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## Monitor Newsletter October 22, 2001

Bowling Green State University

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# MONITOR

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## Internet2 puts BGSU on fast track for research

A better understanding of the laws governing the universe will be Bowling Green's passport to the next phase in Internet communication, Internet2. Comer Duncan, physics and astronomy, has obtained a grant from the National Science Foundation to bring Internet2 to BGSU to further his research into astrophysics and relativity theory.

His \$150,000, two-year grant is titled "Internet2 Connection for Research in Numerical Relativity and Relativistic Astrophysics at Bowling Green State University."

### Comer Duncan examines black holes, galaxies

How does one study something that cannot be visited in person nor recreated in a terrestrial laboratory? How does a researcher test theories without direct access to the subject?

A modern method of investigation is computational physics, which allows scientists to simulate, using computers, events that are either too dangerous, too expensive or unreachable, according to Comer Duncan, physics and astronomy.

Beginning this January, his work with the Ohio Supercomputer Center (OSC) will be aided by a new Internet2 connection to BGSU, made possible through a grant from the National Science Foundation. This will bring data sets from the supercomputers to his computer very quickly, and will allow him to share the results immediately with his collaborators and co-researchers.

Duncan uses computational physics to investigate phenomena in outer space, using supercomputers to simulate and visualize very complicated processes.

The staff at the OSC has volunteered to help by writing the necessary visualization software.

"These supercomputers and computer programs allow us to express the laws of nature numerically, and can give us approximate answers to elaborate problems, which would be very difficult to do on your desktop or in your laboratory because they are very memory- or time-intensive," Duncan said.

Internet2 is a not-for-profit consortium, led by more than 180 U.S. universities, developing and deploying advanced network applications and technology. With participation by more than 60 leading companies, Internet2 recreates the partnership of academia, industry and government that helped foster today's Internet in its infancy.

Duncan described Internet2 as a "well-oiled pipe" that allows large amounts of data to be sent very quickly. This higher speed connection will facilitate his use of Ohio's Supercomputer Center

in Columbus to do the extremely complex calculations involved in his two computational physics research projects.

Internet2, which has much greater bandwidth and higher speed than Internet1, will fulfill the function originally conceived for the Internet as a means of communication for scholars and scientists. "By opening up another lane of traffic, it will segregate academics from the rest of the communications traffic," said Linda Dobb, executive vice president. "It's the next logical step and

very exciting."

Several other Ohio universities such as Case Western Reserve, Cincinnati, Kent State, Ohio State, Ohio University and Miami are already Internet2 members.

BGSU's Internet1 and, beginning in January, Internet2, connections are supplied by OSC/OARNet, the state's network system for universities. As long-time members of the networking and computing support organization, Duncan and Dobb serve on statewide committees that recommend policies and help plan future deployment of high-end support and applications. In fact, Duncan wrote the NSF proposal that brought Internet1 to BGSU in 1989.

They said Internet2 membership will open many more research and applications opportunities for BGSU faculty. In addition to physics and astronomy faculty, other researchers interested in utilizing Internet2 are those in biology (both for biomolecular research and sharing of electron microscope images), mathematics, chemistry and neuroscience.

Beginning in the spring semester 2002, the new Internet2 connection will be put in place and initial work will be under way to use it for Duncan's research with the OSC. Simultaneously with this work, Duncan will lead a group of faculty on campus in exploring how the Internet2 connection can be used in a variety of research and teaching areas.

Bowling Green has made a serious commitment to bringing Internet2 to campus, both by agreeing to cost sharing for the project in the amount of \$244,600 and by implementing the technology infrastructure across campus. Without the speed allowed by the BGsupernet, the Internet2 connection would not be possible. "It's one thing to bring the packets of information to your door, which is what Internet2 does, but it's another thing what you do with them," Duncan said. His grant proposal to NSF included the specifications of BGSU's network, which were judged adequate for Internet2 interface.

To learn more about Internet2 and the advanced networks that convey it, visit [www.internet2.org](http://www.internet2.org).



Comer Duncan, physics and astronomy, shows a sequence of a gas jet spewing from the center of a galaxy. The variations in shade denote the changes in pressure as the jet emerges and moves away.

Many of the questions about how the universe operates are so complex that it takes a cluster of very fast machines working on separate parts of the simulation simultaneously to produce the answers. This is called parallel computing, and it is what the 160 high-powered machines in the OSC do.

