Wandaliz Torres-García

CONTACT INFORMATION

Work: PO Box 9001
Mayagüez, PR 00681 USA
(787) 832-4040 x3819
wandaliz.torres@upr.edu

Personal: 228 Calle Dinamarca
San Germán, PR 00683 USA
wandaliz@gmail.com

INTERESTS

data mining, big analytics, statistical modelling, bioinformatics, engineering education

EDUCATION

Arizona State University, Tempe, Arizona USA
Ph.D., Industrial Engineering, May 2011
Dissertation: "Integrative Analyses of Diverse Biological Data Sources"
Committee Members: George C. Runger (Co-chair), Deirdre R. Meldrum (Co-chair), Weiwen Zhang, Jing Li, and Esma S. Gel.

University of South Florida, Tampa, Florida USA
Masters, Industrial Engineering, May 2006

University of Puerto Rico, Mayagüez, Puerto Rico USA
B.S., Industrial Engineering, May 2003

PROFESSIONAL EXPERIENCE

University of Puerto Rico, Mayagüez, Puerto Rico USA
School of Engineering
Department of Industrial Engineering
Assistant Professor **July 2014 - *Present***
Currently working on research areas within data mining, applied statistics and bioinformatics. Teaching the following courses:
ININ 4010: Probability and Statistics for Engineers
ININ 4018: Systems Simulation with Digital Computers
ININ 4020: Applied Industrial Statistics
ININ 4022: Probabilistic Models in Operations Research
ININ 5559: Engineering Statistics
ININ 4998: Undergraduate Research
ININ 4995: COOP Cooperative Education Program
ININ 6026: System Simulation

Arizona State University, Tempe, Arizona USA
School of Computing, Informatics, and Decision Systems Engineering
Academic and Student Affairs
Lecturer **June 2013 - July 2014**
Designed lab materials and led several sections of FSE100: Introduction to Engineering course created to ignite curiosity and excitement for the engineering field into our freshmen students 08/13 - 12/13 and 01/14 - 05/14. As part of the Freshmen Initiative team other duties include participation to programs to retain our engineering students (Engineering Projects in Community Service (EPICS), E2-Camp, Grand Challenges, others). Other courses under my guidance:
IEE 385: Engineering Statistics and Probability: 01/14 - 05/14
IEE 545: Simulating Stochastic Systems: 01/14 - 05/14 and 05/14 - 08/14

The University of Texas MD Anderson Cancer Center, Houston, Texas USA
Department of Bioinformatics and Computational Biology
Postdoctoral Fellow **June 2011 - June 2013**

Studying genomic rearrangements in over a thousand samples across different cancer types from The Cancer Genome Atlas project (TCGA) using RNA next-generation sequencing data through the development of a modular computational pipeline called PRADA (Pipeline for RNA sequencing Data Analysis). Identification of gene fusions could elucidate interesting patterns in the biology of the disease for better prognosis and development of targeted treatment drugs.

University of Texas Graduate School of Biomedical Sciences
Guest Lecture Assistant **November 20, 2012**
Led a computational exercise aimed to explore RNA-sequencing data using IGV (Integrative Genome Viewer) tool and to estimate differential gene expression values through statistical R packages.

Arizona State University, Tempe, Arizona USA

School of Computing, Informatics, and Decision Systems Engineering and the Center for Biosignatures Discovery Automation at the Biodesign Institute
Graduate Research Associate **January 2008 - May 2011**
Developed statistical data mining tools to study correlation between different types of post-genomic data and imaging (i.e. transcriptomic, proteomic and single-cell imaging). Submitted a research proposal to NIH and awarded September 2008. Received intensive laboratory training in microbiology, genetics, and proteomics techniques (i.e. butanol effect to Synecocystis cell growth). Analyzed SNPs datasets using boosted trees to study the association with Age-Related Macular Degeneration (AMD).

GK-12 Down to Earth Fellowship
NSF GK-12 Graduate Fellow **June 2009 - May 2010**
Developed, implemented and assessed an inquiry-based science lessons derived from cutting-edge research for middle school students in close partnership with teachers. School Site: Parkridge Elementary School - Peoria, AZ.

