Team turns theory into observable science

A method of differentiating two similar chemical systems that once was only a theoretical concept has been directly observed through experiments conducted by an international team of physicists led by Nora Berrah, physics.

The publication Phys.Org.com recently reported the breakthrough, reviewing published results of work conducted at the 2-year-old Linac Coherent Light Source, at the SLAC National Laboratory at Stanford University in Menlo Park, Calif.

The experiments at the Stanford facility are providing a new way to explore atomic structure and dynamics and giving the scientific community more evidence of what the world’s most powerful hard X-ray laser can do.

The article, reviewed by Phys.Org.com, appeared in an October issue of the Proceedings of the National Academy of Sciences. It represents the first published piece that reveals a favorable comparison with earlier theoretical modeling on how molecules can be differentiated by using free-electron lasers to create a double-core hole by ejecting two electrons from their positions.

WMU named among nation’s ‘Best for Vets’ schools

For the second consecutive year, a national publication that serves all branches of the armed forces has identified WMU as Michigan’s top-ranked school for outreach and service to veterans.

Military Times’ EDGE magazine announced its annual list of the nation’s colleges and universities it calls “Best for Vets” in its November issue. WMU was ranked 33rd on the list of 59 schools nationally that earned the coveted designation. The only other Michigan university has identified WMU as Michigan’s top-ranked school for outreach and service to veterans.

Among other schools ranked by EDGE are Eastern Kentucky and Concord universities, which were tied for first place, and Arizona State, Ohio State and George Washington universities. Of the 59 schools honored, 51 are public institutions.

With the new assessment tool, this year’s final list includes fewer schools than the first list, which appeared in 2010. WMU, however, remains Michigan’s top-performing school.

Warm regards this holiday season,
and best wishes for the new year.

—John and Linda Dunn
Choral Christmas concert slated

The popular holiday “Choral Christmas” concert featuring Cantus Femina, the University Chorale and the Collegiate Singers will take place at 4 and 7:30 p.m. Saturday, Dec. 3, in the First Presbyterian Church, 321 W. South St. in Kalamazoo.

General admission tickets are $15, $12 for senior citizens and $5 for WMU students with a valid school ID. They are available at the door and through the Miller Auditorium Ticket Office at www.millerauditorium.com/som or (269) 387-2300.

Annual event supports scholarships

The School of Music will hold a scholarship benefit concert, “Jazz for the Holidays,” at 3 p.m. Sunday, Dec. 4, in the Dalton Center Recital Hall. The concert has become a tradition for many Kalamazoo-area families. More than 100 music majors will present this year’s show, which will include medleys of holiday tunes mixed with unique arrangements of traditional songs and carols as well as an audience sing-along.

Concert proceeds will be applied to scholarship for outstanding WMU music students. General admission tickets are $15, and $5 for senior citizens and WMU students with a valid school ID. They are available at the door and through the Miller Auditorium Ticket Office at www.millerauditorium.com/som or (269) 387-2300.

Students to present senior projects

A hybrid airship prototype, a geodesic pool dome cover for above-ground pools and a “Broncobot” multi-tool additive manufacturing system that has the ability to rapidly improve manufacturing time will be among the projects presented Tuesday, Dec. 6, at the 49th Conference on Senior Engineering and Design.

WMU students will showcase and demonstrate their projects from 8 a.m. to 4 p.m. in the Engineering and Applied Sciences Building. The free event will feature 122 seniors presenting the results of 44 projects they have completed to solve problems facing business and industry. Visit www.wmich.edu/engineer/senior-design-conference.htm for more information.

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PROF EXAMINES HEALTH COMMUNICATION

Julie Apker, communication, has written a book that explores the communication processes, issues and concepts that influence the lives of patients, health professionals and others in health institutions.

“Communication in Health Organizations,” published in October by Polity Press, integrates scholarship from communication, medicine, nursing, public health and allied health. A comprehensive review of research literature, the book explains the complexities and contingencies of communication in health settings using systems theory. It familiarizes readers with how health institutions function communicatively, and why health professionals interact as they do. An associate professor of communication, she taught the course in the fall of 2001. She teaches and conducts research in organizational and health communication.

