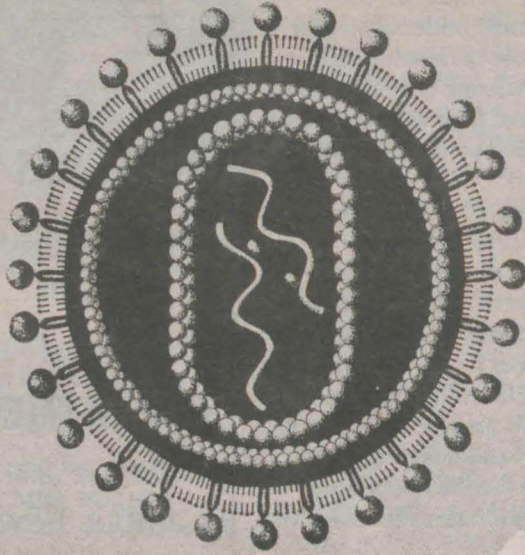
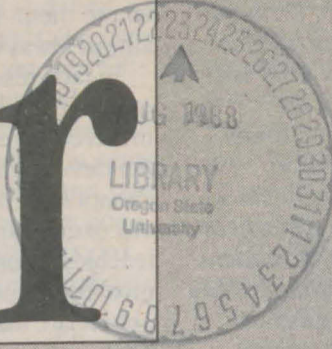


Vol. 22, No. 4
September 1988

Oregon State University
Corvallis

THE OREGON Stater



MONSTER DISEASES

Is This the Century of the Monster Disease?

Story on page 10

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(Editor's Note: Periodically, I give up my small corner of this newspaper to guest editorials timely in their content and of importance to the OSU family and community. This time, Graham Spanier, vice president for academic affairs and provost, offers a brief but well-written essay outlining the advantages of receiving one's undergraduate education at a major research university like Oregon State. Dr. Spanier delivered these remarks at OSU's annual Undergraduate Student Recognition and Awards Banquet May 18. A related story, which gives the facts behind OSU's undergraduate enrollment figures, appears on page 8. Readers wishing to respond to Dr. Spanier's essay are invited to write to: Letters to the Editor, The Oregon Stater, AdS 416, OSU, Corvallis, OR 97331.)

Undergraduate Education in a Research University

Oregon State University is among a select group of institutions of higher education. Among the 3,300 college and universities in the United States, only about 100 are considered comprehensive teaching and research universities. In other words, they have a unique mission because their purpose is to develop as well as to transmit knowledge. They are dedicated to both research and teaching.

About half of these are considered land-grant universities—those institutions (an average of one in each state) that have a long history dedicated to serving the citizens of the state through education of the masses, through research directed to basic and applied problems, through education in the applied sciences, technical fields, and the liberal arts, and through outreach delivered by the Extension Service and other units.

The part of the mission related to research is a very special responsibility since much of the nation's research and scholarship is conducted in universities, principally in the top 100 or so institutions. This includes meeting the nation's need for research and development in engineering, biological sciences, natural sciences, mathematics and computational sciences, agriculture and natural resources, and the social sciences, just to name a few. Universities are also a key source of nourishment for the humanities. In fact, OSU ranks in the top 40 in the total scope of its funded research programs. This is an incredible accomplishment.

The research activities of the University enhance its teaching activities. Most undergraduates, however, are not aware of this interdependence of teaching and research. Students come to us without any direct experience with people engaged in what is called basic research. That is as it should be; elementary and secondary education have other important purposes. Our new freshmen usually have read about scientists and their new discoveries in magazines and newspapers. They have probably seen social scientists on television, commenting on one national problem or another from the standpoint of their research findings. They are less likely, I'm sorry to say, to have come across philosophers and other humanists, whose research into the thought, feeling, and values of the human condition gives them a vital perspective from which to interpret events.

Whatever familiarity with researchers undergraduates may have gained from the media, however, it all seems totally remote from the undergraduate experience. Most students see the research function of the university not only as separate from their education, but also as getting in its way. They think that because their professors are

busy with research projects they give short shrift to their undergraduate course—only their graduate students, who assist in the research, are important to them. That, I assure you, is almost always untrue.

In fact, research and teaching are integrally combined. Professors involved in research are so steeped in the developments in their field, they cannot help but talk about the latest discoveries and interpretations in their teaching. Moreover, they know they must train students to understand and appreciate the research they are doing. The undergraduates of today, after all, are the researchers and direct or indirect supporters of research of the future. By "indirect supporters of research" I mean the citizens, the taxpayers, who must understand that the university's role in developing and transmitting knowledge is vital to society. As citizens, they will ultimately provide the public and private funds to continue this work.

Undergraduates who have learned the fundamental principles and methods of a field of inquiry can make tremendous strides in understanding what research actually contributes to the world, and how it is done, if they participate in it. Our undergraduate program therefore provides numerous opportunities for students to do research, and the faculty encourages qualified students to take advantage of these opportunities.

OSU's mission as a teaching and research university often leads students and faculty members alike to ask whether the concept of publish or perish applies here. The answer is a qualified "yes." Unlike the faculty members hired at the other 3,200 colleges and universities that focus almost exclusively on teaching, our faculty are recruited for their talents across a range of expertise, including teaching, research, public service, and in some cases, extension, librarianship, and other special areas. Faculty such as Clara Pratt in human development and family studies, Marc Borg in religious studies, David Bella in civil engineering, Tom Murray in pharmacy, Jane Lubchenco in zoology, Starr McMullen in economics, Henry Sayre in art, Sam Stern in industrial education, and David Carlson in oceanography, to name but a very few, are here at OSU because of their abilities both to generate knowledge, be leaders in their fields, and to transmit that knowledge effectively and in a dedicated way to our students. A tall order to be sure, but one that faculty in virtually every department are able to fill.

OSU's students can be proud that their education was obtained from talented faculty members who are paving the way in their fields. OSU's reputation is heavily influenced by the accomplishments of its faculty members, and this has a payoff for our graduates. When they look for jobs, they will find that a degree from OSU often means more than other degrees. That is because employers know about OSU through its faculty. Our reputation is based on the exemplary job our faculty have done in combining this dual mission of teaching and research.

I ask the alumni of Oregon State University to consider this mission and to remember with pride what this research and scholarship has contributed to society. OSU's discoveries, its artistic and creative accomplishments, and its practical contributions to solving the problems of the state, the nation, and the world have made and will continue to make a difference.

THE OREGON Stater

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On the cover:

Artist's conception of the AIDS virus.
 Designed by Heather Nichols.

The *Stater* will publish letters as long as there are letters to publish. All correspondence must be signed and must include a current address and telephone number. The editor reserves the right to condense or return a letter for the author to condense. Letters should not exceed 150 words, but longer letters may be published at the editor's option. Send all correspondence to Letters to the Editor, The Oregon Stater, AdS 416, Corvallis, OR 97331.

Sports in America

To the Editor:

As one who is in your corner (life being a rectangle), I offer the following well-intended comments. They are meant to reinforce your efforts to blaze a few new trails with *The Oregon Stater*. They are not meant to disparage anyone or anything.

The June 1988 *Stater* featured an article written by a Doug Marx. It was entitled "Sports in America." Marx was described as one of "Oregon's leading freelance writers and an avid sports enthusiast." But how is Doug Marx connected to Oregon State? The article itself was billed as thought-provoking, as analysis, and as a challenge. In my view, Mr. Marx pulled off a reverse hat trick: he went 0-3. What he wrote was superficial, highly derivative, and merely sideswiped any link to Oregon State. Overall it varied from aimless to pointless.

I urge you to think twice (although I rarely do) about featuring or including pieces that do not reside or cannot be placed within an Oregon State context. National and international issues are treated much more effectively elsewhere... unless such issues bear on the interests of the university, its students, its faculty, its alumni, or some other aspect of it. This is not a call for shrinking the focus of your efforts, which I endorse and support. However, please spare us (or me) further exposure to such stuff as "Sports in America."

Jud Blakely '65
Chicago, Ill.

(Editor's Note: *The Stater* disagrees. Sports stories represent the most popular reading in the world. And lately, sports fans have been given a lot to read, most of it bad. From big-league managers who incite riots, to superstar athletes with underworld connections, to colleges and universities that will break any rule to win, it's little wonder many people today are questioning if big-time sports makes sense any more. Why not just shut it all down and save everybody a lot of grief? Mr. Marx's essay offers some perspective in these matters and provides a thought-provoking thesis—that colleges and universities can serve as a testing ground for the return of those ideals best exemplified in the competitive spirit of the ancient Greeks, who, Mr. Marx tells us, competed for the development of the whole self, for the sheer pleasure of sport. What with the Save Oregon State Sports campaign, the elimination of OSU's track and field program, delays in the Parker Stadium roof project, the constant worry about Pac-10 affiliation, a football team with one of the nation's longest losing-season streaks, Mr. Marx's context for the value of sport could not be published at a better time or in a better place.)

Fallen Empire

To the Editor:

My congratulations on an important, informative article on America. It certainly was an eye-opener for students, faculty and alumni of OSU. The article was timely and should generate badly needed political

information among students, whom in the past have done poorly when it comes to voting. The article has served as a warning, that this nation is in a crisis and the need for new direction, new leadership has never been greater. The American people must respond to this intelligently Nov. 8.

The April issue of the *Stater* was the first I've ever seen and I was impressed very much. I feel strongly that our universities should take an active role in providing political information on important issues affecting our schools and nation. Debating the issues is democracy in its highest form. We need much more of this on the home front. I wish to applaud the *Stater* in taking a leadership role for other universities to follow.

In order to rid corruption from government, the voters must be more careful in selecting the people we send to Washington. We must look for qualities of integrity, fairness, high moral character, decency, and leadership, with a will to best serve the interests of all the public. A top-priority of the highest should be given to campaign reforms.

The fall of Richard Nixon and Watergate was a Sunday school picnic compared to the Iran-Contra scandal. The worse yet to come is the Pentagon bribery affair, which involves greed and love for money by many in high positions in government. I am 78 and have witnessed many administrations. The last eight years we've seen more corruption, lying and cover-up, and the most incompetent administration of the last 60 years.

Herman Krajeck
Appleton, Wisc.

To the Editor

I have read your article "Is America the Next Fallen Empire?"

How about another article about what is right in America. I think a pro-America article is in order. The "doom-and-gloom" people have their ideas but America remains the strongest, fairest, most giving, most innovative nation in the world. Our communications system, farm production, auto production, aircraft production, are still the best in the world.

Please, let's have a more positive article next time.

Bob Hall '48
Portland, Ore.

Hysteria Notwithstanding

To the Editor

My, my... In your June '88 issue:

- I read the letter from the alumnus who sees a bleak future for us if we continue to allow heavy foreign investment, and participate in global affairs at our present level;

- Then I read the letter from the alumnus who proclaims and bemoans an erosion of our emphasis upon technical skills, and a concomitant new emphasis upon what he apparently feels are secondary skills—talking, writing, accounting and managing;

- Then, I read the letter from the alumnus who decries the "hysteria of environmentalism" and its "massive land grabs" as opposed to "the traditional reasoned approach to forest management" (a phrase which, of course, is the traditional euphemism for letting the timber industry do as it pleases).

Obviously, there was little hope for Oregon or the country, but I turned the page, anyway. An article on the bottom of page five, in fewer words than the three letters of doom required, provided a neat rebuttal to them all.

OSU researchers (technological

inferiority notwithstanding) are participating in an ambitious, highly technical joint project with several other nations (our over-extended global involvements notwithstanding), leading ultimately to an Earth Observing System in the 1990's, focusing world-wide attention upon "some of the thorniest environmental issues" (hysteria notwithstanding).

This article, exhilarating in its implicitly grand and hopeful prospects for humanity, is rich in further denials of the doomsayers of this and other societies. Cooperation is not mediocrity, and recognizing the skills and achievements of other peoples is not a form of cultural abdication. Our involvement with the technical world, the environment and other nations is ongoing, robustly alive and productive and among the best assurances of our future.

Robert C. Buckley '68
San Jose, Calif.

Commencement

To the Editor:

I was glad to view the 119th Commencement exercises on June 5, 1988 via KOAP T.V. I feel the awarding of an honorary doctorate to Dr. Kenneth B. Clark was particularly appropriate. Dr. Clark delivered a fine commencement address. He emphasized that an important outcome of higher education is that the graduates place top priority on humane values in thought and action. I, for one, would like to read and ponder his ideas. Perhaps other OSU alumni would be challenged by reading Dr. Clark's address. Therefore, I suggest that you publish a complete transcript of his message in the next issue of the *Stater*. You may have already decided to do this. At the very minimum please indicate where a copy of Dr. Clark's address may be obtained.

I feel Dr. Clark's message deserves even wider dissemination than your readership.

I have enjoyed reading the *Stater* since I am no longer in close proximity to OSU. Thank you for your service to OSU graduates and former faculty members.

William A. Foster
Associate Professor Emeritus of
Sociology

(Editor's Note: Dr. Clark's address can be obtained from: Academic Affairs, OSU, AdS 624, Corvallis, OR 97331.)

Drinking on Campus

To the Editor:

OSU should not permit students or alumni to "tailgate" with alcohol before football games, concerts at LaSells Stewart Center, or Peavy Lodge for the following reasons:

1. Drunken driving causes the highest rate of accidents on our highways. Allowing drinking at games and concerts will add to this danger.

2. Alumni are not providing high standards of deportment to students under drinking age. At last year's homecoming, the barbecue attendance at the armory was low due to tailgate activities behind the stadium. People sitting behind us at the game were obnoxiously drinking. Going to a living group where a bar is set up and members are drunk is unsettling.

After living 40 years away from the OSU campus, I have returned to find a more complex, sophisticated, car cluttered institution. Having first attended this university as a 4-H club summer school student at 11, graduated from OSU, sent two children through OSU, and lived with a husband associated with OSU, WSU, and

UC Davis, I hate to see OSU's standards crumble.

OSU alumni should not tempt OSU students with additional drinking privileges which will diminish their ability to find ultimate satisfaction in universities and activities.

Pat Glenn Hagood '44
Corvallis, Ore.

Disappointed

To the Editor:

I enjoyed again the latest issue of the *Stater*, June 1988, and especially another "Glory Days" article by Chuck Boice. I remember well how Robin Reed was the pride of the campus, the whole Corvallis community, and the State of Oregon when he won an Olympic Gold Medal in wrestling at the Paris Games in 1924.

I also remember seeing him wrestle professionally at the matches in the old Moose Hall on 2nd Street. His strength and quickness enabled him to handle opponents much heavier, and he always put on a good show which is what professional wrestling is all about.

However, I am disappointed that you did not publish my letter to you of April 20, 1988, about my Dad's contributions to the Glory Days. I am sure there are thousands of alumni who knew him well, during his 43 years as a member of the faculty, and 19 years as Chairman of the Intercollegiate Athletic Board. It's about time this piece of the Glory Days history is known.

C.V. Ruzek Jr. '37
Los Angeles, Calif.

(Editor's Note: In his letter of April 20, C.V. Jr. says his dad, C.V. "Bo" Ruzek Sr., was a professor of soils at OSU who would flunk any student in his class who referred to soil as "dirt." Ruzek, who supervised athletics on campus during the "Stiner Years," went on to serve as President of the Pacific Coast Conference until 1952.)

Errata

To the Editor:

These are the errata I mentioned in our recent conversation regarding the Alumni News section of the June 1988 *Stater*.

- David A. Bucy, '55, was at least an Associate Professor. Fred Burgess, dean of engineering, can inform you correctly.

- David E.M. Bucy, also an alum, now teaches at OSU but was omitted from the note.

- Melinda J. Bucy is enrolled at OSU, Class of '89.

"Moreloch" was given for "Morelock," "Jeannie" for "Jeanne," "Katterling" for "Ketterling" and "Emily" for "Emilie."

Picayune, perhaps. But these details are the great attraction of your magazine. Unimportant to the world, they rivet the attention of the friends and relations of the alumnus. Witness, in fact, this letter.

Then, too, my family has had a long relation with OSU. If the University is to inform and expand the humanity of those associated with it, then people and institution must interact humanely. Both must give loyalty, make commitments, recognize service.

Your magazine seems to present an attitude of indifference both to accuracy and audience. If so, it disregards the University's obligation to recognize long involvement, service, and truth. I hope this letter will help correct this tendency, to show you that at least one person cares.

Susan K. Farnworth '80
Vallejo, Calif.

FACULTY NEWS

Daniel B. Dunham, professor of education, has been appointed director of continuing education. He has been serving in the post half-time, while continuing half-time as director of the Oregon Alliance for Program Development. Summer term will also be a part of the continuing education responsibility.

Journalism professor **Rob Phillips** will report to the *Pendleton East Oregonian* fall term as part of the editor-professor exchange encouraged by the Allied Daily Newspaper Publishers Association. **Mike Forrester**, editor of the *Pendleton* newspaper, will join the journalism faculty as an editor-in-residence.

Richard W. Boubel, professor emeritus of mechanical engineering, was honored by the Association Dedicated to Air Pollution Control and Hazardous Waste Management with the Lyman A. Ripperton Award for distinguished achievement as an educator.

The Sigma Xi Research Award for scientific achievement was presented to **Michael Schimerlik**, professor of biochemistry, by the OSU chapter of Sigma Xi, a national scientific society with chapters at most research universities.

Jon Hendricks has been named chair of the department of sociology. He comes to OSU from the University of Kentucky, where he was a professor of sociology and a faculty associate in the Multidisciplinary Center on Aging. He replaces **Gary Tiedeman**.

The department of economics welcomes **W. James Smith** as its new department chair. Smith, formerly department chair at the University of Colorado at Denver, specializes in industrial organization, antitrust, tax progressivity, income equity, and monetary theory.

Paul Lawrence Farber, professor and chair of the department of general science, has been awarded one of only 10 grants given nationwide by the Humanities, Science, and Technology Program of the National Endowment for the Humanities. He will receive \$90,000 to complete research for a book he is writing on the history of Darwinian ethics.

Two forestry researchers have received the George Marra Award from the Society of Wood Science and Technology. **Anton Polensk**, professor of forest products, and graduate student **Les Groom** earned recognition for their research work and professional papers.

Fred C. Zwahlen, professor and chair of the department of journalism, received the 1988 Presidential Award from the Association for Education in Journalism and Mass Communications.

The Gannett Foundation awarded a \$2,800 grant to **Theodore H. Carlson**, associate professor of journalism, to study the career of Nellie Bly, a 19th century reporter and adventurer.

David Sullivan, associate professor of business, has received a first place award in the Xerox Ventura Publisher "Design for Excellence" contest. The competition, which drew more than 1,300 entries, recognizes the best work being done in desktop publishing.

The U.S. Department of Agriculture's Distinguished Service Award, its highest honor, was awarded to OSU's **Warren Kronstad**, professor of plant breeding and genetics. Best-known for his work in developing new wheat varieties, Kronstad was one of five agricultural research scientists to receive the award from Secretary of Agriculture Richard Lyng.

Juinn-Chin Hsu, a postdoctoral researcher in food science and technology, and **David Heatherbell**, a former OSU food scientist who now heads the horticultural processing section of New

Zealand's Department of Scientific Industrial Research, received awards from the American Society for Enology and Viticulture. The two published the best paper of 1987 in the society's professional journal.

Barbara O'Keeffe Dawson, a 1987 OSU graduate in agriculture, is back on campus in a new position that combines graduate study with alumni and student relations in the College of Agricultural Sciences. She will develop plans to revitalize the Agricultural Alumni and Friends organization and devise student outreach and retention programs.

Pharmacy professor **Jane Lovett** has received a \$10,000 starter grant from the Pharmaceutical Manufacturers Association Foundation for research on opioid receptors, substances in the brain which mediate pain control.

NEWS BRIEFS

OSU scientists Jack Dymond and Robert Collier explored the floor of Crater Lake, the deepest in the nation, in a series of dives in "Deep Rover," a submersible craft piloted by the two oceanographers. They are testing their hypothesis that the lake contains thermal springs, based on several observations made over the last five years.

Last summer, using a remote-controlled submersible equipped with a video camera, the researchers saw what they believed to be hydrothermal vents, but were unable to read water temperatures.

With the dives being made over the first weeks of August, they hope to take such measurements as well as water samples with the help of the Rover's two "arms." Collier and Dymond will alternate the piloting of the one-person vehicle to the depths of the caldera, 1,932 feet at its deepest.

A report of their findings will be included in an upcoming issue of the *Stater*.

Three thousand years of Oregon history is on display at the Hatfield Marine Science Center in Newport, through the month of September. Organized around three themes relating to coastal fishing communities, the exhibit showcases artifacts recovered from archaeological digs along the coast and examines the Euro-American settlement of the coast in the 19th century and its effects on natural resources, including fisheries.

The display also highlights 15 years of research by OSU anthropologists Roberta Hall, Richard Ross, Court Smith, and others. After September, the exhibit moves to Tillamook until the new year.

OSU's journalism program is one of four singled out by Allied Daily Newspapers for providing the best journalism education in the Pacific Northwest.

The department will receive a \$12,000 grant, of which \$2,000 will go toward scholarships and the remaining \$10,000 toward computer equipment purchases, primarily desktop publishing.

A team of OSU food science and technology students captured a national championship this summer in New Orleans during the annual meeting of the Institute of Food Technologists. The team of graduate and undergraduate students won the "College Bowl" competition by proving they know their subject matter and possess quick recall.

OSU won its way into the "final five" by defeating Brigham Young University

and the University of California at Davis in regional competition. In New Orleans, the team defeated Purdue, North Carolina, Pennsylvania State universities and the University of Minnesota.

The Oregon State Board of Higher Education has approved a proposal to reorganize OSU's graduate degree programs in economics. OSU is seeking to consolidate its economics programs, which are located in three different colleges: Forestry, Agricultural Sciences, and Liberal Arts. The University is replacing its master's and Ph.D. programs in resource economics, located in agriculture and forestry, with a graduate degree program coordinated through the Graduate School.