Industrial Engineering Department
Teaching Assistant **August 2006 - May 2008**
Work closely with professors to create academic tools to enhance students learning. Grade exams, projects, and quizzes, led two lab sessions, maintained class website through Blackboard, and held office hours. IEE 570: Advanced Quality Control: 01/08 - 05/08
IEE 380: Probability and Statistics: 01/07 - 05/07 and 08/07 - 12/07
IEE 598: Data Mining: 08/06 - 12/06
IEE 376: Introduction to Operations Research: 08/06 - 12/06

National Institutes of Health, Bethesda, Maryland USA

Biomedical Summer Research Program and the Office of Quality Management
Summer Intern **May 2007 - August 2007**
Designed and implemented a computer simulation to study shuttle bus utilization. Helped the office team with the preparation and analysis of surveys. Attended research seminars, workshops, and trainings offered through the 2007 Summer Research Program and NIH. Attended two-day training about statistical microarray analysis.

University of Southern California, Los Angeles, California USA

Bioinformatics Institute in Genomic Science and Computational Molecular Biology and Bioinformatics Department
Summer Research Intern **June 2006 - August 2006**

Conducted a literature review about microRNAs. Completed a 4-unit course in genomics and bioinformatics (BISC 478) and attended several research presentations and lab visits.

University of South Florida, Tampa, Florida USA

GK-12 Students, Teachers, and Resources in Sciences (STARS)
NSF GK-12 Graduate Fellow **July 2003 - May 2006**
Developed and implemented engineering, science, and math educational modules through close partnership with teachers of elementary schools from the Hillsborough County of the Florida state to enhance the K-5 curriculum in math and science. Trained teachers using advanced background knowledge and materials for modules for implementation in the classroom. Developed activities, lessons and organized administrative tasks for summer camps related to the science behind water and space. School Site: Lawton Chiles Elementary School - Tampa, FL

Focused Integrated Group (FIG) and Industrial and Management Systems Engineering Department
Research Assistant **June 2004 - October 2005**
Conducted literature review and assisted in proposal writing related to modeling drug response in cancer cells. Developed and executed a code in Visual Basic Application to segregate genes to specific sets. Coded C++ programs to execute data filtering and data binarization.

Advanced Biosensors Laboratory
Research Assistant **July 2003 - June 2004**
Designed statistical experiments to determine sources of variation affecting the performance of a fiber optic biosensors device (RAPTOR) and its laboratory-based version, the Analyte 2000.

Interamerican University of Puerto Rico, San Germán, Puerto Rico USA

Federal TRIO Math and Science Program
Math Tutor **September 1999 - May 2002**
Provided math tutoring and mentoring to high school students during the Saturday and Summer programs. Developed and supervised academic, social, and recreational activities.

University of Puerto Rico, Mayagüez, Puerto Rico USA

Alliance for Minority Participation
Research Team Member **August 2000 - March 2001**
Studied feasible recycling solutions for the PVC as a concrete component maintaining a required resistance.

Academic Excellence Program in the University of Puerto Rico, Mayagüez Campus.
Math Tutor **April 1999 - May 2001**
Developed, graded and discussed math exercises for university freshmen students. Advised students in successful study habits.

Peer-Reviewed Publications

W. Torres-García, M. Domenech. (2017) "Hedgehog-mesenchyme gene signature identifies bimodal prognosis in luminal and basal breast cancer sub-types.", *Molecular BioSystems*,13(12), 2615-2624, DOI: 10.1039/C7MB00416H.

K. Sircar, S.Y.Yoo, T. Majewski, K.Wani, L. R. Patel, H. Voicu, **W. Torres-García**, RG. Verhaak, N. Tannir, J. A. Karam, E. Jonasch, C. G. Wood, P. Tamboli, K. A. Baggerly, K. D. Aldape, B. Czerniak.(2015) "Biphasic Components of Sarcomatoid Renal Cell Carcinomas Are Molecularly

Similar but Distinct from Non-Sarcomatoid Renal Carcinomas", *Journal of Pathology Clinical Research*,1(4), 212-224, DOI: 10.1002/cjp2.23.

