Extended Academic Curriculum Vitae

Krystel K. Castillo

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Contents

Krystel K. Castillo, Ph.D., Sc.D.
GreenStar Endowed Associate Professor in Energy
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A. EDUCATIONAL BACKGROUND

2011   Ph.D.   **Texas Tech University, Ph.D. in Industrial Engineering** (GPA 4.0). Dissertation Title: "A Strategic Model for Supply Chain Network Design Including Quality."

2012   Sc.D.   **Monterrey Institute of Technology and Higher Education (Monterrey Tech), Sc.D. in Engineering Sciences** (GPA 4.0). Dissertation Title: "The Impact of the Cost of Quality on Supply Chain Network Design."

2008   M.S.   **Monterrey Tech, M.S. in Quality and Productivity Systems** (GPA 4.0). Thesis Title: "Performance Improvement in the Glass Melting Process Through Statistical Analysis."

2006   B.S.   **Monterrey Tech, B.S. in Industrial and Systems Engineering,** *Summa Cum Laude* (GPA 4.0).

B. PROFESSIONAL EMPLOYMENT HISTORY

09/2017-
Present
GreenStar Endowed Associate Professor in Energy, Mechanical Engineering Department at the University of Texas at San Antonio (UTSA).
Director of the Texas Sustainable Energy Research Institute (TSERI)
texasenergy.utsa.edu

08/2012-
08/2017
Assistant Professor in the Mechanical Engineering Department at the University of Texas at San Antonio (UTSA).
- Co-director of the Manufacturing Systems and Automation Laboratory at UTSA.
- Core Faculty of the Center of Advanced Manufacturing and Lean Systems (CAMLS).
- Core Faculty of the Center for Simulation, Visualization, and Real-Time Prediction (SiViRT).
- Core Faculty of the Open Cloud Institute (OCI)

01/2010-
05/2012
Doctoral Research Assistant. Full-time. Quality and Manufacturing Center, Monterrey Tech, Monterrey, Mexico.
- Conducted research on computational logistics and metaheuristics.
- Participated in numerous research projects in computational logistics, including supervising undergraduate students, scoping and framing the research work, collecting and analyzing data, and generating and disseminating research findings.

01/2009-
12/2009
Doctoral Research Assistant. Full-time. Department of Industrial Engineering, Texas Tech University.
- Created new mathematical models to quantify quality costs in integrated supply

chain networks and developed novel solution procedures.
- Participated in research proposal writing, scoping and framing the research work, collecting and analyzing data, and generating and disseminating research findings.

01/2007-
12/2008
Graduate Research Assistant. Full-time. Quality and Manufacturing Center, Monterrey Tech, Monterrey, Mexico.
- Investigated statistical quality control techniques to enhance a glass melting process.

C. AWARDS AND HONORS *(Hyperlinks in Blue)*

10/2017   2017 INFORMS MIF Early Career Award, INFORMS Annual Conference, October 22, 2017, Houston, Texas.

09/2017   Recipient of NSF Assist Travel Support to attend SACNAS Conference, October 18 – 21, 2017, Salt Lake City, Utah.

03/2017   2017 President's Distinguished Achievement Award for Research Achievement (tenure-track faculty - STEM), The University of Texas at San Antonio, April 13, 2017.

03/2017   2017 Outstanding Young Faculty, American Society of Engineering Education (ASEE) – Gulf South West Region, March 14, 2017, University of Texas at Dallas, TX,

02/2017   A winner of the San Antonio Business Journal 2017 40 Under 40 Award, February 16, 2017, San Antonio, TX.

09/2016   Recipient of NSF Assist Travel Support to attend the Engineering Early-Career Faculty Development Symposium in the 28th HENAAC Conference, October 5 - 9, Anaheim, CA.

06/2015   GreenStar Endowed Professorship in Energy, College of Engineering, The University of Texas at San Antonio, June 15, 2015.

06/2015   Selected as a Young Engineer (30-45 years old) to Participate in the National Academy of Engineering's (NAE) 2015 U.S. Frontiers of Engineering Symposium (USFOE). Eighty-nine of the nation's brightest young engineers have been selected to take part in the NAE 21st annual USFOE symposium, September 9-11, Irvine, CA.

06/2015-
08/2015
Summer Faculty Fellowship, Air Force Research Laboratory, Summer 2015, WPAFB, Dayton, Ohio.

05/2015   Kika de la Garza Fellowship, U.S. Department of Agriculture, Summer 2015, Washington, D.C. (Declined).

05/2015   Faculty Award for Excellence in Research 2014, College of Engineering, The University of Texas at San Antonio.

06/2014-
07/2014
Summer Faculty Fellowship, Air Force Research Laboratory, Summer 2014, WPAFB, Dayton, Ohio.

01/2014   NSF Stipend to attend the Faculty Development Needs for Advanced Manufacturing in the USA Workshop, Arlington, Virginia, Jan 9-10, 2014.

09/2013   Member of the National System of Researchers (Level 1). National Council of Science and Technology (CONACyT).

05/2013   NSF Stipend to attend the Summer Institute Course on Additive Manufacturing, Evanston, Illinois. May 29-31, 2013.

04/2013   Selected to participate in the 2013 NSF Career Proposal Writing Workshop, Tampa, Florida (only 150 participants were selected out of more than 270 applications).

01/2009-
05/2012
Ph.D. Stipend and Excellence Scholarship, National Council of Science and Technology-CONACyT (NSF's Mexico)/Monterrey Tech, Monterrey, Mexico.

12/2009   Alpha Pi Mu. Industrial Engineering Honor Society. Chapter at Texas Tech University.

12/2008   Diploma of Excellence for being the best student of the generation in the academic program of Master in Sciences with specialization in Quality and Productivity Systems, Monterrey Tech, Monterrey, Mexico.

01/2007-   Master Stipend and Excellence Scholarship, National Council of Science and

12/2008   Technology- CONACyT (NSF's Mexico)/Monterrey Tech, Monterrey, Mexico.

12/2006   Diploma of Excellence for being the best student of the generation in the academic program of Bachelor in Industrial and Systems Engineering, Monterrey Tech, Mexico.

D.   PUBLICATIONS

*In the following subsections * means student. Impact factors reported by JCR of 2014.*

Published in Peer-Reviewed Journals [Total Citations since 2012: 253, h-index: 8]

1. Chavez, H.*, **Castillo-Villar, K.K.,** Webb, E. (2017). Development of the IBSAL-SimMOpt Method for the Optimization of Quality in a Corn Stover Supply Chain. *Energies.* 10 (1137). DOI: 10.3390/en1008113 [Impact Factor: 2.072].

2. **Castillo-Villar, K.K**., Eksioglu, S., Taherkhorsandi, M*. (2017). Integrating biomass quality variability in stochastic supply chain modeling and optimization for large-scale biofuel production. *Journal of Cleaner Production.* 149, 904-918. [Impact Factor: 5.315].

3. Chavez, H.*, **Castillo-Villar, K.K.,** Herrera, L., and Bustos, A. (2017). Simulation-based Multi-Objective Model for Supply Chains with Disruptions in Transportation. *Robotics and Computer-Integrated Manufacturing*, 43, 39-49. DOI: 10.1016/j.rcim.2015.12.008 [Impact Factor: 2.305]

4. Quader, S.*, **Castillo-Villar, K.K.** (In Press). Design of an Enhanced Multi-aisle Order-picking System Considering Storage Assignments and Routing Heuristics, *Robotics and Computer-Integrated Manufacturing*, In Press. DOI: 10.1016/j.rcim.2015.12.009 [Impact Factor: 2.305]

5. Aboytes-Ojeda, M.*, **Castillo-Villar, K. K.,** Yu, T.E., Boyer, C., English, B., Larson, J., Kline, L., Labbé N. (2016). A Principal Component Analysis in Switchgrass Chemical Composition. *Energies.* 9(11), 913. DOI:10.3390/en9110913 [Impact Factor: 2.072].

6. **Castillo-Villar, K. K.,** Minor-Popocatl, H., & Webb, E. (2016). Quantifying the Impact of Feedstock Quality on the Design of Bioenergy Supply Chain Networks. *Energies*, *9*(3), 203. DOI: 10.3390/en9030203 [Impact Factor: 2.072]

7. Treviño-Garza, G., **Castillo-Villar, K. K.**, & Cárdenas-Barrón, L. (2015). Joint Determination of the Lot Size and Number of Shipments for a Family of Integrated Vendor-buyer Systems Considering Defective Products, *International Journal of Systems Science*, 46(9), 1705-1716. DOI: 10.1080/00207721.2014.886750 [Impact Factor: 2.1]

8. Mahmoodabadi, M.J., Taherkhorsandi, M.*, Maafi, R.A. and **Castillo-Villar, K.K.** (2015). A novel multi-objective optimisation algorithm: artificial bee colony in conjunction with bacterial foraging, *Int. J. Intelligent Engineering Informatics*, Vol. 3, No. 4, pp. 369-386. DOI: 10.1504/IJIEI.2015.073088

9. Herbert-Acero, J. F., Probst, O., Rivera-Solorio, C. I., **Castillo-Villar, K. K.,** & Méndez-Díaz, S. (2015). An Extended Assessment of Fluid Flow Models for the Prediction of Two-Dimensional Steady-State Airfoil Aerodynamics. *Mathematical Problems in Engineering*, Special Issue: Computational Methods for Engineering Science, Article ID 854308. DOI: 10.1155/2015/854308 [Impact Factor: 0.762]

10. Kibria A.*, **Castillo-Villar, K. K,** & Millwater, H. (2015). Minimizing the Discrepancy between Simulated and Historical Failures in Turbine Engines: A Simulated Annealing-based Optimization Method, *Mathematical Problems in Engineering*, Special Issue: Mathematical

Applications to Reliability and Maintenance Problems in Engineering Systems, Article ID 813565. DOI: 10.1155/2015/813565 [Impact Factor: 0.762]

11. Yu, T.E., Larson, J. A., English, B. C., Boyer, C. N., Tyler, D. D., & **Castillo-Villar, K. K.** (2015). Influence of Particle Size and Packaging on Storage Dry Matter Losses for Switchgrass, *Biomass & Bioenergy, 73*, 135-144. DOI: 10.1016/j.biombioe.2014.12.009 [Impact Factor: 3.394]

12. **Castillo-Villar, K. K.** (2014). Metaheuristics Applied to Biorefinery Supply Chain Problems: Theory, Review, Challenges, and Future. *Energies*, 7, 7640-7672. DOI: 10.3390/en7117640 [Impact Factor: 2.072]

13. Herbert-Acero, J. F., Probst O., Réthoré P-E., Larsen, G. C., & **Castillo-Villar K. K.** (2014). A Review of Methodological Approaches for the Design and Optimization of Wind Farms. *Energies*, 11, 6930-7016. DOI: 10.3390/en7116930 [Impact Factor: 2.072]

14. **Castillo-Villar, K. K.**, & Herbert-Acero J. F. (2014). A Metaheuristic-based Approach for the Capacitated Supply Chain Network Design Problem Including Imperfect Quality and Rework, *Computational Intelligence Magazine, IEEE, 9*(4), 31-45. DOI: 10.1109/MCI.2014.2350934 [Impact Factor: 2.571]

15. Taherkhorsandi, M.*, Mahmoodabadi, M. J., Talebipour, M., & **Castillo-Villar, K. K.** (2014). Pareto Design of an Adaptive Robust Hybrid of PID and Sliding Control for a Biped Robot via Genetic Algorithm Optimization, *Nonlinear Dynamics*, 1-13. DOI: 10.1007/s11071-014-1661-1 [Impact Factor: 2.849]