Alumni who worked with the Orchard Street and Park Terrace preschools at OSU are invited to a mini-reunion being planned for all persons who taught at, attended, or had children who attended the child development laboratories. An open house will be held from 2-3:30 p.m. on Saturday at the Orchard Street Preschool as part of the College of Home Economics' Great Reunion Sept. 16-18. For information, contact Linda Whiteman, College of Home Economics, Milam 114, OSU, Corvallis, OR 97331; phone (503) 754-3551.

The Oregon State Board of Higher Education approved a 3 percent increase in tuition for the 1988-89 school year. This was the third tuition increase in the last six years.

Also approved was a \$10-per-term computer fee for several OSBHE institutions. The one-time fee is expected to raise \$650,000 for equipment services and support.

Benton Hall's clock tower will finally house a clock, thanks to a gift from the Northwest Natural Gas Company, made possible through the efforts of the Class of 1988. Built in 1887, Benton Hall was the first building on campus. Funds at that time did not stretch far enough and the intended clock had to wait.

Benton Hall celebrated its 100th anniversary last year, so the wait was a rather long one. The clock mechanism, made by the E. Howard Clock Company of Boston, was first installed in the early 1900s in the GasCo Building of Portland. The *Stater* will present photos of the Benton Hall installation in a future issue.

The OSU Press has published the 49th volume of the "Yearbook of the Association of Pacific Coast Geographers." The yearbook contains eight geography-related articles and abstracts of papers presented at the 51st annual meeting of the association. The yearbook is available for \$15 plus \$2 postage and handling from the OSU Press, 101 Waldo Hall, Corvallis, OR 97331.

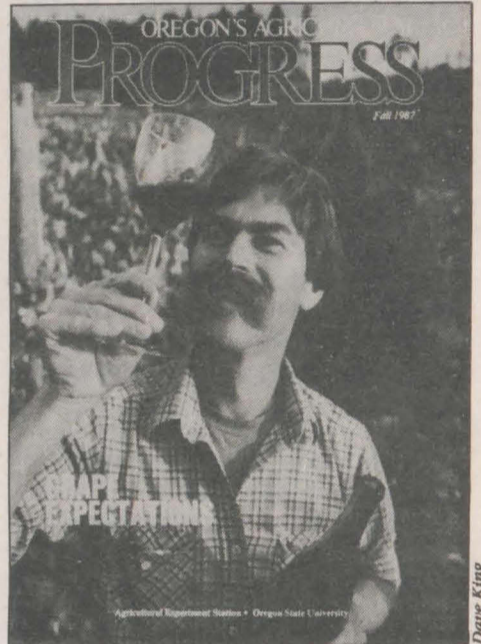
Having a child has major financial consequences for today's parents, points out Alice Mills Morrow, OSU Extension family economics specialist.

Just how major is shown in the newest figures from Family Economics Research Group of the U.S. Department of Agriculture which estimates it will cost a Western urban family (living in cities of 2,500 or more) at least \$106,784 to raise baby Jane or Joe to age 18. Rural non-farm families can expect to spend a little more at \$111,548.

The figures are given in 1987 dollars and make no allowance for inflation, the specialist noted. The figures include the cost of food, both at home and away, clothing, education (but not college), and the child's share of family expenses for housing, transportation, and such other expenses as medical, personal care and recreation. Birth expenses are not included.

Generally the cost of children increases as the child ages, the specialist explained. Teenagers are the most expensive, which is no surprise to their parents.

Persons interested in the cost figures may obtain a copy by sending a self-addressed, stamped envelope to Alice Mills Morrow, Extension Home Economics, OSU, Milam Hall 161, Corvallis, OR 97331-5106.



Dave King

Oregon's Agricultural Progress, judged best in nation.

OSU's Agricultural Communications department won several awards in annual competition sponsored by Agricultural Communicators in Education, a national organization primarily for agricultural communications specialists at Land Grant universities. The awards were presented at the conference in Washington, D.C.

Oregon's Agricultural Progress, a quarterly publication about OSU Agricultural Experiment Station research, was picked as the best agricultural magazine produced at a U.S. Land Grant university, and as the overall best entry in the competition's publications category. The magazine's staff, editor Andy Duncan, designer Tom Weeks, and photographer Dave King, were picked for the organization's Outstanding Professional Skill in Publications award.

Publications specialist Evelyn Engel Liss was one of four individuals to receive the organization's Pioneer Award. The award honors members under the age of 36 for outstanding work and their contribution to the organization. Liss is the award winner for the Western Region.

Sea Pen, a newsletter about marine resources published by the OSU Sea Grant Extension Program, was recognized as the best newsletter for 1988. Dan Guthrie, marine education specialist, and Tom Gentle, communications specialist, edit the publication. Gentle also received a Superior Award for an interactive video produced as a training tool for port administrators.

Editor Karen Skjei won a Superior Award for a direct mail publication, "Food for Tots."

Gwil Evans, director of agricultural communications, won an Excellent Award in the graphics category for "Selecting for Excellence," folders, certificates, invitations, and other materials produced in cooperation with graphic designer Tom Weeks.

Writer Bob Rost won an Excellent Award in a writing-for-magazines category.

Construction Heavy on Campus this Summer

Carpenters, bricklayers and architects were busy this summer at OSU, where construction totalling \$40 million is beginning, nearing completion, or reaching the advanced planning stage.

Landscapers put the finishing touches on OSU's new electrical and computer engineering building, while architects are working on plans for a proposed \$24.5 million Agricultural Sciences II building.

Other campus building projects include construction of a fish research laboratory, expansion of the Hinsdale Wave Research Lab, additions to two Agricultural Experiment Station sites, improvements to Parker Stadium, an expansion of the administration building and installation of elevators as part of the state's handicapped access improvement plan.

Much of the \$40 million was authorized by the Oregon State Legislature's capital construction program, said L. Edwin Coate, vice president for finance and administration.

Faculty began moving into OSU's new electrical and computer engineering building in June, said Fred Burgess, dean of the College of Engineering. One of the first major construction projects to be funded by lottery proceeds, the total package was funded for about \$8.6 million, Coate said. The new building cost roughly \$7 million, he noted, with the remaining \$1.6 million earmarked for alterations to the places vacated by its new tenants.

Burgess said the building will house about 60 percent of the University's engineering program, and allow the faculty to be on the cutting edge of such fields as advanced electronics.

"The building is fantastic," he said. "It's a modern facility that will accommodate both teaching and research."

The new electrical and computer engineering building includes several elements of a site-specific sculpture created by OSU alumnus Larry Kirkland '73, a Portland-based artist whose works are displayed from Washington, D.C., to Kuala Lumpur, Malaysia. The Oregon Legislature passed a bill which sets aside one percent of public building money to go to art

projects. The symbols Kirkland used in his work for the OSU building are drawn from those engineers use—delta, equal, B, X, and others—and executed in large marble and granite slabs, which can also be used for seating. Colorful aluminum tubes hanging from the atrium ceiling represent a sine wave.

As the final touches are put on the engineering building, plans have been firmed up for Agricultural Sciences II, one of the most ambitious projects in OSU history. With a budget of \$24.5 million, the building will form the nucleus of a "Life-Sciences Complex," connecting with Cordley and Nash halls.

"One of the benefits of the new building will be the focusing of basic biology-related and natural resource-related activities, including the Center for Gene Research and Biotechnology," said Thayne Dutson, director of OSU's Agricultural Experiment Station. "There will be a greater interaction within programs located in different disciplines."

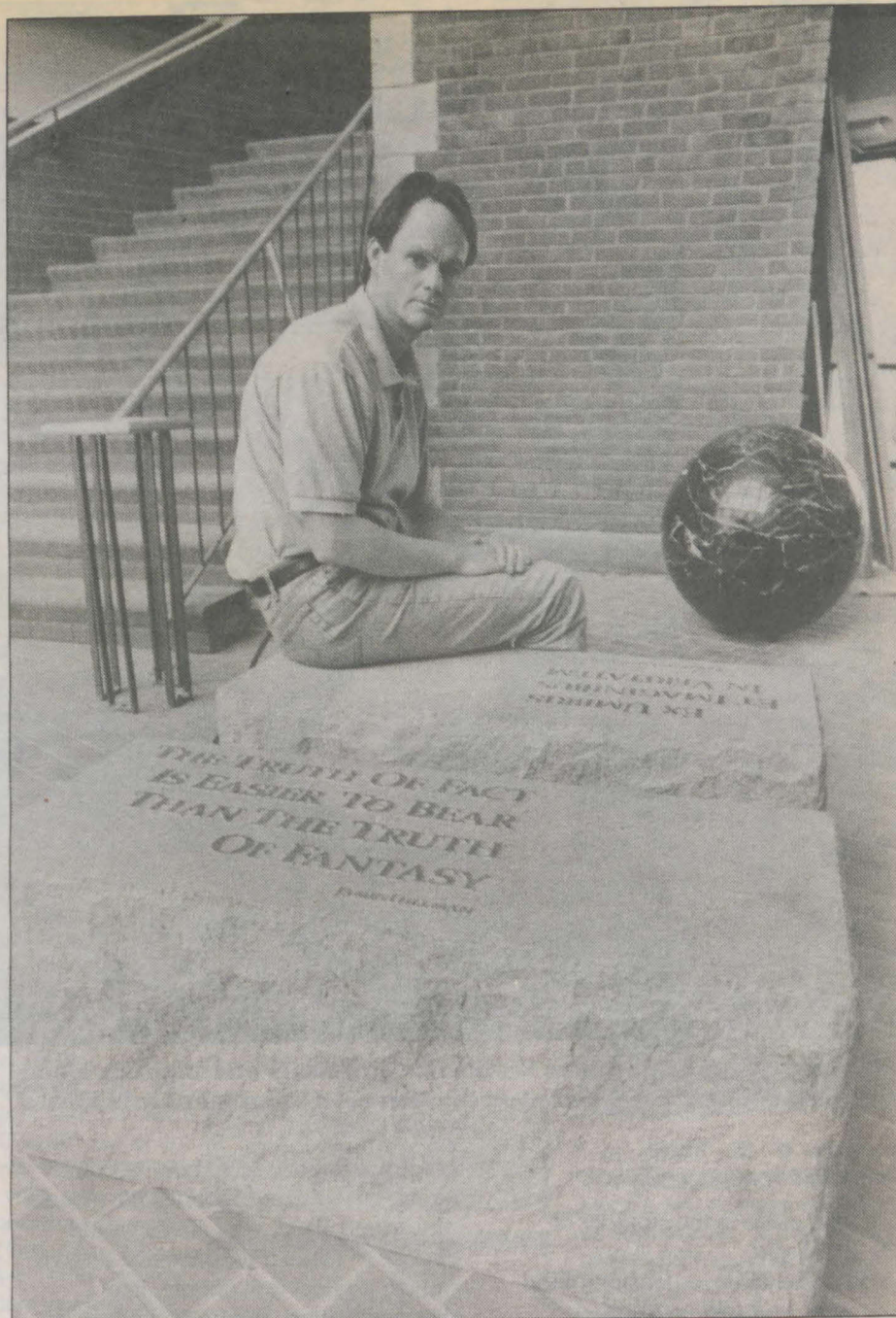
The state has authorized slightly more than \$15 million for the project, with an additional \$10 million coming from the U.S. Department of Agriculture. The five-story, 181,000 square foot building will be connected to Cordley and Nash halls, Coate said.

Construction on Agricultural Sciences II may begin by July of 1989.

A new fish disease research laboratory, combined with OSU's saltwater studies at the Hatfield Marine Science Center, will give the University one of the best facilities in the world for fish disease research, said John Fryer, chair of the microbiology department.

The new laboratory, funded at \$904,000, will be built this fall east of Corvallis. The Bonneville Power Administration is picking up most of the tab for the laboratory, which will focus on costly diseases which attack young salmon during the vulnerable freshwater stage of their development, Fryer said.

Ongoing expansion of the Hinsdale Wave Research Lab will continue this summer with the construction of a north-south extension onto the present facility. Total budget for the extension is \$557,000, said Coate.



Artist Larry Kirkland '73 and his sculpture for OSU's new \$7 million Electrical and Computer Engineering Building, which will be dedicated in formal ceremonies tentatively scheduled for Oct. 26. He's sitting here on an "equal" sign, hewn from stone. Behind him is a marble "point." Kirkland combined symbols, form, and function in creating this installation piece, paid for by state-legislated One Percent for Art funds and a private donation.

The expansion is part of an \$8.6 million grant in 1986 by the Office of Naval Research. That money was earmarked for distribution over a five-year period.

OSU's Agricultural Experiment Station has received \$310,000 to build an addition to the North Willamette Research and Extension Center, and \$430,000 for various projects at Wilson Farm, a sheep research facility near Corvallis.

Parker Stadium saw the installation of a VIP concession area and restroom above the present concourse. Total cost of the project is \$450,000, funded from the sale of VIP seats, said University architect Daniel Read. The first phase of the project, installation of VIP seating, was completed last year. The project's third phase, covering much of the west grandstand at Parker, will

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OSU Survey Shows AIDS Knowledge High, But So Is At-Risk Sexual Behavior Among College Students

Accurate knowledge of AIDS offers no guarantee college students will take it to heart when it comes to their own behavior and protection, according to a recent survey conducted at OSU.

The survey of more than 450 students, one of the largest to date in the U.S. with undergraduates, shows "knowledge is not necessarily going to do it in terms of changing at-risk behavior," said Lizbeth Gray. And the risk exists. Statistics indicate this age group will be the hardest hit in the future, she said.

Gray is an assistant professor of counseling and conducted the study with Marie Saracino, assistant professor in human development and family studies.

The research indicated that students possess accurate knowledge about AIDS, a change from earlier studies by other researchers which found a much lower level of knowledge. The OSU subjects were

able to answer correctly more than 50 percent of the basic knowledge questions, including how AIDS is transmitted and the at-risk behaviors associated with the disease.

Knowledge level doesn't translate to a recognition of risk on a personal level, however. The group surveyed was sexually active—81 percent having had sexual intercourse, comparable to national statistics for the age group. More than 60 percent reported having had sex in the past year without the use of a condom.

As a group, however, the students felt they were not at-risk for getting AIDS. "The knowledge questions dealt with the possibility of heterosexual transmission of AIDS, yet this group had no sense of being at risk," Gray said.

"The mindset is that AIDS happens to other people," said Saracino. "It happens to the promiscuous, homosexuals, intravenous drug users, but 'not to people like me.'"

"We also found it very interesting that this group is not talking to each other about AIDS or the risk of getting it," said Gray. "For example, they aren't asking a new partner about their sexual history and they aren't talking about the need to use a condom, even though they know it is risky to have intercourse without protection," she said.

The researchers' preliminary explanation is that the students as a group developmentally are at an age where they feel invulnerable.

"They don't have a realistic assessment of their own risk in regards to AIDS and they are not changing their sexual behaviors," Gray said. "Unfortunately, their attitudes may not change until some of their peers start dying," which statistics predict will happen.

"The reason recent statistics have shown little or no increase in AIDS in homosexuals is that this group has changed its at-risk sexual behavior," Gray added.

According to this survey, the college-age population isn't prepared to take that kind of action. "Educators are going to have to develop creative strategies to empower this population because knowledge alone is not going to change behavior."

The study also found that 90 percent of this age group had not been tested and more than 75 percent had no friends they knew of who had been tested for AIDS.

The group as a whole was accepting of people with AIDS, rejecting ostracism for victims and advocating compassion. The survey showed that the higher the knowledge level, the greater the degree of acceptance.

"The aspect I find interesting is broader than AIDS," said Gray. "That's the idea that students don't talk to each other before sexual relations. That has all kinds of implications for healthy relationships. It seems as if they feel they can sleep with someone, but they can't talk to them about sexual issues."

The results will be reported to OSU's President's Task Force on AIDS presented at meetings of the National Council on Family Relations and the National Council on Sex Research.

—Carolyn Homan



Good Morning America! Home Economics professors and students, along with a cast of hundreds, gathered on the Memorial Union steps to bellow a

thunderous "Good Morning America!" The event was televised by KEZI-TV of Eugene and will be broadcast Oct. 4 on the national program.

(Continued from page 5)

likely take place in the summer of 1989, Read said.

A \$1.235 million expansion of the administration building, funded primarily by the state board, will add a third floor to the building's southern extension. The addition will house units of both the state system and OSU.

Summer construction continued the effort to remove barriers at OSU which limit access to handicapped persons. The University will receive more than \$1.6 million from the state, which designated handicapped access improvements as its top spending priority for the biennium.

—Mark Floyd

UFO Sightings Deserve More Serious Investigation, Researcher Says

A large number of UFO sightings are "crying out" for more serious study, one researcher believes, by both the science community and an impartial news media.

The increasing volume of UFO "encounters" and the apparent validity of at least some of them deserves far more attention than it is getting, the scientist said at an annual meeting of the American Association for the Advancement of Science, Pacific Division.

According to James Deardorff, a professor emeritus of atmospheric sciences at OSU, the evidence of an extraterrestrial presence on Earth is "getting much stronger, and the reports show no signs of diminishing." But the traditional scientific disciplines and the reputable news media both refuse to examine the evidence on its merits, he said, because of fear of ridicule.

"This is either a grandiose, master hoax, on a worldwide basis," Deardorff said, "or this is the real thing."

On a global scale, there are an average of about 5,000 UFO sightings and other types of encounters each year "that don't have any obvious natural explanation," Deardorff says. Since 1975, large amounts of photo-

graphic evidence have been accumulating, he says, and theories have been developed about why aliens would choose to make their presence known only to a select few people, in a discreet fashion. But prevailing social and scientific attitudes create an atmosphere in which "no type or amount of evidence is considered relevant."

"If this was anything less bizarre, the response would be quite different, and scientists would look more readily at the weight of the evidence," Deardorff said. "But since the presence of aliens is difficult to understand and threatening to many belief systems, scientists focus on the frauds or shaky reports and ignore the more persuasive ones."

This is particularly true even in organizations "that supposedly investigate" UFO phenomena, he added, such as the Committee for Scientific Investigation of Claims of the Paranormal.

"That group has exposed some true frauds, and in that sense they perform a useful public service," Deardorff said. "But in the investigation of extraterrestrial possibilities, I think they are heavily biased, and their methods are unscientific. They emphasize any data that questions the existence of UFOs and discard any data that supports their existence."

The national news media and wire services also refuse to investigate most UFO sightings, Deardorff said, for fear of ridicule and other reasons similar to those of the science community. Most reports never get past the local news outlets, he said.

One example he cited was of a man who had photographed, using sealed equipment to prevent tampering with the film, what clearly appeared to be a hovering, cylindrical object about 14-feet in diameter.

"This is one of the more interesting cases to come along in years," Deardorff said. "There are 23 reported sightings by this man and 55 other reports that help confirm them. But so far there has been little interest outside the local news media, although ufologists are investigating it strenuously."

The possibility that millions of other civilizations exist in the galaxy has been conceded by many scientists, Deardorff said, and their technological advancement over us could range from thousands to billions of years.

—David Staugh

ELECTION '88

This is the last in a series of political reports from OSU's Bill Lunch, assistant professor of political science and the official elections analyst for Oregon Public Broadcasting. The next issue of the Stater will present a major feature article by Lunch, which will address the broad changes in the American presidency—how presidents are elected and how the selection process and the media have changed the types of individuals we as voters now have to choose from.

The Real Differences in '88

One of the benefits of broadcasting political analysis I did not expect when I started is that a number of people have stopped me to ask questions or make comments about politics; one of the most often-repeated comments has been that 1988 will be a dull political year. Those who make this type of comment often follow it by saying that there isn't much difference between the major party presidential candidates this year.

I beg to differ. While Vice-President Bush and Gov. Dukakis are not likely to win any charisma contests this year, they differ profoundly on the issues, particularly domestic issues. A Bush administration and a Dukakis administration would choose quite different paths for the nation during the next four years.

As the leader of the Republican party, Bush favors less government intervention in the economy, while Dukakis favors more. Nowhere is this clearer than in their differences over health care. Earlier this spring, Dukakis signed a bill in Massachusetts which will eventually provide health insurance coverage to all citizens there, either through employers or through the state. Bush and the Republican party strongly oppose government health insurance. Should the government provide—that is, mandate—medical care for its citizens? Health care is a necessity and a very expensive necessity, but most Americans are skeptical of government's ability to manage such a large responsibility. The difference between Bush and Dukakis on this score is profound and

hardly dull if one is thinking of a sick child or grandparent.

There is also a highly significant difference between the candidates over social control issues. Discussing "social control" sounds like the non-drug alternative to Sominex, but should the status of women in American life continue to change or do the American people want a rest from social change? The Equal Rights Amendment, abortion, college sports programs for women, and government child care for women—Dukakis favors all of these and more generally a Dukakis administration would favor continued change in the status of women. A Bush administration would seek to stop this type of change or at least to slow it down, which may be one reason women strongly favor Dukakis in current polls, while men are much more evenly divided.

Whatever we may think of government intervention in the economy or social control, it is clear that the policy differences between the candidates are very real and substantial—so beyond appearances, the 1988 election will be anything but dull.

Cycles in American Politics

Beneath the clash of personalities, advertising, and "media events" concocted by presidential campaign managers, there are deeper political currents which are sometimes visible but are usually obscured in swirling political waters.

American politics is subject to regular cycles, as Prof. Arthur Schlesinger Jr. has pointed out—we go back and forth between wanting government to expand and provide more services for us and wanting a smaller, less costly government.

There have been, in this century, three cycles of this kind. Government expanded during the Progressive era, near the turn of the century, but it was followed by conservative retrenchment associated with presidents Harding and Coolidge during the twenties.

During the thirties and forties, political life was dominated by

(Continued on page 18)

New Study Relates Eating Fish to a Healthy Heart

One of the hot topics in diet and health today has been the subject of a research project at Oregon State University. Is eating fish good for your heart? And if so, how? And which fish?

