Physics Matters

1993-94

Department of Physics

Murnane Receives NSF Presidential Faculty Fellow Award

This spring, **Margaret Murnane**, assistant professor of physics at WSU since 1990, received a National Science Foundation Presidential Faculty Fellow (PFF) Award in recognition of her pioneering work in ultrafast optics. This award, which was personally approved by President Clinton, is the highest honor given by the U.S. government to young researchers. Margaret's award was bestowed by the President at a reception in the White House Rose Garden on September 29.

Margaret Murnane (front row, right) poses with the research group in the laser lab. Included are (front row, from left) Chung-Po Huang, Chengyu Shi, Jianping Zhou, Melanie Asaki; (back row) Assistant Professor Henry Kapteyn, Dennis Garvey, Greg Taft, Chris Baldwin, Nicole Dawson, and Sterling Backus.

Thirty PFF awards in all fields of the sciences and engineering are awarded each year; one of only two 1993 physics recipients, Margaret is recognized for pioneering work in the generation of ultrashort optical pulses. Her Ph.D. thesis work at the University of California, Berkeley, which earned her the 1990 Simon Ramo Award of the American Physical Society, pioneered the use of short (less than 10^{-13} seconds) high-power laser pulses to create short-lived X-ray emitting plasmas. Her measured X-ray pulses, less than one picosecond in duration, remain the record for the shortest X-ray pulses ever.

Here at WSU, her research, which is done in collaboration with **Professor Henry Kapteyn**, her husband, and their students, is setting new standards. Their group continues to be a leader in ultrafast laser technology, having demonstrated a laser which produces pulses of 11 femtoseconds' duration. This is the record for pulses emitted directly from a laser.

Their laser now makes ultrafast pulses more readily available for probing high-speed events such as the transfer of energy within molecules and semiconductors.

Generating ultrafast pulses is tricky, because the photons must be kept very close together. The Heisenberg uncertainty principle also makes it impossible to know precisely both the position of a photon (the duration of the pulse) and its energy (the wavelength).

*See **Murnane** page 2.*

Washington State University

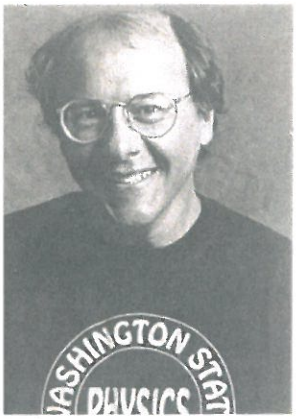
Murnane from page 1.

Any pulse of light is composed of a range of superimposed wavelengths. But a short pulse requires a broader range of wavelengths than is produced by most lasers. With a greater range of wavelengths, it is harder to stop the constituent waves from spreading out, because in most materials the speed of light varies with wavelengths.

The WSU team uses an unusual laser based on sapphire crystal doped with titanium. They were able to compress pulses within the laser's optical cavity. Titanium-sapphire emits light over a wider range of wavelengths than any other laser. It produced the 11-femtosecond pulses in a rapid sequence, giving an average power of half a watt, which is adequate for many experiments.

The award includes funding of $100,000 per year for three years. WSU is the only Pacific Northwest institution whose faculty have received the PFF award. Margaret is also a Sloan Foundation fellow and president of the recently-formed Palouse chapter of the Association for Women in Science.

Greetings from the Chair



Michael Miller, Chair, Department of Physics

It has been too long since the last newsletter. We hope to publish annually in the future.

Several departmental events from last year deserve mention. We hired a new assistant professor, **Lai-Sheng Wang**, who will be based at Washington State University at Tri-Cities. Lai-Sheng obtained his Ph.D. from the University of California at Berkeley working for the Nobel Laureate, **Yuan Lee**. He did a postdoc with **Richard Smalley** at Rice studying buckyballs. He has a joint appointment with Battelle Pacific Northwest Laboratory and is now madly working to set up his lab.

Jerry Tripard resigned a year ago to become director of the WSU Nuclear Radiation Center. He is doing a great job and is breathing new life into that operation.

