

CREDIT, DEBIT CARD NUMBERS STOLEN FROM DAY'S JEWELERS

# LOCAL & STATE

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## ANOTHER WAY OF LOOKING AT LIFE



Gregory Rec/Staff Photographer

**Jennifer Jamison** and Deering sophomore Billy Farrell look at an image on a monitor connected to an electron microscope in a biology class at the high school Tuesday. Jamison is a microscopist and research associate at the University of Southern Maine.



# SCHOOLS EXPLORE ELECTRON SCOPE

By **KELLEY BOUCHARD**  
*Staff Writer*

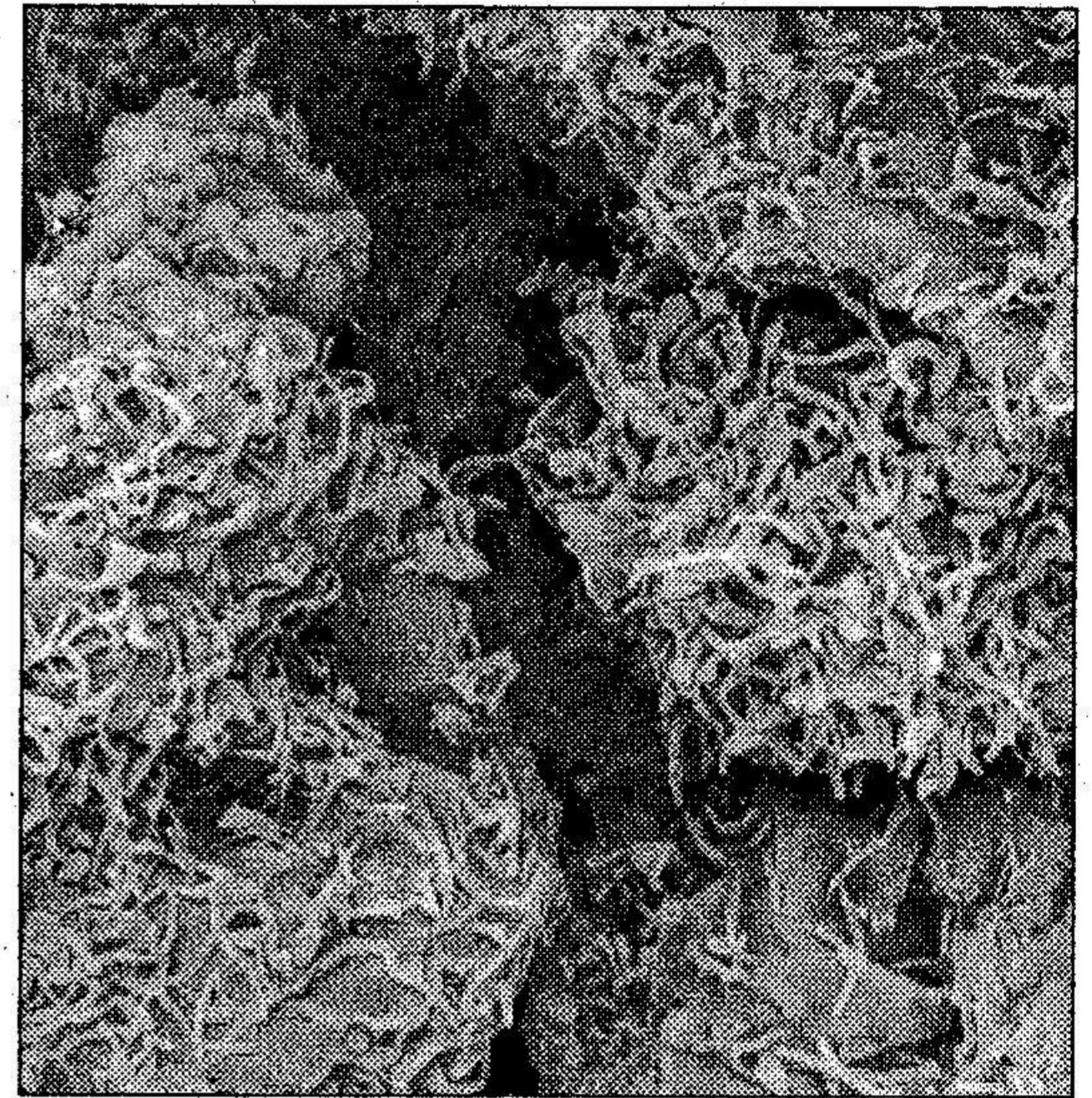
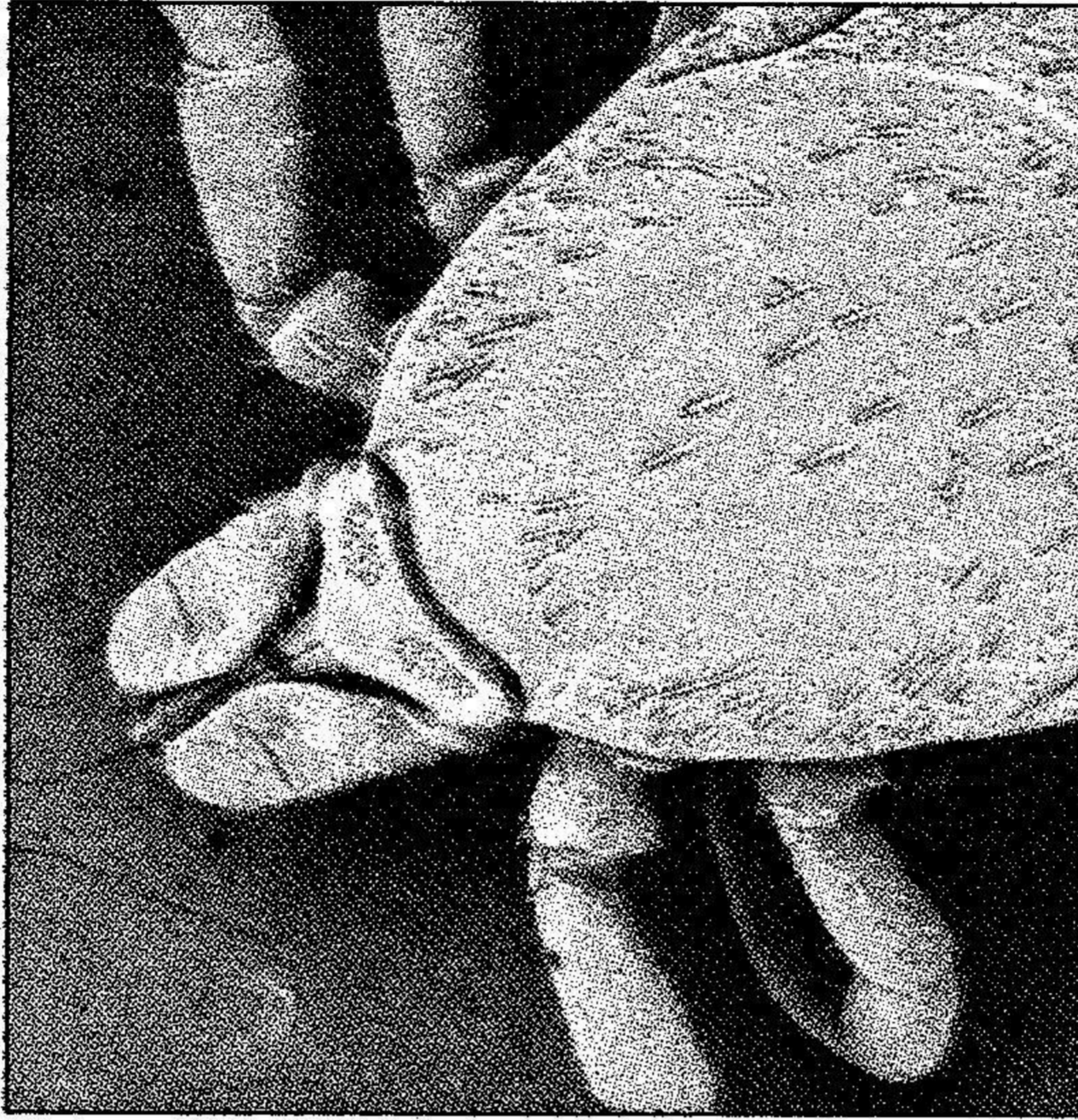
**PORTLAND** — The black-and-white image of fuzzy cells filled the computer screen, showing students at Deering High School what breast cancer looks like when it's magnified 9,000 times.

