

# Curriculum Vitae

## PERSONAL

Name: Bruno De Oliveira  
Office Phone: (305) 284-2320  
Current Academic Rank: Associate Professor of Mathematics  
(Director of Graduate Studies)  
Citizenship: American

## HIGHER EDUCATION

- Columbia University; PhD in Mathematics; May 97.
- Columbia University; MPhil in Mathematics, May 97.
- Instituto Tecnico Superior, Universidade de Lisboa; BS in Physics ; June 91

## EXPERIENCE

- Institut Élie Cartan, University of Lorraine at Nancy, Visiting Professor, December 24
- CAMGDS, Center for Mathematical Analysis, Geometry and Dynamical Systems, at Instituto Superior Técnico, Portugal, Visiting Researcher, Spring 23
- Harvard University, Associate, Fall 13-Spring 14
- University of Miami, Associate Professor, 07-present
- New York University, Visiting Associate Professor, 11-12
- Harvard University, Research Scholar, 08-09 (sabbatical)
- University of Miami, Assistant Professor, 02-07
- University of Pennsylvania, Lecturer of Mathematics (Postdoctoral position); 98-00 and 01-02;
- Harvard University; National Science Foundation Postdoctoral Fellow; 00-01;
- University of California at Irvine; Visiting Assistant Professor; 97-98

## PUBLICATIONS

Selected juried or referred journal articles

- Bruno De Oliveira, Yohannes Asega, Michael Weiss “Surface quotient singularities and big cotangent bundle: Part II”, (2024) (to appear European Journal of Mathematics)
- Bruno De Oliveira, Yohannes Asega, Michael Weiss “Surface quotient singularities and big cotangent bundle: Part I”, (2023). (to appear European Journal of Mathematics)
- Bruno De Oliveira, Michael Weiss “Resolution of surfaces with big cotangent bundle and  $A_2$  singularities” Boletim Sociedade Portuguesa Matematica, 77 (2019) 39-52
- Bruno De Oliveira, Christopher Langdon “Twisted symmetric differentials and the quadric algebra of subvarieties of  $P^N$  of low codimension”, European Journal of Mathematics, 5 (2018), pages 454-475
- Bruno De Oliveira, Fedor Bogomolov, “Local structure of closed symmetric 2-differentials”, “Foliations in algebraic geometry”, Simons Symposia, Cascini, P., McKernan, J., Pereira, J (Eds.), Springer Verlag, (2016), 53-71

- Bruno De Oliveira, Fedor Bogomolov, “Closed symmetric 2-differentials of the 1-st kind”, Pure and Applied Mathematics Quaterly, vol 9, 4, (2013), 613-643
- Bruno De Oliveira, Fedor Bogomolov “Symmetric differentials of rank 1 and holomorphic maps”, Pure and Applied Mathematics Quaterly, vol 7, 4, (2011), 1085-1104
- Bruno De Oliveira, Fedor Bogomolov “Symmetric tensors and the geometry of projective subvarieties of  $P^n$ ”, Geometric And Functional Analysis, vol 18 (2008), 637-656
- Bruno De Oliveira, Fedor Bogomolov “Hyperbolicity of nodal hypersurfaces”, J. Reine Angew. Math. Volume 596, (2006), 89-101
- Bruno De Oliveira, Fedor Bogomolov “Vanishing theorems of negative vector bundles on projective varieties and convexity of coverings”, J. Algebraic Geom., 15, (2006), 207-222
- Bruno De Oliveira, Fedor Bogomolov, Paolo Cascini “Singularities on complete algebraic varieties”, Center European J. of Math, vol 4, No. 2 (2006), 194-208
- Bruno De Oliveira, Fedor Bogomolov “Holomorphic functions and vector bundles on coverings of projective varieties”, Asian J. Math., Vol. 9, No. 3 (2005), 295-314
- Bruno De Oliveira; “Complex Cobordisms and Embeddability of CR-manifolds”; Mathematical Research Letters, **10**, (2003), 695-708
- Bruno De Oliveira; L. Katzarkov; M. Ramachandran; “Deformations of large fundamental groups”; Geometric and Functional Analysis; **12** (2002); 651-668;
- Bruno De Oliveira “Embeddability of CR-manifolds is a not complex cobordism invariant”; Appendix to "Can a good manifold come to a bad end?" Henkin, G., Epstein; Tr. Mat. Inst. Steklov; **325** (2001); 71-93
- Fedor Bogomolov; Bruno De Oliveira; “Stein Small Deformations of Strictly Pseudoconvex Surfaces”; Contemporary Mathematics; Amer. Math. Soc. **207** (1998); 25-41