Previous studies had identified the connection between seafood and lower heart disease risks, said researcher Rosemary Wander, an assistant professor in the department of foods and nutrition. The health benefits have been attributed to certain oils in fish, known as omega-3 fatty acids. Little information, however, has come from dietary studies conducted with normal, healthy people, according to Wander.

"If dietary recommendations based on research are going to be made, feeding trials have to be done," she said. The OSU study, supported by Oregon Sea Grant, was a feeding trial.

Twenty-four young men were the subjects in the Sea Grant project. They were served the same prescribed diet, which was designed to maintain their weight. Breakfasts and lunches stayed the same during each phase of the study. Fish was served as the dinner entree.

For 18 days, the men ate chinook salmon for dinner. Then, after time off, they ate dover sole. After another break from fish and from the project, it was black cod (also known as sablefish) for dinner. The three different species of fish were served to determine the dietary effects of different species on the same individual.

Blood samples were taken before and after each 18-day set.

The first results of the feeding trial are now in, and they do not disappoint the curious. They are not, however, simply good news or bad news. They are, as researcher Wander says, "interesting."

The project focused on two effects on the cardiovascular system of eating fish. One effect was the ability of the blood to form clots; the other was the effect on blood cholesterol levels.

The results of blood-clotting tests were generally positive, according to researcher Wander. For black cod, analysis showed that the potential of the blood to clot decreased significantly from levels before the feeding trial.

In another test of clotting ability, small cuts were made in the subjects' forearms and the time was measured until bleeding stopped. For chinook salmon-eaters, the bleeding time increased by approximately 30 percent.

Results of both the clotting and the bleeding test with the other fish were less pronounced, and not all were viewed as positive. Nevertheless, Wander interprets the black cod and salmon results as significant.

"I think the fact that we affected blood-clotting at all, with as much fat in the diet as we had, is quite remarkable."

She explained that the feeding trials were deliberately designed on the "typical American diet," in which 15-20 percent of calories come from protein, 40 percent from fat, and the rest from carbohydrates.

A lower percentage of fat calories is recommended by the American Heart Association and by many nutritionists, and Wander suggests that the benefits of eating fish would be more pronounced in a lower-fat diet.

A case in point were the effects of the fish diet on the subjects' blood cholesterol levels. High levels of cholesterol in the blood are associated

with increased risk of heart disease, and in some previous tests, consumption of fish had led to lower cholesterol levels.

But in the Sea Grant project, with its "normal" dietary fat percentage, cholesterol levels rose about 8 percent with chinook and black cod.

However, in another feeding trial, when the same subjects were fed chinook salmon as part of a low-fat diet, Wander found that cholesterol levels decreased.

"This suggests that if you eat a diet where about 20 percent of the calories are from fat, you may get additional benefits from eating fatty fish," said the researcher.

Wander is reluctant to place special emphasis on the increased cholesterol levels in the principal trials that were based on the typical American diet. She said that the percentage increase of 8 percent, though statistically significant, was "really quite small."

She suggested that one factor that could have kept cholesterol levels from improving in the principal study was the relatively low quantities of omega-3 fatty acids in the fish themselves.

Fatty acids are the building blocks of fats, and omega-3 fatty acids have been identified in other studies as the cause of cholesterol reduction. The quantity of omega-3 fatty acids have been identified in other studies as the cause of cholesterol reduction. The quantity of omega-3 fatty acids in the servings of fish in the OSU study was estimated to be about one-third the amount contained in some other studies.

Meanwhile she is "hesitant to jump too quickly to big conclusions" and to make major dietary prescriptions based on the study. "We need more time to evaluate the data and the conclusions to be drawn from them."

—Carolyn Homan

OSU to Open Office in Portland

OSU will open an office complex in Portland this fall that will become a base for student recruitment, alumni relations, fund raising and development, and continuing education.

"This will establish a presence for OSU in the Portland area," said L. Edwin Coate, vice president for finance and administration.

Located in the three-story Mikado Building at First and Taylor, the complex includes 3,160 square feet on the first floor, and an additional 3,700 square feet in the basement. The target date for opening the first floor of the complex is mid-October, Coate said. Renovation of the basement, which may house classrooms and a computer laboratory, will take place later.

The new OSU complex will include office space, conference rooms, open work stations, a small retail outlet, and a reception area. It will also become the new home for the Portland Beaver Club, OSU's athletic booster organization.

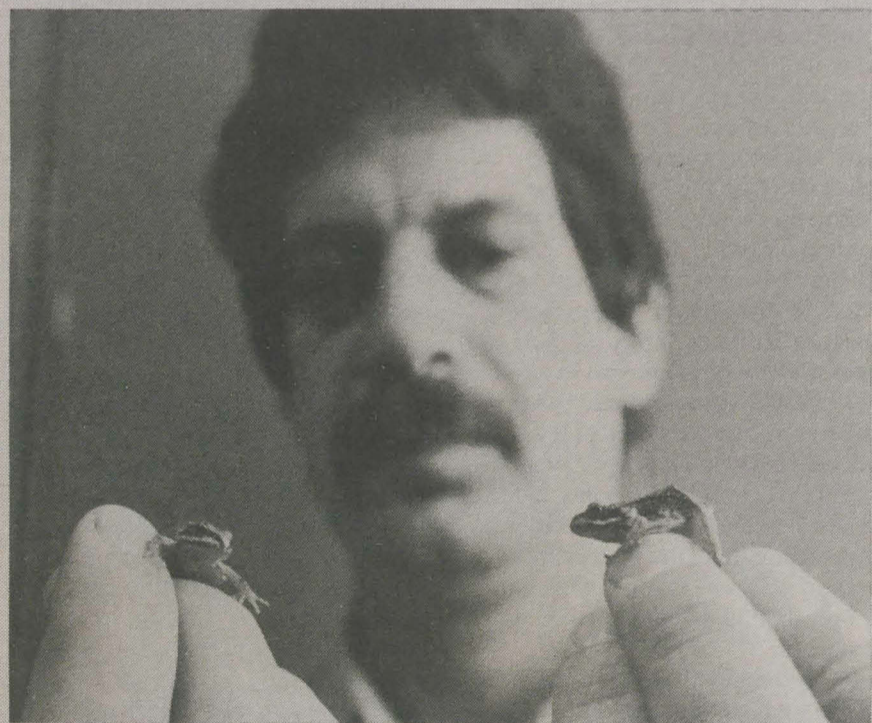
"It will be an advantage for the Beaver Club to be in a building with (representatives from) the rest of the University," said Bob Herndon, Beaver Club director. "The location, and the retail store, will be an excellent opportunity to create walk-in traffic."

The Mikado Building is on the edge of the popular Yamhill Market.

OSU will lease the two floors for 66 months, receiving free rent for the first six months, Coate said. Frequent users of the complex would include the OSU Foundation, the Alumni Association, the Department of Intercollegiate

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Why Are the Frogs Croaking?



OSU researcher Andrew Blaustein examines a tiny tree frog, a species that is in danger of disappearing from its natural habitat for reasons that are confounding scientists in western states.

Up and down the western coast of North America, the frogs are dying. In certain species and certain places, they are simply disappearing.

Scientists don't know why. But the strange phenomenon has reached disturbing proportions, some researchers say, and they believe it's time to find out what is going on.

According to OSU zoologists, a variety of frog species are declining or disappearing, in regions from Oregon to Colorado and California, from valley floors to mountain lakes. Possible causes range from introduced predators to acid rain, but no single, obvious culprit that explains all of the various population declines.

A comprehensive program is needed to study the extent of the problem and identify its cause, the researchers say.

"I think this may have more ecological significance than some other problems that get more attention," said Andrew Blaustein, an associate professor of zoology at OSU. "Frogs are extremely sensitive to ecological changes, and could be an early indicator of some environmental changes. In that sense, this is an issue that should be taken more seriously."

Part of the problem, according to Blaustein and OSU research associate Richard O'Hara, is that most of the

evidence of declining frog populations is by casual observation or anecdotes. There have been no major studies to scientifically quantify the extent, seriousness or exact causes of the decline.

But it is happening, the scientists believe. Some localized extinctions of the Cascades Frog have been identified by O'Hara near Sisters, Ore. A number of researchers have observed declining populations of several frog species in California. And in the Willamette Valley of western Oregon, the once-common Spotted Frog and Red Legged Frog have virtually disappeared, Blaustein said.

According to another OSU zoologist, professor emeritus Robert Storm, the Willamette Valley's Spotted Frog was reported as "abundant" in a graduate thesis done in the 1930s. But when he studied the area in the mid-1940s, they were already scarce. Now they are virtually gone from that region.

"This is an issue that crept up on us," Storm said. "It eventually dawned on us that we have a problem, that the declines are very widespread. From my perspective it seemed to get worse since the 1940s. But something is killing the frogs, and someone ought to figure out what it is."

According to Blaustein, O'Hara and other researchers, there are several possible problems that may relate to the frog declines.

One is acid rain. Frogs are "extremely sensitive" to changes in water chemistry, Blaustein said, and could be an indicator of changes in the environment, more so than some other plant and animal species. The only flaw in this theory is that most of the West has no acidic rain, except at low levels in some localized pockets near major urban areas.

According to some environmental experts, however, major storm events can at times cause acidic "pulses" in which the acid level of the water is higher than normal. Above-average acidity may also be caused by the concentration of spring snow melt, which could affect tadpoles at a particularly vulnerable stage of their development.

Depending on the area, another possible suspect might be pesticides or herbicides, Blaustein said, especially the intensive pesticides used in the past such as DDT.

But beyond that, scientists suspect that introduced predators may be responsible for at least part of the problem.

"One predator that has received the most attention is the bullfrog," Blaustein said. "The bullfrog is not native to most of western North America, and there's no doubt it can have an impact on other frog species when they are found in the same territory."

But bullfrogs are not present in all of the areas where declining frog populations are observed, Blaustein said, and apparently are not the single answer to the issue. Introduced fish species, such as trout, are a possible problem that also needs to be studied. And it could be that these population declines are some type of normal fluctuation, he said.

"There may be an interplay of many factors here," Blaustein said. "This is an enigma, and I'm not sure exactly what is going on. But these declines are substantial, and they could be significant. I do think it's time the problem got a little more attention."

—David Stauch

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Athletics, the Office of Student Affairs, and Continuing Education.

The site will also be available for departmental functions, meetings, seminars, news conferences, and other events.

OSU initially will hire one employee to staff the office, said Jo Anne Trow, vice president for student affairs.

"The individual will have to be quite knowledgeable about Oregon State to respond to questions from prospective students," Trow said.

—Mark Floyd

Alvin Dives Seek Clues to Life Formation

As part of research on rare bacteria that may be a common ancestor to all living things, a group of scientists will make 17 dives this summer to the subsea Juan de Fuca Ridge in the Pacific Ocean.

From Aug. 24 to Sept. 15, a 19-person research team will use the deep-diving submersible "Alvin" to explore hot thermal vents on the Endeavour Ridge segment of this underwater mountain range, about 200 miles off the coast of southern British Columbia.

The expedition is just one of several research activities planned for 1988 off the coasts of Oregon and Washington, studying various aspects of ocean ridges and troughs.

Scientists from the University of Washington, OSU and other institutions will study a strange type of "thermophilic" bacteria that can live in temperatures higher than boiling water. This type of bacteria may have played a key role in the earliest formation of life on Earth more than 3.5 billion years ago, and could be a common link between all plant, animal and human life forms that later evolved.

The deep sea thermal vents can be very hot, with water temperatures ranging up to 750 degrees Fahrenheit. They are of particular interest, scientists say, because they remain virtually identical to environmental conditions that were common on Earth billions of years ago. During those harsh periods of the Earth's early history, the oceans were hotter, the atmosphere full of noxious gases and the planet wracked by five times more thermal and volcanic activity than at present.

"These undersea vents are a natural laboratory for life," said John Baross, a marine microbiologist at the University of Washington and lead scientist on the summer expedition. "I think it's highly likely that this was a site for the first establishment of microbial communities, and that thermophilic bacteria were the first organisms. But we have to be patient. With this concept we're still just studying the tip of the iceberg."

The upcoming research cruise will leave from Newport, Ore., and conclude in Seattle. Scientists will participate from the University of Washington, OSU, the University of Victoria, the Scripps Institute, the University of Maryland and the University of New Mexico.

A basic goal of the cruise, Baross said, is "to study a range of extreme environments," to isolate and characterize the bacteria and other life forms. The studies will include a measurement of microbial growth and activity in "real time"; the placement of sampler mechanisms into "hot smoker" vents on the ridge; the visit of as many thermal vent sites as possible; and the retrieval of gear from some previous explorations.

The work will be done in the two-

person submersible Alvin, along with its parent ship, the Atlantis II. A second research cruise may be attempted in 1989-90 if the results of this expedition are successful, Baross said.

According to Robert Becker, a biochemist at OSU and participant in this research, these unusual forms of thermophilic bacteria exist in conditions that would kill virtually any other form of life.

The bacteria live on a diet of noxious gases such as methane, carbon monoxide, and hydrogen sulfide, a gas notorious for its "rotten egg smell." Becker, a protein biochemist, is trying to determine the amino acid "sequences" that would indicate how the molecules in the bacteria evolved. This research may help reveal how the bacteria can actually live and grow in such extraordinarily hot environments.

A number of bizarre life forms are found around these undersea thermal vents. Besides the bacteria that grow without oxygen, scientists also find giant tube worms and huge clams that grow 15-16 inches long.

—David Stauth

Veterans Club to Honor All Oregonians Who Died in Service

The OSU Veterans Club has begun a fund-raising campaign to place plaques into the Memorial Union bearing the names of Oregon veterans who lost their lives while serving their country.

Tom Coleman, president of the club, said the veterans will present the plaques at a fall ceremony commemorating the Memorial Union's 60th anniversary. The OSU building, dedicated Nov. 18, 1928, was built to honor those who died in World War I, said George Stevens, Memorial Union director.

"Not many people know this, but the central part of the Memorial Union was built with all of its funds coming from students, faculty, and the community as a memorial," Stevens said. A plaque listing the names of those who died in World War I is displayed in the building's concourse.

Coleman said the veterans are trying to raise funds for separate plaques for a World War II Memorial, a Korean War Memorial, a Vietnam Memorial, and a Those Who Served Memorial. The names of all Oregon veterans who died in service will be listed on the appropriate plaques, he added.

Stacey Perry, an OSU student helping the club for a journalism project, said more than 3,500 Oregon veterans have died in service since World War I. Oregonians who died in World War II numbered 2,826; Korea, 155; and Vietnam, 549 dead and 29 missing in action, she said. In World War I, 360 Oregon veterans died.

"The MU was built to commemorate the dead, but it was really for the living," said Sam Davis, secretary-treasurer for the OSU Veterans Club. "Unfortunately, not much has been done since then to recognize the contributions of our veterans. Most of the students and staff walking through the Memorial Union probably don't know why it was built."

Separate funds have been set up for the four plaques. Persons wishing to contribute to the World War II Memorial, the Korean War Memorial, the Vietnam War Memorial or the Those Who Served Memorial should send their contribution to the OSU Foundation, Snell Hall, OSU, Corvallis 97331.

—Mark Floyd



Student Enrollment at OSU: Facts Behind the Figures

This spring, the University of Oregon received applications from far more students than it could comfortably admit. And so, for the first time in its history, the U of O now has a ceiling cap on enrollment.

In Monmouth, Western Oregon State College is swamped with applications, 26 percent over last year. Eastern Oregon looks even better, with admission requests up 32 percent.

In fact, of the seven institutions that comprise the Oregon State System of Higher Education, all but two schools report very high increases in the numbers of students requesting enrollment.

These are Oregon Institute of Technology, which is enjoying a modest four percent increase over last year, and Oregon State University, which is doing slightly better with applications running about nine percent above a year ago.

Such statistics might have university administrators burning the midnight oil to try and catch the competition, but at OSU, the mood is calm; interested, certainly, in the numbers, but not particularly moved to drastic action. If there is a "scholar wars" underway among Oregon's institutions of higher learning, the feeling on campus is that OSU is holding its own.

"Enrollment is very cyclical," says OSU's Jo Anne Trow, vice president for student affairs. "From 1975-81, we were *the* school in Oregon to attend. Our enrollment went some 1,000 students above our comfort level of around 16,000 students. We were short of teachers, classrooms, lab facilities, living quarters, everything. At the same time, the University of Oregon was not doing as well, and, as I recall, had to eliminate certain programs."

According to Trow, OSU had 15,227 total students last fall. Of those, 14,636 were full-time students, a ratio that continues to be among the state's leaders. "Portland State, by comparison, enrolled 15,964 but only enrolled 10,319 full-time students," she says.

Both Trow and OSU Registrar Wallace Gibbs admit certain shifts occurring in American society over the last five years that are affecting enrollment figures at colleges and universities around the country.

"The chief one has been a renewed interest in the liberal arts degree," explains Trow. "Schools that rely heavily on liberal arts curricula are doing very well right now. This is a national trend and really beyond the control of any one school or person to try and alter."

Trow also admits the U of O has played a part in its own success story.

"They've done television advertising and I'm sure it has had an impact. They've made a real attempt to strengthen their image, to get people to take a look at them," she says.

Gibbs says the value being placed on the liberal arts education by the latest generation of college students is having a positive affect on OSU as well. "Just look at the demand on our own liberal arts programs," he shares. "Enrollment increases in the liberal arts at OSU exceed almost all other departments on campus."

And he points out that OSU's enrollment decreases over the last several years have been less than those experienced by other land grant universities. "This year we'll have an increase in new student and new freshman enrollment," Gibbs says. "The increase in freshman students may be significant, but it's still too soon to tell."

Gibbs says the number of women enrolled at OSU last fall was at an all-time high and that the numbers of students from Hawaii, Washington, and California were setting records as well.

Gibbs admits OSU is not doing as well at home as the University would like. "We're not now getting the percentage of Oregon high school graduates we once did." With aggressive recruiting of outstanding in-state students, OSU should be able to gain back some of the losses, he says.

Trow says OSU is not alone in its decline of in-state students who decide to leave home to attend college. "Other schools in Oregon have experienced similar problems," she says. "One of the major forces at work here is that with the numbers of high school students in decline, a lot more schools are recruiting nationally and many of these schools are coming to Oregon to recruit. Because they are looking out-of-state and have attractive financial-aid packages, these schools appear to have more prestige than the state institutions in Oregon. This is not always the case and we do get some students who leave Oregon and then come right back here to OSU."

"I think parents and students are looking to those institutions that will offer them a good education so that they can get a job when they graduate," Trow says. "Issues that come and go can create an image that such-and-such a school is a good place to go or is not a good place to attend. OSU has always had to fight the image of being the state's 'Aggie' school, which has caused some people not to see that we have a very broad spectrum of offerings."

—George P. Edmonston Jr.

Gene Research Gets Down to the Basics of Life

By Gail Wells

A disease that attacks wheat is keeping Oregon wheat out of China. The disease, called TCK smut, is caused by the fungus *Tilletia controversa*. Chinese officials report that the fungus does not exist in China, and they want to keep it out. Result: Oregon wheat can't be marketed in China until someone comes up with a way to make sure it is free of this disease.

OSU scientists Warren Kronstad and Dallice Mills want to do just that. Eventually they hope not only to devise a test to confirm the presence or absence of the fungus in a shipment of wheat, but to discover how the fungus' genes interact with the plant's genes to cause the infection in the first place—and then to breed a cultivar of wheat with a durable resistance to the fungus.

Kronstad, professor of plant breeding and genetics and holder of the OSU endowed chair for wheat research, and Mills, professor of botany and plant pathology, are approaching the problem with a varied and powerful kit of tools—the traditional methods of genetic cross-breeding, plus a relatively new set of techniques that go by the collective name of "biotechnology." These techniques enable them to scrutinize the very molecules of the organisms they're working with.

Where conventional genetics must infer from an organism's behavior what its genes are doing, the tools of biotechnology enable scientists to learn what's going on under the surface—to find the actual protein in the cell wall of a variety of wheat that is associated with resistance to drought, for example, or to pinpoint the genes responsible for the wheat's vulnerability to a particular fungus or bacterium.

Besides being professors in their respective departments, Kronstad and Mills are two of the 50 or so scientists who compose the staff of the OSU Center for Gene Research and Biotechnology. The Center was created in 1983 to be an interdisciplinary research organization devoted to biotechnology—the "new biology" as the Center's latest annual report hails it.

Biotechnology consists of, among other things, such revolutionary research methods as recombinant DNA technology (the "cutting and pasting" of DNA molecules in the test tube), the culturing of living tissues, and the making of monoclonal antibodies (those with the ability to recognize only one specific part of a complex virus). With biotechnology and the help of ever more powerful computers, scientists can now analyze on an ultramicroscopic scale the most basic components of life—microbial, plant, animal, and human.

Kronstad, with the help of Mills, is incorporating biotechnology into the conventional genetics research methods with which he has been improving Oregon's wheat crops for 27 years.

Like most life scientists, Kronstad is eager to take advantage of the promise of the "new biology." But he's cautious about overstating just what it can do—yet. "Some day," he says, "we would like to learn how to, say, take a gene out of barley and implant it into wheat," and thus cause a predictable improvement in the wheat's performance. But "these techniques are not that well established."



Kronstad (right) and Mills in a field of OSU's experimental wheat

Yet married to the more traditional genetics, biotechnology can help speed the development of new cultivars (varieties) of commercially important plants like wheat. And the new cultivars will have greater resistance to disease.

The research into the TCK smut fungus is a case in point. To find out what's happening at the molecular level, Mills is making "genomic libraries"—fragments of DNA that carry certain genetic information—from different genetic variants of the *Tilletia* fungus, each of which attacks a different cultivar of wheat. By transferring the genomic libraries from one strain into another over and over again, Mills will isolate those genes in each that are responsible for causing the disease in a particular cultivar.

One of Mills' immediate goals is to come up with a DNA probe—a synthesized fragment of DNA that would respond only to the unique genetic coding of *T. controversa*. If it works, such a probe would be a boon to wheat growers.

