# JEFFREY FREDERICK GOLD

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## Education:

- United States Naval Academy, Annapolis, MD, 1987–1988.
- University of Utah, Bachelor of Science (Physics), June 1996.
- University of Utah, Minor (Mathematics), June 1996.
- University of Cambridge (Fitzwilliam College), Cavendish Laboratory (Microelectronics Research Centre). Microelectronic Engineering and Semiconductor Physics, 1996–1997.

## Personal:

- Born March 13, 1968 in Rock Island, Illinois.
- Have lived in Moline, Illinois; Castroville, California; Heidelberg, Germany; Las Cruces, New Mexico; Bangor, Maine; Honolulu, Hawaii; Annapolis, Maryland; Cambridge, England; Albi, France; and am currently living in Salt Lake City, Utah.
- Fluent in German and English.
- Interests include fishing, softball, soccer, sailplane gliding, writing, filmmaking, screenwriting, and musical composition.

## Publications:

- **A Characterization of Twin Prime Pairs** (with Don H. Tucker). Proceedings — Fifth National Conference on Undergraduate Research, Volume I, pp. 362–366, University of North Carolina Press, University of North Carolina at Asheville (UNCA), 1991.
- **Remodulization of Congruences** (with Don H. Tucker). Proceedings — Sixth National Conference on Undergraduate Research, Volume II, pp. 1036–1041, University of North Carolina Press, University of North Carolina at Asheville, 1992.
- **Is Gravitation A Result of Asymmetric Coulomb Charge Interactions?** Journal of Undergraduate Research (JUR), Volume III, pp. 56–61, University of Utah Press, University of Utah, 1992.
- **Complementary Sets of Systems of Congruences** (with Don H. Tucker). Proceedings — Seventh National Conference on Undergraduate Research, Volume II, pp. 793–796, University of North Carolina Press, University of North Carolina at Asheville, 1993.
- **On a Conjecture of Erdös** (with Don H. Tucker). Proceedings — Eighth National Conference on Undergraduate Research, Volume II, pp. 794–798, University of North Carolina Press, University of North Carolina at Asheville, 1994.

- **Electrically Symmetric Poly(Phenylene Acetylene) Diodes** (with S.A. Jeglinski, M.E. Hollier, Z.V. Vardeny, Y. Ding, and T. Barton). Journal of Molecular Crystals and Liquid Crystals 1994, Vol. 256, pp. 555-561.
- **A Novel Solution of Linear Congruences** (with Don H. Tucker). Proceedings — Ninth National Conference on Undergraduate Research, Volume II, pp. 708–712, University of North Carolina Press, University of North Carolina at Asheville, 1995.
- **Vector Products Revisited** (with Don H. Tucker). Proceedings — Tenth National Conference on Undergraduate Research, Volume II, pp. 994–998, University of North Carolina Press, University of North Carolina at Asheville, 1996.
- **Knocking on the Devil's Door:** *A Naive Introduction to Quantum Mechanics.* Available on the World-Wide Web at `http://www.math.utah.edu /~gold/quantum.html`.
- **Short Lifetimes of Light Emitting Polymers**. Available for downloading from the World Wide Web at (`http://www.math.utah.edu/~gold/publications.html`). This paper was delivered at the Microelectronic Research Centre of the Cavendish Laboratory, University of Cambridge on January 20, 1997.

## Technical Illustrations:

- **420 Illustrations**. *Physics of Hi-Fi: From Analog to Digital*, Kendall/Hunt Publishing Company, Dubuque, Iowa, 1995 (available at `http://www.math.utah.edu/~gold/publications.html`).
- **Illustrations**. Doctoral Thesis (Stefan Jeglinski). Department of Physics, University of Utah, 1995.
- **Illustrations**. Utah State Science Core Curriculum Activity Packet, Earthquake Education Services, September 1995.
- **Timing of Prehistoric Earthquakes on the Wasatch Fault, Utah.** The Salt Lake Tribune, Thursday, July 27, 1995.
- **Illustrations**. *The Earthquake Threat in Utah.* University of Utah Seismograph Stations.