## PROFESSIONAL

### Grants:

- National Science Foundation Grant DMS- 0707097 (PI Bruno De Oliveira) \$112,783 June 1 2007-May 31 2011
- National Science Foundation Grant DMS-0306487 (PI Bruno De Oliveira) \$98,984 August 15 2003-May 31 2007
- National Science Foundation Grant DMS-0535363 (Co-PI Bruno De Oliveira) \$12,000

### Post-Doctoral Fellowships:

- National Science Foundation Mathematical Research Postdoctoral Fellowship 99-02

### Awards:

- Max Orovitz Summer Award, \$9,000 University of Miami, 2003

### Selected Invited Conference and Workshop Talks and Mini-Courses:

- Isaak Newton Institute, workshop “singularity theory and hyperbolicity”, lecture: “Quotient singularities and big cotangent bundles”, Cambridge, England, March 24
- American Mathematical Society, Special Session, lecture: "Abundance of symmetric differential tensors, birational geometry of surfaces and hypersurfaces in  $P^3$ ", Boston, January 4-5, 2023
- IMSA, Mini-course, “The geometry of anticanonical pairs”, Miami, September-October 2023
- University of Lisbon, Workshop on Geometry, lecture: “ $A_n$  singularities and bigness of the cotangent bundle”, Lisbon, July 1-10, 2022
- Summer school "Algebra and geometry", (postponed due to covid), Yaroslavl, Russia, invited main speaker, to present the mini-course “The geometry of symmetric differentials and subvarieties of  $P^n$ ”, July 24–31, 2020
- CIRM, workshop, Entire Curves, Rational curves and Foliations, France, invited participation, February, 2019
- Pontificia Universidad Catolica de Chile, mini-course: “Hyperbolicity and closed symmetric differentials”, Santiago, Chile, March 7-9, 2018
- Instituto Superior Tecnico, University of Lisbon, mini-course “New and old on hyperbolicity of complex manifolds”, Portugal, Lisbon, July 2018
- 1<sup>st</sup> International conference “Global Portuguese Mathematicians”, title of lecture “The Geometry of Symmetric Differentials”, Lisbon, Portugal, July 13-14, 2017
- CAMGSD, Mini-course: “Twisted symmetric differentials and quadric envelopes”, Lisbon, Portugal, July 25-29, 2016
- BIRS Workshop on “Distribution of Rational and Holomorphic Curves in Algebraic Varieties”, “Surfaces that are multi-isotropic”, Banff, Canada, March, 2015
- Conference “Algebraic Surfaces”, title of lecture “The topology and geometry of closed symmetric differentials”, Lisbon, Portugal, 1 to 3 of July, 2015
- Workshop “Rational Points, Rational Curves and Entire Holomorphic Curves and Projective Varieties”, title of lecture “Foliations and closed symmetric differentials on surfaces”, Montreal, Canada, June 3-28th, 2013
- Workshop “The Topology of Algebraic Varieties”, title of lecture “Topological/Geometrical properties of closed symmetric differentials on surfaces”, Montreal, Canada, September 21-28<sup>th</sup>, 2012
- Conference “Geometry of Kahler Manifolds”, title of lecture “Geometry of closed symmetric differentials”, Nantes, France, May 21-25<sup>th</sup>, 2012
- Invited to be one of the 3 main speakers of the international “XIII Lisbon Summer Lectures in Geometry”, mini-course title “Symmetric differentials and fundamental group”, Lisbon, Portugal, July 23-25<sup>th</sup>, 2012
- Invited speaker Kolchin workshop “Differential Algebraic Geometry”, “Geometry of closed symmetric differentials”, CUNY and NYU, New York, April 16-18, 2010
- Invited speaker BIRS workshop on “Complex Analysis and Complex Geometry”, “Symmetric differentials, differential operators and topology of complex surfaces”, Banff, Canada, May 31<sup>st</sup>-June 5<sup>th</sup>, 2009
- Invited speaker at the Fields Institute affiliated Workshop on “Arithmetic and Hyperbolic Geometry”, UQAM, “Symmetric differentials and algebraic surfaces”, Montreal, Canada, November 7-9, 2008
- Invited to participate and speak at the Workshop “Komplexe Analysis”, Mathematisches Forschungsinstitut Oberwolfach, Germany, August 24-30, 2008.
- Workshop on Complex geometry, Korean Institute of Advance Study, “Symmetric twisted differentials and the geometry of projective manifolds”, Seoul, Korea, October 16-19, 2007

