

André Arroja Neves

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1. EDUCATION

- **Stanford University**, Stanford, USA
Ph. D. in Mathematics, 2000-2005.
Thesis advisor: Richard Schoen.
- **Instituto Superior Técnico**, Lisboa, Portugal.
Licenciatura in Mathematics, 1999.

2. APPOINTMENTS

- 2016 – Present, Professor **University of Chicago**
- 2016 – Present, Visiting Professor **Imperial College London**
- 2012 – 2016, Professor **Imperial College London**
- 2011 – 2012, Reader **Imperial College London**
- 2009 – 2011, Lecturer **Imperial College London**
- 2007 – 2009, Assistant Professor, **Princeton University**
- 2005 – 2007, Instructor, **Princeton University**

3. RESEARCH INTERESTS

- Differential Geometry and Analysis of PDE's.

4. AWARDS

- **Oswald Veblen AMS Prize**, 2016
- **New Horizons in Mathematics Prize**, 2016
- **Royal Society Wolfson Merit Award**, 2015
- **LMS Whitehead Prize**, 2013
- **Philip Leverhulme Prize**, 2012
- **Excellence in teaching award**, Princeton, 2006.

5. INVITED LECTURES

- Joint AMS-MAA Annual Meeting Invited Speaker, San Diego 2018
- EMS Distinguished Speaker 2018, Valladolid, Spain 2018
- Distinguished Visitor Professor - Fields Institute, Canada, Fall 2017
- Nirenberg Lectures - CRM, Canada, 2015
- ICM Invited Section Speaker, South Korea, 2014
- Rademacher Lectures - UPenn, USA, 2014
- Current Developments in Mathematics 2013 - Harvard, Boston, USA
- Barret Lectures - University of Tennessee, USA, 2013

6. GRANTS

- **NSF grant DMS 1710846** (2017-2020)
- **EPSRC Programme Grant**(joint with Prof. Topping and Prof. Dafermos)(January 2013 to January 2019) 1,600,000 GBP
- **ERC Start Grant**(January 2012 to January 2017) 1,100,000 EUR

- **Marie Curie IRG** (January 2011 to January 2015)
- **NSF grant** (July 2006 to June 2009)

7. EDITORIAL BOARDS

- Editor of Communications in Analysis and Geometry.
- Managing Editor of Calculus of Variations and Partial Differential Equations.
- Editor of Annales scientifiques de l'E.N.S.
- Editor of Selecta Mathematica

8. ORGANIZED CONFERENCES

- Geometrie Workshop, Oberwolfach, Germany 2018
- ICMS Geometric Analysis workshop, Edinburgh, 2018
- Scalar Curvature Workshop, Oberwolfach, Germany 2017
- Geometry - Mario Micalef's 60th birthday, Warwick, 2017
- EPSRC Symposium: Geometric PDEs, Warwick, 2016
- Geometrie Workshop, Oberwolfach, Germany 2016
- End of Year London Geometry Conference, London, UK, 2015
- Min-max Theory and Applications, Oberwolfach, Germany 2015
- International Conference in Differential Geometry (in honour of Rick Schoen's 65h birthday), Warwick, UK, 2015
- WIC Workshop in honour of Rick Schoen's 65h birthday, London, UK, 2015
- AMS-SPM-EMS Porto Meeting Geometry session, Porto, Portugal, 2015
- Progress on Scalar Curvature Conference, Oberwolfach, Germany, 2014
- Recent Developments in Geometric Analysis, Lisbon, Portugal, 2014

- WIC (Warwick-Imperial-Cambridge) Geometry day, Cambridge, UK, March 2014

- WIC (Warwick-Imperial-Cambridge) Geometry day, London, UK, May 2013
- Willmore functional workshop, Oberwolfach, Germany, July, 2013
- Geometric Analysis Conference, Granada, Spain, June 2013
- WIC (Warwick-Imperial-Cambridge) Geometry day, Warwick, UK, June 2012
- Geometric Analysis conference, ICMS, Edinburgh, June 2011
- Geometric Analysis mini-workshop, Princeton, USA, March, 2008