Over the long term, Kronstad and Mills want to gain a better understanding of how the *T. controversa* fungus mutates its genes to enable it to attack previously resistant strains of wheat. In the process, they expect to learn much about gene-for-gene interaction—the process by which either the wheat or the fungus, or both, undergoes particular genetic changes in order for the disease to take hold.

Scientists hope eventually to refine the gene-splicing techniques now

possible on simple organisms like fungi so that they can be used on the highly complex genetic coding of plants like wheat. With such a technique, a wheat breeder could impart disease resistance by means of a "gene transplant" from a resistant species. This would not only be faster than the present, cumbersome cross-breeding methods, but a lot neater, for the offspring would show only the desired changes—no undesirable side effects. This is "on the horizon," Kronstad says, "but we're not there yet."

Like the technology that spawned it, the Center for Gene Research and Biotechnology is young and growing. Its researchers are studying such topics of current concern as the synthesis of antibiotics, the genetic engineering of trees, biological pest control, the behavior of viruses, and the effects of drugs on cells.

Each faculty member has a primary appointment as an OSU professor in one of five colleges: science, agricultural sciences, forestry, pharmacy, or veterinary medicine. The Center offers faculty an avenue for communicating to each other, to collaborate on their research efforts, to promote the newest technologies, to use the Center's state-of-the-art laboratory, and to recruit other scientists who, like them, are extending the boundaries of traditional knowledge with their discoveries.

These discoveries are, in their scope and pace, truly revolutionary, says George Pearson, director of the Center and head of the genetics department at OSU. "In my lifetime we have gone from science fiction to science fact. We now have the ability to manipulate at

the most fundamental level—the 'quark' level, if you will—the genetic content of organisms. Fifteen years ago these technologies didn't exist—and in the span of history 15 years is a flash. The first human gene was cloned in 1977. By 1981 there were commercial products out there."

Even now, after some of this research has found its way into the marketplace, the average consumer doesn't realize he or she is benefiting from biotechnology. "Say you're a diabetic and you're buying insulin. You don't know, necessarily, that it's genetically engineered human insulin, rather than animal insulin. You may notice it's cheaper.... These things are not glitzy and high-tech on the surface, but underneath, at the gene level, they are very glitzy and very high-tech."

At OSU, this high-tech research ranges from the most fundamental to that which has immediate commercial promise. Pearson, who is studying how a virus that causes cancer in rodents replicates its DNA, says with a grin, "I don't do anything practical." On the other hand, microbiologist JoAnn Leong has developed a recombinant DNA vaccine for two virus diseases of salmon and trout. These two diseases are particularly worrisome to Oregon's young aquaculture industry because they can explode through a population of fish and virtually wipe it out.

Leong uses recombinant DNA to engineer a genetic trick—a vaccine consisting of that part of the virus' coat protein that carries the antigenic recognition sites. These cause the fish to develop antibodies that "recognize" and resist the real virus. This fragment of virus is grown in bacteria, which are then applied to the water in which the fish are reared.

Before the advent of recombinant DNA technology, it would have been prohibitively expensive both to grow either virus in sufficient quantities to make a vaccine, and to test one once it was developed.

This and all research done under the Center's auspices is funded by grants awarded directly to researchers by such organizations as the National Science Foundation, the American Cancer Society, the National Institutes of Health, the U.S. Department of Agriculture, the Oregon Wheat Commission, and perhaps 35 other sources of public and private funds. The Center's scientists among them have attracted some \$5 million in grant money this year alone. Most of the Center's annual \$800,000 operations budget comes from state funds.

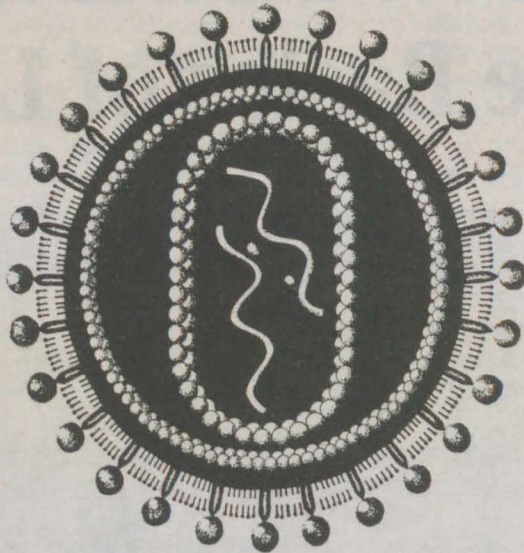
What does the public get for all that money? A lot, says Pearson. "The spinoff of all the new knowledge that comes from this research results in millions of dollars of benefit to the state of Oregon," particularly in the fields of agriculture and forestry.

Kronstad's breakthroughs in disease-resistant wheat throughout his long career have saved the Oregon wheat industry an estimated \$35 to \$50 million alone, Pearson says. And over the long term, biotechnology holds out the promise of payoffs more attractive than mere money. "We'll have less disease, fewer physical defects, better nutrition, freedom from infections," Pearson predicts. "We're going to live better."

OSU

Is This the Century of the Monster Disease?

By Darrell E. Ward



As to the question of how it could first have come about or what causes can be found adequate to explain its powerful effect on nature, I must leave that to be considered by other writers....

—Thucydides (ca. 427 B.C.)

The technician at the Centers for Disease Control was puzzled. In the first three weeks of April, she had received five orders for the drug pentamidine from one Manhattan physician alone. The rarely used compound, available only from the CDC, was restricted to patients with a rare pneumonia, pneumocystis pneumonia, that sometimes occurred in patients with a suppressed immune system. What's more, orders had also come in from other physicians in New York City and San Francisco. Their patients were young men with several things in common: they suffered from pneumocystis pneumonia, many had an equally rare cancer, and all had an inexplicably destroyed immune system. The patients were also found later to be admitted homosexuals. The physicians could offer no explanation for the disease or its cause.

On April 28, 1981, the technician sent a list of the cases to the CDC's parasitic disease division. Her memo put the nation on notice that it was in the beginnings of what quickly became a new, frightening and unprecedented epidemic: AIDS.

The previous year, a baffling new disease struck down young women. Symptoms developed extremely fast, usually within hours, often sending their victims into a severe state of shock, killing within a few days. Toxic Shock Syndrome hit the headlines.

But neither AIDS or TSS arrived with the explosiveness of the mysterious pneumonia-like disease that struck 182 people attending a convention in Philadelphia in July of 1976; 29 of them died. Overnight "Legionnaire's Disease" became a household word.

Add to these the equally frightening realization that statistically 1 out of 3 Americans is likely to die of cancer—with one out of 10 women expected to die of breast cancer alone—and one can't help but ask the question: Is the 20th century the era of the monster disease?

History Holds Precedents

A look at history reveals the answer. The sudden emergence of deadly new diseases is hardly unique to the 20th century, says Dr. Paul Farber, history of science professor at OSU. "They were socially very disruptive. Two of the big ones, the plague, beginning in the 14th century, and cholera, in the 19th century, were so widespread and caused such devastation that they undermined the society of the time. The plague undermined Western culture for a century. People lost confidence, it was something they couldn't make any sense of." The Christian culture pictured a world overseen by a benevolent God, says Farber, "then all of a sudden everyone was dropping dead—good people, bad people, everybody—it didn't fit into their world view in any intelligible way." In addition, he says, "vast numbers of people in the church, the universities, and the cities were wiped out, so it was disruptive to the power structure, as well."

In fact, disease has played an active role in history, ravaging cities, countries, and entire continents, draining life from cultures and giving life to fanaticism; it has toppled kingdoms, determined the outcome of wars, and killed more people than all the weapons of destruction put together.

The first epidemic to be described in detail struck Athens between 430 and 427 B.C. It broke out at the zenith of Athenian culture and during the early days of the Peloponnesian War against Sparta. Under siege and over-crowded, the city held some 300,000 residents when the monster disease hit. More destructive than any mythological monster, it killed tens of thousands, including Pericles, one of Athens' greatest generals. It's thought that the disease contributed to Athens' losing the Peloponnesian war—and the energy and momentum of its civilization.

Bubonic plague is perhaps history's most infamous pandemic, a disease occurring over a wide area and affecting an exceptionally high proportion of the population. It appeared suddenly in Europe in

1348, sending society into chaos and wiping out one third to one half of the population by 1350. It recurred in 1361, 1371, and 1382, growing milder each time because of improved biological resistance among the survivors. The last pandemic of plague in Europe occurred from 1663 to 1668, and after about 1820 the Black Death vanished from the Continent as mysteriously as it had arrived.

Syphilis seems to have arisen in Western Europe in the early 16th century as a new disease that was far more virulent, severe, and fatal than it is today. The first major appearance followed an attack on Naples by the French in 1495. The timing leads some to speculate that the disease was introduced from the New World by Columbus's crew.

Cholera began in the 19th century as a disease localized in a few provinces of India. But in 1817, it suddenly became more virulent, overrunning its natural borders and spreading across Europe and Asia (where it remains today). Between 1823 and 1926, Russia alone reported 5,537,358 cases, with 2,140,558 deaths. It reached England in 1831, arriving in the New World the following year.

The 20th century itself experienced a devastating pandemic of influenza that struck in 1918, killing an estimated 20 million people world wide and 548,000 in the United States. Poliomyelitis flared up in the 1940s and '50s, filling hospital wards across the country with people of all ages in iron lungs, probably the first outbreak of epidemic proportions, though the disease itself was recorded by early Egyptians.

Just as the 20th Century doesn't have a corner on plagues, it also doesn't have a monopoly on cancer. The disease was known as far back as Hippocrates (ca. 460-377 B.C.), and the recognition of benign versus malignant masses, as well as search for cures, goes back at least to the time of Galen, a Greek physician and writer who lived approximately from A.D. 129 to 210.

New Monsters

How is it that a monster disease such as AIDS can rise from invisible, submicroscopic depths to kill hundreds of thousands, perhaps millions, of people? Where do new infectious diseases come from?

"They can arise by changes in organisms, usually genetic mutations, through changes in susceptibility and most often through changes in social factors that increase the level of exposure to agents already in existence," says Dr. Mark Loveless, head of the AIDS Task Force at the Oregon Health Sciences University. "Global population movements also introduce new diseases into susceptible populations."

Global population movements have spread syphilis, smallpox, and measles, for example, as well as AIDS into susceptible populations, with devastating results.

At other times, a disease can smolder quietly, affecting only a small number of people and escaping detection because the microbe doesn't become

apparent through conventional tests. Then, when conditions are just right, the disease appears suddenly and receives a lot of attention as a new phenomenon.

"Legionnaire's disease appeared suddenly because of the Philadelphia focus," says Dr. Ramon Seidler, former OSU professor of microbiology who is now team leader of the biotechnology risk assessment program with the U.S. EPA in Corvallis. "That tragedy led to the discovery of a new disease agent, and subsequently its ecology and after that how to control it. Conditions were just right. It was the right place and the right time."

But the disease was not caused by a new organism. "It had always existed, it had always been around, we just never knew it," says Seidler.

The bacterium that causes Legionnaire's disease initially evaded detection by medical researchers who examined autopsied lung tissue with standard microscopes and conventional stain and culture methods. A break in the case came when guinea pigs and chicken embryos developed an infection after being injected with extracts of the lung tissue. When the researchers then reexamined the human lung tissue using electron microscopes and special stains, they found it to be heavily populated with a previously unknown bacterium.

The bacterium, dubbed *Legionella pneumophila*, was later linked to a mysterious 1965 epidemic that killed eight in a hospital in Washington, DC, and was also found in tissues preserved from the 1940s. Some 25 species of *Legionella* have since been discovered in a variety of environments, says Dr. David Tison, a clinical microbiologist who did post-doctoral research at OSU. He is now director of the microbiology laboratory at Multicare Medical Center in Tacoma. "It's really a diverse group of organisms common in a number of environments throughout the country." About 14 of these species have been documented as causing disease; Tison expects the others will eventually also be tied to disease. The originally discovered bacterium, however, remains by far the most virulent, and has since been found in blood samples stored at the CDC, making it possible to attribute some undiagnosed pneumonia cases 10 to 20 years old to what is now known as Legionnaire's Disease.

The story was similar for Toxic Shock Syndrome, first reported in 1978. By early 1981, 941 cases were reported in the United States, with 75 fatalities. Researchers tracking the disease felt that it was caused by a bacterium that released a toxin into the bloodstream. Nearly all the victims were female and most were in the first five days of their menstrual cycle. A staphylococcus bacterium was found in mucus from three-fourths of the patients. The carboxymethylcellulose fibers used in a particular brand of tampons proved to provide a breeding ground for the toxin-producing staph infection that caused the disease.

Ironically, the identification of toxic shock syndrome has also suggested a cause for the plague of Athens. Researchers writing in *The New England Journal of Medicine* in October of 1985 attributed the Athenian epidemic to an influenza infection complicated by a toxin-producing strain of staphylococcus that lived in the lungs or on the skin.

"Such a hypothesis would have been dismissed as fanciful speculation even as recently as a decade ago," write the authors. But the recent experience with toxic shock syndrome revealed that even "almost trivial-appearing, superficial lesions can lead to sudden, severe, sometimes fatal disease."

Understanding and Fighting a Puzzling Disease: Cancer

Bacteria and viruses are not the only causes of monster diseases. Cancer is the number two killer of people in the United States, and the battle to understand its cause has been long, expensive, and frustrating. Gradually, the disease has revealed its secrets, and with the help of recombinant DNA technology, enormous strides have been made over the past eight to 10 years.

Darrell Ward '74 MS '77 is a science writer currently with the Oregon Health Sciences University in Portland. All photographs courtesy of OHSU.



Still, the going has been painfully slow because cancer is rooted in cellular phenomena that are more difficult to identify than, for example, the single cause of a simple infectious disease, says Dr. Christopher Mathews, professor and chair of the OSU department of biochemistry and biophysics. "Most bacterial or viral infections involve the growth of an infectious organism that can be isolated and shown to be responsible for the infection." Cancer, however, lacks such an external agent that can be isolated.

Cancer arises, researchers think, as the result of damage to a gene, a mutation, in a cell of the body (as opposed to a mutation in an egg or sperm). Normally, the cell can repair damaged DNA and nip a mutation in the bud, so to speak. But it may be that eventually mutations overwhelm the capacity of the DNA repair system to correct the damage.

The effect of the mutation is compounded enormously if it occurs in an oncogene. An oncogene is one of 20 or 25 genes in the cell that, in their normal state, serve as codes for the proteins that regulate cell growth and metabolism. When an oncogene mutates, however, this control is lost and the cell becomes a cancer cell.

"The whole oncogene story is one of the most exciting developments in science ever," says Mathews. Oncogenes provided a needed clue as to what cancer is, what causes it. This knowledge will eventually be used to develop treatments. But not for a while. "We don't yet know how oncogenes function to regulate cell growth, and we have to learn this before we can get a handle on how they cause cancer."

The work on oncogenes shows that a limited number of mutations in perhaps only a handful of the right genes can trigger the changes that lead to cancer. "So the capacity of the cell to undergo DNA repair is critical to its ability to fight off cancer," says Mathews.

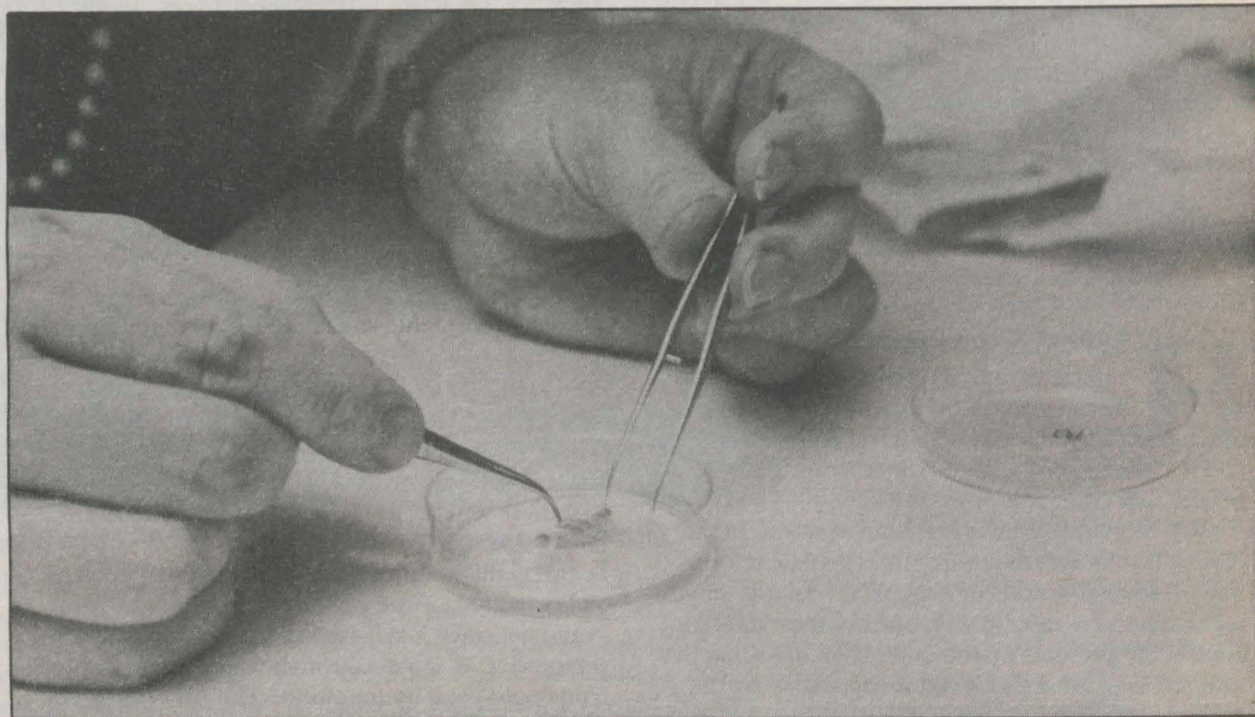
Damage to DNA often results from environmental factors, he says, "such as sunlight, which is known without question to be responsible for skin cancer, or tobacco smoke, which is known without question to be responsible for many forms of lung cancer. Now that it's known, says Mathews, you can isolate the specific components in tobacco smoke that cause cancer, you can show that in sunlight it's the UV radiation that does this, and you can show which specific chemical damage is responsible for mutagenic events leading to cancer.

"But all this has resulted from tremendous improvements in scientific technology—the ability to separate compounds that are present in very small amounts to determine their structure—and of course getting at the genes that are the targets of the disease-causing agents. It's not until recombinant DNA came along 10 or 12 years ago that it became possible to isolate individual genes and determine their structure and show how their structure changes as a result of certain chemical and physical agents. I think the progress that has been made in the last five years has been staggering."

Mathews also notes that cancer is an age-related condition. "The longer the person or animal lives, the greater the probability of contracting cancer."

Dr. George Bailey, professor of food science and technology and director of OSU's marine/freshwater biomedical sciences center, agrees. "Every species has cancer rates that increase dramatically with age, whether it lives a maximum of 2 years, like the rat, or 96 years, like the human species." This relationship holds true for all animals that have been tested. "It exists in rats, mice, fish, and man. It's linked to the normal life span of the animal, but all show the same kind of increase. So there's a fundamental issue of biology that is common to all living creatures that we're facing here."

Disease has played an active role in history, ravaging cities, countries, entire continents, draining life from cultures and giving life to fanaticism; it has toppled kingdoms, determined the outcome of wars, and killed more people than all the weapons of destruction put together.



That fundamental issue is the flip side of the evolutionary coin, says Bailey. Cancer, at least in part, involves genetic errors, mutations, that occur when cells reproduce, or replicate. "In part, those mutations may be due to chemicals that we're exposed to, and in part they may be due to normal error processes that are part of our normal evolutionary development," he says. "Species evolve because their DNA sequences change. Some of those changes might be good, but some of them are going to be bad. Cancer is just one result of that kind of change, and we have to view that as a background cancer rate that exists in man, rats, fish and all vertebrate organisms. So the real problem in human biology is determining what proportion of human cancer is due to the background rate. We have no way of knowing because we don't live in a chemical-free world. So it's always an estimate—a guesstimate, really—as to what portion of cancer is caused by this normal background rate and what portion is caused by chemicals and radiation."

Because cancer at least in part results from a natural process, it makes the struggle against the disease all the more difficult, says Bailey. "We are attempting to fight some fundamental errors in biology that are common to all animals, not just unique to man."

The Evolution of a Monster: AIDS

When a mutation occurs in the DNA of a cell in the body, the result can transform a normal cell into a source of cancer in one person; when a change occurs in the DNA of a bacterium or virus, the result can transform a harmless microbe into the source of a deadly disease that can kill millions. Such a mutation may have transformed the AIDS virus from a form

perhaps harbored in monkeys and previously harmless to humans, to one that remained harmless to monkeys but became devastating to humans.

The AIDS virus differs in several ways, from all previous viruses that humans have had to contend with. "The pathogenic process of this virus, its persistent, progressive destruction of the immune system, is unique," says the OHSU's Loveless. In addition, it is one of just three other retroviruses to cause disease in humans (the others are the Human T-cell Lymphotropic viruses—HTLV-I and HTLV-II—and a variant of the AIDS virus known as Human Immunodeficiency Virus II). It is also unusual in having a long latent period, the time from infection to manifestation of the disease.

When the AIDS virus enters the bloodstream, it attaches to its host cell, usually a T4 lymphocyte, a white blood cell that plays a central role in regulating the immune system. Inside the lymphocyte, the virus behaves as a typical retrovirus, a virus that carries its genetic information in the form of RNA, a molecule closely related to DNA. First, the virus uses the RNA as a template to make two strands of DNA. These travel to the cell's nucleus where they become incorporated into one of the lymphocyte's chromosomes. The viral DNA remains there for an average of about 7 years. The latent period may end when the lymphocyte is immunologically activated by an unrelated infection. Once turned on, the cell, under the influence of the viral DNA, produces viruses at a furious pace, destroying the lymphocyte as they burst through the cell's membrane. The result is the depletion of T4 lymphocytes, the hallmark of an AIDS infection.