Last fall the department hosted a reception to honor five of our own who have passed the 25-year mark at WSU. Our senior citizens are **Keith Brandon, Miles Dresser, Dick Fowles, Howard Miles,** and **Jim Park.**

Attending the reception for 25-year faculty were (seated, l. to r.) Betty Duvall, Miles Dresser, Muriel Dresser, and Dian Bender.

A special commemorative T-shirt was given to each and to their spouses.

Jim Berger retired this spring after 17 years in the physics department. Jim's contributions to the lower-division effort will be sorely missed. The department will be allowed to fill the slot, but there are complications due to the reconfiguration process which WSU had to undertake this summer because of our state budget cuts.

Lori Finch (née **Blair**), our senior secretary for the past seven years, received a promotion and moved to Human Resource Services. Her place was filled by **Lee Ann Winters**, who came to us from plant pathology.

We also have a new department administrative assistant. Taking the place of **Ed Steever**, who returned to teaching high school physics, is **Marilyn Burns.** Marilyn held a similar position in the Clinical Sciences Department in the vet school at Cornell. She came to Pullman with her husband, **Gil**, who is a faculty member in our vet school.

Bill Band passed away in April. His contributions to the department have left an indelible mark. Bill's estate has established funding for a distinguished professorship in theoretical physics and two scholarships. One of the latter, the Claire May Band Scholarship, is now permanently endowed and will support women students in physics. The new William and Claire May Band Scholarship is for students in theoretical physics.

The late William Band

We were saddened to hear of the death of **Al Butler's** wife, **Ava**, this past June.

The department is strong and doing well. We expect close to 60 graduate students this fall and approximately 35 undergraduate majors. A prime source of our strength is our alumni, and I want to thank you sincerely for all the support you have given to us through the years.

The department joins me in wishing you all the best.

Mike Miller, Chair

Around the Department

Tom Dickinson has become a world leader in fracture and laser surface interactions since joining WSU in 1968. His studies of the mechanisms and applications of particle emission from surfaces of solids due to mechanical stimulation or intense ultraviolet laser irradiation have enhanced the understanding of fracture and the processes of laser desorption and ablation. This year he received the WSU President's Faculty Excellence Award for Research and was named a fellow of the American Vacuum Society.

Miles Dresser was elected president of the Washington Section of the American Association of Physics Teachers. The association's 1994 meeting will be at WSU.

*Physics alumnus **John N. Abelson '60** received the College of Sciences and Arts' highest award for alumni, the Distinguished Achievement Award.*

Physics alumnus **John N. Abelson '60** received the College of Sciences and Arts' highest award for alumni, the Distinguished Achievement Award. He is the George Beadle Professor and chair of the Department of Biology at the California Institute of Technology. His outstanding research career was acknowledged twice in 1985 when he was elected to both the National Academy of Sciences and the American Academy of Arts and Sciences. During his visit, John expressed his debt to the research program of **S. Town Stephenson.** John's work on DNA with Stephenson provided the direction for his career.

The S. Town Stephenson Distinguished Lecture for 1993 was given by **Professor Michael Berry**, fellow of the Royal Society. Berry is Royal Society research professor at the University of Bristol. He received the Maxwell Medal in 1978, the Lilienfeld Prize and Dirac and Royal Medals in 1990, and the Naylor Prize in 1993. His talk was entitled, "Some Geometric Phases." The phase is a unifying idea that connects such disparate subjects as light in fibers, molecular vibration, crystal dislocations, spinning tops, and automobile wheel-balancing.

The Department of Physics was awarded eight three-year fellowships in the Department of Education Graduate Assistance in Areas of National Need Program. The fellows are to work in the broad area of optical physics/optical properties of materials. The fellowships pay an annual stipend plus tuition and fees. The competition for these awards is very stiff, and we feel that our success is an indication of the strength of our program.

Mark Kuzyk organized an international conference on organic nonlinear optics, headquartered on the campus in July 1992. Some 75 scientists from around the world—including Japan, Europe, and Canada—converged for the two-day meeting to discuss developments in this quickly growing interdisciplinary field. Disciplines represented included physics, optics, chemistry, materials science, and engineering.

