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Monitor Newsletter August 16, 2010

Bowling Green State University

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BGSU Monitor

AUGUST 16, 2010

B O W L I N G G R E E N S T A T E U N I V E R S I T Y

> Top Stories

In Brief

Calendar

Job Postings

Obituaries

\$1.3 million grant boosts BGSU RNA research

A group of BGSU researchers is immersed in a project that expands our knowledge base about genes. Their work translates existing information into a form that tells biologists more about the organisms they study.

Funded by a four-year, \$1.3 million grant from the National Institutes of Health, Dr. Neocles Leontis, chemistry; Dr. Craig Zirbel, mathematics and statistics; bioinformatics doctoral student Anton Petrov, and statistics doctoral student James Roll are creating tools that will enable biomedical researchers to use the new knowledge for drug development and gene therapy, among many other applications.

They are collaborating with the international Protein Data Bank (PDB) and the Nucleic Acid Database (NDB), and with colleagues at Rutgers University.

Though the NIH funding is new, Zirbel and Leontis have been collaborating for about 10 years on the effort. Students have made significant contributions over that time; many are now in teaching and research positions at prestigious universities.

"Our research collaboration is training new scientist/scholar/teachers for the U.S. STEM work force—a top priority of the state of Ohio and the nation," Leontis said.

It is now possible to "sequence" the DNA of a bacterium in a day, and a human being in a week, he said. But while those long chains of nucleotide bases contain the chemical "recipe" for each organism, they do not paint a three-dimensional picture of its actual structure. And it is the structure—how the sequences of RNAs and proteins twist, turn, fold and loop—that determines what the organism is and how it functions.

"There is a huge repository of gene sequences that have been completed, but it's not directly useful to biologists," Leontis said.

The BGSU team is focusing on ribonucleic acid (RNA). Leontis describes RNA molecules as "the software controlling how the genes are expressed to make proteins."

"We're developing software and data-mining tools that can be used to look for 3-D motifs, or repeating patterns, in 3-D structures and in sequences. Identifying and classifying these motifs will enable researchers to begin to predict their functions," Leontis said.

With the assistance of previous students, Zirbel has written the code for searching RNA structures and sequences for motifs. "We plan to integrate these 3-D motifs into the PDB/NDB so that researchers can search any way they want to, and quickly," he explained. "By observing commonalities, we can make predictions for structures and how they function."

Petrov, a third-year Ph.D. student from St. Petersburg, Russia, is using the code to search for these motifs, which will be analyzed to determine if they are similar enough to reliably predict what function they control. "It becomes more precise as we accumulate more data," Zirbel said.

The team will make the "motif atlas" available online through the Nucleic Acid Database and also provide interactive Web tools that researchers can use to search for and predict functions of RNA motifs.

BOWLING GREEN STATE UNIVERSITY

Top Stories

> In Brief

> Calendar

Job Postings

Obituaries

IN BRIEF

Plan parking, routes carefully for Friday move-in

Move-in for new incoming and transfer students is on Friday (Aug. 20), and will require closing some parking lots and modification of normal traffic patterns to accommodate this year's large freshman class.

Following are parking guidelines for faculty and staff who will need to be on campus that day.

Northwest

Employees who work in the northwest portion of campus (e.g., Mathematical Sciences, Technology, College Park, etc.) are advised that lots 3, H, and 5 will be unavailable. Further, Merry Avenue will be restricted to one-way traffic (westbound only) beginning at 7 a.m. It is recommended that individuals enter campus off Poe Road and North College Drive and park in the lots north of Technology (lots S, TE, TC, TS, TN, W and M). Parking will be available in Lot R; however, the lot will be difficult to access. Vehicles will need to enter campus at the Visitor Center on Alumni Drive and proceed along with orange/green move-in routes around the football stadium to get to Merry.

