

## CURRICULUM VITAE

### Bo Guan

Professor  
Department of Mathematics  
Ohio State University  
Columbus, OH 43210

#### Contact Information:

- Telephone: (614) 292-6897
- Fax: (614) 292-1479
- Email: guan@math.osu.edu

#### Education:

- University of Massachusetts, Amherst (Sept.1987-Aug.1992), Ph.D., Mathematics.  
Adviser: Joel Spruck.  
Thesis: Boundary value problem for surfaces of prescribed Gauss curvature and fully nonlinear equations.
- Harbin Inst of Tech, Harbin, China (Sept.1982-May 1985), M.S. Mathematics.
- Harbin Engineering Univ, Harbin, China (March 1978-Jan.1982), B.S. Mathematics.

#### Academic Positions:

- Oct. 2006 – , Ohio State University, Professor.
- Aug. 2004–Sept 2006, Ohio State University, Associate Professor.
- Sept 2002–May 2003, Johns Hopkins University, Visiting Associate Professor.
- Aug. 2000–July 2005, University of Tennessee, Associate Professor.
- Aug. 1996–July 2000, University of Tennessee, Assistant Professor.
- Sept. 1995–Aug. 1996, Stanford University, Visiting Assistant Professor.
- Sept. 1994–Aug. 1995, University of Massachusetts, Visiting Assistant Professor.
- Sept. 1992–Aug. 1994, Indiana University, Visiting Assistant Professor.
- June 1985–Aug. 1987, Harbin Institute of Technology, Assistant Instructor.
- Jan. 1982–Aug. 1982, Harbin Engineering University, Assistant Instructor.

#### Research Fields:

- Elliptic and parabolic partial differential equations; geometric analysis.

#### PhD Students:

- Marek Szapiel (Degree in August 05), Changhoon Lim.

#### Selected list of Publications:

- (1) Isometric embedding of negatively curved surfaces in the Minkowski space. *Pure Applied Math. Quarterly*, to appear.

- (2) Conformal metrics with prescribed curvature function on manifolds with boundary, *Amer. J. Math.* **129** (2007) appeared online.
- (3) Entire spacelike hypersurfaces of prescribed Gauss curvature in Minkowski space (with Huai-Yu Jian and Richard Schoen), *J. Reine Angew. Math.* **595** (2006), 167-188.
- (4) Locally convex hypersurfaces of constant curvature with boundary (with Joel Spruck), *Comm. Pure Appl. Math.* **57** (2004), 1311-1331.
- (5) The Monge-Ampère equation with infinite boundary value (with Huai-Yu Jian), *Pacific J. Math.* **216** (2004), 77-94.
- (6) Liouville property and regularity of a Hessian quotient equation (with J.-G. Bao, J.-Y. Chen, M. Ji), *Amer. J. Math.* **125** (2003), 301-316.
- (7) Existence of hypersurfaces of constant Gauss curvature with prescribed boundary (with J. Spruck), *J. Differential Geometry* **62** (2002), 259-287.
- (8) Closed hypersurfaces of prescribed curvatures (with Pengfei Guan), *Annals of Math.*, **156** (2002), 655–673.
- (9) Hypersurfaces of constant mean curvature in hyperbolic space with prescribed asymptotic boundary at infinity (with J. Spruck), *Amer. J. Math.*, **122** (2000), 1039-1060.
- (10) Gradient estimates for solutions of nonparametric curvature evolution with prescribed contact angle condition, in *Monge-Ampère Equation: Applications to Geometry and Optimization*, *Contemporary Mathematics* **226**, AMS 1999, 105-112.
- (11) The Dirichlet problem for Hessian equations on Riemannian manifolds, *Calculus of Variations and PDEs*, **8** (1999), 45-69.
- (12) The Dirichlet problem for complex Monge-Ampère equations and regularity of the pluri-complex Green function, *Comm. in Anal. Geom.*, **6** (1998), 687-703; a correction, **8** (2000), 213–218.
- (13) The Dirichlet problem for Monge-Ampère equations in non-convex domains and spacelike hypersurfaces of constant Gauss curvature, *Trans. Amer. Math. Soc.*, **350** (1998), 4955-4971.
- (14) Boundary value problem on  $S^n$  for surfaces of constant Gauss curvature (with J. Spruck), *Annals of Math.*, **138** (1993), 601-624.

#### Grants:

- NSF grant DMS 0505632: Fully nonlinear partial differential equations in geometry (PI, June 15, 2005-May 31, 2008).
- NSF grant DMS-0204590: Fully nonlinear elliptic and parabolic equations in differential geometry (PI, June 1, 2002-May 31, 2005).
- NSF grant DMS-9626722: Monge-Ampère type equations and related geometric problems (PI, Aug 15, 1996-July 15, 2002 (renewed 1999, DMS-9971453)).
- NSF grant DMS-0080037: The Barrent Lectures 2000: New directions in Differential Geometry (Co-PI, May 15, 2000-April 15, 2001).