The grueling first day, which was packed with 20 lectures in 13 hours, was followed by a jet boat trip up the Snake River rapids. The remainder of the meeting was held in the river canyon at Copper Creek Lodge in Oregon. Researchers debated heated topics in 110-degree meetings wearing cut-offs and ice bags. (Some were seen swimming in the river during breaks.) To test the other temperature extreme, the next meeting will be held in January 1994 in the French Alps. Both meetings are sponsored by the National Science Foundation Engineering Directorate and high tech companies.

During the first space flight of the new U.S. Microgravity Laboratory in July 1992, an experiment was carried out that was designed by **Phil Marston** in cooperation with his co-investigator, **Eugene H. Trinh** of Cal Tech's Jet Propulsion Laboratory. The two observed the response to ultrasound of bubbles in a chamber of water in the absence of complications due to buoyancy. The experiment in space was performed by Trinh, while Marston provided support from NASA's Huntsville Science Operations Area.

The Shock Dynamics Group has had considerable interaction with the Institute of Chemical Physics, Chernogolovka, and the High Energy Density Center (HEDC) in Moscow. These have resulted in short visits by two of the best known Russian scientists in this field, **L.V. Altshuler** and **V.E. Fortov.** Most recently, **A.N. Dremin**, head of the High Dynamic Pressure Department at the Institute of Chemical Physics, spent a month at the Shock Dynamics Center. He presented a series of lectures and explored future collaborative efforts in discussions with **Yogi Gupta.** Research collaborations are also underway with **Eugene Zaretsky**, a recent emigrant from the HEDC, who is now at Ben-Gurion University in Israel.

Adolph Lomb Medal Awarded to Kapteyn

Henry Kapteyn received the 1993 Adolph Lomb Medal in recognition of making noteworthy contributions to optics before reaching the age of 30. He was cited for his work in ultrashort pulse production, particularly the demonstration of the photon-pumped XUV laser and the production of ultrashort X-ray pulses from femtosecond laser-produced plasmas.

The Acoustics of Arctic Ice

Kevin Williams prepares an ice core for a sound wave velocity measurement. He works with samples of sea ice he has collected in the Arctic.

Kevin Williams (Ph.D. '85) works at the Ocean Acoustics and Electromagnetics Group of the Applied Physics Laboratory at the University of Washington. His current research consists of measuring an acoustical wave as it passes through a medium such as ice. This research attempts experimental verification of the relationship between temperature, salinity, and sound velocity in sea ice. His work will allow a more reliable prediction of the performance of acoustic systems and will assist in their design.

Sea ice is considered a porous medium, as it is multiphased and contains pockets of brine and air. This changes the acoustical properties of sound as it travels through the ice. Temperature also changes the acoustical phasing and thereby changes the entire acoustical measurement by changing the elastic moduli. Young's modulus and the shear modulus are the parameters which govern the propagation of acoustical energy in solids. When one attempts to measure the porosity, temperature, and salinity of the ice while passing an acoustical wavefront through it, accurate measurements can be taken.

Letters from Our Alumni

The letters we receive from you, our physics department alumni, are always greatly appreciated. We hope to hear from more of you. Please let us know where your careers have taken you. We are very interested and would like to share your accomplishments with your fellow alumni and our current students. If you like, use the enclosed envelope to keep in touch.

"...It was good to see your facilities and laboratories. It's such a change from what **Paul Anderson** and **Town Stephenson** started over 50 years ago!"

Art Lathrop (B.S. '43)
Walla Walla

"...As an Emeritus Professor in Physiology, I attend, with my wife (a former Assistant Professor in Physiology), many of the weekly seminars, as well as special functions of the Department of Physiology at the Medical College of Virginia. I like to think that your departmental program serves as a model to our graduate program in physiology.

"You do have an outstanding department in physics. A career is open to physics majors in medical physiology at either the graduate or Ph.D. levels. Medical advances depend on so many techniques developed first in a department of physics.

