres., Edith Montes, Heidi A. Taboada, and **Jose F. Espiritu**. (2014). Fair Division Transportation Allocation Model for Funding Prioritization. *American Society of Civil Engineering (ASCE), Journal of Infrastructure Systems*.
- [P-27] Tongdan Jin, Fei Sun, **Jose F. Espiritu** and Heidi A. Taboada (2014). A Hybrid Approach to Weibull Renewal Approximation with Increasing Failure Rate. In *Proceedings of the 20th ISSAT International Conference on Reliability and Quality Design*. August 7-9, 2014, Seattle, WA.

- [P-28] Nicolas Lopez and **Jose F. Espiritu**. (2014). A New Decision Support Tool for Optimal Hybrid Micro-Grid Configuration. *In Proceedings of the Industrial and Systems Engineering Research Conference*. May 31-June 3, 2014, Montreal, Canada.
- [P-29] Oswaldo Aguirre, Heidi A. Taboada and **Jose F. Espiritu**. (2014). An Automated Decision Support Model for Remote Patrolling. *In Proceedings of the Industrial and Systems Engineering Research Conference*. May 31-June 3, 2014, Montreal, Canada.
- [P-30] Anuar Aguirre, **Jose F. Espiritu** and Salvador Hernandez. (2013). Designing Optimal Aviation Baggage Screening Strategies Using Evolutionary Algorithms. *International Journal of Applied Evolutionary Computation*. Vol 3, Issue 1.
- [P-31] Rodney Vance and **Jose F. Espiritu**. (2013). Biofuel Feedstock Optimization Considering Different Land Cover Scenarios and Watershed Impacts. *In Proceedings of the Industrial Engineering Research Conference*. San Juan, Puerto Rico. May 18-22, 2013.
- [P-32] Oswaldo Aguirre, Heidi A. Taboada, Jose F. Espiritu and Christopher Kiekintveld. (2012). A new Multiple Objective Evolutionary Algorithm to Optimize Patrolling Strategies. *Computers and Industrial Engineering*.
- [P-33] Carlos M. Ituarte-Villarreal, Nicolas Lopez and **Jose F. Espiritu**. (2012). Using the Monkey Algorithm for Hybrid Power Systems Optimization. *Complex Adaptive Systems Conference*. Washington D.C. November 14-16, 2012
- [P-34] Nicolas Lopez, Carlos M. Ituarte-Villarreal and **Jose F. Espiritu**. (2012). Evolutionary Agent Based Microstorage Management for a Hybrid Power System. *Complex Adaptive Systems Conference*. Washington D.C. November 14-16, 2012
- [P-35] **Jose F. Espiritu**, Tongdan Jin, Chen-Han Sung and Hong-Zhong Huang. (2012). Contracting for Performance-Based Maintenance under Profit Maximization. *In Proceedings of the 18th ISSAT International Conference on Reliability and Quality Design*. Boston, Massachusetts. July 26-28, 2012
- [P-36] Heidi A. Taboada and **Jose F. Espiritu**. (2012). A Multi-Disciplinary and Multi-Institutional Approach to Prepare Industrial Engineers to Respond to Future Energy Challenges. *In Proceedings of the American Society for Engineering Education Conference*. San Antonio, Texas. June 10-13, 2012
- [P-37] **Jose F. Espiritu**, Heidi A. Taboada and Connie Gomez. (2012). Research and Leadership Experiences for Undergraduates (RLEU) in Optimization with Engineering Applications. *In Proceedings of the American Society for Engineering Education Conference*. San Antonio, Texas. June 10-13, 2012
- [P-38] Carlos M. Ituarte-Villareal and **Jose F. Espiritu** (2012). A Viral Systems Algorithm Implementation to Optimize the Layout of a Wind Farm Considering Reliability. *In Proceedings of the Industrial Engineering Research Conference*. Orlando, Florida. May 19-23, 2012

