

Curriculum Vitae: **Barbara NELLI**

COORDINATES

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ACADEMIC EMPLOYMENT

- Present Position: since October 2017: Professore Ordinario (Full Professor), Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università dell' Aquila.
- March, 2005 - September 2017: Professore Associato, Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università dell' Aquila.
- December, 1997- February, 2005. Ricercatore, Facoltà di SMFN, Università dell'Aquila.
- November, 1995 - February, 1997. ATER (attaché temporaire de recherche et enseignement) at Université Paris VII.

EDUCATION (HIGHER DEGREES)

- PhD in Mathematics: 1995, Université Paris VII and Università di Pisa.
- Laurea in Matematica: 1990, Università di Pisa.

LANGUAGES. Italian (mother tongue). English, French, Portuguese (spoken, read, written). Spanish (roughly spoken, read). German (roughly understood).

FELLOWSHIPS AND RESEARCH POSITIONS, QUALIFICATIONS

- December 2013. Abilitazione Scientifica Nazionale: 01/A2 Professore Prima Fascia.
- Mai - July, 2004. Poste Rouge CNRS: position at Université Paris VII, Paris.
- January, 1999 - February, 2000. Post-doctorate fellowship of Humboldt foundation at Technische Universität Berlin.
- 1996 - 1997. Qualification for the position of Maitre de Conference (France).
- 1996 - 1997. Post-doctorate fellowship of Università di Pisa.
- April-June, 1992. ERASMUS fellowship at Université Paris VI.
- 1991 - 1994. Fellowship of Università di Pisa for PhD in Mathematics (research made alternately at Università of Pisa and Université of PARIS VII).

VISITING POSITIONS (SINCE 2010)

- June, 2016. PUC Rio de Janeiro (invited professor at PUC, one month).

- February, 2016. Universidad Granada (invited professor at Departamento de Geometria y Topologia, one month).
- November, 2015. Universidade Federal do Rio de Janeiro (invited Professor, one month).
- September, 2015. Universidad Granada (invited professor at Departamento de Geometria y Topologia, one week).
- May, 2015. Université Tours (invited professor by CNRS, one months).
- October, 2014. Universidad Granada (invited professor at Departamento de Geometria y Topologia, two weeks)
- August, 2014. Universidade Federal do Rio de Janeiro (invited Professor by CNPQ, one month)
- May, 2014. Université Paris VII (invited professor by CNRS, one month).
- March, 2013. Universidad Granada (invited professor at Departamento de Geometria y Topologia, one week).
- September, 2012. Universidad Granada (invited professor at Departamento de Geometria y Topologia, one week).
- March, 2012. PUC Rio de Janeiro (invited professor at PUC, three weeks).
- June, 2011. PUC Rio de Janeiro (invited professor at PUC, two weeks).
- March-May, 2011. Université Tours (invited professor by CNRS, three months).
- September, 2010. PUC Rio de Janeiro (invited professor at PUC two weeks).
- June, 2010. Université Paris VII (invited professor by CNRS, one month).

ACADEMIC SERVICES

UNIVERSITY OF L'AQUILA

- (Elected) President of the *Corso di Laurea in Matematica* (Bachelor's and Master degree in Mathematics) of the University of L'Aquila, since A.A. 2017-18.
- Member of the the SUA-RD committee (quality of research evaluation) of the Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, University of L'Aquila (2015).
- Member of the Giunta of the Department of Engineering, Computer Science and Mathematics, University of L'Aquila (since 2012). Coordinator of the *Rules and Research quality* working commission (since 2017).
- Member of the VQR committee (quality of research evaluation) of the Dipartimento di Matematica, University of L'Aquila (2012).
- Member of the *Collegio dei Docenti* of the Ph.D program Matematica e Modelli (previously Matematica), University of L'Aquila (since 2006).

NATIONAL AND INTERNATIONAL

- Delegate of the Unione Matematica Italiana at the EMS Council in Prague, June 23-24, 2018.

- (elected) Vice President of the Unione Matematica Italiana (since June 2018).
- Coordinator (joint with 3 persons) of the Editorial Board of the public awareness web site Maddmaths! Site supported by UMI, SIMAI and AIRO (since 2017)
<http://maddmaths.simai.eu>
- Member of the Board for assigning INdAM starting fellowships for undergraduate students in Mathematics A.A. 2016-2017, 2017-2018.
- Delegate of the Unione Matematica Italiana at the EMS Council in Berlin, July 16-17, 2016.
- (Elected) member of the Commissione Scientifica of the Unione Matematica Italiana (June 2015-May 2018).
- Referee for dozens of articles to be published in international journals. Among them: American Journal of Mathematics, Annali di Matematica Pura e Applicata, Annali della Scuola Normale Superiore di Pisa, Calculus of Variations and PDE's, Journal of Australian Mathematical Society, Journal of Geometric Analysis, International Mathematics Research Notices, Mathematische Annalen, Nonlinear Analysis, Pacific Journal of Mathematics, Proceedings of London Mathematical Society, Transactions of the American Mathematical Society.