9. POSTDOCS AND STUDENTS

9.1. **Former Postdocs:** Reto Muller, Sérgio Almaraz, Heudson Mirandola, Ezequiel Barbosa, Ben Sharp, Lu Wang, Alessandro Carlotto, Dan Ketover, Yvgeni Liokumovich, Cicero Cruz,IVALDO NUNES, Lucas Ambrósio, Rafael Montezuma

9.2. **Current Postdocs:** Daren Cheng, Marco Guaraco

9.3. **Current Phd students:** Celso Viana, Yuchin Sun, Liam Mazurowski

9.4. **Former Phd students:** Charles Nurser, Nicolau Aiex

10. SURVEYS

- A. Neves, Recent Progress on Singularities of Lagrangian Mean Curvature Flow. *Surveys in Geometric Analysis and Relativity*, ALM 20 (2011) 413-436
- A. Neves, New applications of Min-max Theory. *Proceedings of International Congress of Mathematics* (2014), 939–957
- F. C. Marques and A. Neves, The Willmore conjecture. *Jahresber. Dtsch. Math.-Ver.* 116 (2014), 201–222.
- F. C. Marques and A. Neves, Applications of Almgren-Pitts min-max theory. *Current developments in mathematics 2013*, 1–71, Int. Press, Somerville, MA, 2014.
- F. C. Marques and A. Neves, Min-max theory of minimal surfaces and applications. *Mathematical Congress of the Americas*, 13–25, Contemp. Math., 656, Amer. Math. Soc., Providence, RI, 2016.

11. LIST OF PUBLICATIONS

- H. Bray and A. Neves, Classification of prime 3-Manifolds with Yamabe invariant greater than $\mathbb{R}P^3$. *Ann. of Math.* 159 (2004), 407–424.

- K. Akutagawa and A. Neves, Classification of all 3-manifolds with Yamabe invariant greater than \mathbb{RP}^3 . *J. Differential Geom.* 75 (2007), 359–386.
- A. Neves, Singularities of Lagrangian Mean Curvature Flow: Zero-Maslov class case. *Invent. Math.* 168 (2007), 449–484.
- A. Neves and G. Tian, Existence and uniqueness of constant mean curvature foliation of asymptotically hyperbolic 3-manifolds. *Geom. Funct. Anal.* 19 (2009), 910–942.
- A. Neves, Singularities of Lagrangian mean curvature flow: Monotone case. *Math. Res. Lett.* 17 (2010) 109–126.
- A. Neves, Insufficient convergence of inverse mean curvature flow on asymptotic hyperbolic manifolds. *J. Differential Geom.* 84 (2010), 191–229.
- A. Neves and G. Tian, Existence and uniqueness of constant mean curvature foliation of asymptotically hyperbolic 3-manifolds II. *J. Reine Angew. Math.* 641 (2010) 69–93.
- H. Bray, S. Brendle, M. Eichmair, and A. Neves, Area-minimizing projective planes in three-manifold. *Comm. Pure Appl. Math.* 63 (2010), 1237–1247
- H. Bray, S. Brendle, and A. Neves, A rigidity result for area-minimizing two-spheres in three-manifolds. *Comm. Anal. Geom.* 18 (2010), 821–830
- S. Brendle, F. C. Marques, and A. Neves, Deformations of the hemisphere that increase scalar curvature. *Invent. Math.* 185, (2011), 175–197
- F. C. Marques and A. Neves, Rigidity of min-max minimal spheres in three-manifolds. *Duke Math. J.* 161 (2012), 2725–2752.
- A. Neves and G. Tian, Nonexistence of almost-calibrated translating solutions to Lagrangian mean curvature flow. *Trans. Amer. Math. Soc.* 365 (2013), 5655–5680.
- A. Neves, Finite time singularities for Lagrangian mean curvature flow. *Ann. of Math.* 177 (2013), 1029–1076.
- J. Lotay and A. Neves, Uniqueness of Lagrangian self-expanders. *Geom. Topol.* 17 (2013), 2689–2729
- F. C. Marques and A. Neves, Min-Max Theory and the Willmore Conjecture. *Ann. of Math.* 179 (2014), 683–782.
- D. Lee and A. Neves, The Penrose inequality for asymptotically locally hyperbolic spaces with nonpositive mass. *Comm. Math. Phys.* 339 (2015), 327–352.