The students' extraordinary experience was possible because scientists from the University of Southern Maine brought a portable electron microscope into David Sproul's biology classroom on Tuesday.

About the size of a mini refrigerator, the new tabletop microscope is modeled after room-size microscopes that few people ever see or have an opportunity to use.

"I've taught here for 28 years and I've never had an electron microscope in my classroom," Sproul said. "The average biology teacher has never seen one."

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**Above, a deer tick** is magnified 80 times. Above right, breast cancer cells are magnified 9,000 times by a portable electron microscope from USM, as part of an educational outreach program for the university's Virology and Electron Microscopy Laboratory.



# EXPLORE

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USM scientists are making the portable electron microscope available to middle and high school classrooms across Maine as part of an educational outreach program for the university's Virology and Electron Microscopy Laboratory.

The program is sponsored by a five-year, \$1.3 million Science Education Partnership Award from the National Center for Research Resources, a branch of the National Institutes of Health.

USM bought the portable electron microscope last summer with a \$100,000 federal grant it received through the American Reinvestment and Recovery Act.

Jennifer Jamison, an electron microscopist and research associate in the virology lab, showed students how the microscope works and allowed a few of them to use it.

"We want students to see science at work," Jamison said after one class. "We also want them to understand the nano world as the world becomes more nano-oriented."

Nanoscience and nanotechnology involve working with matter and devices on an atomic or molecular scale. An electron microscope uses a particle beam of electrons to illuminate matter and produce a magnified image.

Sproul's students typically work with compound optical microscopes that use a combination of lenses and light to magnify matter as much as 430 times.

The portable electron microscope magnifies micro or nano matter – which measures one-millionth or one-billionth

## INTERESTED TEACHERS

To arrange a demonstration of the portable electron microscope in a classroom, visit the project's website at [nanodiscoverylabs.org](http://nanodiscoverylabs.org) or contact project coordinator Gail Fletcher at [gail.fletcher39@gmail.com](mailto:gail.fletcher39@gmail.com).

of a meter, respectively – up to 10,000 times. The room-size electron microscope that Jamison operates in the lab at USM magnifies matter up to 340,000 times.

Sproul learned about the portable microscope's availability for classroom presentations while taking science courses for high school teachers at the university. USM scientists have brought the microscope to Falmouth Middle School, Skowhegan Area High School and Stearns High School in Millinocket.

Though portable, the mi-

croscope is a delicate piece of equipment that must be transported carefully and recalibrated each time it's moved. On Tuesday, it took an hour to set up the microscope in Sproul's classroom. Students who worked with the microscope were impressed and a little intimidated.

"I was afraid I might break it," said Celie Bauer, a sophomore. "If you just touched the table, the image would get blurry. But it was fun."

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