"Both my wife and I have Ph.D.s from the medical school of the University of Rochester. Incidentally, I was recruited (because of my B.S. and M.S. degrees in physics at WSU) to operate a whole body calorimeter for some short term studies. I was also a member of the Rochester Physiology Department for three years and have been a member of the faculty of the Medical College of Virginia (now a part of Virginia Commonwealth University), where I remained for 31 years, retiring with the rank of Professor. My wife, **Carolyn**, has taught physiology at Vassar and the Medical College of Virginia...."

Leslie Edwards (B.S. '37, M.S. '39)
Sandston, Virginia

Early Memories of the Physics Department

by Alfred Butler

My first memories of the physics department came during a trip from Spokane to Pullman to see the Engineers Open House. This was during the spring of 1929. My father was a civil engineer who had graduated from WSC in 1904 and had been in touch with his teachers and others of the engineering staff ever since....The many kinds of demonstrations and displays were of very great interest to me. Physics was a part of the College of Engineering at this time, and I somehow got the impression that physics was basic to all engineering....in 1931, I enrolled in physics at WSC.

Paul Anderson was my adviser, and as a freshman I was impressed....There were two other freshmen majors, **Jack Downey** and **Peter Kraght**, both of them excellent students and very nice to be with....All the physics classes were taught in Carpenter Hall. The E.E. department was mainly concentrated on the ground floor, with civil on the second floor and architecture on the third floor....a small shop...was overseen by **Kenneth Fitzsimmons.** Fitz, as he was known, would later help each of us learn some elementary machine skills, as we had to build or modify equipment.

...We didn't have any physics classes until our sophomore year and spent our time in math, chem, mechanical drawing, some elective, German, PE, and military. Between high school and college I had become really motivated, much to my parents' delight, and the first year passed quickly.

Sophomore year...we...enrolled in Engineering Physics, the equivalent of our 201 class. There were about 120 students in the class, with Paul Anderson as the teacher. Paul was an excellent teacher and gave the most interesting and well-formulated lectures. I think all the students looked forward to his class, though his exams were tough. Paul didn't have many demonstrations, but each one was a real joy to the class. He didn't talk at all about himself or his background, and while you admired him greatly, you didn't really get to know him during class.

The class was for five hour credits, and one of those credit hours was earned in a tutorial. This was taught by graduate [assistant]...**Philip Abelson,** who went on to become very well known, both for his work at Berkeley and as editor of the AAAS journal, *Science*. Abelson was a great help to us. He could explain any of the problems we had difficulty with and had an easy going manner which put us students at ease and encouraged questions. He was later to become a distinguished alumnus of WSU, a well-deserved honor.

I think it was during my sophomore year that **S.T. Stephenson** came. The department then consisted of three men, Fitzsimmons, Stephenson, and

Al Butler lectures to a physics class in the late 1950s.

Anderson....When we became juniors we got acquainted with S.T. Stephenson. He taught us in several of the upper-division classes and was a great teacher. Steve had been the youngest physics major to get a Ph.D. at Yale, but just because he was smart didn't keep him from anticipating problems that we ordinary mortals might have. He could explain the thought process so the solutions became straightforward. I remember one open book test he gave in which I couldn't find the answer to one of the questions. I finally gave up and took the test to Steve with something of an apology for this one item. Steve didn't laugh or act disgusted, he just said, suppose I had asked it this way, and he reworded the question. I immediately gave him the answer, but he had taught me to sometimes do the rewording myself....

See ***Memories*** *back page.*

The Department of Physics, 1952. L. to r., kneeling: A.B. Butler, K.E. Fitzsimmons, Frank Peters (glassblower), unknown, William F. Nelson, unknown. Sitting: William Band, Richard M. Brown, S. Town Stephenson, Lois Blackmore, P.A. Anderson, Thomas Stinchcomb, I.D. Riggins. Standing, front row: Angus Hunt, unknown, Dave Bushnell, Jack Schauble, Earl Emery, Kelly Marshal, Don Miller. Standing, back row: Ruben Krogstad, Dave Freeman, unknown, Roger Moe, unknown, unknown, John Guptill.

