

# OU NEWS

December 19, 1978

## Laser research could be safety bonus

A new application of laser technology — one that will allow quick detection of dangerous changes in large objects such as a dam, bridge, or building — is being developed here at Oakland University.

The National Science Foundation has awarded \$97,000 to three OU engineering professors to work on perfecting their device.

The project is entitled Laser Scanning Moire of Large Objects, explains Joseph Hovanesian, one of the three investigators.

Structural changes that could lead to the collapse of a structure can be discovered by simply matching wavy-lined negatives that were taken of the object at different times.

With the moire phenomena, wavy-lined photographs of an object should remain unchanged if the subject is unchanged. When there are "fringes" or areas where the lines do not mesh there is structural change, Hovanesian says.

The changes are quantitative as well. The more fringe areas, the more severe the changes in the structure.

No large scale measuring devices are now available. Investigation of strain can be done by a costly and lengthy point to point method. Strain can also be measured by gauges, but they cover only a small area of a structure.

The OU scanning device will allow engineers or safety inspectors to take a "moire gram" of an entire structure. This can be compared to later photographs to see if changes occur, Hovanesian says.

The scanning device will consist of a laser light with two electronically controlled mirrors and a camera set off at an angle from the laser. The laser will scan a structure vertically creating a pattern of closely matched lines. The camera, photographing the process from the side, produces a negative with the wavy, moire patterns. Subsequent photographs will show if there are any structural changes in the object.

The three grant winners are A.J. Durelli, internationally known for his work in stress analysis and co-author of the book Moire Analysis of Strain, Mike Hung, active in holography research, and Hovanesian, an expert in moire technique analysis.

The two year grant begins in January and the professors hope to begin testing a scanning device by summer of 1979.

# IN THE SPOTLIGHT

**Will a powerful poison ivy extract aid in tumor immunity? What are the human visual fatigue effects from extensive use of cathode ray tube (CRT) devices?**

Nine Oakland University researchers are examining these and other areas with the aid of \$35,100 in biomedical research support grants from the National Institutes of Health (NIH).

The NIH funds were distributed by Frederick W. Obeir, OU academic vice-president and provost, based on competitive proposals for new avenues of biomedical research.

Among the more unusual projects are those of Denis M. Callewaert, chemistry, Ron Mourant, engineering, and Michael Chopp, physics.

As part of his research Callewaert will use volunteers from the local Federation for Alternative Cancer Therapy. They will receive applications of poison ivy extract, and this response of their lymphocytes (a type of cell) to cultured tumor cells will be studied at various time intervals after the application of the extract. More than one liter of crude extract from poison ivy plants has been obtained from Parke Davis Co.

Ron Mourant in engineering will use volunteers whose time responses and eye movements will be monitored while they work on CRT screens filled with two different types of characters. The long term objective is the development of a CRT display system that will result in the least amount of visual fatigue for users.

Michael Chopp, physics, will use mathematical systems analysis to identify the wave forms created by intracranial pressures. These pressures exist in patients with head injuries or diseases. The analysis will aid management of neurosurgical patients who were being monitored in an intensive care unit.

Other award winners in biological sciences and their research projects are Ashish C. Nag, "Regulation of Cell Proliferation in Mammalian Heart"; Daphna Oliver, "Plasmids in Group B Streptococci"; James K. Reynhout, "The Role of Monovalent Ions in Control of Cell Division"; Paul Ketchum, "Mechanism of NADPH-Nitrate Reductase Inactivation in *Neurospora crassa* am 2"; and Francis Butterworth, "Cell Death in *Drosophila* Fat Body: Genetic Studies on Lysosome Formation."

Also Stanley Pons, chemistry, "Spectroelectrochemical and Novel Ion Trapping Techniques in the Electrosynthesis of Bio-Medically Important Compounds"; and M. Kazem Mostafapour, Center for Health Sciences, "Glucose and Anion Transport Protein of the Lens."

**Stuart C. Hyke** of radio station WDET-FM is the new managing director of the Meadow Brook Music Festival at Oakland University.

The 30-year-old Hyke has been director of development at the Detroit classical music station since 1976 and the host for the popular Saturday morning program "The Maestro." He began his OU duties December 18.

Under Hyke's tenure as development director WDET-FM has increased its

fund-raising efforts annually. The most recent pledge period raised a record \$135,000. The public radio station is operated by Wayne State University.

In November he staged the first Detroit appearance of "I Musici" to a sold-out audience at Orchestra Hall.

Hyke's personal library includes some 2,500 LP records and more than 3,000 78 RPM records. He is a long-time patron of the festival and for the past two years he has worked closely with Leon C. Petrus, the man he replaced. Petrus resigned October 1 to become general manager and artistic director of the Society for the Performing Arts in Houston, Texas.

As managing director Hyke will have responsibility for the day to day operations of the festival. He said there is much that he will miss about working at WDET-FM, but that he is excited about the challenges of a demanding new position.

Hyke received his bachelor's degree from Wayne State University in 1976. He has lived in the Detroit area for the past 17 years.

**Frederick Obear**, vice-president for academic affairs and provost, will recommend at the next board meeting (January 17) that George E. Coon, education, be appointed acting dean of that school, replacing Laszlo Hetenyi.

Hetenyi announced recently that he would not seek reappointment as dean following completion of his term. Hetenyi will be taking a six-month sabbatical beginning January 1. The founding dean of the School of Education, Hetenyi has led the teacher-education program since 1959.

