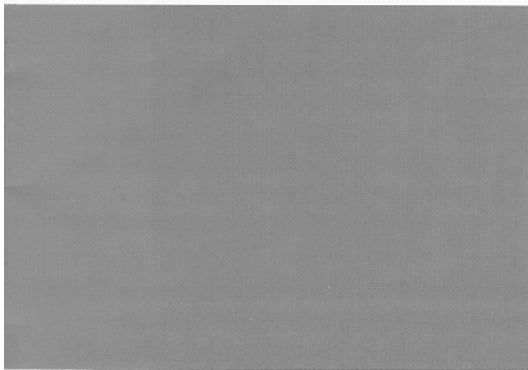
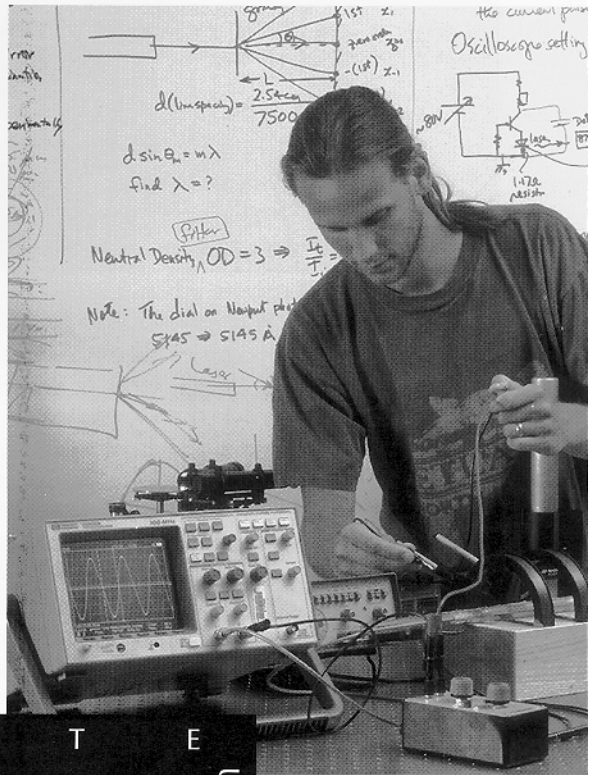
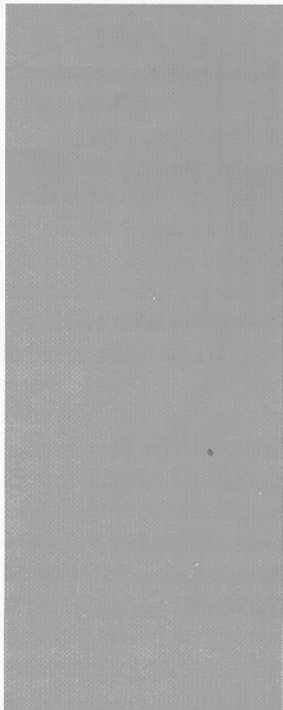
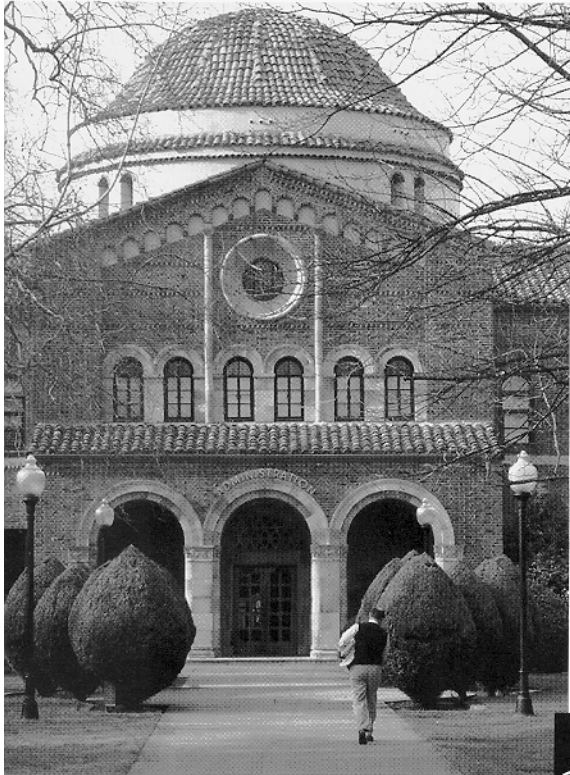
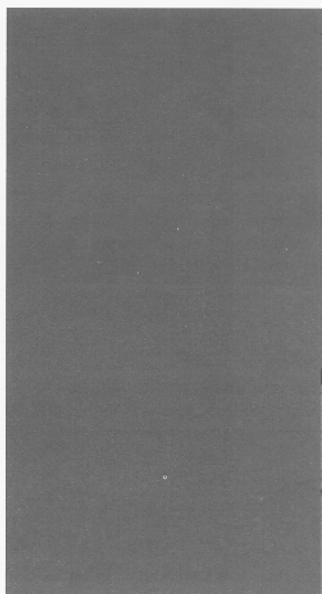
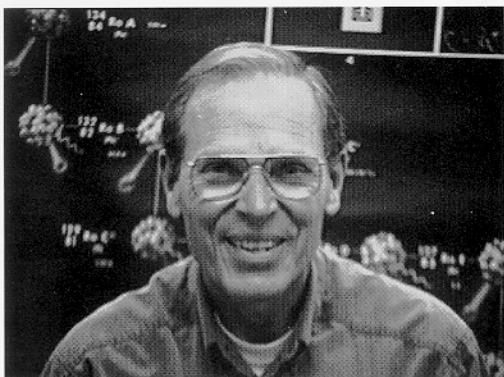