### Professional Services:

- Served on NSF program panels and reviewed proposals for NSF.
- Reviewer for *Mathematical Reviews*.
- Refereed articles for mathematical journals, including
  - *Acta Mathematica*,
  - *American Journal of Mathematics*,
  - *Asian Journal of Mathematics*
  - *Communications in Analysis and Geometry*,
  - *Calculus of Variations and PDE*
  - *Communications in Pure and Applied Mathematics*,
  - *Duke Mathematical Journal*,
  - *Dynamics in PDE*,
  - *Experimental Mathematics*,
  - *Electronic JDE*,
  - *Geometria Dedicata* (2007n)
  - *Geometric Analysis and Functional Analysis*,
  - *Indiana University Mathematical Journal*,
  - *International Journal of Mathematics and Mathematical Sciences*,
  - *Journal of American Mathematical Society*,
  - *Journal of Australian Mathematical Society*,
  - *Journal für die reine und angewandte Mathematik*,
  - *Journal of Differential Equations*,
  - *Journal of Differential Geometry*,
  - *Journal of Geometric Analysis*,
  - *Journals of London Mathematical Society*,
  - *Journal of Mathematical Analysis and Applications*,
  - *Mathematische Zeitschrift*
  - *Numerical Methods for PDEs*,
  - *Pacific Journal of Mathematics*,
  - *Proceedings of American Mathematical Society*,
  - *Sciences in China*,
  - *Transactions of American Mathematical Society*.
- Co-organizer of “Conference on Geometric Analysis and Non-linear Elliptic PDE’s” at Johns Hopkins University, October 27-29, 2006.
- Co-organizer of the special session “Nonlinear Partial Differential Equations and Applications” in the AMS meeting in Cincinnati, OH, October 21-22, 2006.
- Co-organizer of the special session “Applications of Partial Differential Equations in Geometric Analysis” in the AMS meeting in Chattanooga TN, October 5-6, 2001.
- Co-organizer of the Barrett Lectures on Differential Geometry, UTK, May 11-13, 2000 (sponsored by NSF and Science Alliance).

**Short Term Visiting Memberships:**

- MSRI, Berkeley, October-November 2005; July 2001.
- IMPA, Brazil, April 2004.
- Center for Mathematical Analysis, Australian National Univ., July 2002; Sept, 1998.
- The Newton Institute, Univ. of Cambridge, UK, March, 2001.
- The Morningside Center, Academia Sinica, Beijing, July-August, 2000.
- National Center for Theoretical Sciences, Taiwan, Nov-Dec, 1999.

**Invited Talks and Lectures:**

- *USTC Summer School in Geometric Analysis*, Hefei China, July 10-28, 2006.
- *Third Pacific Rim Conference on Mathematics*, Shanghai, August 17-21, 2005
- *Nanjing Workshop on Geometry and Analysis, 2005*, Nanjing, June 12-19, 2005.
- *International Workshop on Fully Nonlinear Partial Differential Equations and Applications*, Hangzhou, May 23-June 9, 2005.
- *Workshop on Geometric Analysis*, Changsha, May 30-Jun 5, 2005.
- *54th Midwest PDE Seminar*, Wayne State University, Nov 19-21, 2004.
- *Workshop on Geometry and Analysis*, Nanjing-Hefei, June 13-19, 2004.
- *Workshop on Surfaces of Constant Mean Curvature and PDE*, Canela, RS, Brazil, April 24-30, 2004.
- *Southeast Geometry Seminar*, Emory University, December 10, 2003.
- *Workshop on Geometric Analysis*, MSRI, Dec 1-5, 2003.
- *Workshop on Defects and their Dynamics*, Banff, August 9-16, 2003.
- *Workshop on Monge-Ampere Type Equations and Applications*, Banff, August 2-7, 2003.
- *CBMS Regional Conference: Fully Nonlinear Equations in Geometry*, Univ. of Notre Dame, June 23-27, 2003.
- *Southeast Geometry Conference*, College of Charleston, March 28-30, 2003
- *Analysis and Geometry Workshop*, Australian National University, July 24, 2002
- *Workshop on Monge-Ampère Equation and its Applications*, (4 lectures) Zhejiang University, May 20-31, 2002.
- *Thematic Programme 2001 on Nonlinear Partial Differential Equations: Geometric PDE*, Pacific Inst. Math. Sci, Vancouver, BC, Canada, August 8-16, 2001.
- *Clay Mathematics Institute Summer School on the Global Theory of Minimal Surfaces*, MSRI, Berkeley, June 25-July 27, 2001.
- *International Workshop on PDE/Geometric Analysis*, Morningside Center, Beijing, China, August 10-11, 2000.

**Colloquia and Seminars:**

- Berkeley, Cambridge, Emory, Fudan, Harbin Institute of Technology, Indiana, Johns Hopkins, Kentucky, MIT, McMaster, Michigan State, Minnesota, Notre Dame, Princeton, Rice, Rutgers, Stanford, UC-Irvine/San Diego, UMass, Utah, Wisconsin, etc.