

Curriculum Vitae

David Terry Kagan, Ph.D.

Personal Data

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Education

- Ph.D. Physics, University of California, Berkeley (12/12/81)
- M.A. Physics, University of California, Berkeley (12/6/80)
- B.A. Physics, California State University, Hayward (6/11/77)
Physics, California State University, Fullerton (9/73 - 12/74)

Academic Experience

- 8/14 - present Professor Emeritus of Physics, California State University, Chico.
- 10/11 – 8/12 Assistant Dean, College of Natural Sciences, CSU, Chico.
- 9/09 – 8/12 Chair, Department of Science Education, CSU, Chico.
- 2/09 – 8/12 Joint Appointment, Department of Science Education, CSU, Chico.
- 7/07 – 7/08 Interim Science Education Coordinator, College of Natural Sciences, California State University, Chico
- 8/98 – 8/03 Chair, Department of Physics, California State University, Chico.
- 9/90 – 8/14 Full Professor of Physics, California State University, Chico.
- 9/85 - 9/90 Associate Professor of Physics, California State University, Chico.
- 9/81 - 9/85 Assistant Professor of Physics, California State University, Chico.
- 6/82 - 8/82 Summer Session research and teaching at the Univ. of Calif., Berkeley.
- 6/79 - 6/81 Graduate student/research assistant at Lawrence Berkeley Laboratory.
- 9/78 - 3/79 Teaching Associate and Head Teaching Assistant at U. C. Berkeley.
- 9/77 - 9/78 Teaching Assistant at the University of California, Berkeley.
- 6/77 - 9/77 Laboratory Assistant at Lawrence Berkeley Laboratory.
- 1/77 - 6/77 Student Assistant writing physics tutorial programs for the Physics Department at California State University, Hayward.
- 9/76 - 6/77 Tutored physics, chemistry, mathematics, and statistics for the Learning Center at California State University, Hayward.
- 6/76 - 9/76 Laboratory Assistant at Lawrence Berkeley Laboratory.

Professional Experience

2/17 - present	Center for Mathematics and Science Education Advisory Board
5/10 - present	Director of Baseball Operations – RockStar Science
5/83 - present	Advisor to the ΣΠΣ Honor Society.
12/81 - 9/11	Advisor to the Society of Physics Students.
9/01 - 9/02	Advisor to the CSU Chico Chess Club.
4/91 - 4/94	Zone 18 Councilor for the Society of Physics Students (SPS).
5/89 - 5/90	President of the Northern California Section of the American Association of Physics Teachers (NCS-AAPT).
5/88 - 5/89	President-Elect of NCS-AAPT.
5/87 - 5/88	Secretary of NCS-AAPT.
11/85	Local Host for the NCS-AAPT Fall Meeting.
3/83	Senior Director, 30th Annual California Central Valley Science Fair.
3/82	Junior Director, 29th Annual California Central Valley Science Fair.
9/76 - 6/77	Vice President of the Calif. State Univ., Hayward chapter of the SPS.
9/75 - 6/76	Tutored physics, chemistry, mathematics, and statistics for the Learning Center at California State University, Hayward.

Memberships

8/81 - present	American Association of Physics Teachers.
9/83 - present	Northern California Section of the American Assoc. of Physics Teachers.
9/83 - present	California Faculty Association (CFA).
9/90 - present	American Association of University Professors.
1/05 - 12/12	Editorial Board for <i>The Physics Teacher</i>
10/03 - 9/07	Advisory Board for Basic & Advanced Science & Technology Academies of Research
1/03 - 1/07	AAPT National Committee on Graduate Education
5/92 - 6/97	Paradise Elementary School Leadership Team (chair 93-94).
9/83 - 9/95	Political Action Committee CSU Chico Chapter of CFA (chair 93-94).
1/78 - 1/85	Board of Directors of United Surplus Department Stores, Incorporated.
10/80 - 10/83	Optical Society of America.
9/76 - 6/77	Calif. State Univ., Hayward Chapter of the Society of Physics Students.

Honors

9/10	SPS Chapter named Outstanding Chapter in Zone 18 (California & Nevada).
9/08	SPS Chapter named Outstanding Chapter in Zone 18.
9/07	SPS Chapter named Outstanding Chapter in Zone 18.
7/07	SPS Chapter wins Marsh White Award.
6/07	SPS Chapter wins Blake Lilly Award.
2/07	SPS Chapter wins Marsh White Award.
9/06	SPS Chapter wins Blake Lilly Award.
9/06	SPS Chapter named Outstanding Chapter in Zone 18.
4/06	Myles Tracy Outstanding Student Organization Advisor 2005-06
2/06	SPS Chapter wins Marsh White Award.
9/05	SPS Chapter named Outstanding Chapter in Zone 18.
9/05	SPS Chapter wins Blake Lilly Award.

Honors (continued)

- 2/05 SPS Chapter wins Marsh White Award.
9/04 SPS Chapter named Outstanding Chapter in Zone 18.
9/03 SPS Chapter named Outstanding Chapter in Zone 18.
9/02 SPS Chapter named Outstanding Chapter in Zone 18.
9/00 SPS Chapter named Outstanding Chapter in Zone 18.
9/98 SPS Chapter named Outstanding Chapter in Zone 18.
9/97 SPS Chapter named Outstanding Chapter in Zone 18.
11/96 Honored for Contributions to the Educational Community
by the Paradise Unified School District (PUSD).
9/96 SPS Chapter named Outstanding Chapter in Zone 18.
12/95 Honored for Contributions to the Educational Community by the PUSD.
9/95 SPS Chapter named Outstanding Chapter in Zone 18.
9/94 SPS Chapter named Outstanding Chapter in Zone 18.
9/93 SPS Chapter named Outstanding Chapter in Zone 18.
9/92 SPS Chapter named Outstanding Chapter in Zone 18.
1991 Society of Physics Students National Outstanding Chapter Advisor.
9/91 SPS Chapter named Outstanding Chapter in Zone 18.
9/91 Outstanding Student Organization Advisor CSU Chico.
9/90 SPS Chapter named Outstanding Chapter in Zone 12 (West Coast).
9/89 SPS Chapter named Outstanding Chapter in Zone 12.
9/88 SPS Chapter named Outstanding Chapter in Zone 12.
2/86 Meritorious Performance and Professional Promise Award.
6/78 Faculty Associate Award, University of California, Berkeley Physics Department.
4/78 Inducted into $\Sigma\Pi\Sigma$ the National Honor Society of SPS.
6/77 B.A. awarded with highest honors.