16. Herbert-Acero, J. F., Martinez-Lauranchet, J., Probst, O., Mendez-Diaz, S., & **Castillo-Villar, K. K.**; Valenzuela-Rendón, M. and Réthoré, P.-E. (2014). A Hybrid Metaheuristic-Based Approach for the Aerodynamic Optimization of Small Hybrid Wind Turbine Rotors, *Mathematical Problems in Engineering*, vol. 2014, Article ID 746319, 18 pages. DOI: 10.1155/2014/746319 [Impact Factor: 0.762]

17. Mahmoodabadi, M. J., Taherkhorsandi, M.*, Talebipour, M., & **Castillo-Villar, K. K.** (2014). Adaptive Robust PID Control Subject to Supervisory Decoupled Sliding Mode Control Based upon Genetic Algorithm Optimization, *Transactions of the Institute of Measurement and Control*. 1-10, DOI: 10.1177/0142331214543295 [Impact Factor: 0.962]

18. **Castillo-Villar, K. K.**, Smith, N. R., & Herbert-Acero, J. F. (2014). Design and Optimization of Capacitated Supply Chain Networks Including Quality Measures, *Mathematical Problems in Engineering*, vol. 2014, Article ID 218913, 17 pages. DOI: 10.1155/2014/218913 [Impact Factor: 0.762]

19. **Castillo-Villar, K. K.**, González, R. G., Miranda, P. A., & Smith, N. R. (2014). A Heuristic Procedure for a Ship Routing and Scheduling Problem with Variable Speed and Discretized Time Windows, *Mathematical Problems in Engineering,* vol. 2014, Article ID 750232, 13 pages. DOI: 10.1155/2014/750232 [Impact Factor: 0.762]

20. **Castillo-Villar, K. K.,** & Herbert-Acero J. F. (2013). The Effect of Individual Representation on the Performance of a Genetic Algorithm applied to a Supply Chain Network Design Problem. *International Journal of Supply Chain Management*, 2(3), 17–24.

21. **Castillo-Villar, K. K.**, Smith, N. R., & Simonton, J. L. (2012). The Impact of the Cost of Quality on Serial Supply Chain Network Design. *International Journal of Production Research, 50*(19), 5544-5566. DOI: 10.1080/00207543.2011.649802 [Impact Factor: 1.477]

22. **Castillo-Villar, K. K.**, Smith, N. R., & Simonton, J. L. (2012). A Model for Supply Chain Design Considering the Cost of Quality. *Applied Mathematical Modelling, 36*(12), 5920-5935. DOI: 10.1016/j.apm.2012.01.046 [Impact Factor: 2.251]

23. **Castillo-Villar, K. K.**, Smith, N. R., & Simonton, J. L. (2011). Heuristic Procedure for a Combinatorial Optimization Problem in Supply Chain Design Incorporating Cost of Quality. *Int. Journal of Biomedical Soft Computing and Human Sciences, 17*(2), 19-26.

Book

1. **Castillo-Villar, K. K.** (2012). Supply Chain Network Design Including Cost of Quality: A Strategic model and metaheuristics. Germany: Lambert Academic Publishing. ISBN: 978-3-659-17723-1, pp. 212.

Referred Book Chapters

1. Taherkhorsandi, M.*, **Castillo-Villar, K. K.**, Mahmoodabadi, M. J., Janaghaei, F., & Mortazavi Yazdi, S. M. (2014). Optimal Sliding and Decoupled Sliding Mode Tracking Control by Multi-objective Particle Swarm Optimization and Genetic Algorithms. Advances and Applications in Sliding Mode Control systems, Springer-Verlag. A. Taher Azar and Q. Zhu. DOI: 10.1007/978-3-319-11173-5_2
2. Sahnehsaraei, M. A., Mahmoodabadi, M. J., Taherkhorsandi, M.*, **Castillo-Villar, K. K.**, & Yazdi, S. M. (2014). A Hybrid Global Optimization Algorithm: Particle Swarm Optimization in Association with Genetic Algorithm Optimization. Complex System Modelling and Control Through Intelligent Soft Computations, Springer-Verlag. A. Taher Azar and Q. Zhu. DOI: 10.1007/978-3-319-12883-2_2
3. **Castillo-Villar, K. K.** (2014). Metaheuristics applied to Biorefinery Supply Chain Problems: a Review of Selected Methods and Applications. Chapter 6 in Soft Computing Applications for Renewable Energy and Energy Efficiency. Garcia-Cascales, Sánchez-Lozano, Masegosa, Cruz-Corona. USA: IGI Global. DOI: 10.4018/978-1-4666-6631-3.ch002
4. **Castillo-Villar, K. K.**, & Smith, N. R. (2013). Supply Chain Design including Quality Considerations: Modeling and Solution Approaches based on Metaheuristics. Chapter 4 in Handbook of Research on Novel Soft Computing Intelligent Algorithms: Theory and Practical Applications. Pandian M. Vasant. USA: IGI Global, August, pp.1329. ISBN13: 9781466644502. DOI: 10.4018/978-1-4666-4450-2

Refereed Conference Papers

In the following section, proceedings are refereed by paper and presenter is underlined.

1. <u>Piper, M., Bhounsule, P.A.</u>, **Castillo-Villar, K. K.** How to beat Flappy Bird: A Mixed-integer Model Predictive Control Approach, ASME-Dynamics Systems and Controls Conference, Tysons Corner, Virginia, USA, October 11-13, 2017.
2. <u>Chavez, H.*</u>; **Castillo-Villar, K.;** Webb, E. Simulation-based approach for the optimization of a biofuel supply chain. In proceedings of the 2017 IISE Annual Conference, Pittsburg, PA, May 20-23, 2017.
3. <u>Aboytes, M.*</u>; Chavez, H.*; Krishnaiyer, K.; Stankus, S.*; Taherkhorsandi, M.*; **Castillo-Villar, K.**; and Chen, F. Improving Radio Frequency Identification Accuracy in a Warehouse Setting. In proceedings of the 2016 IIE Engineering Lean and Six Sigma Conference, San Antonio, TX, September 14-16, 2016.
   - ***Third Place in Best Track Paper Award.***
4. <u>**Castillo-Villar, K. K.**</u>, Cabrera-Rios, M., Persans, M.W., DeYoe, H.R. Engaging Minority Students in Sustainable Bioenergy and Water Quality through an Education and Research Network. In proceedings of the *ASEE's 123rd Annual Conference and Exposition*, New Orleans, LA, June 26-29, 2016. 10.18260/p.26966. https://peer.asee.org/26966
5. <u>Chávez, H.*</u>, **Castillo-Villar, K. K.**, Stochastic Multi-objective Simulated Annealing for the Optimization of Machining Parameters. In proceedings of the *2016 Industrial and Systems Engineering Research Conference (ISERC)*, Anaheim, California, May 21-24, 2016.
   - ***Best Track Paper Award: Manufacturing and Engineering Design.***

6. Chávez, H.*, Stankus, S.*, **Castillo-Villar, K. K.**, & Feng, Y. A Simulation-based Optimization Approach to Modeling a Fast-track Emergency Department. In proceedings of the *2015 Industrial and Systems Engineering Research Conference (ISERC)*, Nashville, Tennessee, May 30 - June 2, 2015.

7. Vásquez-Doria, J., Chen, F. F., Wan, H., & **Castillo-Villar, K. K.** Improving Order Processing Workflow through Value Stream Mapping: A Case. Abstract accepted in the *2015 Industrial and Systems Engineering Research Conference (ISERC)*, Nashville, Tennessee, May 30 - June 2, 2015.

8. **Castillo-Villar, K. K.**, & Turek, S. Assessing Measurement Uncertainty in 3D Laser-Based Scanners through Experimental Design and Analysis. In proceedings of the *2015 Industrial and Systems Engineering Research Conference (ISERC)*, Nashville, Tennessee, May 30 - June 2, 2015.

9. Chávez, H.*, & **Castillo-Villar, K. K.** A Preliminary Simulated Annealing for Resilience Supply Chains. In proceedings of the *2014 IEEE Symposium Series on Computational Intelligence*, Orlando, Florida, USA, December 12, 2014. IEEE Catalog Number: CFP14ADP-USB, ISBN: 978-1-4799-4553-5. [Citations: 1]

10. Smith, N. R., Manzano, M., **Castillo-Villar, K. K.**, & Rivera-Morales, L*. A Bi-objective Model for Local and Global Green Supply Chain. In proceedings of the *2014 IEEE Symposium Series on Computational Intelligence*, Orlando, Florida, USA, December 12, 2014. IEEE Catalog Number: CFP14ADP-USB, ISBN: 978-1-4799-4553-5.

11. González-Ramírez, R. G., Miranda, P., Voss, S., **Castillo-Villar, K. K.**, & Bearzotti, L. *A Continuous Berth Allocation and Quay Crane Assignment*. In proceedings of the *2014 CiLOG, International Congress of Logistics and Supply Chain,* Mexico City, Mexico, November, 2014.

12. Kibria, A.*, **Castillo-Villar, K. K.**, & Millwater, H. A Simulation-based Optimization Method for Modeling of Turbine Engine Sustainment. In proceedings of the *2014 INFORMS Workshop on Data Mining and Analytics*, San Francisco, USA, November 8, 2014.

13. Chukukere, A.*, **Castillo-Villar, K. K.**, & Wan, H. Improving Operations through Dynamic Value Stream Mapping and Discrete-Event Simulation. In proceedings of the *2014 Industrial and Systems Engineering Research Conference (ISERC),* Institute of Industrial Engineers, Montreal, Canada, May 31- June 3, 2014. [Citations: 2]

14. Hernando, G.*, **Castillo-Villar, K. K.**, & Herrera, L. A Column Generation Approach to Schedule Constrained Routing Parcels in Megacities. In proceedings of the *2014 Industrial and Systems Engineering Research Conference (ISERC)*, Institute of Industrial Engineers, Montreal, Canada, May 31- June 3, 2014.

15. Sadia, Q.*, & **Castillo-Villar K. K.** A Study of the Performance of Bucket Brigades when dealing with Multiple Aisles in Warehouses. In proceedings of the *Flexible Automation and Intelligent Manufacturing (FAIM) Conference 2014*, San Antonio, TX, May 20-23, 2014.

16. **Castillo-Villar, K. K.**, & Herbert-Acero, J. F. A Preliminary Study of the Impact of the Genotype Representation of a Genetic Algorithm on the Supply Chain Design Performance. In proceedings of the *Flexible Automation and Intelligent Manufacturing (FAIM) Conference 2014*, San Antonio, TX, May 20-23, 2014.

17. Chávez, H.*, **Castillo-Villar, K. K.**, Herrera, L., & Bustos, A. Simulation-based Optimization Model for Supply Chains with Disruptions in Transportation. In proceedings of the *Flexible Automation and Intelligent Manufacturing (FAIM) Conference 2014*, San Antonio, TX, May 20-23, 2014.

18. Herbert-Acero, J. F., Martínez-Torres, J., Probst, O., Méndez-Díaz, S., Valenzuela, M., Réthoré, P-E., & **Castillo-Villar, K. K.** Aerodynamic Optimization of Small Wind Turbine Rotors Based on NACA 4-Digit Airfoils by Computational Intelligence Algorithms. In

proceedings of the *European Wind Energy Conference and Exhibition 2014*. The European Wind Energy Association (EWEA), Barcelona, Spain. March 10-13, 2014.

