Marlon de Oliveira Gomes

Contact Information

Mathematics Department 3-101
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Research Interests

Differential Geometry, 4-dimensional manifolds, Complex Geometry.

Education

Stony Brook University, Stony Brook, NY, U.S.A.

Ph.D., Mathematics, Aug 2014 - Present

- *Expected:* Summer 2020
- Thesis Topic: *Anti-self-dual metrics from the geometry of plane conics.*
- Advisor: Claude LeBrun

Universidade Federal do Ceara, Fortaleza, CE, Brazil.

M.S., Mathematics, Aug 2011 – Aug 2013

- *Graduated with Honors*
- Thesis title: *The Bernstein Problem.*
- Advisors: Luquésio Petrola de Melo Jorge, Ph.D and Luciano Mari, Ph.D
- Keywords: Minimal Submanifolds, Stability, Sets of Finite Perimeter.
- Area of Knowledge: Differential Geometry.

B.S., Mathematics Mar 2009 – Jun 2011

Publications

1. Birbrair, L., **Gomes, M.**, and Pereira, W. "Resonance sequences and recoverability". *Inter. J. Number Theory*, 11 (2) pp.495-506, 2015. doi:10.1142/S1793042115500256

Papers in Preparation

1. **Gomes, M.** "Anti-self-dual metrics from the geometry of plane conics."

Fellowships

- CAPES/LASPAU Science Without Borders Ph.D. Fellowship, Aug 2014 - Jul 2018
- CAPES Masters Degree Fellowship Aug 2011 - Jul 2013
- IMPA Summer Fellowship Jan 2010 - Feb 2010
- CNPq Undergraduate Research Fellowship Mar 2009 - Jul 2011

Awards and Honors

- *Chairman's Award for Excellence in Teaching by a Graduate Student Receiving a Ph.D.* 2020
  Department of Mathematics,
  Stony Brook University, Stony Brook, USA.
- *Teaching Award:"Outstanding educator."* 2016
  The Governor's School for Mathematics, Science and Technology,
  Lynchburg College, Lynchburg, VA, USA.
- *Master's Dissertation Approved with Honors* 2013
  Department of Mathematics,
  Universidade Federal do Ceará, Fortaleza, Brazil.
- *Teaching Award, "in recognition for the outstanding work in the preparation of Mathematics Olympiad teams"* 2013
  Coordination of the Ceará State Mathematics Olympiad,
  Universidade Federal do Ceará, Fortaleza, Brazil.

- *Silver Medal - Brazilian National Physics Olympiad* 2008
- *Honorable Mention - Ceará State Mathematics Olympiad* 2008
- *Gold Medal - Ceará State Mathematics Olympiad for Public Schools* 2006
- *Bronze Medal - Brazilian National Mathematics Olympiad for Public Schools* 2006

Invited Talks

Anti-self-dual metrics, Twistors, and Plane Conics Nov 2019
CUNY Almost Complex Geometry Seminar, New York, NY.

Conics, Twistors, and Anti-self-dual metrics. Sep 2019
Union College Mathematics Conference, Schenectady, NY.

Conferences attended

- *Geometry of Manifolds.* Oct 2017
  Simons Center for Geometry and Physics, Stony Brook, USA.
- *Thematic Program on Kähler Geometry.* Jun 2017
  University of Notre Dame, Notre Dame, USA.
- *Conference in Differential Geometry:* Jul 2016
  in Honour of Claude LeBrun's 60th birthday.
  Université du Québec à Montréal, Montreal, Canada.
- *3rd Biannual Stony Brook Mini-school in Geometry:* Jan 2015
  An invitation to Gromov-Witten Theory.
  Stony Brook University, Stony Brook, USA.

