Roberto De Leo

Curriculum Vitæ

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🌐 http://deleo.website/
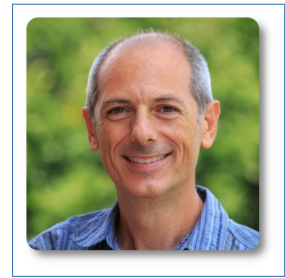
Scientific Interests

Mathematical Biology
1. Solitons dynamics in DNA

Dynamical Systems/Fractals Theory
2. Self-projective sets
3. Real Newton Fractals in the plane
4. Invariant sets of the logistic map
5. Topology of quasiperiodic functions

Global Analysis
6. Infinitesimal invertibility of the isometric operator and free maps.
7. Cohomological equation on the plane.

Education

1996–2000 **PhD**, *University of Maryland*, College Park, USA
PhD in Pure Mathematics

1996–1998 **MA**, *University of Maryland*, College Park, USA
M.A. in Pure Mathematics

1994–1996 **Laurea**, *Università di Cagliari*, Cagliari, Italy
Laurea in Mathematics

1990–1994 **Doctorate**, *Università di Cagliari*, Cagliari, Italy
Doctorate in Physics

1986–1990 **Laurea**, *Università di Cagliari*, Cagliari, Italy
Laurea in Physics

PhD thesis

year 2000

title *Topological aspects of planar sections of periodic surfaces.*

advisor S.P. Novikov, Fields Medalist (1970), U. of Maryland and IPST (USA), Steklov Inst. (Russia)

jury W.M. Goldman, M. Brin, S.J. Gates

Doctorate thesis

year	1994
title	*Positronium decay in four photons*
advisor	A. Devoto, U. of Cagliari

Academic Employments and Fellowships

Aug 2024 – now	**Full Professor**, *Department of Mathematics*, Howard University, Washington, DC
January 2023 – now	**Associate Chair**, *Department of Mathematics*, Howard University, Washington, DC
August 2017 – Aug 2024	**Associate Professor**, *Department of Mathematics*, Howard University, Washington, DC
August 2013 – August 2017	**Assistant Professor**, *Department of Mathematics*, Howard University, Washington, DC
Sep–Dec 2012	**Visiting Lecturer**, *Department of Mathematics*, University of Maryland, College Park, MD
Sep–Dec 2011	**Visiting Scientific Researcher**, *IPST (Institute for Physical Science and Technology) and Department of Mathematics*, University of Maryland, College Park, MD
April 2011	**Visiting Scientific Researcher**, *IPST (Institute for Physical Science and Technology) and Department of Mathematics*, University of Maryland, College Park, MD
2011–2012	**Associate Research Fellow**, *Department of Physics*, University of Cagliari, Italy
2007–2010	**Associate Research Fellow**, *Department of Mathematics*, University of Cagliari, Italy
Feb–May 2007	**Visiting Scientific Researcher**, *IPST (Institute for Physical Science and Technology) and Department of Mathematics*, University of Maryland, College Park, MD
2003-2007	**Researcher**, *Department of Physics*, University of Cagliari, Italy
Jan–Aug 2002	**Fellowship**, *Department of Mathematics*, University of Cagliari, Italy
2001	**Consultant**, *CRS4 (Computational center)*, Cagliari, Italy
1997–2000	**Fellowship**, *Indam (Istituto di Alta Matematica "F. Severi")*, Italy

Teaching

Fall 2023	**MATH243 (Dynamical Systems I, graduate course)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2024	**MATH164 (Intro to Numerical Analysis)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2023	**MATH164 (Intro to Numerical Analysis)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2023	**MATH164 (Intro to Numerical Analysis)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2022	**MATH156 (Calculus I), 3 sections)**, *Department of Mathematics*, Howard University, Washington, DC

