

# Ramona L. V. Perez

## School Address

Florida International University  
FIU Department of Physics, CP204  
11200 SW 8<sup>TH</sup> ST  
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## Permanent Address

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## EDUCATION

<i>Doctor of Philosophy</i> , Physics	Florida International University	2008 - 12/2014
<i>Bachelor of Science</i> , Physics	Florida International University	2003 - 2008

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## SKILLS

Experimental Physical Scientist with experience in diagnostic design, development, and validation in a collaborative fast-paced work environment.

Electrical Design	Cable block diagrams, data acquisition electronics system design (decreased cost of system cables by a factor of 20 saving \$9K), electrical design reviews
Equipment	Radiation detection electronics, high-speed digitizers, mini electron-beam evaporator, sonicator, vacuum pumps, elemental analyzer, fluorometer, spectrophotometer, mass flow controller
General Research	Monte Carlo simulations, particle detection techniques, problem-solving, data acquisition automation, statistical analysis, ultra high vacuum (UHV) design and practices, software development for interfacing to electronics, instrument design, development, and validation
Mechanical Design	Machine drawings and instrument concept and design (successful design of \$8K+ UHV mechanical housing with parts manufactured by 4 different machining facilities using 3 different materials), mechanical design reviews
Operating Systems	Mac, Windows, Linux/Unix
Programming	Python, C, C++, Fortran 95, G (graphical language), shell scripting, basic IDL
Project Management	Planning, design, and execution (project timescale 2+ years), international and domestic collaborations, technical and general oral presentations, status reports, grant budgeting (\$25K+ equipment and expenses), international freight forwarding (\$40K worth of equipment), vendor paperwork, purchase orders, supervising and advising student research projects
Software	LaTeX, Solidworks, Vectorworks, AutoCAD, LabVIEW, GNU Make, MS Office, Virtual Network Computing, basic Matlab, basic Mathematica
Web/Video Conferencing	H.323 Polycom, ReadyTalk, Skype

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## EXPERIENCE

Plasma Physics	<b>Graduate Research Assistant</b> FIU Physics Department, Dr. Werner Beoglin, Princeton Plasma Physics Laboratory, Dr. Douglass Darrow, Culham Centre for Fusion Energy, Dr. Scott Allan, Dr. Ken McClements Designing, and validating a new instrument to study the physics of plasma instabilities through charged fusion product detection in spherical tokamaks* <a href="http://phy.fiu.edu/twiki/bin/view/TWiki/MAST_Diagnostic">http://phy.fiu.edu/twiki/bin/view/TWiki/MAST_Diagnostic</a>	04/2010 - Present
Teaching	<b>Graduate Teaching Experience</b> FIU Physics Department, 9 Sections 2048L (Physics 1), Class size 30 students, Educationally reformed labs	01/2008 - 04/2010
Physics Education	<b>Graduate Research Experience</b> FIU Physics Department, Researching FIU PhysTEC reform of introductory physics lab, conducting interviews (Institutional Review Board certified)	04/2008 - 12/2008
Solid-State Physics	<b>Undergraduate Research Experience</b> FIU Department of Physics, Dr. Wenzhi Li Carbon nanomaterial fabrication and system design, thin film deposition, and chemical vapor deposition synthesis of novel ruthenium dioxide nanorods	08/2005 - 08/2007
Space Physics	<b>Undergraduate Research Experience</b> Florida Institute of Technology Physics and Space Sciences Department, Dr. Ramon Lopez Analyzing satellite data to support the proposed existence of field-aligned currents in the earth's polar cap during geomagnetic storm conditions	06/2006 - 07/2006
Biology Ecology	<b>Undergraduate Laboratory Technician</b> FIU Biology Department, Dr. Jim Fourqurean Processing of plant and abiotic samples for elemental and spectrophotometric analysis and performing field work (Scientific SCUBA Certification) surveying and collecting samples in Florida Keys National Marine Sanctuary and Gulf of Mexico	02/2004 - 08/2005 02/2004 - 08/2005

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## PUBLICATIONS

Journal Articles	S. Neupane, G. Kaganas, <b>R. Valenzuela</b> , L. Kumari, X. W. Wang, W. Z. Li, Synthesis and characterization of ruthenium dioxide nanostructures, Journal of Materials Science, July 2011, Volume 46, Number 14, 4803-4811	07/2011
	Lopez, R. E., S. Hernandez, K. Hallman, <b>R. Valenzuela</b> , J. Seiler, P. Anderson, and M. Hairston (2007), Field-Aligned Currents in the Polar Cap during Saturation of the Polar Cap Potential, J. Atmos. Sol. Terr. Phys., doi:10.1016/j.jastp.2007.08.072	08/2007
Conference Proceedings	Boeglin WU, <b>Valenzuela Perez R</b> , Darrow DS. Concept of a charged fusion product diagnostic for NSTX. Rev. Sci. Instrum. 2010 Oct; 81(10):10D301, <a href="http://dx.doi.org/10.1063/1.3464262">http://dx.doi.org/10.1063/1.3464262</a>	10/2010

Wells, L., *Valenzuela, R.*, Brewe, E., Kramer, L., O'Brien, G., & Zamolla, E., 06/2008  
Impacts of the FIU PhysTEC reform of introductory physics lab, Phys. Ed.  
Res. Conf. Edmonton, Canada, 2008 AIP Conference Proceedings.

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## HONORS

FIU Graduate & Professional Student Committee Research Travel Grant	2013
Ronald E. McNair Baccalaureate Program Fellow	2006-present
Center for High Energy Physics Research and Education Outreach Fellow	2005-2008
Cristina Menendez Fellowship for Everglades Research	2004
Florida Department of Transportation Employee Dependent Scholarship	2004
Florida Bright Futures Scholarship	2003-2008
FIU Salutatorian Scholarship	2003-2005
FIU Presidential Scholarship	2003-2005
Advanced Placement Scholar	2003
Marsh Scholarship	2003
Salutatorian Land O' Lakes High School, FL	Class of 2003

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## PROFESSIONAL ACTIVITIES

AVS Science and Technology, Student Member	2012-present
FIU Student Chapter of AVS, Founding Chair/ President	2012-present
FIU Society of Physics Students, President	2006-2008
FIU Society of Physics Students, Member	2005-present

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## AVAILABILITY

Graduating	December 2014
Flexibility	Willing to relocate nationwide or internationally
Travel Experience	Domestic, International