

**Marco V. Martinez**  
Department of Mathematics, North Central College  
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### Education

The University of Tennessee - Knoxville

2013 Ph.D. Mathematics. Dissertation Title: Optimal Control of the Invasive Pest Gypsy Moth  
Advisor: Dr. Suzanne Lenhart

2013 M.Sc. Statistics

Pontificia Universidad Javeriana - Bogotá, Colombia

2007 B.Sc. Mathematics with honors

2005 B.Sc. Biology

### Professional Experience

2013 - Assistant Professor. Department of Mathematics, North Central College, Naperville, IL

2012 - 13 Graduate Research Fellow. National Institute for Mathematical & Biological Synthesis, Knoxville, TN

2008 - 12 Graduate Teaching Associate. Department of Mathematics, University of Tennessee, Knoxville, TN

2005 - 08 Lecturer. Pontificia Universidad Javeriana, Bogotá, Colombia

2003 - 04 Undergraduate Teaching Assistant. Pontificia Universidad Javeriana, Bogotá, Colombia

### Book

2011 Becerra, R., Rueda, N. and **Martinez, M.V.** Experimental design in agricultural and biological sciences with SAS, SPSS, R and statistix (in Spanish). Two volumes. Fondo Nacional Universitario. ISBN: 978-958-9251-57-7

### Publications

2015 **Martinez, M.V.**, Lenhart, S. and White, J. Optimal control of integrodifference equations in a pest-pathogen system. Discrete and Continuous Dynamical System - Series B 2015; 20(6): 1759-1783

2014 Bodine, E.N. and **Martinez, M.V.** Optimal genetic augmentation strategies for a threatened population using a continent-island model. Letters in Biomathematics 2014; 1(1): 23-39

2009 **Martinez, M.V.** R for Biologists. Version 1.1.  
<http://cran.r-project.org/doc/contrib/Martinez-RforBiologistv1.1.pdf>

2007 Undergraduate Thesis, Development of a computer tool for the analysis of the diversity of species in biological communities

2005 Undergraduate Thesis, Microhabitat characterization used by the assembly of anurans associated with a shade coffee plantation (Santander, Colombia)

### Actuarial Science

Exams: Probability, Financial Mathematics

VEE: Applied Statistical methods

2016 - Coordinator of the actuarial science major, North Central College, Naperville, IL

2017 Planning Committee, The Actuarial Teaching Conference, The Society of Actuaries, June 26 - 27

2017 Participant, The Actuarial Teaching Conference, The Society of Actuaries, June 26 - 27

2015 Participant, The Actuarial Teaching Conference, The Society of Actuaries, June 22 - 23

## Undergraduate Students Advising and Mentoring

### North Central College

- 2015 Lisette Herrera, Dana Lacey, Rebecca Rachan, Taylor Spino. Mathematical modeling of Multihost pathogens, Center for Undergraduate Research in Mathematics, Advisor with Ruthig, G.
- 2014 Laura Olejniczak. A New Metric for Credit Migration Matrices, Advisor, Honors Thesis.  
Alexis Gramera. Density-Dependence's Correlation to Nest Success in the Olive Ridley Sea Turtle, Second Reader, Honors Thesis

### The University of Tennessee - Knoxville

- 2012 Desiree Seay and Sarah Wilson. Heritability of speed and maze performance in *Tribolium confusum*, Mentor for VolsTeach program, Spring semester

### Pontificia Universidad Javeriana - Bogotá, Colombia

#### Co-advisor of senior biology students in their thesis

- 2009 Mauricio Santos. Development of a spatial model to assess the effect of shape, size and distance between patches on the dispersal of seeds by bats
- 2008 Andres Morales. Effects of a multiple predator functional response on the predator-prey systems dynamics: A nest predation approximation
- 2007 Mariana Rojas. Development of a model for approximating the volume of extraction of *Panulirus argus* by artesian fisheries in Fuerte Island, Colombia

## Grants

- 2017 Minorities in Mathematics Speaker Series (MIMSS), Tensor-SUMMA Program, Mathematical Association of America's, Harris, P (PI), Prieto-Langarica, A. (Co-PI) and **Martinez, M.V.** (Co-PI) \$6000
- 2016 Minorities in Mathematics Speaker Series (MIMSS), Tensor-SUMMA Program, Mathematical Association of America, **Martinez, M.V** (PI), Harris, P. (Co-PI) and Prieto-Langarica, A. (Co-PI) \$6000  
SACNAS Mini-collaboration grant \$802  
Summer Grant, Faculty Professional Development Committee, North Central College, \$2,625
- 2015 Minorities in Mathematics Speaker Series (MIMSS), Tensor-SUMMA Program, Mathematical Association of America's, Prieto-Langarica, A. (PI), Harris, P. (Co-PI) and **Martinez, M.V.** (Co-PI) \$6000  
Mini-Grant Award, Center for Undergraduate Research in Mathematics (CURM), **Martinez, M.V.** (PI) and Ruthig, G. (Co-PI). Supported four female mathematics students, three of them first-generation and one Hispanic, \$22,150  
Summer Grant, Faculty Professional Development Committee, North Central College, \$3,427
- 2014 Summer Grant, Faculty Professional Development Committee, North Central College, \$3,777
- 2012 Graduate fellowship, National Institute for Mathematical and Biological Synthesis, \$20,000 plus tuition

