Robert Hladky

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EDUCATION

Ph.D. (Mathematics) University of Washington 2004
M.Math Oxford University 1999

EMPLOYMENT

Assistant Professor, North Dakota State University	2009-Present
Visiting Assistant Professor, University of Rochester	2006-2009
JWY Research Instructor, Dartmouth College	2004-2006
Teaching Assistant, University of Washington	1999-2004

PUBLICATIONS

- *Bounds for the first eigenvalue of the horizontal Laplacian in positively curved subRiemannian manifolds*, Geometriae Dedicata, (2012), DOI:10.1007/s10711-012-9766-5
- *Connections and curvature in sub-Riemannian geometry*, to appear Houston J. Mathematics, 38 (2012) no.4
- *Minimal surfaces in the roto-translation group with applications to a neurobiological image completion model (with S.D. Pauls)* , JMIV 36 (2010) no.1, p. 1-27
- *The $\bar{\partial}_b$-Neumann problem on noncharacteristic domains*, Pacific J. Math 242 (2009) no. 1, p.71-112
- *Constant mean curvature surfaces in sub-Riemannian geometry. (with S.D. Pauls)*, Journal of Differential Geometry, 79 (2008) no.1, p. 111-139
- *Boundary regularity for the $\bar{\partial}_b$-Neumann problem, part 2.*, Journal of Geometric Analysis, 16 (2006) no. 2, p. 295-318
- *Boundary regularity for the $\bar{\partial}_b$-Neumann problem, part 1.*, Journal of Geometric Analysis, 16 (2006) no. 1, p.117-153

PREPRINTS

- *Variation of perimeter measure in sub-Riemannian geometry (with S.D. Pauls)*, arXiv:0702237v1
- *Isometries of complemented sub-Riemannian manifolds*, arXiv:1203.1066v1
- *Counter-examples in the $\bar{\partial}_b$-Neumann problem*, In preparation

Teaching Experience

NDSU	Teaching: Calculus 1, Differential equations, Introduction to abstract mathematics, Abstract algebra I, Linear algebra, Axiomatic geometry, Differential geometry, Topology (graduate course) Mentoring: Senior seminar projects, "The fundamental group and the fundamental theorem of algebra" (2010), "The use of the fundamental group in classifying knots" (2012)
Rochester	Teaching: Calculus 1,2 and 3, Pre-calculus, Multivariable calculus, Differential geometry, Linear algebra and differential equations, Linear algebra Mentoring: Undergraduate writing projects, "Electromagnetism" (2008), "Fibre Bundles" (2008)
Dartmouth	Teaching: Calculus 2, Differential Equations, Multivariable calculus for physicists, Geometry of curves and surfaces, Mathematics in science and engineering, Introduction to complex manifolds (graduate)
Washington	Teaching (as instructor): Calculus 2, 3, Differential equations, Geometry for high school teachers, Vector calculus Mentoring: New TA mentor 2000-2001, Undergraduate research project, "Projective geometry" (2004).

Service and Outreach

- North Dakota Governors School, one-week mini-course in geometry for gifted high school students.
- Exploratory committee for creation of NDSU math emporium, 2012-present
- Creation of NDSU graduate qualifying exam in geometry and topology; development core graduate course sequence and support courses.
- Technology Enhanced Science Education Group, NDSU 2010-present
- NDSU Mathematics assessment committee, 2011-present
- NDSU Mathematics, linear algebra course assessment committee, 2011-present
- NDSU College of Science and Mathematics, website design committee, 2011-present
- NDSU Mathematics department webmaster 2009-present
- NDSU Mathematics department WeBWorK coordinator 2009-present
- K.N. Rao Annual Mathematics Competition coordinator, NDSU 2009-present
- Masters supervisory committee for Mike Woodley, School of Education, NDSU 2012.
- Reviewer for Math. Sci. Net.
- Referee: International Journal of Systems Science, Communications in Partial Differential Equations

- Organizational committee for the University of Rochester geometry seminar, 2008
- Ph.D. supervisory committee for Dan Cole, Dartmouth College 2005
- VIGRE Planning Committee, University of Washington 2002-2003

PRESENTATIONS AND WORKSHOPS

- Lehigh Geometry and Topology, (2012) *Geometric structures on complemented sub-Riemannian manifolds.*
- AMS Special Session, Albuquerque, NM, (2010) *Generalizing the Tanaka-Webster connection.*
- Geometry and analysis seminar, NDSU, (2010) *Sub-Riemannian geometry* [3], (2009) *"CR manifolds and the $\bar{\partial}_b$-complex* [3].
- Mathematics Colloquium, NDSU, (2009) *Using the WeBWorK online homework system.*
- Lecture for visiting high school students, Rochester, 2008, *Non-Euclidean geometry and the shape of space.*
- Analysis and Geometry seminar, Rochester, (2008) *Regularity and estimates for the $\bar{\partial}_b$-complex*, (2006) *Variational problems in subRiemannian geometry.* [2]
- Conference on Analysis on Homogenous spaces, Tucson, AZ, (2007) *Minimal and CMC surfaces in sub-Riemannian geometry.*
- Dept. of Computer Vision Science seminar, Rochester, (2007) *Modeling the visual cortex using subRiemannian geometry.*
- AMS Special Session, Storrs, CT, (2006) *Minimal surfaces and isoperimetric domains in sub-Riemannian geometry.*
- Conference on geometric analysis and application, UIUC, (2006) *Variation of horizontal perimeter measure.*
- Summer school on real PDE's in complex and CR geometry, CIRM, Italy, (2005) *The Kohn Laplacian on the Heisenberg Ball*, (2005)*Minimal surfaces in pseudo-hermitian geometry.*
- Conference on minimal surfaces, subelliptic PDE and geometric analysis, Dartmouth, (2005) *Boundary regularity for the $\bar{\partial}_b$-Neumann problem.*
- Geometry and Analysis on CR manifolds, BIRS, Banff, Canada (2004).
- Geometry of CR manifolds, Academia Sinica, Taiwan (2003)

AWARDS AND MEMBERSHIPS

Microsoft Scholar Award		1999-2003
VIGRE Graduate Fellowship		2002-2003
Faculty Academic Excellence Award		2001
AMS Membership		1999-present