YEARS OF RESEARCH CULMINATE IN BOOK

H. Byron Earhart, emeritus in comparative religion, has a new book out that is the first comprehensive English-language study of the evolving religious and aesthetic symbolism of one of the world's most famous mountains.

“Mount Fuji: Icon of Japan” was published in October by the University of South Carolina Press. Illustrated with color and black-and-white images, it provides an overview of the imagery of Mount Fuji from prehistoric to modern times.

In addition to firsthand descriptions of religious practices of pilgrims climbing the peak and pilgrimage organization meetings, the work provides a link to the author’s streaming 28-minute video documentary of Fuji pilgrimage and practice.

Earhart, a WMU Distinguished Faculty Scholar, retired in 2000. He is an expert in world religions and continues to teach online courses in Japanese and world religions.

ECONOMIST EDITS FORECASTING TEXT

Matthew L. Higgins has edited a book assessing economic forecasting methods in the wake of one of the greatest recent economic downturns—the “Great Recession.”

“Advances in Economic Forecasting,” published in November by the Upjohn Institute for Employment Research, features six papers presented for WMU’s 2009–10 Werner Sichel Lecture-Seminar Series.

“Advances in Economic Forecasting” argues that the economics profession can better exploit data through model and forecast combination, and advocates for models that are adaptive and perform well in the presence of nonlinearity and structural change.

Higgins has been a faculty member for 16 years. An associate professor, he focuses his research on econometric methods for understanding how uncertainty about the future affects the economy.
Walking around campus these days is like going on an environmental field trip.

Six interpretive signs have been installed near the University's most prominent stormwater management areas. The signs show the locations of vegetative strips, rock-filled detention basins, rain gardens and other examples of best management systems for slowing and filtering stormwater before it leaves WMU property and enters surrounding watersheds. They also explain how the various treatment systems employed at those locations work.

"Many of these treatment areas are underground and therefore go unnoticed," says Cari Delong, WMU Facilities Management natural areas manager and coordinator of campus stormwater initiatives. "The University felt the addition of signage would be a great way to educate the community while also advertising WMU's commitment to sustainability."

The new signs can be found near the Chemistry Building, Goldsworth Valley Pond, Miller Auditorium, across Western Avenue from the Gilmore Theatre Complex (Parking Lot 23), the Engineering and Applied Sciences Building, and the Business Technology and Research Park Pond.

They should clear up some confusion concerning areas of campus, such as

### Bioalcohol from algae is Bronco Biodiesel's next frontier

Bronco Biodiesel first made a splash five years ago by converting waste vegetable oil into renewable alternative biodiesel fuel. Now it's going underwater.

The Bronco Biodiesel collaboration team has expanded its sustainable energy research to include producing bioalcohols from algae grown in over-nutritized surface waters and municipal wastewater. As with the original Bronco Biodiesel project, algal energy products use materials recovered from existing urban waste streams and do not compete with food production.

In their research, team members John Miller and Steve Bertman, chemistry, and Sarah Hill, anthropology, are converting carbohydrates from wastewater algae to ethanol, an alcohol commonly added to gasoline. In addition to creating new alternative energy sources, the process could help to rectify the significant water quality problems associated with high nutrient levels in surface waters, including harmful algal blooms.

According to Miller, WMU research quickly revealed that carbohydrates in the algae were the most promising energy source and could be used as a feedstock for bioalcohols.

"We believe the technology is there, but there are obviously many other factors involved," he notes. "This means that for now, we're operating on a small scale. As such, we're able to work closely with a number of undergraduate and graduate students who are engaged in the research, which we certainly see as a positive thing."

The Bronco Biodiesel team is involved in algal projects in several locations, including WMU's Goldsworth Valley Pond and, through a partnership with Muskegon Country Wastewater Management Systems, upstate wastewater treatment lagoons.

### Obituaries

James E. Burns, a staff member since 2000, died Nov. 25. He was 54.

Burns was a supervisor in Facilities Management—maintenance services.

Edward T. Callan, internationally known scholar and emeritus in English, died Nov. 17. He was 93. Callan came to WMU in 1957 and retired in 1983 after 26 years of service.

