

Extended Academic Curriculum Vitae

J. René Villalobos

School of Computing, Informatics and Decision Systems Engineering
Ira A. Fulton School of Engineering
Arizona State University
Tempe, AZ 85287

Phone: (480)965-0437
E-mail: rene.villalobos@asu.edu

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EDUCATION

Ph.D. in Industrial Engineering - December 1991

Texas A&M University

College Station, Texas

Dissertation: "Inspection Strategies for Flexible Inspection Systems"

Chairman of the Advisory Committee: Dr. Joseph W. Foster

M.S. in Industrial Engineering - August, 1987

University of Texas at El Paso, El Paso, Texas

Thesis: "A Computer Vision System for Solderability Inspection"

Chairman of the Advisory Committee: Dr. Carroll W. Johnson

B.S. in Industrial-Mechanical Engineering - February, 1982

Instituto Tecnológico de Chihuahua, Chihuahua, Mexico

ACADEMIC, RESEARCH AND INDUSTRIAL EXPERIENCE

Associate Professor, Ind. Eng. Dept., Arizona State University, Tempe, AZ, January 1999-Present.

Site Director, Center for Engineering Logistics and Distribution (CELDi)an NSF I/UCRC Center, August 2008-Present

Site Director, US-AID sponsored project “U.S.-Mexico Partnership on Education and Technology Transfer for the Aerospace Industry, Arizona State University, Tempe, AZ, May 2004-December 2007.

Assistant Director, the Industrial Assessment Center, Arizona State University, September 2002-December 2006.

Associate Professor, Mech. & Ind. Eng. Dept., The University of Texas at El Paso, El Paso, Texas, September 1997-December 1998.

Director of Manufacturing Engineering Program, Mech. & Ind. Eng. Dept., The University of Texas at El Paso, El Paso, Texas, December of 1993-Present.

Director, Center for Electronics Manufacturing, Mech. & Ind. Eng. Dept., The University of Texas at El Paso, El Paso, Texas, September 1995-Sept. 1998.

Assistant Professor, Mech. & Ind. Eng. Dept., The University of Texas at El Paso, El Paso, Texas, September of 1991-August 1997.

Lecturer, Industrial Engineering Department, Texas A&M University, 1990 - 1991.

Research Assistant/Lab. Manager, Automated Visual (AVI) Laboratory, Industrial Engineering Department, Texas A&M University, 1987 - 1990.

Research Assistant, Computer Vision Laboratory, Mechanical and Industrial Engineering Department, University of Texas at El Paso, 1986 - 1987.

Teaching Assistant, Mechanical and Industrial Engineering Department, University of Texas at El Paso, 1985 - 1986.

INDUSTRIAL EXPERIENCE

Industrial Engineer, Packard Electric, Juarez, Mexico, 1987.

Project Engineer, Renault Co., Gomez Palacio, Mexico, 1982-1984.

Research Intern, Celulosa de Chihuahua, Chihuahua, Mexico, 1982.

SAMPLE OF CONSULTANCY AND PROFESSIONAL PROJECTS

Thomson Consumer Electronics, SL Waber, El Paso Foreign Trade Association, CAADES, Diesel Recon, White-Rodgers, TRW, Lear (United Technologies Automotive)

Awards

1993 IIE Doctoral Dissertation Award Recipient

1995 NSF Early Career Development Program (Career) Grant Recipient

Alpha Pi Mu (Industrial Engineering Honor Society)

SCHOLARSHIP

Refereed Journal Publications, Published

- 1 Griffin, P., J.R. Villalobos and J.W. Foster "Recognition and Matching of Occluded Objects," *The International Journal of Advanced Manufacturing Technology*, Vol. 4, 1989, pp. 263-268.
- 2 Foster, J.W., P. Griffin, J.R. Villalobos and S.L. Messimer "Automated Visual Inspection: A Tutorial," *Computers and Industrial Engineering*, Vol. 18, 1990, pp. 493-504.
- 3 Griffin, P., J.W.Foster, S.L. Messimer and J.R. Villalobos "Automated Visual Inspection of Bare Printed Circuit Boards," *Computers and Industrial Engineering*, Vol. 18, 1990, pp. 505-509.
- 4 Foster, J. W., Malave, C. O., and Villalobos, J. R., "Flexible Inspection within an Aggregated Information Environment," *Computers and Industrial Engineering*, 19, 224-228, 1990.
- 5 Villalobos, J.R. and J.W. Foster, "Some Results of a Model of a Dynamic Inspection Allocation", *Computers and Industrial Engineering*, 20, 355-358, 1991.
- 6 Foster, J.W., S. Kona and J.R. Villalobos "A Simple Statistic for the Detection of Missing Components on PCBs *Computers and Industrial Engineering*, Vol. 21, No. 1-4, pp. 339-342, 1991.
- 7 Villalobos, J.R., R. Parra and W.C. Johnson "A Solderability Inspection System," *The International Journal of Advanced Manufacturing Technology*, Vol. 7, 1992, pp. 144-149.
- 8 Villalobos, J.R., J.W. Foster and R.L. Disney "Flexible Inspection Systems for Serial Multistage Production Systems," *IIE Transactions*, Vol. 25, Num. 3, pp. 16-26, 1993.
- 9 Griffin, P., and J.R. Villalobos "Process Capability of Automated Visual Inspection Systems," *IEEE Transactions on Systems, Man and Cybernetics*, Vol. 22, No. 3, pp. 441-448, 1992.
- 10 Foster, J.W., S. Kona and J.R. Villalobos "Detection of Missing Components Using a Goodness-of-Fit Test on Pixel Frequency distribution," *The International Journal of Advanced Manufacturing Technology*, Vol. 7, pp. 378-384, 1992.
- 11 Estrada, F., J.R. Villalobos and L. Roderick "Evaluation of Just-in-Time Strategies in the Electric Wire-Harness Industry," *The International Journal of Production Research*, Vol. 35, No. 7, pp. 1993-2008, 1997.
- 12 Guerra, Enrique, Alfonso Manriquez and J. Rene Villalobos "Three Dimensional Automated Visual Inspection of Surface Mounted Devices," *Computers and Industrial Engineering*, Vol. 33, Num. 1-2, Oct 1997.
- 13 Hutchinson, S., J.R. Villalobos and M. Beruvides "Managing Work Time Variability Caused by Labor Turnover in a Serial Assembly Line", *The International Journal of Production Research*, Vol. 35, No. 11, pp. 3201-3223, 1997.
- 14 Quintana, R. and J.R. Villalobos, "A Systematic Performance Rating Methodology," *International Journal of Industrial Engineering*, Vol. 5, Num. 2, June 1998.
- 15 Guerra, Enrique and J. Rene Villalobos "A three dimensional Automated Visual Inspection System for SMT Assembly, *Computers and Industrial Engineering*, Vol. 40. Num. 1-2, pp. 175-190 June 2001
- 16 Verduzco, A, J.R. Villalobos and B. Vega, "Information-Based Inspection Allocation for Real-Time Inspection Systems," *Journal of Manufacturing Systems*, Vol. 20, No.1, pp. 13-22, 2001.
- 17 Munoz L. and J.R. Villalobos "Work Allocation Strategies for Serial Assembly Lines under High Labor Turnover", *International Journal of Production Research*, Vol. 40, No. 8, pp. 1835-1852, 2002.

- 18 Villalobos, J.R., M. Arellano, A. Medina and F. Aguirre, "Vector Classification of SMD Images," *Journal of Manufacturing Systems*, Vol. 22, No. 4, pp. 265-282, 2003.
- 19 Villalobos, J.R., L. Munoz and M.A. Gutierrez, "An Application of Fixed and Adaptive Multivariate SPC Charts for On-line Monitoring of SMD Assembly," *International Journal of Production Economics*, Vol. 95, No. 1: pp. 109-121, 2005.
- 20 Van den Briel, M. , J.R. Villalobos, G.L. Hogg, T. Lindeman and A. Mule, "Development of Efficient Boarding Strategies at America West Airlines," *Interfaces*, Vol. 35, No. 3, pp. 191–201, May–June 2005.
- 21 Garcia H., R. Villalobos and G. Runger, "Automated Feature Selection for Visual Inspection Systems," *IEEE Transactions on Automation Science and Engineering*, Vol. 3, No. 4, pp. 394 – 406, October 2006.
- 22 Montano, A, J.R. Villalobos, M.A. Gutierrez and L.R. Mar, "Performance of Serial Assembly Line Designs under unequal Operator Speeds and Learning," *International Journal of Production Research*, Vol. 45 No 22, pp. 5355–5381, 2007.
- 23 Jeong, In-Jae; J.V. Leon, V Jorge; and J. R. Villalobos, " Integrated decision support system for diagnosis, maintenance planning and scheduling of manufacturing systems," *International Journal of Production Research*, Vol. 45, Num 2, pp. 267 – 285, 2007.
- 24 Villalobos, JR, "The Stock Portfolio Game," *INFORMS Transactions on Education*, Vol. 8, Num. 1, September 2007, <http://ite.pubs.informs.org/Vol8No1/Villalobos/>
- 25 Alghandoor, A., P.E. Phelan, R. Villalobos, B.E. Phelan, "U.S. Manufacturing Aggregate Energy Intensity Decomposition: the Application of Multivariate Regression Analysis," *International Journal of Energy Research*, Volume 32, Issue 2, Pages 91 – 106, 2008.
- 26 Alghandoor, A., P.E. Phelan, R. Villalobos, B.E. Phelan, "Modeling and Forecasting the U.S. Manufacturing Aggregate Energy Intensity," *International Journal of Energy Research*, Volume 32, Issue 6, Pages 501 – 513, 2008.
- 27 Quintana, R., J.H. Wang, J.R. Villalobos and M. Graul, "Corrective Maintenance through Dynamic Work Allocation and Preemption: Case Study and Application of Bucket Brigade System" *International Journal of Production Research*, Volume 47, Number 13, pp. 3539-3557, January 2009.
- 28 Garcia, H and J.R. Villalobos, "Automated Refinement of Automated Visual Inspection Algorithms," *IEEE Transactions on Automation Science and Engineering*, Volume 6, Issue 3, pp. 514 – 524, July 2009.
- 29 Ahumada, O. and J.R. Villalobos, "Application of Planning Models in the Agri-Food Supply Chain: A review," *The European Journal of Operational Research*, 2008, Volume 196, Issue 1, 1, Pp. 1-20, July 2009.
- 30 Garcia H., R. Villalobos, R. Pan and G. Runger, "A Novel Feature Selection Method for the Quadratic Discriminant Function." *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 31, Issue 7, pp.1338 – 1344, July 2009.
- 31 González-Ramírez, R. G., R. G. Askin, N. R. Smith, and R. Villalobos, "Shipment Consolidation by Terminals and Vehicles", *Revista de Matemática: Teoría y Aplicaciones*, 16(1), pp. 178-187, 2009.
- 32 Ahumada, O. and J.R. Villalobos, "Planning the Production and Distribution of Fresh Produce," *Annals of Operations Research*, 2009, In Press, DOI: 10.1007/s10479-009-0614-4
- 33 Villalobos, J.R, M.A. Gutierrez, L. Mar, and O. Sanchez, "The Use of Dynamic Work Sharing Production Methods to Adapt to Labor Turnover in Serial Assembly Lines," *International Journal of Manufacturing Technology and Management*, In press, 2009.