South/Southwest

Those who work in the west/southwest portion of campus (e.g., Administration, Williams, Union, McFall, etc.) are advised that lots E, 3, J, 11, and A will be unavailable. Further, Wooster Street continues to be closed between the railroad tracks and downtown. For those coming from the south, Parking Services highly recommends avoiding Wooster and suggests parking in the lots surrounding the Tucker Center on Troup Avenue (lots P, PX, 9 and 15). For everyone else, it is recommended that they enter campus along Poe Road to Enterprise Street and park in Lots 4 /4A. Parking will be available in lots G and 21; however, heavy traffic on Wooster and the low lot capacity do not make those recommended locations.

Northeast/East

Those who work in the northeast/east portion of campus (e.g., Jerome Library, Business Administration, Moore Musical Arts, etc.) are advised that lots N, K, 2, 5 and 12 will be unavailable. Further, Merry Avenue will be restricted to one-way traffic (westbound only) beginning at 7 a.m. It is recommended that drivers enter campus at the Visitor Center on Alumni Drive, follow the orange/green move-in routes to Merry and park in lots 10, 16, C and 1. Because move-in begins at 8 a.m., it is recommended that faculty and staff in this area arrive before that time to avoid being stuck in traffic.

Contact Parking Services at parking@bgsu.edu or 2-2776 for more information. To view the campus map, visit http://www.bgsu.edu/map.

CALENDAR

Wednesday, Aug. 18

Classified Staff Council, 10 a.m.-noon, 136 Perry Field House.

Friday, Aug. 20

Move-In for new incoming and transfer students, watch for signs and notifications from parking and traffic.

Men's Soccer vs. Windsor, scrimmage, 5 p.m., Cochrane Field.

Women's Soccer vs. Windsor, scrimmage, 5 p.m., Cochrane Field.

Sunday, Aug. 22

Move in for returning students, watch for signs and notifications from parking and traffic.

Women's Soccer vs. Cincinnati, 1 p.m., Cochrane Field.

Monday, Aug. 23

Fall Semester Begins.



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B O W L I N G G R E E N S T A T E U N I V E R S I T Y

- Top Stories
- In Brief
- > **Calendar**
- > **Job Postings**
- > **Obituaries**

Continuing Events**August 15-20**

Graduate Student Orientation, schedule and information available at <http://www.bgsu.edu/colleges/gradcol/gso/page29328.htm>.

August 20-22

Opening weekend, complete schedule available at www.bgsu.edu/openingweekend

August 23-September 21

Art Exhibit, Robert McCann, paintings, Little Gallery, BGSU Firelands. Gallery hours are 9 a.m.-5 p.m. Monday-Friday.

JOB POSTINGS**FACULTY**

There were no jobs posted this week.

Labor Postings

<http://international.bgsu.edu/index.php?x=facinfohires>

Contact the Office of Human Resources at 419-372-8421 for information regarding *classified and administrative positions*. Position vacancy announcements may be viewed by visiting the HR website at <http://www.bgsu.edu/offices/ohr/>.

Employees wishing to apply for these positions must sign a "Request for Transfer" form

and attach an updated resume or data sheet. This information must be turned in to Human Resources by the job deadline.

CLASSIFIED**On-campus classified:**

http://www.bgsu.edu/offices/ohr/employment/BGSU_only/page11151.html

Off-campus classified:

http://www.bgsu.edu/offices/ohr/employment/cl_staff/page11145.html

ADMINISTRATIVE

http://www.bgsu.edu/offices/ohr/employment/adm_staff/page11137.html

OBITUARY

Edgar Daniels, 89, a professor emeritus of English, died Aug. 5 in California. He taught at BGSU from 1953-81.

Bruce Bellard, 87, a professor emeritus of health, physical education and recreation and former mayor of Bowling Green, died Aug. 13 in Bowling Green. He taught at the University from 1948-81.

Margit Heskett, 90, died Aug. 13 in Bowling Green. An associate professor emeritus of physical education and recreation, she joined the faculty in 1965 and retired in 1979.