TODAY DECIDES TOMORROW



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PHYSICS
NEWSLETTER
SUMMER 1998





Dr. Michael R. McGie

Mike McGie Retires

After 32 years of dedicated service, Mike McGie will retire from the Department of Physics at the end of the spring 1998 semester.

Mike was born and raised in Gridley. Since his grandparents lived in Chico, his family often made the 30-mile trip during the years he was growing up. At that time, the population of Chico was about 12,000, but it seemed

like a big city. On one occasion, Mike visited the campus and vividly recalls the sense of awe he felt that evening when he first saw the rotunda of what is now Kendall Hall.

Mike graduated from high school in 1952 and decided late that summer to enroll at Chico State. He has never regretted that decision. His mathematics and physics classes were in what is now Kendall Hall, and his chemistry classes were in

what is now Ayres Hall. He graduated in 1957 with a bachelor's degree in chemistry. For the next four years, he worked as a physicist at the Naval Ordnance Test Station in China Lake, California. He took two night classes in physics or mathematics each semester for four years through UCLA extension. In the spring and fall of 1961, he attended UCLA as a graduate student. Mike completed his master's degree in physics in January 1962 and returned to China Lake.



In fall 1962, he became a graduate student again, this time at UC, Davis. By fall 1966, he had completed the requirements for the Ph.D. in physics. It was a time of rapid growth in higher education, so faculty positions were plentiful. He chose to return to Chico State because of its strong emphasis on good teaching and because he knew that Chico was a good place to raise children. Except for three occasions when he took sabbatical leave to do research, and one year when he was resident director for the CSU International Programs in Sweden and Denmark, Mike has taught continuously at Chico State. Mike provided leadership as department chair twice, from 1970 to 1972 and 1990 to 1998. He earned a Performance Award in 1998.

Mike has always been a consummate teacher. He recalls, "When I was growing up in Gridley, I was often approached by one of my father's former students who would say 'Your dad was the best teacher I ever had.' It has been a real challenge trying to live up to his standard."

Simply put: we will miss him.

40 Years 40 Years 40 Years

"Forty Years of Graduates" Reunion

May 1999 marks the fortieth anniversary of the first graduate of the Department of Physics. To commemorate this event, we will be hosting a "Forty Years of Graduates" Reunion. Think about joining us. After all, can you remember anything more pleasant than a spring weekend in Chico? The tentative schedule of festivities is:

- Thursday Evening:
Social
- Friday Morning:
Coffee and muffins
Laboratory tour
Contributed talks by alumni
- Friday Midday:
Buffet lunch in Alumni Glen
Contributed talks by alumni
- Friday Evening:
Banquet
- Saturday Midday:
Family BBQ at Nettleton Stadium
Attend a CSU, Chico baseball game

Look for the mailer we will be sending out with more complete information, a request for contributed talks, and a more definite schedule in late February or early March. By the end of April, we will prepare a final program for those who will be attending. If you have suggestions, questions, or concerns, contact the Physics Department.