Spring 2022	**MATH164 (Intro to Numerical Analysis) and MATH247 (Numerical Analysis I, Graduate course)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2021	**MATH164 (Intro to Numerical Analysis) and MATH229 (Complex Analysis I, Graduate course)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2021	**MATH230 (Complex Analysis II, Graduate course)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2020	**MATH164 (Intro to Numerical Analysis), MATH185 (Complex variables) and MATH229 (Complex Analysis I, Graduate course)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2020	**MATH158 (Calculus III) and MATH247 (Numerical Analysis I, Graduate course)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2019	**MATH158 (Calculus III) and MATH236 (PDE I, Graduate course)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2018	**MATH156 (Calculus III) and MATH164 (Intro to Numerical Analysis)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2018	**MATH158 (Calculus III) and MATH247 (Numerical Analysis I, Graduate course)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2017	**MATH006 (College Algebra 1) and MATH156 (Calculus I)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2017	**MATH010 (College Algebra 2) and MATH159 (Differential Equations)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2016	**MATH006 (College Algebra 1) and MATH450 (Scientific Computing, Graduate course)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2016	**MATH006 (College Algebra 1) and MATH155 (Calculus I)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2015	**MATH006 (College Algebra 1) and MATH159 (Differential Equations)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2015	**MATH006 (College Algebra 1) and MATH159 (Differential Equations)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2014	**MATH158 (Calculus III)**, *Department of Mathematics*, Howard University, Washington, DC
Spring 2014	**MATH006 (College Algebra 1) and MATH159 (Differential Equations)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2013	**MATH150 (Modern Geometry) and MATH156 (Calculus 1)**, *Department of Mathematics*, Howard University, Washington, DC
Fall 2012	**Lecturer for the course MATH115 (Precalculus) and MATH141H (Calculus 2)**, *Department of Mathematics*, University of Maryland, College Park, MD
April 2012	**Lecturer for a mini-course on numerical resolution of ordinary differential equations**, *Department of Mathematics*, Moscow State University, Russia
Spring 2010	**Lecturer for the course "Mathematics"**, *Department of Education*, University of Cagliari, Italy

Spring 2009	**Lecturer for the course "Mathematics"**, *Department of Education*, University of Cagliari, Italy
Spring 2008	**Lecturer for the course "Mathematics"**, *Department of Education*, University of Cagliari, Italy
2007-08	**Teacher of Mathematics and Physics**, *Liceo Scientifico "L.B. Alberti"*, Italy
Spring 2006	**Lecturer for the course "Foundations of Mathematics"**, *Department of Education*, University of Cagliari, Italy
Spring 2005	**Lecturer for the course "Foundations of Mathematics"**, *Department of Education*, University of Cagliari, Italy
Spring 2004	**Teaching Assistant for the course "Mathematical Physics"**, *Department of Physics*, University of Cagliari, Italy
Spring 2004	**Lecturer for the course "Foundations of Mathematics"**, *Department of Education*, University of Cagliari, Italy
Spring 2003	**Lecturer for the course "Foundations of Mathematics"**, *Department of Education*, University of Cagliari, Italy
2002-03	**Teacher of Mathematics and Physics**, *Liceo Scientifico "L.B. Alberti"*, Italy
Spring 2002	**Teaching Assistant for the course "Geometry 1"**, *Department of Mathematics*, University of Cagliari, Italy
Spring 2002	**Lecturer for the course "Foundations of Mathematics"**, *Department of Education*, University of Cagliari, Italy
Fall 2001	**Lecturer for the course "Computer Science"**, *Special School for High-School Teachers*, University of Cagliari, Italy
Fall 2000	**Teacher of Mathematics and Physics**, *Liceo Scientifico "L.B. Alberti"*, Italy
Fall 1997	**Teaching Assistant for the course MATH140 (Calculus 1)**, *University of Maryland*, College Park, MD
Spring 1997	**Teaching Assistant for the course MATH115 (Precalculus)**, *University of Maryland*, College Park, MD
Fall 1996	**Grader for the course MATH403 (Introduction to Abstract Algebra)**, *University of Maryland*, College Park, MD
1994-95	**Teacher of Mathematics and Physics**, *Liceo Scientifico "L.B. Alberti"*, Italy
1993-94	**Teacher of Mathematics and Physics**, *Liceo Scientifico "L.B. Alberti"*, Italy

PhD Students

2020–present	**Samar Alsalmi**, *Department of Mathematics*, Howard University, Washington, DC
2020–present	**Abdullah Alharti**, *Department of Mathematics*, Howard University, Washington, DC
2016–present	**Daoudaf Ballo**, *Department of Mathematics*, Howard University, Washington, DC
2004–2007	**Sergio Demelio**, *Department of Physics*, University of Cagliari, Italy

Publications on Solitons dynamics in DNA

[1] M. Cadoni, R. De Leo and G. Gaeta, *Solitons in a double pendulums chain model, and DNA roto-torsional dynamics*, J. of Nonlinear Math. Phys., 14(1), 128-146, 2007, q-bio/0604027