FUNDING INFORMATION

- In charge of the responsibility of 2 , one year ASSEGNO DI RICERCA for Post-doc at University of L'Aquila (2017), with the following title: "Varietà Riemanniane: sottovarietà e flussi geometrici". Postdocs: Vlad Moraru (since April 2017) and Giuseppe Pipoli (since September 2017).
- In charge of the responsibility of local RIA funding of Algebra and Geometry group (11.000 euros/year) (since 2017).
- Member of the PRIN project 2011 and 2015: Varietà reali e complesse: geometria, topologia e analisi armonica (national coordinator Fulvio Ricci).
- In charge of many GNSAGA fundings for Visiting Professors and for organizing Congresses.
- In charge of the responsibility of the local ATEN funding of Geometry Group of L'Aquila (2010-2016).
- In charge of the scientific responsibility of L'Aquila unit PRIN 2007 .
- Member of the PRIN projects Sottovarietà reali e complesse (1998-2005) (national coordinators: Vincenzo Ancona and Simon Salamon).

CONGRESS AND SEMINARS (ORGANIZATION IN LAST 10 YEARS)

- Organizer of the monthly Geometry Seminar at the University of L'Aquila (since A.A. 2017-18)
- Organization (joint with Maria Fernanda Elbert, UFRJ) of the special session Geometric Analysis in First Joint Meeting Brazil - Italy in Mathematics (IMPA, August 29th - September 2nd, 2016)
- Organization (joint with Adriana Garroni and Gianluca Vinti) of the Colloqui Scientifici e Assemblea dell'UMI (May, 20th, 2016 and May, 19th, 2017).

- Member of the organizing committee of NTDG 2014 (Villasimius, September 18th-20th, 2014)
- Organization (joint with Magdalena Rodriguez, Universidad Granada) of the special session Geometric Analysis in the First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI (Bilbao, June 30th - July 4th, 2014)
- Responsible of the of COLLOQUIUM di MATEMATICA (2009-2012) at the University of L'Aquila.
- Member of the scientific and organizing committee of NTDG 2011 (L'Aquila, September 7th-9th, 2011):
- Member of the scientific and organizing committee of RAGTS 2008 (Roma, May 28th-30th, 2008):

REFEREE AND/OR MEMBER OF THE JURY FOR THE FOLLOWING PH.D THESIS

1. J. L. Teruel Carretero, University of Granada, 2015 (member of the Jury).
2. G. Pipoli, Università La Sapienza, Roma, 2014 (member of the Jury).
3. J. M. Manzano Prego, University of Granada, 2012 (referee).
4. . M. A. Jimenéz Grande, University of Granada, 2012 (referee and member of the Jury).
5. S. Cartier, Université Paris-Est, Marne la Vallée, 2011 (referee and member of the Jury).
6. F. Torralbo, University of Granada, 2010 (referee).
7. J. M. Espinar, University of Granada, 2008 (referee).
8. R. Alessandrini, Università di Roma Tor Vergata, 2008 (member of the Jury).

TEACHING EXPERIENCE

Since 1998, I have been teaching different courses (analysis and mainly geometry) in *Corso di Laurea in Matematica, Fisica, Ingegneria, Informatica, Biologia* at the Universities of L'Aquila, Roma *La Sapienza*, Roma *Tor Vergata*, Paris VII. Moreover I was the supervisor of *Tesi di Laurea* of many students at the University of L'Aquila.

PUBLICATIONS AND PREPRINTS

1. J. M. MANZANO, B. NELLI: *Height and area estimates for constant mean curvature surfaces in $\mathbb{E}(\kappa, \tau)$ -spaces*, **Journal of Geometric Analysis**, 27, 4 (2017).
2. B. NELLI, R. SA EARP, E TOUBIANA: *Minimal graphs in Nil_3 : existence and non-existence results*, **Calc. Var. Partial Differential Equations** 56, 2 (2017).
3. J. A. GALVEZ, B. NELLI: *Entire solutions of the degenerate Monge-Ampère equation with a finite number of singularities*, **Journal of Differential Equations**, 216, 11, (2016).
4. M.F. ELBERT, B. NELLI, W. SANTOS: *Hypersurfaces with $H_{\tau+1} = 0$ in $\mathbb{H}^n \times \mathbb{R}$* , **Manuscripta Mathematica** 149 (2016).
5. S. ILIAS, B. NELLI, M. SORET: *On the entropy of hypersurfaces with bounded curvature*, **Mathematische Annalen** 364 (2016).