Department Offers New Degree Options

The physics department now offers two Bachelor of Science degree options. The traditional physics degree is now called the Professional Physics Option. It is designed for those who intend to pursue advanced study in physics or other fields. The new option is called the General Physics Option. It is intended for students who want a broader scientific background across many disciplines, but prefer a strong emphasis in physics.

Both options share a common set of lower division requirements such as two years of math, one year of chemistry, and three semesters of physics. Common upper division physics requirements are one year of modern physics, advanced laboratory and seminar. At this point, the options diverge.

The Professional Physics Option requires the usual advanced courses in mechanics, electricity and magnetism, statistical physics, and quantum mechanics. This is the standard baccalaureate physics education that most universities provide.

The General Physics Option drops these mathematically intensive advanced courses in favor of one year of biology and a year and a half of geoscience. In addition, there are five upper division elective classes in any single science of the student's choosing. This allows the student to develop considerable breadth in many fields of science, and some depth in a science other than physics. In addition, this option is consistent with the demands of the California Commission on Teacher Credentialing. Meeting the requirements for a primary authorization in physics and a secondary authorization in one other science, makes the prospective high school physics teacher very employable.

The General Physics Option could also be used by students who intend to pursue advanced study in interdisciplinary sciences such as biophysics, geophysics, atmospheric sciences, meteorology, environmental science, oceanography, astronomy, actuarial science, computer science, health physics, or medicine. This degree is solid training for technical writers, science journalists, scientific or medical sales personnel, medical technicians, and many other technical careers. This option is excellent preparation for advanced degrees in business administration and patent or technical law. In summary, the new General Physics Option allows students to explore a wide variety of career paths and still share in the excitement of physics.

Society of Physics Students Chapter Receives Tenth Outstanding Chapter Award

The CSU, Chico physics students received their 10th consecutive Outstanding Chapter Award recently in recognition of their outstanding chapter service for the 1996-97 academic year. In June, each chapter applies for service recognition for the previous year, and awards are presented the following spring.

The CSU, Chico physics students are best known in the community for their Annual Pumpkin Drop, which reenacts Galileo's legendary Tower of Pisa experiment, and the Rocket Trike, which displays Newton's Laws of Motion. Society members provide free physics tutoring to CSU, Chico students in the physics student learning center. Physics students also act as judges and provide prizes for the Chico Science Fair, benefiting local schools in the area.

"The Outstanding Chapter Award reflects on the students and the community events they provide to try to make physics more understandable and visible to people," said Mike McGie, CSU, Chico physics professor and department chair.

The local SPS charter was established December 15, 1981, and presently has about 20 members.

"The award also reflects on the faculty and the support they give students in what they do," said McGie. Current chapter adviser David Kagan was the National Outstanding Chapter Adviser for the 1990-91 academic year.

For more information about the CSU, Chico Society of Physics Students chapter, contact adviser David Kagan, or visit their Web page. *(excerpted from Inside Chico State)*



SPS demonstrates the rocket trike at the last CSU, Chico football homecoming game. Pictured left to right are Joshua Strieby, Samantha Baumgartner, Katherine Hegewisch, Ken Waring, Clare Hupp, Justin Mosier, Brian Willard, Jason Trento, and Damon Todd.

What Do Physics Grads Do?

The very best thing about physics is that it applies to everything! There is no clearer evidence of this than the great variety of careers that our graduates have pursued. Here are just a few graduates with interesting occupations that we've heard about recently.

Jory Culbreath (1997) is a Weapons Export Analyst for ANSER in Arlington, VA.

Jeffrey Mallory (1994) is a Forestry Technician for the U.S. Forest Service Remote Sensing Laboratory in Sacramento, CA.

Derrick Booth (1991) earned his M.S. in Environmental Engineering at the University of Washington and will soon earn his Ph.D. from the same program.

Benjamin Kokenge (1991) was awarded an M.S. in Physics at Texas A&M. He recently started his own firm and is Director of Operations of Electronic Data Management Services in Houston, TX.

Richard Radcliffe (1987) earned an M.A. in Education from CSU, Chico and currently serves as Principal of Live Oak Alternative School in Live Oak, CA.

Robert Bartholomew (1984) received his M.S. in Computer Science from the Florida Institute of Technology. He is a Senior Software Engineer at Acres Gaming in Corvallis, OR.