With the immune system in tatters, the human victim becomes prone to a variety of viral, bacterial, and protozoan infections that the body would otherwise keep easily under control. These oppor-

tunistic infections, which result in normally rare and unusual cancers and respiratory problems, eventually overwhelm the body, killing the victim.

What makes a virus virulent? Apparently not much, says Dr. Dennis Hruby, an associate professor of microbiology at OSU. Hruby works with the vaccinia virus, a nearly harmless version of the smallpox virus. Yet the two viruses are so similar—right down to their DNA patterns—that the human immune system can't tell them apart. Thus, an inoculation with the harmless vaccinia virus protects people from the deadly smallpox virus and enabled medical science to exterminate a virus that in 18th-century England killed people at the same rate that cancer kills today.

"So what is it about one virus that enabled it to wipe out more people than all the wars in history combined, whereas the other one is totally innocuous? It's probably due to a small number of mutations," says Hruby, "and I think this is true of a lot of our common viruses. They have the potential to be very pathogenic."

When the vaccinia virus replicates, it must make a copy of its DNA molecule. "In theory it should make a perfect copy of that molecule," says Hruby. "But in practice, it makes mistakes." The mistakes occur as it incorporates the building-blocks of DNA known as nucleotides. Insertion of the wrong nucleotide in a DNA strand is equivalent to an erroneous specification in a blueprint. Such an error can result in a product that doesn't work. DNA serves as the blueprint for proteins. An error in the DNA can, in turn, lead to a malformed protein that could turn out to be harmless to the virus and to humans, it could be one that kills the virus, "or it could cause it to be pathogenic—it will now be able to cause diseases," he says.

(Continued on page 12)

Genetic Engineering: A Question of Ethics



Recombinant DNA technology—the ability to remove genes from chromosomes, manipulate them and put them back into the same cell or into a bacterium or virus—is frequently science's front line of attack on monster diseases such as AIDS and cancer. But is it at the same time a monster science, creating Frankensteinian organisms ready to unleash havoc if given the opportunity?

The experience gained with this technology over the past 15 years has generally alleviated such fears of monster microbes.

"Recombinant DNA technology has been highly regulated," says Dr. George Pearson, director of OSU's Center for Gene Research and Biotechnology. "Those regulations are decreasing because experience is showing the technology to be safe, and it is producing benefits in the way of commercial products such as human growth hormone, insulin, and alpha and gamma interferon, to name a few examples." Furthermore, says Pearson, the potential that a recombinant microbe will escape and become dangerous is insignificant. "The idea of an accident is literally astronomically small," he says. "Genes

from higher organisms are different from genes from lower organisms. When you put human genes into a bacterium, they just don't work; or if you put human genes into a bacterium, you have to tinker with them extensively to make them work, so accidents just don't happen." What's more, he notes that the most commonly used genetically engineered bacterium, *Escherichia coli*, which also lives in the human intestine, has been so drastically altered that it cannot survive away from its specially prepared culture medium.

However, says Pearson, at least two ethical questions remain: Should recombinant DNA techniques be used to genetically engineer human eggs and sperm, which means that those changes will be passed to future generations, and should genetically engineered organisms be released into the environment?

While the first problem is at the moment technically impossible, science and society are already grappling with the second. "The main concern is that we know precious little about microbial ecology—how they interact with other bacteria and how they spread," says Pearson.

The first experimental release of a genetically engineered bacterium took place last year near Tule Lake, California, not far from the Oregon border. The experiment was conducted by Dr. Steven Lindow OSU '73, associate professor with the department of plant pathology, University of California Berkeley.

Lindow developed a microbe known as the ice-minus bacterium. The wild form of this microbe normally occurs on the leaves of healthy potato plants. A protein on the surface of this bacterium, however, serves as the focal point, the nucleus, for the formation of frost on the bacterium, and then on the plant itself. If the bacteria on a plant lacked that protein, the plant could better tolerate cold weather. So Lindow and his research team used recombinant DNA techniques to remove the gene responsible for the protein, grew batches of the modified bacterium, and inoculated a group of potato plants with them.

There was considerable opposition by certain members of the public who feared that once the genetically engineered bacterium was released it would be impossible to recall if it proved detrimental. However, laboratory tests completed prior to the release indicated that the danger was small, and in the field the organisms behaved very much as predicted, says Lindow. "They survived in the places they were predicted to and they didn't survive in soil and water and places we didn't expect them to survive. They didn't disperse any more than we thought they would. They did colonize plants that were inoculated, and on those colonized plants we did protect against freezing because of the exclusion of ice-nucleating bacteria from the same plants."

More complex questions, the answers to which are less subject to laboratory testing, are those surrounding the alteration of DNA in eggs or sperm. "Tampering with germ lines will raise ethical flags," says Pearson. The alternative is to correct body, or somatic, cells rather than germ cells, the carriers of genetic traits from one generation to the next. Such changes affect only the individual, says Pearson. "No ethical problems are raised here because it's the equivalent of giving insulin to a diabetic or of performing surgery for removal of a tumor," he says.

Changing germ cells, however, means a trait will be passed on to future generations. "Manipulating the germ line would be helpful in some cases. Take sickle-cell anemia. Should it be corrected in germ cells?" Perhaps the answer in that case is yes, he says. Such manipulation could eventually eliminate the hereditary disease. But what if a parent wants genes for improved intelligence, blond hair and blue eyes, or fast-twitch fibers to help a child run faster?

Fortunately, says Pearson, "this is not in the near future because we know precious little about how these characteristics are transmitted." There are also formidable technical problems to surmount that also make it impossible, "unless we have a major breakthrough," he says. "Five years from now, however, we could have a very different conversation."

—Darrell E. Ward

(Continued from page 11)

Hruby notes that while the rate of mutation among viruses is quite low, it does vary. "Some viruses are relatively stable; others, like influenza, are unstable. They have a much higher mutation rate." Such viruses are perpetually changing.

Why do viruses differ in mutation rates? In the case of flu viruses, they carry their genetic information on several strands of RNA. The multiple strands recombine very rapidly with one another, shuffling around the proteins on the outer shell, resulting in a new strain of virus that is not recognizable by the immune system.

"So if you take a flu that's causing disease today, isolate it in the laboratory, grow up large batches and use it as a vaccine, by next year there will be a good chance that a new strain of influenza will have emerged out in nature and it will have a different antigenicity than the one you used in the vaccine." Thus, while a flu vaccine might protect against a strain that is common at any one time, the continual evolution of the virus will bring strains to which we will still be susceptible.

Herein lie scientists' gravest concerns about AIDS: its virus also mutates rapidly, presenting a constantly moving target. "There are certain portions of the genome that seem to be hot spots for mutation. Why that is, they don't understand yet," says Hruby.

This destruction of the immune system by the virus, the very system that has been evolved to deal with creatures like viruses, makes the AIDS virus more difficult to deal with than the conventional microbes responsible for the Black Death, polio, or Legionnaire's disease.

"AIDS is very different than any disease than we've ever come across," says Dr. Al Ferro, a microbiologist and vice president for research and development at Epitope, Inc., of Portland. "A major problem with the AIDS virus is that it mutates so rapidly." This makes diagnosis, preparation of a vaccine, and development of therapeutics difficult, says the former OSU professor of microbiology, "because what might work on one strain has no effect on another."

Compounding this problem is the high mortality rate associated with the virus, which was originally thought to be 100 percent. Dr. Jay Levy, head of one of the first three laboratories in the world to isolate the AIDS virus, however, doesn't regard that as true. "The pessimists say that everyone infected with the virus eventually will die," asserts Levy, a professor of

medicine at the University of California at San Francisco who travels to Corvallis annually to work with OSU's Jo-Ann Leong. "I take a more optimistic view. I think the data now show that many infected people will develop symptoms, but not all of them will develop symptoms, and not all of them will die. We have people living a very long time, and I think that there will be, as is true of all viral infections, survivors."

AIDS differs from most other diseases, such as polio, in at least one positive way, as well. "You could get polio just by going into the wrong swimming pool. It spread through water and sewerage. You could get it by ingestion. The AIDS virus is difficult to get. The only way you can get it is through sexual activity and blood."

What is the most frustrating thing about looking for a treatment or cure for AIDS? "The fact that this virus gets incorporated into cells and can exist in cells hidden and somewhat protected from the immune system makes it a very difficult agent to treat, to cure," says Levy. "I think that's the most troublesome aspect of it"—the fact that the genes of the virus get incorporated into the DNA of the cells they infect. "No other diseases in humans work this way."

The next step in dealing with the AIDS virus is, of course, to find a cure and develop a vaccine. "We just have to find the Achilles heel that will give us the lead into the treatment," says Levy. He sees no means of curing or eliminating the virus, nor does he see any possibility of a vaccine as yet.

"The best approach, I feel, given our knowledge today, is an immunologic approach. Attempt to get the immune system to fight off the virus itself. In that situation we may have some hope because there are cells that we've identified, T-suppressor lymphocytes, that appear to be capable of suppressing the virus from virus-infected cells when they are present." These lymphocytes are there in large numbers in early infections, says Levy, but they then seem to lose their activity. "Their function is falling away. We've got to figure out a way of bringing back the function of the cells."

Such options were not available to ancient and medieval societies. Pestilence swept through their susceptible, defenseless populations like fire through dry grass, wreaking havoc until they burned themselves out, only to flare anew when their hidden embers were fueled again by a fresh community or a new generation. People then regarded disease as an invisible, insidious, inescapable monster on a reign of terror; the dreadful, pitiless harpy of a vengeful



deity. Farms, villages, even sick family members, were abandoned in panic. Famine, civil war, and the rise of fanatical religious movements often compounded the suffering and terror.

For most people today, the idea of a monster disease is hyperbole, a sensationalist metaphor. Yet, at the same time, we can feel a certain uneasiness, even twinges of fear, when confronted with the sudden emergence of a Legionnaire's disease or toxic shock syndrome. Our main advantage is that we are able to recognize a disease such as AIDS for what it is: a natural phenomenon, the ordinary workings of biology.

And while AIDS presents us with a virus unparalleled in human history, and, therefore, with unparalleled challenges, we can face its threat in a knowledgeable, orderly manner, with a rational plan of attack. "I have confidence in my scientific colleagues," says Levy. "I think it's a matter of time, but that this will be conquered." The fight against AIDS has gone slower than most researchers would have liked. What was needed, says Levy, was "to act quickly, get a lot of people involved, have flexible budgets, train the students who can do it for tomorrow—we didn't have very many people trained to do this. We had gotten complacent about the fact that infectious diseases were all taken care of."

"I hope that we learn lessons from this that will allow us to face the next virus, or infectious agent, because AIDS is not going to be the last." OSU

Foundation Fundamentals

Fund-raising volunteers—what would we do without them? This column is dedicated to those who, by their commitment of time and talent, obtain private contributions to help make Oregon State University an even more outstanding institution of higher learning.

Virtually every college on campus has an advisory board or development council, as do many of the individual departments and all of the OSU Foundation affiliate organizations. From the Home Economics Centennial Campaign Committee to the Construction Education Foundation Board, these groups provide advice and fund-raising assistance, and represent a critically important link with the private sector.

As an alum or friend, the telephone call you receive asking you to participate in the OSU Fund may be made by another alum at one of the regional telefund sites throughout the west. Those volunteer calls have helped the OSU Fund achieve tremendous growth during the past decade. Volunteer leadership likewise makes it possible to reach ambitious goals for special campaigns such as the Save Oregon State Sports effort.

From the OSU Foundation trustee to the individual who helps with one aspect of a single event—without the thousands of hours that volunteers give to benefit OSU, this University would be far less than it is today. Thank you.

John M. Evey
Director of Development

Colleges Appoint Development Officers

The Colleges of Home Economics and Liberal Arts recently appointed new directors of development. The two directors will be responsible for developing and promoting comprehensive fund-raising programs in their respective colleges, including annual giving, planned giving and major gift solicitation.

James Kennison was named director of development for Home Economics. His background is in fund-raising, long-range planning, budgeting, marketing promotion and consulting services assisting nonprofit organizations. He received his doctorate from the University of Kentucky.

Kennison has held positions as director of federal and corporate relations, Polytechnic Institute of New York, and associate dean of professional studies and director of institutional planning at Glassboro State College, New Jersey. He has also served as associate executive director of North Idaho Children's Home in Lewiston and director of community relations and development for The Children's Hospital in Seattle, Wash.

Harold Hunter joined the College of Liberal Arts as director of development on August 1. He has twenty years of experience administering community-based volunteer organizations, nine as a professional fund-raiser.

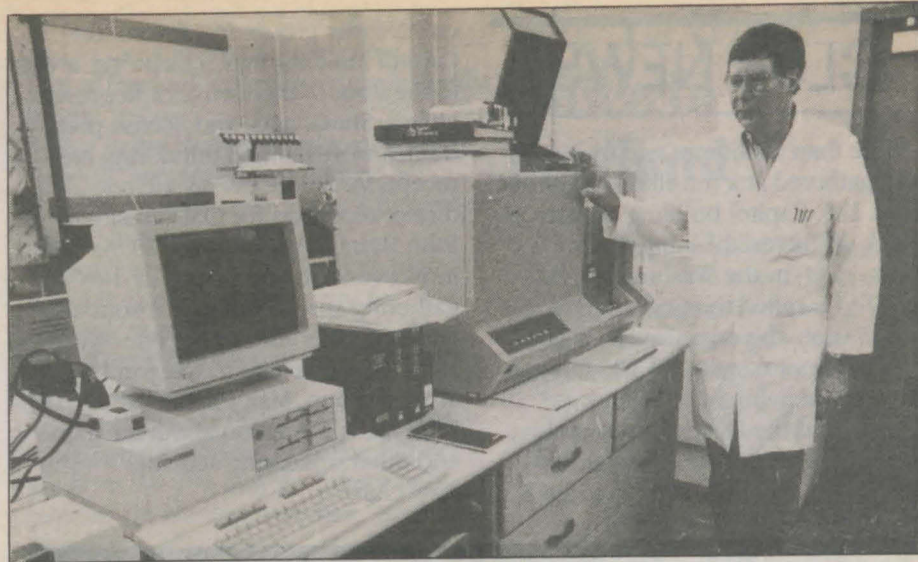
Hunter received a master's degree in English literature from the University of Tennessee and a master of divinity degree from Princeton Theological Seminary. He has served as director of development for Bremwood Lutheran Children's Home, director of planned giving for the University of North Iowa and associate director of the Wartburg Design for Tomorrow, a 10-year advancement effort for Wartburg College. All three are located in Waverley, Iowa.

Recent Grants Support University Programs

The Center for Gene Research and Biotechnology was awarded a \$60,000 grant in May from the Lorene Sails Higgins Charitable Trust of Portland.

The funds will be used to purchase comprehensive computer software programs for research in molecular biology. In combination with a SUN 3-60 computer that is being donated to OSU, the new components will greatly enhance the existing research capabilities of university scientists. It will be particularly valuable to analyze molecular biological data and to access major data banks.

The Center, established as a "Center for Excellence" in 1983, is an informal federation of about 50 scientists in the colleges of science, agricultural sciences, veterinary medicine, forestry, and pharmacy. The new computer system will aid one of its principal goals, which is the acquisition and sharing of major new research facilities. Since the establishment of a central service laboratory in 1985, the Center has acquired large-scale, expensive, modern and multiuser equipment at a great savings. In the past year, savings to research budgets totaled more than \$100,000 when costs were compared to commercial prices elsewhere. In addition, several scientists from the University of Oregon, Portland State and Oregon Health



George F. Edmonston, Jr.

Dr. Reg McParland operates the Gene Research Center's DNA Sequencer, a component that will make ample use of the new software.

Sciences Center have used the facility. The Lorene Sails Higgins Charitable Trust supports medical and biological research and the economic growth of Oregon.

In June, the University received a \$12,500 grant from the Summerville Fund of the Oregon Community Foundation to support a new outreach program to minority youth in rural Oregon communities. The grant, combined with others totaling \$17,000 from the Tektronix Foundation and the Mentor Graphics Foundation, will help OSU establish a program to assist middle-school minority students (grades 6, 7 and 8) in acquiring the necessary skills in mathematics and science to ensure future academic success.

The program will focus on four geographic areas of high minority population in which science and math enrichment opportunities are currently

limited. The four communities are Woodburn, the Warm Springs-Madras area, Chiloquin (Klamath Tribal Agency), and Ontario, Nyssa, Vale.

The Office of Academic Affairs, the Educational Opportunities Program, the School of Education, and the Colleges of Engineering and Science jointly created the program. Their goals are: 1) to help the students develop the basic academic skills, attitudes and self-confidence necessary to allow them to succeed in the academic environment; 2) to provide a range and variety of enrichment activities which reinforce the skills and attitudes needed for success in engineering, mathematics and science-based careers; and 3) to inform students and their parents of the career options open to those who are ready to undertake the challenges presented by the scientific disciplines.

Jack Byrne Explains the OSU Fund

John M. "Jack" Byrne, class of 1933, has served as chair of the OSU Fund Advisory Committee since its inception in 1972.

Jack, how did the OSU Fund do this last year (July 1, 1987 - June 30, 1988)?

Compared to last year we were down slightly in the numbers of donors and dollars. But, compared to all years it was the second best year ever. Almost 24,000 alumni and friends made an annual gift to the OSU Fund. Oregon State's percentage of giving is higher than any other public university on the west coast, above 30% for the second year in a row.

Why have we done so well?

The OSU Fund is successful because of the hundreds of alumni volunteers who work on regional telefunds in cities from San Jose to Seattle and Newport to Boise. Support from student volunteers during the two-week Super Telefund in the fall also plays a key part in our success. When our alumni are asked to help, they respond, and respond generously. I think this is because OSU offered such a positive educational experience to us as students.

What exactly is the OSU Fund?

The OSU Fund is the annual giving program of OSU. We contact alumni and friends each year to ask for ongoing support. Annual gifts supplement state funds to help with library acquisitions, student scholarships, faculty development, equipment purchases, alumni publications, student recruiting, distinguished speakers, and cultural activities, to name a few. Each of these makes Oregon State University stronger and enhances our teaching, research and service.

What are gifts to the "University Fund" used for?

Right now there is a critical need for what we call "unrestricted" funds. President Byrne uses these when needs and opportunities arise after the base budgets have been set. Specific examples include helping the Symphonic Band pay for its goodwill trip to Taiwan, helping to finance the All-University Student Recognition and Awards banquet (which honors outstanding academic and leadership achievements), and funding a special student recruiting marketing campaign. Your gift to the University Fund gives the President and the university important flexibility.

I want to make my gift to a specific area on campus. Can I do that through the OSU Fund?

Yes. A number of alumni choose to direct all or part of their annual gift to their college or department, or to Kerr Library. These funds are also vitally important, and provide the same assistance to the deans and directors that gifts to the University Fund offer to the university as a whole.

I hear that only the big gifts and the big givers count at OSU. Is there any merit to that statement?

Big gifts are only a part of the overall picture, and most donors of sizable gifts first started giving annual contributions to the OSU Fund. It's true that very generous gifts were necessary to construct facilities like the LaSells Stewart Center and the Trysting Tree Golf Club, and to establish Endowed Chairs in Wheat Research, Polymer Chemistry, and Marine Biology. The donors who make a gift of \$10 to \$500 every year, however, make the difference between a basic education and academic excellence at Oregon State. That's why we need both types of donors and gifts.

I seem to be getting lots of mail asking me to support just about everything under the sun. I even get mail from different areas at OSU asking for my support. Which one should I support?

I hope you will support as many as your budget will allow when those programs request your help. Annual gifts are an important component of not only the OSU Foundation, but for the Beaver Club, the OSU Moms and Dads Clubs, the Oregon 4-H Club Foundation, and the Friends of the Library.

Could you explain how a matching gift program works?

Your gift to OSU can have double the impact if you work for one of the 1,000 companies offering matching gift programs. In most cases your personnel office will provide a form for you to complete and return to OSU with your gift. We mail the form back to your employer after completing our section, and your employer will then send a check for the amount of your gift (in some cases double or triple the value) directly to OSU. Many companies also match gifts made by spouses or retired employees—I suggest you check with your personnel office to find out the details of your firm's matching gift policy.

SOS₂

**SWEEPSTAKES
DEADLINE
August 20, 1988**

CLUB NEWS

More than 60 alumni and friends of OSU gathered at a fun-filled reception in the U.S. Capitol building on May 23 to kick off the establishing of an alumni club for the Washington, D.C. area. To be called the OSU Capitol Alumni Club, the organization will serve the approximately 1,200 Oregon State alumni living in Maryland, Virginia, and the District of Columbia. Washington State Congressman Rod Chandler '68 and his wife Joyce led the

enthusiastic group on a tour of the Capitol building which included a visit to the floor of the House of Representatives. Shirts, hats, and license plate frames were handed out during the reception. Future events include a dinner reception for OSU President John Byrne on September 20. As with most events in D.C., news of the OSU gathering spread quickly. A softball challenge has already been received from the University of Oregon D.C. alumni group. Max Clausen at 301/963-5758 has information about the game and other upcoming activities for the new club.



Organizing the Washington D.C. Club: Left to right: Nancy Dahl '83; Dick de Stwolinski '71, Steve Davis '74; Jerry Lambo '57; Mary Pattie Tobias '63; Barbara Wallace Cullicott '63.

Alumni Position Available

The OSU Alumni Association has an opening for an Assistant Director of Alumni Relations, to fill a vacancy anticipated Sept. 1, 1988. This is a 12-month position with faculty rank.

Qualifications: B.S. or B.A. degree with excellent oral and written communications skills; an understanding of alumni organization and management functions; familiar with computer applications; experience in public relations; accounting and staff supervision.

Responsibilities: Assist the Director in the management of the Alumni Office, including supervision of staff, accounting and banking operations. Administer maintenance of alumni records system coordinating with other University offices, schools, colleges, and living groups in providing alumni records for their use. Organize alumni class reunions and homecoming. Perform other duties assigned by the Director.

