Ramona L. V. Perez

School Address
Florida International University
FIU Department of Physics, CP204
11200 SW $8^{TH}ST$
Miami, FL 33199

Permanent Address
8100 NW 53^{RD} ST
Doral, FL 33166
(786) 239-5123
lc.ramona@gmail.com

EDUCATION

Doctor of Philosophy †, Physics	Florida International University	2008 - 04/2015
Bachelor of Science, Physics	Florida International University	2003 - 2008

†Dissertation Work: Measurement and analysis of fast ion loss in magnetically confined plasmas

---

EXPERIENCE - RESEARCH

Plasma Physics	**Research Assistant** FIU Physics Department, Werner Beoglin, Princeton Plasma Physics Laboratory, Douglass Darrow, Culham Centre for Fusion Energy, Scott Allan, Ken McClements • Designed, constructed, installed, and operated a new instrument to study fast ion loss and distribution during plasma instabilities in magnetically confined plasmas at the Mega Amp Spherical Tokamak • Currently analyzing data to validate the instrument • `http://phy.fiu.edu/twiki/bin/view/TWiki/FEPP`	04/2010 - Present
Physics Education	**Research Assitant** FIU Physics Department, Leanne Wells • Researched quantitative impact of education reform and teacher preparation on introductory physics labs • Conducted research interviews (Institutional Review Board certified) and administered evaluation instruments	04/2008 - 12/2008
Solid-State Physics	**Research Assistant** FIU Physics Department, Wenzhi Li • Synthesized novel ruthenium dioxide nanorods and fabricated carbon nanomaterials and thin film depositions • Designed experimental systems, trained new researchers, and calibrated, operated, and maintained lab equipment	08/2005 - 08/2007
Space Physics	**Research Assistant** Florida Institute of Technology Physics and Space Sciences Department, Ramon Lopez • Analyzed solar-geophysical satellite data to graph changes in a specific region of the earth's magnetic field during geomagnetic storm conditions	06/2006 - 07/2006
Biology Ecology	**Laboratory Technician** FIU Biology Department, Jim Fourqurean • Processed plant and abiotic samples for elemental and spectrophotometric analysis • Surveyed and collected (Scientific SCUBA Certification) samples in Florida Keys National Marine Sanctuary and Gulf of Mexico	02/2004 - 08/2005

Biology Everglades	**Research Assistant** South Florida Water Management District, Christopher J. Madden • Processed abiotic data and performed field work • Surveyed and collected samples in Everglades National Park related to projects: monitoring drought improvements, nutrient flow, and invasive species	06/2001- 07/2001

EXPERIENCE - SKILLS

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

Electrical Design	• *Example*: Experience in data acquisition electronics system design (decreased cost of system cables by a factor of 20, saving $9K) • *Skills:* Created cable block diagrams and programs for interfacing to electronics, monitored electrical installation for projects, prepared electrical design reviews
Equipment	• *Current Research:* high-speed digitizers, modular crate electronics, pulse generators, radiation detection electronics, surface barrier detectors, vacuum pumps • *Past Research:* elemental analyzer, fluorometer, mass flow controller, mini electron-beam evaporator, sonicator, spectrophotometer
Mechanical Design	• *Example:* Successful instrument design ($8K+ UHV mechanical housing for sensitive electronic instruments) • *Skills:* Created machine drawings, experience in ultra high vacuum (UHV) and high vacuum design and practices, prepared mechanical design reviews
Programming	• *Operating Systems:* Mac, Windows, Linux/Unix • *Languages:* Python, C, C^{++}, Fortran 95, G (graphical language), shell scripting, IDL • *Skills:* Monte Carlo simulations, statistical analysis
Project Management	• *Control and Monitoring:* Developed troubleshooting techniques, identified risks and planned for contingencies, monitored schedules (including progress of student research activities), reinforced strong organizational skills, reprioritized tasks • *Cost Management*: Experience in budgeting ($25K+ equipment and expenses), knowledge of purchase orders and vendor paperwork, managed international freight forwarding ($40K+ worth of equipment) • *Dissemination:* Created and currently maintain group website/wiki page, developed oral presentation (technical and general) skills at: conferences, design reviews, and group meetings • *Project Planning and Execution:* Created status reports, prioritized tasks and developed schedules for instrument: design, construction, testing, installation, and operation (timescale of 2+ years) • *Team Development:* Advise student research activities (up to 6 students), create student research projects, run weekly group meetings, work within a large-scale collaboration
Software	LaTeX, Solidworks, Vectorworks, AutoCAD, LabVIEW, GNU Make, Microsoft Office, Virtual Network Computing, Matlab
Web Meetings	H.323 Polycom, ReadyTalk, Skype