Richard Aglipay (1983) was awarded his Teaching Credential from Oregon State University. He is a high school physics teacher at Trinity High School in Trinity, CA.

Stephen Burke (1983) is vice president of his own company, Burke & Pace in Arroyo Grande, CA.

Michael Porter (1973) received an M.A. in Physical Science from CSU, Chico. He runs his own business as Chief Executive Officer of Mike Porter Vineyard Consulting, Forrestville, CA.

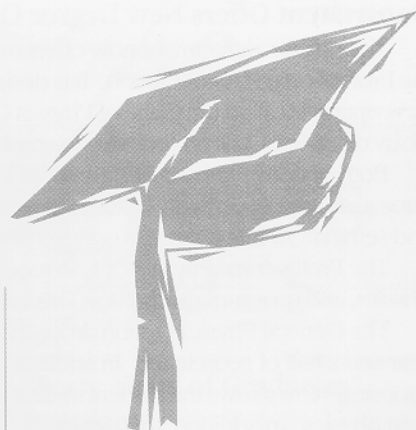
Robert MacKay (1978) earned an M.S. in Physics from Portland State University as well as an M.S. and Ph.D. in Atmospheric Physics from Oregon Graduate Institute. He is currently a professor of physics at Clark College in Vancouver, WA.

Ronald Fegley (1962) was awarded a Ph.D. in Physics from the University of California, Davis. He is a Senior Technical Specialist at Northrop-Grumman Corporation in Pico Rivera, CA.

Jon Bolstad (1962) is President of Control Vision Inc. in Idaho Falls, ID. His company produces laser-augmented imaging systems.

If you would like to contact these people or find out what happened to an old friend from the physics department, check out the graduates page on our web site. There you will find the current status and e-mail addresses for many of our graduates.

<http://www.csuchico.edu/phys/>



Oh Where, Oh Where Can They Be?

We have been unable to locate the following alumni. If you have any information about these folks, please drop us a line.

| | |
|-----------------------|------|
| Donald Knifong | 1963 |
| Donald Stewart | 1963 |
| Thomas Weber | 1964 |
| Kay K. Souders | 1965 |
| Troy Wilson | 1965 |
| Steven DeCou | 1968 |
| Ross Brown | 1968 |
| Jeffery Evans | 1970 |
| Lup Chung | 1970 |
| Dirk Borges | 1970 |
| Reubin Ballestil | 1970 |
| Gary Hanlon | 1970 |
| Edward J. Farmer, Jr. | 1972 |
| Ronald Weakley | 1972 |
| David Dion | 1973 |
| Charles F. Massa | 1974 |
| Robert Messmer | 1974 |
| Kevin Mankin | 1977 |
| Mathew Morey | 1979 |
| Abdulhaiem Qari | 1980 |
| Bishara Shamee | 1982 |
| Stephen Chappell | 1983 |
| Ronald Hall | 1987 |
| Clark Pickell | 1992 |

The Physics Advisory Board

The CSU, Chico Department of Physics Advisory Board meets up to two times each year with the members of the faculty. These meetings have been very productive. They have led to changes in our program in response to the suggestions of these former students. We wish to thank the members of the Advisory Board for their efforts on behalf of our department.

Benjamin Catching (B.S. Physics, 1989) is a Senior Program Manager at Tinsley Laboratories in Richmond, CA. They are leaders in the field of aspherical optics. Ben earned his M. S. in Physics at the University of Delaware.

Joshua Fishkin (B.A. Physics, 1985) is a Post-Doctoral Fellow at the Beckman Laser Institute in Irvine, CA. He was awarded a M.S. in Physics and a Ph.D. in Physics from the University of Illinois. Josh studies the scattering of light off biological tissue.

Thomas Gosnell (B.A. Physics, 1967) is a Radiation Physicist at Lawrence Livermore National Laboratory in Livermore, CA. He earned an M.S. in Nuclear Engineering from the University of California, Berkeley. Tom develops methods for verifying arms control agreements.

Theresa Hartsell (B.A. Physics, 1984) is a Professor of Physics at Clark College in Vancouver, WA. She earned an M.S. and a Ph.D. in Astrophysics from the University of Colorado, Boulder. Peggy's area of expertise is solar physics.

James Millerd (B.S. Physics, 1987) is a Senior Scientist at MetroLaser in Irvine, CA. He received his M.S. & Ph.D. in Electrical Engineering at the University of Southern California. James is currently studying optically excited energy states in certain materials.

