

## CURRICULUM VITAE

**Name:** Gregory L. Naber  
**Citizenship:** U. S. A.  
**Date of Birth:** September 21, 1948  
**Affiliation:** Department of Mathematics  
Drexel University  
Philadelphia, PA 19104

### Academic Training:

1. B. S. in Mathematics, Carnegie-Mellon University, 1970
2. M.S. in Mathematics, Carnegie-Mellon University, 1971
3. D.A. in Mathematics, Carnegie-Mellon University, 1974

### Occupational Record:

1. Drexel University, Teaching Professor, 2004 – Present
2. California State University (Chico), Professor, 1987 – 2003
3. Hong Kong Polytechnic, Visiting Professor, 1986 – 1987
4. California State University (Chico), Associate Professor, 1983 – 1987
5. St. Joseph's University, Associate Professor, 1981 – 1983
6. St. Joseph's University, Assistant Professor, 1980 – 1981
7. Penn State (Delaware County), Assistant Professor, 1975 – 1980
8. Penn State (DuBois), Assistant Professor, 1974 – 1975
9. Memphis State University, Instructor, 1973 – 1974

### Publications:

1. **Set-Theoretic Topology, With Emphasis on Problems from the Theory of Coverings, Zero-Dimensionality and Cardinal Invariants**, University Microfilms International, Ann Arbor, Michigan, 1977.
2. **Topological Methods in Euclidean Spaces**, Cambridge University Press, Cambridge, England, 1980.
3. A review of the book **Differential Geometry and Relativity Theory**, by Richard L. Faber, American Journal of Physics, Vol. 54, No. 7, July, 1986.
4. **Spacetime and Singularities: An Introduction**, London Mathematical Society Student Texts #11, Cambridge University Press, Cambridge, England, 1988.
5. **The Geometry of Minkowski Spacetime: An Introduction to the Mathematics of the Special Theory of Relativity**, Applied Mathematical Sciences Series #92, Springer-Verlag, New York, Berlin, 1992.
6. **Topology, Geometry and Gauge Fields: Foundations**, Texts in Applied

- Mathematics #25, Springer-Verlag, New York, Berlin, 1997.
7. “Topology and Classical Gauge Theory”, in **Aspects of Complex Analysis, Differential Geometry, Mathematical Physics and Applications**, World Scientific, Singapore, 1999.
  8. **Topology, Geometry and Gauge Fields: Interactions**, Applied Mathematical Sciences Series #141, Springer-Verlag, New York, Berlin, 2000.
  9. **Geometry, Integrability and Quantization** (Co-Editor with Ivailo Mladenov), Coral Press Scientific Publishing, Sofia, Bulgaria, 2000.
  10. **Topological Methods in Euclidean Spaces**, Dover Publications, Inc., Mineola, New York, 2000.
  11. **Geometry, Integrability and Quantization II** (Co-Editor with Ivailo Mladenov), Coral Press Scientific Publishing, Sofia, Bulgaria, 2001.
  12. **Geometry, Integrability and Quantization III**, (Co-Editor with Ivailo Mladenov), Coral Press Scientific Publishing, Sofia, Bulgaria, 2002.
  13. “Gauge Fields in Physics and Mathematics”, *Journal of Dynamical Systems and Geometric Theories*, Vol. 1, No. 1, 2002, 19-34.
  14. **The Geometry of Minkowski Spacetime: An Introduction to the Mathematics of the Special Theory of Relativity**, Dover Publications, Inc., Mineola, New York, 2003.
  15. “Topology, Geometry and Physics: Background for the Witten Conjecture I”, *Journal of Geometry and Symmetry in Physics*, Vol. 2, 2004, 27-123.
  16. “Topology, Geometry and Physics: Background for the Witten Conjecture II”, *Journal of Geometry and Symmetry in Physics*, Vol. 3, 2005, 1-83.
  17. **Encyclopedia of Mathematical Physics, Volumes 1-5**, (Co-Editor with Jean-Pierre Francoise and Tsou Sheung Tsun), Academic Press/Elsevier, Oxford, England, 2006.
  18. “Minkowski Spacetime and Special Relativity”, in **Encyclopedia of Mathematical Physics**, Academic Press/Elsevier, 2006.

