

BIOGRAPHICAL SKETCH

NAME: Steven D. Taliaferro
DATE OF BIRTH: April 4, 1949
PLACE OF BIRTH: Honolulu, Hawaii
MARITAL STATUS: Married, three children

CURRENT OFFICE AND E-MAIL ADDRESSES

Department of Mathematics
Texas A&M University
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CITIZENSHIP

U.S.

IN THE PROFESSION

- 1982 - present Associate Professor of Mathematics, Texas A&M University,
College Station, TX 77843-3368
- 1983 - 1984 Research Fellowship from the Alexander von Humboldt Foundation
and Faculty Academic Study Leave, Institut für Mechanik,
Technische Universität, Darmstadt, Germany.
- 1976 - 1982 Assistant Professor of Mathematics, Texas A&M University,
College Station, TX 77843-3368
- 1972 - 1976 Teaching Assistant, Stanford University

DEGREES

- Ph.D. in Mathematics with a minor in Computer Science from Stanford University, 1976.
B.A. in Mathematics from San Diego State University, 1971.

SOCIETY MEMBERSHIPS

American Mathematical Society

INVITED LECTURES

- Institut für Mechanik, Technische Universität, Darmstadt, Germany
- Mathematics Department, Universität Augsburg, Augsburg, Germany
- Mathematics Department, University of Trento, Trento, Italy
- Mathematics Department, Technische Universität, Darmstadt, Germany
- November 1990, Special Session on Geometric Inequalities and Convex Bodies,
American Mathematical Society, Denton, Texas (20 minutes).
- January 1994, Special Session on Singular Boundary Value Problems,
American Mathematical Society, Cincinnati, Ohio (20 minutes).
- March 1995, Special Session on Nonlinear Boundary Value Problems,
American Mathematical Society, Hartford, Connecticut (20 minutes).
- May 1996, International Conference on Dynamical Systems and Differential Equations,
Springfield, Missouri (45 minutes).
- August 1997, International Colloquium on Differential Equations,
Plovdiv, Bulgaria (one hour).
- August 1998, International Colloquium on Differential Equations,
Plovdiv, Bulgaria (one hour).

May 2000, Y2K International Conference on Dynamical Systems and Differential Equations, Kennesaw GA, (30 minutes).

May 2001, Conference on Differential Equations and Computational Simulations, Mississippi State University, (20 minutes).

June 2001, three one-hour lectures in Perugia, Italy.

June 2001, University of Rome Tor Vergata, Rome, Italy.

September 2003, Rutgers University, New Brunswick, NJ.

June 2004, Fifth International Conference on Dynamical Systems and Differential Equations, California State Polytechnic University, Pomona CA, (20 minutes).

October 2005, Special Session on Analysis of Partial Differential and Integral Equations, American Mathematical Society, Lincoln NE (20 minutes).

November 2005, Conference on Partial Differential Equations and Applications, University of Florida, (35 minutes).

April 2006, Special Session on Qualitative Analysis of Partial Differential Equations, American Mathematical Society, Miami, FL (20 minutes).

July 2006, San Diego State University, San Diego, CA.

May 2008, Seventh International Conference on Dynamical Systems and Differential Equations, University of Texas at Arlington, (45 minutes).

July 2009, PLENARY TALK, 12th Equadiff Conference, Masaryk University, Brno, Czech Republic (60 minutes).

May 2010, Eighth AIMS Conference on Dynamical Systems, Differential Equations, and Applications, Dresden, Germany (30 minutes).

July 2012, Ninth AIMS Conference on Dynamical Systems, Differential Equations, and Applications, Orlando, FL (30 minutes).

JOURNALS REFEREED FOR

Advances in Mathematics

Duke Mathematics Journal

Archive for Rational Mechanics and Analysis

Journal of Differential Equations

Communications in Partial Differential Equations

C. R. Acad. Sci. Paris Ser. I Math.

SIAM Journal for Mathematical Analysis

Proceedings of the American Mathematical Society

Discrete and Continuous Dynamical Systems
Electronic Journal of Differential Equations
Journal of Mathematical Analysis and Applications
Journal of Nonlinear Analysis: Theory, Methods, and Applications
Electronic Journal of Differential Equations
Canadian Mathematical Bulletin
Houston Journal of Mathematics
Annales de l'Institut Fourier
International Journal of Nonlinear Mechanics
Glasnik Matematički
International Journal of Mathematics and Mathematical Sciences
Communications in Applied Analysis
Mathematical and Computer Modelling
Indian Journal of Pure and Applied Mathematics
Computers and Mathematics with Applications
Discrete Dynamics in Nature and Society
Indian Journal of Mathematics

POST-DOCS MENTORED

Lei Zhang, 2001-2004.