6. L. HAUSWIRTH, B. NELLI, R. SA EARP, E TOUBIANA: *Minimal ends in $\mathbb{H}^2 \times \mathbb{R}$ with finite total curvature and a Schoen type theorem*, **Advances in Mathematics** 274 (2015).
7. B. NELLI, R. SA EARP, E TOUBIANA: *Maximum principle in a half-space for minimal hypersurfaces in $\mathbb{H}^n \times \mathbb{R}$* , **Annali della Scuola Normale Superiore di Pisa XIV**, 2 (2015).
8. S. ILIAS, B. NELLI, M. SORET: *Caccioppoli's inequalities for cmc-hypersurfaces in Riemannian Manifolds*, **Ann. of Global Analysis and Geom.** 42, 4 (2012).
9. M.F. ELBERT, B. NELLI, R. SA EARP: *Vertical Ends of CMC surfaces in $\mathbb{H}^2 \times \mathbb{R}$* , **Trans. Amer. Math. Soc.** 364 (2012).
10. B. NELLI, R. SA EARP: *A halfspace theorem for mean curvature $H = \frac{1}{2}$ surfaces in $\mathbb{H}^2 \times \mathbb{R}$* , **J. of Math. Anal. and App.** 365 (2010).
11. B. NELLI: *On properties of constant mean curvature surfaces in $\mathbb{H}^2 \times \mathbb{R}$* , **Seminari di geometria 2005-2008, Bologna** (2009).
12. B. NELLI: *A Survey on Alexandrov-Bernstein-Hopf Theorems* **Matematica Contemporanea** vol. 35 (2008).
13. B. NELLI, R. SA EARP, W. SANTOS, E. TOUBIANA *Uniqueness of H -surfaces in $\mathbb{H}^2 \times \mathbb{R}$, $|H| \leq 1/2$, with boundary one or two parallel horizontal circles*, **Ann. of Global Anal. and Geom.** 33 (4) (2008).
14. B. NELLI, H. ROSENBERG: *Errata Minimal Surfaces in $\mathbb{H}^2 \times \mathbb{R}$* , [Bull. Braz. Math. Soc., New Series 33 (2002), 263-292] **Bull. Braz. Math. Soc.**, New Series 38 (4) (2007).
15. M.F. ELBERT, B. NELLI, H. ROSENBERG: *Stable Constant Mean Curvature Hypercurves*, **Proc. of the American Math. Soc.** 135, 10 (2007).
16. B. NELLI, M. SORET: *Stably Embedded Minimal Hypersurfaces*, **Math. Zeit.** 255 (2007)
17. B. NELLI, H. ROSENBERG: *Simply Connected Constant Mean Curvature Surfaces in $\mathbb{H}^2 \times \mathbb{R}$* , **Michigan Journal of Mathematics** 54, 3 (2006).
18. B. NELLI, H. ROSENBERG: *Global Properties of Constant Mean Curvature Surfaces in $\mathbb{H}^2 \times \mathbb{R}$* , **Pacific Journ. Math.** 226, N. 1 (2006).
19. B. NELLI, M. SORET: *The State of the Art of Bernstein's Problem*, **Matematica Contemporanea** vol. 29 (2005).
20. B. NELLI, H. ROSENBERG: *Minimal Surfaces in $\mathbb{H}^2 \times \mathbb{R}$* , **Bull. Bras. Math. Soc.** (33) 2, (2002) special issue for 50th of IMPA.
21. B. NELLI, M. SORET: *Stably Embedded Minimal Hypersurfaces*, **Trends in Mathematics**, Proceedings of Daewoo Workshops in Pure Mathematics, (5), 2, (2002).
22. B. NELLI, B. SEMMLER: *On Hypersurfaces embedded in Euclidean Space with Positive Constant H_r Curvature*, **Indiana Univ. Math. Jour.** 50, (2), (2001).
23. B. NELLI: *On the structure of Scalar Curvature Type Graphs*, **It. Jour. of Pure and App. Math.** (2001)
24. B. NELLI, B. SEMMLER: *Some Remarks on H -Surfaces in a halfspace of \mathbf{H}^n* , **Jour. of Geom.** 64 (1999).