Chapters in Published Books

“The Effect of the Marine Layer on Fly Balls,” with Chris Mitchell, *The Hardball Times Baseball Annual 2017* (Fangraphs & The Hardball Times, 2015), pp. 227-234.

“The Physics of the Longest Possible Homer,” *The Hardball Times Baseball Annual 2016* (Fangraphs & The Hardball Times, 2015), pp. 228-238.

“Pitching in the Wind,” *The Hardball Times Baseball Annual 2015* (Fangraphs & The Hardball Times, 2014), pp. 338-347.

Chapter 2.10, *The Physics of Sports* (American Institute of Physics, New York, NY, 1992), pp. 65-68.

Papers Published in Professional Journals

D. T. Kagan and Alan M. Nathan, “Statcast and the Baseball Trajectory Calculator”, *The Physics Teacher* Vol. 55, 134 (2017).

D. T. Kagan and Alan M. Nathan, “Simplified Models for the Drag Coefficient of a Pitched Baseball”, *The Physics Teacher* Vol. 52, 278 (2014).

D. T. Kagan, “Chart a new introductory course”, *The Physics Teacher* Vol. 52, 59 (2014).

Papers Published in Professional Journals (continued)

D. T. Kagan, “Stolen Base Physics”, *The Physics Teacher* Vol. 51, 269 (2013). Cited in Smithsonian Magazine Oct. 2014 (<http://www.smithsonianmag.com/science-nature/breaking-down-science-stolen-base>).

I. C. Aguilar and D. T. Kagan, “Breaking Bat”, *The Physics Teacher* Vol. 51, 80 (2013).

D. T. Kagan, “The Vibrations in a Rubber Baseball Bat”, *The Physics Teacher* Vol. 49, 588 (2011).

D. T. Kagan, “Demonstration of the 'Trampoline Effect' in Aluminum Bats”, *The Physics Teacher* Vol. 49, 340 (2011).

D. T. Kagan, “An Inexpensive Mechanical Model for Projectile Motion”, *The Physics Teacher*, Vol. 49, 265 (2011).

D. T. Kagan, “A Very Inexpensive Magnus Force Demonstrator”, *The Physics Teacher*, Vol. 48, 488 (2010).

“You Can Understand the Physics of Baseball” cited in the Web Sights column, *The Physics Teacher*, Vol. 48, No. 5, 350 (2010)

D. T. Kagan, “What is the best launch angle to hit a home run?”, *The Physics Teacher*, Vol. 48, 250 (2010).

D. T. Kagan, “Happy Balls, Unhappy Balls, and Newton’s Cradle”, *The Physics Teacher*, Vol. 48, 152 (2010).

L. Klein and D. T. Kagan, “Radio-Active Learning: Visual Representation of Radioactive Decay Using Dice”, *The Physics Teacher*, Vol. 48, 45 (2010).

D. T. Kagan, “The Anatomy of a Pitch: Doing Physics with PITCHf/x Data”, *The Physics Teacher*, Vol. 47, No. 7, 412 (2009).

D. T. Kagan, “Simulate Interference...With Supplies That Last”, *The Physics Teacher*, Vol. 47, No. 4, 246 (2009).

D. T. Kagan, “Detecting the Hard Drive on an iPod”, *The Physics Teacher*, Vol. 43, No. 8, 551 (2005).

D. T. Kagan, “Upright Homopolar Generator,” letter to the editor of *The Physics Teacher*, Vol. 43, No. 2, 68 (2005).

D. T. Kagan and D. Atkinson, “The Coefficient of Restitution of Baseballs as a Function of Relative Humidity”, *The Physics Teacher*, Vol. 42, No. 6, 330 (2004).

D. T. Kagan, “The Gauss Accelerator”, *The Physics Teacher*, Vol. 42, No. 1, 24 (2004).

D. T. Kagan and C. Gaffney, “Building A Physics Degree for High School Teachers”, *The Journal of Physics Teacher Education Online*, Vol. 2, No. 1, September 2003.

D. T. Kagan, “An Old Pilot’s Yarn”, *The Physics Teacher*, Vol. 40, No. 8, 464 (2002).

C. Gaffney and D. T. Kagan, “Beats in an Oscillator Near Resonance”, *The Physics Teacher*, Vol. 40, No. 7, 405 (2002).

D. T. Kagan and C. Gaffney, “Colliding Magnetic Pendula: When is a collision not collision-like”, *The Physics Teacher*, Vol. 40, No. 5, 280 (2002).

D. T. Kagan, “The Shaken Soda Syndrome”, *The Physics Teacher*, Vol. 39, No. 5, 290 (2001).

Papers Published in Professional Journals (continued)

D. T. Kagan and Lynda Klein, "Why Is There No Vertex in Air-Table Collisions", *The Physics Teacher*, Vol. 38, No. 9, 414 (2000).

D. T. Kagan, "A Cheap Simple Ammeter for Batteries-and-Bulbs Activities", *Apparatus For Teaching Physics Column, The Physics Teacher*, Vol. 38, No. 4, 204 (2000).

D. T. Kagan, "Building a Cheap Simple Generator", *The Physics Teacher*, Vol. 37, No. 4, 25 (1999).

D. T. Kagan, "The Annual Pumpkin Drop," *The Physics Teacher*, Vol. 36, No. 4, 404 (1998).

D. T. Kagan, "Fast-Food Physics", *The Physics Teacher*, Vol. 35, No. 8, 482 (1997).

D. T. Kagan and M. McGie, "Some Physics of Kite Strings", *The Physics Teacher*, Vol. 35, No. 4, 202 (1997).

D. T. Kagan, "Scientist in Residence," *The Physics Teacher*, Vol. 34, No. 7, 404 (1996).

D. T. Kagan and A. Kott, "The Greater-Than-g Acceleration of a Bungee Jumper," *The Physics Teacher*, Vol. 34, No. 6, 368 (1996).