### Recent Invited Conference Papers:

1. “The Ubiquitous Dirac Monopole,” Special Session on Dynamical Systems and Mathematical Physics, AMS Western Sectional Meeting, Davis, CA, April 25-26, 1998.
2. “Topology and Classical Gauge Theory,” Fourth International Workshop on Complex Structures and Vector Fields, St. Constantine, Bulgaria, September 3-11, 1998.
3. “Dirac and Seiberg-Witten Monopoles,” International Conference on Clifford Algebras and Their Applications in Mathematical Physics, Ixtapa, Mexico, June 27-July 4, 1999. Also at “International Conference on Geometry, Integrability, and Quantization,” St. Constantine, Bulgaria, September 1-10, 1999.
4. “Spheres and the Symmetry Groups of Physics,” International Conference on Geometry, Integrability, and Quantization, St. Constantine, Bulgaria, September 1-10, 1999
5. “The Witten Conjecture”, 2<sup>nd</sup> International Conference on Geometry, Integrability, and Quantization, St. Constantine, Bulgaria, June 7-15, 2000.
6. “A Survey of Donaldson Theory”, 2<sup>nd</sup> International Conference on Geometry, Integrability, and Quantization, St. Constantine, Bulgaria, June 7-15, 2000.
7. “Invariants of Smooth 4-Manifolds: Topology, Geometry, Physics,” 3<sup>rd</sup> International Conference on Geometry, Integrability, and Quantization, St. Constantine, Bulgaria, June 14-23, 2001.
8. “Equivariant Localization and Stationary Phase”, 4<sup>th</sup> International Conference on Geometry, Integrability, and Quantization, St. Constantine, Bulgaria, June 6-15, 2002.

### Recent Invited Lecture Series:

1. Two week Short Course at the Feza Gürsey Institute in Istanbul, Turkey, June 25-July 6, 2001, on **Invariants of Smooth 4-Manifolds: Topology, Geometry and Physics**.
2. One week Short Course at the Institute of Theoretical Physics, Technical University, Budapest, Hungary, July 22-27, 2003, on **Topology, Geometry and Physics: Background for the Witten Conjecture**.
3. One week Short Course at the Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany, July 18-22, 2005, on **Donaldson and Seiberg-Witten Invariants: The Witten Conjecture**.
4. Series of nine 2-hour lectures at the Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany, June 22-August 18, on **Localization**.

### Invited Colloquium and Seminar Lectures:

1. Topology and Relativity
2. Singularity Theorems in General Relativity

3. A Topology for  $\mathbb{R}^4$  and its Physics
4. Fractional Linear and Lorentz Transformations
5. Hawking's First Theorem
6. The Dirac Scissors Problem
7. The Spinor Map
8. The Hopf Bundle and Magnetic Monopoles
9. Magnetic Monopoles, Instantons and 4-Manifolds
10. Fiber Bundles in Mathematics and Physics
11. The Witten Conjecture
12. Equivariant Cohomology, Euler Classes and TQFT

**Recent Conferences Attended (No Paper Delivered):**

1. Georgia International Topology Conference, Athens, Georgia, August 2-13, 1993.
2. Las Cruces Symposium on Gauge Theory, Las Cruces, New Mexico, January 4-10, 1994.
3. Seminar on Gauge Theory and Symplectic Geometry, Montreal, Canada, July 3-14, 1995.
4. International Press Lectures, Irvine, California, March 28-30, 1996.
5. Workshop on Low-Dimensional Topology, Mathematical Sciences Research Institute, Berkeley, California, August 12-23, 1996.
6. Symposium on Mathematical Physics and Quantum Field Theory, U.C. Berkeley, June 11-13, 1999.
7. String Theory at the Millenium, California Institute of Technology, January 12-15, 2000.
8. Workshop on Singularity Theory, Bogazici University, Istanbul, Turkey, June 25-29, 2001.
9. International Congress of Mathematical Physics, Lisbon, Portugal, July 28-August 2, 2003.
10. Workshop on Quantum Gravity, Blaubeuren, Germany, July 28 - August 1, 2005.

**Editorial:**

1. Editor (along with Tsou Sheung Tsun of Oxford and Jean-Pierre Francoise of the Universite P.-M. Curie in Paris) of a five volume **Encyclopedia of Mathematical Physics**, published by Elsevier, Academic Press, May, 2006.
2. Editorial Board for the Journal of Dynamical Systems and Geometric Theories.
3. Associate Editor for the Journal of Geometry and Symmetry in Physics.
4. Standing Committee for the Eighth International Conference on Geometry, Integrability and Quantization, Varna, Bulgaria, June, 2006.
5. Advisory Board for the Texts in Applied Mathematics Series, Springer-Verlag.