## Inventions:

- **Compact Disc Case**, Technology Transfer Office, University of Utah.
- **Physical Data Compression**, Technology Transfer Office, University of Utah.
- **Digital Book**, in process (St. John's Innovation Centre, Cambridge).
- **Airline Aisle Cart**, in process (K. W. Nash & Associates, Cambridge).

## Research Experience:

- **Thin Films Sputtering Systems**. Department of Physics, University of Utah, Salt Lake City, Utah 84112. Research Assistant, 1988 – 1993.
- **Magnetoencephalography**. Department of Physics, University of Utah. Research Assistant, 1988 – 1993.
- **Thermoacoustics**. Department of Physics, University of Utah. Research Assistant, 1988 – 1993.

- **Vapor Deposition Systems, High Vacuum Systems**. Dr. Zeev V. Vardeny and Stefan Jeglinski, Department of Physics, University of Utah. Research Assistant, Mar. 1993 – 1995.
- **Number Theory, Mathematics**. Dr. Don H. Tucker, Department of Mathematics, University of Utah, Salt Lake City, Utah 84112. Collaborator, 1988 – present.
- **Experimental Physics**. Department of Physics, University of Utah, Salt Lake City, Utah 84112. Research Assistant, 1988 – 1995.
- **Microelectronic Engineering and Semiconductor Physics**. University of Cambridge, Department of Physics, Cavendish Laboratory, Microelectronics Research Centre and Department of Engineering, Cambridge, United Kingdom 1996 – 1997.

## Work Experience:

- **VB Applications Developer and Programmer**, Experior, Salt Lake City, Utah 84102. 1998 – 1998.
- **World Wide Web Consultant**. Department of Geology and Geophysics, University of Utah Seismograph Stations, Salt Lake City, Utah 84112. 1995 – 1996.

## Computer Experience:

- Programming languages: Visual Basic, Advantage DataBase Client/Server applications, *C* and HTML, SOME *C* SHELL PROGRAMMING.
- Operating systems: Unix, Unix variants (AIX, IRIX, DECUnix), DOS.
- Applications: LaTeX MSWord, Pagemaker, Aldus Freehand, Adobe Photoshop, FoxPro, BroPlus, InstallShield.
- Platforms: IBM Risc6000, DECstation 3100, SGI Indigo$^2$, DECalpha, Power Macintosh, Windows NT/'95.

## Conferences:

- Fifth National Conference on Undergraduate Research. March 21–23, 1991. California Institute of Technology (Caltech), Pasadena, California.
- Sixth National Conference on Undergraduate Research. March 26–28, 1992. University of Minnesota, Minneapolis, Minnesota.
- 1992 SPS National Conference, Society of Physics Students. October 28–31, Dayton, Ohio.
- 1992 ΣΠΣ Congress. October 29–30, 1992, Dayton, Ohio.
- Seventh National Conference on Undergraduate Research. March 25–27, 1993. University of Utah, Salt Lake City, Utah.
- Annual Spring Meeting, Intermountain Section of the Mathematical Association of America, Westminster College of Salt Lake City, Utah, April 8–9, 1994.
- Eighth National Conference on Undergraduate Research. April 14–16, 1994. Western Michigan University, Kalamazoo, Michigan.
- Ninth National Conference on Undergraduate Research. April 20–22, 1995. Union College, Schenectady, New York.

- Tenth National Conference on Undergraduate Research. April 20–22, 1996. University of North Carolina, Asheville, North Carolina.