- I. Agol, F. C. Marques and A. Neves, Min-max theory and the energy of links. *J. Amer. Math. Soc.* 29 (2016), 561–578.
- F. C. Marques and A. Neves, Existence of infinitely many minimal hypersurfaces in positive Ricci curvature. *Invent. Math.* 209 (2017), 577–616.
- F. C. Marques and A. Neves, Morse index and multiplicity of min-max minimal hypersurfaces. *Camb. J. Math.* 4 (2016), 463–511.
- D. Ketover, F. C. Marques and A. Neves, The catenoid estimate and its geometric applications. *to appear in JDG*.
- Y. Liokumovich, F. C. Marques and A. Neves, Weyl law for the Volume Spectrum. *to appear in Ann. of Math.*
- K. Irie, F. C. Marques and A. Neves, Denseness of minimal hypersurfaces for generic metrics. *to appear in Ann. of Math.*
- T. Ilmanen, A. Neves, and F. Schulze, On short time existence for the planar network flow, *to appear in JDG*.
- F. C. Marques, A. Neves, and A. Song, Equidistribution of minimal hypersurfaces for generic metrics.

12. INVITED TALKS FOR THE LAST FOUR YEARS.

Riemannian Geometry Past, Present and Future: an homage to Marcel Berger, IHES, France 2017
 Geometric Analysis Conference, Rutgers, USA 2017
 Geometry of Manifolds, Simons Center, USA 2017
 ESI Conference, Vienna, Austria, 2017
 Global Portuguese Math Meeting , Lisbon, Portugal, 2017
 Geometry - Mario Micaleff's 60th birthday, UK, 2017
 UConn Geometry Day, Connecticut, USA, 2017
 Colloquium, Notre Dame University, USA, 2017
 South. California Geom. Analysis Conference, San Diego, USA, 2017
 AMS National Meeting, Plenary Speaker, Canberra, Australia, 2016
 Colloquium, Northwestern, USA, 2016
 Wolfgang Meyer 80th Birthday Conference, Florence, Italy, 2016
 CMSA Geometric Analysis Seminar, Harvard University, US, 2016
 Portuguese association of Mathematical Students, Lisbon, Portugal, 2016
 Geometric Flows & Related Topics, Queen Mary University of London 2016.
 Colloquium, UCLA, USA , 2015
 Colloquium, University Leicester, UK, 2015
 10th Pacific Rim Complex Geometry Conference, Tokyo, Japan, 2015
 International Conference in Differential Geometry, Warwick, UK, 2015
 AMS-SPM International Meeting, Plenary Speaker, Porto, Portugal, 2015
 Struwe's 60th Birthday Conference, ETH Zurich , Switzerland, 2015

Colloquium, Università di Roma “Tor Vergata” , Italy, 2015
Colloquium, University of Chicago USA, 2015
Simons Colloquium, Simons Center, Stony Brook, USA 2015
Holography and Entanglement Entropy, Orlean, France, 2015
Flowers and Friends, Frankfurt, Germany, 2015
International Conference on Minimal Surfaces, IMPA, Brazil, 2015
Conference on Calculus of Variations: Geometry, Inequalities, and Design,
Fields Institute, Canada 2014
Colloquium, Yale University, USA, 2014
DPMMS Presentations, Cambridge, UK, 2014
FU Geometry Colloquium, Berlin, Germany 2014
Riemann, Einstein, and Geometry, Strasbourg, France, 2014
Sussex PDE conference, Brighton, UK, 2014
Workshop on Special Geometric Structures, Hamburg, Germany, 2014
ICM Lecture- Seoul, South Korea, 2014
KIAS Summer school, South Korea, 2014
Geometrie, Oberwolfach, Germany, 2014
Geometry Fest - Stony Brook, USA, 2014
Imperial Geometry and Topology Seminar, London, UK, 2014
Queen Mary Geometry Seminar, London, UK, 2014
Oxford PDE’s conference, Oxford University, UK, 2014
Oxford Geometry Seminar, Oxford University, UK, 2014
Lisbon Geometry Seminar, IST, Lisbon, 2014
International Geometric Analysis conference, Maceio, Brazil, 2014