One of WMU's most venerated faculty members, he was appointed a Distinguished Faculty Professor, the University's highest faculty honor, in 1983 and received the Distinguished Faculty Scholar Award, the University's highest scholarly honor, in 1980.

Memorial donations may be made to Hospice Care of Southwest Michigan or St. Joseph Catholic Church.

Edward H. Holloway, a former staff member, died Nov. 25. He was 58. Holloway came to WMU in 1994 and retired in 2008 as a systems support specialist in University Libraries after 14 years of service.

Frona "Toni" Ward, a former staff member, died Nov. 11. She was 101. Ward came to WMU in 1966 and retired in 1978 as a biology department secretary after 11 years of service. Memorial contributions may be made to the Kalamazoo Humane Society.

Howard Wolpe, a former faculty member and U.S. representative, will be honored during two public memorial events. Locally, there will be a celebration and reception starting at 4 p.m. Tuesday, Dec. 13, in Miller Auditorium. Nationally, an event has been planned for 11 a.m. Thursday, Jan. 19, in the Ronald Reagan Building in Washington, D.C.

Memorial donations may be made to the Woodrow Wilson Center's Africa Program.
Fall staff award winners to be feted at reception

Ten staff members have been selected to receive semiannual Make a Difference awards for fall 2011. The awards will be presented during a reception at 2 p.m. Monday, Dec. 5, in 157 Bernhard Center.

Members of the University community are invited to attend the reception, during which each award recipient will receive a before-tax prize of $300 and a commemorative certificate.

The fall 2011-12 recipients are:

- Christin Fawley-Zehner, Valley I Dining Service
- David Florida, electrical and computer engineering
- Margaret Hamilton, College of Fine Arts
- Anthony Helms, College of Education and Human Development
- M’Myia Hughes, College of Education and Human Development
- Lori Krum, physics
- Rainer Liebert, Sindecuse Health Center
- Jessica Parker, Extended University Programs
- Roxann Swank, College of Education and Human Development
- Scott Puckett, enrollment management

The WMU Make a Difference awards program is a campuswide peer-to-peer program that recognizes University staff members for their outstanding accomplishments and daily investment of energy and creativity. Up to 15 staff members may receive the award in each of two semiannual award periods every academic year. Semiannual award winners are eligible to receive one of the four annual Make a Difference awards that are presented each academic year and include a before-tax prize of $1,200.

Team turns theory into observable science

Berrah, who is on sabbatical this year and doing research at the SOLEIL light source facility in Paris, is the lead author on the published results.

Working on her team were researchers from Japan’s Institute for Molecular Science and Tohoku and Hiroshima universities, Finland’s University of Turku, Sweden’s Stockholm and Uppsala universities, the Stanford Linear Accelerator Center, and the Sincrotrone Trieste free-electron laser facility in Italy.

Successful observation of the concept and evidence of how the observed results match the theoretical modeling, Berrah says, will help researchers fingerprint molecules that are similar and lead to a rebirth of electron spectroscopy for chemical analysis—the detection of particles and measurement of their energies.


December is great time to hear free classical music at WMU

University musicians are staging a variety of free concerts this month in honor of the holiday season.

Two concerts are set for today in the Dalton Center Recital Hall. The Percussion Ensemble will perform global percussion grooves at 6 p.m. The Western Horn Choir, which is composed of French horn artists, will perform with special guest Michael Wood at 8:15 p.m.

- Friday, Dec. 2, the Symphony Orchestra will perform popular compositions by Russian masters at 8:15 p.m. in the Dalton Center Recital Hall.
- Monday, Dec. 5, student and faculty soloists will feature the music of Franz Liszt when they present “Lisztomania” at 7 p.m. in the Dalton Center Recital Hall.

Visit www.wmich.edu/wmu/news/arts for stories about some of the upcoming free concerts and www.wmich.edu/events for a complete list of holiday-related events.

WMU named among ‘Best for Vets’

WMU has made veterans a priority over the past five years with a number of initiatives that reach out to both veterans returning from deployment and National Guard members who might be called to serve at any time.

The University has the largest population of Iraq and Afghanistan veterans among all of Michigan’s 15 public universities.