Further installments of "Al Butler Remembers" will appear in future issues of Physics Matters.

The Department of Physics Honor Roll of Donors

We are proud to report the names of the following individuals who have contributed to the Department of Physics in the last several years. Their generosity enables us to build programs of distinction and provides direct support to our students and faculty. We extend our warmest thanks to our donors and encourage others to join them in support of our department.

Benefactors ($100,000 lifetime gifts)

Philip & Neva Martin Abelson '33, '34
AT&T Foundation
Silicon Graphics Computer Systems

Endowed President's Associates ($25,000 cumulative gifts of endowment)

+William Band

President's Associates Council ($5,000 or more)

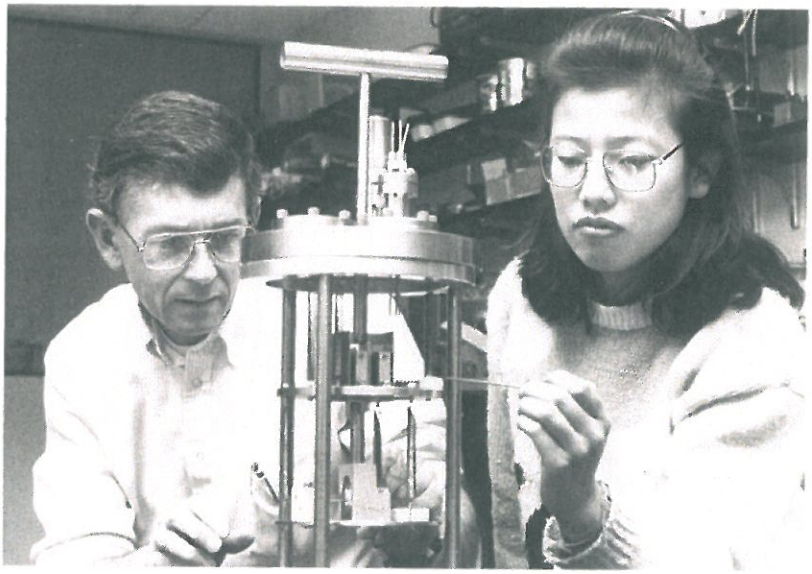
Dorothy D. Bender
Department of Energy
Edward & Virginia Voss Donaldson '48, '45
Granville-Phillips Company
Hoechst Celanese Corporation
Lawrence Livermore Laboratory
Tektronix, Incorporated
Union Carbide Corporation

President's Associates ($1,000 or more)

+Chester J. Calbick '25
Dinah L. Donaldson-Suty '73
Hitachi Limited
Lockheed Missiles & Space Co., Inc.
Newport Corporation
Larry & Margaret Fleming Nielsen '67
Donald '62 & Monika Sandstrom
Paul A. Smith '74
Thorlabs, Incorporated
Harold '63 & Marjorie Winters

Dean's Associates ($500 or more)

Burton & Karen Johnson Berringer '66, '69
Daniel & June McLean Bills '49, '48
Wilbur '71 & Pamella Dong
Eastman Kodak Company
Peter & Susan McDougall Majewski '83, '78
Alroy & Kathleen Phillips
Sensor Physics
David B. Snyder '78



Tom Dickinson and Zhen-Yi Ma

Tower Club ($100 or more)