K. Yoshihara, Q. Wang , **W. Torres-García**, S. Zheng, R. Vegesna, H. Kim , RG. Verhaak.(2014) "The landscape and therapeutic relevance of cancer-associated transcript fusions ", *Oncogene*,34, 4845-4854, DOI:10.1038/onc.2014.406.

W. Torres-García, S. Zheng, A. Sivachenko, R. Vegesna, R. Yao, M. F. Berger, G. Getz, R.G.W. Verhaak. (2014) "PRADA: Pipeline for RNA sequencing Data Analysis", *Bioinformatics*, 30(15),2224-6.

K. Yoshihara, M. Shahmoradgoli, E. Martinez, R. Vegesna, H. Kim, **W. Torres-García**, V. Trevino, H. Shen, P. W. Laird, D. A. Levine, S. L. Carter, G. Getz, K. Stemke-Hale, G. Mills, R. G. Verhaak. (2013) "Inferring tumour purity and stromal and immune cell admixture from expression data", *Nature Communications*, 4, 2612.

The Cancer Genome Atlas Research Network*(**W. Torres-Garcia as part of the TCGA Analysis Working Group**). (2013)"Comprehensive molecular characterization of clear cell renal cell carcinoma", *Nature*, 499, 4349, DOI:10.1038/nature12222.

S. Zheng, J. Fu, R. Vegesna, Y. Mao, L. E. Heathcock, **W. Torres-García**, R. Ezhilarasan, S. Wang, A. McKenna, L. Chin, C. W. Brennan, A. K. Yung, J. N. Weinstein, K. D. Aldape, E. P. Sulman, K. Chen, D. Koul, R. G. Verhaak. (2013) "A survey of intragenic breakpoints in glioblastoma identifies a distinct subset associated with poor survival", *Genes & development*, 27(13), 1462-1472, doi:10.1101/gad.213686.113.

W. Torres-García, S. Ashili, L. Kelbauskas, R. Johnson, W. Zhang, G.C. Runger, and D.R. Meldrum. (2012) "A statistical framework for multiparameter analysis at the single-cell level", *Molecular BioSystems*, 8(3), 804-817, DOI:10.1039/C2MB05429A.

W. Torres-García, S. D. Brown, W. Zhang, G.C. Runger, R. Johnson, and D. R. Meldrum. (2011) "Integrative analysis of transcriptomic and proteomic data of Shewanella oneidensis: missing value imputation using temporal datasets", *Molecular BioSystems*, 7(4), 1093-1104, DOI:10.1039 /c0mb00260g.

W. Torres-García, W. Zhang, G.C. Runger, R. Johnson, and D. R. Meldrum. (2009) "Integrative analysis of transcriptomic and proteomic data of Desulfovibrio vulgaris: a nonlinear model to predict abundance of undetected proteins", *Bioinformatics*, 25(15), 1905-1914.

Peer-Reviewed Conference Proceedings

K. López-González, and **W. Torres-García**. (2018) "Modeling Survival in Breast Cancer: a Large Population Study", *Proceedings of the 2018 Industrial and Systems Engineering Research Conference.*

A. Moreno-Hernández and **W. Torres-García**. (2017) "Identification of Transcriptomic Patterns for Endometriosis Characterization using Ensemble Methods", *Proceedings of the 2017 Industrial and Systems Engineering Research Conference.*

I. Narvaez-Bandera and **W. Torres-García**. (2017) "Integration of Multi Omics Data for Breast Cancer Subtype Classification", *Proceedings of the 2017 Industrial and Systems Engineering Research Conference.*

K. López-González, C. Dvila, S. Dávila, and **W. Torres-García**. (2017) "Predicting Survivability using Breast Cancer Subtype with Transcriptomic Profiles", *Proceedings of the 2017 Industrial and Systems Engineering Research Conference.*

I. Narvaez-Bandera and **W. Torres-García**. (2016) "Data-driven Approach to Extract Molecu-

lar Patterns in Breast Cancer using Transcriptomic and Clinical Data", *Proceedings of the 2016 Industrial and Systems Engineering Research Conference.*

K. Yoshihara, Q. Wang , **W. Torres-García**, S. Zheng, R. Vegesna, H. Kim , RG. Verhaak.(2015) "The landscape of therapeutic targetable fusions", *Proceedings of the 106th Annual Meeting of the American Association for Cancer Research,*Published 1 August 2015,75,15 Supplement,3762, DOI:10.1158/1538-7445.AM2015-3762.