- [P-39] Anuar Aguirre, **Jose F. Espiritu**, Heidi A. Taboada (2012). Solving the Aviation Baggage Screening Problem using Genetic Algorithms. In *Proceedings of the Industrial Engineering Research Conference*. Orlando, Florida. May 19-23, 2012
- [P-40] Nicolas Lopez and **Jose F. Espiritu**. (2012). Multi-Objective Optimization of Hybrid Power Systems Using Evolutionary Algorithms. In *Proceedings of the Industrial Engineering Research Conference*. Orlando, Florida. May 19-23, 2012
- [P-41] Carlos Ituarte-Villareal, Claudia S. Valles and **Jose F. Espiritu**. (2012). Optimal Sitting of Wind Turbines Using Viral Systems Algorithm. In *Proceedings of the 2nd Southwest Energy Science and Engineering Symposium*. El Paso, TX. March 24, 2012.
- [P-42] Nicolas Lopez, Karla Gutierrez and **Jose F. Espiritu** A Central vs. Distributed Micro-Storage Management Using Game Theory and Evolutionary Techniques. In *Proceedings of the 2nd Southwest Energy Science and Engineering Symposium*. El Paso, TX. March 24, 2012.
- [P-43] Anuar Aguirre and **Jose F. Espiritu**. (2012). Using Genetic Algorithms to Solve Component replacement problems in the power industry. In *Proceedings of the 2nd Southwest Energy Science and Engineering Symposium*. El Paso, TX. March 24, 2012.
- [P-44] Carlos M. Ituarte-Villareal and **Jose F. Espiritu**. (2011). A Decision Support System for the Level of Repair Analysis Problem. In *Proceedings of the 41st International Conference on Computers & Industrial Engineering (CIE 41)*. Los Angeles, California. October 23-26, 2011
- [P-45] Carlos M. Ituarte-Villareal and **Jose F. Espiritu**. (2011). Wind turbine placement in a wind farm using a viral based optimization algorithm. In *Proceedings of the 41st International Conference on Computers & Industrial Engineering (CIE 41)*. Los Angeles, California. October 23-26, 2011
- [P-46] Nicolas Lopez, Oswaldo Aguirre, **Jose F. Espiritu** and Heidi A. Taboada. (2011). Using Game Theory as a Post-Pareto Analysis for Renewable Energy Integration Problems Considering Multiple Objectives. In *Proceedings of the 41st International Conference on Computers & Industrial Engineering (CIE 41)*. Los Angeles, California. October 23-26, 2011
- [P-47] Anuar Aguirre, **Jose F. Espiritu** and Heidi A. Taboada. (2011). Designing optimal aviation baggage screening strategies using Memetic-Algorithms. In *Proceedings of the 41st International Conference on Computers & Industrial Engineering (CIE 41)*. Los Angeles, California. October 23-26, 2011
- [P-48] Oswaldo Aguirre, Rafael Llausas, Crystal Lucero, Heidi A. Taboada, **Jose F. Espiritu** and Christopher Kiekintveld. (2011). A multi-objective evolutionary evolutionary algorithm for intelligent patrolling. In *Proceedings of the 41st International Conference on Computers & Industrial Engineering (CIE 41)*. Los Angeles, California. October 23-26, 2011
- [P-49] Nicolas Lopez and **Jose F. Espiritu**. (2011). An approach to hybrid power systems integration considering different renewable energy technologies. In *Proceedings of the Complex Adaptive Systems Conference*. Chicago, Illinois. October 31- November 2, 2011

- [P-50] Carlos M. Ituarte-Villareal and **Jose F. Espiritu**. (2011). Optimization of wind turbine placement using a viral based optimization algorithm. In *Proceedings of the Complex Adaptive Systems Conference*. Chicago, Illinois. October 31- November 2, 2011
- [P-51] Oswaldo Aguirre, Nicolas Lopez, Erick Gutierrez, Heidi A. Taboada, Jose F. Espiritu and Christopher Kiekintveld. (2011). Towards the integration of multi-attribute optimization and game theory for border security patrolling strategies. In *Proceedings of the 25th Conference on Artificial Intelligence*. San Francisco, CA. August 7-11, 2011.
- [P-52] **Jose F. Espiritu**, Nicolas Lopez and Emmanuel Gurrola. (2011). Solving the Renewable Energy System Integration Problem Considering Multiple Objectives. In *Proceedings of the Industrial Engineering Research Conference (IERC)*. Reno, NV.
- [P-53] Carlos M. Ituarte-Villareal, Oswaldo Aguirre, **Jose F. Espiritu** and Heidi A. Taboada. (2011). GALORA: A New Genetic Algorithm for the Level of Repair Analysis Problem. In *Proceedings of the Industrial Engineering Research Conference (IERC)*. Reno, NV. May 21–25, 2011.
- [P-54] Edgar Jimenez, Anuar Aguirre & **Jose F. Espiritu**. (2011). Quality Control in the Pavement Industry. In *Proceedings of the Industrial Engineering Research Conference (IERC)*. Reno, NV. May 21–25, 2011.
- [P-55] Heidi A. Taboada, **Jose F. Espiritu** and Emmanuel Gurrola. (2011). Catalyzing and Supporting Minority Talent Development in STEM fields: A Structured Mentoring Model to Inspire Young Engineering Minds. In *Proceedings of the ASEE Annual Conference and Exposition*. Vancouver, B.C., Canada, June 26-29, 2011.
- [P-56] Heidi A. Taboada, **Jose F. Espiritu**, Olivia Moreno and Abril Vasquez. (2011). Experiences While Incorporating Sustainability Engineering into the Industrial Engineering Curricula. In *Proceedings of the ASEE Annual Conference and Exposition*. Vancouver, B.C., Canada, June 26-29, 2011. (**2011 ASEE Industrial Engineering Division Best Young Faculty Paper Award**)
- [P-57] **Jose F. Espiritu** and Heidi A. Taboada (2011). Building Expertise on Energy Sustainability (BEES) - An Integrative Model to Increase Research and Education in Energy Sustainability. In *Proceedings of the ASEE Annual Conference and Exposition*. Vancouver, B.C., Canada, June 26-29, 2011.
- [P-58] Connie Gomez, Heidi A. Taboada **Jose F. Espiritu** & Noe Vargas (2010). Increasing Sustainability Engineering in Education and Research. In *Proceedings of the 2010 ASEE Annual Conference and Exposition*. Louisville, Kentucky. June 20 - 23, 2010.
- [P-59] **Jose F. Espiritu** & Sowmya Parimi. (2009). Electricity distribution system optimization using evolutionary algorithms. In *Proceedings of the 15th ISSAT International Conference on Reliability and Quality Design*. San Francisco CA.
- [P-60] **Jose F. Espiritu** & David W. Coit. (2009). Component Replacement Analysis in the Power industry. In *Proceedings of the 15th ISSAT International Conference on Reliability and Quality Design*. San Francisco CA.