John Abelson '60 & Linda Iverson
Albert & Joanne Pratt Abey '58, '57
George & Mildred Abrahamson
John Aidun '89 & Joan Harris
James '71 & Patricia Asay
Michael J. Barbour '71
Donald '58, & Eva Brownhill Beale
Gary '70 & Cleo Bennett
Robert C. Bohara '74
William '50 & Eunice Boyd
Larry W. Brackenbush '62
Eugene & Margaret Burke '60
Robert '68 & Diana Bushey
David & Teresa L. Cremers '80
Donald Curran '56 & Liv Njaa
Arnold '80 & Jackie Danielson
George R. Danker '69
Dean R. Denison '55
Thomas & Diane Dickinson
Donald L. Dittberner '50
Donald & Jo Lysek Doran '51
John S. Eberle '82
Leslie '37 & Carolyn Edwards
Greg '83 & Dian Field
Robert Flock & Nissa Nack '86, '84
Julian L. Frese '39
Melvin '52 & Andjelka Fronsdahl
Jeffrey & Kris Furrer '84, '86
Oliver M. George '25
Thomas A. Granberg '71
Yogendra & Barbara Gupta '73, '70
Ronald & Sandra Hudson Hanson '68, '69
Daniel Harmon & Kelley Holtman '71
Angus '59 & Patricia Hunt
Stacy K. Irwin '90
Gerald & Mary Skidmore Johnson '37, '40
LeRoy '71 & Joanne Johnson
William '77 & Jeanne Jones
Edwin '68 & Marilyn Karlow
Robert '47 & Christy Kinkaid
Wilton H. Kuehn '74
Mark Kuzyk
Carl & Virginia Edsall Lagergren '44, '50
Mark '79 & Mary Linquist
Chelcie & Katherine Kyte Liu '62
Dale & Leila Cook Martin '48, '51
John '64 & Donna Dempster McClain
James '52 & Jacqueline McCoy
Microsoft Corporation
Sergio L. Monteiro '81
National Instruments
Daniel E. Nieuwsma '78
Bradford Pate & Toshiko Ichiye
Carl A. Paul '72
Allen L. Pitner '64
Lee & Catherine Podolin
Stephen & Cherri DeFigh Price '75
Ray & Margie Hochstatter Prichard
Kurt Priebe
Warren & Bernice Birkhofer Quinn '51, '46

Scholarship Recipients, 1993-1994

Many of the gifts from our alumni and friends support scholarships for our department's most deserving students. For this academic year, the following scholarship awards have been made.

John Hunt, Tacoma, Washington, and **Nathan Probst**, Selah, Washington, received the Paul and Dian Bender Scholarship in Physics.

Anh Phuyong Pham, Pasco; **Julia Plummer**, Spokane; **Jenifer Reece**, Otis Orchards, Washington; **Colette Sacksteder**, Seattle; and **Nicole Wilson-Spence**, Orofino, Idaho, all received Claire May Band Memorial Scholarships.

Kendall Read, Denver, Colorado, received the Neva Abelson Graduate Fellowship, and **Susanne Wood**, Colville, Washington, received the George Duvall Scholarship.

Justin Jacob, Wapato, Washington, received an American Physical Society Scholarship.

On behalf of these students we thank all of you who donate to scholarship funds.

President's Honor Roll

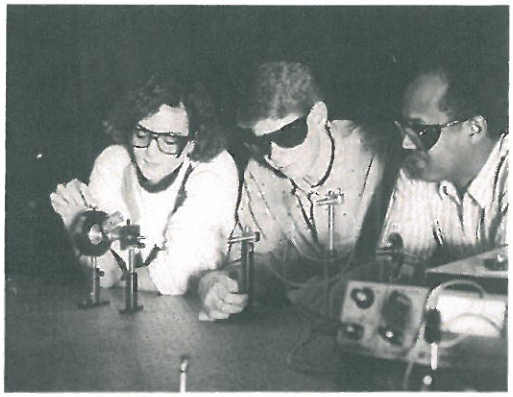
We are proud to announce the names of the following physics students who earned places on the President's Honor Roll for spring 1993.

Christopher Baldwin, Downers Grove, Illinois
Orion Carlisle, South Bend, Washington
Daniel Guenther, Clarkston, Washington
Leslie Miles, Pullman, Washington
Jenifer Reece, Otis Orchards, Washington
Drew Roraback, Everett, Washington
Colette Sacksteder, Seattle, Washington
Louis Scudiero, Pullman, Washington
Einar Stauber, Genesee, Idaho
Jason Swift, Seattle, Washington

