Iván J. Baigés-Valentín, Ph.D.

Iván J. Baigés has a B.S. in Mechanical Engineering from the University of Puerto Rio at Mayaguez; a M.S. in Mechanical Engineering from MIT; and a Ph.D. in Mechanical Engineering from the University of Florida. Since August 2004 he has been an Associate Professor of the Department of Engineering Sciences and Materials at the University of Puerto Rico Mayaguez., specializing in the areas of materials science and engineering. His areas of interest are *Fundamentals of Plastics*, *Plastic Part Design*, *Manufacturing of Plastic Parts*, *Use of Recycled Materials in New Products, Industrial Ecology, Design of Environmentally Friendly Products and Processes and Life Cycle Assessment.*

As part of his efforts at University of Puerto Rico at Mayaguez

- ✓ He was part of the team that negotiated the agreement between EPA and UPR Mayaguez to create the UPRM Environmental Management System for Managing Materials and Wastes on campus; and is developing the UPRM Materials Impact Management System.
- ✓ He has collaborated with different Medical Devices Companies such as Boston Scientific, Advanced Medical Optics, Roche Diagnostics and Stryker on Design for Manufacturing Projects.
- ✓ He has worked with different companies such as Hewlett Packard Puerto Rico in developing the knowledge for using recycled materials in there products and services.

He also has worked (2001 – 2004) with Hewlett Packard's Puerto Rico Imaging and Printing Group R&D Team, where he was responsible for the design and analysis of plastic parts and the related manufacturing processes for new products. Previously he was an assistant professor in the Department of Mechanical Engineering at the University of Puerto Rico - Mayaguez (1989-1993 & 1996 – 2000) working in the areas of Machine Design, Product Design, Automatic Controls and Manufacturing.

Education

- ❒ **December 1995, Doctor of Philosophy in Mechanical Engineering**
  University of Florida
  Specialty Areas: Robotics, Dynamics and Controls

  Thesis Title: "Dynamic Modeling of Parallel Manipulators"

- ❒ **August 1989, Master of Science in Mechanical Engineering**
  Massachusetts Institute of Technology

  Specialty Areas: Design, Controls and Rehabilitation Engineering

  Thesis Title: *"Development of a Whole-Arm Orthosis for Abnormal Tremor Suppression."*
  Awarded U. S. Patent # 5231998 for design developed as part of the Master Thesis.

- ❒ **June 1986, Bachelor of Science in Mechanical Engineering**
  University of Puerto Rico at Mayagüez

  Minor in Electrical Engineering in the area of Microprocessors and Digital Design

Professional Experience

- **August 2005 to present - University of Puerto Rico at Mayagüez**

  Person in charge of developing and implementing the Environmental Management System for the University of Puerto Rico at Mayaguez Campus (a campus with over 12,000 students and 2000 teaching and nonteaching employees), working with material impact management strategies.

- **August 2004 to present- University of Puerto Rico at Mayagüez**

  Associate Professor in the Department of General Engineering. Responsible for teaching courses in the area of Basic Material Sciences, developing new courses in Plastics and Material Science. Have taught courses in Basic Materials Science and Engineering, Plastics, Recycling of Materials, Manufacturing Strategies (a MBA course) and Project Management. Responsible for conducting research in the area of Design and Manufacturing of Plastic Products; and Design of Environmentally-friendly products.

- **August 2004 to present- University of Puerto Rico at Mayagüez**

  Technical consultant in the areas of process improvement, plastic materials, plastic part manufacturing and assembly, design for manufacturing, project management and knowledge management for manufacturing operations – for companies such as Hewlett Packard, Boston Scientific, Medtronic, Stryker, Advanced Medical Optics, Pfizer and Pall and Cordis.

- **January 2005 to January 2006 – Caribbean Integration Engineers**

  Technical consultant in training services in Process Control and Automation; R&D and Mechanical Automation; and emerging areas such as Process Control with Process Analytical Technologies and RFID.

- **January 2001 to September 2004 – Hewlett-Packard del Caribe Ltd, Aguadilla Puerto Rico.**

  Member of Technical Staff, part of Imaging and Printers Supplies Organization – Americas R&D Team of Puerto Rico. Member of the Modeling Center, responsible for Finite Element Analysis of Plastic Parts and related Manufacturing Processes (such as Ultrasonic Welding). Also responsible of the Mechanical Design of Plastic Products, and Design for Manufacturing for New Product Development in the area of Inkjet Printers.

- **May 1996 to Present – Expert Witness Services.**

  Expert witness in the area of product liability. Have worked on different product liability and design defect cases. This is in addition to having taught the Product Design Course at UPR Mayaguez where the topics of product safety and how to design safe products were covered.