## Awards, Honors and Fellowships

- 2016 Clarence F. Dissinger Award for Distinguished Teaching and Mentoring by a Junior Faculty Member, North Central College
- 2013 Project NExT Fellow. Mathematics Association of America
- 2010 Teaching award, Dorothea & Edgar D. Eaves Outstanding Graduate Student Teacher. Department of Mathematics, The University of Tennessee - Knoxville
- 2009 Finalist, teaching award, Dorothea & Edgar D. Eaves Outstanding Graduate Student Teacher. Department of Mathematics, The University of Tennessee - Knoxville

- 2008 Second place, undergraduate poster contest, SIAM Conference on the Life Sciences
- 2007 Undergraduate honors thesis in mathematics, Pontificia Universidad Javeriana
- 2005 Honorary fellow for one year, Department of Wildlife Ecology, University of Wisconsin-Madison
- 2000 Five year full tuition merit scholarship from the president of the Pontificia Universidad Javeriana (awarded to less than 1 percent of students)

#### Travel Awards

- 2015 Modern Math Workshop 2015 and Annual SACNAS National Conference  
Latinos in the Mathematical Sciences Conference, Institute for Pure & Applied Mathematics  
Careers and Opportunities in Industry for Mathematical Scientists, Institute for Mathematics and its Applications
- 2014 Blackwell-Tapia Conference and Awards Ceremony, Institute for Pure & Applied Mathematics  
Algebraic and Discrete Biological Models for Undergraduate Courses, National Institute for Mathematical and Biological Synthesis  
Research Experiences for Undergraduate Faculty, American Institute of Mathematics
- 2013 Southeastern Atlantic Regional Conference on Differential Equations (SEARCDE)
- 2012 Graduate Student Senate, The University of Tennessee - Knoxville  
Department of Mathematics, The University of Tennessee - Knoxville  
Southeastern Atlantic Regional Conference on Differential Equations (SEARCDE)
- 2011 Department of Mathematics, The University of Tennessee - Knoxville  
Workshop 3: Ecology and Control of Invasive Species, Including Insects Mathematical Biosciences Institute, The Ohio State University

#### Teaching Experience

##### North Central College

- 2013 - Assistant Professor of Mathematics: College Algebra, Finite Mathematics, Integrated Calculus I and II, Calculus II, Ordinary Differential Equations with Applications, Applied Mathematical Techniques, Probability and Statistics I and II.  
Independent Studies: Introduction to R, Biostatistics and Multivariate analysis, Introduction to Regression Models, An Introduction to Stochastic Processes.

##### The University of Tennessee - Knoxville

- 2008 - 12 Graduate Teaching Associate: Precalculus, Basic Calculus, Mathematics for life sciences I and II.  
Instructor: R seminar for life sciences (graduate level class)

##### Pontificia Universidad Javeriana, Bogotá, Colombia

- 2005 - 08 Lecturer: Biomathematics, calculus for science, biostatistics, experimental design, and mathematical models in biology
- 2003 - 04 Undergraduate Teaching Assistant: Biomathematics, and calculus for science

#### Underrepresented Minority Outreach

- 2015 - 21 Committee on Minority Participation in Mathematics, Mathematical Association of America (MAA)
- 2014 - Webmaster (with Pamela E. Harris and Alicia Prieto Langerica) of the MAA website Resources for Minority Faculty and Students <http://www.maa.org/programs/underrepresented-groups/resources-minority-faculty-students>
- 2014 - Faculty contact (North Central College). Nebraska conference for undergraduate women in mathematics
- 2015 Invited participant, Annual SACNAS National Conference, October 29-31  
Invited participant, Modern Math Workshop 2015, October 28-29

- Invited participant, Latinos in the Mathematical Sciences Conference, Institute for Pure & Applied at UCLA, April 9-11
- 2014 Invited participant, Blackwell-Tapia Conference and Awards Ceremony, Institute for Pure & Applied Mathematics at UCLA, November 14-15
- 2013 Committee for the Recruitment and Retention of Hispanic/Latino Students, North Central College
- 2007 Invited participant, Mini-workshop: Opportunities in Mathematical Biology for Under-represented Groups, Mathematical Biosciences Institute, March 23-25

