

## **Vitae:** Bennett Palmer

- Address: Department of Mathematics

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## **Education**

- 1975-1979 University of Massachusetts, Amherst, Massachusetts  
Bachelor of Science, Mathematics
- 1980-1986 Stanford University  
Ph.D. ( under the direction of Robert Osserman )

## **Work Experience**

- Fall 2004 to present, Associate Professor, Idaho State University.
- Fall 2002 to Fall 2004, Assistant Professor, Idaho State University
- 1992-2002 Lecturer, University of Durham, Durham, UK
- 1999-2000 Visiting Professor, St. Mary's College, Moraga, Ca.
- 1997-1998 Sabbatical leave, University of Murcia, Murcia, Spain  
supported by DGICYT grant no. SAB95-0494.
- 1989-1992 Postdoctoral position, Technische Universitaet Berlin
- 1986-1989 Assistant Professor, University of California at Santa Cruz
- 1986-1987 Lecturer, Stanford University

## Publications and preprints

### Refereed publications

1. *A uniqueness theorem for anisotropic capillary surfaces*, (to appear in SIAM Journal on Mathematical Analysis) (with Miyuki Koiso).
2. *Anisotropic capillary surfaces with wetting*, (to appear in Calculus of Variations and PDE's) (with Miyuki Koiso).
3. *Stability of anisotropic capillary surfaces between two parallel planes*, Calculus of Variations and Partial Differential Equations, Vol. 3, 2006. (with Miyuki Koiso).
4. *Geometry and stability of surfaces with constant anisotropic mean curvature*, (with Miyuki Koiso) Indiana Univ. Math. J., volume 54, issue 6, 2005
5. *Geometry and stability of bubbles with gravity*, Indiana Univ. Math. J. 54 No. 1 (2005), 65-98), with Miyuki Koiso
6. *On a variational problem for soap films with gravity and free boundary*, (with Miyuki Koiso), Journal of the Mathematical Society of Japan, 57 (2005), no. 2, 333-355.
7. *Remarks on the stability of CMC surfaces of higher genus with circular boundary*, Complex Variables Theory Appl., 2003, Vol. 48, pg. 663-669.
8. *Biharmonic capacity and the stability of minimal Lagrangian submanifolds*, Tohoku Math. J., Vol.55, No.4, December, 2003)
9. *On the area of constant mean curvature discs and annuli with circular boundaries* ( with Luis Alías ), Math. Zetischrift., 237(2001)3, 585-599.
10. *On the Gaussian curvature of maximal surfaces and the Calabi-Bernstein theorem* ( with Luis Alías ), Bull. London Math. Soc., 33(2001), no. 4, 454-458 .
11. *Uniqueness theorems for Willmore surfaces with fixed and free boundaries*, Indiana University Math. Journal., 49(2000), no. 4, 1581-1601.
12. *A duality between the minimal surface equation and the maximal surface equation* ( with Luis Alías ), Anais de Academia Brasileira de Ciencias, 73(2001), no. 2, 161-164.
13. *Stability of Spacelike Zero Mean Curvature Surfaces in Flat Lorentzian 4-manifolds* ( with Luis Alías ), Global differential geometry: the mathematical legacy of Alfred Gray (Bilbao, 2000), 244-248, Contemp. Math., 288, Amer. Math. Soc., Providence, RI, 2001.

14. *Remarks on a variational problem in Laguerre geometry*, Rendiconti di Matematica, Serie VII,(1999), 281-293.
15. *Zero mean curvature surfaces in Minkowski space with non-negative curvature* , ( with Luis Alías ). R. Soc. Lond. Proc. Ser. A Math. Phys. Eng. Sci. 455 (1999), no. 1982, 631–636.
16. *Stable constant mean curvature surfaces with circular boundaries* , ( with Luis Alías and Rafael Lopez ), Proc. Amer. Math. Soc. 127 (1999), no. 4, 1195–1200.
17. *Stability of the Wulff shape* , Proc. Amer. Math. Soc. 126 (1998), no. 12, 3661–3667.
18. *Calibrations and Lagrangian submanifolds in the six sphere*, Tohoku Math. J. (2) 50 (1998), no. 2, 303–315.
19. *Curvature properties of zero mean curvature surfaces in four dimensional Lorentzian space forms*, ( with Luis Alías ), Math. Proc. Cambridge Philos. Soc. 124 (1998), no. 2, 315–327.
20. *Deformations of Stationary Surfaces* ( with Luis Alías). Classical and Quantum Gravity, 14 (1997), 2107–2111.
21. *Hamiltonian minimality and Hamiltonian stability of Gauss Maps*, Differential Geometry and its Applications, 7, 1997,51–58.
22. *Conformal geometry of surfaces in Lorentzian space forms*, ( with Luis Alías ), Geometriae Dedicata, Vol.60, no.3(1996),301–315.
23. *The Bao - Ratiu equations on surfaces* , Proceedings of the Royal Society of London, no. 449(1995), 623–627.
24. *Buckling eigenvalues, Gauss maps and Lagrangian submanifolds*, Differential Geometry and its Applications, No. 4, (1994) 391–403.
25. *Minimal surfaces and H-surfaces in nonpositively curved space forms*, Proc. of the American Math. Soc., vol.119, no.1(1993), 245–250. .
26. *The conformal Gauss map and the stability of Willmore surfaces*, Annals of Global Analysis and Geometry, vol.9, no. 3,(1991)305–317. .
27. *Surfaces in Lorentzian hyperbolic space* , Annals of Global Analysis and Geometry, vol.9, no.2(1991) 117–128. .
28. *Stability of minimal hypersurfaces* , Comment.Math.Helvitici, 6, (1991) 185–188..
29. *Index and stability of harmonic Gauss maps*, Math.Zeitschrift, 206, (1990) 563–566..