- 34 Aguirre, F, J.R. Villalobos, P.E. Phelan, J.R. Pacheco, "Development of Energy-Production Signatures to Assess the Relative Energy Use Efficiency in a Manufacturing Plant," *Energy: The International Journal, In Press*, 2009.
- 35 Alghandoor, A., P.E. Phelan, P.E., J.R. Villalobos, J.O. Jaber, "Energy and Exergy Utilizations of the U.S. Manufacturing Sector," *Energy, In Press*, 2010.

Refereed Journal Publications, Under Review

- 36 Cordova, G, PM Griffin, and JR Villalobos, "Multimodal Supply Chain Design for the US-Mexico Trade Environment Under NAFTA," under review, *Transportation Research*, 2007
- 37 Polanco, J., J.R. Villalobos, K. Kempf and G. Runger "Balancing Fixed and Option Contracts for Capacity Reservation and Supply Chain Coordination," *International Journal of Production Economics*, Under Review, 2008.
- 38 Ahumada, O., J.R. Villalobos and A. Maltz, "A Continuous Improvement System for Inbound Transportation," *International Journal of Physical Distribution and Logistics Management*, Under Review, 2008.
- 39 Garcia, H, J.R. Villalobos, G. Runger and A. Garcia, "A feature construction methodology for reconfigurable automated inspection systems," *Pattern Recognition*, Under Review, 2010.
- 40 Ahumada, O. and J.R. Villalobos, "Operational Model for Planning the Harvest and Distribution of Perishable Agricultural Products," *International Journal of Production Economics*, 2010, Under Review.

Refereed Conference Proceedings

- 41 Johnson, C.W., J.R. Villalobos, X. Man and R. Parra "A Statistical Approach to Image Segmentation on a Cylindrical Surface," *IEEE International Conference on Systems, Man, and Cybernetics*, Beijing, China, August 1988.
- 42 Hernandez, M.E., J.R. Villalobos and W.C. Johnson "Sequential Computer Algorithms for Printed Circuit Board Inspection," *Society of Photo-Optical Instrumentation Engineers Annual Conference*, Boston, Massachusetts, Nov. 1993.
- 43 Gallegos, J.M., J.R. Villalobos and S.D. Cabrera "Sequential Algorithms for the Inspection of Surface-Mounted Devices," *Proc. of SPIE Intelligent Robots and Computer Vision XIII*, SPIE Vol. 2354, pp. 215-226, Boston, MA, Nov. 1994.
- 44 Cabrera, S.D., J.M. Gallegos, G. Thomas and J.R. Villalobos, "Aplicaciones de Procesamiento Digital de Señales e Imágenes de Manufactura," *Proceedings of XXIII Convencion Panamericana de Ingenieros 1994*, Acapulco, Gro., Mexico, July 1994.
- 45 Gallegos, J.M., J. Rene Villalobos and S.D. Cabrera "Implementación de un Sistema de Inspección Visual Flexible para Tecnología de Dispositivos de Montaje de Superficie", *Proceedings of Electro ' 94*, Chihuahua, Chih., Mexico, Oct. 1994.
- 46 Gallegos, J.M., J.R. Villalobos, G. Carrillo and S.D. Cabrera, "Reduced-Dimension and Wavelet Processing of SMD Images for Real-Time Inspection," *Proc. of IEEE Southwest Symposium on Image Analysis and Interpretation 96*, San Antonio, TX, April 8-9, 1996.
- 47 Villalobos, J.R. and V.J. Leon, "Center for Electronics Manufacturing," *5th Industrial Engineering Research Conference*, Minneapolis, Minnesota, May 18-20, 1996.
- 48 Gallegos, J.M., L. Villalobos, J.R. Villalobos and S.D. Cabrera, "Improved Inspection Algorithms Using Vector Decision Techniques", *Proceedings of Electro ' 96*, Chihuahua, Chih., Mexico, Oct. 1996.

- 49 Li, BingCheng, J. Rene Villalobos, M. Gallegos and S. Cabrera, "Diffusion Equation and its Application to SMD Inspection," *Society of Photo-Optical Instrumentation Engineers Annual Conference*, San Jose, CA, Feb. 1997.
- 50 Villalobos, J.R. and A. Verduzco, "Integration of Quality and Process planning activities in SMD Assembly," *Proc. of 6th Industrial Engineering Research Conference*, Miami Beach, Florida, May 17-18 1997.
- 51 Muñoz, L.F. , B. Vega and J. R. Villalobos, " Multivariate On-line Quality Monitoring of SMD Assembly," *Proc. of 7th Industrial Engineering Research Conference*, Banff, Canada May 1998.
- 52 Verduzco, A. and J. R. Villalobos, "Information-Based Inspection Allocation," *Proc. of 7th Industrial Engineering Research Conference*, Banff, Canada May 1998.
- 53 Villalobos, J.R., "On-Line Quality Monitoring Module for SMD Assembly," *Proc. of 1999 Design and Manufacturing Grantees Conference*, Long Beach, California, January 1999
- 54 Villalobos, J.R and L.F. Munoz, "Assembly Lines Designs that Reduce the Impact of Personnel Turnover," *Proc. of IIE Solutions Conference*, Phoenix, AZ, May 1999.
- 55 De Unanue, A, F. Ruiz and J.R. Villalobos, "Desarrollo de herramientas de comunicación vía Internet para la Tele-operación de un sistema de Inspección Visual Automática," *Proc. of Cie 2000 Conference*, Mexico City, September 5-7, 2000.
- 56 De Unanue, A, F. Ruiz and J.R. Villalobos, "JMVL: Diseño y realización de un Laboratorio Virtual de Manufactura con JINI," *Proc. of Cie 2001 Conference*, México City, September 5-7, 2001.
- 57 Soria, J. and J.R. Villalobos, "Development of an Integrated Quality Environment for Electronics Assembly," *11th Industrial Engineering Research Conference*, Dallas, TX, May , 2001.
- 58 Soria, J. and J.R. Villalobos, "IQE: A Distributed Quality System for Electronics Assembly," *Proceedings Prism Conference*, Purdue University, West Lafayette, IN, August 2001.
- 59 Pérez-Arreortúa, N., N. A. Plata-Ramírez, A. Gallegos-Hernández, F. J. Ruiz-Sánchez and J. R. Villalobos-Cano, " Automated Visual Inspection System for Quality Control of SMD Assembly with Remote Access facilities to the Jini™ Manufacturing Virtual Lab". *International Symposium on Robotics and Automation, ISRA'02*, Toluca, Edo. De México, septiembre 2, 3, 4, 2002, pp. 688-693.
- 60 Gallegos-Hernandez, A, F.J. Ruiz-Sanchez and J.R. Villalobos-Cano, "automated visual inspection system for the remote quality control of SMD assembly," *IECON-2002, 28th Annual Conference of the IEEE-Industrial-Electronics-Society*, vol.3, No.02, pp. 2219-24, 2002.
- 61 Van den Briel, M. , J.R. Villalobos and G.L. Hogg "The Aircraft Boarding Problem," *The 2003 IIE Annual Conference*, Portland, OR, May , 2003.
- 62 Ahumada, Omar. and J.R. Villalobos "Efficiency measures for inbound logistics performance," *The 2004 IIE Annual Conference*, Houston, TX, May , 2004.
- 63 Williams, L. F. Aguirre and J. R. Villalobos, "Development of a Methodology for the Rapid Self Training Automated Visual Inspection Systems," *The 2004 IIE Annual Conference*, Houston, TX, May, 2004.
- 64 Alghandoor, A., Villalobos, R. and Phelan, P.E., 2005, "Projected Impact of Industrial Assessment Center Program Recommendations on US Manufacturing Aggregate Energy Consumption," *ACEEE Summer Study on Energy Efficiency in Industry*, West Point, New York.
- 65 Villalobos, R. and H. Garcia, "Automated Generation of Inspection Routines for SMD Components", *IIE Annual Conference and Exposition*, Atlanta Georgia, May 14-18, 2005.
- 66 Villalobos, R. and H. Garcia, "Integrated Quality Environments for Automated Visual Inspection Systems" *Virtual Concept 2005 International Conference*, Biarritz, France, November 8-10, 2005.