## **Presentations**

### Teaching/Outreach

- 2016 Poster, Minorities in Mathematics Speaker Series (with P. Harris and A. Prieto-Langarica), Joint Mathematics Meetings, January, Seattle, WA
- 2013 Speaker, Bullet-Proofing Excel, TechDay North Central College, December, Naperville, IL
- 2012 Speaker, Inverted classroom: A Pre-calculus experience, The Mathematical Association of America Southeastern Section meeting, March, Morrow, GA

### Research (\* = Undergraduate Student)

- 2017 Invited Speaker, Optimal Control for Management of an Invasive Species, The National Diversity in STEM conference, October, Salt Lake City, UT
- Invited Speaker, Optimal Control for Management of an Invasive Species, Arizona State University's West Campus, Seminar series for the School of Mathematical & Natural Sciences, February, Phoenix, AZ
- 2016 Invited Speaker, Optimal Control for Management in Gypsy Moth Models, Elmhurst College Departments of Mathematics, Computer Science, and Physics Seminar Series, April, Elmhurst, IL
- Invited Speaker, Optimal Control of the gypsy moth populations, Youngstown State University Mathematical Ecology Seminar, March, Youngstown, OH
- 2015 Speaker, Modeling the management of invasions of gypsy moths, Annual Meeting for The Society for Mathematical Biology, June, Atlanta, GA
- Poster, A New Metric for Credit Migration Matrices (with L. Olejniczak\*), Rall Symposium at North Central College, May, Naperville, IL
- Invited Speaker, Optimal Control for Management in Gypsy Moth Models, Joint Mathematics Meetings, January, San Antonio, TX
- 2014 Invited Speaker, Optimal Control for Management in Gypsy Moth Models, Dominican University's Math Club's Special Lecture Series, November, Naperville, IL
- Invited Speaker, Mathematical Modeling, E<sup>2</sup> North Central Math Circle, September, Naperville, IL
- Invited Speaker, Mathematical Modeling, E<sup>2</sup> North Central Math Circle, April, Naperville, IL
- Invited Speaker, Optimal Control for Management in Gypsy Moth Models, Colloquium Pi Mu Epsilon at North Central College, March, Naperville, IL
- Invited Speaker, Optimal Control of the gypsy moth populations, American Mathematical Society Southeastern Spring Sectional Meeting, March, Knoxville, TN
- 2013 Speaker, Optimal control in gypsy moth discrete models, SEARCDE, September, Knoxville, TN
- Invited Speaker, Using Mathematical-Biology to help Biodiversity, Science Seminar Series, North Central College, September, Naperville, IL
- Speaker, Optimal control of integrodifference equations in a host-pathogen system, Joint Mathematics Meetings, January, San Diego, CA

- 2012      Invited speaker, Can coffee help frogs? Rhodes College, November, Memphis, TN  
             Speaker, Optimal control of integrodifference equations in a host-pathogen system, SEARCDE, October, Winston Salem, NC  
             Poster, Optimal control of the gypsy moth populations (with S. Lenhart and J. White), Workshop for Young Researchers in Mathematical Biology, August, Columbus, OH  
             Speaker, Optimal control of the gypsy moth populations, Society for Mathematical Biology Annual Meeting and Conference, July, Knoxville, TN
- 2009      Poster, On the Stability of a two predators one prey system: A non-additive approach (with A. Morales and J. Perez-Torres), 10th International Mammalogical Congress, August, Mendoza, Argentina  
             Poster, Effect of patch shape, distance between patches and patch size on animal seed dispersal: An spatial model approximation (with M. Santos-Vega and J. Perez-Torres), 10th International Mammalogical Congress, August, Mendoza, Argentina
- 2008      Poster, Cats Protecting Birds Revisited with a Spatial Approach (with J. Gambino, K. Salau and E. Soho), SIAM Conference on the Life Sciences, August, Montreal, Canada
- 2007      Poster, Cats protecting birds: In space (with J. Gambino, K. Salau and E. Soho), National Conference of SACNAS, October, Kansas City, MO  
             Poster, Cats protecting birds revisited with a spatial approach (with J. Gambino, K. Salau and E. Soho), MathFest 2007, August, San Jose, CA
- 2006      Poster, Characterization of the microhabitat used by the associated assembly of anurous to shaded coffee crops in Santander, Colombia (with J. Perez-Torres), II Colombian Zoology Congress, November, Santa Marta, Colombia
- 2005      Poster, Biodiversity associated with shaded coffee crops in La mesa de los Santos (Santander) (with J. Perez-Torres, C. Peraza, D. Ortegón, J. Alayón and Y. Cifuentes), VIII Congress of research in the Pontificia Universidad Javeriana, September, Bogotá, Colombia
- 2004      Poster, Structure of the arboreal vegetation associated to a shaded coffee crop in Santander, Colombia (with J. Perez-Torres, C. Peraza and D. Ortegón), III Colombian Botanic Congress, November, Popayán, Colombia