D. T. Kagan, L. J. Buchholtz, and L. Klein, "Soda Bottle Water Rockets," *The Physics Teacher*, Vol. 33, No. 3, 150 (1995).

D. T. Kagan, "Building a Magnetic Levitation Toy," *The Physics Teacher*, Vol. 31, No. 10, 432 (1993).

D. T. Kagan and L. J. Buchholtz, "Demonstrations of Normal Modes on a Bubble Membrane," *American Journal of Physics*, Vol. 59, No. 4, 376 (1991).

D. T. Kagan, "The Effect of Coefficient of Restitution Variations on Long Fly Balls," *American Journal of Physics*, Vol. 58, No. 2, 151 (1990). Cited in *Science News* Vol. 137, No. 8, 127 (1990).

D. T. Kagan, "A Brief Experiment to Illustrate the Relationship Between Statistics and Measurement," *The Physics Teacher*, Vol. 27, No. 1, 44 (1989).

D. T. Kagan, "Measuring the Earth's Magnetic Field in an Introductory Laboratory with a Spinning Coil," *The Physics Teacher*, Vol. 24, No. 7, 423 (1986).

D. T. Kagan, "Three Computer Programs for Use in Introductory Level Physics Laboratories," *The Physics Teacher*, Vol. 22, No. 7, 443 (1984).

D. T. Kagan, "Statics and the Walkway's Collapse," *The Science Teacher*, 59 (1984).

D. T. Kagan, "The Spectrum of Four-times Ionized Niobium, Including Zeeman Studies of Selected Lines and Laser Modification of the Population of Certain Levels in a Sliding Spark Source," LBL Report 12822, June 1981.

D. T. Kagan, J. G. Conway, and E. Meinders, "The Spectrum of Four-times Ionized Niobium," *Journal of the Optical Society of America*, Vol. 71, 1193 (1981).

D. T. Kagan, J. G. Conway, and E. Meinders, "The Spectrum of Four-times Ionized Niobium," LBL Report 12404, March 1981.

Papers Published in Professional Journals (continued)

W. G. Graham and D. T. Kagan, "Electron Detachment in Collisions Involving 20 to 120keV O⁻ Ions," *Bulletin of the American Physical Society*, 22, 1327 (1977).

A. S. Schlachter, J. W. Stearns, D. T. Kagan, and K. R. Stalder, "Equilibrium Yield of D⁻ by Charge Exchange of D⁺, D²⁺, and D³⁺ in Cesium Vapor," *Bulletin of the American Physical Society*, 21, 1265 (1976).

Popular Articles Published

D. T. Kagan, "The Physics of Carry at Dodger Stadium," *The Hardball Times*, January 3, 2018.

D. T. Kagan, "The Physics of the Gyro Pitch," *The Hardball Times*, December 1, 2017.

D. T. Kagan, "The Physics of Batting Practice," *The Hardball Times*, November 1, 2017.

D. T. Kagan, "The Physics of the Bat Flip," *The Hardball Times*, October 2, 2017.

D. T. Kagan, "The Physics of "Late Break," *The Hardball Times*, September 1, 2017.

D. T. Kagan, "The Physics of a Rising Fastball," *The Hardball Times*, July 31, 2017.

D. T. Kagan, "The Physics of Aaron Judge," *Fangraphs*, June 19, 2017.

D. T. Kagan, "Light Up the Night," *The Hardball Times*, June 6, 2017.

D. T. Kagan, "The Physics of Choking Up," *The Hardball Times*, May 18, 2017.

D. T. Kagan, "The Physics in Two Players Names," *The Hardball Times*, April 24, 2017.

D. T. Kagan, "Physics on the Flight to Spring Training," *The Hardball Times*, March 14, 2017.

D. T. Kagan, "The Physics of Coors Field's Higher Fence," *The Hardball Times*, February 3, 2017.

D. T. Kagan, "The Physics of Barreled Balls," *The Hardball Times*, January 17, 2017.

D. T. Kagan, "The Physics of the Force on Spinning Baseballs," *The Hardball Times*, December 12, 2016.

D. T. Kagan, "The Physics of Statcast Errors," *The Hardball Times*, November 17, 2016.

D. T. Kagan, "The Physics of October Baseball in Wrigley," *The Hardball Times*, October 3, 2016.

D. T. Kagan, "The Physics of Ballpark Statues," *The Hardball Times*, September 14, 2016.

D. T. Kagan, "The Physics of Hard Hit Balls," *The Hardball Times*, August 17, 2016.

D. T. Kagan, "The Physics of Beach Balls and Fastballs," *The Hardball Times*, August 3, 2016.

D. T. Kagan, "The Physics of Catchers' Knees," *The Hardball Times*, July 21, 2016.

D. T. Kagan, "The Physics of Three Great Catches," *The Hardball Times*, June 13, 2016.

D. T. Kagan, "The Physics of Ballpark Fare," *The Hardball Times*, May 17, 2016.

Popular Articles Published (continued)