[2] M. Cadoni, R. De Leo and G. Gaeta, *Composite model for DNA torsion dynamics*, Phys. Rev. E, 75, 021919 (21 pages), 2007, q-bio/0604014

[3]   M. Cadoni, R. De Leo and G. Gaeta, *A symmetry breaking mechanism for selecting the speed of relativistic solitons*, J. Phys. A: Math. Theor., 40, 8517-8534, 2007, hep-th/0702213

[4]   M. Cadoni, R. De Leo and G. Gaeta, *Sine-Gordon solitons, auxiliary fields, and singular limit of a double pendulums chain*, J. Phys. A: Math. Theor., 40, 12917-12929, 2007, arXiv:0706.3173 [math-ph]

[5]   M. Cadoni, R. De Leo, S. Demelio and G. Gaeta, *Twist solitons in complex macromolecules: from DNA to polyethylene*, Int. J. on Non-Linear Mech., 43, 1094-1107, 2008, arXiv:0710.4475 [q-bio.BM]

[6]   R. De Leo and S. Demelio, *Numerical analysis of solitons profiles in a composite model for DNA torsion dynamics*, Int. J. on Non-Linear Mech., 43, 1029-1039, 2008, arXiv:0711.1069 [q-bio.BM]

[7]   M. Cadoni, R. De Leo, S. Demelio and G. Gaeta, *Propagation of twist solitons in fully inhomogeneous DNA chains*, J. of Non-linear Math. Phys., 17:4, 557-569, 2010, arXiv:0904.0148 [q-bio.BM]

[8]   M. Cadoni, R. De Leo and S. Demelio, *Soliton propagation in homogeneous and inhomogeneous models for DNA torsion dynamics*, J. of Non-linear Math. Phys., 18:S2, 287-319, 2011

[9]   R. De Leo and S. Demelio, *Some numerical results on motion of kinks in some model of DNA torsional dynamics*, CAIM 2:1 (2011)

Publications on Topology of quasiperiodic functions

[1]   R. De Leo, *Existence and measure of ergodic leaves in Novikov's problem on the semiclassical motion of an electron*, Russian Math. Surveys, 56(6), 166-168, 1999, math-ph/0005031

[2]   R. De Leo, *Numerical analysis of the Novikov problem of a normal metal in a strong magnetic field*, SIAM J. on Applied Dyn. Sys., 2(4), 517-545, 2003, math-ph/0006023

[3]   R. De Leo, *Characterization of ergodic regime directions in the Novikov problem of a normal metal in a strong magnetic field*, Russian Math. Surveys, 58(5), 1042-1043, 2003, math/0207234

[4]   R. De Leo, *Topological effects in the magnetoresistance of Au and Ag*, Physics Letters A, 332, 469-474, 2004

[5]   R. De Leo, *Proof of a Dynnikov conjecture on the Novikov problem of plane sections of periodic surfaces*, Russian Math. Surveys, 60(3), 566-567, 2005

[6]   R. De Leo, *First-principles generation of Stereographic Maps for high-field magnetoresistance in normal metals: an application to Au and Ag*, Physica B, 362, 62-75, 2005, cond-mat/0409383

[7]   R. De Leo, *Topology of plane sections of periodic polyhedra with an application to the Truncated Octahedron*, Experimental Mathematics, 15(1), 109-124, 2006, math/0502219

[8]   R. De Leo and I.A. Dynnikov, *An example of fractal set of directions of planes that give a chaotic intersection with given 3-periodic surface*, Russian Math. Surveys, 62:5, 990-992, 2007

[9]   R. De Leo and I.A. Dynnikov, *Geometry of plane sections of the infinite regular skew polyhedron {4, 6|4}*, Geometriae Dedicata, 138:1, 51-67, 2009, arXiv:0804.1668 [math.GT]

[10] R. De Leo, *A survey on quasiperiodic topology*, in Advanced Mathematical Methods in Bio-Sciences and Applications, Eds. Berezovskaya and Toni, Springer, 2018, arXiv:1711.01716 [math.GT]

[11] R. De Leo and A.Ya. Maltsev, *Quasiperiodic dynamics and magnetoresistance in normal metals*, Acta Applicandae Matematicae, 162:1, 47-61, 2019