## Professional Development

### Teaching

#### North Central College

- 2015      More Than Spin: Making the Most of Imperfect Measures (student evaluations), January 8  
 2013      What Are the Three Worst Mistakes to Make in the Classroom?, December 3

#### The University of Tennessee - Knoxville

- 2012      Teaching College Mathematics Program, Level I & II. Department of Mathematics  
             Having fun with calculus, November 13  
             Bubbling up: Flipping the college classroom with FIZZ, September 17  
             Instructor-focused workshops: Turning point clicker technology, September 12  
             Workshop: The top 10 technology resources for the mathematics classroom, April 12  
             Faculty dialogues: Active learning in flexible classrooms, April 12
- 2011      Effective teaching approaches for international faculty: A conversation about where we are and where we are going, November 10  
             Best practices in teaching program for graduate teaching assistants and associates, postdoctoral lecturers, and new faculty, Fall semester
- 2010      Effective college teaching workshop, NIMBioS, April 16-17

2008 - 13 Graduate student teaching seminar, Department of Mathematics

Participant in Project NExT Courses at MathFest

2014 Applying for Grants from the National Science Foundation. August 8

Getting your Research off to a Good Start. August 7

2013 Undergraduate Research – How to Make It Work. August 1-2.

Participant in short courses at the Mathematical Association of America Southeastern Section meetings

2012 Helping statistics students develop understanding and communication about statistical inference, March 9

2011 Teaching with a Digital Text, April 1

### Research

2015 Mathematics of Planet Earth: Workshop on Education for the Planet Earth of Tomorrow, National Institute for Mathematical and Biological Synthesis, September 30 – October 2

Careers and Opportunities in Industry for Mathematical Scientists, Institute for Mathematics and its Applications, April 20-22

2014 Algebraic and Discrete Biological Models for Undergraduate Courses, National Institute for Mathematical and Biological Synthesis, June 17-20

Research Experiences for Undergraduate Faculty, American Institute of Mathematics, July 7-11

2012 Workshop for Young Researchers in Mathematical Biology, Mathematical Biosciences Institute, August 27-30

2011 MBI-NIMBioS-CAMBAM Summer Graduate Workshop, Mathematical Biosciences Institute, July 25 - August 5

Workshop 3: Ecology and Control of Invasive Species, Including Insects, Mathematical Biosciences Institute, February 21-25

### **Professional Service**

Referee for: *Involve* a journal of mathematics, PRIMUS (Problems, Resources, and Issues in Mathematics Undergraduate Studies), and Natural Resource Modeling

Mathematical Association of America

2014 - 16 Judge Undergraduate Student Poster Session, Joint Mathematics Meetings, January

2016 Project NExT Panelist. The Early (Post-PhD) Years: An Interactive Survival Guide. January, Seattle, WA

2014 Project NExT Panel Co-Organizer. Where is the Money? Grants Accessible to Junior Faculty. MathFest, August, Portland, OR

Project NExT Panel Co-Organizer. The Nuts and Bolts of Undergraduate Research. Joint Mathematics Meetings, January, Baltimore, MD

Society for Advancement of Chicanos/Hispanics and Native Americans in Science.

2017 Judge Undergraduate Student Poster Session, Annual SACNAS National Conference, October

2015 Judge Undergraduate Student Poster Session, Annual SACNAS National Conference, October

North Central College

2014 - Advisor of the Actuarial Club and LSA (Latin Student Association)

2017 - 19 College Scholars Committee

2017 Member. Search committee Economics Department Chair

- 2017 Member. Search committee tenure-track position in Economics
- 2017 Member. Strategic Plan: Faculty and Curriculum Working Group
- 2014 - 16 Science division representative. International Programs Committee
- 2014 - 16 Science division representative. Faculty committee on enrollment, athletics, and student affairs
- 2014 - 16 Junior mentor for new faculty members
- 2015 Member. Search committee tenure-track position in Biology

The University of Tennessee – Knoxville

- 2013 Volunteer. Adventures in STEM camp for middle school girls. June 3 - 7
- Judge. Regional Southern Appalachian Science & Engineering Fair. April 2
- 2010 - 13 Officer of the SIAM student chapter
- 2009 - 12 Orientation committee for new graduate students
- 2009 - 12 Graduate student mentor
- 2009 - 12 Pro2Serve Math Contest for TN High School Students

Memberships: Mathematical Association of America (MAA), Society for Advancement of Hispanics/Chicanos and Native Americans in Science (SACNAS), Council on Undergraduate Research (CUR)

**Computing skills**

Mathematical: Matlab, Maple, Mathematica  
Statistical: R, SAS, Statistix, SPSS, JMP  
Other: Latex, MS office and Visual Basic for Excel

**Languages**

English (Fluent)  
Spanish (Native)