- D. T. Kagan, "The Physics of the Cutoff: Part II," *The Hardball Times*, April 6, 2016.
- D. T. Kagan, "The Crack-of-the-Bat," *The Hardball Times*, February 10, 2016.
- D. T. Kagan, "The Physics of Broken Bat Homers," *The Hardball Times*, January 14, 2016.
- D. T. Kagan, "The Physics of the Most Perfect Game," *The Hardball Times*, December 9, 2015.
- D. T. Kagan, "The Physics of Which Way the Wind Blows," *The Hardball Times*, October 28, 2015.
- D. T. Kagan, "The Physics of a Souvenir," *The Hardball Times*, October 16, 2015.
- D. T. Kagan, "The Physics of Wind at the Remodeled Wrigley Field," *The Hardball Times*, September 16, 2015.
- D. T. Kagan, "The Physics of the Dog Days of Summer," *The Hardball Times*, August 21, 2015.
- D. T. Kagan, "The Physics of Sound at the Ballpark," *The Hardball Times*, August 17, 2015.
- D. T. Kagan, "The Physics of Calling Pitches from Your Sofa," *The Hardball Times*, June 15, 2015.
- D. T. Kagan, "The Physics of Radar Guns," *The Hardball Times*, May 12, 2015.
- D. T. Kagan, "The Physics of Baseball in Super Slow Motion," *The Hardball Times*, April 21, 2015.
- D. T. Kagan, "The Physics of Going from First to Third," *The Hardball Times*, March 4, 2015.
- D. T. Kagan, "The Physics of Fielding," *The Hardball Times*, February 18, 2015.
- D. T. Kagan, "The Physics of Base Stealing," *The Hardball Times*, January 5, 2015.
- D. T. Kagan, "The Physics of Falling Baseballs," *The Hardball Times*, December 22, 2014.
- D. T. Kagan, "The Physics of the Wave," *The Hardball Times*, November 13, 2014.
- D. T. Kagan, "The Physics of Pesky's Pole," *The Hardball Times*, October 22, 2014.
- D. T. Kagan, "The Physics of Splash Hits," *The Hardball Times*, October 14, 2014.
- D. T. Kagan, "The Physics of the Pop-up," *The Hardball Times*, September 26, 2014.
- D. T. Kagan, "The Physics of Replay Reviews," *The Hardball Times*, September 4, 2014.
- D. T. Kagan, "Lost in the Sun: The Physics of Ballpark Orientation," *The Hardball Times*, July 30, 2014.
- D. T. Kagan, "The Physics of the Bunt," *The Hardball Times*, June 19, 2014.
- D. T. Kagan, "The Physics of a Foul Down the Line," *The Hardball Times*, May 22, 2014.
- D. T. Kagan, "The True Origins of Baseball (Scientifically Speaking)," *The Hardball Times*, May 8, 2014.
- D. T. Kagan, "The Physics of the Cutoff," *The Hardball Times*, Apr. 1, 2014.
- D. T. Kagan, "The Physics of the Curveball - A Short History," *The Hardball Times*, Mar. 3, 2014.

Popular Articles Published (continued)

D. T. Kagan, "The Physics of the Pitcher's Padded Cap," *The Hardball Times*, Jan. 31, 2014.

D. T. Kagan, "It's Game Time ," *The Hardball Times*, Jan. 26, 2014.

D. T. Kagan, "Taking a dive (into first base)," *The Hardball Times*, Dec. 30, 2013.

D. T. Kagan, "Why is a sinker "heavy?"" *The Hardball Times*, Dec. 3, 2013.

Presentations at Professional Meetings

- 8/17 "Some Physics in Super Slow Motion Video," Seventh Annual SaberSeminar, Boston University, Boston, MA.
- 8/16 "Some Physics of Well Hit Balls," Sixth Annual SaberSeminar, Boston University, Boston, MA.
- 10/13 "STEM Roundtable," Center for Excellence in Learning and Teaching, CSU Chico, CA.
- 11/12 Invited talk: "Get in the Swing of Physics," American Association of Physics Teachers (AAPT) – Northern California Section (NCS) Fall Meeting, Sierra College, Rocklin, CA.
- 5/12 Poster: "Teaching Excellence in Math and Science Phase II", National Science Foundation Robert Noyce Annual Meeting, Renaissance Hotel, Washington, DC.
- 5/12 Workshop: "An Urban-Rural University Partnership: Learning From the 'Other'", National Science Foundation Robert Noyce Annual Meeting, Renaissance Hotel, Washington, DC.
- 2/12 Poster: "Science Teacher Recruiting at CSU Chico", AAPT-National Winter Meeting, Ontario Convention Center, Ontario, CA.
- 2/12 Poster: "Science Teacher Recruiting at CSU Chico", Physics Teacher Education Coalition Meeting, Radisson Hotel, Ontario, CA.
- 2/12 Poster: "Science Teacher Recruiting at CSU Chico", Math Science Teacher Initiative / CalTEACH Meeting, Radisson Hotel, Ontario, CA.
- 8/11 "Bat Vibrations", 4th Annual PITCHf/x Summit, Westin Hotel and AT&T Park, San Francisco, CA.
- 7/11 Poster: "Teaching Excellence in Math and Science", National Science Foundation Robert Noyce Annual Meeting, Renaissance Hotel, Washington, DC.
- 3/11 Workshop: "Put Me In Coach: The Physics of Baseball", 59th National Science Teachers Association National Meeting, Moscone Convention Center, San Francisco, CA.
- 7/09 "Using PITCHf/x to Teach Physics", 2nd Annual PITCHf/x Summit, Westin Hotel and AT&T Park, San Francisco, CA.
- 11/08 Invited Talk: "Pitch Physics to Your Students: Using PITCHf/x Data from Major League Baseball", AAPT-NCS Fall Meeting, Foothill College, LosAltos, CA.
- 3/08 Workshop: "The Physics of Baseball", 56th National Science Teachers Association National Meeting, Boston Convention Center, Boston, MA.

Presentations at Professional Meetings (continued)