S. Dvila, **W. Torres-García**, and V. Cesan. (2015) "Mining the Profile of Successful IE Students: Using Historical Data to Drive Curricular Interventions", *Proceedings of the 2015 Industrial and Systems Engineering Research Conference.*

G. Centeno, S. Zekri, and **W. Torres-García**. (2006) "Impact Development and Implementation of Advanced Science Training Modules for Elementary Teachers", *Proceedings of 36th ASEE/IEEE Frontiers in Education Conference*, M2C-9 - M2C-14.

Papers in preparation

I. Narvaez-Bandera and **W. Torres-García**. *"IBIF-RF: Importance Between Interactive Features using Random Forest: a breast cancer case study".*

W. Torres-García and G.C. Runger. *"Multiple Time Series Approximations using Two-Dimensional Wavelets Approach".*

Invited Presentations

W. Torres-García, "Mesenchymal modulation and abundance of active Hh signaling in triple negative breast cancer, ", **Invited talk** at the *Forward Grantees Symposium*, Universidad del Este, Carolina, PR, May 27, 2017.

W. Torres-García, "Statistical Learning and Computational Biology: Crucial for Knowledge Discovery", **Invited talk** at the *Biotechnology Research Seminar*, Pontifical Catholic University of Puerto Rico, Ponce, PR, March 16, 2015.

W. Torres-García, S. Zheng, R. Vegesna, R. Yao, D. Cogdell, W. Zhang, Z.Ding, P. German, E. Jonasch, M. F. Berger, A. Sivachenko, G. Getz, R. G.W. Verhaak. "Identification of gene fusions using RNA Sequencing Data", **Invited talk** at *The Cancer Genome Atlas' 2nd Annual Scientific Symposium: Enabling Cancer Research Through TCGA*, Arlington, VA, November 28, 2012.

W. Torres-García, "Understanding Genomic, Transcriptomic and Proteomics Data using Gradient Boosted Trees", **Invited talk** at the *2009 Institute for Operations Research and Management Sciences (INFORMS) Annual Conference*, San Diego, CA, October 14, 2009.

Conference Presentations

K. López-González, and **W. Torres-García**. (2018) "Modeling Survival in Breast Cancer: a Large Population Study", *Proceedings of the 2018 Industrial and Systems Engineering Research Conference.* To be presented on May 2018.

W. Torres-García, and M. Domenech. (2017) "Computational Analysis of Hedgehog-Mesenchymal Gene Expression in Breast Cancer", *Proceedings of the 2017 Industrial and Systems Engineering Research Conference.* Presented at the IISE Annual Conference and Expo, Pittsburgh, PA, May 23, 2017.

A. Moreno-Hernández and **W. Torres-García**. (2017) "Identification of Transcriptomic Patterns for Endometriosis Characterization using Ensemble Methods", *Proceedings of the 2017 Industrial and Systems Engineering Research Conference.* Presented at the IISE Annual Conference and Expo, Pittsburgh, PA, May 22, 2017.

K. López-González, C. Dávila, S. Dávila, and **W. Torres-García**. (2017) "Predicting Survivability using Breast Cancer Subtype with Transcriptomic Profiles", *Proceedings of the 2017 Industrial*

and Systems Engineering Research Conference. Presented at the IISE Annual Conference and Expo, Pittsburgh, PA, May 22, 2017.

I. Narvaez-Bandera and **W. Torres-García**. (2017) "Integration of Multi Omics Data for Breast Cancer Subtype Classification", *Proceedings of the 2017 Industrial and Systems Engineering Research Conference*. Presented at the IISE Annual Conference and Expo, Pittsburgh, PA, May 21, 2017.

I. Narvaez-Bandera and **W. Torres-García**. (2016) "Data-driven Approach to Extract Molecular Patterns in Breast Cancer using Transcriptomic and Clinical Data", *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*. Presented at the IISE Annual Conference and Expo, Anaheim, CA, May 23, 2016.