SERVICE

- ★ Engineering Mathematics Textbook Committee: I made up the syllabus for the 7th edition of Thomas and Finney.
- ★ Final editing of Professor Bakelman's book *Convex Analysis and Nonlinear Geometric Elliptic Equations* published by Springer-Verlag in 1994. This included shortening the book by about 200 pages and the time consuming task of inserting reference numbers throughout the remaining 600 pages of text.
- ★ Chairman of the ad hoc committee to organize the Symposium in Memory of Ilya Bakelman held in October, 1993.
- ★ Member of the P&T Subcommittee, 1993 and 1994.
- ★ Graduate Student Advisor 1992, 1993, 1994, 1995, 1996, 1997, 1998.

- ★ Member of Hiring Committee, 92-93.
- ★ Member of the Math 152 Common Exam Committee, Fall 94.
- ★ Edited with Stephen Fulling and Irene Bakelman the following volume which was essentially the proceedings of the Bakelman conference: *A Tribute to Ilya Bakelman*, Discourses in Mathematics and its Applications, No 3, Department of Mathematics, Texas A&M University, 1994.
- ★ Reviewed two chapters of a new manuscript on ordinary differential equations for Prentice Hall Publishing Company.
- ★ Member, Faculty Senate, February 1996–May 1997.
- ★ Member, Personnel and Welfare Committee of the Faculty Senate.
- ★ Member, International Programs Subcommittee of the Faculty Senate.
- ★ Member, International Programs Enhancement and Coordination Committee’s Workgroup on Visiting International Scholars and Faculty Sponsors.
- ★ Reviewed for Gordon and Breach Publishing Group a new journal proposal entitled *International Journal of Regular and Chaotic Dynamics* edited by Professor V.V. Koslov of Moscow State University.
- ★ Member of the P&T Subcommittee, 1997 and 1998.
- ★ Member and Secretary, Faculty Advisory Council of the College of Science, 2000–2003.
- ★ Member of the Teaching Committee, 2006–2008.
- ★ Member of the Awards Committee, 2009–2010.

PUBLICATIONS

Papers

1. S. Taliaferro, Asymptotic behavior of solutions of $y'' = \phi(t)y^\lambda$, *J. Math. Anal. Appl.* **66** (1978), 95–134.
2. S. Taliaferro, On the positive solutions of $y'' + \phi(t)y^{-\lambda} = 0$, *Nonlinear Anal.* **2** (1978), 437–446.
3. A. Nachman and S. Taliaferro, Mass transfer into boundary layers for power law fluids, *Proc. Roy. Soc. London A.* **365** (1979), 313–326.
4. S. Taliaferro, A nonlinear singular boundary value problem, *Nonlinear Anal.* **3** (1979), 897–904.
5. S. Taliaferro, On the angular variation of solutions of second order linear systems, *SIAM J. Math. Anal.* **11** (1980), 173–180.