- 1/07 "Student Report Learning Gains From Pre-class Questions", AAPT National Winter Meeting, Seattle Convention Center, Seattle, WA.
- 11/05 "Cooling Properties of Beverage Containers", NCS-AAPT Fall Meeting, Calif. State Univ., Chico, Chico, CA. Presented with Andrew Fisher, a CSUC Physics Major.
- 8/04 Invited Talk "Humidity and the COR of Baseballs", AAPT National Summer Meeting, CSU Sacramento, Sacramento, CA.
- 11/03 "Humidity and the COR of Baseballs", NCS-AAPT, UC Berkeley, Berkeley, CA.
- 1/03 "SPS and Science Education for the Public", AAPT National Winter Meeting, Renaissance Conference Center, Austin, TX.
- 11/02 "Humidity and the COR of Baseballs", NCS-AAPT, SF State Univ., San Francisco, CA. Presented with David Atkinson, a CSUC Physics Major.
- 10/01 "Colliding Magnetic Pendula: When is a collision not collision-like", NCS-AAPT, Naval Postgraduate School, Monterey, CA.
- 9/01 "A Century of Physics", 7th Annual Conference on Excellence in Learning and Teaching, CSU Chico, Chico, CA.
- 3/01 "The Shaken Soda Syndrome," NCS-AAPT, Lawrence Berkeley Laboratory, Berkeley, CA.
- 1/01 "Physics Teacher Preparation at California State University, Chico," AAPT National Winter Meeting, Town and Country Conference Center, San Diego, CA.
- 4/99 "Master of Arts: Science Teaching," NCS-AAPT, University of the Pacific, Stockton, CA.
- 1/99 "New Physics Degree at CSU Chico," AAPT National Winter Meeting, Anaheim Marriott, Anaheim, CA.
- 11/98 "New Physics Degree at CSU Chico," NCS-AAPT, CSU Sacramento, Sacramento, CA.
- 1/97 "Scientist in Residence," AAPT National Winter Meeting, Civic Center Hyatt Regency, Phoenix, AZ.
- 11/96 "Bungee Jump Surprise," NCS-AAPT, Woodcreek High School, Roseville, CA.
- 1/96 "The Scientist in Residence Program," AAPT National Winter Meeting, Nugget Hotel, Sparks, NV.
- 4/95 "Using FOSS Kits to Teach Energy," Northern California Science Teachers Association, Shasta College, Redding, CA.
- 4/93 "2-Liter Pop Bottle Water Rockets," NCS-AAPT, American River College, Sacramento, CA.
- 6/89 "Effects of Coefficient of Restitution Variations on Long Fly Balls," AAPT National Summer Meeting, Cal-Poly San Luis Obispo.
- 4/89 "The Rocket Trike," NCS-AAPT at Sierra College, Rocklin, CA.
Presented with David Snyder a CSUC Physics Major.
- 11/87 "Shake and Bake Physics," NCS-AAPT at Delta College, Stockton, CA.
Presented with Edward Noddings a CSUC Physics Major.

Presentations at Professional Meetings (continued)

- 11/84 "Least Squares Fitting to a Straight Line is a Statics Problem," NCS-AAPT at University of California, Santa Cruz, CA.
- 11/83 "Computer Use in Introductory Physics Laboratories at California State University, Chico," NCS-AAPT at University of Santa Clara, Santa Clara, CA.
- 5/77 "Computer Assisted Instruction - Graphing Position, Velocity, and Acceleration," NCS-AAPT at Sierra College, Rocklin, CA.

Professional Meetings Attended

- 8/17 Seventh Annual SaberSeminar, Boston University, Boston, MA.
- 8/16 Sixth Annual SaberSeminar, Boston University, Boston, MA.
- 7/16 National Science Foundation Robert Noyce Annual Meeting, Renaissance Hotel, Washington, DC.
- 4/15 American Association of Physics Teachers (AAPT) – Northern California Section (NCS) Spring Meeting, PASCO Scientific, Rocklin, CA.
- 3/15 Society of American Baseball Research (SABR) Analytics Conference, Hyatt Regency, Phoenix, AZ.
- 11/14 AAPT-NCS Fall Meeting, San Francisco City College, San Francisco, CA.
- 6/14 National Science Foundation Robert Noyce Annual Meeting, Renaissance Hotel, Washington, DC.
- 4/14 AAPT-NCS Spring Meeting, The Exploratorium, San Francisco, CA.
- 11/13 AAPT-NCS Fall Meeting, Carondelet High School, Concord, CA.
- 10/13 "STEM Roundtable," Center for Excellence in Learning and Teaching, CSU Chico, Chico, CA.
- 4/13 AAPT-NCS Spring Meeting, Foothill College, Los Altos Hills, CA.
- 11/12 AAPT-NCS Fall Meeting, Sierra College, Rocklin, CA.
- 5/12 National Science Foundation Robert Noyce Annual Meeting, Renaissance Hotel, Washington, DC.
- 4/12 AAPT-NCS Spring Meeting, Lake Tahoe Community College, South Lake Tahoe, CA.
- 2/12 AAPT-National Winter Meeting, Ontario Convention Center, Ontario, CA.
- 2/12 Physics Teacher Education Coalition Meeting, Radisson Hotel, Ontario, CA.
- 2/12 Math Science Teacher Initiative / CalTEACH Meeting, Radisson Hotel, Ontario, CA.
- 11/11 AAPT-NCS Fall Meeting, University of California, Berkeley, Berkeley, CA.
- 8/11 4th Annual PITCHf/x Summit, Marriot Hotel and AT&T Park, San Francisco, CA.
- 7/11 National Science Foundation Robert Noyce Annual Meeting, Renaissance Hotel, Washington, DC.
- 4/11 AAPT-NCS Spring Meeting, The Exploratorium, San Francisco, CA.
- 3/11 59th National Science Teachers Association National Meeting, Moscone Convention Center, San Francisco, CA.
- 7/10 3rd Annual PITCHf/x Summit, Westin Hotel and AT&T Park, San Francisco, CA.
- 4/10 AAPT-NCS Spring Meeting, American River College, Sacramento, CA.
- 10/09 AAPT-NCS Fall Meeting, NASA Ames, Moffett Field, CA.
- 7/09 2nd Annual PITCHf/x Summit, Westin Hotel and AT&T Park, San Francisco, CA.
- 3/09 AAPT-NCS Spring Meeting, PASCO Scientific Co., Roseville, CA.

Professional Meetings Attended (continued)