Scott Perry (B.A. Physics, 1970) is a Professor of Physics at American River College in Sacramento, CA. He was awarded an M.A. in Physics from the University of

California, Davis. Scott is a frequent speaker at American Association of Physics Teachers meetings in Northern California.

Boyd Reazor (B.A. Physics, 1969) is a Senior Software Engineer at Lockheed-Martin Santa Clara, CA.

Danny Sorenson (B.A. Physics, 1983) is a Physicist at Los Alamos National Laboratory in Los Alamos, NM. Danny received his Ph.D. in Physics from the University of California, Davis. Danny is doing research in nuclear physics and optics.

If you are interested in becoming a member of the Advisory Board, please just drop us a line and let us know. We would be delighted to have your input.

Arloe Anania-Murray Physics Scholarship Fund

The Arloe Anania-Murray Physics Scholarship Fund honors the memory of Arloe Anania-Murray, the department secretary before her death in September of 1989. She brightened the department with her outgoing personality, and her work and dedication were appreciated by faculty, staff, and students. At the time of her passing, it was her wish that contributions be made for a scholarship fund for students in the Physics Department. This wish was characteristic of Arloe's compassionate and genuine interest in our students. Her special role as an enthusiastic friend, "mother," and confidant of our students was as valuable as her exceptional secretarial talents. Each of the students, faculty, and staff held a special affection for her.

This year two students were honored, Samansa Maneshi and Jason Jordan. Samansa is a physics major. Originally from Iran, she has distinguished herself as an exceptional physics student. She will serve as treasurer for the Society of Physics Students next year. Jason is majoring in physics and mechanical engineering. He recently completed an internship at University of New Mexico doing cosmic ray studies.



Dr. Floyd L. English

The Floyd L. English Natural Sciences Scholarship

Dr. Floyd L. English is the Chief Executive Officer of Andrew Corporation and CSU, Chico's first physics graduate. The generosity of Dr. English and the Andrew Foundation makes possible the award of ten to twenty scholarships to students majoring in programs in the College of Natural Sciences each year. Annual awards range from \$2,500 to \$5,000, with a four-year \$20,000 total award possible for freshmen. Dr. English endowed this scholarship with these words: "In tribute to the excellence of the Chico elementary, Chico high school, and Chico university faculty who, in addition to my parents, and the community, provided a superb intellectual, moral and ethical environment in which to learn."

This year, two physics majors earned Floyd L. English Scholarships. Keith Bein is a double major (physics and chemistry), an SPS member, and has been a volunteer tutor. Jonathan Nay is also a double major (physics and math). He is a transfer student from Butte Community College and has served as a mentor to gifted elementary school students.

We thank Dr. English and the Andrew Foundation for their generosity.

Faculty Accomplishments

Dr. Louis J. Buchholtz is enjoying the challenge of team teaching, with two humanities professors, a GST (General Studies Thematic) course linking hard science and humanities. The recent groundbreaking experiments on the Josephson Effect in superfluid He₃ have reinvigorated his research efforts. Finally, Lou has produced version 614/C of his fabled water rocket launcher. It's the best one yet!

Dr. Cheuk K. Chau has been working with Phil Gash in search of the Triplet State in Lithium fluoride crystals with large dose of γ radiation. This year he has had the opportunity to work with one of our alumni, Dr. James Millerd, in measuring the diffraction efficiency of Bacteriorhodopsin films.

Dr. Eric R. Dietz continues to make improvements to the introductory laboratory. He is currently seeking funding for an on-line data acquisition and analysis system patterned after the micro-computer-based laboratory concept.

Dr. Chris A. Gaffney is studying supercurrent distributions in YBaCuO using magnetic susceptibility measurements. In addition, he is working with Cheuk Chau and Richard Demaree (Biology) to examine the non-thermal effects of microwaves on biological tissue. Chris is also teaching a new course, Concepts in Modern Physics, to non-science majors.

Dr. Philip W. Gash is involved in a joint project with Pontificia Universidade Catolica do Rio de Janeiro to study the triplet excited state in LiF crystals. F₂/F₃⁺ centers are produced by irradiation using the Holt Hall gamma source. Optical laser absorption experiments are conducted to find the long lived triplet state.

Dr. David T. Kagan published a description of SPS's Annual Pumpkin Drop in *The Physics Teacher* (February 1998). He is currently teaching Physics 1 (Conceptual Physics) without traditional lectures, using only lab activities.