- 67 Villalobos, J.R., "Virtual Concept Session on Shape Digitalization and Tracking In Design," *Virtual Concept 2005 International Conference*, Biarritz, France, November 8-10, 2005.
- 68 Ruiz - Sanchez, J.F., V. M. Larios-Rosillo, J. R. Villalobos-Cano and J. Leon, "Construction of a Virtual and Distributed Laboratory as an operative tool for the Mx- US Manufacturing Network, MANET," *Virtual Concept 2005*, International Conference, Biarritz, France, November 8-10, 2005.
- 69 Larios-Rosillo, V., F. Ruiz-Sanchez, R. Villalobos and J. Leon, "Virtual reality distributed laboratories to support micro and nano manufacturing design and research" *Virtual Concept 2005*, International Conference, Biarritz, France, November 8-10, 2005.
- 70 Garcia, H. and J.R. Villalobos, 2007, "Development of a Methodological Framework for the Self Reconfiguration of Automated Visual Inspection Systems," *IEEE International Conference on Industrial Informatics*, Vol.1, pp. 207-212, Vienna, Austria, June 23-27.
- 71 Garcia, H. and J.R. Villalobos, 2007, "Automated Feature Selection Methodology for Reconfigurable Automated Visual Inspection Systems," *IEEE International Conference on Automation Science and Engineering, CASE 2007*, Vol.1, pp. 542-547, Scottsdale, Arizona, Sept. 22-25.
- 72 Villalobos, J.R. and O. Ahumada, "International Plant Location Decisions under Labor Scarcity," Proceedings of the 2008 Industrial Engineering Research Conference J. Fowler and S. Mason, eds., Vancouver, BC, May 17-21, 2008.
- 73 Garcia, H. and J.R. Villalobos, 2008, "A Feature Selection Method for Automated Visual Inspection Systems," *IEEE INDIN's Sixth International Conference on Industrial Informatics*, Daejeon Korea, July 13-16, 2008.
- 74 Villalobos, J.R. and O. Ahumada, "The development of planning tools for the agribusiness supply chain," Proceedings of the 2009 Industrial Engineering Research Conference, Miami, FL, May 28 June 1, 2009.

Other Conference Proceedings

- 75 Villalobos, J.R. "Integrated Quality Environment" 2001 NSF Design and Manufacturing Grantees Conference, Tampa, FL, January 7-11, 2001.
- 76 Villalobos, J.R., A. Montano, and L.R. Mar, "Design of Serial Assembly line to reduce the Impact of Labor Turnover," *Proc. of 2002 Design and Manufacturing Grantees Conference*, San Juan, Puerto Rico, January 2002.
- 77 Villalobos, J.R., Luis R. Mar, Adrian Montano and Marco A. Gutierrez, "The Performance of a Modified Work Sharing Production System Under Labor Turnover," NSF Design, Service and Manufacturing Conference, January 2003 Alabama, USA.
- 78 Ruiz Sanchez, F.; Villalobos-Cano, J.R.; Larios-Rosillo, V.; León, J. "MANET: US-Mexico Manufacturing Network, Educational and Research Networks for Manufacturing," NSF Design, Service and Manufacturing Conference, January 2003 Alabama, USA.
- 79 Villalobos, J.R., Leslie Williams, Wookyeon Hwang and Fernando Aguirre, "Vector based inspection of SMD components," NSF Design, Service and Manufacturing Conference, January 2004, Dallas, TX.
- 80 Villalobos, J.R., Marco A. Gutierrez, Adrian Montano, Omar Ahumada and Melissa Restori, "Performance of the Modified Worksharing Systems with Operator Learning," *NSF Design, Service and Manufacturing Conference*, January 2004, Dallas, TX, USA.

- 81 Villalobos, J.R. and Omar Ahumada, "Operational Rules for Modified Worksharing and Bucket Brigades Systems with Operator Learning," NSF Design, Service and Manufacturing Conference, January 2005, Phoenix, AZ, USA.
- 82 Villalobos, J.R. and Hugo C. Garcia, "Automated Feature Selection for SMD Inspection," NSF Design, Service and Manufacturing Conference, January 2005, Phoenix, AZ, USA.
- 83 Villalobos, J.R. and Hugo Martinez, "Development of a Virtual Inspection System for Solder Paste," Proceedings of the NSF Design, Service and Manufacturing Conference, July 2006, St. Louis, MO, USA.
- 84 Villalobos, J.R. and Hugo Garcia, "Outliers Elimination for the Refinement of AVI Systems," Proceedings of the NSF Design, Service and Manufacturing Conference, July 2006, St. Louis, MO, USA.

Working Papers

- 85 Villalobos, J.R., V. Ramachandran and V. Baeza "Inspection Routine Generation for a Flexible Inspection System", *Working Paper*.
- 86 Strom, J. and J.R. Villalobos "The Tire Recycling Reverse Logistics Problem," Working paper, Industrial Engineering Department, Arizona State University, Tempe, AZ.
- 87 Vega, B., J.R. Villalobos and Paul M. Griffin, "Logistics Strategies for Mexican-Based Plants Serving U.S. Markets and NAFTA," Working paper, Industrial Engineering Department, Arizona State University, Tempe, AZ.
- 88 Garcia H., R. Villalobos, G. Runger and A. Garcia, "A Feature Construction Methodology for Reconfigurable Automated Inspection Systems," Working paper, Industrial Engineering Department, Arizona State University, Tempe, AZ.

Technical Reports

- 89 Villalobos, J.R., L. Munoz and B. Vega (1998), "Development of a Pilot Simulation Model of the Bridge of the Americas," Final Report to the Foreign Trade Association, Available on-line at <http://eal.asu.edu/Research/ResPast.htm>
- 90 Villalobos, J.R., M. Restori, O. Ahumada, R. Vega and T. Lindquist (2005), "Integrating the North American Electronics Industry Supply Chain, The US-Mexico Distribution System and the Possible Benefits to the City of Phoenix," Final Report to the Dept. of Community and Economic Development of the city of Phoenix, accessible through the internet at <http://eal.asu.edu/Research/ResPast.htm>.
- 91 Villalobos, J.R., Maltz, A, Ahumada O. and Sánchez O (2006), "Logistics Capacity Study of the Guaymas-Tucson Multimodal Corridor," Final Report to Arizona Dept. of Transportation accessible on-line at: <http://eal.asu.edu/Research/ResCurrent/CorridorGYM-TUS.htm>
- 92 Villalobos, J.R., Ahumada O. and Sánchez O (2007), "Diseño de una Plataforma Logística para la Comercialización de Hortalizas en EEUU," Reporte Final para la Confederación de Asociaciones de Agricultores del Estado de Sinaloa. Accessible on-line at: <http://eal.asu.edu/Research/ResCurrent.htm>.
- 93 Villalobos, J.R., Arnold Maltz, Liangjie Xue, Octavio Sánchez, Laura Vázquez (2009), "Forecast and Capacity Planning for Nogales' Ports of Entry," Final Report to Arizona Dept. of Transportation accessible on-line at: <http://ilpil.asu.edu/wordpress/wp-content/uploads/Forecsating-Report-All-in-One.pdf>.