[12] S.P. Novikov, R. De Leo, I.A. Dynnikov and A.Ya. Maltsev, *Theory of Dynamical Systems and Transport Phenomena in Normal Metals*, Journal of Experimental and Theoretical Physics volume, 129, 710–721, 2019

Publications on Self-Projective sets

[1] R. De Leo, *Exponential growth of norms in semigroups of linear automorphisms and Hausdorff dimension of self-projective IFS*, Journal of Geometrical Analysis, 25:3, 1798-1827, 2015

[2] R. De Leo, *A conjecture on the Hausdorff dimension of attractors of real self-projective Iterated Function Systems*, Experimental Mathematics, 24:3, 270-288, 2015

Publications on the theory of Isometric Immersions

[1] R. De Leo, *A note on non-free isometric immersions*, Russian Mathematical Surveys, 63(3), 577-579, 2010, arXiv:0905.0928 [math.DG]

[2] G. D'Ambra, R. De Leo and A. Loi, *Partially Isometric Immersions and Free Maps*, Geometriae Dedicata, 151:1, 79-95, 2011, arXiv:1007.3024 [math.DG]

[3] R. De Leo, *Partial immersions and partially free maps*, Differential Geometry and its Applications, 29:S1, 52-57, 2011, arXiv:1010.5362 [math.DG]

[4] R. De Leo, *Proof of a Gromov conjecture on the infinitesimal invertibility of the metric inducing operators*, Asian Journal of Mathematics, 23:6, pp 919-932, 2019, arXiv:1711.01709 [math.DG]

Publications on the Cohomological Equation

[1] R. De Leo, *Solvability of the cohomological equation for regular vector fields on the plane*, Annals of Global Analysis and Geometry, 39:3, 231-248, 2011, arXiv:1007.3016 [math.DG]

[2] R. De Leo, T. Gramtchev and A. Kirilov, *Global Solvability in Functional Spaces for Smooth Nonsingular Vector Fields in the Plane*, in Pseudo-Differential Operators: Analysis, Applications and Computations, L. Rodino, M.W. Wong and H. Zhu eds., vol. 214 of Operator Theory: Advances and Applications, Springer, 2011, arXiv:1001.2121 [math.AP]

[3] R. De Leo, *Weak solutions of the cohomological equation in the plane for regular vector fields*, Mathematical Physics, Analysis and Geometry, 18:18, 2015

Publications on Real Newton Fractals

[1] R. De Leo, *Conjectures about simple dynamics for some real Newton maps on $\mathbb{R}^2$*, Fractals, 27:6, 2019, arXiv:1812.00270 [math.DS]

[2] R. De Leo, *Dynamics of Newton Maps of Quadratic Polynomial Maps of $\mathbb{R}^2$ into itself*, 30:9, 2020, arXiv:1812.11595 [math.DS]

Publications on Invariant Sets of Dynamical Systems

[1] R. De Leo and J.A. Yorke, *The graph of the logistic map is a tower*, Discrete and Continuous Dynamical Systems, 41:11, 5243-5269, 2021 arXiv:2008.08338 [math.DS]

[2] R. De Leo and J.A. Yorke, *Infinite towers in the graphs of many dynamical systems*, nonlinear Dynamics, 105, 813–835, 2021, arXiv:2101.00306 [math.DS]

[3] R. De Leo, *Backward asymptotics in S-unimodal maps*, Internation J. of Bifurcations and Chaos, 32:6 (2022).

[4] R. De Leo and J.A. Yorke, *Streams and graphs of Dynamical Systems*, Qualitative Theory of Dyanmical Systems, 24:1 (2025).

[5] A. Anusic and R. De Leo, *Graph and backward asymptotics of the tent map*, accepted for publication on the Journal of Differential Equations and Applications (2024).

Other publications

[1] R. De Leo, C. Gutierrez and H. Mawi, *On the Numerical Solution of the Far Field Refractor Problem*, Nonlinear Analysis, 157, 123-145, 2017, arXiv: 1603.01469[math.NA]

Conferences and Talks

19 Apr 2024 *The Graph of a Dynamical System*, Math seminar, AMS Eastern Meeting, Howard U.
USA

16 Feb 2024 *The Graph of a Dynamical System*, Math Colloquium, Washington, DC, Howard University.
USA

31 Jan 2024 *The Graph of a Dynamical System*, Math seminar, Lubbock, TX, Texas Tech U.
USA

15-18 Mar 2023 *Backward dynamics in S-unimodal maps*, 56th Spring Topology and Dynamical Systems Conference, Memphis, TN, Rhodes College.
USA