Dr. Michael R. McGie and David Kagan are providing technical assistance to two avid kites in their attempt to break the high altitude world's record for kite flying (*The Physics Teacher*, April 1997). In addition, Mike has introduced several new methods and experiments into the upper division laboratory course.

Dr. L. Edward Millet continues to advance the quality of his upper division thematic course Relativity and Albert Einstein. He has recently published two articles in *The Physics Teacher* (September 1997 and March 1998) on new ways to look at traditional mechanics problems.

Dr. Robert Paulson has spent a good deal of time recently studying the physics of pinewood derby cars. He has made an effort to use this as a method of stimulating interest and excitement in his classes.

Dr. John C. Young has introduced LabView to the upper division laboratory course to automate data collection and analysis. He continues his efforts to get the X-ray Fluorescence and Diffraction unit up and running. He is interested in introducing more solid state experiments into the advanced lab and would be delighted to hear your suggestions. ☛



Distinguishing Characteristics of Graduates

From time to time, administrators ask us to justify what we are trying to do. This is probably a good idea, since we are a tax-supported institution. We were recently asked to describe the distinguishing characteristics of our graduates. Here is what we came up with. Does this describe you?

Graduates of the department's bachelor's degree program should have the following distinguishing characteristics:

1. An understanding of and an appreciation for the methods and successes of scientific inquiry.
2. An appreciation for the history of physical science.
3. A good knowledge of mathematics.
4. A strong problem-solving capability.
5. A facility with computers and knowledge of at least one programming language.
6. An understanding of the basic principles of chemistry.
7. A fundamental understanding of the principles of physics, including mechanics, electricity and magnetism, sound, thermodynamics, optics, special relativity, atomic physics, nuclear physics, and quantum mechanics.

Stay In Touch With Us

Have you been promoted, received an award, changed jobs, gotten married, increased your family, moved? We are interested in you! The events of your life are interesting to other alumni. You can help keep our mailing list current by using this form to notify us of a change of address. Send completed form to David Kagan, Department of Physics, California State University, Chico, Chico, CA 95929-0202, fax to 530-898-5234, or e-mail information to dkagan@oavax.csuchico.edu.

Name _____ *Maiden* _____ *Student ID/SSN* _____

Address _____

Phone (home) _____ *(work)* _____

Year graduated from CSU, Chico _____ *Major* _____

Graduate School _____ *Degree* _____ *Date* _____

Graduate School _____ *Degree* _____ *Date* _____

E-mail _____

Employer _____

Position/Title _____

Work address _____

News items _____

Do you know where any of your classmates are? _____



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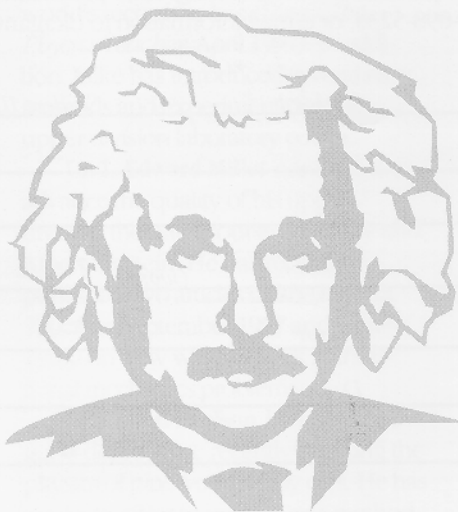
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web site:

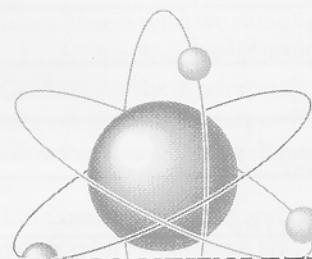
<http://www.csuchico.edu/phys/>

Chair: David T. Kagan, Ph.D.



Please send us your business card!

We are trying to illustrate to potential students the great variety of careers for which a physics degree can prepare them. Who better to make this point than our graduates? If you send us three business cards, we will use them to clearly illustrate the great many doors that physics can open. Thanks!



PHYSICS NEWSLETTER

A PUBLICATION OF THE COLLEGE OF NATURAL SCIENCES

EDITORS: DAVID KAGAN and LINDA MILES

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California State University, Chico
Chico, CA 95929-0202

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