

Education

Stanford University, Stanford, CA	Ph.D. Physics
Massachusetts Institute of Technology, Cambridge, MA	B.S. Physics

Professional History

Director of Technology Education – Innovation Hangar, Palace of Fine Arts, SF	2015 – 2018
Software Developer, independent contractor	2011 – pres.
Senior Software Developer – Health Analytic Services, Skyware, inc	2004 – 2011
VP Technology Development – Emerald Lake Software	2000 – 2004
Science and Educational Materials Director – NASA / CERES Program	1998 – 2000
Associate Professor of Physics – Montana State University	1996 – 2000

Skills and Experience

Instruction	<ul style="list-style-type: none">• Graduate and undergraduate instructor in physics, mathematics and astronomy• Online distance education instruction and program design• STEM K-12 teacher continuing education• Maker skills, 3D printing, electronics
Research	<ul style="list-style-type: none">• High energy astrophysics, cosmology• Parametric and nonparametric statistics, game theory• Power electronics, motion control, photovoltaics• Autonomous vehicle routing algorithms
Software	<ul style="list-style-type: none">• 3D CAD/CAM, Solidworks, SketchUp, AutoCad, HSMWorks• C++, C#, .NET, ASPX, PHP, JAVASCRIPT, HTML, MVC, MSSQL, MySQL• Eagle PCB layout• HTTP proxy design, HTML parsing engines• Web-based instruction architecture and design• Photoshop, Illustrator, InDesign, Flash, LaTeX, Word, Excel, etc.
Hardware	<ul style="list-style-type: none">• Printed circuit (PCB) design and fabrication.• Power electronic and motion control device design, prototype and fabrication.• 3D printing• CNC machining, manual mill & lathe• Arduino MCU

Patents

Predictive Browser and Protocol Package (U.S. Serial No. 10/933,444)
Optimized Peremptory Juror Challenges (U.S. Application No. US20150310353 A1)

Miscellaneous

Technology Instructor, TheShop.build, San Francisco (2018-present)
Director, Innovation Solar Car Team, Palace of Fine Arts, San Francisco (2015-2018)
Faculty advisor, Montana State University Solar Vehicle Project (1993-2000)
Director, Stanford University Solar Vehicle Project (1987–1992)

Selected Publications

Non-parametric Estimation of Evolution of the Quasar Luminosity Function, Caditz, D. 2018, The Astrophysical Journal, volume 869, 2

Recalculating the quasar luminosity function of the extended Baryon Oscillation Spectroscopic Survey, Caditz, D. 2017, Astronomy & Astrophysics, 608, A64.

Nonparametric Estimators for Incomplete Surveys, Caditz, D. 2016, The Astrophysical Journal, volume 831, 1

Generalized Continuity Equation Solutions for the QSO Luminosity Function, Caditz, D., 2016, The Astrophysical Journal, volume 821, 2

Selection Under Veto with Limited Foresight, Caditz, D., 2015, Submitted to Operations Research

Selection Under Veto: A Game Theoretic Analysis, Caditz, D., 2015, Submitted to Operations Research

On the Application of Game Theory in Jury Selection, Caditz, D., 2014,
<http://www.thejuryexpert.com/2014/08/on-the-application-of-game-theory-in-jury-selection/>

HTTP Proxy Specification for Random Access Channels in Digital Satellite Communications, Caditz, D. 2004, Hokupa'a Technologies.

Demand Assigned Multiple Access Architecture for Digital Satellite Communications, Caditz, D. and Abramson, N. 2004, Hokupa'a Technologies.

Online Journey Through Astronomy: Course Implementation Guide, Caditz, D., Gale, D., and Harper, B. W., 2000 1st Edition, Brooks/Cole Publishing

Relativistic Adiabatic Shocks in Accretion Flows, Caditz, D. and Tsuruta, S. 2000, Highly Energetic Physical Processes and Mechanisms for Emission from Astrophysical Plasmas, Proceedings of IAU Symposium #195, 6-10 July 1999. Published by Astronomical Society of the Pacific, San Francisco, p. 381.

Technology Assessment and Preliminary Design Study of Electromechanical Actuation Systems, Venkataramanan, G., and Caditz, D., 1999, successful Proposal to Montana Space Grant Consortium.