Obear anticipates the search for a new dean will begin shortly after the first of the year and be concluded within six to nine months. Coon will serve until a new dean is appointed and is not interested in being a candidate for the permanent deanship, Obear said.

The announcement of Hetenyi's plans was one of three such personnel changes announced in recent weeks.

Norton Seeber, dean of the School of Economics and Management, announced to his faculty on November 7 that he would like to return to teaching when his term as dean expires on June 30, 1979. Seeber was the founding dean of the school and has served for 10 years.

Corey Van Fleet, director of Physical Education and Athletics and men's swimming coach, has also announced that he will resign as swimming coach at the end of the 1979 season to concentrate entirely on the administrative responsibilities of athletic director.

Van Fleet has coached the swim team for the past 13 years and has built the program into one of the most competitive in the midwest and one of the top five among the nation's NCAA Division II schools.

**An Oakland University** professor is helping the tire industry create a picture perfect tire.

Mike Hung, School of Engineering, is using holography (three-dimensional photography) to provide non-destructive quality evaluation of production tires.

Hung has a \$20,000 grant and \$120,000 in specialized equipment from Industrial Holographics, Inc. of Auburn Heights for research in this area.

Tire safety is an increasing concern of the rubber companies, and a method

of quality evaluation for every tire would be of benefit to the tire companies and the driving public, Hung says.

The professor has worked for a major tire maker, and he claims the industry has had nothing as effective as holography for the quality evaluation of every tire coming off the line. In the past tire makers have spot-checked their production for possible defects, Hung says.

In the holographic method of testing, each tire is enclosed in a pressurized hemisphere containing a laser interferometer (a laser and camera device), and the inspection process is controlled by a micro computer.

Each tire is turned in the hemisphere and its sections are holographed by use of the laser and camera. The holographs are taken before and after the tire has been subjected to pressure, and a comparison of the three dimensional pictures will detect possible defects in the tire.

This method is suitable for testing any pressurized container, Hung claims.

In addition to work on the holograph examination of tires, Hung is seeking new design methods that will result in a tire with an even higher degree of safety than those currently in production.

## FOR YOUR INFO

**Effective January 3, 1979**, the rate for a routine office call at the Graham Health Center for faculty and staff will be increased from \$10 to \$12.

**The university community** was saddened last week by the death of Joann Kowalski, Manager of Operations for the computer center.

A prayer service was held for Joann Wednesday at the Lake Orion chapel of the Sparks-Griffin Funeral Home and her funeral was held Thursday at St. Joseph's Church in Lake Orion.

The computer center staff is working on a memorial tribute for Joann. Persons wishing to make donations should send them to Rose Mary Mitchell, Controller's Office, 100L NFH. Checks should be made payable to Oakland University; indicate that donation is for Joann Kowalski.

**Mary Hartson**, a master's degree student in Medical Physics, presented a paper "Effects on Technetium 99m on a Computed Tomographic Scan" by Mary Hartson and Michael Chopp at the Radiological Society of North American (RSNA) annual meeting in Chicago on December 1.

The recent **Revista Iberoamericana** contains an edition of a 17th century play discovered by William Bryant, modern languages, at the National Library in Mexico City. The **Relacion de un ciego y su lazarillo** is a humorous Christmas play about a blind beggar and his guide. Bryant was asked to contribute to this special number of the **Revista**, which was dedicated to a former professor of Bryant's in recognition of the man's contributions to the study of Latin American history and culture in the United States.

Several members of the Continuum Center made presentations during recent weeks. Betty White conducted two workshops on personal growth and assertiveness training at the annual American Association of Homes for the Aging in Ohio; Elinor Waters and Jane Goodman presented "Where do you go after you reflect? Increasing your repertoire of responses," to practicing counselors at the 1978 state convention of the Michigan Personnel and Guidance Association in Detroit; and Adele Weaver made a presentation on "Peer Group Counseling for Older People" at the 31st annual Scientific Meeting of the Gerontological Society in Dallas.

**Carol Halsted**, OU Dance Program director, and Marvin "Doc" Holladay, special instructor in music and director of the Afram Jazz Ensemble, appeared on the Good Morning Detroit show on December 6 in conjunction with the opening of "Suite for Pops: A Tribute to Louis Armstrong." Two dancers, Jill Johnson and Andrian Manigault, performed excerpts from the show.

**Irwin Schochetman**, mathematics, participated in the University of Maryland's Special Year in Mormonic Analysis in November. He presented a one-hour seminar on "Integral Operators and Induced Representations."

## JOBS

**Secretary to the Associate Provost & Director**, CT-8, a permanent full-time position in the Center for General & Career Studies.

**Payroll Clerk**, CT-5, permanent full-time position in the Payroll Office, Department of Business Affairs.

**Inventory & Property Control Clerk**, CT-5, a permanent full-time position in the Department of Physical Plant.

**Secretary**, CT-5, a permanent full-time position in the Office of Institutional Research.

**The OU NEWS**, an official publication of Oakland University, is published weekly during the year and distributed free within the university community. Its content is under the editorial control of the Office of Public Relations. Submit material to Nancy Liese, editor, 109 NFH.

# CALENDAR

December 22 - January 3

Holiday recess—University closed

**A Christmas greeting**

Once again during this holiday season, we would like to extend our warmest wishes to the entire university community and our hopes for the best in 1979.

*Jan and Don O'Donnell*