S. Dávila, **W. Torres-García**, and V. Cesan. "Mining the Profile of Successful IE Students: Using Historical Data to Drive Curricular Interventions", *Proceedings of the 2015 Industrial and Systems Engineering Research Conference*. Presented at the IIE Annual Conference and Expo, Nashville, TN, June 1, 2015.

W. Torres-García, Siyuan Zheng, Rahulsimham Vegesna, Rong Yao, David Cogdell, Wei Zhang, Zhiyong Ding, Peter German, Eric Jonasch, Michael F. Berger, Andrey Sivachenko, Gad Getz, Roel G.W. Verhaak. "PRADA: Pipeline for RNA sequencing Data Analysis", Poster presented at *The Cancer Genome Atlas' 2nd Annual Scientific Symposium: Enabling Cancer Research Through TCGA*, Arlington, VA, November 27-28, 2012.

W. Torres-García, and Roel G.W. Verhaak on behalf of the TCGA-KIRC Analysis Working Group. "Identification of recurrent gene fusions in kidney clear-cell carcinoma using RNA sequencing data", Poster presented at *The Cancer Genome Atlas' 1st Annual Scientific Symposium: Enabling Cancer Research Through TCGA*, National Harbor, MA, November 17-18, 2011.

W. Torres-García and Roel G.W. Verhaak. "Identification of gene fusions in kidney clear cell carcinoma using RNA sequencing data", Poster presented at *8th Annual Biotechnology and Bioinformatics Symposium*, Houston, TX, October 20-21, 2011 (awarded best poster).

W. Torres-García, S. Ashili, L. Kelbauskas, W. Zhang, G.C. Runger, and D.R. Meldrum. "Statistical framework for multiparameter analysis at the single-cell level". Post-conference volume of the Proceedings 5th. International Symposium on Bio- and Medical Informatics and Cybernetics (BMIC 2011), Orlando, FL, July 19- 22, 2011.

W. Torres-García, "Missing value imputation through integration of Shewanella oneidensis temporal datasets" Poster presented at the *More Graduate Education at Mountain States Alliance (MGE@MSA) Student Research Conference 2011*, Tempe, AZ, February 8, 2011.

W. Torres-García, "Multiple Time Series Approximations using Two-Dimensional Wavelets Approach", Presentation at the *2010 Institute for Operations Research and Management Sciences (INFORMS) Annual Conference*, Austin, TX, November 9, 2010.

S. Ashili, L. Kelbauskas, J. Houkal, Y. Tian, H. Zhu, C. Youngbull, X. Zhou1, D. Smith, M. Hupp, P. Senechal-Willis, T. Ray, A. Brunner, F. Su, I.S. Elango,**W. Torres-García**, S. A. Merza, A. Mohammadreza, J. Myers, K. Lee, A. Kumar, V. Kuppuswamy, P. Kahn, P. Wiktor, S. McQuaide, N. Fitzgerald, M. Konopka, J. Anderson, T. Paulson, S-H. Jang, L. Burgess, B. Cookson, A. Jen, M. Holl, R. Johnson and D. Meldrum, "Technology development for single-cell phenotype measurements", Poster presented at the *Eighth Annual Grantee Meeting for Centers of Excellence in Genomic Science National Human Genome Research Institute National Institutes of Health*, Tempe, AZ, October 27-29, 2010.

W. Torres-García and J. Corbett, "Biosensors and Diabetes: Engineering-based lesson con-

structed through a real life topic which incorporates different learning techniques." Poster presented at the *GK-12 session of the 2010 American Association for the Advancement of Science (AAAS) Annual Meeting*, San Diego, CA, February 19, 2010.

W. Torres-García, "Analysis of Transcriptomic and Proteomic Data using Gradient Boosted Trees." Poster presented at the *More Graduate Education at Mountain States Alliance (MGE@MSA) Student Research Conference 2010*, Tempe, AZ, January 28, 2010.

W. Torres-García, "Nonlinear Data-driven Model to Predict Protein Abundance using Stochastic Gradient Boosted Trees", Presentation at the *2009 Institute for Operations Research and Management Sciences (INFORMS) Annual Conference*, San Diego, CA, October 14, 2009.

