

Curriculum Vitae
September 13th of 2018

PERSONAL

INFORMATION Name: Rafael Montezuma Pinheiro Cabral Date of birth: November 26, 1987
Languages: English, Portuguese (Native - Brazilian) Married, 1 child

CONTACT

INFORMATION Princeton University, Fine Hall phone: +1 (609) 727-8188
Washington Road e-mail: rcabral@math.princeton.edu
Princeton, NJ 08544-1000 USA webpage: <https://web.math.princeton.edu/~rcabral>

EDUCATION

Ph.D. in Mathematics, 2011-15
IMPA - Associação Instituto Nacional de Matemática Pura e Aplicada (Brazil)
Advisor: Fernando Codá Marques

Mathematics M.S., 2009-11
IMPA - Associação Instituto Nacional de Matemática Pura e Aplicada (Brazil)
Advisor: Marcelo Viana

Mathematics B.S., 2007-09
UFC - Universidade Federal do Ceara (Brazil)

EMPLOYMENT

HISTORY 2017-current Instructor of Mathematics, Princeton University
2016-17 Visiting Scholar, University of Chicago
2016-17 Research Associate, Imperial College London
2015-16 Instructor of Mathematics, Princeton University

TEACHING **Princeton University**, Princeton, NJ USA

EXPERIENCE Course instructor
· Spring 2019: T. B. D. (2 sessions)
· Spring 2018: MAT 201 - Multivariable Calculus
· Fall 2017: MAT 103 - Calculus I (2 sections)
· Spring 2016: MAT 201 - Multivariable Calculus
· Fall 2015: MAT 103 - Calculus I (2 sections)

IMPA, Rio de Janeiro, Brazil

Teaching Assistant (responsible for review sessions and grading)
· Jan-Feb 2013: Real Analysis
· Mar-Jun 2012: Riemannian Geometry
· Jan-Feb 2012: Differential Topology.
· March-June 2011: Complex Analysis

School of Differential Geometry, Rio de Janeiro, Brazil

Course instructor (responsible for planning lectures and writing lecture notes)

· Summer 2016: Minicourse on “Min-max theory for minimal surfaces”

Park City Mathematics Institute, Park City, UT USA

Teaching Assistant (responsible for problems sessions and lecture notes)

· Summer 2013: Minicourse on “Min-max theory and the Willmore Conjecture”

RESEARCH

INTERESTS Mathematics, Differential Geometry, Geometric Analysis

PUBLICATIONS

“Min-max minimal hypersurfaces in non-compact manifolds”

J. Differential Geom. 103 (2016), no. 3, 475-519.

“Metrics of positive scalar curvature and unbounded widths”

Calc. Var. Partial Differential Equations 55 (2016), no. 6, Art. 139, 15 pp.

PREPRINTS

“On the width of unit volume three-spheres” (with Lucas Ambrozio)

arXiv: 1809.03638 [math.DG]

“On the two-systole of real projective spaces” (with Lucas Ambrozio)

arXiv: 1809.03636 [math.DG]

“A mountain pass theorem for minimal hypersurfaces with fixed boundaries”

arXiv:1802.04757 [math.DG]

SERVICES **Princeton University**, Princeton, NJ USA

Organization of Seminar

· 2018-19: Differential Geometry and Geometric Analysis seminar

· 2015-16: Differential Geometry and Geometric Analysis seminar

Co-organization of Conference

· 31st Geometry Festival

University of Chicago, Chicago, IL USA

Organization of Seminar

· 2016-17: Geometric Analysis seminar

IMPA, Rio de Janeiro, Brazil

Organization of Seminar

· 2011-12: Graduate students geometric analysis seminar

Article reports

Refereed papers for *Mathematische Annalen*, *Annales de l’Institut Fourier*, *Journal of Differential Geometry*, *Pacific Journal of Mathematics*.