Mario Rabinowitz '64
Dan & Shirley Miller Radecki '66, '65
Riley P. Richardson '70
Carl E. Rosenkilde '59
Ramsay '37 & Roleen Schlademan
Victor '51 & Shirley Schmidt
Robert P. Sharp '65
Ralph '77 & Linda Simmons
Harry J. Simpson '88
Daniel '84 & Barbara Sisk
Leonard '68 & Deborah Slack
+Diane D. Spencer
Paul R. Spencer '63
Daniel & Mary Gudjohnsen Stoneman '73, '74
James Thomas & Mary Bartholomew '76
Brett L. Thovson '84
Rolf '78 & Mary Vatne
John '59 & Kathleen Wacker
Theodore Watanabe '48
Johannah M. Webster
Jack '62 & Judith Westerman
Michael '80 & Rita Winegardner

Sustaining (less than $100)

Clyde D. Acree '74
Paul '86 & Cheryl Adams
George '67 & Joan Akers
James '56 & Joann Albers
Bradley A. Albro '87
+Paul A. Anderson
Frank '60 & Irene Barmore
Claude '56 & Betty Barnett
+Paul A. Bender
Stuart C. Billette '86
John & Jacklyn Johnson Boardman '71, '72
Robert J. Bohara '77
M. Brotherton
Bert E. Brown '49
James '49 & Dorothy Crosby Burgess
Kenneth & Julia Bush
Elmore A. Calbick
Randy C. Carr '89
Marjorie Carson
Richard T. Casper '86
Larry L. Chamberlain '70
Charles '69 & Sharyn Cole
Lewis '72 & Mary Coleman
Charles '70 & Carron Collins
Robin A. Collins '84
Mark P. Conner '88
Robert S. Cooper '72
Robert '75 & Sharon Creek
Robert '69 & Rose Cunningham
Robert & Gwynn Farrell Davidson '77
Dorothy E. Davis
Kurt U. Dichmann '74
Kenneth B. Dodson '74
Dale Doering '77 & Toyoko Tsukuda
Miles & Muriel Dresser
Bert M. Dunn '67
James '61 & Carmela Estes
James '64 & Maryanna Feeney
Charles '63 & Donna Fitzsimmons
Jerry '76 & Cynthia Forbes
Lawrence '67 & Shirley Frice
George C. Fullmer '44
Gerald E. '26 & Martha W. Hart
Timothy J. Haugan '86
George Hauser '71 & Margaret Lacy
Dennis '72 & Janet Hayes
Jay '68 & Catharine Holberg
William '78 & Susan Iverson
Bruce J. Jackson '77
George & Ann Melvin Jannison '70, '71
Ned & Jeanette Jones Jenne '64, '70
Henry '66 & Linda Jones
Scott & Judy Jones '81, '82
William & Margaret Keighin
Larry & Susan Steinhaus Kimmel '71, '73
Lee R. Koller '78
David W. Langford '76
Stephen C. Langford '77
Richard '62 & Madelon Lindsay
+Alfred R. Lof '48
James '53 & Jean Lonborg
Gary L. Lucas '61
Robbe & Gloria Aylesworth Lyon '70, '73
Edward & Corinne Langgut Marques '80
Frank D. Mason '43
Homer B. Mathes '56
David '51 & Patricia McDaniels
Michael & Mechthild Miller '92
Everald '68 & Patricia Mills
Dean A. Millsap '53
Elsie Worthen Mock '20
Frank S. Moody
Walter & Robin Douglas Morgan '54
Stephen & Jody Cate Murray '83
Joseph '66 & Patricia Muscari
Ira '48 & Betty Myers
David & Pamela Ballenger Olsen '70, '71
Robert '65 & Patricia Parry
Earl '36 & Mary Peabody
David '56 & Eileen Pettijohn
Claude '32 & Ruth Pevey