W. Torres-García, "Data Mining Challenges in Biological Systems", Presentation at the *2008 Institute for Operations Research and Management Sciences (INFORMS) Annual Conference*, Washington, DC, October 15, 2008.
`http://biblio.informs.org/showConfRecord.php?id=52415`

O.C. Cash, **W. Torres-García**, G. Okogbaa, and T.K. Das, "Thematic summer camp design by STARS", Presentation at the *GK-12 Symposium of the Florida Academy of Sciences' 70th Annual conference* held at FIT, Melbourne, FL, March 11, 2006.

W. Torres-García, "Prediction of Chemotherapy Response in High Risk AML Patients Using Gene Expression Profile", Poster presented at the *Sixth Annual More Graduate Education at Mountain States Alliance (MGE@MSA) Student Research Conference* [1st Place Award: Poster Presentation], Tempe, AZ, April, 2006.

W. Torres-García, "Prediction of Chemotherapy Response in High Risk AML Patients Using Gene Expression Profile", Poster presented at the *Institute for Operations Research and Management Sciences (INFORMS) Annual Conference –Minorities Forum–*, San Francisco, CA, November 13-16, 2005.

R. Ganesan, T. K. Das,**W. Torres-García**, "Prediction of Chemotherapy Response in High Risk AML Patients Using Gene Expression Profile", Presentation at the *Institute for Operations Research and Management Sciences (INFORMS) Annual Conference*, San Francisco, CA, November 13, 2005.
`http://biblio.informs.org/showConfRecord.php?id=39036`

W. Torres-García, "Extended Mathematica's capabilities to solve triangle-trigonometry problems by implementing the Law of Sines, the Law of Cosines, and Hero' s formula.", Presentation at the *1997 Association of Computer/Information Sciences and Engineering Departments at Minority Institutions (ADMI) Symposium –Increasing Diversity in Research and Education–*, Washington DC, May, 1997.

Grants

Current Project Grants

Project/Proposal Title: ERC CMaT: Cellular Based Manufacturing Technologies (Role: Senior Personnel, PI: K. Roy, Co-PI: M. Torres-Lugo
Source of Support: National Science Foundation Total Award Period Covered: 10/01/2017 - 10/01/2022 Location of Project: University of Puerto Rico Mayaguez

Project/Proposal Title: CREST Phase II: Nanotechnology Center for Biomedical Environmental and Sustainability (Role: Senior Personnel, PI: M.O. Suaréz)
Source of Support: National Science Foundation Total Award Period Covered: 04/01/2014 - 04/01/2019 Location of Project: University of Puerto Rico Mayaguez

Past Project Grants
Project/Proposal Title: Mesenchymal Modulation and Abundance of Active Hh Signaling in Triple Negative Breast Cancer(Role: CO-PI, PI: M. Domenech)
Source of Support: Puerto Rico Science and Technology Trust: Small Research Grant Total Award Amount: $70,000 Total Award Period Covered: 01/01/2016 - 01/01/2017 Location of Project: University of Puerto Rico Mayaguez

Junior Faculty Small Research Grant Program: PR Science Trust, Role: Co-PI, Project Budget: $90,000 for 9 months (01/2016-09/2016).
Selected to be part of the 2014 NIH Grant Writing Initiative (GWI) - University of Puerto Rico Mayaguez.

Conferences Participation

2nd Puerto Rico Project Kaleidoscope Regional Meeting, San Juan, PR, May 26, 2017.

IISE Annual Conference and Expo 2017, Pittsburgh, PA, May 20-24, 2017.

High Impact Applications of Data Science in Precision Medicine, Health Analytics, and Health Disparities Workshop, Atlanta, GA, September 18-20, 2016.

Engineering Early-Faculty Career Development Symposium at the HENAAC Conference, Anaheim, CA, October 6-10, 2016.

IISE Annual Conference and Expo 2016, Anaheim, CA, May 20-24, 2016.

Winter Simulation Conference, Huntington Beach, CA, December 6-9, 2015.