## Grants and Fellowships:

Undergraduate Research Opportunities Program (UROP) Fellowships:

- Summer 1989, (Mathematics)
- Autumn 1990, (Mathematics)
- Winter 1990, (Mathematics)

## Speaking Engagements:

- **A Characterization of Twin Prime Pairs**. This paper was delivered at the Fifth National Conference on Undergraduate Research at Caltech, March 1991. This research was also delivered to an honors undergraduate class at the University of Utah.
- **Remodulization of Congruences**. This paper was delivered at the Sixth National Conference on Undergraduate Research at the University of Minnesota. It was also presented at a Number Theory Seminar at the University of Utah, March 1992.
- **Prime Numbers**. Colloquium, BTG/IMETS program, Department of Mathematics, University of Utah, Summer 1992.
- **Complementary Sets of Systems of Congruences**. This paper was delivered at the Seventh National Conference on Undergraduate Research held at the University of Utah, March 1993.
- **A Proposed Mechanism for the Geomagnetic Field**. Delivered at the Seventh National Conference on Undergraduate Research held at the University of Utah, March 1993.
- **Topics in Number Theory and Cryptography**. Colloquium, BTG/IMETS program. This talk was given at the University of Utah on July 1, 1993.
- **On a Conjecture of Erdös**. This paper was delivered at the Annual Spring Meeting of the Intermountain Section of the Mathematical Association of America at Westminster College of Salt Lake City, Utah on April 8, 1994. This paper was also delivered at the Eighth National Conference on Undergraduate Research held at Western Michigan University, April 14 1994.
- Utah State Math Contest. April 17, 1995, University of Utah.
- **A Novel Solution of Linear Congruences**. This paper was delivered at the Ninth National Conference on Undergraduate Research held at Union College, April 1995.
- **Vector Products Revisited**. This paper was delivered at the Tenth National Conference on Undergraduate Research held at the University of North Carolina at Asheville, April 1996.
- **Short Lifetimes of Light Emitting Polymers**. This paper was delivered at the Microelectronic Research Centre of the Cavendish Laboratory, Department of Physics, University of Cambridge on January 20, 1997.

## Awards:

- **Meritorious** (with David E. Norman and Laura M. Lochhead). Mathematical Contest in Modelling (MCM 91), April 1991. Consortium of Mathematics and its Applications (COMAP).

- **Meritorious** (with Peter L. Staab and Steven M. Thackeray). Mathematical Contest in Modelling (MCM 92), February 1992. Consortium of Mathematics and its Applications (COMAP).
- $1^{st}$ **Place**, University of Utah, Department of Mathematics, Putnam Examination 1992.
- Selected for Golden Key National Honor Society, 1995.
- **Meritorious** (with Parrish Brady and Christopher J. Waters). Mathematical Contest in Modelling (MCM 95), February 1995. Consortium of Mathematics and its Applications (COMAP).
- **Honorable Mention** (with Parrish Brady and Matthew Cargo). Mathematical Contest in Modelling (MCM 96), February 1996. Consortium of Mathematics and its Applications (COMAP).

## National Contests:

- Mathematical Contest in Modelling (MCM 91), April 1991. Consortium of Mathematics and its Applications (COMAP).
- Mathematical Contest in Modelling (MCM 92), February 1992. Consortium of Mathematics and its Applications (COMAP).
- Mathematical Contest in Modelling (MCM 95), February 1995. Consortium of Mathematics and its Applications (COMAP).
- Mathematical Contest in Modelling (MCM 96), February 1996. Consortium of Mathematics and its Applications (COMAP).

## Professional Organizations:

- Associate Zone Councilor (Utah, Idaho, Montana), American Institute of Physics, Society of Physics Students (SPS), 1992 – 1993.
- President, Society of Physics Students (SPS), University of Utah Chapter, 1992–93.
- Member, American Institute of Physics (AIP).
- Associate Member, $\Sigma\Xi$ (Sigma Xi), The Scientific Research Society.
- Associate Member, Mathematical Association of America (MAA).
- Alumnus, United States Naval Academy, Annapolis, Maryland.

## University Organizations:

- Cambridge University Film & Television Society (CFTV) (Lifetime Member).
- Cambridge University Gliding Club, 1996–97.

## Leadership:

- College of Science Representative, Associated Students of the University of Utah (ASUU). General Assembly, Vice-Chair Appropriations Standing Committee, Executive Committee, 1990–91.
- Student Advisory Committee (SAC), Physics, University of Utah, 1991–92, 1992–93.
- Student Advisory Committee (SAC), Mathematics, University of Utah, 1990.
- Representative for the College of Science, Science Day, University of Utah, 1990, 1991, 1992.