Professional Trade Publications

- 94 Roderick, L. and J.R. Villalobos, "Pollution at the Border," *Twin Plant News*, pp. 64-67, Vol. 8, No. 4, November 1992.
- 95 Villalobos, J.R. and J. Leon, "Applied Research: Help for Maquilas," *Twin Plant News*, Vol. 12, No. 8, pp. 44-48, March 1997.
- 96 Estrada, F. and J. R. Villalobos, "Just In Time: Wire Harness Methods," *Twin Plant News*, Vol. 12, No. 9, pp. 34-38, April 1997.
- 97 Beruvides, M, J. R. Villalobos, and S. Hutchinson, "High Turnover: What it does to Production," *Twin Plant News*, Vol. 13, No. 2, pp. 41-44, September 1997.
- 98 Villalobos, J.R., M. Beruvides and S. Hutchinson, "High Turnover: How to Reduce the Impact," *Twin Plant News*, Vol. 13, No. 2, pp. 41-44, September 1997.
- 99 Villalobos, J.R. , L. Munoz and M. Varela, "Simulation Applications in Mexico, " IIE solutions, Simulation Conference, Mesa, Arizona, April 1999.
- 100 Villalobos, J.R., F. Estrada, L.F. Munoz and L. Mar "Bucket Brigade: A new way to Bust Production," *Twin Plant News*, Vol. 14, No. 12, pp. 57-61, July 1999.
- 101 Villalobos, J.R., W. Smith. A. Lazzarotto, O. Ahumada, and Melissa Restori, "Overcoming the Challenges of Inbound Supply Chain for a US-Mexico Maquiladora," *Industrial Engineer*, April, 2004.
- 102 Villalobos, J.R., O. Sanchez, A. Maltz, and O. Ahumada, "Incentives of Alternate Route: Finding the Logistics Capacity of a Multimodal Corridor", *Industrial Engineer*, , Vol. 41, Num. 7, pp. 39-43, July 2009

Invited Conference Presentations

- 103 Villalobos, J.R., R.L. Disney and J.W. Foster "Flexible Inspection Models for Partially Observable Manufacturing Model," TIMS/ORSA Conference, Orlando, Florida, May 1992.
- 104 Villalobos, J.R. and P. Griffin "Flexible Inspection for Automated Visual Inspection Systems," IIE Research Conference, Chicago, Illinois, May 1992.
- 105 Griffin, P, M. Downing and J.R. Villalobos "Sampling Strategies for Geometric Tolerance Verification," IIE Research Conference, Chicago, Illinois, May 1992.
- 106 Villalobos, J.R., R.L. Disney and J.W. Foster "Inspection Strategies for Flexible Inspection System," EURO/TIMS International Joint Conference, Helsinki, Finland, July 1992.
- 107 Griffin, P., J. Calvin and J. R. Villalobos, "Sequential Decision Making in Form Tolerance Estimation," ORSA/TIMS Joint National Meeting, Phoenix, Arizona, November, 1993.
- 108 Villalobos, J.R., Gallegos J. M. and Villalobos L., "Multi-Feature Visual Inspection Algorithms for SMD Technology," 1996 NSF Design and Manufacturing Grantees Conference, Albuquerque, NM January 1996.
- 109 Villalobos, J. R., P.Griffin and J. Nieto, On-line quality monitoring of SMD Assembly, Informs Fall 1996 Conference, Atlanta, GA, Nov. 3-6, 1996.
- 110 Villalobos, J.R. "Development of an Integrated Environment for SMD Technology Assembly" *1997 NSF Design and Manufacturing Grantees Conference*, Seattle, WA, January 7-10, 1997. (Poster Presentation)
- 111 Villalobos, J.R. "Value Added Methodology for Automated Inspection Routine Generation", *Informs Spring 1997 Conference*, San Diego, CA, May 4-7, 1997.

- 112 Villalobos, J.R. and L. Martin-Vega, "Challenges and Opportunities for US/Mexico Collaboration on Manufacturing Research and Education," *Proc. of 7th Industrial Engineering Research Conference*, Banff, Canada May 1998.
- 113 Villalobos, J.R., L. Martin-Vega and E. Garcia, "Challenges and Opportunities for US/Mexico Manufacturing," *1998 NSF Design and Manufacturing Grantees Conference*, Monterrey, Mexico, January, 1998.
- 114 Villalobos, J.R. "On-Line Quality Monitoring" 1998 NSF Design and Manufacturing Grantees Conference, Monterrey, Mexico, January, 1998. (Poster Presentation)
- 115 Villalobos, J.R. and L. Martin-Vega, "US-Mexico Joint Workshop on Research and Educational Opportunities in Manufacturing," *Proc. of 1999 Design and Manufacturing Grantees Conference*, Long Beach, California, January 1999.
- 116 Villalobos, J.R. and P. Griffin, "On-Line Multivariate Control Charts with Variable Sampling Interval", *Infirms Spring 1999 Conference*, Cincinnati, OH, May 2-5, 1999.
- 117 Villalobos, J.R., "Logistics in Mexican/US Manufacturing", *Infirms Fall 1999 Conference*, Philadelphia, PA, Nov. 7-10, 1999.
- 118 Villalobos, J.R. "Information-Based Inspection Allocation" *2000 NSF Design and Manufacturing Grantees Conference*, Vancouver, Canada, January 3-6, 2000. (Poster Presentation)
- 119 Villalobos, J.R., B. Vega and P.M. Griffin, "Distribution Strategies for Mexican Plants in a US Market," *2002 IFORS Triennial Conference*, Edinburgh, Scotland, July 8-12,2002
- 120 Villalobos, J.R., L. Munoz, L.R. Mar and A. Montano, "Design of Serial Assembly Lines Under Labor Turnover," *2002 IFORS Triennial Conference*, Edinburgh, Scotland, July 8-12,2002
- 121 Villalobos, J.R., L.R. Mar, A. Montano and M.A. Gutierrez, "Use of Dynamic Work Allocation Strategies to Minimize the Impact of Labor Turnover," *2002 Infirms Annual Conference*, San Jose, CA, November 17-20, 2002.
- 122 Ahumada, O. and J.R. Villalobos, "Efficiency Measurements for Improving Logistics Performance," *The 2003 IIE Annual Conference*, Portland, OR, May, 2003.
- 123 Villalobos, J.R., W. Smith, A. Lazzarotto and O. Ahumada, "Overcoming the Challenges of inbound Supply Chain for a US-Mexico Maquiladora," *The 2003 IIE Annual Conference*, Portland, OR, May, 2003.
- 124 Villalobos, J.R., P.M. Griffin and G.L. Hogg, "Experiences Using Active Learning in Teaching Operations Research for Undergraduates," *The INFORMS Annual Meeting 2003*, Atlanta, GA, October 2003.
- 125 Villalobos, J.R., O. Ahumada and M.A. Gutierrez, "Performance of Hybrid Dynamic Worksharing Systems under Labor Turnover," *The INFORMS Annual Meeting 2003*, Atlanta, GA, October 2003.
- 126 Van den Briel, M. , J.R. Villalobos, G.L. Hogg and T. Lindeman, "Reducing Airplane Boarding Time at America West Airlines," *The INFORMS Annual Meeting 2003*, Atlanta, GA, October 2003. (Poster Presentation)
- 127 Villalobos, J.R., W. Smith, A. Lazzarotto and O. Ahumada, "Overcoming the Challenges of inbound Supply Chain for a US-Mexico Maquiladora," *The 2003 IIE Annual Conference*, Portland, OR, May, 2003.
- 128 Gutierrez, M.A. and J.R. Villalobos, "A Case Study of Application of Vendor Managed Inventory at a Maquiladora Plant," *The 2004 IIE Annual Conference*, Houston, TX, May, 2004.
- 129 Ahumada, O. and J.R. Villalobos, "Efficiency Measures for Inbound Logistics Performance," *The 2004 IIE Annual Conference*, Houston, TX, May, 2004

- 130 Villalobos, J.R. and Hugo C. Garcia, "Classifiable Populations Issues for Automated Inspection," *The INFORMS Annual Meeting 2004*, Denver, CO, October 2004.
- 131 Van den Briel, M. , J.R. Villalobos and Ahmet Keha, "Improved Group Configurations for Zone/Group Boarding," *The INFORMS Annual Meeting 2004*, Denver, CO, October 2004.
- 132 Villalobos, R. and H. Garcia "Automated Population Separability Assessment for Automated Inspection Systems Classifiable Populations Issues for Automated Inspection", *The Informs Annual Meeting 2005*, San Francisco, November 13-16, 2005.
- 133 Garcia, H. and R. Villalobos "Feature Selection via the Minimization of Misclassification Probabilities of Discriminant Functions", *The Informs Annual Meeting 2006*, Pittsburgh, November 5-8, 2006.
- 134 Van Den Briel, M. and R. Villalobos "How to board a 150 seat airplane in less than 15 minutes" *21st European Conference on Operational Research*, Iceland, July 2-6, 2006.
- 135 Villalobos, J.R., O. Sanchez and O. Ahumada "Development of Logistics Platforms for International Fresh Produce Commerce," *INFORMS International Meeting 2007*, San Juan, Puerto Rico, July 8-11.
- 136 Sanchez, O. and J.R. Villalobos "Design of a Logistics Platform for the Distribution of Fresh Produce," *The Informs Annual Meeting 2007*, Seattle, WA, November, 4-7, 2007.
- 137 Villalobos, J.R. and O. Ahumada, "Development of Planning Tools for the Supply Chain of Fresh Produce," *The Informs Annual Meeting 2007*, Seattle, WA, November 4-7, 2007.
- 138 Villalobos, J.R. "The Stock Portfolio Classroom Game," *The Informs Annual Meeting 2007*, Seattle, WA, November, 4-7, 2007.
- 139 Villalobos, J.R. "Productivity Based Incentives for Dynamic Work Allocation Systems," *The Informs Annual Meeting 2007*, Seattle, WA, November 4-7, 2007.
- 140 Sanchez, O., J.R. Villalobos, O. Ahumada, and Cesar Meneses. "Logistics Analysis of the Port of Guaymas in the Supply Chain of Regional Companies," *Proceedings of the 2009 Industrial Engineering Research Conference*, Miami, FL, May 30- Jun 3, 2009.