Teaching Experience

Stony Brook University, United States

Teaching Assistant, Department of Mathematics. Aug 2014 - present

Courses taught as instructor:
- MAT 118 - Mathematical Thinking (Summer 2015)
- MAT 127 - Calculus C (Summer 2015)
- MAT 132 - Calculus II (Summer 2016, Summer 2017, Summer 2019)
- MAT 203 - Calculus III with Applications (Summer 2018, Summer 2020)
- MAT 303 - Calculus IV with Applications (Summer 2018)
- MAT 511 - Fundamental Concepts of Mathematics (Summer 2019)
- MAT 514 - Analysis for Teachers II (Summer 2020)

Recitations:
- MAT 123 - Introduction to Calculus (Spring 2016)
- MAT 125 - Calculus A (Fall 2017)
- MAT 126 - Calculus B (Spring 2015)
- MAT 131 - Calculus I (Fall 2015)
- MAT 132 - Calculus II (Fall 2018, Spring 2019)
- MAT 303 - Calculus IV with Applications (Spring 2016, Spring 2018, Fall 2019)
- MAT 319 - Foundations of Analysis (Fall 2016)

Courses graded:
- MAT 200 - Logic, Language and Proof (Fall 2015)
- MAT 324 - Real Analysis (Fall 2014)

Universidade Federal do Ceará, Brazil

Substitute Professor, Department of Mathematics. Aug 2013 – Jun 2014

Courses taught as instructor:
- CB0587 - Calculus with Analytic Geometry I

CB0588 - Calculus with Analytic Geometry II
CB0536 - Integral and Differential Calculus III
CB0683 - Applied Mathematics
CB0696 - Introduction to Algebra
CB0669 - Applied Vector Calculus
CB0534 - Integral and Differential Calculus I
CB0674 - Supervised Training in Mathematics Teaching III

Sete de Setembro School, Brazil Mar 2013 – Jul 2014

Worked with Middle and High school students as a coach for Mathematics olympiads at State, National and International levels.

Master School, Brazil Apr 2013 – Dec 2013

Worked with Middle and High school students as a coach for Mathematics and Informatics olympiads at State and National levels.

Universidade da Integração Internacional da Lusofonia Afro-Brasileira, Brazil Mar 2012– Jul 2012

Worked as Instructor for courses in the Bachelor's degree in Mathematics and Natural Sciences. The audience consisted of local students, as well as students from Guiné-Bissau and Timor-Leste, participants of the University's exchange program.

Outreach activities

Institute for STEM Education, Stony Brook University.

Instructor for the Stony Brook Mathematics Summer Program.

- Mini-course: *Two-person Games and the Minimax Theorem.* Jul 2019
- Mini-course: *Planar Graphs, Euler's Formula, and Platonic Solids.* Jul 2018
- Mini-course: *Coloring Problems in Graph Theory.* Jul 2017
- Mini-course: *An Introduction to Graph Theory.* Jul 2016

Instructor for the Math in Jeans program.

- Mini-course: *An Introduction to Algorithms.* Mar - Apr 2017

Service

Graduate Student Representative. Aug 2017 - Jul 2018

Met with the Graduate Commitee to discuss final exams and written qualifying exams. Represented students interests in Graduate Commitee meetings.

Co-organizer, Student Differential Geometry Seminar. Aug 2018 - Present

A seminar on topics related to Complex Differential Geometry, Riemannian Geometry and Geometric Analysis.

- *Spectral Theory of the Laplacian.* Fall 2019
- *Topics in Scalar Curvature.* Spring 2019
- *Einstein Metrics and Special Holonomy.* Fall 2018

Co-organizer, RTG in Geometry Seminar. Aug 2017 - May 2018

A student seminar on topics on the interface of Algebraic, Differential and Symplectic Geometry.

- *Stability Conditions and Wall-crossing Phenomena.* Spring 2018
- *Introduction to Mirror Symmetry.* Fall 2017

References

Claude LeBrun
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Mathematics Department — E-mail: claude@math.stonybrook.edu
Stony Brook University, Stony Brook, NY, U.S.A.

H. Blaine Lawson, Jr.
Distinguished Professor — Phone: +1 631 632 8285
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Stony Brook University, Stony Brook, NY, U.S.A.

Xiuxiong Chen
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