- [P-61] Noel Chavez, Heidi Taboada and **Jose F. Espiritu**. (2009). Multiple Objective Optimization in Electricity Transmission and Distribution Systems. In *Proceedings of the Industrial Engineering Research Conference (IERC)*, Miami, Florida.
- [P-62] **Jose F. Espiritu** & David W. Coit. (2008). Component Replacement Analysis for Radial Distribution Systems. In *Proceedings of the Industrial Engineering Research Conference (IERC)*. Vancouver, BC.
- [P-63] **Jose F. Espiritu** & David W. Coit. (2008). Component Replacement Analysis for Complex Electricity Distribution Configurations. In *Proceedings of the Industrial Engineering Research Conference (IERC)*. Vancouver, BC.
- [P-64] **Jose F. Espiritu** & David W. Coit. (2008). Component Replacement Models for Electricity Distribution Systems. *The Engineering Economist*, 318-339(53).
- [P-65] Heidi Taboada, **Jose F. Espiritu** & David W. Coit. (2008). MOMS-GA: A Multiobjective Multi-State Genetic Algorithm for System Reliability Optimization Design Problems. *IEEE Transactions on Reliability*, 57(1): 182-191.
- [P-66] Heidi Taboada, **Jose F. Espiritu** & David W. Coit. (2008). Design Allocation of Multi-State Series-Parallel Systems for Power Systems Planning: A Multiple Objective Evolutionary Approach. *Journal of Risk and Reliability*, 222(3).
- [P-67] **Jose F. Espiritu**, David W. Coit & Upyukt Prakash. (2007). Component Criticality Importance Measures for the Power Industry. *Electric Power systems Research*, 77(5-6).
- [P-68] **Jose F. Espiritu** & David W. Coit. (2007). Component Replacement Analysis for Electricity Transmission and Distribution Systems. *International Journal of Performability Engineering*, 3(2).
- [P-69] **Jose F. Espiritu**, David W. Coit & Naruemon Wattanapongsakorn (2007). Component Replacement Models for Electricity Transmission and Distribution Systems. In *Proceedings of the Fifth International Conference on Quality and Reliability*. Chiang Mai, Thailand.
- [P-70] **Jose F. Espiritu** & David W. Coit. (2006). Customized Component Reliability Importance Measures for Electricity Transmission Systems. In *Proceedings of the Industrial Engineering Research Conference (IERC)*. Orlando, FLA.
- [P-71] **Jose F. Espiritu**, David W. Coit, Upyukt Prakash & Jose Ramirez-Marquez. (2005). Reliability Modeling of Electricity Transmission Systems: An Extension of Traditional Reliability Methods. *Proceedings of the Industrial Engineering Research Conference (IERC)*. Atlanta, GA.

B. Abstracts

- [A-1] **Jose F. Espiritu**, Heidi Taboada and Eduardo Castillo-Fatule. Centralized Carrier Collaboration and Multi-Hub Location Optimization Using Genetic Algorithms. Industrial and Systems Engineering Research Conference. Nashville, Tennessee. May 30-June 2, 2015