Salary: \$25,000 - \$30,000.

Closing date: Friday, Sept. 28, 1988.

Application procedure: Resumé and three letters of recommendation should be mailed to: Donald S. Wirth, Alumni Director, OSU, Memorial Union 103, Corvallis, OR 97331-5003.

Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973. OSU is sensitive to the needs of dual-career couples.

Alumni Membership Update

As the *Stater* was going to press, OSUAA President Denny Todd was contacted for an update on OSU's new alumni membership program, announced in the June issue of this publication and scheduled to be implemented later this year.

Todd said his group has been very busy this summer working out the details of the proposed program. He said that although it would be premature at this point to talk about the specifics of the plan, he shared that the Association had just completed a survey of OSU alumni to determine "just what our alums would like to see in a membership program, and what they would be willing to pay for membership on such a program.

"Survey results clearly indicate many of our alums would like to see the *Stater* as part of what they receive for membership dues," he said. "Many of the respondents also told us they wanted the Alumni Association to begin offering scholarships and other financial assistance to deserving students. Other information contained in the survey won't be released until after the full board has had a chance to review the data at its next regularly scheduled meeting in September."

Todd said the survey was conducted by a professional marketing firm in Portland and that a statistically random sampling of alumni from around the country was taken.

He said he did not expect any specifics about OSU's new alumni membership program to be announced until sometime later this fall.

Isbell Joins Alumni Staff



Isbell

Lila Anne Isbell, a 1987 business administration graduate of the University of Montana, has joined the staff of the OSU Alumni Office as assistant director of Alumni Relations, OSU Alumni Director Don Wirth has announced.

Isbell will be responsible for administering OSUAA's alumni club program, and will help coordinate all activities related to other OSUAA-sponsored events, including alumni picnics, reunions, and Family Weekend. In addition, she will work with the Alumni Fellows Program and the Student Alumni Association.

Prior to coming to Oregon State, OSU's new assistant alumni director was a traveling consultant for Kappa Kappa Gamma social sorority.

Isbell replaces Mary Jo Rutten, who left the position in early August to attend graduate school at Indiana University.



Former OSU basketball pivot men Vic Bartolome '70, "Red" Rocha '47, and Gary Freeman '70, pose for a picture at this year's Corvallis summer alumni picnic, held at Avery Park July 19. A Dixie Land jazz ensemble and plenty of good food and conversation greeted the more than 400 participants at this year's Corvallis gathering. According to Kevin McCann, associate director of alumni relations, over 2,400 alumni attended picnics this summer, in locations around Oregon, Washington, California, and Idaho. OSU President John Byrne had a busy picnic schedule, traveling around the Northwest to report to alumni on news from campus, and to answer questions on a variety of academic and athletic topics. Don Wirth, OSU alumni director, says the alumni summer picnic program continues to be one of OSU's best traditions.

Have You Ordered Yours Yet?

This is your last opportunity to order the Oregon State University Alumni Association Directory

Name _____

Address _____

City/State/Zip Code _____

• OSU • OSU • OSU • OSU • OSU •

Choose your method of payment:

- My check for \$29.92 enclosed (payable to the "OSU Alumni Association")
 Please bill my MasterCard
 Please bill my VISA

Account Number: _____

Expiration Date: _____

Signature for Credit Card Use _____

Mail this form to: OSU Alumni Association, Memorial Union 103, Corvallis, OR 97331. For questions, call (503) 754-2351.

NEWS FROM CLASSMATES & FRIENDS

'10s

Alva Jones, '11, who is retired from wheat ranching, recently had his 97th birthday. He lives in Heppner with his daughter and son-in-law and takes a walk each morning to the local Elks club to play cards.

Frances Simpson Cook, '12, of Eugene was 101 years of age on July 31 and resides at the South Hills Health Care Center. She is a very active lady for her age and tells us that she majored in art at OAC, played basketball and dated the art teacher while a student.

'20s

Mildred Carlyle Alexander, '20, lives in Forest Grove and celebrated her 91st birthday in July. She is "still going strong" according to her letter.

Clyde H. Burmaster, '28, who retired from teaching in 1967 after 42 years of service, plans to attend the 1928 class reunion in Corvallis. He lives in Seattle.

Helen Churchill Trueblood, '28, lives at the Capital Manor in Salem since her retirement as a hospital dietician in Portland, Seattle and Salem. She has traveled extensively in Europe with her husband, and they lived two years in Greece.

Beatrice Scheuerman Gillson, '28, of Portland was instrumental in establishing the first school for preschool children with hearing and speech problems. She was named "Citizen of the Week" during National Hearing Week in 1944 and is proud of her part in educating these children.

'30s

Helen A. Hammond, '31, of Seattle is booked on the Columbus Line for a freighter trip around the world. She leaves this fall from Hamburg for a duration of 110 to 130 days.

Leone Thordarson Briggs, '31, is looking forward to Christmas when she will be hostess to her nine children and grandchildren for the holiday at her home in Honolulu, Hawaii.

Recently honored for his spectacular garden by the Portland Beautification Association was **Fremont McComb**, '38. He was a U.S. forester for 40 years and retired in 1972 from the division of timber management.

Bernard McClendon, '38, lives in Crescent City, Calif. and is retired from employment on the Golden Gate Bridge. He is now enjoying gardening and vacationing.

Henry A. White, Jr., '39, recently retired from the Lawrence Livermore National Laboratory after 34 years of service. He and his wife continue to live in Walnut Creek, Calif.

'40s

Leon Sterling, '40, is a lay minister in Kona, Hawaii, and delivers regular sermons from Milolii to Puanahulu, along with blessing boats, performing marriages, and christening babies. He is also the current president of the West Hawaii Housing Foundation and is active in the community.

Since retiring as a colonel in 1981, **William B. Wootton**, '41, is active in the local yacht club and with amateur radio in Port Ludlow, Wash.

John F. Cross, '42, is "alive and well" in Hilo, Hawaii, and wants any Fernhoppers passing through to call him at 935-8150.

Richard Hallock, '44, who retired from the Department of Fish and Game in California three years ago, was recently honored as

"Sportsman of the Year" by the Shasta-Cascade Wonderland Association in Red Bluff, Calif.

Carolyn Johnson Davidson, '45, retired from the Veterans Administration in Washington, D.C. in July and will continue to live in Lake Ridge, Va.

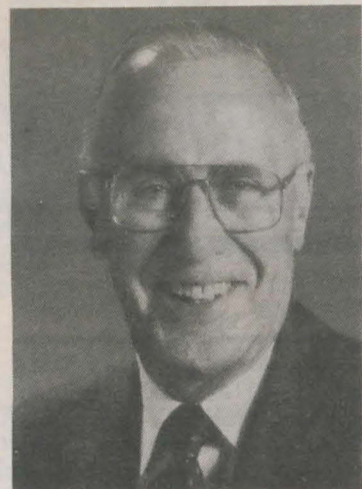
Retiring last October after 41 years of working at OSU was **Doris Granneman Anderson**, '46.

Fall Reunion Class of '48 September 30

June Ridout Backus, '48, lives in Menlo Park, Calif., and is employed by a residential real estate company.

Dr. **Beth Smith Lee**, '49, is working as coordinator of research for the Los Rios Community College District in Sacramento, Calif.

'50s



Andrew V. Smith, '50, has been named president of operations for U S WEST Communications, a subsidiary of U S WEST, Inc., in Washington state. Smith also retains his position as president of Pacific Northwest Bell.

Willard R. Berry, '50, is serving as president of the Tillamook County Historical Society and doing forestry consulting work in Tillamook. He and his wife traveled to Great Britain for seven weeks last year.

Warren E. Mueller, '50, who is the retired Oregon Department of Transportation project manager, spent last winter in Arizona and California. He lives in McMinnville.

Gould L. Cline, '50, retired as a colonel in the U.S. Air Force after 37 years of service and is presently employed as a senior staff engineer for TRW in Ogden, Utah.

After 17 years of teaching, **Agnes Moll Chirgwin**, '51, retired in June from a position in the social studies department at Phoenix High School. She and her husband, **Dave Chirgwin**, '49, have lived in Medford since 1956.

Ben Larson, '51, is an architect and associate partner in the San Francisco office of Owings, Skidmore & Merrill. **Carolyn Zimmerman Larson**, '51, was recently elected to the city council of Corte Madera where they make their residence.

John E. Ricketts, '51, lives in Honolulu where he is manager of the Ingram Paper Company. This year he is completing 37 years of employment in the paper distribution business.

Marilyn Hill Chandler, '51, who recently retired from 26 years of teaching in Salem, sent in a picture of Gamma Phi Betas who meet regularly for lunch. We couldn't use the photograph, but the group includes **Dorothy Murray Cowan**, '51, of Portland; **Barbara Hendrickson Quisenberry**, '51, of Salem; **Marilyn Hill Chandler**, '51, **Gloria Houck Ferguson**, '51, of Hillsboro; **Joan McKimmens Price**, '51, of Corvallis; **Lois Frink Harlow**, '51, of Lake Oswego; **Betty Bailer Wachter**, '50, of Tigard; **Patty Wilson Dasch**, '51, of Albany, and **Jo Blaxall Bartu**, '51, of Vancouver, Wash.

Now retired from teaching after 34 years of service and living in Salem is **Leona Tibbets Baker**, '51.

Dr. Arthur N. L. Chiu, '52, professor of civil engineering at the University of Hawaii at Manoa, has been re-elected national president of Chi Epsilon, national civil engineering honor society and will serve until April 1990.

Douglas Decker, '52, who has owned and managed Fire Control Northwest in Bellevue for the past 25 years, has been named president of Auger Pak, Inc., a Bellevue-based (Wash.) developer of auger-style trash compactor systems.

Recently traveling to Reno, Nev., to visit **Janet Schadowitz Lawhun**, '52, were **Mary Jean Anderson Webb**, '52, of Laguna Beach, Calif.; **Barbara Cummins Bullier**, '52, of Beaverton; **Reta Adams Earhart**, '52, of Lake Oswego; and **Jean Pickens Eggers**, '52, of Corvallis. They also enjoyed a stay at Lake of the Woods and Lake Tahoe during their trip.

Recently re-appointed to the Energy Facility Siting Council by Gov. Neil Goldschmidt was **Marlene Little Mitchell**, '53, who is also currently a member of the Board of Governors for the Portland City Club.

Sonia Nohlgren Hunter, '55, has purchased a business established 28 years ago, Bellevue Florist, in Bellevue, Wash.

G. Brent Cameron, '55, of Colorado Springs, Colo., is the owner of ten McDonald's stores in the Colorado Springs-Widefield area and has been with the parent corporation for more than 24 years.

Gloria Oberg Lee, '56, is a full-time homemaker with seven grandchildren under age four, and her husband, **Wayne B. Lee**, '58, is manager of an estimating unit of The Boeing Company. They live in Renton, Wash.

Mr. and Mrs. **Larry V. McBee**, '56 (**Betty Chase**, '50) have sold their dairy farm and moved to a Christmas tree farm near Silver Falls State Park. During the summer they travel with their computer portrait system under the business name of "Sure Beats Farmin'."

William F. Ettlich, '57, who has more than 25 years of technical and managerial experience in water and wastewater treatment in the consulting engineering field and the process equipment field, has been promoted to senior vice president of HDR Engineering, Inc., in Omaha, Neb.

George Ascherl, '57, manager of the purchasing division for the State of Oregon in Salem, retired June 30. He and his wife live in Silverton.

William R. Johnston, '57, retired from a 22-year career with Westlands Water District in Fresno, Calif., was recently inducted into the Grants Pass High School Hall of Fame. Grants Pass is celebrating its centennial birthday and has selected 100 alumni from the past 100 years for its Hall of Fame.

Fall Reunion Class of '58 October 28

Recently selected for the current edition of Who's Who In California was **Leo E. Ward**, '58, pharmacist and president of Leo's Lakeside Pharmacy in El Cajon, Calif.

Dr. **Leroy F. Rogers**, '58, professor of agricultural economics at WSU in Pullman, has been named acting dean of the College of Agriculture and Home Economics.

Dr. **Mervin E. Brokke**, '59, of Stamford, Conn., graduated from Pace University School of Law in 1985.

Charles E. Clemans, '59, who has been with Boeing in Seattle for 25 years, is currently the data processing manager on the advances launch system project.

Since retiring from his government job as lab technician at the Naval Weapons Station in Seal

Beach, Calif., **Arthur C. Welch**, '59, is now living in Portland.

Former Peace Corps volunteer **Paul Vitale**, '59, has joined the Peace Corps Office of Training and Program Support in a newly created position as an urban and community development specialist in Washington, D.C.

'60

Robert W. Pingleton of Newberry, S.C., produces video tapes on hunting and fishing. He says that Wild Russian Boar Hunt and Fishing Video should be on the market soon.

'63

Dr. Elver H. Voth was the recent recipient of a \$11,060 grant from the Medical Research Foundation of Oregon for work on placental ultrastructure in nutria to be performed at George Fox College in Newberg.

Iver W. Deudall of the Florida Institute of Technology in Melbourne, Fla., is co-author of a six-volume series of books dealing with all aspects of waste disposal in the oceans. Another co-author of the series is **Dana R. Kester**, '66.

Fall Reunion Class of '63 October 28

'64

Murray D. Crowe is beginning his 20th year with State Farm Insurance Co. in Applegate, and **Judy Harper Crowe** teaches first grade at Applegate School. Two of their three children are attending OSU.

Marion R. Morehouse is the new principal of Buckingham Elementary School in the Bend-LaPine School District. He has been elected president of the Central Region Principals Association for the 1988-89 school year. He and his wife live in Bend.

'65

Father **Rock Sassano**, who was ordained a Benedictine monk in 1963 and became a priest of the Archdiocese in 1987, recently celebrated the 25th anniversary of his ordination. He is parochial vicar at St. John the Baptist Parish in Milwaukie.

Jerry Harms has been appointed director of sales and marketing for Kemin Industries, Inc., in Des Moines, Iowa.



Dr. **William H. Campbell**, professor and chairman of the Department of Pharmacy Practice in the School of Pharmacy at the University of Washington in Seattle, has been installed as president of the American Association of Colleges of Pharmacy.

Now living in Irvine, Calif., **Mary Ellen Meriam Seitz** has been promoted to manager for employee communications for Allergan, Inc., world-wide pharmaceutical company specializing in eye care.

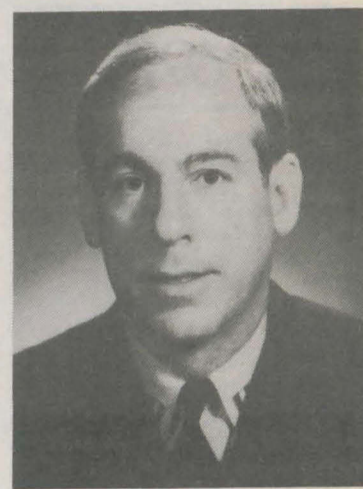
Donna Fowler Knopf is a busy housewife and mother in Mercer Island, Wash., and enjoys playing tennis in her spare time.

'66

Retiring as an educator after 30 years of service, **Richard J. Hermesen** is now working part time as an insurance salesman.

Susan Stone is a legal secretary in San Diego, Calif., who enjoys playing in a handbell choir and singing in the church choir in her leisure time.

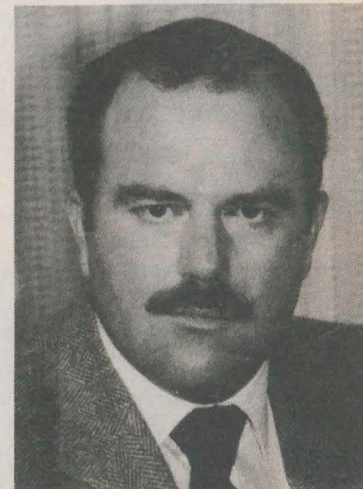
'67



Lt. Rand H. Wintermute, USCGR, has been cited for heroism by Gov. Booth Gardner of the state of Washington. A Lake Oswego resident, he was credited with saving the lives of three people that were critically injured at Cape Disappointment last April.

Bob Adelman, who was district conservationist in Morrow County for 13 years, has been named district conservationist for the Umatilla County SCS office in Pendleton.

Beckianne Gaines Kilkenny teaches at Cornelius Elementary School and spent last summer as director of Tryon Creek State Park National Day Camp. She spent two summers teaching English in Hungary.



Donald E. Greiner, area conservationist at Albany where he is responsible for SCS activities in 13 western Oregon counties, received the U.S. Department of Agriculture's highest honor during the recent USDA Awards Ceremony in Washington, D.C.

Many years of volunteer work at Sumpter Community School in Salem earned **Betty Charnholm** the honor as top volunteer in Oregon for outstanding community achievement by the Oregon Community Education Association.

Larry L. Sciuchetti works in the operations modeling district of Bellcore (Bell Communications Research) in Middletown Township, N.J. and was recently presented the Distinguished Member of Professional Staff award.

Dr. Greg Jacob is in the English Department at Pacific University in Forest Grove and presented a paper in June at the ASPAC conference in Northridge, Calif.

Fall Reunion Class of '68 September 30

'68

Capt. **P. Craig Landon** has been assigned as a strategic planner for the Joint Chiefs of Staff at the Pentagon in Washington, D.C. He lives in Arlington, Va.

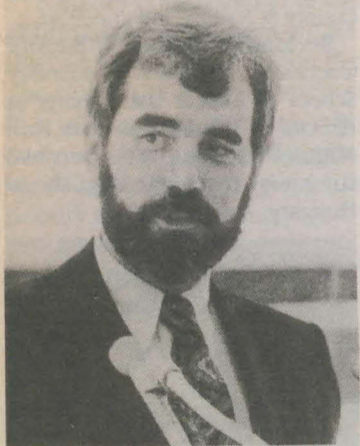
Recently representing the California-Nevada Conference of the United Methodist Church at the general assembly of the Evangelical Methodist Church in Bolivia was **Sally Bailey Upatisinga**, who is a laywoman in the Eureka First United Methodist Church and a certified lay preacher.

Robert B. Myers lives in Malvern, Pa., where he is employed at Wyeth-Ayerst Laboratories as a computer systems analyst.

'69



Martha Much Chambers, director of volunteer services at Good Samaritan Hospital in Corvallis, was recently elected president of the Oregon Association of Directors of Volunteer Services in Hospitals.



Dr. Edward G. DeForrest has been named chairman of the governmental affairs committee of the National Association of Private Schools for Exceptional Children. He is executive director of the Spaulding Youth Center, a private residential school for emotionally disturbed children in Tilton, N. H.

A pilot for Delta Airlines, **Jerald C. Burgess** is also chief of standards/evaluation for the USAFR at Norton AFB, Calif. He and his family live in Redlands, Calif.

'70

Linda M. Hoffman was recently named a project manager for Portal West Corporation of Seattle, a company that develops shopping centers throughout the Puget Sound area.

'71

Prison Fellowship Ministries, the international Christian outreach to prisoners, ex-prisoners and their families, has named **Collis Huntington** as its area director in Arizona and southern Nevada. He and his family live in Phoenix.

Ted Moon, vice principal at South Albany High School the past six years, has been named principal at Pilot Rock High School in northeastern Oregon.

Susan Connine Mitchell lives in Glide and teaches the sixth grade for the Glide School District.

Ann Bridenstine Buckingham works as secretary for the captain and cruise director of the Golden Odyssey and is aboard ship 11 out of 12 months of the year. She and her husband spend vacations at their home in Medford.

'72

Maj. **David A. Jacobs**, who has been serving as an aircraft maintenance officer at Dyess AFB, Tex., has been assigned to the Air Staff at the Pentagon.

Recently opening a State Farm Insurance agency in Clackamas was **Connie Stalick Morrill**. She lives in Oregon City.

Gary A. Meier is an associate of the Robert Buth Agency of AAL in Portland and recently attended a national sales conference in Orlando, Fla.

Kenneth D. Dobbin and his wife, **Nancy Petrowicz Dobbin**, '74, are living in West Richland, Wash., and have a daughter, Kathleen, age 1 year.

'73

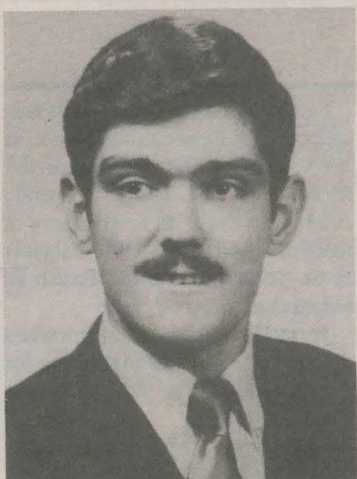
David G. Coles works as an environmental chemist for Beak Consultants, Inc. in Portland.

Both **Joe E. Sandoz** and his wife, **Patty Rice**, teach at LaGrande High School. They live on a farm near LaGrande and have two children.

Gerald J. Schmeckpeper is a farmer and teacher of industrial technology at Bluffs Middle School in Scottsbluff, Neb., as well as a part-time police investigator.

Dr. William P. Cosart lives in Tucson where he is currently associate dean in the Engineering and Mines College at the University of Arizona. Next year he will be head of systems and industrial engineering until the new department head arrives.

Recently appointed senior vice president in charge of engineering for MMP International, Inc. was **Phillip J. Antis, Sr.** Headquarters for the firm is Washington, D.C.



James D. Garrard has been employed with the State of Oregon Highway Department as an engineer and professional land surveyor in Salem since 1984. He and his family live in Silverton.

'75

Anne-Marie Fagnan of Corvallis was recently reassigned to serve as acting coordinator of OSU's new Family Employment Program. This new program began in response to a resolution passed by the Faculty Senate to be responsive to the needs of dual-career couples in the work force.