TALKS

- 2018 CUNY Differential Geometry Seminar (USA)
- 2018 Lehigh University Geometry and Topology Conference (USA)
- 2018 University of Chicago Geometric Analysis Seminar (USA)
- 2018 Workshop of Differential Geometry, Maceio-AL (Brazil)
- 2018 Princeton University DGGA Seminar (USA)
- 2017 University of Wisconsin-Madison Geometry Seminar (USA)
- 2016 Warwick EPSRC Symposium: Geometric PDEs (UK)
- 2016 19th School of Differential Geometry, IMPA (Brazil)
- 2016 Oberwolfach - Geometrie (Germany)
- 2016 CUNY Differential Geometry Seminar (USA)
- 2015 MIT Geometric Analysis Seminar (USA)
- 2015 AMS Sectional Meeting, at Rutgers University (USA)
- 2015 Stanford University (USA)
- 2015 29th Brazilian Mathematical Colloquium, IMPA (Brazil)
- 2015 Minicourse on min-max theory for minimal surfaces at UFAL (Brazil)
- 2014 18th School of Differential Geometry, UnB, (Brazil)
- 2014 Minimal and CMC Surfaces seminar, IMPA (Brazil)

ATTENDED

CONFERENCES

- Lehigh University Geometry and Topology Conference, May 2018
- 33rd Geometry Festival, Upenn, April 2018
- VIII Workshop of Differential Geometry, UFAL, Maceió, March 2018
- Rutgers University Geometric Analysis Conference, November 2017
- Warwick EPSRC Symposium: Geometric PDEs, December 2016
- Rutgers University Geometric Analysis Conference, October 2016
- XIX School of Differential Geometry, Rio de Janeiro, July 2016
- Oberwolfach - Geometrie, Germany, June 2016
- 31st Geometry Festival, Princeton, April 2016
- Advances in Geometric Analysis, Warwick, UK, July 2015
- 30th Geometry Festival, NYU-Courant, May 2015
- IV Workshop of Differential Geometry, UFAL, Maceió, March 2014
- VII Workshop of Geometric Analysis, UFC, Fortaleza, February 2014
- Conference in differential geometry and analysis, IHP, Paris, December 2013
- 29th Brazilian Mathematical Colloquium, IMPA, Rio de Janeiro, July 2013
- Graduate Summer School, PCMI, Park City, July 2013
- Encounters in Geometry, IMPA, Cabo Frio, June 2013
- III Workshop of Differential Geometry, UFAL, Maceió, March 2013
- VI Workshop of Geometric Analysis, UFC, Fortaleza, February 2013
- Conformal and Kahler Geometry, IHP, Paris, 2012
- 17th School of Differential Geometry, UFAM, Manaus, July 2012
- School and Conference on Geometric Analysis, ICTP, Trieste, June 2012

16th School of Differential Geometry, USP, São Paulo, July 2010
27th Brazilian Mathematical Colloquium, IMPA, Rio de Janeiro, July 2009
15th School of Differential Geometry, UFC, Fortaleza, July 2008

AWARDS

- First prize in the Mathematics category, CAPES PhD thesis 2016 annual award
- First prize, 2016 Carlos Gutierrez award for PhD thesis, ICMC-USP-São Carlos
- Special PhD scholarship “Bolsa nota 10” from FAPERJ (2013-2015)
- Doctorate scholarship from CNPq - Brazil (2011-2012)
- Masters scholarship from CNPq - Brazil (2009-2010)

EXTRA INFORMATION

REU summer program

- Summer 2008: Exchange program involving Brazilian and American undergraduate students, Fortaleza, Brazil

Mathematics competitions

- 31st Brazilian Mathematical Olympiad, Silver medal
- 30th Brazilian Mathematical Olympiad, Bronze medal
- 27th Brazilian Mathematical Olympiad, Bronze medal
- 24th Brazilian Mathematical Olympiad, Bronze medal

Memberships

- American Mathematical Society (since 2018)
- Brazilian Society of Mathematics (since 2009)

Abbreviations

- Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro (FAPERJ)
- Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)
- Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)