"They allow you to play a very fancy game of 'what ifs,'" Duncan said.

Duncan's work centers on two projects. First, he studies simulations of jets of matter emitted by other galaxies to try to discover what they contain and the nature of their source. These jets, which are spewed from the center of galaxies for long distances at speeds approaching the speed of light, are made up of gases consisting of protons and electrons, and collide with other ambient gases outside the galaxy. One theory is that they are produced by black holes thought to exist in the centers of many galaxies.

His co-researchers on the

project are Philip Hughes, University of Michigan astronomy faculty member, and Mark Miller of Washington University in St. Louis, a top BGSU physics alumnus.

Duncan's second project involves the study of black holes in relation to Einstein's Theory of Gravity. By putting Einstein's equations into computer code, Duncan hopes to find the conditions under which black holes will and will not form. His collaborator on this project is David Garfinkle, a physics faculty member at Oakland University in Michigan.

"Given the very enhanced speeds that the new Internet2 connection will provide, I will be able to be immersed in the ongoing simulations as they proceed. Such an ability to engage in 'computational steering' will provide me a much better feel for the physics as it evolves. I thus see Internet2 as a tremendous boon to my research," Duncan said.

## in brief

### Faculty Development Grants due

Faculty Development Grant proposals are due in the Provost's Office by 5 p.m. on Nov. 13. The application guidelines can be found at [www.bgsu.edu/offices/provost/facdev/grants.html](http://www.bgsu.edu/offices/provost/facdev/grants.html).

For more information, call Sharon Mason in the provost's office at 2-9939.

### Understanding Hate Crimes

Four panelists will discuss hate crime in the first program in this year's series "Issues in Cultural Diversity," sponsored by the Multicultural Affairs Committee of Libraries and Learning Resources.

The program, titled "Understanding Hate Crimes," will be held from 10 a.m.-noon Wednesday (Oct. 24) in the Pallister Conference Room in Jerome Library.

Panelists will include Carl Spicocchi of the Federal Bureau of Investigation, Imam Farooq Abo-Elzahab of the Islamic Center of Greater Toledo, Robert Salem of the University of Toledo College of Law Clinic, and attorney Matthew Reger of the Bowling Green City Prosecuting Attorney's Office.

Marshall Rose, director of the University's Office of Equity, Diversity and Immigration Services, will moderate.

The program is the first of three in the 2001-02 series, which has the theme, "Millennium Demographics: Being Other." Future programs will look at non-traditional families, cultural/ethnic minorities and persons with disabilities or differing sexual orientations.

## job postings.....

### FACULTY

**Applied Sciences, BGSU Firelands.** Visual Communications Technologist. Assistant professor. Call the dean's office, 2-0623. Deadline: Nov. 15.

**Economics.** Instructor. Call John Hoag, 2-8231. Deadline: Dec. 15.

**HMSLS.** Assistant professor (two positions). Call Marilyn Dewyre, 2-7234. Deadline: Jan. 14/15, 2002.

Contact Human Resources at 372-8421 for information regarding the following:

### CLASSIFIED

(Employees wishing to apply for these positions may request a "Request for Transfer" form.)

Deadline for employees to apply is 1 p.m. Friday, Oct. 26.

**Administrative Assistant 2 (C-126-Vb)**—University Dining Services. Pay grade 10.

**Student Services Counselor (C-131-Vb)**—Student Financial Aid. Pay grade 7.

• The following positions are being advertised on and off campus:

**Cook 1 (C-123-Sb)**—University Dining Services (two positions). Pay grade 3. Nine-month, part time.

**Food Service Worker (C-120-Sb)**—University Dining Services (four positions). Pay grade 1. Nine-month, part time.

**Grants Coordinator 2 (C-119-Vb)**—Office of Sponsored Programs and Research. Pay grade 10.

**Vehicle Operator 2 (C-127-Sb)**—BGSU Shuttle Service (two positions). Pay grade 6. Nine-month, part time.

### ADMINISTRATIVE

**Coordinator for Internal Training and Development**

**(M-091)**—Office of Human Resources. Administrative grade 14. Deadline: Oct. 26.

**Manager of Employee Relations (M-090)**—Office of Human Resources. Administrative grade 16. Deadline: Oct. 26.

**Assistant Director of Recreational Sports, Aquatic Programs (S-092)**—Recreational Sports. Administrative grade 14. Review of applications will begin Nov. 2 and continue until the position is filled.