- [A-2] **Jose F. Espiritu**, Nicolas Lopez and Oswaldo Aguirre. Hybrid MicroGrid Optimization for Buildings Considering HVAC Profiles. Industrial and Systems Engineering Research Conference. Nashville, Tennessee. May 30-June 2, 2015
- [A-3] Ana Cram and **Jose F. Espiritu**. Using Genetic Algorithms to solve a feedstock scheduling problem considering a single anaerobic digester. Industrial and Systems Engineering Research Conference. Nashville, Tennessee. May 30-June 2, 2015
- [A-4] Carlos Ituarte-Villarreal, Nicolas Lopez and **Jose F. Espiritu**. Wind Farm Layout Optimization Using the Universal Generating Function. Industrial and Systems Engineering Research Conference. Nashville, Tennessee. May 30-June 2, 2015
- [A-5] Nicolas Lopez and **Jose F. Espiritu**. (2014). Using Universal Generating Function and Genetic Algorithm to solve the Hybrid Micro-Grid System Optimization Problem. Industrial and Systems Engineering Research Conference. Montreal, Canada. May 31-June 3, 2014.
- [A-6] Heidi A. Taboada, **Jose F. Espiritu** and Noe Vargas-Hernandez. (2014). Predictive Sustainability Assessment Methodology for Early Product Design. Montreal, Canada. May 31-June 3, 2014.
- [A-7] Rodney Vance, Jesusita Ibarra and Jose F. Espiritu/ (2014). Biofuel Feedstock Optimization Considering Watershed Impacts and Economic Sustainability. Industrial and Systems Engineering Research Conference. Montreal, Canada. May 31-June 3, 2014.
- [A-8] Victor Santana-Viera, Jesus Jimenez, Tongdan Jin and **Jose F. Espiritu** (2014). A Design-of-Experiment for Factory Demand Response Planning with On-site Wind Generation. Industrial and Systems Engineering Research Conference. Montreal, Canada. May 31-June 3, 2014.
- [A-9] Ethel Martinez, Heidi A. Taboada and **Jose F. Espiritu** (2014). Border Enforcement Environments and Change Detection Strategies for Remote Patrolling. Industrial and Systems Engineering Research Conference. Montreal, Canada. May 31-June 3, 2014.
- [A-10] Raul Lopez, Nicolas Lopez and **Jose F. Espiritu**. (2013). Renewable Energy System Optimization for a Rural Farm in the state of Morelos, Mexico. *Industrial Engineering Research Conference*. San Juan, Puerto Rico. May 18-22, 2013.
- [A-11] Carlos M. Ituarte-Villareal, Nicolas Lopez, Heidi A. Taboada and **Jose F. Espiritu**. (2013). Wind Farm Layout Optimization Considering Multiple-Objectives. *Industrial Engineering Research Conference*. San Juan, Puerto Rico. May 18-22, 2013.
- [A-12] Nicolas Lopez and **Jose F. Espiritu**. (2013). Modular Energy-Storage System-Management by Adaptive Echolocation & Game Theory. *Industrial Engineering Research Conference*. San Juan, Puerto Rico. May 18-22, 2013.
- [A-13] Carlos M. Ituarte-Villareal and **Jose F. Espiritu**. (2013). Considering Wind-Wake and Reliability as Multi-State System. *Industrial Engineering Research Conference*. San Juan, Puerto Rico. May 18-22, 2013.

- [A-14] Carlos Ituarte-Villareal, Nicolas Lopez and **Jose F. Espiritu**. Hybrid Power Systems Optimization using the Monkey Algorithm. *Annual Industrial Engineering Research Conference and Expo*. Orlando, Florida. May 19-23, 2012.
- [A-15] Aaron Martinez, Edgar Jimenez and **Jose F. Espiritu**. Designing optimal aviation baggage screening strategies using the Monkey Algorithm. *Annual Industrial Engineering Research Conference and Expo*. Orlando, Florida. May 19-23, 2012.
- [A-16] Nicolas Lopez and **Jose F. Espiritu**. Evolutionary Agent Based Micro storage Management for a Hybrid Power System. *Annual Industrial Engineering Research Conference and Expo*. Orlando, Florida. May 19-23, 2012.
- [A-17] Anuar Aguirre and **Jose F. Espiritu**. Using Genetic Algorithms to Solve Component Replacement Problems in the Power Industry. *Annual Industrial Engineering Research Conference and Expo*. Orlando, Florida. May 19-23, 2012.
- [A-18] Oswaldo Aguirre, Heidi A. Taboada and **Jose F. Espiritu**. An Evolutionary Game Theory Approach for Intelligent Patrolling. *Annual Industrial Engineering Research Conference and Expo*. Orlando, Florida. May 19-23, 2012.
- [A-19] Heidi A. Taboada, **Jose F. Espiritu**, Connie Gomez & Noe Vargas. A Model to Incorporate Sustainability Topics into the Engineering Curricula. *North American Colleges and Teachers of Agriculture, Annual Conference*. University of Alberta, Edmonton, Canada. June 14-18, 2011.
- [A-20] **Jose F. Espiritu**, Heidi A. Taboada and Virgilio Gonzalez. Building Expertise on Energy Sustainability (BEES) Model. *North American Colleges and Teachers of Agriculture, Annual Conference*. University of Alberta, Edmonton, Canada. June 14-18, 2011.
- [A-21] Carlos Ituarte-Villareal and Jose F. Espiritu. A Solution Method for the Constrained Level of Repair Analysis Problem. *Institute for Operations Research and Management Science Conference*, Austin, Texas. November, 2010
- [A-22] Vasukumar Chenna and Jose F. Espiritu. Power Systems Optimization using Genetic Algorithms. *Institute for Operations Research and Management Science Conference*, Austin, Texas. November, 2010
- [A-23] Nicolas Lopez and Jose F. Espiritu. Hybrid Power Systems optimization considering different renewable energy technologies. *Institute for Operations Research and Management Science Conference*, Austin, Texas. November, 2010
- [A-24] Abril Vazquez and Jose F. Espiritu. Implementing Sustainability Engineering Principles into the Undergraduate Engineering Curricula. *Institute for Operations Research and Management Science Conference*, Austin, Texas. November, 2010
- [A-25] Vasukumar Chenna & **Jose F. Espiritu**. Ant Colony Optimization for Power Distribution Systems. *Constraint Programming and Decision Making Workshop (CoProD)*. The University of Texas at El Paso, El Paso, Texas. November 9-10, 2009