19. Sadia, Q.*, & **Castillo-Villar K. K.** A State-of-the-Art Matrix Analysis of Bucket Brigade. In proceedings of the *2013 Industrial and Systems Engineering Research Conference,* Institute of Industrial Engineers, San Juan, Puerto Rico, May 18-22, 2013.

20. **Castillo-Villar, K. K.**, Smith, N. R., & Simonton, J. L. Enhancing performance through statistical analysis: a case study in the glass industry. In proceedings of the *32nd Annual National Conference of the American Society for Engineering Management*, Lubbock, Texas, USA, October 19-22, 2011.

21. **Castillo-Villar, K. K.**, Smith, N. R., & Simonton, J. L. Cost of Quality in supply chain design: A preliminary study. In proceedings of the *31st Annual National Conference of the American Society for Engineering Management*, Rogers, Arkansas, USA, October 13-16, 2010.

22. **Castillo-Villar, K. K.**, Smith, N. R., & Simonton, J. L. Toward Integrating Cost of Quality in Supply Chain Network Modeling. In proceedings of the *2010 Industrial Engineering Research Conference*, Institute of Industrial Engineers, Cancún, Q.R., México, June 5-9, 2010.

23. **Castillo-Villar, K. K.**, & Simonton, J. L. Cost of Quality: Interdisciplinary Cooperation Between Accounting and Quality Function. In proceedings of the *30th Annual Conference of the American Society for Engineering Management*, Springfield, MO, USA, October 14-17, 2009.

24. **Castillo-Villar, K. K.**, Simonton, J. L., & Smith, N. R. Performance Improvement in the Glass Melting Process Through Statistical Analysis. In proceedings of the *30th Annual Conference of the American Society for Engineering Management*, Springfield, MO, USA, October 14-17, 2009.

Non-refereed Publications

1. **Castillo-Villar, K. K.** (2012). The Impact of the Cost of Quality on Supply Chain Network Design. Sc.D. Dissertation, Monterrey Institute of Technology and Higher Education, Monterrey, Mexico: Monterrey Tech Library.

2. **Castillo-Villar, K. K.** (2011). A Strategic Model for Supply Chain Network Design Including Quality. Ph.D. Dissertation, Texas Tech University, Lubbock, TX: Texas Tech Library.

Technical Reports

1. Stankus, S.*, **Castillo-Villar, K.K.** (2015). Fast-Track Emergency Room Project, San Antonio, TX: The University of Texas at San Antonio, Technical Report, August 2015, 16 pages (Medical Data Analytics and Visualization Cluster: SALSI Clusters in Research Excellence).

2. **Castillo-Villar, K.K.,** Chavez, H.*, Rogers, D. (2015). Fleet Replacement Optimization Strategy (San Antonio Water Systems and Austin Public Transit – Capital Metro), San Antonio, TX: The University of Texas at San Antonio/Texas Sustainable Energy Research Institute, Technical Report, July 27, 2015, 81 pages (In Support of Department of Energy Award - DE-EE0006078, The Central Texas Fuel Independence Project).

3. **Castillo-Villar, K. K.**, Millwater, H., Iglesias, E.*, & Kibria, A.* (2014). Probabilistic Modeling of Turbine Engine Sustainment, San Antonio, TX: The University of Texas at San Antonio, Technical Report, December 2014, 85 pages (General Dynamics Information Technology Final Project Report).

4. **Castillo-Villar, K.K.**, & Chávez, H*. Simulation-based Optimization Model for Supply Chains with Disruptions in Transportation, San Antonio, TX: The University of Texas at San Antonio, Technical Report, August 2014, (Mexico Center Educational Research Fellowship - International Study Fund funded by UTSA Mexico Center).

5. **Castillo-Villar, K.K.**, & Chávez, H*. (2014). Reliability Project in Toyota Manufacturing from Reactive to Proactive Maintanence, San Antonio, TX: The University of Texas at San

Antonio, Technical Report, June 2014, 68 and 21 pages (Toyota Motor Manufacturing Texas Final Project Report).

6. **Castillo-Villar, K.K.**, & Quader, S.* (2014). A Model to Simulate the Mobility and Charging Behavior of Elecric Vehicles and Quantify the Energy Required from the Grid. Electrification of Transportation in the Alamo Region, San Antonio, TX: The University of Texas at San Antonio, Technical Report, January 2014, 140 pages (Texas Sustainable Energy Research Institute and CPS Energy Final Project Report).

7. Saygin, C., **Castillo-Villar, K.K.**, Wan, H., Alaeddini, A., & Chen, F. F. (2013). Predictive Maintenance – Phase 1: A Roadmap for Intelligent Maintenance, San Antonio, TX: The University of Texas at San Antonio, Technical Report, November 2013, 25 pages (Harland Clarke Final Project Report).

E.   SCHOLARLY PRESENTATIONS

In the following subsections, presentations are refereed by abstract, presenter is underlined and * means student.

Abstracts/Posters and Conference Presentations

1. Cardona, Y., **Castillo-Villar, K. K.** Robust Stochastic Model for Enhanced Biofuel Production. Abstract and presentation in the CSMIO 2017 (6th Conference of the Mexican Society of Operations Research), Guadalajara, Mexico, October 4-6, 2017.

2. **Castillo-Villar, K. K.,** Aboytes-Ojeda, M.*, Eksioglu, S. Cloud-based Decision Support System Integrating Biomass Quality and Uncertainty to Optimize the Production of Biofuels. Abstract and presentation in the 21st Conference of the International Federation of Operational Research Societies Conference, Quebec, CA, July 17-21, 2017.

3. Aboytes-Ojeda, M.*, **Castillo-Villar, K. K.,** Eksioglu, S., Roni, M. Stochastic Hub-and-Spoke Model for the Production of Biofuels considering Biomass Quality Variability. Abstract and presentation in 2017 IISE Annual Conference, Pittsburg, PA, May 20-23, 2017.

4. Schier, B.*, Cruz-Rivera, Y., Garcia, E., Chavez, L., Ly, A., **Castillo-Villar, K.K.,** Persans, M., DeYoe, H., Cabrera-Rios, M., Optimizing Algae Growth and Lipid Accumulation for Biofuel Production, Workforce Diversity and Career Opportunities within the USDA for Current and Recent Graduates Annual Meeting, Albuquerque, NM, February 16-18, 2017.

5. Tapia-Carrillo, A.*, **Castillo-Villar, K.K.**, Steven Mirsky. Agricultural Sustainability through Cover Crops. Poster presented at the 22nd Undergraduate Research and Creative Inquiry Showcase. San Antonio, TX, April 20, 2017.

6. Olazaba, D.*, **Castillo-Villar, K.K.**, Steven Mirsky. Sustainable Agricultural Systems. Poster presented at the 22nd Undergraduate Research and Creative Inquiry Showcase. San Antonio, TX, April 20, 2017.

7. **Castillo-Villar, K. K.,** Stankus, S.* and Stadick, J.* Enhancing the Monitoring of 3D Scanned As-built Components through a Spatiotemporal Quality Control Method, *Defense Manufacturing Conference*, Denver, CO, November 28-30, 2016.

8. Stadick, J.*; **Castillo-Villar, K.K.**; Turek, S. Laser Measurements: Repeatability and Reproducibility. Poster presented at 2016 RX Summer Student Researcher Poster Session of the *Air Force Research Laboratory Materials and Manufacturing Directorate* (RX). Wright Patterson Air Force Base, OH, August 5, 2016.

9. Chavez, H.*; Webb, E.; **Castillo-Villar, K.K.**; Ebadian, M.; Sokhansanj, S. Modeling Cost of Quality in a Discrete Event Biomass Supply Chain. Poster presented at *IBSS (Southern Partnership for Integrated Biomass Supply Systems) Annual Meeting*. Oak Ridge, TN, July 27, 2016.

10. Chavez, H.*; Webb, E.; **Castillo-Villar, K.K.**; Ebadian, M.; Sokhansanj, S. Modeling Cost of Quality in a Discrete Event Biomass Supply Chain, Poster presented at *ORISE (Oak Ridge Institute for Science and Education)* Poster Session. Oak Ridge, TN, August 9, 2016.
11. **Castillo-Villar, K.K.**, Gatsis, N., TaherKhorsandi, M.*, Bazrafshan, M. A Robust Optimization Model for Biofuel Supply Chain Planning Incorporating Biomass Quality Uncertainties. Abstract and presentation in INFORMS 2016 International Conference, Waikoloa, Hawaii, USA, June 12-15, 2016.
12. Tapia-Carrillo, A.*, **Castillo-Villar, K.K.,** Holt, G., Pelletier, M. Study of Mycelium based Acoustic Absorbers Grown with Agricultural By-product Substrates. Poster presented at 21st Undergraduate Research and Creative Inquiry Showcase. San Antonio, TX, April 21, 2016.
13. Stankus, S.*, **Castillo-Villar, K.K.,** Feng, Y., Adams, B., Marriot, K., Govea Ramos, R. A Simulation-based Optimization Approach for Learning to Reduce Patient Risk and Higher Memory Load Scenarios. Poster presented at *2015 AMSUS Annual Continuing Education Meeting, Federal Health: the new normal*. San Antonio, TX, December 1-4, 2015.
14. Stankus, S.*, **Castillo-Villar, K.K.,** Repeatability and Reproducibility of 3D Laser Measurements. Abstract and presentation in Defense Manufacturing Conference 2015, Phoenix, AZ, USA, November 30-December 3, 2015.
15. **Castillo-Villar, K.K.**, Eksioglu, S.D., Taherkhorsandi, M.* An Integrated Biofuel Supply Chain Design Stochastic Model Including Biomass Quality Variability. Abstract and presentation in 2015 INFORMS Annual Meeting, Philadelphia, PA, USA, November 1-4, 2015.
16. Wan, H., Saygin, C., Alaeddini, A., & **Castillo-Villar, K. K.** The Lean Perspectives of Maintenance in High-speed Printing Industry. Abstract accepted in the *2015 Industrial and Systems Engineering Research Conference (ISERC)*, Nashville, Tennessee, May 30 - June 2, 2015.
17. Shipley, H., **Castillo-Villar, K. K.**, Giacomoni M., Chen, F. "An Interdisciplinary Approach to Embedding a Renewable Energy, Water and Sustainability Concentration in Engineering Curriculum", Association of Environmental Engineering & Science Professors (AEESP) National Conference, June 2015, New Haven, CT.
18. **Castillo-Villar, K. K.** and Shipley, H. Embedding a Renewable Energy and Sustainability Concentration in Engineering: An intersidciplinary Approach. Abstract and presentation in 2015 American Society for Engineering Education (ASEE-GSW) Annual Conference, San Antonio, Texas, March 26, 2015.
19. **Castillo-Villar, K. K.** *Metaheuristics applied to Biorefinery Supply Chain Problems.* Abstract and presentation in INFORMS 2014, San Francisco, California, USA, Nov 12, 2014.
20. **Castillo-Villar, K. K.**, & Webb, E. *Bioenergy Supply Chain Network Design Model to Enhance Biomass Quality Characteristics.* Abstract and presentation in INFORMS 2014, San Francisco, California, USA, Nov 11, 2014.
21. **Castillo-Villar, K. K.** , & Herbert-Acero, J. F. *Improved Methodology for the Construction of Large-Scale Wind Turbine Power Curves.* Abstract and presentation in INFORMS 2013, Minneapolis, Minnesota, October 9, 2013.
22. Millwater, H., **Castillo-Villar, K. K.,** Kibria, A.*, & Iglesias, E. *System Reliability Optimization by using Monte Carlo Simulation and a Metaheuristic Algorithm.* Abstract and presentation in INFORMS 2013, Minneapolis, Minnesota, October 6, 2013.
23. **Castillo-Villar, K. K.**, & Herbert-Acero, J. F. *Preliminary Study of the Impact of Individual Representation of a Genetic Algorithm in a Logistics Problem.* Abstract and presentation in the 4th International Conference on Computational Logistics, Copenhagen, Denmark, September 25-27, 2013.
24. **Castillo-Villar, K. K.**, & Smith, N. R. *The Impact of the Cost of Quality on Serial Supply Chain Network Design.* Abstract and presentation in the *43 Congreso de Investigación y Desarrollo*,

Monterrey Institute of Technology and Higher Education, Monterrey, N.L., México, January 30-31 and February 1, 2013.