- 11/08 AAPT-NCS Fall Meeting, Foothill College, Los Altos, CA.
- 9/08 Chico STEM Summit, CSU Chico, Chico, CA.
- 4/08 AAPT-NCS Spring Meeting, Heritage High School, Brentwood, CA.
- 3/08 56th National Science Teachers Association National Meeting, Boston Convention Center, Boston, MA.
- 11/07 Edward Teller Education Symposium, Lawrence Livermore National Laboratory, Livermore, CA.
- 10/07 National Network for Educational Renewal, CSU Chico, Chico, CA.
- 5/07 AAPT-NCS Spring Meeting Spring Meeting, Stanford University, Stanford, CA.
- 1/07 AAPT-National Winter Meeting, Seattle Convention Center, Seattle, WA.
- 11/06 AAPT-NCS Fall Meeting, Menlo School. Atherton, CA.
- 11/05 AAPT-NCS Fall Meeting, Calif. State Univ. Chico, Chico, CA.
- 8/04 AAPT-National Summer Meeting, CSU Sacramento, Sacramento, CA.
- 11/04 AAPT-NCS Fall Meeting, Lawrence Berkeley Laboratory and UC Berkeley, Berkeley, CA.
- 1/03 AAPT National Winter Meeting, Renaissance Conference Center, Austin, TX.
- 11/02 AAPT-NCS Fall Meeting, Exploratorium and SF State, San Francisco, CA.
- 1/02 AAPT National Winter Meeting, Marriot Conference Center, Philadelphia, PA.
- 12/01 Laser Technology Consortium, Los Rios Community College, Sacramento, CA.
- 10/01 AAPT-NCS Fall Meeting, Naval Postgraduate School, Monterey, CA.
- 3/01 AAPT-NCS Spring Meeting, Lawrence Berkeley Laboratory, Berkeley, CA.
- 1/01 AAPT National Winter Meeting, Town & Country Conf. Center, San Diego, CA.
- 10/00 AAPT-NCS Fall Meeting, California State University, Chico, Chico, CA.
- 4/00 AAPT-NCS Spring Meeting, Stanford University, Stanford, CA.
- 1/00 AAPT National Winter Meeting, Hyatt Orlando, Orlando, FL.
- 11/99 AAPT-NCS Fall Meeting, University of the Pacific, Stockton, CA.
- 11/99 International Online Conference on Teaching Online in Higher Education
- 4/99 AAPT-NCS Spring Meeting, NASA Ames Research Center, Mountain View, CA.
- 1/99 AAPT National Winter Meeting, Anaheim Marriott, Anaheim, CA.
- 11/98 AAPT-NCS Fall Meeting, CSU Sacramento, Sacramento, CA.
- 11/97 AAPT-NCS Fall Meeting, Santa Rosa Junior College, Santa Rosa, CA.
- 1/97 AAPT National Winter Meeting, Civic Center Hyatt Regency, Phoenix, AZ.
- 11/96 AAPT-NCS Fall Meeting, Woodcreek High School, Roseville, CA.
- 1/96 AAPT Winter National Meeting, Nugget Hotel, Sparks, NV.
- 4/95 Northern California Science Teachers Association, Shasta College, Redding, CA.
- 4/95 AAPT-NCS Spring Meeting at the University of Nevada, Reno, Reno, NV.
- 11/93 Society of Physics Students (SPS) Zone 18 Meeting, CSU Dominguez Hills, Carson, CA.
- 10/93 Society of Physics Students National Council Meeting, Washington, D.C.
- 5/93 Joint Meeting SPS Zone 18 & AAPT-SPS, Grant High School, Van Nuys, CA.
- 4/93 AAPT-NCS Spring Meeting, American River College, Sacramento, CA.
- 3/93 Conference on Reform of Undergrad. Science Teaching, UC Irvine, Irvine, CA.
- 10/92 Society of Physics Students National Council Meeting, Dayton, Ohio.
- 11/91 Joint Meeting SPS Zone 18 and AAPT-NCS, Univ. of California, Berkeley, CA.
- 6/91 AAPT National Meeting, Univ. of British Columbia, Vancouver, B.C., Canada
- 4/91 Society of Physics Students National Council Meeting, Washington, D.C.
- 4/91 AAPT-NCS Meeting at Stanford Linear Accelerator Center, Palo Alto, CA.

Professional Meetings Attended (continued)

- 11/90 Joint Meeting SPS Zone 12 and AAPT-NCS, Exploratorium, San Francisco, CA.
- 4/90 AAPT-NCS Meeting at the University of Nevada, Reno, Reno, NV.
- 11/89 AAPT-NCS Meeting at California State University, San Jose, San Jose, CA.
- 6/89 AAPT National Summer Meeting, Calif. Poly. State Univ., San Luis Obispo, CA.
- 4/89 AAPT-NCS Meeting at Sierra College, Rocklin, CA.
- 1/89 AAPT/APS/AAAS Joint National Winter Meeting, San Francisco, CA.
- 10/88 AAPT-NCS at Sonoma State University, Rohnert Park, CA.
- 4/88 AAPT Joint Section Meeting at Cal-Poly State University, San Luis Obispo, CA.
- 11/87 AAPT-NCS Meeting at Delta College, Stockton, CA.
- 5/87 AAPT-NCS at Foothill College, Los Altos Hills, CA.
- 11/86 AAPT-NCS at American River College, Sacramento, CA.
- 11/85 AAPT-NCS at California State University, Chico, CA.
- 5/85 AAPT Joint Section Meeting at Cal-Poly State University, San Luis Obispo, CA.
- 11/84 AAPT-NCS at University of California, Santa Cruz, CA.
- 11/83 AAPT-NCS at University of Santa Clara, Santa Clara, CA.
- 5/77 AAPT-NCS at Sierra College, Rocklin, CA.

Physics Department Seminars Presented

- Sp '17 "How To Hit It Hard"
- Sp '11 "Get in the Swing: The Physics of a Baseball Bat"
- Sp '09 "The Anatomy of a Pitch: Using Pitch/FX Data from Major League Baseball"
- Sp '05 "Measurement of the COR of Baseballs as a Function of Humidity"
- Sp '96 "Scientist in Residence or How I Ended Up Back in Elementary School"
- Sp '95 "A Physics Cruise on the World Wide Web"
- Fa '93 "When Push Comes to Pull"
- Sp '93 "Macintosh Computers in the Introductory Physics Labs"
- Fa '93 "Basic Concepts in Chaos"
- Sp '91 "Does God Play Dice? The Question Has Now Been Answered Experimentally."
- Sp '89 "The Physics of Well Hit Baseballs."
- Sp '87 "A Chalk Talk for the Physics Softball Team."
- Sp '86 "Our New Coffin - The Jarrell - Ashe 3.4 Spectrograph."
- Sp '84 "Computer Simulation in Introductory Physics Laboratories."
- Fa '83 "Atomic Physics and NFL Point Spreads."
- Sp '83 "Computer Graphics in Introductory Physics Labs."
- Sp '83 "Least Squares Fitting Without Calculus."
- Sp '82 "The Spectrum of Four-times Ionized Niobium."
- Sp '82 "The Unification of Forces."
- Sp '17 "The Coach's Chalk Talk: How to Hit It Hard."

Other Professional Activities

- Fa '17 Referee for *The Physics Teacher*.
- Sp '17 TRIAD Content Specialist
- Sp '17 Referee for *The Physics Teacher*.
- Fa '16 Referee for *The Physics Teacher*.