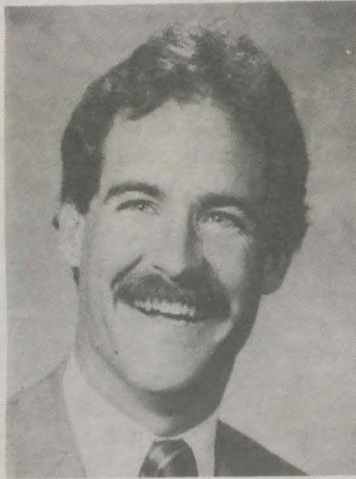
Dr. Warren D. Devine, Jr. and his wife, **Carol Duckwald**, '74, have started a consulting engineering/economics business in Oak Ridge, Tenn.

Jason S. Carlile of Albany was appointed in January by Gov. Neil Goldschmidt to serve as district

attorney of Linn County and then was elected district attorney in the May election.

Working as director of the Early Childhood Education Program at Mount Hood Community College in Portland is **Bob Dematteis**.

Mike Woods is now an engineer for Delta Airlines flying out of Portland to the Orient. **Gail Knox Woods**, '78, completed her master's degree in curriculum and instruction from National University in Sacramento. They are living in Boring with their two sons.



Office sales and leasing specialist **Patrick J. Collins** has been named the top revenue producing salesman in the Bakersfield office of Coldwell Banker Commercial Real Estate Services for 1987.

'76

Dr. Thomas R. Boubel is an anesthesiologist living in Spokane with his wife and two daughters and enjoys flying, golf, hunting and fishing in his leisure time.

Shelley Stamm lives in Portland where she works as a teacher at David Douglas High School.

Now working for Lockheed Missiles and Space Company as a budget analyst in St. Marys, Ga., is **Laurence Richard Sass**.

Robin Sabala has relocated from Memphis to Newport Beach, Calif., and has been promoted to senior account executive for the Kraft Packaging Division of International Paper Co.

'77

Laurence Gordon Haroun of Portland started his own remodeling business last year. He is married to the former **Debbie Thorsen**, '73.

John B. Maul received a master's degree in 1980 from Syracuse University and is presently assistant professor of art at Ball State University in Muncie, Ind.

Now employed as a computer education specialist at John Thomas Dye School in Bel Air, Calif., is **Nikki C. Fernandez**. She lives in Santa Monica.

William McCoy III was elected president of the Graduate Professional Students Association for the year July, 1988 to June, 1989.

Michael J. Skinner is vice president in charge of marketing for Shasta Beverages, Inc., a subsidiary of National Beverage Corporation, in Hayward, Calif.

Capt. **Harold J. Bochsler** is currently stationed in Tacoma where he is advisor to the Washington National Guard in Seattle.

Recently promoted to the rank of professor in the department of physical education, athletics and recreation at Carleton College in Northfield, Minn. was **Mylla Urban**. She was appointed chair of the department and director of athletics in February.

John K. Hayes, Jr. recently moved to LaJolla, Calif., where he is an investment real estate broker for Marcus & Millichap.

Lt. Cdr. **Richard Goward** writes that seven out of the nine officers that took part in a Naval exercise as members of the Naval Reserve operating out of Subic Bay in the

Republic of the Philippines were Oregon Staters. Alumni involved in the exercise were Lt. **Rudolph Hooven** '79; Cdr. **Steven Stockton** '71; Capt. **Larry Germann** '64; Lt. Cdr. **John Kirkland** '73; Lt. Cdr. **Craig Ostrem** '77; Lt. Cdr. **Richard Goward** '77; and Lt. Cdr. **James Foglesong** '70.

'78

Elizabeth Mary Anderson of Athens, Ala., received two Associated Press awards for excellence in journalism—first place for news reporting and second honorable mention for feature writing—in 1987 for newspapers above 25,000 circulation in the state of Alabama.

Elaine Kruger Young coordinates the elderly nutrition program in Redmond, and her husband, **J. Pat Young**, '77, works as business manager for the Crook County School District.

Jeffrey Dose recently moved to Roseburg where he is now the forest fisheries biologist for the Umpqua National Forest.

Fall Reunion
Class of '78
September 30

'79

Julie Kierstead, conservation coordinator for the Berry Botanical Garden who played a pivotal role in the passage of Oregon's first Endangered Species Act for rare plants and animals, has received a 1988 Chevron Conservation Award. She lives in Portland.

Currently teaching second grade at Redland School in Portland is **Annette Vinje Wenzinger**, who has been there for eight years. She and her husband have three children.

Kathryn M. Swartz has joined the Holy Spirit Missionary Sisters in the Chicago area to begin training for the sisterhood and would love to hear from all of her friends.

Lucinda M. Wagonblast is working as art director of The Professional Towel Company in Tumwater, Wash., designing and supervising design work for nationwide corporations insignias to be imprinted.

Traveling Oregon under the auspices of the statewide Artist-in-Education program is Eugene folk singer **Jim Kuoni**. He also does concerts and gives guitar lessons.

Nancy Blair Courselle is teaching marketing at Glencoe High School part time. She and her husband have two sons and live in Tigard.

'80

Lt. **Bruce A. Vandebos** completed a master's degree at the Naval Postgraduate School in Monterey, Calif., and has been transferred to Naval Station Roosevelt Roads in Puerto Rico as a pilot and aviation safety officer.

After studying for the past two years at the University of Oregon for her master's degree in international studies, **Kathleen Poole** has received a Rotary International scholarship to study in the South Pacific for one year.

Shannon Dale O'Dell has been hired as a senior associate for the museum collection management firm of Rachael Maines & Associates in Ithaca, N.Y.

Dr. Rosemary Marilyn Booze is currently an assistant professor at Wake Forest University in Winston-Salem, N. C.

David A. Bowman is working in a family-owned wood truss manufacturing company located in Cloverdale, Calif. His wife, **Bonnie Pinkerton Bowman**, is taking a

year off from teaching to be with their infant daughter, Brooke.

Now living in Hilo, Hawaii are Mr. and Mrs. **John M. Bosch, Jr.** (**Elizabeth Brownhill**, '78) while Bosch is project engineer for the Moseman Construction Co. on the Wailoa Bridge reconstruction in downtown Hilo.

'81

Janel Erickson Klingman is a commercial casualty underwriter for Safeco Insurance Co. in Seattle, Wash.

Working as the lab manager for Petroleum Testing Service in Anchorage, Alaska, is **Donald James Graika**.

'82

Samuel C. Skillern III works as a senior account executive with Arst Public Relations in Bellevue, Wash. He and his wife live in Seattle.

Recently moving back to Houston, Tex., was **Roger Edward Tipley** who works for Compaq Computer Corporation. He and his wife recently had a new baby daughter.

Don Crownover is employed as a traffic data analyst for the Oregon State Highway Division. He and his wife live in Keizer and had a new daughter, Larissa Ann, last Nov. 17.

Stephen Rogerson and his wife live in Eugene where he works for Medline Industries as territory manager.

Teaching the elementary grades in Silver Lake since her graduation seven years ago has been **Gail Gilliland**, who loves the wide open spaces there.

Robert S. Williams and **Stephanie Joyce Williams**, '85, of Sacramento, Calif., have a new baby daughter, Emily Jane, born April 23.

Richard Michael Mead was married last December and is working for the U. S. Department of Agriculture in Fresno, Calif.

Eugene M. Leung has been transferred from Cape Canaveral to General Electric's Defense Systems Division at Sunnyvale, Calif.

First Lt. **Michael F. Malsom** is attending the engineer officer advanced course at Ft. Belvoir, Va., and after completion will be moving to Germany where he hopes to become a company commander in an engineering unit.

'83

Sally Click, assistant dean of students at Whitman College in Walla Walla, Wash., is the recipient of the 1988 "new professional" award given by the National Association of Student Personnel Administrators of Region V.

Recently accepting a job with Digital Equipment Corporation in Mountain View, Calif., was **Ronald Heglie**, who now makes his home in Fremont, Calif.

Neal Deffenbach Smith is working as a senior technical marketing engineer for Intel Corporation in Beaverton. He and his wife, **Tarol Matocha**, had their second daughter, Jean Greenburg, on Mar. 28.

Dr. Laura J. Benson has been working as a small animal veterinarian at a clinic in Beaverton for two years.

Dr. Robert L. Gillen is currently an assistant professor of range management at Oklahoma State University in Stillwater, Okla.

Since receiving a master's degree in business from Northwestern University, **Pamela Marcott** has returned to the Portland area and works as product manager at Hewlett-Packard's Vancouver division.

Colin Stuart Inasley is employed by Foothill Parks and Recreation in Lakewood, Colo. He was married in 1987 to the former Karen Goldman.

Ron A. Masters has finished his Ph.D. in analytical chemistry at Purdue University and now works for Procter & Gamble in Cincinnati.

Now living in Spokane, Wash., **Suzanne Hill Peters** is working in retail sales for Nordstrom's.

Peggy Ann Parent Houston recently joined CIGNA Financial Services Company in Edison, N.J. She and her husband have a one-year old son.

Dennis M. Cordy is living in Renton, Wash., where he is employed by Boeing Commercial Aircraft Co.

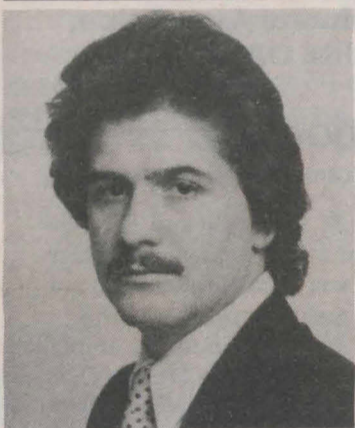
Lynn Yamamoto Labasan has left her job at Marylhurst College and is now working for Willamette Industries in downtown Portland.

Still living in Milwaukie is **John C. Smith, Jr.**, who works for West Coast Computer Systems.

Meade N. Boutwell is a sales associate with Damon Raik & Co. in San Francisco, a commercial real estate firm that works with tenants in re-locating their office facilities.

James A. Wood is a broadcast specialist in the the University of Idaho News Bureau and recently wrote, produced and directed a documentary, "Taylor Ranch: America's Wildest Classroom", that has garnered several major awards.

'84



Dr. **Matthew M. Eschelbach** graduated from the University of Osteopathic Medicine and Health Sciences in Des Moines, Iowa last May 27 and is now completing his medical internship at Metropolitan Hospital, Central Division, in Philadelphia, Pa.

Sandra Stratton Johnson and her husband both left their jobs at St. Mary's Home for Boys and moved to Las Vegas, Nev. where they have started a group home for delinquent boys.

Tonya T. York of Portland is employed as a contingency planning analyst for the Information Services Group at U. S. Bancorp.

Barbara Yoder is working as a research assistant in the Forest Science Department at OSU in Corvallis, and her husband, **William Yoder**, '85, is an engineer at Hewlett-Packard there.

Director of advertising for Barbara Sue Seal Properties, Inc., a Portland real estate firm, is **Stacey Guterman Walbert**. Her husband, **Garth Walbert**, '85, is a sales engineer for Gage Industries, a plastics manufacturing firm.

Scott A. Heiser is practicing law in Portland for the firm of Tonkon, Torp, Galen, Marmaduke & Booth. **Lynn Hunnicut Heiser** is working towards a teaching certificate and as a part-time legal assistant.

Lauren E. Monson is currently working as director of marketing in the Seattle area for the nationwide company, Staff Builders Health Care Services.

David A. Bird of Reno, Nev. was recently assigned to Freeport-McMoran's Latin American Minerals Exploration Division.

Besides actively racing bicycles in the Mountain View, Calif. area, **Mark B. Schwyhart** is working in customer service for Floating Point Systems in San Jose.

Maria L. Havery lives in Beaverton and teaches physical education at Phil Lewis Elementary School in the Tigard School District.

Ensign **Joseph J. Bonner** is now the navigator on USS Reeves, CG-24, based out of Yokosuka, Japan.

'85

Diane P. Dulwick works as a senior accountant in the audit division of the Big Eight Accounting firm of Coopers & Lybrand. She purchased a home last fall in Beaverton.

Marine First Lt. **Raymond C. Hicks** was recently designated a Naval Aviator upon presentation of the "Wings of Gold" marking culmination of 18 months of flight training.

Kathleen Gillespie, who previously taught pre-school and kindergarten in Albany and Coos Bay, has been hired to teach at South Prairie School in Tillamook School District 9.

Dennis J. Rearden and his wife are moving to Fayetteville, Ark. after a two-year tour of duty in Barceloneta, Puerto Rico, where he served as project manager for the Barceloneta Land Treatment Project for Operations Management International, Inc.

Recently reporting for duty at the Naval Air Station on Whidbey Island, Wash. was Lt. j.g. **George M. Nadler**, who is serving with the Tactical Electronic Warfare Squadron-139.

Jonathan D. Long is living in Lakeview and now has a permanent position with the U. S. Forest Service in the Silviculture Department.

'86

Ensign **Brian Gordon Eldridge** recently received his Navy wings and will be stationed at Naval Air Station, Barbers Point, Hawaii, after completing his training at Moffatt Field, Calif.

Christina Lees Guerins is a field customer service representative for American Express Co. in the bay area, and **Kenneth T. Guerins** is an asset manager for the Robert Randall Co. They live in Vallejo, Calif.

Lawrence C. Crabb is working as a design engineer for McDonnell Douglas Corporation in Long Beach, Calif. He and his wife, **Kimberly Marie Murphy**, live in Huntington Beach.

Lt. j.g. **Andrew M. Bilton-Smith** of the U. S. Navy received his "Wings of Gold" in Meridian, Miss. and is now stationed at NAS Whidbey Island, Wash.

Timothy W. Mondale graduated from the physical therapy training program of the Mayo School of Health-Related Sciences on May 20.

Patty Estes Boswell is a research assistant in the Department of Neurology at the University of Massachusetts Medical Center. Her husband, Dr. **Carl Boswell** is a post-doctoral research associate in the Department of Pathology there.

George C. Looney works as an accountant for Georgia-Pacific's Pulp and Paper Mill in Toledo.

Recently hired as a management trainee for Continental Hardwoods Co. in Portland was **Pete Bierma**.

Grant Armbruster has been promoted to controller/office manager for the Triangle Veneer Co. in Eugene.

James Sizemore, a mechanical engineer for Precision Castparts in Portland, and his wife, **Christine Hannah**, '83, had a new son, Keith Gordon, last Feb. 6.

Recently promoted to assistant buyer of traditional knits at Meier & Frank in Portland was **Molly S. Bassett**.

Daniel T. Scroggin, formerly employed by Motorola in Foster City, Calif., has joined Bear Communications, Inc. as its Pacific Northwest manager in Seattle, Wash.

Marine Second Lt. **Steven B. Dorman** has reported for duty with the 2nd Marine Aircraft Wing at Marine Corps Air Station, Cherry Point, N.C.

First Lt. **Jaymi Robinson Conklin** was married two years ago and is currently stationed in Germany with the U. S. Army.

Daniel S. Phillips is living in Portland and attends the Oregon Health Sciences University School of Dentistry.

Thomas C. Booth, who has been working for an engineering firm in the Bay area in California, plans to return to OSU this fall to obtain his MSCE.

Maureen Doherty is employed as a sales associate for Byron E. Thompson & Associates in Portland and is also presenting Dale Carnegie training in Oregon and Southwest Washington.

Recently returning from a six-month deployment to the Persian Gulf was Navy Ensign **Thomas P. Bellit**, who was serving aboard the guided missile frigate USS Reuben James, homeported in Long Beach, Calif.

Second Lt. **Lloyd T. Tweedt**, who received his silver wings upon graduation from USAF pilot training, received the Distinguished Graduate Award at Williams AFB, Ariz.

A. Troy Reinhart, executive director of Douglas Timber Operators in Roseburg, was recently elected to the Roseburg Chamber of Commerce board of directors.

Second Lt. **James Van Loben Sels** has completed combat crew training at Castle AFB, Calif., and has moved to Blytheville AFB, Ark. to become a B-52 navigator in the U. S. Air Force.

'87

Ramona Gould Hendren works in Irvine, Calif., as a technical writer for Invisys Corporation.

Rick D. Anderson is employed by GTE Communication Systems as a software engineer in Phoenix, Ariz. **Carol South Anderson**, '86, works for the Scottsdale Princess Resort as a fitness specialist.

Robert Yancey, who is employed at Denver General Hospital, is working toward a master's degree in health administration at the University of Colorado at Denver. His team of graduate students recently placed second in a College Bowl contest for health administrators in Anaheim, Calif.

Second Lt. **John I. Duval** was recently assigned to Mather AFB, Calif., as a civil engineer.

Currently working with the Generation Engineering Group at Pacific Power & Light Co. in Portland is **Peter D. Kracke**.

Scott D. Ellefson became a licensed pharmacist last November and now works as a staff pharmacist for BiMart in Coos Bay.

Ensign **Jill F. Russell** recently completed officer training in Kings Point, N.Y., and has now been commissioned in the NOAA Corps.

Russell A. Hedge lives in Tualatin and works for Pihas, Schmidt & Westerdahl in Portland.

Corvallis artist **Jim Kline** is displaying his exhibit, "Evolution of an Artist: 1975-1988", in the Memorial Union Concourse Gallery at OSU until Sept. 2.

Ensign **Kimberly A. Roddy** received her commission in the U. S. Navy last November and is now stationed in Winter Park, Fla.

Assistant professor of chemistry at Saint Vincent College in Latrobe, Pa., Dr. **Brian J. Bozlee** has been awarded a basic scientific research grant donated by the PPG Industries Foundation.



Dr. **Annette Bruyer** was invited to participate in the Third International Conference on Eating Disorders held in April in New York City, where she presented a paper in April.

'88

Brad Sharpton graduated from a police training course on June 8 followed by a six-weeks field training course in Corvallis and will soon attend an eight-week course at the Board of Police Standards and Training Academy in Monmouth to prepare for becoming a Corvallis police officer.

Karen Jones Wooley has been accepted by the Graduate School of Cornell University to work for a Ph.D. in chemistry. She will be residing in Ithaca, N. Y. for approximately five years until completing her graduate work.

Joseph Fazio recently passed his state board examinations and is now working as a pharmacist in Portland for Kaiser Permanente.

MARRIAGES

Andrew M. Bilton-Smith, '86, and Mary Catherine Holmes; April 16 in Portland.

John W. Kent, '86, and **Lisa Fox**, '88; Aug. 8, 1987 in McMinnville.

Lawrence Curtis Crabb, '87, and **Kimberly Marie Murphy**, '86; Nov. 14 in Ontario.

Robert S. Dugan and **Deirdre Leigh Raby**, '86; Mar. 19 in Newport.

Larry Randall Smith, '86, and **Susan Jane Muller**; April 16 in Albany.

Ron E. Kendall and **Kimberly D. Anders**, '85; May 21 in Stayton.

Cory Alan Carroll, '87, and **Leslie Allyson Namitz**; Dec. 12 in Lebanon.

Kenneth Eugene Varner, '79, and **Jo Ellen Yarema**; Feb. 20 in Las Vegas, Nev.

Donn Jay Ylvisaker and **Patricia Anne Reeder**, '81; June 18 in Portland.

Gregory Woolhiser, '82, and **Rosemary Go**; Mar. 26 in Walnut Grove, Calif.

David Langland, '78, and **Janet Mason-Uremovich**, '77; May 1 in Aloha.

Brian S. Thurber and **Kathleen J. Kee**, '83; April 23 in Portland.

Jon Trowbridge Baker and **Mary Elizabeth Ivancie**, '83; May 14 in Portland.

Neil Douglas Ehman and **Denise Susan Perreault**, '82; May 7 in Portland.

Joseph Philip Beehler and **Marianne Patricia Hittner**, '84; May 6 in Portland.

Gregory Philip Ripplinger and **Karen Suzette Graves**, '87; June 11 in Oregon City.

John Robert Schmidt and **Elaine Gettelfinger**, '83; May 7 in Portland.

Ted Allen, '81, and **Toni Schmittou**; April 23 in Portland.

David Thomas Merriman, '78, and **Tiffany Kay Martin**; June 11 in Portland.

Pak-Ho Leong, '81, and **Nancy Ann Klinkhammer**; June 11 in Portland.

James Scott Bluhm, '84, and **Carol Lee Feltz**; May 28 in Portland.

Harvey C.W. Scott, '78, and **Claudia Anne Anderson**; June 4 in Renton, Wash.

John Edward Fettig, '84, and **Karen Hall Fletcher**; June 5 in Portland.

H. Craig Ramey, '85, and **Janet Marie Sanders**, '86; May 14 in Lake Oswego.

Kenneth T. Guerins, '86, and **Christina B. Lees**, '86; June 13, 1987 in Vallejo, Calif.

Rick D. Anderson, '87, and **Carol D. South**, '86; June 11 in Milwaukie.

Bruce E. Swanson, '85, and **Pamela J. Bingham**, '84; May 21 in Lake Oswego.

Glen S. Andrew and **Kay M. Greason**, '84; May 21 in Helvetia.

Aaron Lee Hendren and **Ramona Consuella Gould**, '87; May 21 in Mission Viejo, Calif.

Steven Paul Kilgore and **Elizabeth Ann Allman**, '86; Feb. 6 in Camarillo, Calif.

Drew Lowcock and **Amy K. LaMear**, '87; Dec. 23 in Toronto, Ontario, Canada.

Jeffrey P. Prostko and **Laura J. Hill**, '83; June 25.

Phillip A. Danley, '84, and **Cheryl A. Cooper**, '86; May 23, 1987 in Bothell, Wash.

Michael R. McLane, '87, and **Holly M. Craig**; June 27 in Tigard.

Derik Gulsvig, '83, and **Kelly Clawson**; Sept. 19.

George C. Looney, '86, and **Dale Parks**; Aug. 22, 1987 in Toledo.

Carl Boswell, '86, and **Patricia S. Estes**, '86; July in Holden, Mass.

Samuel C. Skillern III, '82, and **Jennifer Bowers**; April 30 in Seattle.

Marion R. Morehouse, '64, and **Sharon A. Coveau**; Mar. 13 in Bend.

IN MEMORIAM

Horace Minor Propst, '10, of Woodburn; April 8 in Woodburn.