Other Conference Presentations

- 141 Villalobos, J.R., R.L. Disney and J.W. Foster, "Inspection Allocation Models of Flexible Inspection Systems for Serial Multi-Stage Production Systems," *TIMS/ORSA Conference*, Nashville, Tennessee, May 1991.
- 142 Ramachandran, V. and J.R. Villalobos, "Flexible Inspection applied to Electronic Assembly", *2nd Industrial Engineering Research Conference*, Los Angeles, California, May 26-27, 1993.
- 143 Adrian F. Montano and Jesus R. Villalobos, "Optimal Designs of Serial Assembly Lines under Labor Turnover", *INFORMS 2001 Conference*, Miami Beach, FL, November 4-7, 2001.
- 144 Luis R. Mar and Jesus R. Villalobos, "Minimizing the Impact of Labor Turnover", *INFORMS 2001 Conference*, Miami Beach, FL, November 4-7, 2001.
- 145 Marco A. Gutierrez and Jesus R. Villalobos, "Vendor Managed Inventory and Cost Reduction in a Two Level Supply Chain", *the 2004 IIE Annual Conference*, Houston, TX, May, 2004.
- 146 Leslie Williams, F. Aguirre and J. R. Villalobos, "Development of a Methodology for the Rapid Self Training Automated Visual Inspection Systems", *the 2004 IIE Annual Conference*, Houston, TX, May, 2004.
- 147 Garcia, H. and R. Villalobos "A Novel Feature Selection Method for the Quadratic Discriminant Function," *Informs Annual Meeting*, Seattle, WA, November 4-7, 2007.

- 148 García Hugo C. and J. René Villalobos (2007) "A Reconfigurable Framework for Automated Visual Inspection Systems", *INFORMS International Meeting 2007*, San Juan, Puerto Rico, July 8-11.

Other Invited Presentations

- 1 Villalobos, J.R., "Automated Visual Inspection, Institute of Industrial Engineers, Chaparral Chapter, monthly meeting on automated inspection systems, El Paso, TX, May 1992
- 2 Villalobos, J.R. and Foster, J.W., "Lighting for Flexible Inspection Systems," SME workshop on Computer Vision for the Electronics Industry, Dallas, TX, Nov 1993
- 3 Villalobos, J.R., "Sistemas de Inspeccion Flexibles," III Simposium of Ingenieria Industrial y de Sistemas, ITESM-Juarez, Juarez, Mexico, May 1993
- 4 Villalobos, J.R., "Sistemas de Control de Calidad," Festejos del XXX Aniversario del ITCJ, Juarez, Mexico, October 1994
- 5 Villalobos, J.R., "Perspectivas del Egresado del ITCH," I Simposium Academico Internacional, Instituto Tecnologico de Chihuahua, Chihuahua, Mexico, February, 1996.
- 6 Villalobos, J.R., "Integracion de Calidad y Actividades de Produccion para Ensamble Electronico," Instituto Tecnologico de Chihuahua, Chihuahua, Mexico, April, 1997.
- 7 Villalobos, J.R., "Programas de Graduados en UTEP," Instituto Tecnologico de Chihuahua, Chihuahua, Mexico, October, 1997.
- 8 Villalobos, J.R. and L. Munoz, "Diseño de Lineas de Ensamble con Alta Rotacion de Personal," Instituto Tecnologico de Hermosillo, Sonora, Mexico, November 17-19, 1999.
- 9 Villalobos, J.R. and L. Munoz, "Diseño de Lineas de Ensamble con Alta Rotacion de Personal," Congreso annual de Ingenieria Industrial, Universidad del Mayab, Merida, Yucatan, Mexico, May 11 and 12, 2000.
- 10 Villalobos, J.R. "Real Time Quality Assessment of SMD Assembly" Plenary session *Cie 2000 Conference*, Mexico City, September 5-7, 2000.
- 11 Villalobos, J.R. and L. Munoz, "Diseño de Líneas de Ensamble con Alta Rotación de Personal," 4° Congreso Internacional de Ingenier á del Instituto de Estudios Superiores de Tamaulipas, Tampico, Mexico, October 12-14, 2000.
- 12 Villalobos, J.R., "Efecto de la Rotación de Personal y Aprendizaje en la Eficiencia de las Líneas de Producción," Primer Simposium de Ingenier á Industrial "Decivel", Universidad de Baja California, Mexicali, México, November 17-19, 2001.
- 13 Villalobos, J.R., J. Leon and B. Vega "The Impact of NAFTA on US-Mexico Distribution Systems," 8th Annual Manufacturing in Mexico and on the U.S. Border conference, Laredo, TX, October 3-5, 2001.
- 14 Villalobos, J.R., "Diseño de Líneas de Producción que Minimizan el Efecto de la Rotación de Personal y el ausentismoPrimer Simposium de Ingenieria Industrial," *VI Congreso Internacional de Ingenier á Industrial y de Sistemas del Instituto Tecnologico y de Estudios Superiores de Monterrey Campus Chihuahua*, Chihuahua, Mexico, April 3,4, and 5, 2003.
- 15 Villalobos, J.R., "Personal Experiences and Some Thoughts on Research Funding," Presentation as part of the Research Funding Panel within the CIDEAH's 2nd Annual IIE Doctoral Colloquium, Portland Oregon, May 17, 2003. (Number of people in attendance 50 Approx.).
- 16 Villalobos, J.R. and M. Henderson, "Global Engineering Design," *Semana de Ingenieria del Instituto Tecnologico de Chihuahua*, Chihuahua, Mexico, September 2003.

- 17 Villalobos, J.R., P. Rossen and J. Miller, "Marketing Strategies for Agricultural Products of Chihuahua," Presentation to Fundacion Produce, Chihuahua, Mexico, July 2004.
- 18 Villalobos, J.R., "Research Issues in the Maquiladora Industry," *Presentation to Maquiladora Plant Managers and Technical Personnel*, Juarez, Mexico, December 2004.
- 19 Villalobos, J.R. and D. Rivera "Research Programs in the IRA A. Fulton School of Engineering," *Presentation to the students of the University of Guadalajara*, Guadalajara, Mexico, November 2004.
- 20 Villalobos, J.R., "Challenges and Opportunities in Manufacturing in the US-Mexico Relationship," 40th Anniversary of the Anahuac University, Mexico City, Mexico, April 2004.
- 21 Villalobos, J.R., A. Garcia and S. Goodnick "Research Programs in the IRA A. Fulton School of Engineering," *Presentation to students of CINVESTAV*, Mexico City, Mexico, February 2005.
- 22 Villalobos, J.R. "Productivity Improvement Opportunities in Industry," Presentation to industry and students. Texas State University, November 9 2007. San Marcos, TX
- 23 Villalobos, J.R. "The Stock Game," Presentation to Industrial Engineering students. Texas State University, November 9 2007. San Marcos, TX.
- 24 Liangjie Xue and Rene Villalobos, "Forecast and Capacity Planning for Nogales' Ports of Entry" Poster presented at the Center for Engineering Logistics and Distribution Industrial Advisory Board Meeting, Dallas, TX, United States of America, October 29, 2008.
- 25 Cesar Meneses and Rene Villalobos, "Logistics Analysis of the Port of Guaymas in the Supply Chain of Regional Companies" Poster presented at the Center for Engineering Logistics and Distribution Industrial Advisory Board Meeting, Charlotte, NC, United States of America, April 8, 2009.
- 26 Villalobos, J.R., "Development of Forecast Models for the Nogales' POEs," US/Mexico Joint Working Committee, FHWA, Santa Fe, New Mexico, July 14 and 15, 2009.
- 27 Liangjie Xue and Rene Villalobos, "Forecast and Capacity Planning for Nogales' Ports of Entry" presented at the Center for Engineering Logistics and Distribution Industrial Advisory Board Meeting, Chicago, IL, United States of America, November 5, 2009.
- 28 Liangjie Xue and Rene Villalobos, "Forecast and Capacity Planning for Nogales' Ports of Entry" presented at the Center for Engineering Logistics and Distribution Industrial Advisory Board Meeting, Charlotte, NC, United States of America, April 8, 2009.
- 29 Octavio Sanchez and Rene Villalobos, "Implementation of a Logistics Platform for the Distribution of Fresh Produce from Sinaloa in the United States" Poster presented at the Center for Engineering Logistics and Distribution Industrial Advisory Board Meeting, Chicago, IL, United States of America, November 5, 2009.
- 30 Cesar Meneses and Rene Villalobos, "Logistics Analysis of the Port of Guaymas in the Supply Chain of Regional Companies" presented at the Center for Engineering Logistics and Distribution Industrial Advisory Board Meeting, Chicago, IL, United States of America, November 5, 2009.
- 31 Villalobos, J.R., A. Maltz, L. Xue and O. Sanchez "Forecast and Capacity Planning for Nogales' Ports of Entry" Arizona Mexico Commission, Sonora Fall Plenary Session, Hermosillo, Mexico, December 3 and 4, 2009.
- 32 Villalobos, J.R., C. Meneses and O. Sanchez "Competitividad del Corredor Logístico Sonora-Arizona" Arizona Mexico Commission, Sonora Fall Plenary Session, Hermosillo, Mexico, December 3 and 4, 2009.