25. B. NELLI: *An Example of an Immersed Complete Genus One Minimal Surface in \mathbb{R}^3 with Two Convex Ends*, on **Comm. Mat. Helv.** 73 (3), (1998).
26. M.E. GALVÃO, C. GÓES, B. NELLI: *A Weierstrass Type Representation for Surfaces in Hyperbolic Space with Mean Curvature One*, **An. Acad. Bra. Ci.** 70 (1), (1998).
27. NELLI, H. ROSENBERG: *Some Remarks on Positive Scalar and Gauss Kronecker Curvature Hypersurfaces of \mathbb{R}^{n+1} and \mathbb{H}^{n+1}* , **Ann. de l'Inst. Fourier** (47) 4, 1997.
28. B. NELLI, J. SPRUCK: *On The Existence and Uniqueness of Constant Mean Curvature Hypersurfaces in Hyperbolic Space*, **Geometric analysis and the calculus of variations**, 253–266, Internat. Press, Cambridge (1996).
29. B. NELLI, H. ROSENBERG: *Some remarks on embedded hypersurfaces in hyperbolic space of constant mean curvature and spherical boundary*, **Ann. of Glob. Anal. and Geom.** (13) (1995).
30. B. NELLI, R. SA EARP: *Some Properties of surfaces of prescribed mean curvature in \mathbb{H}^{n+1}* , **Bull. Soc. Math. de France** 6 (1996).
31. B. NELLI: *Polyhedral surfaces in \mathbb{R}^3 with minimality conditions*, **BUMI** (7) 9-B, (1995).

INVITED TALKS (SINCE 2010)

1. February 2018. **Workshop su varietà reali e complesse: geometria, topologia e analisi armonica, SNS, Pisa.** *Minimal Surfaces in Heisenberg Space.*
2. June 2017. **Frei Universität, Berlin.** *Minimal Surfaces in Heisenberg Space.*
3. April 2017. **School of Mathematical Sciences, Queen Mary University of London. A Geometric Analysis Day.** *Minimal Surfaces in Heisenberg space.*
4. March 2017. **University of Cork. Minimal Surface Integrable Systems and visualization: Spring 2017 workshop.** *Minimal Surfaces in Heisenberg space.*
5. February 2017. **Centro de Giorgi SNS. France-Italy meeting in Geometric Analysis.** *Non compact constant mean curvature surfaces.*
6. September 2016. **Università di Parma: Workshop on Riemannian and Complex Geometry.** *Old and New Results on Constant Mean Curvature Surfaces.*
7. June 2016. **Universidade Federal Fluminense, Niteroi.** *Minimal surfaces in the Heisenberg Space.*
8. June 2016. **PUC Rio de Janeiro. Graduate Course.** *Constant Mean curvature Hypersurfaces in $\mathbb{H}^n \times \mathbb{R}$ (3 lectures).*
9. March 2016. **Universidad Granada.** *Minimal surfaces in the Heisenberg Space.*
10. February 2016. **Università di Tor Vergata. Seminario di Equazioni Differenziali.** *Superfici Minime nello Spazio di Heisenberg.*
11. February 2016. **Workshop on complex geometry and Hamiltonian actions, Università di Parma.** *Minimal surfaces in the Heisenberg space.*
12. December 2015. **End of Year London Geometry Conference, King's College, London.** *Minimal surfaces in Heisenberg Space.*

13. October, 2015. **Potsdam Universität.** *Minimal surfaces in homogeneous three-manifolds.*
14. September, 2015. **Congresso UMI 2015.** *Superfici Minime nelle varietà omogenee di dimensione tre.*
15. June, 2015. **Université Paris VII.** *Height and Area growth of minimal graph in the Heisenberg space.*
16. June 2015. **Université Tours.** *Surfaces Minimales dans l'espace d'Heisenberg.*
17. August, 2014. **XVIII escola de geometria diferencial, Brasilia.** *Minimal graphs in Heisenberg space.*
18. May, 2014. **Université Paris VII.** *Graphes minimaux dans l'espace d'Heisenberg.*
19. April, 2013. **University of Potsdam: Topics in Geometric analysis.** *Minimal Surfaces with two ends in $\mathbb{H}^2 \times \mathbb{R}$.*
20. February, 2013. **Workshop su varietà reali e complesse: geometria, topologia e analisi armonica, SNS, Pisa.** *Superfici di curvatura media costante.*
21. July, 2012. **International School in Differential Geometry - Universidad de Manaus.** *Minimal Surfaces with two ends in $\mathbb{H}^2 \times \mathbb{R}$.*
22. December, 2011. **Universidad Granada: Jornada de Geometria.** *Minimal Surfaces with two ends in $\mathbb{H}^2 \times \mathbb{R}$.*
23. May, 2011. **Université Paris VII.** *On Caccioppoli's inequalities on CMC hypersurfaces in Riemannian manifolds.*
24. March, 2011. **King's College, London.** *Constant mean curvature surfaces in $\mathbb{H}^2 \times \mathbb{R}$.*
25. September, 2010. **PUC Rio de Janeiro.** *On the index of CMC surfaces in three dimensional manifolds.*
26. June, 2010. **Université Paris VII.** *Sur l'indice des surfaces CMC dans les variétés de dimension 3.*