30. *Spacelike constant mean curvature surfaces in pseudo- Riemannian space forms* , Annals of Global Analysis and Geometry, vol.8, no.3, (1990), 217–226.
31. *Bäcklund transformations for surfaces in Minkowski space* , Journal of Math.Physics , vol.31, no.12 (1990) 2872–2875 .
32. *The Gauss map of a spacelike constant mean curvature hypersurface of Minkowski space*, Comment. Math. Helvetici, 65, (1990) 52–57.
33. *Isothermic surfaces and the Gauss map* , Proc. of the American Math. Soc. 104, No.3, (1988) 876–884.

### Unrefereed publications

1. *Conformal geometry and Willmore surfaces in Lorentzian space forms*, ( with Luis Alías ) Differential geometry and its applications (Granada, 1994), 145–153, An. Fs. Monogr., 2, CIEMAT, Madrid, 1995.
2. *Stability of minimal Lagrangian submanifolds*, Geometry of Submanifolds VII, World Scientific Press, 1995, 211–213.
3. *Buckling eigenvalues and variational problems for surfaces in the three sphere*, Geometry of Submanifolds VI , World Scientific Press, 1994, 165–170.
4. *Stability of harmonic Gauss maps*, in Geometry of Submanifolds V, World Scientific Press, 1993, 233–241
5. *Second variation formulas for Willmore surfaces*, The Problem of Plateau, World Scientific Press, 1992, 221–228.

### Preprints and papers in preparation

1. *Equilibria for anisotropic energies and the Gielis formula*, (submitted 2007) (with Miyuki Koiso).
2. *A rolling construction for anisotropic Delaunay surfaces*, (submitted 2007) (with Miyuki Koiso).
3. *Anisotropic capillary surfaces with hydrophilic wetting*, (in preparation) (with Miyuki Koiso).
4. *Stability of Willmore surfaces*, (in preparation).

### Conferences and visits

- invited visitor, SFB 256, Universitaet Bonn, Summer 1989.
- invited speaker: Geometry Conference, Oberwolfach, April 1990
- invited speaker: Conference on Differential Geometry sponsored by the AMS, Mount Holyoke College, July 1991
- invited speaker: Humbolt Universitaet Berlin, 1991
- invited speaker: Geometry of Submanifolds, University of Leuven, July 1993.
- invited visitor: University of Murcia, Murcia Spain, Sept.1993
- invited speaker: Geometry Day, University of Leeds, March 1993

- invited speaker: City University of New York, March 1994
- invited speaker: Newton Institute, Cambridge, UK April 1994. *Willmore surfaces and Conformal Geometry*
- invited speaker: Geometry of Submanifolds, University of Leuven, Belgium July 1994.
- invited speaker: Autumn workshop on Differential Geometry and its Applications, Granada, Spain, Oct. 1994
- invited speaker: University of York, Dec. 1994, *Minimal Lagrangian Submanifolds*
- visitor: University of Granada, September-December 1995
- participant: International conference on Differential Geometry IMPA, Rio de Janeiro, Brazil July 8-19 1996
- participant: First conference on Geometry and Topology Braga, Portugal, Sept. 11-13, 1997.
- invited speaker: University of Lyon, June, 1998, *Stable constant mean curvature surfaces with circular boundary*
- invited speaker: University of Chile, Santiago, Chile, August 1998. *Variational Problems in Geometry*
- invited speaker: Conference in Honor of Tom Willmore, University of Durham, April 1999. *CMC and Willmore surfaces with Circular Boundary*
- Yorkshire Geometry Day, University of Hull, June 14, 2002: *Stability of minimal Lagrangian submanifolds*
- Harmonic Maps and Minimal Surfaces, Tokyo Metropolitan University, Jan. 27, 2003, *Stability of minimal Lagrangian submanifolds*
- Edge Conference on Variational Problems on Surfaces, Granada, Spain, Feb. 2004 *Geometry of surfaces with constant anisotropic mean curvature*
- Kyushu University, Fukuoka, Japan, July 21, 2004 *Geometry of surfaces with constant anisotropic mean curvature*
- Nara Women's University, Nara, Japan, July 27, 2004 *Geometry of surfaces with constant anisotropic mean curvature*
- Nara Women's University, Nara, Japan, August 15, 2005 *Variational Problems with Multiple Constraints*
- Nara Women's University, Nara, Japan, August 15, 2005 *Anisotropic Capillary Surfaces*

### **Additional Skills**

- **Languages:** Spanish, German
- **Computer languages/skills:** C,C++, Python, Java, Html

### **Awards:**

- ISU Outstanding Researcher 2004.

### **Grant Support:**

- Summer research stipend, SFB 256 “Non linear Partial Differential Equations”, University of Bonn, 1987
- DGICYT Grant no. SAB95-0494 from the Spanish Ministry of Education and Culture provided one year of support in 1997.
- Member of SFB 288, “Differential Geometry and Quantum Physics”, Technical University of Berlin. 1989
- Faculty Research Committee, ISU grant 2003.
- Summer research stipend. College of Arts and Sciences, ISU, 2005.

### **Referee for:**

- London Mathematical Society
- The Royal Society of London. Proceedings. Series A.
- Communications in Mathematical Physics
- Mathematical Proceedings of the Cambridge Philosophical Society
- Geometriae Dedicata
- Journal of Geometry and Physics
- Annals of Global Analysis and Geometry
- Commentarii Mathematici Helvetici. Journal of the Swiss Mathematical Society
- Illinois Journal of Mathematics
- Resultate der Mathematik

- The Journal of Geometric Analysis
- Math Reviews
- American Mathematical Monthly
- Missouri Journal of Mathematics
- SIAM Journal on Mathematical Analysis
- Southwest Journal of Mathematics