A Systemic Approach to Improving K-12 Astronomy Education Using NASA's Internet Resources. Slater, T. F., Beaudrie, B., Caditz, D. M., Governor, D. S., Roettger, E. S, Stevenson, S., Tuthill, G. 1999, Manuscript for Journal of Computers in Math and Science Teaching. Available:

<http://www.thefreelibrary.com/A+Systemic+Approach+to+Improving+K-12+Astronomy+Education+Using...-a078398578>

Integration of Image Data into Classroom Activities: Three Perspectives, Stevenson, S., Caditz, D. and Ruscher, P. 1998, INET '98 Proceedings http://www.isoc.org/inet98/proceedings/4x/4x_2.htm

Teaching Astronomy by Internet Jigsawing, Beaudrie, B., Slater, T. F., Stevenson, S., & Caditz, D. 1998, *Leading and Learning with Technology*, 26, 2

Adiabatic Shocks in Accretion Flows, D. Caditz and S. Tsuruta 1998, , *Astrophysical Journal* v.501, p.242

Effects of Shocks on Emission from the Central Engines of Active Galactic Nuclei. , Sivron, R., Caditz, D., & Tsuruta, S. 1996, *The Astrophysical Journal* v.469, p.542

Comparing Censoring and Random Truncation via Nonparametric Estimation of a Distribution Function, D. Caditz 1996, *Statistical Challenges in Modern Astronomy II*, Proceedings of the conference held 2-5 June, 1996 at Pennsylvania State University. Edited by G.J. Babu and E.D. Feigelson. Berlin: Springer-Verlag, 1997., p.100

Smoothed Nonparametric Density Estimation for Censored or Truncated Samples, D. Caditz 1996, Proceedings of the conference held 2-5 June, 1996 at Pennsylvania State University. Edited by G.J. Babu and E.D. Feigelson. Berlin: Springer-Verlag, 1997., p.429

Effects of Shocks on Emission from AGN's Central Engines, R.Sivron, D.Caditz, and S.Tsuruta 1996, arXiv:astro-ph/9604043v1

Shock Induced Modifications of AGN Central Source Emission Sivron, R., Tsuruta, S., & Caditz, D. 1994, *Bull. Am. Astron. Soc.*, Vol. 26, No. 1, p. 797

The Luminosity-Colour Distribution of Quasar Accretion Disks, D. Caditz 1994, Proceedings of the 33rd Herstmonceux Conference held at Cambridge, 16-22 July 1992, Cambridge: Cambridge University Press, [c1994, edited by Robinson, Andrew; Terlevich, Roberto, ISBN 0521464803

Solar Vehicle Design, Caditz, D., 1994, Successful Proposal to General Motors Corp.

Statistical Evidence for Accretion Disks in Active Galactic Nuclei, D. Caditz 1993, *Astrophysical Journal*, Part 1 (ISSN 0004-637X), vol. 411, no. 1, p. 103-107.

The Slope of the BATSE Number-Flux Distribution, D. Caditz 1993, *Astrophysical Journal* v.452, p.140

Evolution of the Luminosity-Color Distribution of Quasar Accretion Disks, D. Caditz 1993, *Astrophysical Journal*, Part 1 (ISSN 0004-637X), vol. 404, no. 2, p. 539-550.

Smoothed Nonparametric Estimation of the Luminosity Function for Flux-limited Samples, Caditz, D. & Petrosian, V. 1993, *Astrophysical Journal* v.416, p.450

The Slope of the BATSE logN - Log C, D. Caditz 1993, *Bulletin of the American Astronomical Society*, Vol. 26, p.881

Luminosity-Function Evolution of Quasar Accretion-Disks, D. Caditz and A. Wandel 1991, *Institute d'Astrophysique de Paris (IAP)* Edited by C. Bertout, S. Collin-Souffrin, and J. P. Lasota. Gif-sur-Yvette: Editions Frontieres, 1991., p.391

Evolution of the Luminosity Function of Quasar Accretion Disks, Caditz, D. M., Petrosian, V., & Wandel, A. 1991, *Astrophysical Journal, Part 2 - Letters* (ISSN 0004-637X), vol. 372, May 10, 1991, p. L63-L66.

Evolution of the Quasar Distribution, Cosmology, and the Accretion Disk Model of AGN, D. Caditz 1990, PH.D. Thesis, Stanford University, Stanford, CA

Statistical and Physical Evolution of Quasi-Stellar Objects, Caditz, D., and Petrosian, V. 1990, *The Astrophysical Journal*, 357, 326.

Statistical and Physical Evolution of QSO's, Caditz, D., and Petrosian, V. 1989, NASA STI/Recon Technical Report N, 1989

Quasar and AGN Evolution, Petrosian, V. & Caditz, D. *Active Galactic Nuclei: proceedings of the 134th Symposium of the International Astronomical Union, held in Santa Cruz, California, August 15-19, 1988.* Edited by Donald E. Osterbrock and Joseph S. Miller. International Astronomical Union. Symposium no. 134, Kluwer Academic Publishers, Dordrecht, p.59

Cosmological Parameters and Evolution of the Galaxy Luminosity Function, Caditz, D., and Petrosian, V. 1989, *The Astrophysical Journal*, volume 337, part 2 (1989), page L65

The Evolution of the Luminosity Function of Galaxies and the Value of the Density Parameter Ω , D. Caditz and Petrosian, V. 1987, *Bulletin of the American Astronomical Society*, Vol. 19, p.1106

The Theory and Design of Multi-wire Drift Chambers, D. Caditz, M.I.T. Bates Linear Accelerator Report (1985)