- Workshop on the geometry of holomorphic and algebraic curves, Centre de recherches mathématiques Montreal, “Symmetric differentials and the geometry of submanifolds of  $P^n$ ”, Montreal, Canada, April 30-May 4, 2007
- Complex geometry, Kahler groups and related topics, Special session SS 9A of American Math. Society sectional meeting at the University of Utah, “Hyperbolicity and the geometry of subvarieties of  $P^N$  via symmetric differentials”, October 7-8, 2006
- International Several Complex Variables Conference, “Symmetric differentials and the geometry of subvarieties of  $P^n$ ”, Beijing, China, June 2006
- BIRS Workshop on Analytic and Algebraic Methods in Complex and CR Geometry, “Symmetric differentials and the hyperbolicity of hypersurfaces in  $P^3$ ”, Banff, Canada, September 2005
- Workshop on Complex and Symplectic Geometry and Applications, “Convexity of coverings of projective varieties”, Miami, March 2004
- Conference on Recent Developments in Several Complex Variables and Complex Algebraic Geometry for the 60th birthday of Professor Yum-Tong Siu, Hong Kong, November 2003
- Lehigh University Geometry and Topology Conference, “Vector bundles and holomorphic convexity of universal covers, Lehigh, July 12-14, 2003
- VBAC (Vector Bundles on Algebraic Curves) Conference, “Vector Bundles on Universal covering and the Shafarevich Conjecture”, Oporto 2003
- Summer Workshop, Lectures on “Uniformization of Complex Manifolds”; CMAGDS, Lisbon; 2000
- American Mathematical Society Sectional Meeting, “Large Fundamental Groups under Deformations,” Tucson, November 1998
- A.G.E (Algebraic Geometry in Europe) Workshop on Algebraic surfaces, “Results on a Conjecture on Kodaira- Fibrations,”, Lisbon, 1997

#### **Selected Invited Colloquia and Seminar Talks:**

- Université de Lorraine, complex geometry seminar, “Chern ratios of surfaces with big cotangent bundle”, Nancy, December 2024
- CIRGET, Geometry and Topology Seminar, “Chern number ratios of surfaces with big cotangent bundle”, Canada, Montreal, November 8th, 2024
- CIRGET, Algebraic Geometry Seminar, “Canonical singularities and surfaces with big cotangent bundle”, Canada, Montreal, November 6th, 2024
- University of Illinois at Chicago, Algebraic Geometry Seminar, “CMS criterion and the geography of surfaces with big cotangent bundle. April 15<sup>th</sup> 2024
- New York University, Algebraic Geometry Seminar, “CMS criterion and the geography of surfaces with big cotangent bundle. February 27<sup>th</sup> 2024
- Europe/Lisbon geometry seminar, "Geography of surfaces with big cotangent bundle", Lisbon, June 20<sup>th</sup>, 2023.
- Algebraic Geometry Seminar, “Surface quotient singularities and big cotangent bundle”, IMSA, Institute of Mathematical Sciences of the Americas, December 22<sup>nd</sup> 2022.
- Geometry Seminar, “ $A_n$  singularities and bigness of the cotangent bundle”, University of Lisbon, July 5<sup>th</sup>, 2022.
- Algebraic Geometry Seminar, “Canonical surfaces whose resolution has big cotangent bundle”, New York University, May 7, 2019
- Geometry Seminar, “Big jet bundles on resolutions of orbifold surfaces of general type”, CAMGSD, Instituto Superior Tecnico, Lisbon, February 26, 2019