- [A-26] **Jose F. Espiritu**. Solving Component Allocation Problems in Electricity Distribution Systems via Genetic Algorithms. *Institute for Operations Research and Management Science Conference*, San Diego, California. October 11-14, 2009.
- [A-27] Vasukumar Chenna & **Jose F. Espiritu**. Component Replacement Schedules for Power Distribution Systems Using Evolutionary Algorithms. *Institute for Operations Research and Management Science Conference*, San Diego, California. October 2009.
- [A-28] Carlos Ituarte-Villareal, **Jose F. Espiritu**, Heidi A. Taboada & Oswaldo Aguirre. Level of Repair Analysis Modeling Using Genetic Algorithms. *Institute for Operations Research and Management Science Conference*, San Diego, California. October 2009.
- [A-29] Heidi A. Taboada, Noel Chavez, **Jose F. Espiritu** & Karla Gutierrez. Transmission and Distribution Systems Optimization Using a New Multiple Objective Evolutionary Algorithms. *Institute for Operations Research and Management Science Conference*, San Diego, California. October 2009.
- [A-30] Vasukumar Chenna & **Jose F. Espiritu**. Development of an ant colony optimization algorithm to obtain optimal replacement schedules for electricity transmission and distribution systems. *INFORMS Western Regional Conference*. Arizona State University. Tempe, AZ, April 2009.
- [A-31] **Jose F. Espiritu** & Sowmya Parimi. Power Systems Optimization Using Evolutionary Algorithms. *INFORMS Western Regional Conference*. Arizona State University. Tempe, AZ, April 2009.
- [A-32] **Jose F. Espiritu**. A replacement analysis model for electricity distribution systems. *Institute for Operations Research and Management Science Conference*. Washington, D.C, October 2008.
- [A-33] **Jose F. Espiritu**. A Multiple Objective Evolutionary Approach to Consider the Design Allocation of Multi-state Series-parallel Systems for Power Systems Planning. *INFORMS Southwest Regional Conference*. College Station, TX, April 2008.
- [A-34] **Jose F. Espiritu**. A New Component Replacement Analysis Method for Electricity Distribution Systems. *Industrial Engineering Seminar*. The University of Texas at El Paso, February 2008.
- [A-35] **Jose F. Espiritu** & David Coit. A replacement analysis model for electricity distribution systems. *Institute for Operations Research and Management Science Conference (INFORMS)*. Seattle, Washington, November 2007.
- [A-36] **Jose F. Espiritu**. Multiobjective Multi-State Genetic Algorithm for Power Systems Reliability Optimization Problems. *Institute for Operations Research and Management Science Conference*. Pittsburgh, Pennsylvania, November 2006.

C. Reports or Monographs

- [E-1] **Jose F. Espiritu**, Heidi A. Taboada & Ricardo Pineda. Level of Repair Analysis Modeling for the Orion Program. *Hamilton Sundstrand*. January 2010. (50 pages, 1 software developed and 3 video tutorials)

[E-2] **Jose F. Espiritu**, Ralph Martinez & Ricardo Pineda Raytheon Project. Large Scale Energy Storage Systems. *Raytheon*. January 2011. (78 pages)

D. Invited Panelist/Workshop

- Leveraging Partnerships to Build Bridges for Student Exchange Opportunities. NAFSA: Association of International Educators. NAFSA 2018 Annual Conference & Expo, "Diverse Voices, Shared Commitment." May 27-June 1, 2018, in Philadelphia, Pennsylvania
- 100,000 Strong in the Americas 3rd Capacity Building Workshop: What Works – Partnering in the Americas. NAFSA: Association of International Educators. The NAFSA 2016 Annual Conference & Expo in Denver, Colorado

E. Doctor of Philosophy Thesis Committee Chair

A) Completed:

- [PhD.1] **Rodney Vance**. Ph.D, Environmental Science and Engineering-Energy Track. Thesis Title: Biofuel Feedstock Optimization Considering Different Land Cover Scenarios and Watershed Impacts. Fall 2014 – (Current Position - Program Manager – National Institute of Food and Agriculture)
- [PhD.2] **Carlos Ituarte-Villareal**. Ph.D, Environmental Science and Engineering-Energy Track. Thesis Title: Wind farm optimization using evolutionary algorithms. Spring 2015 - (*Air-Quality and Modeling Specialist/Engineer - SWCA Environmental Consultants- El Paso Texas*)
- [PhD.3] **Nicolas Lopez**. Ph.D, Environmental Science and Engineering-Energy Track. Thesis Title: "Hybrid Microgrid Configuration Optimization with Evolutionary Algorithms". Spring 2017. (*Position: Assistant Professor, The American University of Kuwait*)
- [PhD.4] **Ana Cram**. Ph.D, Environmental Science and Engineering. Thesis Title: A Coupled Modeling Framework for Allocation Design in Land-use and Land-cover Changes to Optimize Biofuel Feedstock Production. Summer 2018. (Current Position: Research Assistant Professor, The University of Texas at El Paso)
- [PhD.5] **Jose Trinidad Reyes**. Ph.D, Environmental Science and Engineering-Energy Track.