IIE Annual Conference and Expo 2015, Selected for the New Faculty Colloquium, Nashville, TN, May 30 to June 2, 2015.

U54 Ponce School of Medicine Partnership Retreat 2015, Bioinformatics Core Committee Meeting, Copamarina Resort, Guánica, PR, May 18, 2015.

Alpha Delta Kappa State Conference 2015, Mayagüez, PR, April 18, 2015.

8th NAE Science Day, Poster Judge, Mayagüez, PR, March 19, 2015.

Junior Technical Meeting-Puerto Rico Interdisciplinary Scientific Meeting 2015, Session Moderator, UPR - Río Piedras, PR, March 14, 2015.

INFORMS Annual Meeting 2014, Bridging data and decisions: Selected for the New Faculty Colloquium, San Francisco, CA, November, 9-12, 2014.

The Cancer Genome Atlas: An Extraordinary Enterprise, Gulf Coast Consortium for Quantitative Biomedical Sciences, Houston, TX, April 14-15, 2011.

Remote Participant Webcast and Blog: Planning the Future of Genomics Foundational Research and Applications in Genomic Medicine Meeting, National Human Genome Research Institute, Bethesda, MD, July 6-8, 2010.

Phoenix Grand Challenges Summit Series, National Academy of Engineering (NAE), Phoenix, AZ, April 8-9, 2010.

INFORMS Western Regional Conference, Institute for Operations Research and Management Sciences, Arizona State University, Tempe, AZ, April 24-25, 2009.

INFORMS Conference on O.R. Practice, Institute for Operations Research and Management

Sciences, Phoenix, AZ, April 26-28, 2009.

Biomedical Informatics for Clinical Decision Support: Bioengineering Consortium (BECON) and Biomedical Information Science and Technology Initiative Consortium (BISTIC) Conference, National Institutes of Health, Bethesda, MD, June 2003.

Other Professional Experience and Comprehensive Projects

Surface Mount Technology Factory University of Puerto Rico Mayagüez, Mayagüez, Puerto Rico USA

Project team member **January 2003 - May 2003**

Designed a comprehensive PC-board production system using Manufacturing Controller Software (SAP) as a class project. Teamwork with another industrial engineer student.

Cabo Rojo Salts Flats Interpretive Center, Cabo Rojo, Puerto Rico USA

Project team member **August 2002 - December 2002**

Designed and implemented a facility layout for the construction of an interpretive center as a class project. Teamwork with another industrial engineer student.

Merck Sharp and Dohme, Barceloneta, Puerto Rico USA

Summer intern **June 2002 - July 2002**

Analyzed discrepancies between real consumption and the quantities specified by the Bill of Material (BOM). Two hundred and eleven (211) BOM's were analyzed and 95% were revised.

Hewlett Packard, Aguadilla, Puerto Rico USA

Project team member **August 2001 - December 2001**

Ergonomically re-designed a receiving area as a class project. Teamwork with two other industrial engineer students.

University of Puerto Rico, Mayagüez, Puerto Rico USA

Project team member **August 2001 - December 2001**

Designed and constructed a model based on a Control Process in Real Time using DirectSoft32, PLC, Wonderware, and mechanical devices to simulate a bottling process as a class project. Teamwork with two other industrial engineer students.

GE Transportation Systems, Erie, Pennsylvania USA

Summer intern **May 2001 - August 2001**

Conducted data analysis of due and overdue parts in the wreck repair department. Documented locomotive parts that required repair and maintenance. Completed training in Six Sigma and was awarded the "most" creative presentation.

Medical Services Department University of Puerto Rico, Mayagüez, Puerto Rico USA

Office Assistant **January 1999 - October 2002**

Designed banners and flyers to provide information on prevention of diseases; developed a comprehensive mail documentation system; worked with confidential information; managed health plan problems, and performed others duties. Had responsibility for transfer and foreign students, registering patients, filing, and other administrative duties.