EXPERIENCE - TEACHING

Teaching Assistant	FIU Physics Department, PHY2049L Physics 2 • 3 Sections, Educationally reformed labs, Class size 20 students • Monitored experiments, created and graded homework	01/2014 - 04/2014
	FIU Physics Department, PHY2048L Physics 1 • 9 Sections, Educationally reformed labs, Class size 30 students • Monitored experiments, mentored Learning Assistants, and created and graded homework	08/2008 - 04/2010
Tutor and Learning Assistant	FIU Physics Learning Center, Center for High Energy Physics Research and Education Outreach, PHY2048/ PHY2049 • Physics 1 & 2 with Calculus, Educationally reformed courses • Assisted instructor in teaching, tutored, and graded homework	08/2005 - 04/2008

AVAILABILITY

Graduating	April 2015
Flexibility	Willing to relocate nationwide or internationally
Travel Experience	Domestic, international

CONFERENCES AND WORKSHOPS

20^{th} Topical Conference on High-Temperature Plasma Diagnostics	Atlanta, Georgia	06/2014
2014 FL AVS Science and Technology /FL Society for Microscopy (FSM) Joint Symposium	Orlando, Florida	03/2014
55^{th} APS Division of Plasma Physics Meeting	Denver, Colorado	11/2013
Physics Education Research Conference	Edmonton, Alberta, Canada	06/2008
American Association of Physics Teachers Meeting	Edmonton, Alberta, Canada	06/2008
2008 Zone 6 Regional Society of Physics Students Conference	Orlando, FL	03/2008
Florida International Grid School 2008 Workshop	Miami, FL	01/23/2008 - 01/25/2008
Compact Muon Solenoid (CMS) Workshop	São Paulo, Brazil	08/06/2007 - 08/18/2007
FIU Ronald E. McNair Research Symposium	Miami, FL	08/2007
Georgia-Tech FOCUS Conference	Atlanta, GA	01/2007
NSU 2^{nd} Annual Future Tech Conference	Norfolk, VA	11/2006
FIU Ronald E. McNair Research Symposium	Miami, FL	09/2006
CISM Space Weather Weekend Workshop	Huntsville, AL	03/30/2006 - 04/02/2006
FIU Physics Modeling Instruction Workshop	Miami, FL	06/2005

HONORS

FIU Physics Department Graduate Research Competition 1st Place	2014
FIU Scholarly Forum Physics Presentations 3rd Place	2014
FIU College of Arts & Sciences Travel Support	2014
American Physical Society Forum on Graduate Student Affairs Travel Award for Excellence in Graduate Research	2014
FIU Graduate & Professional Student Committee Conference Travel Grant	2014
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
South Florida Secondary Teacher Equity in Mathematics and Science Scholar	2005
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, Tampa, FL	2003

MEMBERSHIPS

FIU Student Chapter of AVS, Founding Chair	2012 - present
AVS Science and Technology, Student Member	2012 - present
FIU Society of Physics Students, President	2006 - 2008
FIU Society of Physics Students, Member	2005 - 2011

SERVICE

Young Leaders Session FL AVS/FSM Joint Symposium, Co-Chair	2014
FIU Physics Graduate Program Review, Committee Member	2009 - 2010
2010 Zone 6 Regional Society of Physics Students Conference, Volunteer	2010
FIU Physics Department Colloquia Series, Volunteer	2008-2010
FIU Public Astronomy Colloquia Series, Volunteer	2008-2010
Miami Museum of Science Quantum Leap Event, Volunteer	2008
FIU Society of Physics Students Quantum Leap Event, Organizer, Volunteer	2008
CHEPREO Physics Department Open House, Volunteer	2006 - 2007

STUDENT ADVISING

Topic: Experimental Plasma Physics Research, FIU Physics Dept.