6. S. Taliaferro, Stability for two dimensional analytic potentials, *J. Differential Equations* **35** (1980), 248–265.
7. S. Taliaferro, An inversion of the Lagrange-Dirichlet stability theorem, *Arch. Rational Mech. Anal.* **73** (1980), 183–190.
8. S. Taliaferro, Asymptotic behavior of solutions of $y'' = \phi(t)f(y)$, *SIAM J. Math. Anal.* **12** (1981), 853–865.
9. S. Taliaferro, Stability of solutions bifurcating from multiple eigenvalues, *J. Funct. Anal.* **44** (1981), 24–49.
10. J. Buckmaster, A. Nachman, and S. Taliaferro, The fast-time instability of diffusion flames, *Phys. D* **9** (1983), 408–424.
11. S. Taliaferro, Stability and bifurcation of equilibrium solutions of reaction-diffusion equations on an infinite space interval, *J. Differential Equations* **54** (1984), 19–59.
12. S. Taliaferro, Bifurcation at multiple eigenvalues and stability of bifurcating solutions, *J. Funct. Anal.* **55** (1984), 247–275.
13. S. Taliaferro, Degenerate Hopf bifurcation from multiple eigenvalues and stability, *Ann. Mat. Pura Appl. (4)* **143** (1986), 275–320.
14. P. Hagedorn and S. Taliaferro, Some remarks on dynamic receptance, stiffness, and impedance of mechanical systems, *Z. Angew. Math. Phys.* **37** (1986), 134–149.
15. S. Taliaferro, Stability of bifurcating solutions in the presence of symmetry, *Nonlinear Anal.* **11** (1987), 821–839.
16. S. Taliaferro, Stability and bifurcation of traveling wave solutions of nerve axon type equations, *J. Math. Anal. Appl.* **137** (1989), 396–416.
17. S. Taliaferro, Instability of an equilibrium in a potential field, *Arch. Rational Mech. Anal.* **109** (1990), 183–194.
18. S. Taliaferro, Asymptotic behavior of positive decreasing solutions of $y'' = F(t, y, y')$, *Geometric Analysis and Nonlinear Partial Differential Equations*, I. Bakelman ed., Marcel Dekker, 1993, 105–128.
19. S. Taliaferro, Asymptotic behavior of solutions of nonlinear elliptic equations, *Arch. Rational Mech. Anal.* **122** (1993), 105–121.
20. I. Bakelman and S. Taliaferro, The isoperimetric problem for two-dimensional convex surfaces, *Geometric Analysis and Nonlinear Partial Differential Equations*, I. Bakelman ed., Marcel Dekker, 1993, 289–303.
21. S. Taliaferro, Are solutions of almost radial nonlinear elliptic equations almost radial?, *Comm. Partial Differential Equations* **20** (1995), 2057–2092.
22. S. Taliaferro, Radial symmetry of large solutions of nonlinear elliptic equations, *Proc. Amer. Math. Soc.* **124** (1996), 447–455.

23. S. Taliaferro, An application of the isoperimetric inequality to the conformal scalar curvature equation, *Math. Ann.* **309** (1997), 117–133.
24. S. Taliaferro, Radial symmetry of positive solutions of nonlinear elliptic equations, *J. Differential Equations* **156** (1999), 219–253.
25. S. Taliaferro, On the growth of superharmonic functions near an isolated singularity I, *J. Differential Equations* **158** (1999), 28–47.
26. S. Taliaferro, On the growth of superharmonic functions near an isolated singularity II, *Comm. Partial Differential Equations*, **26** (2001), 1003–1026.
27. S. Taliaferro, Isolated singularities of nonlinear elliptic inequalities, *Indiana Univ. Math. J.* **50** (2001), 1885–1897.
28. S. Taliaferro, Local behavior and global existence of positive solutions of $au^\lambda \leq -\Delta u \leq u^\lambda$, *Ann. Inst. H. Poincaré Anal. Non Linéaire* **19** (2002), 889–901.
29. S. Taliaferro and L. Zhang, Arbitrarily large solutions of the conformal scalar curvature problem at an isolated singularity, *Proc. Amer. Math. Soc.* **131** (2003), 2895–2902.
30. S. Taliaferro, Existence of large singular solutions of conformal scalar curvature equations in S^n , *J. Funct. Anal.* **224** (2005), 192–216.
31. S. Taliaferro and L. Zhang, Asymptotic symmetries for conformal scalar curvature equations with singularity, *Calc. Var. Partial Differential Equations* **26** (2006), 401–428.
32. S. Taliaferro, Isolated singularities of nonlinear elliptic inequalities. II. Asymptotic behavior of solutions, *Indiana Univ. Math. J.* **55** (2006), 1791–1812.
33. S. Taliaferro, Isolated singularities of nonlinear parabolic inequalities, *Math. Ann.* **338** (2007), 555–586.
34. S. Taliaferro, Blow-up of solutions of nonlinear parabolic inequalities, *Trans. Amer. Math. Soc.* **361** (2009), 3289–3302.
35. S. Taliaferro, Initial blow-up of solutions of semilinear parabolic inequalities, *J. Differential Equations* **250** (2011), 892–928.
36. M. Ghergu, A. Moradifam, and S. Taliaferro, Isolated singularities of polyharmonic inequalities, *J. Funct. Anal.* **261** (2011), 660–680.
37. M. Ghergu and S. Taliaferro, Semilinear elliptic inequalities in the exterior of a compact set, *Proc. Roy. Soc. Edinburgh Sect. A*, accepted for publication subject to minor revision, (27 pages).
38. S. Taliaferro, Isolated singularities of nonlinear polyharmonic inequalities, submitted for publication, (32 pages).

Other Writings

S. Taliaferro, Asymptotic Behavior of Solutions of $y'' = \phi(t)y^\lambda$, Ph.D. Thesis.