**Bookstore Director (M-096)**—University Bookstore. Administrative grade 18. Review of applications will begin Nov. 6 and continue until the position is filled.

**Assistant Director of Residence Life (residential neighborhoods) (S-093)**—Office of Residence Life. Administrative grade 14. Review of applications will begin Nov. 16 and continue until the position is filled.

**Psychologist (S-097)**—Counseling Center. Administrative grade 14 for non-licensed and 17 for licensed. Deadline: Nov. 27.

## University honored with two Crystal Apple Awards

For the second year in a row, BGSU has been honored for its commitment to providing meaningful work opportunities for people with disabilities. The University received two Crystal Apple Awards from the Northwest Ohio Placement Association at a ceremony on Oct. 5.

Carl Cogar, assistant vice president for facilities services, Duane Hamilton, director of campus services, facilities ser-

BGSU is an AAETEO institution.

## campus calendar.....

### Tuesday, Oct. 23

**French Film Series, "Pola X"** (1999) 7:30 p.m., Gish Film Theater, Hanna Hall.

**Arts & Sciences Forum, "The 21st Century War and the Lessons of History,"** with Gary Hess, Distinguished Research Professor of history, noon-1 p.m., McFall Center Gallery. The noon luncheon is \$7.95; the 12:30 presentation is free. Call 2-2340 or email [mjhitt@bgnet.bgsu.edu](mailto:mjhitt@bgnet.bgsu.edu).

**Brown Bag Luncheon, "Whose Pink? A Feminist Analysis of Breast Cancer Awareness Month,"** presented by Julia Mason, American culture studies, noon-1 p.m., the Women's Center, 107 Hanna Hall.

**Multimedia Artist Presentation,** Kenneth A. Huff, 6-7:30 p.m., 115 Olscamp Hall. Call 2-8526.

### Thursday, Oct. 25

**PCA Presentation Series, "Social Inclusion Activities for Older Adults with Mental Retardation and Developmental Disabilities within Wood County,"** with Nancy Orel, gerontology, and Holly Beaverson, Wood County Board of MR/DD, noon-1 p.m., 107 Hanna Hall.

**International Film Series, "West Beyrouth"** (1998, Lebanon), 7:30 p.m., Gish Film Theater, Hanna Hall.

### Friday, Oct. 26

**CTLT Workshop, "Developing Your Digital Video Project,"** 9 a.m.-noon, 210 University Hall. To register, email [jcthomp@bgnet.bgsu.edu](mailto:jcthomp@bgnet.bgsu.edu).

### Sunday, Oct. 28

**Sunday Matinée, "The Kid,"** 1920 silent motion picture directed by Charles Chaplin. Introduction by Jan Wahl, film historian, and musical accompaniment by Michael Peslikis, 3 p.m., Gish Film Theater, Hanna Hall.

**Public Skating Special Event, "Happy Halloween,"** with games and treats, 3:30-5:30 p.m. Free to those in costume.

### Monday, Oct. 29

**Campus Trick or Treat,** 6:15-8:30 p.m., residence halls. Parents and children to gather on the steps of Saddlemere Student Services Building at 6 p.m.

### Continuing Events

#### Through Nov. 14

**Art Exhibition,** Vince Tarano, painter, The Little Gallery, BGSU Firelands.

#### Through Nov. 16

**Art Exhibition, "Next Question,"** computer art collaboration with Emily Blair, Michelle Illuminato, art, and Phuong Nguyen, Kennedy Green Room, Moore Musical Arts Center.

#### Through Nov. 18

**Art Exhibition, "Somebody Else's Dream: Gregory Barsamian,"** kinetic sculptor, Dorothy Uber Bryan Gallery, Fine Arts Center. Gallery hours are 10 a.m. to 4 p.m., Tuesday-Saturday, and 1-4 p.m. Sundays.

#### Oct. 22-26

**Hands Are Not for Hurting,** noon-6 p.m., Olscamp lobby. Take a pledge against violence.

birthday parties and including them in special events," said Susan Davis, director of Community Employment Services at Wood Lane.

NOPA is an organization of placement professionals assisting individuals with special needs secure employment in their community. They strive to meet the needs of area businesses while providing life-enhancing employment for the workers.