B) In-Progress:

- [PhD.6] **Eduardo Castillo-Fatule**. PhD computational Science. (Expected graduation date: Fall 2022)

F. M.S. Thesis Committee Chair

A) Completed:

- [M.S.1] **Sowmya Parimi**. Thesis Title: Electric Power Distribution Optimization Using Evolutionary Algorithms. M.S Industrial Engineering. Fall 2009.

- [M.S.2] **Vasukumar Chenna**. Thesis Title: Component Replacement Schedules for Electricity Distribution Systems Using Evolutionary Algorithms. M.S. Industrial Engineering. Fall 2010.
- [M.S.3] **Carlos M. Ituarte-Villareal**. Thesis Title: Optimization Models for the Economic and Non-Economic Level of Repair Analysis. M.S. Industrial Engineering. Fall 2010.
- [M.S.4] **Nicolas Lopez**. Thesis Title: Renewable Energy Integration: An Approach for Micro-Grid Optimization. M.S. Industrial Engineering. Fall 2010.
- [M.S.5] **Abril Vazquez**. Thesis Title: A Framework for Strategic Sustainable Supply Chain Design. M.S. Industrial Engineering. Fall 2011.
- [M.S.6] **Edgar Jimenez**. Thesis Title: Designing Optimal Aviation Baggage Screening Strategies Using the Monkey Search Algorithm. M.S. Manufacturing Engineering. Spring 2012
- [M.S.7] **Anuar Aguirre**. Thesis Title: Implementation of Evolutionary Algorithms on the Power Industry and Aviation Security. M.S. Industrial Engineering. Spring 2012.
- [M.S.8] **Jana Cervinska**. Thesis Title: Vulnerability of Intermodal Logistic Networks to Sea Port Disruption. M.S. Civil Engineering. Spring 2012. Co-Advised with Dr. Salvador Hernandez (Oregon State University).
- [M.S.9] **Aaron Martinez**. Thesis Title: Applied Evaluation for Life Cycle Impact Assessment Methodologies in the Medical Industry. M.S. Industrial Engineering. Fall 2012
- [M.S.10] **Ana Cram**. Thesis Title: Development of a new genetic algorithm to solve the feedstock scheduling problem in an anaerobic digester. M.S Industrial Engineering. Summer 2013.
- [M.S.11] **Luis Ramirez**. Multi-State Multi-Objective Reliability Analysis of Renewable Energy Systems. M.S Manufacturing Engineering. Summer 2018. **Luis Ramirez – Won the First Place in the 2019 Caminos Thesis Competition. Award was presented at The fourteenth annual national conference of the American Association of Hispanics in Higher Education (AAHHE). Costa Mesa, California, February 28 - March 2, 2019. Luis is now a full-time Industrial Engineer for the Department of Defense at Naval Air Systems Command (NAVAIR) in Patuxent River, Maryland**
- [M.S.12] **Eduardo Castillo**. Applications Of A New Genetic Algorithm To Solve The Centralized Carrier Collaboration And Multihub Location Problem Considering Environmental Impacts. M.S Industrial Engineering. Spring 2019.
- [M.S.13] **Chuck Easttom**. Incorporating Cybersecurity Engineering Within The Discipline Of Systems Engineering. M.S Systems Engineering. Spring 2019.
- [M.S.14] **John Artus**. Thesis Title: A Survey Of The Current State Of The Practice In Bridging The Gap Between Engineering Ontologies and Modeling Profiles For Engineering Applications. M.S Systems Engineering. Spring 2020.

- [M.S.15] **Pedro Marquez.** Weather Prediction: Improving Accuracy Using Data Mining And Forecasting Techniques. M.S Industrial Engineering. Summer 2020.
- [M.S.16] **Abdulaziz Alidrees.** Forecasting Consumer Consumption Behavior of Water Bottles Using Generlized Linear Model For Supply Chain Resilience. M.S Industrial Engineering. Fall 2020.
- [M.S.17] **Brett Babcock.** Adaptive Lean Manufacturing Implementation for Organizations with Rapid Leadership Turnover. M.S Systems Engineering. Spring 2021.

Thesis committee member

Master of Science:

- [M.S.1] *Carlos Ochoa.* (MS Industrial Engineering). Thesis title: Simulation modeling to Hospital response in case of Chemical, Biological, Radiological, and High-yield Explosive (CBRNE) incidents. Advisor: Dr. Rafael S. Gutierrez (Fall 2007)
- [M.S.2] *Giancarlo Rayas.* (MS Electrical Engineering). Thesis title: The evaluation of determinism of the power signature of electronics for health monitoring. Advisor: Dr. Eric MacDonald (Spring 2008)
- [M.S.3] *Jonathan A. Cervantes.* (MS Electrical Engineering). Health Prognosis of Electronics via Power Profiling. Advisor: Dr. Eric MacDonald (Summer 2009)
- [M.S.4] *Oswaldo F. Aguirre.* (MS Industrial Engineering). Thesis title: Multi-objective Network Reliability Optimization Using Evolutionary Algorithms. Advisor: Dr. Heidi A. Taboada (Fall 2009)
- [M.S.5] *Claudia E. Valles.* (MS Industrial Engineering). Thesis title: An Evolutionary Approach Based on Viral Replication for Solving Combinatorial Optimization Problems. Advisor: Dr. Heidi A. Taboada (Summer 2011)
- [M.S.6] *Jesus Nunez Michel.* (MS Mechanical Engineering). Thesis title: Design and Development of a High Pressure Combustor. Advisor: Dr. Ahsan Choudhuri (Spring 2012)
- [M.S.7] *Victoria Rangel.* (MS Metallurgical and Materials Engineering). The Effect of Al, Mo, and B on the Oxidation Behavior of Three Nb-Based Alloys. Advisor: Dr. S.K Varma. (Spring 2012)
- [M.S.8] *Olivia Moreno.* (MS Industrial Engineering). Thesis Title: "Multi-Objective System Design Optimization Considering Environmental Emissions". Advisor: Dr. Heidi A. Taboada. (Spring 2012)
- [M.S.9] *Emmanuel Gurrola.* (MS Industrial Engineering). Thesis Title: "New Mathematical and Evolutionary Optimization Methods to Achieve Fair Division in Multi-Agent Resource Allocation". Advisor: Dr. Heidi A. Taboada. (Spring 2012)

- [M.S.10] *Samia Afrin*. (MS Mechanical Engineering). Numerical Analysis of Single Tank Thermocline Thermal Storage System for Concentrated Solar Power Plant. Advisor: Dr. Vinod Kumar. (Spring 2012)
- [M.S.11] *Oswaldo Aguirre*. (MS Computational Science). Thesis Title: "New Multi-Objective Evolutionary Game Theory Algorithms for Border Security". Advisor: Dr. Heidi A. Taboada. (Spring 2012)
- [M.S.12] *Satyan Awale*. (MS Civil Engineering). Carrier Collaborative Network Hybrid Hub Location and Algorithm. Advisor: Dr. Salvador Hernandez. (Spring 2012)
- [M.S.13] *Georgina Heredia*. (MS Metallurgical and Materials Engineering). Influence of Shoulder Geometry on Friction Stir Welding of Aluminum 6061-T651. Advisor: Dr. Steve Stafford. (Summer 2012)

Doctor of Philosophy

- [PhD.1] *Abdallah Imad*. (PhD Civil Engineering). Strategies to Improve and Preserve Flexible Pavements at Intersections. Advisor: Dr. Soheil Nazarian (Spring 2011)
- [PhD.2] *Manuel Celaya*. (PhD Civil Engineering). Evaluation of Nondestructive Technologies to Assess Presence and Extent of Delamination of Hot Mix Asphalt Airfield Pavements. Advisor: Dr. Soheil Nazarian (Spring 2011)
- [PhD.3] *Vishwanath R. Ardha*. (PhD. Environmental Science and Engineering – Energy Systems Track). Measurement and Analysis of Turbulent Syngas/Air and Methane Oxy-Combustion. Advisor: Dr. Ahsan Choudhuri (Spring 2012)
- [PhD.4] *Bidhan K. Dam*. (PhD. Environmental Science and Engineering – Energy Systems Track). Study of Flame Stability and Radiation Characteristics of Oxy-Fuel Combustion for Advanced Combustor. Advisor: Dr. Ahsan Choudhuri (Spring 2012)
- [PhD.5] *Mario Ruvalcaba*. (PhD. Environmental Science and Engineering – Energy Systems Track). Investigation of Gas-Solid Fluidized Bed with Non-Spherical Particles. Advisor: Dr. Ahsan Choudhuri (Spring 2012).
- [PhD.6] *Oswaldo Aguirre*, Computational Science Program. Multi-Objective Border Patrolling Optimization Using Game Theory And Evolutionary Algorithms. Advisor: Dr. Heidi Taboada. Spring 2014
- [PhD.7] *Rossana Villegas*. Electrical and Computer Engineering Program. Artificial Intelligence in the Assessment of Transmission and Distribution Systems Under Natural Disasters Using Machine Learning and Deep Learning Techniques in a Knowledge Discovery Framework. Advisor: Dr. Patricia Nava. Fall 2019

[PhD.8] *Antara Badhan*. Mechanical Engineering. CFD DEM Analysis of a dry powder inhaler. Advisor Dr. Vinod Kumar. Fall 2019

[PhD.9] *Anil Krishna Battu*. Mechanical Engineering. Structure-Property-Performance Evaluation Of Refractory Metal Incorporated Gallium Oxide Thin Films For Extreme Environment Applications. Advisor Dr. Ramana Chintalapalle. Fall 2020

C. IMSE Graduate Program director

- Academic Advising to over 160 graduate students in the IMSE department's graduate programs (M.S. in Industrial Engineering, M.S. in Manufacturing Engineering and M.S. in Systems Engineering)
- Providing academic guidance about course description and communicating with students via email, online and phone at least 3 times per year.
- Strategic graduate classes scheduling, and planning based on student needs for each semester (Spring, Summer and Fall).
- Manage budget for IMSE graduate programs
- Communicating continuously with graduate level faculty and lecturers to maintain academic excellence and learn about graduate program needs (labs, software, etc.)
- Leading graduate level student initiatives such as recruitment (local and external students) and retention
- Participating in academic fairs to promote graduate programs and our IMSE department
- Lead our graduate programs growth over **100%** from previous years.