25. **Castillo-Villar, K. K.**, & Smith, N. R. *Capacitated model for supply chain network design including the cost of quality.* Abstract and presentation in the *First National Congress of the Mexican Society of Operations Research (SMIO)*, Zapopan, Jalisco, México, October 24-26, 2012.

26. **Castillo-Villar, K. K.**, Smith, N. R., & Simonton, J. L. *Heuristic Procedure for a Combinatorial Optimization Problem in Supply Chain Design Incorporating Cost of Quality*. Abstract and presentation in the *42 Congreso de Investigación y Desarrollo*, Monterrey Institute of Technology and Higher Education, Monterrey, N.L., México, January 18-20, 2012.

27. **Castillo-Villar, K. K.**, Smith, N. R., & Simonton, J. L. *Toward Integrating Cost of Quality in Supply Chain Network Modeling*. Abstract and presentation in the *41 Congreso de Investigación y Desarrollo*, Monterrey Institute of Technology and Higher Education, Monterrey, N.L., México, January 19-21, 2011.

28. **Castillo-Villar, K. K.**, Smith, N. R., & Simonton, J. L. *Toward integrating the Cost of Quality in supply chain network modeling: A preliminary study*. Abstract and presentation in the *II Encuentro Iberoamericano de Investigación Operativa y Ciencias Administrativas*, Monterrey, N.L., México, July 21-23, 2010.

Invited Presentations/Seminars

1. **Castillo-Villar, K. K.,** Robust Optimization Model for the Enhanced Production of Second Generation Biofuels, Applied Mathematics Center, Universidad Autonoma de Coahuila, Saltillo, MX, June 2, 2017.

2. **Castillo-Villar, K. K.,** *Integrated Computational and Theoretical Scheme for Linking Quality Control and Stochastic Modeling in Bioenergy Supply Chain Network Design*, School of Industrial and Systems Engineering, University of Oklahoma, Norman, OK, April 14, 2017.

3. **Castillo-Villar, K. K.,** Stankus, S.* and Stadick, J.* *Big Data Analytics: Quantification of Dimensional Measurement Uncertainty using 3D Laser Scanners for the Assessment of Manufacturing Variability,* Minority Leaders - Research Collaboration Program Review, University of Dayton, Dayton, OH, September 21, 2016.

4. **Castillo-Villar, K. K.** *Integrated Computational Tool for the Production of Second-generation Biofuel,* Bioenergy Technologies Office of the Energy Department's Office of Energy Efficiency and Renewable Energy, Washington, D.C., March 24, 2016.

5. **Castillo-Villar, K. K.** *Modeling and Optimization of Second-generation Biofuel Production Systems,* U.S. Department of Agriculture – National Institute of Food and Agriculture, Washington, D.C., March 23, 2016.

6. **Castillo-Villar, K. K.** *Integrating Biomass Quality Variability in Stochastic and Robust Supply Chain Modeling for Second-generation Biofuel Production,* Idaho National Laboratory, Idaho Falls, Idaho, March 3, 2016.

7. **Castillo-Villar, K. K.** *Unified Computational and Theoretical Scheme for Linking Quality Control and Stochastic Modeling in Bioenergy Supply Chain Network Design,* Auburn University, Auburn, Alabama, October 26, 2015.

8. **Castillo-Villar, K. K.**, Stankus S.* *Assessing Measurement Uncertainty in 3D Laser-Based Scanners through Experimental Design and Simulation*. Technical briefing presented at Air Force Research Laboratory, Wrigth Patterson Air Force Base, August 11, 2015.

9. **Castillo-Villar, K. K.** *International Supply Chains: Modeling and Optimization Techniques*. Seminar presented at Institute for Supply Management, San Antonio, TX, September, 2014

10. **Castillo-Villar, K. K.** *3D Laser-based Scanner Measurement Uncertainty Study.* Technical briefing presented at Air Force Research Laboratory, Wrigth Patterson Air Force Base, July 31. 2014.
11. **Castillo-Villar, K. K.** *Probabilistic Modeling of Turbine Engine Sustainment through Simulation-based Optimization.* Technical briefing presented at Air Force Research Laboratory, Wrigth Patterson Air Force Base, July 10. 2014.
12. **Castillo-Villar, K. K.** *Supply Chain Optimization, Design and Management.* Seminar presented at Monterrey Institute of Technology and Higher Education, Campus Santa Fe, Mexico City, Mexico, November 7, 2013.
13. **Castillo-Villar, K. K.** *Supply Chain Modeling for Enterprise Analysis and Simulation Methods for Alternative Transportation Initiatives.* Seminar presented at Oak Ridge National Laboratory, National Transportation Center, Knoxville, Tennessee, September 12, 2013.
14. **Castillo-Villar, K. K.** *Supply Chain Modeling and Optimization including Quality-related Characteristics.* Seminar presented at Oak Ridge National Laboratory, Bioenergy Resource & Engineering Systems Group, Oak Ridge, Tennessee, September 11, 2013.
15. Millwater, H., **Castillo-Villar, K. K.**, Kibria, A.*, & Iglesias, E. *Probabilistic Modelling of Turbine Engine Sustainment.* Presentation in the Minority Leaders Program, Air Force Research Laboratory, Materials & Manufacturing Directorate Air Force Research Laboratory, September 23, 2013.
16. **Castillo-Villar, K. K.** *Supply Chain Network Design Including Quality-related Issues: Models and Solution Procedures.* Presentation in the Operations Research and Industrial Engineering Graduate Seminar, Department of Mechanical Engineering, The University of Texas at Austin, Austin, TX, February 15, 2013.
17. **Castillo-Villar, K. K.** *Enhancing Performance through Statistical Techniques: A Case Study in the Glass Container Industry.* Presentation in the Management Science and Statistics Seminar, College of Business, The University of Texas at San Antonio, San Antonio, TX, November 2, 2012.
18. **Castillo-Villar, K.K.** *Enhancing Performance through Statistical Techniques: A Case Study in the Glass Container Industry.* Presentation in the Continuous Improvement Meeting, The University of Texas at San Antonio, San Antonio, TX, October 5, 2012.
19. **Castillo-Villar, K. K.** *The impact of the Cost of Quality on supply chain design.* Presentation in the Engineering Management and Systems Engineering Graduate Seminar, Department of Engineering Management and Systems Engineering, Missouri University of Science and Technology, Rolla, MO, March 12, 2012.
20. **Castillo-Villar, K. K.**, & Smith, N. R. *Supply Chain Design including the Cost of Quality.* Presentation in the Graduate Program in Economics Research Seminar, Universidad Autonoma de Nuevo Leon, Monterrey, Mexico, October 25, 2011.
21. **Castillo-Villar, K. K.** *A strategic model for serial supply chain design integrating the Cost of Quality.* Presentation in the Supply Chain Research Group Seminar, Quality and Manufacturing Center, Monterrey Institute of Technology and Higher Education, Mexico, October 11, 2011.
22. **Castillo-Villar, K. K.** *Response Surface Analysis applied to a glass making process.* Presentation in the Applied Statistics Seminar from the MS in Applied Statistics, Monterrey Institute of Technology and Higher Education, Mexico, October, 2008.

F. GRANTING ACTIVITIES

Funded Grants

Dr. Castillo has received a total of ~**$2.62 M** in grant funding as principal investigator and ~**$2.3 M** as co-principal investigator. The following table show the funded research grants.

Project Dates	Title of Research Grant or Contract	Granting Agency	Total Amount ($) and Status	Principal Investigator and Co-Principal Investigator in order
9/1/2012-12/28/2014	Probabilistic Modeling of Turbine Engine Sustainment	General Dynamics Information Technology/ Air Force Research Lab	$152,444 (Completed)	Harry R. Millwater (PI), **Krystel Castillo (Co-PI)**.
Spring 2013-Spring 2014	The Impact of Transportation Disruptions in Supply Chains in the U.S.-Mexico Border (Fellowship)	UTSA Mexico Center Educational Research Fellowship	$3,500 (Completed)	**Krystel Castillo (PI).**
03/01/2013-5/1/2014	Predictive Maintenance - Phase 1: A Roadmap for Intelligent Maintenance	Harland Clarke	$108,784 (Completed)	Can Saygin (PI), Co-PI: **Krystel Castillo**, F. Frank Chen, HungDa Wan, Adel Alaeddini.
02/01/2013-08/31/2013	CPS Energy: Alternative Transportation Initiatives	City Public Service (CPS) through the Texas Sustainable Energy Research Institute	$153,335 (Completed)	Dwain Rogers (PI), **Krystel Castillo (Co-PI).**
09/01/2013-01/31/2014	CPS Energy: Alternative Transportation Initiatives	City Public Service (CPS) through the Texas Sustainable Energy Research Institute	$397,774 (Completed)	Dwain Rogers (PI), Co-PI: **Krystel Castillo**, Donghoon Han**.**
09/01/2013-08/31/2014	Feedstock Logistics in the Bioenergy Industry: Biomass-to-biorefinery Supply Chain Model	UTSA Tenure-Track Award Competition (TRAC), The Office of the Vice President for Research	$27,500 (Completed)	**Krystel Castillo (PI).**
Summer 2013-Spring 2014	Reliability Project in Assembly Process	Toyota Motor Manufacturing Texas	$13,860 (Completed)	**Krystel Castillo (PI).**
7/1/2013-6/30/2015	Continuous Improvement and Sustainability at Harland Clarke	Harland Clarke	$33,000 (Completed)	Hung-Da Wan (PI), Co-PI: **Krystel Castillo**, Fengshan Chen, Can Saygin, Adel Alaeddini, and Hazem Rashed-Ali.
8/1/2013-5/31/2017	Supply Chain Modeling and Optimization in the Bioenergy Industry (Fellowship)	National Council of Science and Technology (NSF's Mexico)	$135,241 ($82,000 in tuition) (Active)	**Krystel Castillo (PI).**
9/1/2014-8/31/2015	Integrated Modeling and Optimization of Supply Chain Design for Sustainable Bioenergy Systems	Office of the Vice President for Research, GREAT Award	$20,000 (Completed)	**Krystel Castillo (PI).**
9/1/2014-8/31/2018	Scheduling and Routing Optimization for Supply Chains with Disruption in Transportation (Fellowship)	National Council of Science and Technology (NSF's Mexico)	$133,020 ($77,360 in tuition) (Active)	**Krystel Castillo (PI).**
9/1/2014-8/31/2018	Opportunities for Higher Education and Research Experience in Renewable Energy and Water Quality to Enable STEM Hispanic	U.S. Department of Agriculture/National Institute of Food and Agriculture	$290,000 (Active)	**Krystel Castillo (PI),** Co-PI: Heather Shipley, F. Frank Chen, and Marcio Giacomoni.