13-17 Jun 2022 *Backward dynamics in S-unimodal maps*, 23rd European Conference on Iteration Theory, Reichenau an der Rax.
Austria

9-12 Mar 2022 *The graph of the logistic map is a tower*, 55th Spring Topology and Dynamical Systems Conference, Waco, Baylor University.
USA

6-9 Dec 2021 *Infinite Towers in the graph of a Dynamical System*, 16th Int. Conference on Dynamical Systems Theory and Applications, Lodz, Lodz University of Technology.
Poland

18 Sep 2021 *Dynamics of the Logistic map*, James A. Yorke's Virtual 80th Birthday Celebration, IPST, University of Maryland.
USA

26-30 Jul 2021 *Backward asymptotics in Logistic-like maps*, ICDEA 2021, University of Sarajevo.
Bosnia and Herzegovina

1-6 Jul 2019 *Invariant sets in the logistic map*, Dynamical Systems and Biology 2019, University of Cagliari, Sardinia.
Italy

3-10 Jun 2018 *Topology and Dynamics of quasiperiodic functions*, Symmetry and Perturbation Theory 2018, Pula (Cagliari), Sardinia.
Italy

May 2018 *Infinitesimal invertibility of the metric-inducing operator*, 2018 Lehigh University Geometry and Topology Conference, Lehigh University, Bethlehem, PA.
USA

27-29 May 2016 *Solvability of the Cohomological Equation for regular vector fields on the plane*, 2016 Lehigh University Geometry and Topology Conference, Lehigh University, Bethlehem, PA.
USA

22-24 May 2015 *Topology of planar sections of the skew polyhedron* $\{4, 6|4\}$, 2015 Lehigh University Geometry and Topology Conference, Lehigh University, Bethlehem, PA.
USA

14 April 2015 *Exponential growth of norms in semigroups of linear automorphisms and Hausdorff dimension of self-projective iterated function systems*, Department of Mathematics, Howard University, Washington, DC.
USA

5, 12, 19, 26 October 2014	*A quick survey of Hamiltonian systems*, Department of Mathematics, Howard University, Washington, DC. USA
2 April 2014	*Magnetoresistance in Normal Metals under a strong magnetic field*, Howard University, Washington, DC. USA
26 March 2014	*Soliton propagation in homogeneous and inhomogeneous models for DNA torsion dynamics*, Advancing Computational Biology Howard University Symposium, Howard University, Washington, DC. USA
13-15 March 2014	*Exponential growth of norms in semigroups of linear automorphisms and Hausdorff dimension of self-projective iterated function systems*, 48th Spring Topology and Dynamics Conference, University of Richmond, Richmond, VA. USA
11 November 2013	*Planar Sections of Triply Periodic Surfaces*, Department of Mathematics, Howard University, Washington, DC. USA
11 February 2013	*Soliton propagation in homogeneous and inhomogeneous models for DNA torsion dynamics*, Department of Mathematics, Howard University, Washington, DC. USA
16 July 2012	*Partially isometric immersions and free maps.*, Department of Mathematics, Università di Roma "La Sapienza", Roma. Italy
21 May 2012	*Asymptotic growth of norms in semigroups of linear automorphisms and Hausdorff dimension of self-projective sets.*, Alexandrov Readings, International Topological Conference., Moscow State University, Moscow. Russia
16 July 2012	*Partially isometric immersions and free maps.*, Department of Mathematics, U. of Roma, La Sapienza, Roma. Italy
18 April 2012	*Some problems concerning (partially) free maps and the sets of (partial) isometries.*, Department of Mathematics, Moscow State University, Moscow. Russia
7 Dec 2011	*Soliton propagation in homogeneous and inhomogeneous models for DNA torsion dynamics.*, Department of Mathematics, University of Sussex, Brighton. UK
18 Mar 2011	*Hiring seminar.*, Department of Mathematics, University of Leicester, Leicester. UK
10 Feb 2011	*Weak solutions of the cohomological equation on R^2.*, Department of Mathematics, University of Leicester, Leicester. UK
22-24 Sep 2010	*Global Solvability for Smooth Nonsingular Vector Fields in the Plane*, International Workshop on Global Properties of Partial Differential Equations on Manifolds, Cagliari, Italy.
27-31 Aug 2010	*Partially Isometric Immersions and Free Maps*, Differential Geometry and its Applications 2010, Brno, Czech Republic.