SERVICE AND HONORS:

Honors and Awards in Teaching

- Selected to Participate in the ***National Academy of Engineering's fourth Frontiers of Engineering Education Symposium***. October 14-17, Irvine, California.
- ***2011 ASEE Industrial Engineering Division Best Young Faculty Paper Award***, Paper titled "Experiences while Incorporating Sustainability Engineering into the Industrial Engineering Curricula" by H. Taboada and J. Espiritu (2011). Award presented in the 2012 Annual ASEE Conference, San Antonio, TX. June 10-13, 2012.

UTEP Committees Served

Department

- Graduate Program Director. (Fall 2017 - till date)
- Industrial Engineering Undergraduate Research & Undergraduate/Graduate Interface. Our objectives are to encourage our students to go to graduate school and to search for and provide our undergraduate students with opportunities to pursue graduate studies. (January 2009 – December 2016).
- Fall 2011 Engineering Graduate School Fair. Represented the department's research areas with 7 graduate students

- Spring 2011 Engineering Graduate School Fair. Represented the department's research areas with 10 graduate students
- IE undergraduate academic program advisor. (Fall 2008 – Summer 2017). Academic Advising for 15-20 Undergraduate students per year (Note: UG student advising shared among faculty members in the IMSE department)
- 2008 - State Employee Charitable Campaign (SECC) Department Coordinator
- Search Committee Chair. 2 Tenure Track positions in the Industrial, Manufacturing and Systems Engineering Department. Fall 2018-Spring 2019.
 - Lead position description development,
 - Coordinated with UTEP's Human Resources Department to post and promote the position,
 - Lead committee member's meetings,
 - Coordinated the positions promotion to attract a diverse pool of applicants,
 - Participated in the INFORMS 2018 annual conference's job fair, held in Phoenix, AZ.
 - Lead skype interviews and developed and coordinated on-campus agendas for 6 finalists
 - One successful hire – *Dr. Serrenath Chalil-Madatil*
- Search Committee Chair. 1 Tenure Track position in the Industrial, Manufacturing and Systems Engineering Department. Fall 2019-Spring 2020 – One successful hire – *Dr. Sergio Luna*
 - Lead position description development,
 - Coordinated with UTEP's Human Resources Department to post and promote the position,
 - Lead committee member's meetings,
 - Coordinated the positions promotion to attract a diverse pool of applicants,
 - Participated in the INFORMS 2018 annual conference's job fair held in Seattle, Wa.
 - Lead skype interviews and developed and coordinated on-campus agendas for 2 finalists
 - Successful hire – *Dr. Sergio Luna*
- SACS Accreditation for IMSE graduate programs in Industrial, Manufacturing and Systems Engineering. (Fall 2018 - Present).
- AY 2020-2021 - Development of the IMSE graduate program review documents submitted to UTEP's graduate school external program reviewers and the Texas Higher Education Coordinating Board for the following programs.
 - M.S. in Industrial Engineering
 - M.S. in Manufacturing Engineering
 - M.S. in Systems Engineering
- Development of the IMSE graduate program handbook. Fall 2020
- IMSE Annual Faculty Evaluation Committee Chair – Spring 2021

School/College

- Faculty Search Committee Member. Civil Engineering Department. Position in Water/Sustainability Engineering. Spring 2018-Fall 2019
- Faculty Search Committee Member, UTEP-College of Engineering Dean's Search Committee Member (Fall 2016 – Spring 2017)
- Student Welfare Committee, Fall 2012 – Spring 2013
- Engineering faculty council alternate, Fall 2012 - Spring 2013
- Faculty Search Committee Member. Electrical and Computer Engineering Department. Position in Modern Power Systems Engineering. Fall 2010-Spring 2011

- Student Recruitment, Industrial Engineering and Sustainability Presentation at Parkland High School. (October 2009)
- Faculty Task Force for Annual Evaluation. Fall 2007-Spring 2008

B. Membership in Professional Societies

- Institute of Industrial Engineers (IIE)
- Institute of Operations Research and Management Science (INFORMS)
- The Institute of Electrical and Electronics Engineers (IEEE)
- American Society for Engineering Education (ASEE)

List of courses Taught at UTEP:

- IE 4395/5390 – Industrial Data Analytics
- MFG 5321 - Modeling and Analysis of Manufacturing Systems
- MFG 5350 – Reliability and Maintainability
- IE 4395/5390 – Sustainability Engineering and Life Cycle Assessment
- IE 4385 – Statistical Quality Control and Reliability
- IE 4333 - Supply Chain Management
- IE 5341 – Advanced Production and Inventory Control
- IE 4391 – Production and Inventory Control
- IE 5390 – Renewable Energy Systems (Co-taught with Dr. Virgilio Gonzales from ECE Department)
- IE 4395/5390 - Optimization Processes for the Environment