University at Buffalo's Upward Bound Math/Science Center, Buffalo, New York USA

Summer Student **Summer 1996 and Summer 1997**

Developed a Science Fair Project based on electricity. Received the following recognitions: Academic Award of Excellence, Excellence in Trigonometry, and Excellence in Physics

Honors and Awards

Fellowships

2010 - 2011 Ted Thal American Society for Quality (ASQ) Fellowship, ASU

2009 - 2010 National Science Foundation Graduate (NSF) GK12 Down to Earth Fellowship
2008 - 2011 National Institutes of Health (NIH), Research Supplement, ASU
2006 - 2006 Fulton Enrichment Fellowship, ASU
2006 - 2006 University Graduate Scholar (UGS) Award, ASU
2004 - 2005 Latino Graduate Fellowship, USF
2003 - 2006 National Science Foundation (NSF) STARS Fellowship, USF
2002 - 2003 Merck Sharp and Dohme IT Fellowship
2000 - 2001 Alliance for Minority Participation Academic Excellence Scholarship, UPRM

Honors Societies Membership Since:

2006 **Pi Mu Epsilon** Math Honor Society: Florida Chapter
2001 **Tau Beta Pi** Honor Society: Public Relations PR Alpha Chapter (2001-2002)
2001 **Alpha Pi Mu** Honor Society of Industrial Engineers
2001 **Phi Kappa Phi** Honor Society
2000 **Golden Key** National Honor Society
2000 United States Achievement Academy (USAA)
2000 National Collegiate Engineering Awards
2000 National Collegiate Minority Leadership Awards

Highlighted Recognitions

2017 UPRM Distinguished Professor of the Industrial Engineering Department
2016 UPRM Distinguished Professor of the Industrial Engineering Department
2011 Best Poster Award at the 8th Annual Biotechnology and Bioinformatics Symposium.
2009 Genomic Careers video interview for the National Human Genome Research Institute.
`http://www.genome.gov/GenomicCareers/video_view.cfm?id=253`
2006 First Place Poster Presentation Award at MGE@MSA Student Research Conference
2005 Featured in the GK-12 NSF STARS Track 1 Program Accomplishments video
`http://stars.eng.usf.edu/DVD/VTS_01.wmv`
2002 Second Place Design Competition of an Assembly Machine at UPRM

Professional Service

Institute of Industrial Engineers (IIE)

2014 - Present Student Chapter 891, Faculty Advisor
2006 - 2011 Student Chapter 802, Member
2005 - 2006 Student Chapter 897, 2006 Region 3 Conference Administration Chair
2003 - 2004 Student Chapter 897, Secretary
2002 - 2003 Student Chapter 897, President

Institute for Operations Research and the Management Sciences (INFORMS)

2009 - 2011 Arizona State University Student Chapter, Active Member
2007 - 2009 Arizona State University Student Chapter, Treasurer
2006 - 2007 Arizona State University Student Chapter, Member
2005 - 2006 University of South Florida Student Chapter, Webmaster

National Aeronautics and Space Administration (NASA) - Motivating Undergraduates in Science and Technology (MUST) Mentoring Program

2009 - 2011 NASA-MUST, Mentor

Arizona State University Envoy Ambassadors Program

2010 - 2011 School of Computing, Informatics and Decisions Systems Engineering, Recruiter
2009 - 2010 Industrial Engineering Department, Recruiter

Society of Hispanic Professional Engineers (SHPE)

2008 - 2009 Arizona State University Student Chapter, Member
2003 - 2004 University of South Florida Student Chapter, Member
2001 - 2003 University of Puerto Rico Mayagüez Student Chapter, Member

Association of Guidance Students
1999 - 2003 University of Puerto Rico Mayagüez Organization, Member

American Society for Quality (ASQ)
2001 - 2003 University of Puerto Rico Mayagüez Student Chapter, Member

Computer Skills

Statistical Packages: R, Minitab, WEKA, JMP and SAS.
Engineering Computing Platforms: Matlab, ARENA, SIMUL8, LINDO.
Programming Languages: Perl, C, C++ and Visual Basic .NET.
Applications: LaTeX, Microsoft Office.
High Performance Computing: Portable Batch System (PBS) Scheduler System.
Bioinformatics tools: Bio::Perl, R Bioconductor, IGV, BLAST, BWA, samtools, Picard, GATK.
Operating Systems: Windows, UNIX and LINUX.