	Leaders			
9/1/2014-8/31/2015	Big Data Analytics Cluster	San Antonio Life Sciences Institute (SALSI)	$300,000 ($150,000 UTSA part) (Completed)	Yusheng Feng (PI), Co-PI: **Krystel Castillo**, Yufei Huang, John Quarles, Craig Sisson, Bruce Adams, Yidong Chen, Ed Sako, John Calhoon, Laura Rosenkranz.
4/15/2015-8/31/2015	A Fleet Analysis Demonstration in Collaboration with Austin Energy's Central Texas Fuel Independence Project (CTFIP)	Austin Energy's Central Texas Fuel Independence Project (CTFIP)	$20,000 (Completed)	Dwain Rogers (PI), Co-PI: **Krystel Castillo**
8/1/2015 – 12/31/2016	Predictive Maintenance - Phase 2: From Data to Performance Metrics	Harland Clarke	$90,000 (Completed)	Can Saygin (PI), Co-PI: **Krystel Castillo**, HungDa Wan, Adel Alaeddini.
9/1/2015-8/31/2016	Development of a Low-Cost Robust Circulating Fluidized Technology for Integration into a Novel Mathematical Model to Promote the Sustainable Production of Biofuels and Biobased Products	Office of the Vice President for Research, CONNECT award.	$125,000 ($50,000 UTSA part) (Completed)	**Krystel Castillo (PI),** Jimell Erwin and Monica Medrano (PIs at SwRI).
8/1/2015-7/31/2020	Scholarship Program for Undergraduates' Retention and Success (SPURS)	NSF S-STEM	$626,890 (Active)	Heather Shipley (PI), **Krystel Castillo (Co-PI)**, Ruyan Guo, and Rena Bizios
8/1/2015-7/31/2017	Process Excellence and Continuous Improvement at Harland Clarke	Harland Clarke Corp.	$62,000 (Completed)	Hung-Da Wan (PI), Co-PI: **Krystel Castillo**, Fengshan Chen, Can Saygin, Adel Alaeddini.
9/1/2015-8/31/2018	Latina SciGirls: Addressing Barriers to Promote Middle School Age Hispanic Girls' Positive STEM Identity Development Through Media, Outreach and Role Models.	National Science Foundation's Advancing Informal STEM Learning initiative	(Active)	Rita Karl (PI), Richard Hudson (Co-PI), Alicia Santiago (Co-PI), Brenda Britsch (Co-PI). **Krystel Castillo (Mentor and role model).**
9/1/2015-8/31/2019	BioEnergy And Water for Agriculture Research and Education (BE AWARE) Network	U.S. Department of Agriculture/National Institute of Food and Agriculture	**$1,000,000** (Active)	**Krystel Castillo (PI)**, Co-PI: Mauricio Cabrera (UPR-M), Michael Persans (UTRGV).
9/28/2015-9/30/2017	Biomass Logistics Simulations	Oak Ridge National Laboratory (Department of Energy) managed by UT Battelle	$60,000 (Completed)	**Krystel Castillo (PI).**
11/1/2015-1/1/2018	Big Data Analytics: Quantification of Dimensional Measurement Uncertainty using 3D Laser Scanners for the Assessment of	Air Force Research Laboratory through Clarkson Aerospace Corp.	$139,189 (Active)	**Krystel Castillo (PI).**

	Manufacturing Variability			
3/29/2016–3/30/2019	U-GREAT (UnderGraduate Research, Education And Training) program in Bioenergy, Natural Resources, Agriculture Economics and Rural Communities	National Institute of Food and Agriculture	$275,760 (Active)	**Krystel Castillo (PI),** Hatim Sharif (Co-PI)
9/1/2016–8/31/2018	Cloud-based Decision Support System Integrating Biomass Quality, Uncertainty and Risk to Optimize the Production of Second-generation Biofuels	South Central Sun Grant	$150,000 (Active)	**Krystel Castillo (PI),** Sandra Eksioglu (Co-PI)
11/1//2016–10/31/2017	Increasing Awareness through the Development of a Web-based Educational Tool to Reduce Greenhouse Gas Emissions in Coal Power Plants	Environmental Protection Agency (EPA)	$15,000 (Completed)	**Krystel Castillo (PI),** Marcio Giacomoni (Co-PI)
9/1/2017-8/31/2018	Dual-Mode Rotors for Small Horizontal-Axis Wind Turbines	ConTex – Postdoctoral Fellowship	$47,476 (Active)	**Krystel Castillo (PI)**
9/1/2017-8/31/2022	A Cloud-based Expert System to Support the Production of Clean Energy	ConTex – PhD Fellowship	$149,875 (Active)	**Krystel Castillo (PI)**
9/1/2017-8/31/2018	Cloud-based Data Analytics To Support Sustainable Clean Energy Production	Open Cloud Institute Fellowship	$30,000 (Active)	**Krystel Castillo (PI)**
9/1/2017-8/31/2018	An Open Source Based Proactive Energy Management System (PEMS) for Integrated Control of Battery Energy Storage System (BESS) and Solar-Powered Buildings	City Public Service (CPS) through the Texas Sustainable Energy Research Institute	$356,631 (Active)	Bing Don (PI), **Krystel Castillo (co-PI),** Jeff Xu (co-PI)

Grant Proposals Not Funded

1. AFRI foundational program, U.S. Department of Agriculture, Data-driven Decision Models and Algorithms to Support Bioenergy Production Expansion. **Krystel Castillo (PI),** Senior Personnel: Erin Webb and James Kiniry. $500,000, 6/1/2017-5/31/2021. Submitted on July 21, 2016.
2. NSF RET Site: Transforming Advanced Manufacturing Research to Project-Based Learning in the Classroom. Can Saygin (PI). Senior personnel: **Krystel Castillo**, HungDa Wan, Adel Alaeddini, Emily Peterek, Guadalupe Carmona-Dominguez, Oscar Chavez, Cody Patterson. $599,445, 7/01/2016-6/31/2019. Submitted on November 2, 2015.
3. US Department of Defense, DM142025 - Team Performance Training Research Initiative, Using "Real-World" Scenarios for Virtual Continuing Education Curriculum: Team STEPPs in Emergency Medicine, Kenneth Marriot (PI), Gillian Schmitz, MD (co-PI), **Krystel Castillo (co-**

PI), James Cleveland (co-PI), Rosemarie Ramos (co-PI), $639,454 ($216,646 my part). 9/1/2015-8/31/2017, Submitted on April 2, 2015.

4. NSF – CMMI – MES, Collaborative Research: Unified Computational and Theoretical Scheme for Linking Quality Control, Uncertainty, and Risk Measures in 2nd Generation Clean Bioenergy Systems, **Krystel Castillo (PI at UTSA)** and Sandra Eksioglu (PI at Clemson University), $248,730 ($148,730 my part), 10/1/2015-8/31/2018. Submitted on February 17, 2015.

5. NSF DUE-IUSE, A Synergetic Method Based on Adaptive Teaching to Redesign Fundamental Engineering Courses for Improved Student Learning, Mehdi Shadaram (PI), Chunjiang Qian; Harry Millwater; Daniel Pack; Heather Shipley; David Akopian (senior personnel), Anson Ong (senior personnel), and **Krystel Castillo** (Senior Personnel), $2,975,265, 10/1/2015-10/1/2020. Submitted on January 2015.

6. USDA Graduate Fellowships, Interdisciplinary USDA-ready Workforce Development and Research Traineeship for Sustainable Agricultural and Bioenergy Systems, **Krystel Castillo (PI)** and F. Frank Chen, $240,000, 1/15/2015 – 1/15/2020. Submitted on September 30, 2014.

7. U.S. Department of Education, STEM CAMP and Just in Time: Increasing STEM Degree Access, Retention, and Completion through Curricular Improvements and Peer Mentoring Among Low Income Students, Michael Karcher (PI), Mehdi Shadaram (PI), David Akopian, **Krystel Castillo** (Senior Personnel)**,** Felicia Castro, Gloria Crisp, Heather Shipley, JingYong Ye, Daniel Sass, $3,960,909, 10/1/2014-9/30/2018. Submitted on June 2014.

8. NSF NRT-DESE, Interdisciplinary Career-ready Training for Multi-scale Big-Data Analytics Related Professions, Wei-Ming Lin (PI), Yusheng Feng, Yufang Jin, Daniel Pack, Chunjiang Qian, **Krystel Castillo** (Senior Personnel), Yufei Huang, and Brian Hermann, 10/1/2014-9/30-2019. Submitted on June 24, 2014.

9. NSF – CMMI – MES, Collaborative Research: Unified Computational and Theoretical Scheme for Linking Quality Control, Uncertainty, and Risk Measures in 2nd Generation Clean Bioenergy Systems, **Krystel Castillo (PI at UTSA)** and Sandra Eksioglu (PI at Clemson University), $251,224 ($151,224 my part), 9/1/2015-8/31/2018. Submitted on September 15, 2014.

10. Department of Defense, National Center of Excellence (CoE) in Research Data Analysis, Nicole Beebe (PI), Daijin Ko, Sos Agaian, Rebekah Smith, Hsinchun Chen, Anthony Chronopoulos, Glenn Dietrich, Greg White, **Krystel Castillo** (Senior Personnel). $4,995,253, 9/1/2015-8/31/2020, Decision on February 2, 2015.

11. SALSI Innovation (UTSA VPR Office), Airway diseases and sulphur: Bioremediation of Texas Sour Crude to reduce hydrogen sulfide for increasing air quality and respiratory health, **Krystel Castillo (PI),** Janakiram Seshu, Brian Hermann, Susan Weintraub (PI at UTHSC) and Gao (UTHSC). $200,000, 9/1/2014-8/31/2015, June 2, 2014.

12. NSF-STEM - Computing Partnerships: MSP, (Proposal Number: 1441056) New Teacher Pathways for Success in STEM, Bernard Arulanandam (PI), **Krystel Castillo,** Yufeng Wang, Alan Soho, Rajendra Boppana. $1,493,322, submitted on March 18, 2014, Decision on June 27, 2014.

13. National Institute of Food and Agriculture (NIFA), Integrated Modeling and Optimization of Supply Chain Design for Sustainable Bioenergy Systems, **Krystel Castillo (PI)** and James Simonton (Co-PI), $311,427, 11/1/2014-10/31/2017, submitted in March 2014.

14. Impact San Antonio, Pair Up and Learn: Enabling Females to Pursue Careers in STEM fields, **Krystel Castillo (PI),** Heather Shipley, Afamia Elnakat, $99,211, submitted on March 31, 2014.

15. NSF IUSES, Improving Retention and Graduation Rates of Underrepresented Engineering Students by Enriching Math Preparation, (Proposal Number: 1432050) Mehdi Shadaram (PI),

Krystel Castillo, David Akopian, Hatim Sharif, Heather Shipley, $2,011,342, 10/1/2014-9/30-2017, submitted on February 4, 2014.

16. Oak Ridge Associated Universities (ORAU). Mathematical modeling and optimization of biomass-to-biorefinery supply chains including quality uncertainty. **Krystel Castillo (PI),** $10,000 (cost share $5,000), submitted on January 10, 2014, 6/1/2014-5/31/2014.