Other Professional Activities (continued)

Fa '16	Referee for <i>The American Journal of Physics</i> .
Sp '16	TRIAD Content Specialist
Sp '16	Referee for <i>The American Journal of Physics</i> .
Sp '16	Referee for <i>The Physics Teacher</i> .
Fa '15	Referee for <i>The Physics Teacher</i> .
Fa '14	Referee for <i>The Physics Teacher</i> .
Fa '13	CELT Panelist for STEM Teaching and Learning.
Fa '13	CELT Luncheon Poster Session presenter.
Sp '12	Judge: Chico Science Fair.
Sp '12	Referee for <i>The Physics Teacher</i> .
Fa '12	Referee for <i>The Physics Teacher</i> .
Sp '11	Judge: Chico Science Fair.
Sp '11	Referee for <i>The Physics Teacher</i> .
Sp '10	Guest Interviewer: Central Middle School Portfolio Day.
Sp '10	Judge: Chico Science Fair.
Sp '10	Referee for <i>The Physics Teacher</i> .
Fa '09	Referee for <i>The Physics Teacher</i> .
Su '09	Referee for <i>The Physics Teacher</i> .
Sp '09	Referee for <i>The Physics Teacher</i> .
Sp '09	Judge: Chico Science Fair.
Sp '09	Presenter – Math Science Teacher Initiative Launch, CSU Chico.
Fa '08	Presenter - Physics Teacher SOS, San Mateo High School.
Fa '08	Presenter – Math Science Teacher Initiative Launch, CSU Chico.
Sp '08	Referee for <i>The Physics Teacher</i> .
Sp '08	Judge: Chico Science Fair.
Fa '07	Referee for <i>The Physics Teacher</i> .
Su '07	Presenter – California Science Project
Sp '07	Guest Interviewer: Central Middle School Portfolio Day.
Sp '07	Judge: Chico Science Fair.
Sp '07	Referee for <i>The Physics Teacher</i> (twice).
Su '06	Mentor: CSU Chico Upward Bound.
Sp '06	Guest Interviewer: Central Middle School Portfolio Day.
Sp '06	Judge: Chico Science Fair.
Fa '05	Participant: American Institute of Physics Adopt-a-Scientist Program.
Fa '05	Participant: BAStar 1st Annual Science and Engineering Research Symposium.
Fa '05	Referee for <i>The Physics Teacher</i> (thrice).
Sp '05	Referee for <i>The Physics Teacher</i> .
Sp '05	Judge: Chico Science Fair.
Fa '04	Referee for <i>The Physics Teacher</i> (twice).
Su '04	Emcee AAPT National Meeting Demo Show
Sp '04	Referee for <i>The Physics Teacher</i> .
Sp '04	Judge: Chico Science Fair.
Fa '03	Referee for <i>The Physics Teacher</i> .
Sp '03	External Reviewer for Cal Poly Pomona Department of Physics Assessment Plan
Sp '03	Judge for CSU Chico Department of Biology Research Poster Symposium

Other Professional Activities (continued)

- Sp '03 External Reviewer for CSU Sacramento Department of Physics
Sp '03 Judge: Chico Science Fair.
Fa '02 Session Moderator AAPT-NCS Fall Meeting, SF State Univ., San Francisco, CA.
Fa '02 Referee for *The Physics Teacher*.
Su '02 Summer Orientation Academic Advisor.
Sp '02 Judge: Chico Science Fair.
Su '01 Summer Orientation Academic Advisor.
Sp '01 Judge: Chico Science Fair.
Su '00 Presenter: Alliance for Minority Participation.
Su '00 Summer Orientation Academic Advisor.
Sp '00 Judge: Chico Science Fair.
Fa '99 "Simple Electric Motors" presented for the Society of Physics Students.
Fa '99 "What is the Universe Made Of?" guest lecture in Art & Physics (CSUC).
Su '99 Summer Orientation Academic Advisor.
Sp '99 "Pinhole Cameras" presented for the Society of Physics Students.
Sp '99 Presented at Paradise Elementary School Family Science Night.
Sp '99 Judge: Chico Science Fair.
Sp '98 Judge: Chico Science Fair.
W '98 Invited Speaker at the "Expand Your Horizons" Conference at CSU Chico.
Su '96 Workshop presentation for the MESA Engineering Exposure Summer Program.
Sp '97 Judge: Chico Science Fair.
Su '96 Participant in the Constructing Physics Understanding (CPU) Leadership Team Workshops.
Sp '96 Judge: Chico Science Fair.
Sp '96 Served as the "Scientist in Residence" at Paradise Elementary School.
W '96 Participant in "Physics by Inquiry" Workshop.
W '96 Invited Speaker at the "Expand Your Horizons" Conference at CSU Chico.
Su '95 Presenter "Alliance for Minority Participation Summer Math Institute" at CSUC.
Su '95 Designed, constructed and maintain the CSU Chico Dept. of Physics Home Page.
Su '95 Designed, constructed and maintain the CSU Chico SPS Home Page.
Su '95 Designed, constructed and maintain a World Wide Web Home Page.
Sp '95 Presenter: Science Night Staff Development, Paradise Unified School District.
Sp '95 Judge: Chico Science Fair.
Fa '94 Presented "Dinner Table Physics" for 200 visiting elementary school teachers.
Fa '94 Participant in the Adopt-a-Scientist Program.
Sp '94 Wrote "Physics 4B Lecture Notes."
Sp '94 Judge: Chico Science Fair.
Sp '94 Participant in the Adopt-a-Scientist Program.
Fa '93 Installed and maintained Physics Laboratory Microcomputer Network.
Fa '93 Participant in the Adopt-a-Scientist Program.
Su '93 Presenter for the Northern California Science Project.
Sp '93 Judge: Chico Science Fair.
Sp '93 Participant in the Adopt-a-Scientist Program.
Fa '92 Delegate to the California Faculty Association Assembly.
Su '92 Presenter for the Northern California Science Project.
Sp '92 Judge: Chico Science Fair.