Students		
	Pierre Avila, Undergraduate	01/2011 - 04/2014
	Omar Leon, Undergraduate	01/2012 - 06/2014
	Carlos Lopez, Undergraduate,	01/2012 - Present
	Adrianna Angulo, Undergraduate	04/2013 - Present
	Javiera LaTorre, Undergraduate	01/2014 - Present
	Douglas Tuckler, Undergraduate	01/2014- Present

PRESENTATIONS

Conferences	***Perez, R. V.***, S. Allen, W. U. Boeglin, M. Cecconello, K. G. McClements, D. S. Darrow, and the MAST team. First Results from a Charged Fusion Products Diagnostic at MAST, Poster session, APS DPP 55^{th} Annual Meeting. Denver, Colorado	11/2013
	Wells, L. and ***Valenzuela, R.*** Impacts of the FIU PhysTEC reform of introductory physics labs, Poster session, Phys. Ed. Res. Conf. Edmonton, Canada	07/2008
	Wells, L. and ***Valenzuela, R.*** Impacts of the FIU PhysTEC reform of introductory physics labs, Poster session, AAPT National Meeting. Edmonton, Canada	07/2008
	Valenzuela, R. Synthesis of Ruthenium Dioxide Nanorods, Talk, Ronald E. McNair Research Symposium. Miami, FL	08/2007
	Valenzuela, R. Space Weather, Talk, Ronald E. McNair Research Symposium. Miami, FL	09/2006
Competitions	***R. V. Perez***. Investigating Fusion Plasma Instabilties, FIU Scholarly Forum. Miami, FL	03/2014
	R. V. Perez. Detecting Protons from DD Fusion Reactions to Study Plasma Instabiliteis, FIU Physics Department Graduate Research Competition. Miami, FL	04/2014
Design Reviews	***Perez, R. V.*** Charged Fusion Product Diagnostic Electrical Design Review, Culham Centre for Fusion Energy, Culham Science Centre, Abingdon, Oxfordshire, England	05/2013
	Perez, R. V. and Boeglin, W. Charged Fusion Product Diagnostic Mechanical Design Review, Culham Centre for Fusion Energy, Culham Science Centre, Abingdon, Oxfordshire, England	09/2012
	Boeglin, W. and ***Perez, R. V.*** Charged Fusion Product Diagnostic Final Design Review, Princeton Plasma Physics Laboratory, Princeton, New Jersey	04/2011
	Boeglin, W. and ***Perez, R. V.*** Charged Fusion Product Diagnostic Preliminary Design Review, Princeton Plasma Physics Laboratory, Princeton, New Jersey	02/2011
Outreach	***Valenzuela, R.*** and Galvez, R. Introduction to Nanotechnology, Quantum Leap Event, Miami Science Museum. Miami, FL	07/2008
	Valenzuela, R. The Role of SPS and CHEPREO in our FIU Physics Community, 2008 Zone 6 Regional Society of Physics Students Conference. Orlando, FL	03/2008
Seminars	***Perez, R. V.*** Initial Results from the Proton Detector, Friday Physics Seminar. Culham Centre for Fusion Energy, Culham Science Centre, Abingdon, Oxfordshire, England	09/2013

PUBLICATIONS

Journal Articles	S. Neupane, G. Kaganas, ***R. Valenzuela***, 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, ***R. Valenzuela***, 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, ***Valenzuela Perez R***, Darrow DS. Concept of a charged fusion product diagnostic for NSTX. Rev. Sci. Instrum. 2010 Oct; 81(10):10D301, http://dx.doi.org/10.1063/1.3464262	10/2010
	Wells, L., ***Valenzuela, R.***, Brewe, E., Kramer, L., O Brien, G., & Zamolla, E., Impacts of the FIU PhysTEC reform of introductory physics lab, Phys. Ed. Res. Conf. Edmonton, Canada, 2008 AIP Conference Proceedings.	06/2008
Abstracts	***R.V. Perez***, W.U. Boeglin, Names and the MAST team. Investigating Fusion Plasma Instabilities Using Protons, **Invited Talk**, The 20th Topical Conference on High Temperature Plasma Diagnostics. Atlanta, Georgia	06/2014
	I. Wodniak, M. Cecconello, O.M. Jones, C.A. Michael, W.U. Boeglin, ***R. V. Perez***, D.S. Darrow, S. Y. Allan, R. Lake, R.J. Akers, N.J. Conway, B. Crowley, K.G. McClements, R. Scannell, M. Turnyanskiy and the MAST team. Neutron and FIDA measurements of energetic ion behaviour in MAST, Poster session, The 17th International Workshop on Spherical Torus (ISTW2013). York Plasma Institute, York, England	09/2013
Outreach	***Perez, Ramona L. V.*** (2011). FIU physics department tea party. *Newsletter of the Committee on the Status of Women in Physics & the Committee on Minorities of the American Physical Society*, *30*(2), 5.	09/2011
	Valenzuela, Ramona (2008). SPS plans lecture series on women in physics. *Newsletter of the Committee on the Status of Women in Physics & the Committee on Minorities of the American Physical Society*, *27*(2), 7.	09/2008