Edith Casteel Dickson, '10 of Redding, Calif.; May, 1986 in Redding. She was a descendant of a co-founder of Corvallis, William F. Dixon.

Arnold Gustave Davids, '22, of Santa Monica, Calif.; Jan. 8.

Theodore Edward Reynolds, '24, of Ashland; Jan. 6 in Ashland. He was affiliated with PSK.

DeLos E. Clark, '27, of Baker; April 22 in Boise, Idaho.

Mildred Payton Spurlock, '28, of Sacramento; Feb. 23. She was affiliated with AXD.

Julia Butler Hansen, '29, of Cathlamet, Wash.; May 3 in Cathlamet. She was a former U. S Representative to Congress and was known as "the grand old lady of Washington politics".

Betty Thorne Peterson, '33, of Gresham; May 21 in Gresham. She was affiliated with ZTA.

Alfred Solomon Wolfe, '34, of Portland; May 15 in Portland.

Elizabeth Steel Genne, '35, of Claremont, Calif.; Oct. 19.

William Edward Bothamley, '38, of Milano, Tex.; Nov. 8. He was affiliated with CP.

Robert Welty, '38, of The Dalles; April 26 in The Dalles.

Herbert LeRoy Whitby, '42, of Boise, Idaho; Mar. 15 in Boise.

Eileen Manning Busch, '44, of Lake Oswego; May 11 in Portland. She was affiliated with KAT.

James Francis Culbertson, '48, of Portland; May 11 in Portland. He was affiliated with SPE.

David Robert Long, '48, of Corvallis; May 7 in Corvallis. He was affiliated with LCA.

Robert James Reid, '48, of Citrus Heights, Calif.; Mar. 3 in Carmichael, Calif.

Joyce Johnston Wilson, '48, of Laguna Hills, Calif.; May, 1987. She was affiliated with DG.

Roy Alfred Strandberg, '49, of Hoodport, Wash.; April 6 in Olympia. He was affiliated with ASP.

Thomas L. Tennant, '51, of Stanford, Calif.; Dec. 9 in Stanford.

Darrell Deane Christensen, '52, of Rancho-Cucamonga, Calif.; May 4 in Fontana, Calif. He was affiliated with PSK.

Ronald Joseph Rinella, '78, of Lake Oswego; May 8 in Portland. Rinella was a nationally known film and video producer.

FACULTY AND FRIENDS

Sara "Sally" Lynn Hacker, OSU professor of sociology, passed away in Corvallis, July 24, 1988. She was 51.

Dr. Hacker was considered among OSU's best-known sociologists. During her distinguished career, she was the recipient of several National Institute of Education and National Science Foundation grants for research, and was the author of over 20 publications.

Her research was concerned with the impact of technology on society, particularly women. In 1985 she spent



Sara "Sally" Hacker

a sabbatical in the Basque Country of Northern Spain studying the worker-owned production cooperatives of Mondragon. Getting close to her subjects was a trademark of Hacker's research. At times she assumed the role of a research subject just to gain that extra added dimension first-hand experience provides, once enrolling as an engineering student to achieve a better understanding of engineering management and its organization of work.

A native of Litchfield, Ill., she received her Ph.D. from University of Chicago. Hacker was featured in the November, 1986, *Oregon Stater* as one of OSU's outstanding CLA faculty.

E. B. Lemon Award A Call for Nominations

Nominations for the 1989 E.B. Lemon Distinguished Alumni Award are now being accepted by the OSU Alumni Association.

The award recognizes and honors former OSU students who have significantly contributed to society and whose accomplishments and careers have brought credit to the University.

Previous E.B. Lemon Award recipients are: 1981 — Thurman J. (T.J.) Starker and Loren L. (Stub) Stewart; 1982 — Claude F. Palmer; 1983 — N.B. (Nat) Giustina; 1984 — Milton Harris; 1985 — Robert C. Ingalls; 1986 — Linus C. Pauling; 1987 — Douglas C. Engelbart; 1988 — Richard A. Koch.

Nominations for OSU's most prestigious alumni award should be submitted to Don Wirth, alumni director, 104 Memorial Union, OSU Alumni Association, Corvallis, OR 97331.

Election '88

(Continued from page 6)

Franklin D. Roosevelt and The New Deal; our mixed economy in which government regulates but does not control business emerged in this period. The fifties in American politics were typified by Pres. Dwight D. Eisenhower, an immensely popular Republican who did not try to repeal The New Deal, but resisted new initiatives by the Democrats.

The political tumult of the sixties and seventies resulted in government expansion into environmental protection, civil rights guarantees, and nationalized public health and safety requirements. The Reagan era has reflected the conservative reaction against these changes, but while these policies have been weakened during the eighties, they have not been repealed and public opinion figures suggest that the public is coming around again to the view that government needs to provide more services.

One hidden question in 1988 is whether the nation will decide to turn, once again, to government to solve domestic problems. No one knows, of course, what will happen, but in time this election may come to be seen as a pivotal one in starting, once again, a new cycle in American politics.

—William Lurch

ALUMNI PROFILE Making the Grass Greener

By Mary Labr Schier



Kathleen Fishbeck '72

It sounds suspiciously like cloning. Working in a small laboratory behind her office at St. Olaf College in Northfield, Minn., Kathleen Fishbeck slices off a minuscule portion of a tiny alfalfa plant. From these few cells, she spawns dozens of opaque, lumpy cell masses—each containing the same genetic complement as the original plant, each theoretically a clone.

Fishbeck, a biologist who received a master's degree from OSU in 1972, is regenerating alfalfa plants. But she does not want clones. She hopes to use this method to develop alfalfa plants that will perform better when planted in a farmer's field.

"Every plant should be identical," she said, because they all developed from cells with the same genes. "What happens is that when cells go through this regeneration process, they are altered. We're not sure how it happens, but the goal is to somehow get better plants because of this alteration."

To produce alfalfa clones, she first germinates alfalfa seeds. As the plant sprouts, she removes one of the two seed leaves, or cotyledons, and puts it in a growth medium containing phosphates, nitrates, sugars, vitamins, and growth hormones. The cells of the cotyledon contain all of the genetic information needed to grow an alfalfa plant.

Cells begin to multiply in the rich growth solution, and soon the tiny cotyledon gives rise to a lumpy mass of tissue, called a callus. When the callus grows to about the size of a half dollar, Fishbeck transfers it to a new medium, which provides the callus with nutrients, but not growth hormones. The callus continues growing and eventually begins to develop roots and shoots. At this point, the plant is transferred to a test-tube, and when it has grown into a mature plant, it is replanted in the soil in the St. Olaf College greenhouse.

"Eventually, we may find that we have created a new plant that is a better plant," Fishbeck said. "It could work the other way, too."

"This is basic research, and in that sense it can be a shot in the dark," she said. "But other scientists have done this quite successfully in developing salt-tolerant plants."

Fishbeck has focused her research on alfalfa—the bushy legume that farmers feed cows. One characteristic of good alfalfa is that it can produce its own nitrogen supply through tiny growths or nodules lodged on the plant's roots, which contain a bacteria of the genus *Rhizobium*. A plant with many nitrogen-rich rhizobia can increase the nitrogen content, and therefore the fertility, of the soil in which it is planted. These plants can help farmers reduce the need for costly commercial fertilizers as other crops are rotated into the alfalfa fields.

Fishbeck first developed an interest in nitrogen fixation in agricultural crops while working with Dr. Harold Evans at OSU. Her work here involved measuring how much nitrogen different varieties of soybeans produced. Later, doing doctoral work at the University of California-Davis and post-doctoral work at the University of Minnesota, Fishbeck shifted her research to alfalfa.

Working on genetic engineering of plants involves fewer ethical concerns than working with animals or humans, Fishbeck believes, and she has "no problems with genetic engineering" as a scientific pursuit.

"The more and more we find out about the world, the better we can manipulate it," she said. "I don't think we should be afraid of genetic engineering, especially in botany."

Achieving those results may take years, though. But Fishbeck believes the method shows promise because it allows scientists to produce many new and different plants. Generally, scientists develop new plant varieties by hand-pollinating one plant with the pollen of another, harvesting the seed and then planting the new seeds, which have different genes, the following season. With genetic engineering, direct comparisons can be

made relatively quickly to see how the new plants differ from the original because they will be growing side-by-side.

Fishbeck has the patience for a long-term research project, and she says her position at the Midwest liberal arts college gives her the right environment in which to conduct it. "At a large institution, I would have to be involved in projects that would be more productive immediately," she said.

These scientific methods require care and a sterile technique. She worked in laboratories for five years before going on to graduate school, and she prides herself on teaching her own students proper laboratory methods.

At St. Olaf, housing 3,500 students in a small campus built overlooking Minnesota's rich farm land, the faculty focus on working with students and teaching above research concerns. While Fishbeck says "it would be lovely" to develop a revolutionary alfalfa variety, "if students learn good lab technique, that's important, too."

She often uses students as lab assistants in her research and helps them develop projects they can work on independently. As a teacher, Fishbeck says she is also conscious of her position as a role model for students, especially young women.

"All of my professors were men," she said. "While they encouraged me, I could never envision myself in that role because I didn't see any women in that role."

"I think just the mere fact of having female faculty in the sciences encourages women. I try to show my students that they don't need to pass up career opportunities just because they want to have marriage and a family," she added.

Beginning in September, Fishbeck will shift her attention to research full-time. As part of a sabbatical leave, she will spend a year studying and working with other researchers at Louisiana State University. If Fishbeck is successful, the plants she develops will be able to transform nitrogen more readily. Those plants not only will be larger and bushier and better sources of food for animals, but they also will require less fertilizer. As farmers struggle to bring production costs into line with lower prices for farm commodities, savings on fertilizer expenses can be crucial.

While this method of developing plants shows promise, Fishbeck emphasizes that it is in its earliest stages. "But once we get a good plant, we can make many copies of it, and then we hope to produce large quantities of seed for use by farmers." OSU



Wilhelm

Football Preview

When McDonald's jingled its way to the fast food bank with its slogan, "you deserve a break today," they must have had Oregon State fourth-year coach Dave Kragthorpe in mind. Thing is, Kragthorpe still awaits such a gift in Corvallis. Lord knows, he has a few coming.

No opponent is taken lightly by a program struggling to its feet. However, it's more than safe to say that Oregon State's Kragthorpe and Company are slightly more relieved with the itinerary ahead than what they left behind in 1987.

Playing between the hedges at Georgia and amidst the hooking horns of Texas has given way to a September meeting with the Buffalo in the Colorado Rockies and a hosting of Fresno State. Neither replacement is a dip in the pool, but they don't seem to have the ghosts of football past lurking around your bench. Then, there's a conference schedule that returns Cal and Washington State to the Beaver docket and passes on a familiar foe in Washington's Huskies.

The Kragthorpe regime will be one of looking to recapture the progress made in years one and two. The monstrous schedule of 1987 coupled with the late season collapse at quarterback threw a wrench in the prior steps taken towards respectability.

It has been a heady policy of the past not to entertain pre-season thoughts of a precise number in the victory column. Still, safe to say that a minimum of four 1988 conquests would not only put the program back on track, but also be hailed as its most successful campaign in 16 seasons. It is time for such a break.

For three years, the offensive side of the ball has been stressed mainly because of Kragthorpe's keen background with the aerial attack. But, after the woes with signal-callers, last year's main problem was stopping somebody. The head coach was totally frustrated with the lack of aggression on defense and made that the theme of spring ball.

"We needed to get back to the level of intensity (of several years ago), but we also wanted to do some of the things to give us a little more freedom on defense," explains Kragthorpe. "(We need) to be more aggressive and cut loose a little bit. Blitz a little more, and so on."

The defense starts with line play and there will, more often than not, be one less man down in a three point stance as OSU will stress the 3-4 alignment in 1988. The "reb" linebacker will sometimes play the part of a down lineman,

but more frequently he will serve as a fourth backer. Ray Giacomelli and Brent Mann are leading candidates for the task.

Esera Tuolo, Tom Vettrus, Greg Juul, Brett Reuter, Mike Maggiori, Lance Jackson and Trevor Gibson will man the trenches, but the greatest addition to the defensive line may be the addition of assistant coach Dave Tipton. He, of the former Rose Bowl Thunderchickens at Stanford, is an imposing figure and should be a boost the intensity down on the ball.

Many scholarship players return to linebacker spots, substantiating even more Kragthorpe's switch to the 3-4 and improving the point of attack. The secondary will be a concern in terms of depth, but OSU will field a strong starting unit in corners Calvin Nicholson, easily the fastest man on campus, David Brannon, and safeties Andre Harris and Teddy Johnson, the latter moving from his corner spot of the past two seasons. Harris was the team's leading tackler and is the most likely honors candidate coming off last year's performance.

OSU's Air Express of past years has run up some nationally-ranked aerial statistics, but has fallen short of paydirt time and time again. A pass-happy offense will still be the order of the day, but striving for more from the running game should open up things inside the 20 yard line.

Kragthorpe has seen to it that the catastrophe at quarterback doesn't happen again. As of the conclusion of spring drills, the job is still in the hands of Beaver record holder Erik Wilhelm. He is complemented this year with junior college transfers Nick Schichtle and Matt Booher and sophomore Ed Browning. Wilhelm understands now that the slightest hint of an off day will bring in a replacement and vice versa. In other words, complete game victories may be as common as a ball club with a bullpen of Lee Smith, Todd Worrell and Dennis Eckersley in the wait.

An attack like OSU's will never want for talented targets and 1988 is no exception. Honors candidates Phil Ross at tight end and Robb Thomas out wide will draw considerable attention from more than opposing DBs this year after finishing second and third in Pac-10 receiving. Versatile Brian Taylor was fourth in the conference out of the backfield.

Kragthorpe terms his task on the offensive line as one of "retooling" after losing three seniors who saw substantial playing time headed by center Dave Orndorff, who signed during the summer with the New Orleans Saints. "We have three junior

college players coming in this summer and we hope two of them will fit in quickly and help us," says Kragthorpe.

Those three are Derek Nelons, Matt Irvin and Brad D'Ancona and they average 6-4 and 272 pounds. Regulars back to form the pocket are Ken Kiff, co-captain Kenny Felix and Mike Bailey. Rob Jack and David Miller will vie to be Orndorff's successor at center. Peter Steffen, Corey Beyerlin and Dan Blus are also expected to see action.

One of OSU's strongest positions may be fullback. Kragthorpe elaborates, "We have three people (Pat Chaffey, Dowell Williams and Brian Swanson) who can play and a fourth (Tacoma's James Jones) coming in as a freshman who we think is going to be an outstanding player as he gets into our system and matures with it."

The season swings right into the Pac-10 fray with a Parker Stadium opener on Sept. 3 with a 6 p.m. contest against Arizona. Three of the first five games of 1988 are at home as Arizona is followed to Corvallis by Cal on Sept. 17 and Fresno State on Oct. 1.

Homecoming will be Oct. 29 against USC and pre-season All-America quarterback Rodney Peete and the five-game home slate concludes with the Nov. 19 Civil War matchup with Oregon. Road trips this year include San Jose State and Colorado in September, October junkets to UCLA and Stanford, and stops in Tempe for Arizona State and Pullman for Wazoo in November.

"There is more confidence in this team (than in recent seasons)," assesses Kragthorpe. "I think they are really sincerely talking about winning some football games. Sometimes in the past when they have talked I have thought it was a little bit superficial."

And belief is the first step. Some of those long overdue breaks wouldn't hamper things either.

—Mike Corwin

Soccer to Make NCAA Debut at Oregon State

It's the beginning of a new era.

Division I soccer has arrived at Oregon State University. James Conway, a former player with the Portland Timbers, and David Oberbillig have been hired to coach OSU's first-ever men's and women's soccer teams.

Oregon State announced the addition of men's and women's soccer to its intercollegiate athletic program last March in conjunction with the announcement that men's and women's track and field would be suspended.

"One of the problems with the first season is that we'll be bringing in kids that we don't know much about," said Conway, 42, head coach for Oregon Youth Soccer Association and director of player development and former soccer coach at Pacific University. "We won't know much about the team until 4-5 days into training. That is a little bit of a concern for me. Everyone will be a walk-on because it's the first year and there was no recruiting. Ninety percent of the players coming in I haven't seen. We will just play it by ear the first season. Anything that's good takes time. I'm just looking for a solid program that will improve in years to come. I'm really excited and I know that the kids are really excited."

Conway spent 18 years as a professional soccer player, two with Bohemians Dublin, Ireland, 10 with Fulham F.C. London, England; two with Manchester City F.C. of the English First Division and the final four with the Portland Timbers of the NASL.

"I'm really looking forward to coaching the new program," said

Oberbillig, the 31-year-old women's soccer coach. "I'm very excited about having the program here. I have coached the OSU club sport team for four years and this is what we've been trying to do; to become a varsity program. We've been working at becoming a varsity program for about 15 years and to have it finally happen is just tremendous. And, I think these programs are going to take off in a very short time."

Oberbillig has been serving as head coach of the OSU club sport soccer team since 1985. He has also been the women's soccer coach at West Albany High School since 1984 and has run his own Beaver Soccer Camp since 1984.

Both the men's and women's soccer teams had tryouts last spring and will resume tryouts in the late summer. The men's season begins Sept. 3 with a match against Humboldt State at Willamette University in Salem. The men's first home match is Wednesday, Sept. 7 against Puget Sound. The women's team starts the season Sunday, Sept. 11 with a 1 p.m. home match against the University of Portland. All of the Beavers' home matches will be played on the fields west of the Women's Building on the Oregon State campus.

"Having a brand new program gives us a lot of freedom to create the type of team we want," said Oberbillig. "There's not a returning group we'll be working with as a core. Of course we did have a club team and there are some good players from the club team that I plan on utilizing. But, having a new program I can go out and look for the type of players I want."

"The kind of team I'd like to put together is a very fast team and a team that has good individual ball skills. I'd like to let them use these skills and make the game exciting. I think the standard American game is much more of a trap and pass kind of game (compared to Latin American and European soccer). Ever now and then you'll find a few players who can use their individual skills and really be dangerous. I'd like to develop that individuality a little bit more and give the players a lot of freedom to go at defenses."

Intercollegiate soccer coming to Oregon State could be just the beginning of a growing interest in soccer in the Willamette Valley. Currently Oregon State is bidding to host World Cup Soccer in 1994 in Parker Stadium.

SHORT SHORTS

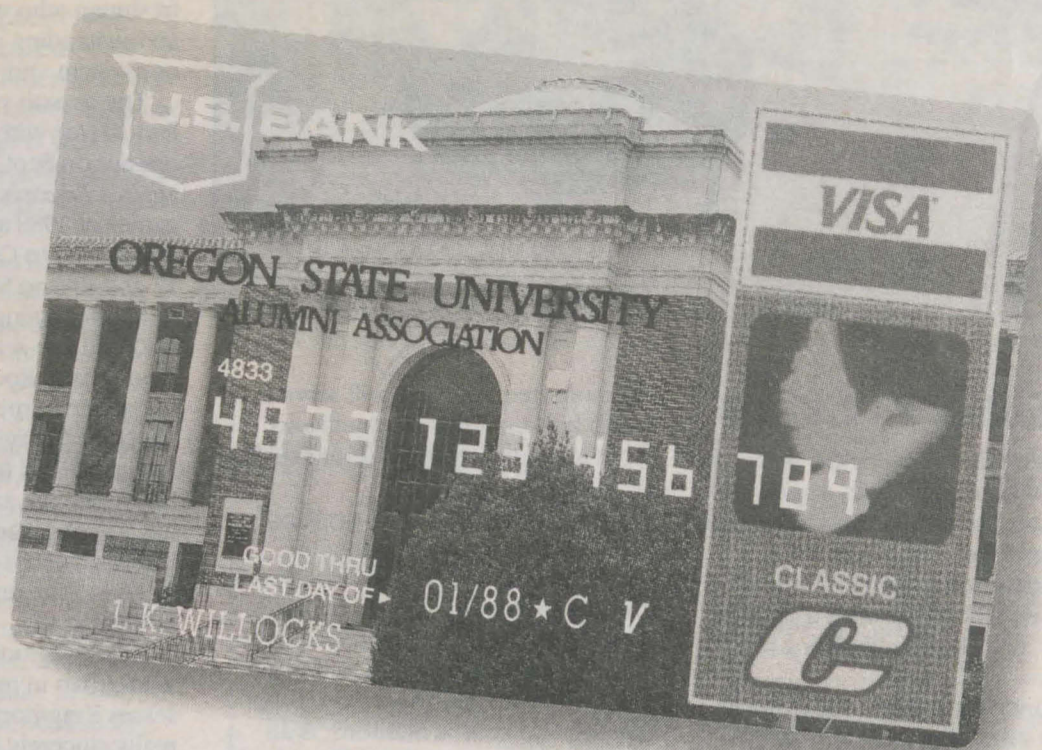
Olympic trials...OSU's Karl Van Calcar, 1988 NCAA 3000-meter steeple chase champion, fell during the steeple chase finals at this year's U.S. Olympic trials in Indianapolis, July 15-23. Van Calcar was considered a strong contender for a spot on the U.S. Olympic team and had performed very well in preliminary heats. Senior John Thomas competed in the hammer throw but also failed to qualify. OSU track alums Dick Oldfield '84 and Cindy Greiner '82 made the trip to Indiana, with Greiner qualifying for the Olympics in the heptathlon. Oldfield finished 10th in the 1500 meter competition but did not make the team.

Parker roof...Construction on Parker's new roof was supposed to have started this summer but probably won't get underway now until after the 1988 football season. Letters mailed to contributors in late July stated that higher-than-expected construction bids were responsible for the delay and that decisions would now have to be made on how best to meet the additional expenses.

SOS2 update...By late July more than \$1 million had been committed to the Save Oregon State Sports campaign, OSU's fundraising effort to help improve the competitive edge for OSU's entire athletic program and to ensure the University's place in the Pac-10 conference. The campaign will continue through Aug. 20 with goal to raise \$1.5 million.

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