17. CPS Energy: Alternative Transportation Initiatives sponsored by City Public Service (CPS) through the Texas Sustainable Energy Research Institute, Dwain Rogers (PI), **Krystel Castillo (Co-PI)** and David Han, $255,571, 2/1/2014-8/31/2014.

18. American Association of University Women, Biomass-to-biorefinery Supply Chain Model incorporating Quality Measures, **Krystel Castillo (PI),** $6,000, submitted on November 15, 2013, 7/1/2014-6/30/2015.

19. Haythornthwaite Foundation Research Initiation Grant, Applied Mechanics Division of ASME, "Mathematical Modeling and Optimization Techniques to Design Supply Systems that Reduces Biomass Feedstock Variability", submitted on August 23, 2013, 10/1/2013-8/31/2014, $20,000, **Krystel Castillo (PI).**

20. NSF S-STEM, Women Engineering Scholarship Program for Undergraduates' Retention and Success (WESPURS), Heather Shipley (PI), **Krystel Castillo,** Ruyan Guo, Hatim Sharif, Rena Bizios, $636,660, submitted on August 2013.

21. NSF CREST Center – Simulation Visualization and Real-Time Prediction Center (SiViRT), Digital Twin, $5M, submitted in the Summer 2013.

22. U.S. Department of Agriculture - Agriculture and Food Research Initiative Sustainable Bioenergy Competitive Grants Program, Enhancing Regionally-appropriate Multi-biomass Quality, **Krystel Castillo (PI),** $149,999, 9/30/2013-9/30/2015, submitted on April 3, 2013.

23. Connecting through Research Partnerships (CONNECT) FY2014-2015, The Office of the Vice President for Research, The University of Texas at San Antonio, Optimizing Biomass Logistics Costs While Enhancing Biomass Quality for transportation Biofuels, **Krystel Castillo (PI)** and William Barclay (SwRI), $200,000, 9/1/2013-8/31/2014, submitted on March 20, 2013.

24. Institute for Transformational Learning (ITL) - Online Certificate Program, Lean Six-Sigma Enterprise Transformation Certificate, Can Saygin (PI), **Krystel Castillo**, Frank Chen, HungDa Wan, Adel Alaeddini, $494,129, 6/1/2013-5/31/2016, submitted on February 1, 2013.

25. NASA STTR. A Flexible Application Programming Interface for Computational Optimization based on Metaheuristics. **Krystel Castillo (PI),** Matthew Gibson, Anthony Castaldo, $62,194, 6/1/2014-12/1/2014, submitted on January 29, 2013.

26. Ralph E. Powe Junior Faculty Enhancement Award (Oak Ridge Associated Universities), Development of a research framework for tactical supply chain modeling including a biomass portfolio and the Cost of Poor Quality in the bioenergy industry, **Krystel Castillo (PI),** $10,000, 06/01/2013-05/31/2014, submitted on January 11, 2013.

27. KCI San Antonio, Repair Service Transformation Study, Can Saygin (PI), **Krystel Castillo,** HungDa Wan, Adel Alaeddini, $30,000, 10/15/2012-10/14/2014, submitted on September 2012.

G. TEACHING ACTIVITIES

Courses Taught

- Applied Engineering Analysis, EGR 2323, Undergraduate, 88 students, Fall 2012.
- Advanced Quality Control (**New course, first time taught at UTSA**), EGR 4953/5233, Undergratudate/Graduate, 15 students, Spring 2013.
- Applied Engineering Analysis, EGR 2323, Undergraduate,103 students, Fall 2013.
- Applied Engineering Analysis, EGR 2323, Undergraduate, 83 students, Spring 2014.
- Advanced Quality Control, EGR 5233, Graduate, 22 students, Fall 2014.
- Advanced Enterprise Process Engineering, ME 4583/5583, Undergraduate/Graduate, 10/14 students, Fall 2014.
- SP: Analytical Techniques in Engineering Analysis II (**New course in optimization, first time taught at UTSA**), ME6973, Graduate, 20 students, Spring 2015.
- Advanced Quality Control, EGR 5233, Graduate, 8 students, Fall 2015.
- Advanced Enterprise Process Engineering, ME 4583/5583, Undergraduate/Graduate, 19/14 students, Fall 2015.
- Advanced Quality Control, EGR 5233, Graduate, 14 students, Fall 2016.
- Mixed Integer and Liner Optimization, ME6973, Graduate, 14 students, Spring 2017.
- Advanced Quality Control, EGR 5233, Graduate, 15 students, Fall 2017.

Supervised Student Research

- Independent Study: Supply Chain Management and Quality Improvement, ME 6953, Graduate, 1 student, Spring 2013.
- Independent Study: Supply Chain Management and Quality Improvement/System's Reliability, ME 6953, Graduate, 3 students, Summer 2013.
- Special Project, ME5973, Graduate, 1 student, Summer 2013.
- Special Project, ME5973, Graduate, 1 student, Fall 2013.
- Master's Thesis, ME 6983, Graduate, 2 students, Fall 2013.
- Independent Study: Supply Chain Management and Quality Improvement, ME 6953, Graduate, 1 student, Spring 2014.
- Independent Study: Supply Chain Management and Quality Improvement, ME 6953, Graduate, 3 students, Summer 2014
- Doctoral Research ME 7953, Graduate, 1 student, Spring 2014.
- Doctoral Research ME 7953, Graduate, 6 students, Spring 2014.
- Doctoral Research ME 7953, Graduate, 3 students, Fall 2014.
- Doctoral Research ME 7953, Graduate, 8 students, Spring 2015.
- Doctoral Research ME 7953, Graduate, 1 student, Summer 2015.
- Doctoral Research ME 7953, Graduate, 3 students, Fall 2015.
- Master's Thesis, ME 6983, Graduate, 1 student, Fall 2015.
- Master's Thesis, ME 6983, Graduate, 1 student, Spring 2016.
- Doctoral Research ME 7953, Graduate, 10 students, Spring 2016
- Doctoral Dissertation ME 7981, Graduate, 3 students, Spring 2016
- Doctoral Research ME 7953, Graduate, 5 students, Fall 2016
- Doctoral Dissertation ME 7981, Graduate, 3 students, Fall 2016

Mentoring of Teaching Assistants

- Muhammad Haaris Shahid (sections 4, 5, and 6), Applied Engineering Analysis, EGR 2323, Undergraduate, Fall 2012.
- Soham Gupta (section 4) and Mohamed Meddouri (sections 5 and 6), Applied Engineering Analysis, EGR 2323, Undergraduate, Fall 2013.
- Soham Gupta (sections 1 and 2) and Carlos Acosta-Berlinghieri (section 3), Applied Engineering Analysis, EGR 2323, Undergraduate, Spring 2014.

WeARE Course Concentration

Led the creation of an *interdisciplinary concentration* in Water Quality and Treatment, Agricultural Logistics and Renewable Energy (WeARE) Systems granted by two centers: Center for Advanced Manufacturing and Lean Systems and Water Institute of Texas.

This is a multidisciplinary course concentration that provides engineering students with the theoretical foundations and data analytics techniques needed to conduct research projects in clean energy and water systems.

H.   LIST OF STUDENTS MENTORED

Active recruitment and mentoring of minority students is an important component of teaching and education. With an increasing percentage of the United States population of minority background, it is important to encourage, recruit and mentor minority students. Thus, I have made it a priority to *recruit and develop minority and female students.*

Current Ph.D. Students [Total: 3]
Maria Finol (Hispanic), Mechanical Engineering with concentration in Manufacturing Systems, UTSA.

- Topic: Stochastic Modeling and Optimization of Clean Energy Systems. Started in Fall 2016-Expected May 2021.

Mario Aboytes (Hispanic), Mechanical Engineering with concentration in Manufacturing Systems, UTSA.

- Topic: Stochastic Programming in Biomass Feedstock Logistics. Started in Fall 2014- Expected May 2018

Sue Stankus (Female), Mechanical Engineering with concentration in Manufacturing Systems, UTSA.

- Topic: A Novel Spatiotemporal Statistical Quality Control Scheme using 3D Point Cloud Data. Started in Spring 2014- Expected October 2017

Current MS Students [Total: 5]
Mario Chapa (Hispanic), MS in ME, UTSA

- Topic: Cloud-based Decision Support System for Enhanced Bioenergy Production. Started in Fall 2016- Expected May 2018

Brittany Shier (Female), MS in AMEE, UTSA

- Topic: Optimizing Algae Growth and Lipid Accumulation for Biofuel Production. Started in Fall 2016- Expected May 2018

Emilio Hernandez (Hispanic), MS in ME, UTSA

- o Topic: Modeling of Quality Characteristics in the Production of Biocrude using an Innovative Hydro-pyrolysis Test Bed. Started in Fall 2014- Expected Dec. 2017

Alyssa Daniel, MS in AMEE, UTSA

- o Topic: TBD. Started in Jan. 2017- Expected Dec. 2018.

Amanda Hydar, MS in AMEE, UTSA

- o Topic: TBD. Started in Aug. 2017- Expected Aug. 2019.

Current Undergraduate Research Supervision/Undergraduate Internship Supervision [Total: 6]

- Andres Tapia-Carrillo, Undergraduate, Mechanical/Electrical Engineering, UTSA. Supported by LSAMP in the Fall 2014. Conducted a summer internship at the USDA Agricultural Research Service (ARS) laboratory located in Lubbock, TX during summer 2015 and at the laboratory located in Beltsville MD during summer 2016, $4,500 (spring/summer 2015) and $7,065 (summer 2016).

- David Olazaba, Undergraduate, Mechanical Engineering, UTSA. Conducted a summer internship at the laboratory located in Beltsville, MD during summer 2016, $4,000 (spring 2016) and $7,065 (summer 2016).

- Kenny Hidalgo, Undergraduate, Mechanical Engineering, UTSA. Conducted a summer internship at the USDA Agricultural Research Service (ARS) laboratory located in Lubbock, TX during summer 2016, $3,000 (spring 2016) and $4,500 (summer 2016).

- Cristian Sánchez, Undergraduate, Mechanical Engineering, UTSA. Conducted a summer internship at the USDA Forest Service, Forest Products Laboratory located in Madison, WI during summer 2016, $4,500 (summer 2016).

- Hector Martinez, Undergraduate, Mechanical Engineering, UTSA. Conducted a summer internship at the USDA Agricultural Research Service (ARS) laboratory located in Lubbock, TX during summer 2016, $4,500 (summer 2016).

- Job Macias, Undergraduate, Mechanical Engineering, UTSA. Conducted a summer internship at the USDA Agricultural Research Service (ARS) laboratory located in Lubbock, TX during summer 2016, $4,500 (summer 2016).

Research Experiences for Undergraduates

I have coordinated and facilitated paid summer internships at USDA agricultural research services laboratories for the following (1) UTSA students: Stephanie Silvia (USDA laboratory in Temple, TX during summers 2015 and 2016), Iris Ozuna (Temple, TX during summer 2015), Jonathan Hart (Temple, TX during summer 2015), Alex Lara (Lubbock, TX during summer 2015), Andrea Russie (Temple, TX during summer 2016) and James Case (Temple, TX during summer 2016).
(2) Alamo College students: Diana Magana, James McGehee, Ramon Vazquez and Kristen Villanueva. (Lubbock, TX during summer 2016).
(3) University of Puerto Rico student: Yazeli E. Cruz Rivera (Beltsville, Maryland during summer 2016).
(4) University of Texas-Rio Grande Valley student: Evelyn Garcia (Beltsville, Maryland during summer 2016).