FUNDING AND RESEARCH

Description of Sponsored Grants and Projects Awarded

Main Research Proposals funded by External Agencies (as PI)

- R1 Agency: National Science Foundation
Title: Arizona State University affiliation with the Center for Engineering Logistics and Distribution (CELDi)
Amount Awarded: \$200,000.00
Period: August 15, 2008 – August 14, 2012
- R2 Agency: Arizona Department of Transportation
Title: Forecast and Capacity Planning for Nogales Ports of Entry
Amount Awarded: \$100,000.00
Period: July 1, 2008 – June 30, 2009
- R3 Agency: CODESIN (Consejo para el Desarrollo del Estado de Sinaloa)
Title: Implementation of a Logistics Platform for the Distribution of Fresh Produce from Sinaloa in the United States
Amount Awarded: \$100,000.00
Period: July 2008 to July 2010
- R4 Agency: Port of Guaymas
Title: Logistics Analysis of the Integration of the Port of Guaymas in the Supply Chain of Representative Companies of the State of Sonora
Amount Awarded: \$55,000
Period: July 2008 to December 2009
- R5 Agency: National Science Foundation (Co-PI with Esma Gel and Ron Askin)
Title: CELDI Planning Grant
Amount Awarded: \$10,000.00
Period: June 2007 – May 2008
- R6 Agency: CAADES
Title: Development of Logistical Platform for Fresh Produce
Amount Awarded: \$65,000
Period: August 2006- May 2007
- R7 Agency: Arizona Department of Transportation
Title: Study of the Guaymas-Arizona Corridor
Amount Awarded: \$109,000
Period: August 2005- May 15 2006.
- R8 Agency: USAID, TIES program (Co-PI with John Fowler and Esma Gel)
Title: U.S.-Mexico Partnership on Education and Technology Transfer for the Aerospace Industry
Amount Awarded: \$299,000
Period: May. 2004 – May 2007

- R9 Agency: National Science Foundation
Title: 2005 NSF –DMII Grantees Conference (Co-PI with Jami Shah)
Amount Awarded: \$380,079.00
Period: December: 2003 - January 2005
- R10 Agency: National Science Foundation
Title: REU: Automated Generation of Inspection Algorithms
Amount Awarded: \$12,000
Period: January –December 2004
- R11 Agency: National Science Foundation
Title: Supplement for Student Participation 2005 NSF –DMII Grantees Conference (Co-PI with Jami Shah)
Amount Awarded: \$35,000.00
Period: December: 2003 - January 2005
- R12 Agency: National Science Foundation (NSF-Conacyt Program)
Title: US-Mexico Virtual Laboratory for Electronics Manufacturing (Co-PI with Jorge Leon from Texas A&M)
Amount Awarded: \$65,000.00
Period: January 2004 - January 2005
- R13 Agency: National Science Foundation
Title: Automated Generation of AVI routines for Surface Mounted Assembly Systems
Amount Awarded: \$100,000.00
Period: August 2003 - July 2005
- R14 Agency: National Science Foundation
Title: Reduction of Labor Turnover Impact through Dynamic Work Allocation and Active Operator Replacement
Amount Awarded: \$249,244.00
Period: June 2001 - April 2005
- R15 Agency: National Science Foundation (through NSF Foundation Coalition)
Title: Development of Active Learning Modules for Industrial Engineering Concepts
Amount Awarded: \$50,000.00 (approx.)
Period: June 2002 - May 2003
- R16 Agency: National Science Foundation, CAREER
Title: Development of an Integrated Environment for SMD Technology Assembly
Amount Awarded: \$315,000.00
Period: June 1995 - May 2001
- R17 Agency: Communications-Electronics Command, U.S. Army (Principal Investigator)
Title: Center for Electronics Manufacturing
Amount Awarded: \$2,300,000.00 (funded first year only at \$300,000 level)
Period: September 1995 - September 2000
- R18 Agency: National Science Foundation (with Louis M. Vega)
Title: US-Mexico Joint Workshop on Research and Educational Opportunities in Manufacturing
Amount Awarded: \$21,795.00
Period: November 1997-April 1998

- R19 Agency: Texas Advanced Technology Program (Principal Investigator)
Title: Implementation of Flexible Inspection Systems in the Manufacturing of Printed Circuit Boards
Amount Awarded \$ 97,287.00
Period: January 1992-May 1994
- R20 Agency: National Science Foundation (Principal Investigator)
Title: Supplemental funds for the NSF grant: Development of an Integrated Environment for SMD Technology Assembly
Amount Granted: \$50,000.00
Term: January 1996-Dec. 1999
- R21 Agency: Thomson Consumer Electronics (Principal Investigator)
Title: Matching funds for the NSF grant: Development of an Integrated Environment for SMD Technology Assembly
Amount Granted: \$100,000.00
Term: January 1996-Dec. 1999
- R22 Agency: Texas Advanced Technology Program, Supplemental Grant for Under-Represented Minorities (Principal Investigator)
Title: Implementation of Flexible Inspection Systems in the Manufacturing of Printed Circuit Boards
Amount Awarded: \$21, 920.00
Period: January 1992-May 1994
- R23 Agency: Texas Advanced Technology Program, Supplemental Grant for Under-Represented Minorities (Co-principal Investigator, through Texas A&M University)
Title: Implementation of Flexible Inspection Systems in the Manufacturing of Printed Circuit Boards
Amount Awarded: \$21, 920.00
Period: January 1992-May 1994
- R24 Agency: U.S. Army (CECOM)
Title: Intelligent Data Package for Electronics Manufacturing
Amount Awarded: \$ 50,000.00
Term: June 1, 1996 - September 30, 1996
Agency: U.S. Army (CECOM)
- R25 Agency: U.S. Army (CECOM)
Title: Integration of Quality, Maintenance and Rework Activities for SMD Assembly
Amount Awarded: \$ 200,000.00
Term: September 1997-August 1998
Date Submitted: Feb. 15, 1997

Funded Research Proposals by External Agencies (as Co-PI or Participant)

- R26 Agency: Department of Homeland Security (As Co-PI with W, Nange, PI, T. Richards and G. Runger)
Title: Intelligent Food Defense Systems for International Supply Chains

- Amount Awarded: \$ 247,091.00
Term: July 1, 2008 - June 31, 2009
- R27 Agency: Department of Energy
Title: Industrial Assessment Center Program (As CO-PI, PI, Pat Phelan)
Amount Awarded: \$ 200,000.00 per year (approx.)
Term: September 2002-November 2006
- R28 Agency: National Science Foundation (As Participant, PI, Albert McHenry)
Title: More Graduate Education at Mountain States Alliance (MGE@MSA)
Amount Awarded: \$1,640,517.00
Term: March 2005-February 2010
- R29 Agency: Texas Department of Transportation (Co-Principal Investigator)
Title: Automated Routing of Overweight Vehicles
Amount Requested: \$131,195.00
Amount Awarded: \$131,195.00
Period: January 1996-December 1997

Other Grants/Contracts

- R30 Agency: City of Phoenix
Title: Support of the 2005 NSF/DMII Grantees Conference
Amount Awarded: \$10,000.00
Period: November: 2004 - May 2005
- R31 Agency: City of Phoenix
Title: Study of the Electronic Industry in the Integrated North American Supply Chains
Amount Awarded: \$22,000.00
Period: June: 2004 - May 2005
- R32 Agency: Intel
Project: Support of the 2005 NSF-DMII Grantees Conference
Amount: \$15,000.00
Period: April 2004 – September 2005
- R33 Agency: America West
Project: Analysis of the Customer Service Center
Amount: \$22,000.00
Period: April 2005 – September 2005
- R34 Agency: City of Phoenix
Project: Support of the 2005 NSF-DMII Grantees Conference
Amount: 10,000
Period: June 2004 – June 2005
- R35 Agency: City of Phoenix
Project: Analysis of Electronics Industry Supply Chain
Amount: 22,000
Period: June 2004 – September 2004

- R36 Agency: TRW- Chihuahua
Project: Improvement of Inbound Binational Logistics and Production Lines
Amount: 45,000 (approx.)
Period: January 2002 – January 2004
- R37 Agency: TRW- Mesa
Project: Implementation of a Vendor Management Inventory System
Amount: \$20,000.00 (approx.)
Period: January 2003 – December 2003
- R38 Agency: America West
Project: Improvement of Passenger Boarding Procedures
Amount: \$8,000.00
Period: June 2002 – December 2002
- R39 Agency: ASU/Cresmet Faculty Educational Improvement
Project: Web Based, Just-in-Time Delivery of OR Methods
Amount: \$10,000.00
Date: Spring/Summer 2000
- R40 Agency: RGK Foundation
Project: First Annual Border Conference on Manufacturing and the Environment
Amount: \$10,000.00
Date: May 1993
- R41 Agency: RGK Foundation
Project: Second Annual Border Conference on Manufacturing and the Environment
Amount: \$10,000.00
Date: May 1994
- R42 Agency: Thomson Consumer Electronics
Project: Lighting Improvement of Flexible Inspection System
Amount: \$2,900.00
Date: January 1995

TEACHING

Undergraduate Courses

IEE 476	Deterministic/probabilistic Operations Research (ASU)
ECE 300	Introduction to Engineering Design Process (ASU)
ASE 485	Engineering Statistics (ASU)
IEE 376	Deterministic Operations Research (ASU)
IEE 300	Engineering Economics (ASU)
IE 3492	Stochastic Operations Research (UTEP)
IE 3389	Deterministic Operations Research (UTEP)
IE 3485	Statistical Quality Control (UTEP)

Graduate Courses

IEE 512	Financial Engineering (ASU)
IEE 535	International Logistics (ASU)
IEE 591	Special Topics in Manufacturing Systems (ASU)
IEE 591	Special Topics in Imbedded Systems (ASU)
IEE 545	Simulating Stochastic Systems (ASU)
IE 3551	Advanced Deterministic Operations Research (UTEP)
IE 3556	Probabilistic Optimization Methods (UTEP)
IE 3552	Design and Analysis of Experiments (UTEP)
MFG 3512	Strategic Design of Manufacturing Processes (UTEP)
MFG 3521	Modeling and Analysis of Manufacturing systems (UTEP)
IE 3585	Advanced Quality Control (UTEP)
MFG 3530	Modern Manufacturing Environment (UTEP)

Course Development

The following table describes lists some of the efforts in terms of course development at ASU and UTEP.