- Algebraic Geometry Seminar, “The quadric algebra and twisted symmetric differentials”, Brown University, Spring 2018
- Algebraic Geometry Seminar, “Trisecant varieties in low codimension”, New York University, Spring 2017
- Colloquium, “The geometry of symmetric differentials”, Lehigh University, Fall 2016
- Geometry Seminar, “Symmetric twisted differentials, quadrics and trisecants, Lehigh University Fall 2016
- Algebraic Geometry Seminar, “Generalized multi-isotropic surfaces in  $C^5$ ”, New York University, NYC, Spring, 2016
- Algebraic Geometry Seminar, “The geometry of twisted symmetric differentials”, New York University, NYC, Fall, 2015
- Algebraic Geometry Seminar, two lectures “Local structure of closed symmetric differentials”, New York University, NYC, Spring, 2014
- Geometry and topology seminar, “On the geometry of closed symmetric differentials”, Université de Québec à Montréal, Montreal, Canada, March 2012
- Algebraic Geometry Seminar, two lectures “The geometry of closed symmetric differentials III and IV”, New York University, NYC, Spring, 2012
- Algebraic Geometry Seminar, “Symmetric differentials of degree 2 on surfaces”, New York University, November 8 & 15<sup>th</sup>, 2011
- Geometry Seminar, “Rank1 Symmetric differentials and holomorphic maps”, Courant Institute, NYU, October 2010
- Complex Geometry Seminar, “Symmetric differentials of degree 2 and the topology of complex surfaces”, University of Houston, November 18<sup>th</sup>, 2009
- Harvard/MIT Algebraic Geometry seminar, “The topology of surfaces via symmetric differentials”, Cambridge, November 25, 2008
- New York University, Differential Geometry Seminar, “Symmetric differentials and the Geometry of submanifolds of  $P^n$ ”, New York, Fall 2006
- Harvard University, Special Seminar, “Algebraic hyperbolicity of nodal hypersurfaces”, Fall 04
- IST, Technical University of Lisbon, “Hyperbolicity of nodal hypersurfaces”, Lisbon, July 2004
- Toronto University, Geometry Seminar, “Complex Cobordant CR-Manifolds and Embeddability,” Fall 2002
- Johns Hopkins University, Complex Geometry Seminar, “Complex Cobordism and Embeddable CR-structures”, Fall 2001
- Brandeis University, General Seminar, “Uniformization of Complex Manifolds and the Shafarevich Conjecture”, Fall 2000
- University of Chicago, Several complex variables Seminar, “Examples of non-embeddable CR-3-manifolds”, Spring 1999
- University of Pennsylvania, Analysis Seminar, “Embeddable CR-3-manifolds”, Spring 1999
- University of California at Irvine, Algebraic Geometry Seminar, “Kodaira Fibrations as a Dominant Class of Surfaces”, Spring 1998.
- Massachusetts Institute of Technology, Algebraic Geometry Seminar, “Lifting Curves on Deformations and Hodge Theory,” Fall 1996.

### **Organization of current events** (Workshops, Conferences, Lecture Series):

- Founder and co-organizer of the annual workshop “Positivity and Hyperbolicity in Lisbon”, first event 2025 June30-July2
- Founder and co-organizer of the international monthly lecture series "The geometry of the cotangent bundle and hyperbolicity" by securing IMSA funding and the participation of 4 international institutions: IMPA (Brazil), CIRGET(Canada), Pontif.Universidad Catolica (Chile), Universite de Lorraine (France)

### **Other professional activities:**

- Participated in the Graduate Directors meeting at JMM-AMS Atlanta and San Diego 2017, 2018
- Participated in Graduate Students Fair, at JMM-AMS 2016, 2017 and 2018
- Invited to participate in the Algebraic Geometry Northeastern Series Workshop, Stony Brook, October 29-30<sup>th</sup>, 2016
- Invited to participate in “A Celebration of Algebraic Geometry”, Harvard University, Boston, August 25-28<sup>th</sup> 2011
- Invited to participate in the Thematic Program on arithmetic Geometry, hyperbolic Geometry and related topics, The Fields Institute, Toronto, Canada, November16-22, 2008.
- Invited to participate in the Park City Mathematics Institute Summer program (Research program), “Analytic and Algebraic Geometry, common problems-different methods”, Park City, Utah, July 6-26, 2008.
- Referee for the Canadian Mathematical Bulletin, European Journal of Mathematics.
- Reviews for the American Mathematical Society.

## **STUDENTS**

### **Ph.D. Students:**

Christopher Langdon (graduated May 2017), with Post-doc position at Pennsylvania State University

Michael Weiss (graduated May 2021)

Yohannes Assega (graduated March 2024)

Claudio Fabroni (2<sup>st</sup> year)

## **SERVICE**

- Overhaul of the curriculum of PhD/Masters program Fall 24-now
- Writing the Report of the graduate program of the department of Mathematics 2016-22
- Writing the Report of the graduate program of the department of Mathematics 2007-15
- Graduate director for the Program in Mathematics 15-present
- Ambassador for United Way for the Mathematics Department, 2017
- University of Miami: College Council 10-present
- University of Miami: member of the Graduate Student Committee 05-07
- University of Pennsylvania: Chairman of mathematical Steele prize committee 98-02