Graduate Summer Internships

- Sue Stankus (Ph.D. candidate) conducted a summer internship at Air Force Research Laboratory (AFRL) at Wright Patterson Air Force Base, Dayton, OH, June-August, 2015.
- Hernan Chavez (Ph.D. candidate) conducted a summer internship at DoE's Oak Ridge National Laboratory through the ASTRO program, June-August, 2016.
- James Stadick (M.S. student) conducted a summer internship at the Air Force Research Laboratory (AFRL) at Wright Patterson Air Force Base, Dayton, OH, June-August, 2016.
- Mario Aboytes (Ph.D. student) conducted a summer internship at the Idaho National Laboratory, Idaho, ID, June-August, 2017 (Expected).

Visiting Scholars

Dr. Yajaira Cardona, 2016 summer research stay fellowship for young investigators, supported by the FUMEC (Fundación México - Estados Unidos para la Ciencia).

Visiting Ph.D. Students

I perform as external co-advisor in the following dissertations:

Luis Rivera, Industrial Engineering, Monterrey Tech, Campus Monterrey.

- Topic: Bi-objective model for global bioenergy supply chains. Chair: Neale Smith and Co-chair: Krystel Castillo, graduation date: May 2016.

Guillermo Hernando-Marquez, Industrial Engineering, Monterrey Tech, Campus Toluca.

- Topic: A Column Generation Approach Based on Partial Paths to Schedule Constrained Routing Parcels in Megacities, Chair: Luis Herrera and Co-chair: Krystel Castillo, expected graduation date: December 2017.

Ph.D. Dissertation Directed

Hernan Chavez, Ph.D. in Mechanical Engineering with concentration in Manufacturing Systems, UTSA.

- Dissertation: "Simulation-based method for the optimization of multi-criteria stochastic models." Chair: Krystel Castillo. Graduated in May 2017. Grade: A. Available from Dissertations & Theses @ University of Texas - San Antonio; ProQuest Dissertations & Theses Global. (10279661). Retrieved from https://search-proquest-com.libweb.lib.utsa.edu/docview/1903629289?pq-origsite=summon&accountid=7122

M.S. Thesis Directed

James Stadick, MS in Advanced Manufacturing Enterprise Engineering, UTSA.

- Thesis: "Exponentially Weighted Moving Average Chart for the Quantification of Dimensional Measurement Variability using 3D Laser Scanners." Chair: Krystel Castillo. Graduated in July 2017. Grade: A.

Jonathan Hart, MS in Advanced Manufacturing Enterprise Engineering, UTSA. Currently, USAA, San Antonio, TX.

- Thesis: "Biomass Supply Chain Logistics for Co-firing Coal Power Plants." Chair: Krystel Castillo. Graduated in May 2016. Grade: A. Available from Dissertations & Theses @ University of Texas - San Antonio; ProQuest Dissertations & Theses Global. (1793669181). Retrieved from https://login.libweb.lib.utsa.edu/login?url=http://search.proquest.com.libweb.lib.utsa.edu/docview/1793669181?accountid=7122

Sadia Quader, MS in Advanced Manufacturing Enterprise Engineering, UTSA. Currently, Supply Chain Engineer at Ruvati USA, San Antonio, TX.

- o Thesis: "A Preliminary Study of the Performance of Bucket Brigades when dealing with multiple Aisles in Warehouses." Chair: Krystel Castillo. Graduated in December 2013. Grade: A. Available from Dissertations & Theses @ University of Texas - San Antonio; ProQuest Dissertations & Theses Global. (1493902521). Retrieved from https://login.libweb.lib.utsa.edu/login?url=http://search.proquest.com.libweb.lib.utsa.edu/docview/1493902521?accountid=7122

Azubuike Chukukere, MS in Advanced Manufacturing Enterprise Engineering, UTSA. Currently, Quality Manager at CoorsTek Engineered Products, Houston, TX.

- o Special Project: "Improving Operations through Dynamic Value Stream Mapping and Discrete-Event Simulation." Chair: Krystel Castillo. Graduated in December 2013. Grade A.

Supervised Undergraduate Students

Joshua Naranjo, Alamo Community College. Supported by U-GREAT funded by NIFA.

- o Topic: Computational Tool to Enhance the Analysis of Biomass Chemical Composition, Summer 2016.

Jessica Chong-Macias, Undergraduate: Junior, Mechanical Engineering, UTSA. Supported by Louis Stokes Alliances for Minority Participation (LSAMP) and SiVIRT.

- o Topic: Inventory Modeling and Management, Spring and Fall 2013.

Omar Medina, Undergraduate: Sophomore, UTEP. Supported by LSAMP.

- o Topic: Modeling disruptions in transportation in the US-Mexico border, Summer 2013.

Guillermo Teyechea-Marquez and Roger D. Escobedo-Arzapalo who participated in a Research Experience for Undergraduates Program supported by CONACyT.

- o Topic: Optimization of supply chain networks, Summers 2010 and 2011.

I.   SERVICE ON GRADUATE COMMITTEES

Ph.D. Students [Total: 4]

1. Olufunso (Sylvester) Ogidan, Ph.D. in Environmental Science and Engineering, Civil and Environtmental Department, University of Texas at San Antonio, Dissertation: Multiobjective Evolutionary Computation for Sanitary Sewer Overflow Reduction Optimization, Chair: Marcio Giacomoni, graduation date: December 2016.
2. Quintana-Kuether, Carolina, Ph.D. in Mechanical Engineering, Mechanical Engineering Department, University of Texas at San Antonio, Dissertation: A variance reduction sampling method to efficiently estimate the probability-of-failure for damage-tolerant structures, Chair: Harry Millwater, graduation date: August 2016.
3. Motasemi, M. Abed, Ph.D. in Mechanical Engineering, Mechanical Engineering Department, University of Texas at San Antonio, Dissertation: Spatiotemporal Outlier Detection Methodologies for Image-based Process Monitoring, Chair: Adel Alaeddini, graduation date: May 2016.
4. Garza, Jose, Ph.D. in Mechanical Engineering, Mechanical Engineering Department, University of Texas at San Antonio, Dissertation: Applications of Complex Variable

Differentiation Methods in Probabilistic Analysis and Structural Dynamic Systems of Finite Elements, Chair: Harry Millwater, graduation date: December 2014.

M.S. Students [Total: 27]

1. Jeffrey Anderson, MS in Electrical Engineering, Electrical and Computer Engineering Department, University of Texas at San Antonio, Thesis: "Characterization of RedFlow's ZBM2 zinc-Bromide Flow Battery," Chair: Hariharan Krishnaswami, graduation: Summer 2017.
2. Deveshkumar R. Jariwala, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Special Project: "A Study of the Lean Six Sigma Application in Public Service and Government Organizations," Chair: F. Frank Chen, graduation: December 2016.
3. Tyler Bailey, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Special Project: "Spar-10 Innovations, USA Inc.; EZ-Torque: Improving the Economics of Torqueing Fasteners," Chair: F. Frank Chen, graduation: December 2016.
4. Mahmoud Nagi, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Special Project: "Six Sigma and Lean Manufacturing Implementation in Engine Assembly Line," Chair: Chair: F. Frank Chen, graduation: December 2016.
5. Cyril Jose, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Special Project: "Application of Lean Six Sigma Methodology to Improve an Engine Assembly Line," Chair: Chair: HungDa Wan, graduation: December 2016.
6. Michael Lasch, MS in Mechanical Engineering (MS in ME), Mechanical Engineering Department, University of Texas at San Antonio, Thesis: "Design Optimization of a Centrifugal Pump for an Emergency Rescue Medical Device," Chair: Yusheng Feng, graduation: May 2016.
7. Octavio Zavala, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Special Project: "Lean Manufacturing Tools Implemented in a 3D Printing Lab," Chair: HungDa Wan, graduation: May 2016.
8. Nihar Gupta, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Thesis: "The Desired Dynamics of Selected Lean Tools and Framework for Effective Design of Lean Simulation Games," Chair: HungDa Wan, graduation: May 2016.
9. Emma E. Flores, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Thesis: "A Study of the Uniqueness of Lean Methodologies when applied to Public Service Organizations," Chair: F. Frank Chen, graduation date: December 2015.
10. Bianca Juarez, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Comprehensive Exam, Chair: HungDa Wan, graduation date: December 2015.
11. Brendan Gallagher, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Comprehensive Exam, Chair: HungDa Wan, graduation date: May 2015.

12. Sandeep Kumar Gottumukla, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Project: Applying Lean and Six Sigma Methodology, Concepts and Tools for Sustainability, Chair: Frank Chen, graduation date: May 2015.

13. Vazquez-Doria, Jorge, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Comprehensive Exam, Chair: HungDa Wan, graduation date: December 2014.

14. Mancha Jr., Jesus, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Special Project: Literature Review on the Environmental Waste known as Emission, Chair: F. Frank Chen, graduation date: December 2014.

15. Iglesias, Eliseo, MS in Mechanical Engineering, Mechanical Engineering Department, University of Texas at San Antonio, Thesis: Sensitivity Analysis of Turbine Engine Sustainment, Chair: Harry Millwater, graduation date: December 2014.

16. Meddouri, Mohamed, MS in Mechanical Engineering, Mechanical Engineering Department, University of Texas at San Antonio, Special Project: Variance Reduction using Enhanced Sampling Method, Chair: Harry Millwater, graduation date: May 2014.

17. Gupta, Tushar, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Thesis: Optimization of Die storage location considering travel distance and time: A Case study of an Automotive Stamping Shop, Chair: F. Frank Chen, graduation date: May, 2014.

18. Nguyen, Luong Hanh, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Thesis: Make-to-Stock or Make-to-Order Scheduling Based on Incremental Cost Resource Smoothing Heuristic Algorithm for Single Product Lot Sizing. Chair: HungDa Wan, graduation date: May, 2014.

19. Sims, Trumone, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Thesis: Applying Theory of Constraints as a Continuous Improvement Tool in a Lean Environment. Chair: HungDa Wan, graduation date: May, 2014.

20. Vedala, Avanija, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Special Project: Facilitate Lean Implementation in Healthcare by Clustering Job Functions. Chair: HungDa Wan, graduation date: Summer, 2013.

21. Ramin Soujoudi, MS in Mechanical Engineering, Mechanical Engineering Department, University of Texas at San Antonio, "Estimation of Surface Temperature, Surface Heat Flux and Heat Transfer Coefficient in the Platform of Inverse Heat Conduction Problems", Chair: Antonio Campo, graduation date, May, 2013.

22. Madana, Venkata K., MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Special Project: "Value Stream Mapping for Lean Manufacturing Implementation – A case study at Helmet Chin Strap Manufacturing Unit", Chair: HungDa Wan, graduation date: May, 2013.

23. De la Riva-Canizales, Jose Luis, MS in Industrial Engineering and Manufacturing, Corporación Mexicana de Investigación en Materiales (COMIMSA), "Dynamic Analysis to Determine the Reliability of Just in Sequence Systems ", Chair: Miguel G. Cedillo-Campos, January 18, 2013.

24. Chris Bain, MS in Advance Manufacturing and Enterprise Engineering (MS in AMEE), Mechanical Engineering Department, University of Texas at San Antonio, Special Project: "Lean Metrics and Value Stream Income Statement Implementation", Chair: Dr. F. Frank Chen, graduation date: November, 2012.