Other Professional Activities (continued)

Sp '92	Judge and Co-host of the "Chaotic Toy Competition."
Su '91	Presenter for the Northern California Science Project.
Fa '90	Wrote "Physics 4A Lecture Notes."
Fa '90	Compiled "Physics 4A Laboratory Notes."
Sp '88	Reviewed "Practical Physics" for Saunders College Publishing.
Sp '86	Signed contract with Addison-Wesley to write a text for college physics.
Sp '86	Judge: California Central Valleys Science and Engineering Fair.
Fa '84	Presenter for the Paradise Elementary Schools - "Science is Fun" Project.
Fa '84	Compiled "Physics 4B Laboratory Notes."
Sp '84	Designed analog data acquisition system for Physics 4B labs.
Sp '84	Judge: California Central Valleys Science and Engineering Fair.
Sp '84	Reviewed "Physics for Pre-Medical and Biology Students" for Prentice Hall.
Fa '83	Presenter: Butte College/Butte-Glenn Public Schools Staff Development Project.
Fa '83	Compiled "Laboratory Syllabus for Physics 2B."
Sp '82	Compiled "Laboratory Syllabus for Physics 2A."

Committee Service

9/17 - 5/18	Department of Physics - Personnel Committee
9/16 - 5/17	Department of Physics - Personnel Committee
9/15 - 5/16	Department of Physics - Hiring Committee
9/14 - 5/15	Department of Physics - Hiring Committee
9/13 - 1/14	College of Natural Sciences – Science Education Task Force
9/13 - 9/14	Department of Physics - Personnel Committee
9/12 - 9/13	Department of Physics - Personnel Committee (Chair)
10/11 - 7/12	Gateway Science Museum Exhibits Committee
10/11 - 7/12	Gateway Science Museum Fundraising Committee
10/11 - 7/12	Gateway Science Museum Marketing Committee
10/11 - 7/12	Gateway Science Museum Community Advisory Board Committee
10/11 - 7/12	Gateway Science Museum Commission
3/10 - 7/12	All University Responsibility for Teacher Education Committee
9/11 - 9/12	Department of Science Education - Personnel Committee (Chair)
9/10 - 9/11	College of Natural Sciences Grant Stimulus Program Committee
9/10 - 9/11	College of Natural Sciences Poster Session Team
9/10 - 9/11	Department of Science Education - Personnel Committee (Chair)
9/09 - 9/10	College of Natural Sciences Poster Session Team
9/09 - 9/10	Department of Science Education - Personnel Committee (Chair)
9/09 - 9/10	Department of Physics - Personnel Committee
9/07 - 5/09	Center for Math & Science Ed – MSTI/Noyce Scholars Committee
9/07 - 9/08	Planning Committee for the Chico STEM Summit
9/07 - 9/08	Department of Physics - Hiring Committee
9/07 - 2/08	Department of Education – Science Education Hiring Committee
9/07 - 12/07	Department of Chemistry – Hiring Committee
9/07 - 12/07	College of Natural Sciences – Science Education Hiring Committee
9/06 - 9/07	College of Natural Sciences – Science Education Hiring Committee
9/05 - 9/06	Department of Physics - Personnel Committee (Chair)

Committee Service(continued)

9/04 - 9/05	College of Natural Sciences - Personnel Committee
9/04 - 9/05	College of Natural Sciences – K-18 Curriculum Development Committee
9/03 - 9/04	Department of Physics - Personnel Committee (Chair)
9/02 - 9/04	Department of Geosciences - Personnel Committee
9/02 - 9/03	Department of Physics - Hiring Committee
9/01 - 9/02	Department of Physics - Hiring Committee
9/97 - 9/98	National Society of Physics Students - Nominating Committee
9/97 - 9/98	Department of Physics - PSSI Committee
9/97 - 9/98	College of Natural Sciences - Academic Policies & Status
9/94 - 12/95	College of Natural Sciences - Affirmative Action
9/91 - 6/93	College of Natural Sciences - Faculty Leaves
9/90 - 6/92	College of Natural Sciences - Affirmative Action
9/88 - 6/90	College of Natural Sciences - Faculty Leaves
9/82 - 6/88	College of Natural Sciences - Affirmative Action (Chairman 83/84 A.Y.)
1/84 - 6/84	College of Natural Sciences - Ad hoc Computer Committee.
9/83 - 6/84	University Speakers Bureau
9/82 - 6/84	College of Natural Sciences - Grievance Committee

Funded Grants and Proposals

12/12	Textbook Alternative Program Award (\$600)
8/11	National Science Foundation Noyce Phase II (\$750,000)
9/09	CELT Instructional Grant
9/03	CELT Small Grant for Instruction (\$300)
9/02	CELT Small Grant for Instruction (\$300)
3/02	Star Safaris Inc. Student Internship (\$5075)
9/01	CELT Small Grant for Instruction (\$300)
9/01	CELT Small Grant for Instruction (\$300)
9/00	CELT Small Grant for Instruction (\$1000)
9/00	CELT Small Grant for Instruction (\$300)
9/00	CELT Small Grant for Instruction (\$50)
9/99	CELT Small Grant for Instruction (\$300)
11/98	CELT Small Grant for Instruction (\$300)
11/98	CELT Small Grant for Instruction (\$300)
4/96	CPU (Constructing Physics Understanding) Leadership Team member.
11/93	Base Allocation Award for presiding at the Society of Physics Students (SPS) Zone 18 Meeting.
4/93	Base Allocation Award for presiding at the SPS Zone 18 Regional Meeting.
11/91	Base Allocation Award for presiding at the Joint Meeting of SPS Zone 18 and the Northern Calif. Section of the American Assoc. of Physics Teachers (NCS-AAPT).
3/90	Base Allocation Award for presiding at the NCS-AAPT Meeting.
10/89	Base Allocation Award for presiding at the NCS-AAPT Meeting.
2/89	Base Allocation Award for presiding at the NCS-AAPT Meeting and attending the AAPT National Summer National Meeting.
11/88	Base Allocation Award for presiding at the NCS-AAPT Meeting and National Winter AAPT Meeting.

Funded Grants and Proposals (continued)

4/88	Base Allocation Award for presiding at the NCS-AAPT Meeting.
11/83	Professional Development Award from the CSUC Graduate School.
10/85	Professional Development Award from the CSUC Graduate School.

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