21-25 Jun 2010	*Propagation of twist solitons in fully inhomogeneous DNA chains*, SIMAI 2010, Cagliari, Italy.
9 Feb 2010	*An introduction to logic through puzzles.*, Department of Mathematics, University of Cagliari, Cagliari. Italy
13-18 Jul 2009	*On the cohomological equation in the plane for regular vector fields*, 7th Isaac Congress, London, UK.
3-5 Jun 2009	*Propagation of twist solitons in real inhomogeneous DNA , Part II*, DNA 2009, Cagliari, Italy.
16-23 May 2009	*Appearance of a topological first integral in a multivalued Poisson dynamical system*, Nonlinear Evolution Equations and Dynamical Systems 2009, Isola Rossa, Italy.
1-11 Jul 2008	*Implementation of a software library to study the asymptotics of plane sections of periodic surfaces*, Algebraic Topological Methods in Computer Science 2008, Paris, France.
16-20 Jul 2007	*Plane foliations of* $\{6,4|4\}$ *and* $\{4,6\,|\,4\}$, Discrete Differential Geometry 2007, Berlin, Germany.
Apr 2007	*Asymptotics of plane sections of the regular skew polyhedron* $\{4,6|4\}$, Dynamical Systems seminar, U. of Maryland, College Park, USA.
20-22 Sep 2006	*Composite models for DNA torsional dynamics*, Mathematical Models for DNA Dynamics, Cagliari, Italy.
2004	*Geometry of plane sections of periodic surfaces*, Department of Mathematics, U. of Cagliari, Cagliari, Italy.
2004	*Getting fractals out of periodic surfaces*, Department of Mathematical Methods and Models for the Applied Sciences, U. of Roma "La Sapienza", Roma, Italy.
2004	*Topological effects on the magnetoresistance of normal metals*, Mathematical-Physics seminar of U. of Roma "La Sapienza", Roma, Italy.
2003	*Topological phenomena in normal metals*, Geometry seminar of U. of Roma "La Sapienza", Roma, Italy.
2000	*Numerical analysis of the asymptotic behaviour of quasi-electrons orbits in a normal metal under a strong magnetic field*, Dep. of Physics, U. of Cagliari, Italy.
1999	*Topology of orbits of quasi-electrons in a normal metal under a strong magnetic field*, Dep. of Mathematics & Physics, U. of Camerino, Italy.

Organized conferences

1. I am one of the organizers of the Baltimore-Washington Metro Area Differential Geometry Seminar (MADGS), a one-day joint seminar on Geometry between the Math Departments of UMD, JHU and HU. So far the meetings took place on Fall 2014, Spring and Fall 2015, Fall 2016, Spring and Fall 2017, 2018 and 2019.

2. I have been one of the organizers of the MathBio conference Advancing Computational Biology Howard University Symposium in Fall 2014 and Fall 2015.

Awards

2023-now	**NSF Grant #2308225**, *Graphs of Dynamical Systems*, Howard University, Washington, DC

2018-2024	**NSF Grant #1832126**, *Excellence in Research: Numerical Analysis of Quasiperiodic Topology*, Howard University, Washington, DC
2015	**Provost funds**, *Funded proposal to buy a small Hihg-Power Computational Cluster*, Howard University, Washington, DC
2015	**New Faculty award**, Howard University, Washington, DC
2014	**New Faculty award**, Howard University, Washington, DC

Service

I am one of the organizers of the Math Department Colloquium since Fall 2013. Over the years I also served on several other committees such as hiring, PhD defenses and curriculum.

Languages

Italian	Native
English	Fluent
French	Average
Russian	Beginner

Computer skills

Applications	Mathematica, MatLab, GeoGebra, Emacs, Apache httpd, Mysql
Typesetting	TEX
Programming	Fortran, Perl, Php, Java, Setl, C/C++, Python, MATLAB
OS	Linux

Software Packages Authored

NTC	A C++ library, built on top of the well-known open-source C++ library VTK, able to evaluate homology class of loops in $\mathbb{T}^3$ and in surfaces embedded in it. The library is available at the CompuTop software archive.
PerlVTK	Perl bindings for the C++ library VTK. The package, created and maintained by me in the first two years, is currently maintained by John Cerney (maintainer of the PDL package for scientific computations with Perl) and it is available at the CPAN repository.