Course	Topic	Course Development Level*	Observations
IEE 476/545	Deterministic/probabilistic Operations Research	1, 3,6	
ECE 300	Introduction to Engineering Design Process	1, 3	
ASE 485	Engineering Statistics	1,3,4	
IEE 376	Deterministic Operations Research	1,3,6	
IEE 300	Engineering Economics	1,3,6, 7	
IEE 512	Financial Engineering	1,2,3,5, 7	
IEE 535	International Logistics	1,2,3,5, 7	
IEE 591	Special Topics in Manufacturing Systems	1,3	
IEE 591	Special Topics in Imbedded Systems	1,3	In collaboration with Chell Roberts
IEE 545	Simulating Stochastic Systems	1, 3	In collaboration with Chell Roberts
IE 3492	Stochastic Operations Research	1, 3	
IE 3389	Deterministic Operations Research	1, 3	
IE 3485	Statistical Quality Control	1, 3	
IE 3551	Advanced Deterministic Operations Research	1, 3	
IE 3556	Probabilistic Optimization Methods	1, 3	
IE 3552	Design and Analysis of Experiments	1,2,3,5	
MFG 3512	Strategic Design of Manufacturing Processes	1,2,3,5	
MFG 3521	Modeling and Analysis of Manufacturing systems	1,2,3,5	
IE 3585	Advanced Quality Control	1,2,3,5	
MFG 3530	Modern Manufacturing Environment	1,2,3,5	

*Course development level keys: 1)Taught course, 2)Developed course concept, including course description for course inventory, 3) Developed course notes, 4) Developed interactive web-based notes, 5) Taught course for first time, 6)Developed notes based on cooperative/active learning principles, 7) Developed teaching games for course

Curriculum/Program Development Activities

- T1 Design of international dual MS degree in International Logistics ASU-Monterrey Tech
- T2 Design of Logistics specialty within the graduate program of Industrial Engineering at ASU
- T3 Redesign of the curriculum of the graduate program in Manufacturing Engineering at UTEP
- T4 Redesign of undergraduate curriculum for Industrial Engineering at UTEP

Advising

- T5 Advisor for students in the Dual MS degree between ASU and Monterrey Tech in International Logistics (2003-2007)
- T6 MFG Graduate Advisor at UTEP (1996 to 1999)
- T7 IE undergraduate advisor at UTEP (1993 to 1996)

Work with Student Organizations

- T8 Mexican Student Association at ASU, Faculty Advisor (2005-present)
- T9 Mexican American Engineering and Scientists at ASU, Faculty Advisor (2005-present)
- T10 Engineers without Borders at ASU, Faculty Advisor (2005-2007)
- T11 UTEP's IIE Student Chapter Advisor (1992-1996)

Students Mentored

Committees Chaired (Completed)

- T12 **Ahmed AL-Gandor** (Co-Chair), Dissertation Topic: U.S. Manufacturing Aggregate Energy Intensity Decomposition, May 2006, Arizona State University.
- T13 **Hugo Garcia**, Dissertation: A Framework for the Self Reconfiguration of Automated Visual Inspection Systems, December 2007, Arizona State University.
- T14 **Vankatesh Ramachandran**, Thesis: Inspection Routine Generation for a Flexible Inspection System, May 1993, the University of Texas El Paso.
- T15 **Francisco Estrada**, Thesis: Evaluation of Just-In-Time Strategies in the Electric Wire-Harness Industry, May 1995, The University of Texas El Paso.
- T16 **Scott T. Hutchinson**, Thesis: Managing Work Time Variability Caused by Labor Turnover in a Serial Assembly Line, May 1995, University of Texas El Paso.
- T17 **Enrique Guerra**, Thesis: Three-Dimensional Inspection of SMD Components, , May 1997, University of Texas El Paso.
- T18 **Adan Verduzco**, Thesis: Information Based Flexible Inspection Allocation System, May 1998, University of Texas El Paso.
- T19 **Jeffery Strom**, Thesis: Optimization models for Tire Recycling, May 1998, University of Texas El Paso.
- T20 **Miguel Arellano**, Thesis: Vector Classification for SMD, December 1999, University of Texas El Paso.
- T21 **Luis Munoz**, Thesis: Management of Production Lines Operating under High Labor Turnover, August 2000, Arizona State University.
- T22 **Benjamin Vega**, Thesis: The Impact of NAFTA on US-Mexico Distribution Systems, August 2000, Arizona State University.
- T23 **Adolfo De Unanue** (co-chair), Thesis: Laboratorio Virtual de Manufactura Basado en Jini, November 2001, CINVESTAV, Mexico

- T24 **Adrian Montano**, Thesis: Optimizing Designs for Serial Assembly Lines under Labor Turnover, August 2002, Arizona State University.
- T25 **Luis R. Mar**, Thesis: Optimizing Designs for Serial Assembly Lines under Labor Turnover, August 2002, Arizona State University.
- T26 **Omar Ahumada**, Thesis: Efficiency Measures for Inbound Logistics Performance, December 2003, Arizona State University.
- T27 **Joel Polanco**, Thesis: Capacity Options Pricing and Stochastic Supply Modeling, May 2005, Arizona State University.
- T28 **Fernando Aguirre**, Thesis: An Effective Diagnostic Tool of Energy and Productivity Efficiency of the Manufacturing Industry with Limited Data, December 2006, Arizona State University.
- T29 **Octavio Sanchez**, Thesis Topic: Development of Logistics Platforms for Fresh Produce, December 2007, Arizona State University.

Undergraduate Honors Theses

- T30 **Melissa Restori (Chair)**, Thesis: “An Analysis of the Integration of the North American Electronics Industry Supply Chain: Assembly and Test in Mexico”, 2005, Arizona State University
- T31 **Leslie Williams (Chair)**, Thesis: “Using Linear Regression Techniques for Inspection Feature Selection”, 2005, Arizona State University
- T32 **Jeremy Foster (Member)**, Thesis: “Getting Air Cargo Business “Off the Ground” at Williams Gateway Airport,” 2005, Arizona State University.

Service in Graduate Advisory Committees

- T33 **Francisco Medina**, Major: Manufacturing Engineering, Topic: Computer Vision Inspection of Keyboards, UTEP
- T34 **Gerardo Chaparro**, Major: Electrical Engineering, Topic: A Computer Vision System for the Visual Inspection of Hall Dies on Ceramic Substrates, UTEP
- T35 **Satish Sadam**, Major: Manufacturing Engineering, Topic: Graphical Editor/Simulator for Coordinate Measuring Machines, UTEP
- T36 **Sreenvasa Ganta**, Major: Manufacturing Engineering, Topic: Development of Numerical Control Programming Interface Kit, , UTEP
- T37 **Hareesh Gowdappa**, Major: Civil Engineering, Topic: An Integrated System as a Design Advisor for Drilled Piers in Expansive Soils, UTEP
- T38 **Jaime Ortiz**, Major: Civil Engineering, Topic: Neural Networks for Damage Assessment of Structures, UTEP
- T39 **Luis R. Duenas**, Major: Electrical Engineering, Topic: On the Use of System Identification of Vibration Sensor Manufacturing Testing, UTEP
- T40 **Jose Mario Gallegos**, Major: Electrical Engineering, Topic: Development of Algorithms for the Inspection of Surface-Mounted Devices, UTEP
- T41 **Jesus Eduardo Arenas**, Major: Electrical Engineering, Topic: Evaluation of JPEG Compression Effects on Digital Mammograms, UTEP
- T42 **Claudia Ayala**, Major: Electrical Engineering, Topic: Simulation and Analysis of an Automated Distributed Inspection System, UTEP
- T43 **Efren Gutierrez**, Major: Electrical Engineering, Topic: Simulation and Analysis of an Automated Distributed Inspection System, UTEP.

- T44 **J.D. Neudorff**, Major: Industrial Engineering, Topic: A Heuristic for Minimizing the Combined Cost of Inventory and Maintenance in a Stochastic Failure Environment, ASU.
- T45 **Zhengshu Shen**, Major: Mechanical Engineering, Topic: Development of a Framework for a Set of Computer-Aided Tools for Tolerance Analysis, ASU.
- T46 **Seow Lim**, Major: Geography, Dissertation: Development of a Framework for a Set of Computer-Aided Tools for Tolerance Analysis, ASU.
- T47 **Alejandro Gallegos**, Major: Mecatronics, Thesis Topic: “Sistemas de Visión y Herramientas Jini de conexión al Laboratorio Virtual de Manufactura JMVl para una Maquina AVI de Tarjetas de Circuito impreso de Alta Densidad”, CINVESTAV, Mexico.
- T48 **Jianbiao Pan**, Major: Industrial Engineering, Dissertation: “Modeling and Process Optimization of Solder Paste Stencil Printing for Advanced Electronic Packages,” Lehigh University.