L. to r.: Scholarship students Costantina Poga, Russ Wittorf, and Fassil Ghebremichael.

Clarice Pittman '28
Fredrick '64 & Denise Reinke
David '72 & Yoshiko Rock
James '54 & Norma Rollins
John & Rhoda Setterberg Roper '71, '67
Ivan & Beverley Becker Rouse '74, '72
John '50 & Carolyn Schauble
Frederick '67 & Lila Schultz
Xiao-An '84 & Amy Shen
William & Carolyn Frantz Slippern '51, '61
Harry & Ann Pittman Smithwick '55
Gary J. Sokolowski '75
Garret & Maureen Warrick Spears '68, '69
David & Suzanne Spencer Uvelli '66
Brad S. Stapleton '90
Clifford & Beckie Kastl Stephan '90, '88
Mildred Stephenson
Robert '68 & Margaret Stephenson
Richard D. Swinney '80
Kin-Yiu P. Tang '74
Walter Tanttila
Kathleen E. Turner '64
David '73 & Elizabeth Unger
William J. Vail '85
Anthony R. Vannelli '72
Mathias & Cornelia VanThiel
Raymond '72 & Betty Warner
Wayne & Karen Griffin Wilcox '72, '73
Gordon E. Williams '56
Perry B. Wilson '50
Jeffrey & Pamela Gamble Wirth '75
Yang Yang '86

+ Deceased

Your Gift Makes the Dream Come True

Each year our student Call-A-Coug callers help us keep in touch with you. If we didn't reach you, please use the attached envelope to make your gift. And don't forget to tell us about your special events so we can share them with your fellow alumni. It is always a pleasure to hear from you.

The scholarships, fellowships, and special programs you support smooth the way to graduation.

The Department of Physics
Washington State University
Pullman, WA 99164-3520

Nonprofit Organization
U.S. Postage
PAID
Pullman, WA
Permit No. 1

Memories from page 5.

As we came to spring of our senior year, we three seniors arranged to take Dr. Anderson to dinner at the Washington Hotel. In 1935 it was really something to go out to dinner, but Paul had been a friend, and we knew that this would be interpreted as a gesture of friendship. We also knew that it wouldn't change our grade one bit, but we would get acquainted in a way that we couldn't up on the hill....I didn't realize how much this simple dinner would mean to Paul, but in the year that followed he mentioned it several times and in a way that let me know that this was a gesture of friendship which he would never forget.

The three of us graduated within a week or so, and Jack and Peter went somewhere else. I've lost track of Downey, but Peter Kraght later become chief meteorologist for one of the major airlines. The staff had every reason to be proud of their graduates.

I stayed on for a year of graduate work and to complete a high school teaching certificate.... Fitzsimmons was an excellent machinist, and he was making an early edition of an electron microscope. (It turned out that the instrument was so sensitive that even though he had a real solid foundation in Carpenter Hall, any car driving up Colorado Street would give motion to the electron beam.) Stephenson was an excellent teacher....His research field was in X-ray spectroscopy. [Editor's note: Butler later returned to WSC to teach introductory physics courses himself.]

"It was only after I had returned on the staff that I found out how tender a heart Anderson really had. Paul sort of held you at arm's length, never letting you become too close. But when Fitzsimmons died, and we were riding back to the funeral home, Paul said he was glad that the service had been as it was. That when his first wife had died, he couldn't have stood it if the funeral service hadn't been pretty matter of fact. I suddenly realized that Paul was a case right out of my psych class. He kept people at some length because he was so easily hurt, he had such a tender heart. Knowing that, I felt even closer to him. Once when I told him that I wished I could be as good a teacher as he was, Paul replied that each of us had to do our job in our own way, and that I should just keep on doing things my way. This gave me the encouragement and support that I needed. It was a friendly department, each of us supporting the others. And as you can tell, I was among the most fortunate, both as student and, later on, as a colleague.

Al Butler earned bachelor's and master's degrees (1935 and 1944, respectively) from Washington State College. After spending seven years as a high school teacher, he returned to WSC in 1943 to supervise army physics training programs and subsequently became a member of the regular physics faculty. An excellent teacher, he received an Outstanding Educators of America Award for 1973. For nearly 20 years, Butler was commentator for a radio program, "Science in the News," which was recorded at KWSU and aired on 60 radio stations and the Voice of America. He directed the NSF Summer Science Institute at WSU from 1958 to 1963. He retired in 1975 and continues to actively support the physics department. His column will continue in future issues of Physics Matters.

November 1993 308555