25. Javier Carrera, MS in AMEE, Mechanical Engineering Department, University of Texas at San Antonio, Special Project: "Simulation Analysis of Mixed Model Assembly Line", Chair: Dr. F. Frank Chen, graduation date: November, 2012.

26. Aziz Akbarali Maredia, MS in Mechanical Engineering, Mechanical Engineering Department, University of Texas at San Antonio, Special Project: "Voxel Point Representation of 3-Dimensional Objects", Chair: Dr. Hung-Da Wan, graduation date: November, 2012.

27. Joel Rolando Guillén-Celedón, MS in Quality Systems and Productivity, Tecnológico de Monterrey, Campus Monterrey, "Diagnostic tool to reduce the ground transportation logistic cost for micro, small, and medium companies in Mexico", Chair: Dr. Jorge Limón, graduation date: May 2012.

J. SERVICE ACTIVITIES

Peer-Review Activities

Awards Committee Member/Judge.
- 2017 Best Teacher Award – Logistics and Supply Chain Division of the Institute of Industrial and Systems Engineering (IISE).
- 2017 Outstanding Industry Practitioner – Logistics and Supply Chain Division of the Institute of Industrial and Systems Engineering (IISE).
- 2017 Student Case Competition – Logistics and Supply Chain Division of the Institute of Industrial and Systems Engineering (IISE).
- 2016 INFORMS ENRE Best Publication Award in Environment and Sustainability, INFORMS, Nashville, TN, November 2016. Committee Member.
- 2016 Institute of Industrial Engineering (IIE) Logistics and Supply Chain Division, Teaching Award, ISERC, Anaheim, CA, May 2016. Committee Chair.
- 2016 Best Track Paper, Logistics and Supply Chain Track, ISERC, Anaheim, CA, May 2016. Committee Member.
- 2016 Best Student Paper, Logistics and Supply Chain Track, ISERC, Anaheim, CA, May 2016. Committee Member.
- 2015 INFORMS ENRE Best Publication Award in Environment and Sustainability.
- Member of the Organizing Committee in the Railway Applications Section (RAS) Problem Solving Competition at 2015 INFORMS, chairman: Dr. Francesco Corman.

Panelist/Research Proposal Reviewer
- Department of Energy
- UTSA VPR – Seed Grants

Referee. Transportation Research Part E: Logistics and Transportation Review, International Journal of Systems Science, Institute of Industrial and Systems Engineering (IISE) Transactions, IEEE CIM (Institute of Electrical and Electronics Engineers-Computational Intelligence Magazine); European Journal of Operations Research; International Journal of Production Economics; International Journal of Production Research; Computers and Industrial Engineering; Robotics and Computer-Integrated Manufacturing; Journal of Cleaner Production; Energies; Processes; Mathematical Problems in Engineering; Energy Systems; American Society for Engineering Management Conference; Industrial and Systems Engineering Research Conference (ISERC); FAIM (24th International Conference on Flexible Automation and Intelligent Manufacturing); ASEE Annual Conference; ASME Manufacturing Science and Engineering Conference; 2014 IEEE Symposium Series on computational Intelligence; International Conference in Computational Logistics; among others.

Leadership Positions in Professional Societies
- Member of board of directors (Awards Director) at the Logistics and Supply Chain (LSC) Division of the Institute of Industrial and Systems Engineering from 2017-2019 (Re-elected)
- Member of board of directors (Awards Director) at the Logistics and Supply Chain (LSC) Division of the Institute of Industrial and Systems Engineering from 2015-2017.

Professional Memberships
- IIE (Institute of Industrial Engineers), ASEM (American Society of Engineering Management), INFORMS (Institute for Operations Research and the Management Sciences), and ASEE (American Society for Engineering Education).
- Member of the Southeastern Partnership for Integrated Biomass Supply Systems (IBSS, http://www.se-ibss.org/).

Conference Organization

Program Chair/Co-Chair
- *Co-Chair in the Flexible Automation & Intelligent Manufacturing 24th International Conference (FAIM 2014)*, May, 2014, San Antonio, TX, USA.

Track Chair/Co-Chair
- *Co-chair in the Energy Systems Track, 2018 Industrial and Systems Engineering Research Conference (ISERC),* May, 2018, Orlando, Florida, USA.
- *Co-chair in the Logistics and Supply Chain Track, 2016 Industrial and Systems Engineering Research Conference (ISERC),* May, 2016, Anaheim, California, USA.
- *Co-Chair in the 2014 ASME International Conference on Manufacturing Science & Engineering (MSEC2014), Quality & Reliability Symposium,* June 9-13, 2014, MI, USA.

Special Session Chair/Co-Chair
- *Chair of the special session,* Integrated Biofuels Supply Chain Design, Environment-Sustainability cluster of ENRE division, 2015 INFORMS Annual Meeting, November 1-4, 2015, Philadelphia, USA.
- *Chair of the special session,* Supply Chain Design, Optimization, and Management. *2014 IEEE Symposium on Computational Intelligence in Production and Logistics Systems,* December 9-12, 2014, Orlando, Florida, USA.

Member
- Member of the Scientific Committee of the International Conference on Computational Logistics (ICCL), September 24-26, 2014, Chile.
- Member of the Scientific Committee of CiLOG 2013 (International Congress on Logistics & Supply Chain), October 24-25, 2013, Queretaro, Mexico.
- Member of the Scientific Committee of IV Latin-American Conference in Operation Research and Management Sciences. April 25-26, 2013, Santa Cruz, Bolivia.

Service at Department Level

8/2012-5/2013	Organized of the Mechanical Eng. Seminar in conjunction with Dr. Xiaowei Zeng. Activities: Invite speakers and host their visit.
1/2013-5/2013	Served as member of the ME Department's Promotion Committee in conjunction with Dr. Victor Maldonado. Main activities: create brochures for the Ph.D. program and give talks at foreign universities to recruit international students.
8/2013-8/2014	Served as member of the ME Faculty Search Committee for the Computational Materials Position. Chair: Dr. Xiaodu Wang. Main activities: conduct search of faculty position, evaluate applications, and coordinate the online interviews with candidates.
1/2015-12/2015	Served as member of the F&A Committee. Main activities: analyze and recommend how to use the Mechanical Engineering F&A allocation. Chair: Dr. Yusheng Feng.
9/2015-12/2015	Served as member of the ME Faculty Search Committee for the Energy Position. Chair: Dr. Randall Manteufel. Main activities: conduct search of faculty position, evaluate applications, and coordinate the online interviews with candidates.
1/2016-12/2016	Served as member of the F&A Committee. Main activities: analyze and recommend how to use the Mechanical Engineering F&A allocation. Chair: Dr. Yusheng Feng.
9/2016-12/2017	Served as member of the PhD Exam Committee. Main activities: coordinate PhD exam.
9/2017-12/2015	Served as member of the ECE Faculty Search Committee for the Machine Learning and Data Analytics Position (Associate Professor). Chair: Dr. David Akopian. Main activities: conduct search of faculty position, evaluate applications, and coordinate the online interviews with candidates.

Service at College Level

12/2012	Served as banner for the College of Engineering, Commencement Ceremony.
5/2014	Served as banner for the College of Engineering, Commencement Ceremony.
5/2015	Served as banner for the College of Engineering, Commencement Ceremony.
4/2015-5/2015	Served as member in the COE Faculty Workload Policy Task Force, Chair: Mark Appleford.
5/2015	Served as reviewer in the UTSA seed grants. Activities: Evaluate CoE proposals.
9/2015	Served as reviewer in the UTSA Limited Submission panel review. Activities: Evaluate internal pre-proposals.
2/2016-4/2016	Served in the CoE Research Strengths Committee. Chair: Anson Ong.
5/2016	Served as reviewer in UTSA seed grants. Activities: Evaluate CoE proposals.
9/2017-12/2017	CoE faculty coordinator for the Dreamer Resource Center.

Service at University Level

11/2014	Participated in the marketing campaign of the Faculty Center. Activities: Provide testimonial and picture for the creation of marketing material.

5/2014	Served as reviewer in the UTSA Limited Submission panel review. Activities: Evaluate internal pre-proposals.
3/2015	Served in the development of the UTSA 2020 Blueprint. Pillar: Innovative Research and Discovery. Initiative Topic: Expand Internal Collaborations. Chair: Dan Hollas.
1/2016	Served in the Revision of HOP 2.41 - Endowed Chairs, Professorships and Faculty Fellowships. Chair: Jesse Zapata.
2/2017	Served as committee member in the President's Distinguished Achievement Award for Advancing Globalization. Chair: Sonia Alconini.

Service to the Community

3/2015	Served in the 2015 Texas Science and Engineering Fair as fair judge, senior division, energy and transportation. San Antonio, TX, March 28, 2015.

K.   PROFESSIONAL DEVELOPMENT

Write Winning Grant Proposals, Speaker: Dr. John D. Robertson, UTSA Research, San Antonio, Texas, November 2, 2015.

Army Research Laboratory Program Presentation, Speaker: Dr. Thomas Russell, UTSA Research, San Antonio, Texas, September 29, 2015.

Department of Defense Panel Discussion, UTSA Research, San Antonio, Texas, August 24, 2015.

Writing Successful Grants Workshops, Speaker: Dr. Robert Porter, UTSA Research, San Antonio, Texas, October 6, 2104.

Building the NSF Grant Proposal Workshop, Speaker: Dr. Robert Porter, UTSA Research - San Antonio Life Sciences Institute, San Antonio, Texas, October 6, 2104.

2014 Taking the Pentagon to the People Technical Assistance Training Conference, DoD's Office of Diversity Management and Equal Opportunity (ODMEO), UTSA Main Campus, San Antonio, Texas, September 18, 2014.

NSF Grant Writing for Engineering Disciplines, Speaker: Dr. Alexis Lewis, UTSA Research, San Antonio, Texas, September 16, 2014.

NSF Early Career Awards Grant Writing Seminar, Speaker: Dr. Alexis Lewis, UTSA Research, San Antonio, Texas, September 16, 2014.

DOD Targeted Document Workshop, Speaker: Dr. Michelle Atchison, Office of the Vice President for Research, San Antonio, Texas, May 14, 2014.

Engaging the DOD Workshop, Speaker: Dr. Michelle Atchison, UTSA Research, San Antonio, Texas, April 4, 2014.

Grant Writing for NIH, Speaker: Dr. Daniel Corcos, UTSA Research – Office of Research Support, San Antonio, Texas, March 25, 2014.

NSF Faculty Development Needs for Advanced Manufacturing in the USA Workshop, Arlington, Virginia, Jan 9-10, 2014.

NSF Summer Institute Course on Additive Manufacturing, Evanston, Illinois, May 29-31, 2013.

NSF 2013 Career Proposal Writing Workshop, Tampa, Florida. April 8-9, 2013.

Teaching Workshop, College of Engineering, UTSA, San Antonio, TX. December 11, 2012.

Tenure and Time Management. National Center for Faculty Development & Diversity. Keery Ann Rockquemore, San Antonio, TX. November 30, 2012.

Grant Writing Workshop. Grant Training Center. Austin, TX. November 7-9, 2012.

Working Together To Supersize Corporate Relationships, Foundation Relations and Corporate Engagement, UTSA, San Antonio, TX, November 2, 2012.

New Faculty Orientation, UTSA, San Antonio, TX, August 20 and 21, 2012.