- **January 1996 to December 2000 - University of Puerto Rico at Mayagüez**

  Assistant Professor in the Department of Mechanical Engineering. Taught courses in Automatic Control Systems, Machine Design, Product Design, and Engineering Design. Conducted research in the Design of Environmentally-friendly products, and in Plastic Part Design and Manufacturing.

- **June 1998 to December 2001 - University of Puerto Rico at Mayagüez**

Assistant Professor in the MIT UPR Tren Urbano Professional Development Program – This program was created to develop engineering professionals capable of building and operating a mass transit system such as the Tren Urbano. Supervised 5 students developing train maintenance strategies and equipment.

- **August 1993 to December 1995 - University of Florida, Gainesville, Florida**
  Research Assistant in the Center for Intelligent Machines and Robotics, Department of Mechanical Engineering. Developed and programmed dynamic simulation algorithms for parallel manipulators.

- **August 1989 to July 1993 - University of Puerto Rico at Mayagüez**
  Instructor in the Department of Mechanical Engineering. Taught courses in Kinematic Design, Machine Design, Design of Microprocessor-Based Systems, Automatic Controls, Manufacturing Processes Laboratory and Product Design. Supervised a team of 16 students designing and building the powertrain for the 1st UPRM Solar Car Team (1989-90)

- **August 1986 to August 1998 – Massachusetts Institute of Technology**
  Research Assistant in The The Eric P. and Evelyn E. Newman
  Laboratory for Biomechanics and Human Rehabilitation working in the area of Orthosis Design for Multiple Sclerosis Patients. Duties included Mechanical and Electrical Design, prototype construction, analysis and control software development and devices testing with patients.

Publications

- " Development of a Whole Arm Orthosis for Tremor Suppression", In Proceedings of the 12th Annual RESNA Conference, pages 290 - 91, New Orleans, LA, June 1989.
- "The Development of a Whole Arm Orthosis for Abnormal Intentional Tremor Suppression" Mass. Inst. of Technology, M.S.M.E. Thesis, August 1989.
- Aisen, ML; Arnold, A; Baiges, I ; Rosen, M . "The Effect of Mechanical Damping Loads on Disabling Action Tremor". Neurology , (1993), 43(7)
- "Design of a controlled-energy-dissipation orthosis (CEDO) for the functional suppression of intention tremors", In The Journal of Rehabilitation Research and Development, Vol. 32 No. 1, February 1995 Pages 1-16.
- "Dynamic Modeling of Parallel Manipulators," University of Florida, Ph.D. Thesis, December 1995.
- 15 patent submissions and defensive publications while at Hewlett Packard Puerto Rico (some titles are confidential at the moment). Patent numbers - US D526,010 S; US 6,984,014 B2; US 6,955,423 B2; US 5,231,988.

case	summary	Lawyer	outcome
Mrs. Carmen Cruz vs. Budget Car Rental; work was done for	Plaintiff claimed that accident was caused by faulty car	Esq. José Delgado	A settlement was negotiated when

the defendant.	conditions.		the plaintiff realized they had no case.
Luís Felipe García Ortiz (plaintiff) vs. RH Investments Corp., Seguros Triple S; work was done for the defendant.	Plaintiff fell down due to faulty handicap ramp design.	Esq. Carlos Bayrón	A settlement in favor of the plaintiff was negotiated.
Ms. Yaritza Rodriguez vs Sears de Plaza del Norte, Hatillo; work done on behalf of the plaintiff.	Plaintiff was injured in electric escalator due to lack of rail guarding.	Esq. Jorge Uzdavinis	N/A
Mr. Wilfredo Colón (plaintiff) vs. Universidad Politecnica de Puerto Rico (defendant).	Plaintiff's son was injured when he fell from a 2nd story due to a defective staircase design.	Esq. Mónica Rosa	A settlement in favor of the plaintiff was negotiated
Mrs. Madeline Ruiz vs Lady Fitness, Mayaguez, work done on behalf of the plaintiff	Plaintiff was injured due to poor gym equipment maintenance.	Esq. Andrés Ramos	A settlement was negotiated in favor of the plaintiff
Mr. Julian Pérez vs. Mr. Julio Arroyo , work on behalf of the defendant Mr. Arroyo.	Plaintiff claims that injury caused by circular sander was caused by defective grinding wheel.	Esq. Manuel Martinez	N/A
Mrs. Magdalena Perez vs. Toyota de Puerto Rico , work on behalf of the plaintiff Mrs. Perez	Plaintiff claims injury and accident caused by unexpected airbag deployment.	Esq. Hector Moreno Luna	A settlement was negotiated in favor of the plaintiff.