Applied projects Committees Chaired

Juan Ojeda	Carlos Calleros	Elias Olivares
Gerardo Trevino	Luis Mejia	Luis Trevino
Manuel Romero	Raul Esquivel	Jose E. Serrano

Other M.S. Students Supervised (funded by research grants):

Moises Hernandez (UTEP)	Dara Morgenstain (UTEP)	Raul Hernandez (UTEP)
James Eoff (UTEP)	Hao-Bin Zheng (UTEP)	Celia Encerrado (UTEP)
Carmen Melendez (UTEP)	Enrique Guerra (UTEP)	Nemish Sha (UTEP)
J. Mario Gallegos (UTEP)	Gerardo Chaparro (UTEP)	Francisco Medina (UTEP)
Jesus Nieto (UTEP)	Adolfo Medina (UTEP)	Gang Qin (UTEP)
Bhanu Palakodeti (UTEP)	Ray Bacion (UTEP)	Mike Soriano (UTEP)
Raul Esquivel (ASU)	Eileen Ruelas (ASU)	Rosa Gonzalez (ASU)
Fernando Camacho (ASU)	Jorge E. Martinez (ASU)	Sarahi Castro Felix (ASU)
Iris Aline Osuna (ASU)	Cinthia Rangel (ASU)	Laura Consuelos S (ASU)
Brenda Perez (ASU)	Luis Mejia (ASU)	Manuel Romero (ASU)
Mario Coba (ASU)	Luis Trevino (ASU)	Gerardo Trevino (ASU)
Juan Ojeda (ASU)	Guillermo Alvarez (ASU)	Elias Olivares (ASU)
Carlos Calleros (ASU)	Giovanna Moreno (ASU)	Hugo Martinez (ASU)
Ricardo Vega (ASU)	S. Krishnamoorthy (ASU)	Mario Morales (ASU)
Eric Diaz (ASU)	Jorge Avila (ASU)	S. Sundararaj (ASU)
Dai Cheng Fu (ASU)	Carlos Macias (ASU)	J. Eduardo Serrano (ASU)

Undergraduate Students Supervised (funded by research grants):

Norma Cardona (UTEP)	Sebastian Santiesteban (UTEP)	Thomas Hunt (UTEP)
Cesar Alonso (UTEP)	Joanna Brunett (UTEP)	Guillermo Vazquez (UTEP)
Alfonso Manriquez (UTEP)	Victor Baeza (UTEP)	Ray Bacion (UTEP)
Phillip Lane (UTEP)	Michael Alvarez (UTEP)	Mirka Vale-Ochoa (UTEP)
Carlos Hernandez (UTEP)	Nancy Amaya (UTEP)	Miguel Arrellano (UTEP)
Robert Martin del Campo (UTEP)	Adan Verduzco (UTEP)	Daniel Schwartz (UTEP)
Jesus Jimenez (UTEP)	Luis Munoz (UTEP)	Benjamin Vega (UTEP)
Manuel Soto (UTEP)	Alfredo Fierro (UTEP)	Liza Lopez (UTEP)
Steve Handy (UTEP)	Ramon Pajaro (UTEP)	Adolfo Medina (UTEP)
Luis Mar (UTEP)	Marco Gutierrez (ASU)	Nawal Zinefilali (ASU)
Todd Linqvist (ASU)	Fernando Aguirre (ASU)	Melisa Restori (ASU)
Leslie Williams (ASU)	Oscar Salazar (ASU)	Tristan Ostrowski (ASU)
Luc Geneste (ASU/IFMA)		

SERVICE

Department and College

- V1 ASU/Fulton School of Engineering, Advisor to Dean Crouch on International Activities, 2003-2006
- V2 ASU/Fulton School of Engineering, Lead for FSE in recruitment in Mexico, 2003-2006
- V3 ASU/Fulton School of Engineering, International Activities Committee, Member, (2004 - 2006)
- V4 ASU/Fulton School of Engineering, Undergraduate Committee, Member, (2003 - 2006)
- V5 ASU/Fulton School of Engineering, Standards Committee, Member, (2003 - 2006)
- V6 ASU/Fulton School of Engineering, Grievance Committee, Member, (2005 - Present)
- V7 ASU/IE Graduate Committee, Member, (2005 – Present)
- V8 ASU/IE Personnel Committee, Member, (2002 – 2003)
- V9 ASU/IE Search Committee, Member, (2002)
- V10 UTEP: M&I Eng. Dept.'s Undergraduate Committee (1991-1994)
- V11 UTEP: M&I Eng. Dept.'s Graduate Policy Ad Hoc Committee (1993)
- V12 UTEP: M&I Eng. Dept.'s Ph.D. Ad Hoc Committee (1992)
- V13 UTEP: M&I Eng. Dept.'s Recruiting Committee (1994-1999)
- V14 UTEP:M&I Eng. Committee in Laboratory Space Allocation (1992-1999)

University Committee Activities

- V15 ASU Graduate Council, Representative of the FSE, (September 2002 - May 2005)
- V16 UTEP: Engineering/Math Task Force (1992)
- V17 UTEP: Member Faculty Senate (1994-1996)
- V18 UTEP: Vice-president of Faculty Senate (1996)
- V19 UTEP: Chair and member of University Research Committee (1996-1999)

Community and Other Service

- V20 Advisor to Arizona Governor's Arizona CANAMEX Corridor Task Force
- V21 Advisor to the Director of the Arizona Dept. of Commerce to establish liaisons with Mexican business organizations and governmental agencies, 2004, 2006, 2006.
- V22 Advisor to the City of Phoenix's Economic Development Office to establish liaisons with Mexican business organizations and governmental agencies, 2004.
- V23 Advisor to the Dean of Engineering at ASU on increasing collaboration links with Mexican universities.
- V24 Improvement of traffic on International Cordova Bridge (El Paso-Juarez), El Paso, TX 1998
- V25 Advisor for the Human Resources Department of the City of El Paso for development an entry test for Senior Industrial Engineers, 1992
- V26 Participant, Electronics Cluster, DRI-McGraw Hill, Economic Study for the El Paso Region, 1994
- V27 Participant, Camino Real Economic Alliance Meeting, Chihuahua, Mexico, 1994
- V28 Participant in planning Sessions for the Texas Manufacturing Resource Network. IC2 Institute, Austin, TX, February 1, 1992, June 18, 1992
- V29 Participant in Workshop on "Building Teaching Factories for World Class Manufacturing: Regional Deployment of Manufacturing Application and Education Networks," Sponsored by IC2 Institute, June 19-20, 1992

- V30 Participant, "Hacia una Cultura Tecnologica para la Competitividad en la Pequeña y Mediana Empresa: Coloquio Internacional," FUNTEC, Mexico City. (1994)

PROFESSIONAL ACTIVITIES

Registration and Certification

- P1 Registered Professional Engineer #78649, State of Texas

Professional and Technical Society Membership

- P2 Institute for Operations Research and the Management Sciences (INFORMS)
P3 Institute of Industrial Engineers
P4 American Society for Engineering Education (ASEE)
P5 Institute of Electrical and Electronic Engineers
P6 Society of Manufacturing Engineers (MVA, NAMRI)
P7 College-Industry Council on Material Handling Education

Editorial Boards

- P8 Member of the Technical Advisory Board for International Journal of Interactive Design and Manufacturing

Society Offices Held and Committee Membership

- P9 Vice-president of Chaparral Chapter of Institute of Industrial Engineers, 1992-1995.
P10 Treasurer of Chaparral Chapter of the Institute of Industrial Engineers, 1995-1997.
P11 Treasurer of El Paso Chapter of the Institute of Electrical and Electronics Engineers, 1995-1996.

Conference Organizations

- P12 Co-Chair of the 2005 NSF-DMII Grantees Conference, Scottsdale, Arizona, January 3-6, 2005.
P13 General Chairman, First Annual Border Conference on Manufacturing and the Environment, May 24-25, 1993, El Paso, TX
P14 General Chairman, Second Annual Border Conference on Manufacturing and the Environment, May 24-25, 1994, El Paso, TX, 1996
P15 Facilitator and panelist in Faculty Forum, Graduate Engineering Education Program, Student Research Panel Presentations, Fourth National Conference, "Diversity in the Scientific and Technological Workforce," National Science Foundation, September 21-23, 1995, Washington, D.C.
P16 Member of the Technical Advisory Board for International Journal of Interactive Design and Manufacturing.
P17 Track Coordinator and Moderator, Borderplex Conference, February, 1995, El Paso, TX
P18 Member of the Steering Committee, Track Chairman and moderator of the Emerging Technologies Track, International Quality Forum, October 5-6, 1992, El Paso, TX

Proposal and Paper Reviews

- P19 Reviewer for different programs of the National Science Foundation (NSF)
P20 Reviewer for INFORMS 2003 Junior faculty Interest Group (JFIG) Paper Competition
P21 Reviewer for the *International Journal of Production Economics*
P22 Reviewer for the *International Journal of Production Research*
P23 Reviewer for *Computers and Industrial Engineering*
P24 Reviewer for *Operations Research*

- P25 Reviewer for the *IIE Transactions*
- P26 Reviewer for the *IEEE Transactions* (Automation, PAMI, Systems, Man and Cybernetics)
- P27 Reviewer for Machine Vision and Applications Journal
- P28 Reviewer for *Annals of Operations Research*

Other Activities

- P29 Member of Committee of Visitors that evaluated the Division of Design, Manufacture and Industrial Innovation, Washington, D.C., 20