

OSR Grants Update

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OSR Grants Update is an internal newsletter produced by the Office for Sponsored Research. This quarterly newsletter was created to keep faculty and staff informed of funding opportunities in their respective disciplines and departments as well as updating the Siena community on current grant activities on campus.

For additional information and resources, please visit the OSR website at www.siena.edu/osr.

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Need technical help with writing your next grant proposal for funding?

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Research Spotlight: Prof. John Hayden Digital Microscopy In Cell Biology

By Alfredo Medina, Editor

Not too long ago, I bumped into Dr. John Hayden, Professor of Biology, in Siena Hall on my way to a meeting. It had been months since we have spoken after his much anticipated move to the newly constructed Morrell Science Center. After exchanging greetings, he invited me to his newly enhanced cell biology laboratory. For just a second, I had almost forgotten how I came to know John and about his grant award from the National Science Foundation.



In Spring 2002, Dr. Hayden received news that his grant proposal entitled, “*Introduction of Digital Microscopy into the Cellular Biology Curriculum*” was awarded \$34,457 by the National Science Foundation under the popular Course, Curriculum, and Laboratory Improvement (CCLI) Program. The grant award was used to upgrade much needed equipment for cell biology, microbiology, and plant physiology courses. Siena College provided a 1:1 match to support this \$70,000 initiative ensuring that all biology students have access to cutting-edge research equipment.

Taking full advantage of the Morrell Science Center’s technological capabilities, Dr. Hayden created four digital microscopy workstations enabling biology faculty to offer laboratory exercises that expose students to techniques and phenomena normally confined to the research laboratory. These workstations allow for making digital records, including time-lapse movies, of their phase and fluorescence observations. Think of a high power microscope linked to a computer. If a student is interested in studying the properties of a cell without having to have their eyes constantly fixated to a microscope, s/he can simply “capture” an image of the cell and transfer it onto the computer hard drive.

In the past, students working on fluorescence microscopy projects had to make their observations in a dark room and had to bring their slides to a digital workstation to record it with a Spot color camera. The cell biology lab was equipped with one digital microscope workstation with 16 student waiting in line

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Digital Microscopy In Cell Biology

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to use it. The upgrading to four new digital microscopy workstations enables students to work in teams and there is no longer the need for a dark room to make observations. Each digital workstation is equipped with a Nikon TS100-F inverted microscope with phase and fluorescence optics allowing for observation and recordings in normal room light. The workstations are also equipped with a Sony DXC-390 CCD color camera, a Sicon Corporation CG-7 frame grabber board and software, and a 21-inch high resolution monitor.



Jeff Schupp, biology major, standing next to one of the four digital microscopy workstations in the Cell Biology teaching laboratory.

In addition to the research knowledge that students gain from the new instrumentation and laboratory experiments, Dr. Hayden, including Dr. Ken Helm, a plant cell biologist and Dr. George Bazinet, a microbiologist, work with students to develop their findings into high-quality poster presentations. Students are paired off and assigned a poster presentation based on a Journal of Cell Biology paper published within the last six months. The student group assignment is to explain to their classmates the research presented in an original article. In some cases, students attend regional and national meetings to communicate their presentations to other faculty and institutions. Poster presentations are typically held at the American Society for Cell Biology Annual Meeting.

Funding Column

National Institutes of Health Academic Research Enhancement Award

Funding to support science faculty at predominantly undergraduate liberal arts institutions with small research programs. Eligible research areas include biology, biochemistry, chemistry, microbiology, and molecular biology. Request can be made up to \$100,000 per year over 3 year period. **Deadline:** 1/25, 5/25 annually.

W. M. Keck Foundation

The W. M. Keck Foundation supports funding equipment, facilities, fellowships, and basic science-related research projects. Past grants have focused on faculty-student research, and incorporating new instructional technologies into the liberal arts curriculum. Eligibility: Tenure-track science faculty at private, predominately undergraduate institutions. **Deadline:** Letter of inquiry required. Invitation needed to submit full proposal.

New York Council for the Humanities

The New York Council for the Humanities funds projects that stimulate public consideration of the humanities, through several different kinds of grants. Funds support speakers, events, and humanities related programming. **Deadline:** Major Grants (\$2500-\$10,000), November 1 & March 1 annually; Mini Grants (>\$2,500) can be submitted anytime.



Erica Goyal (left) and Dana Lawton working on their poster presentation.