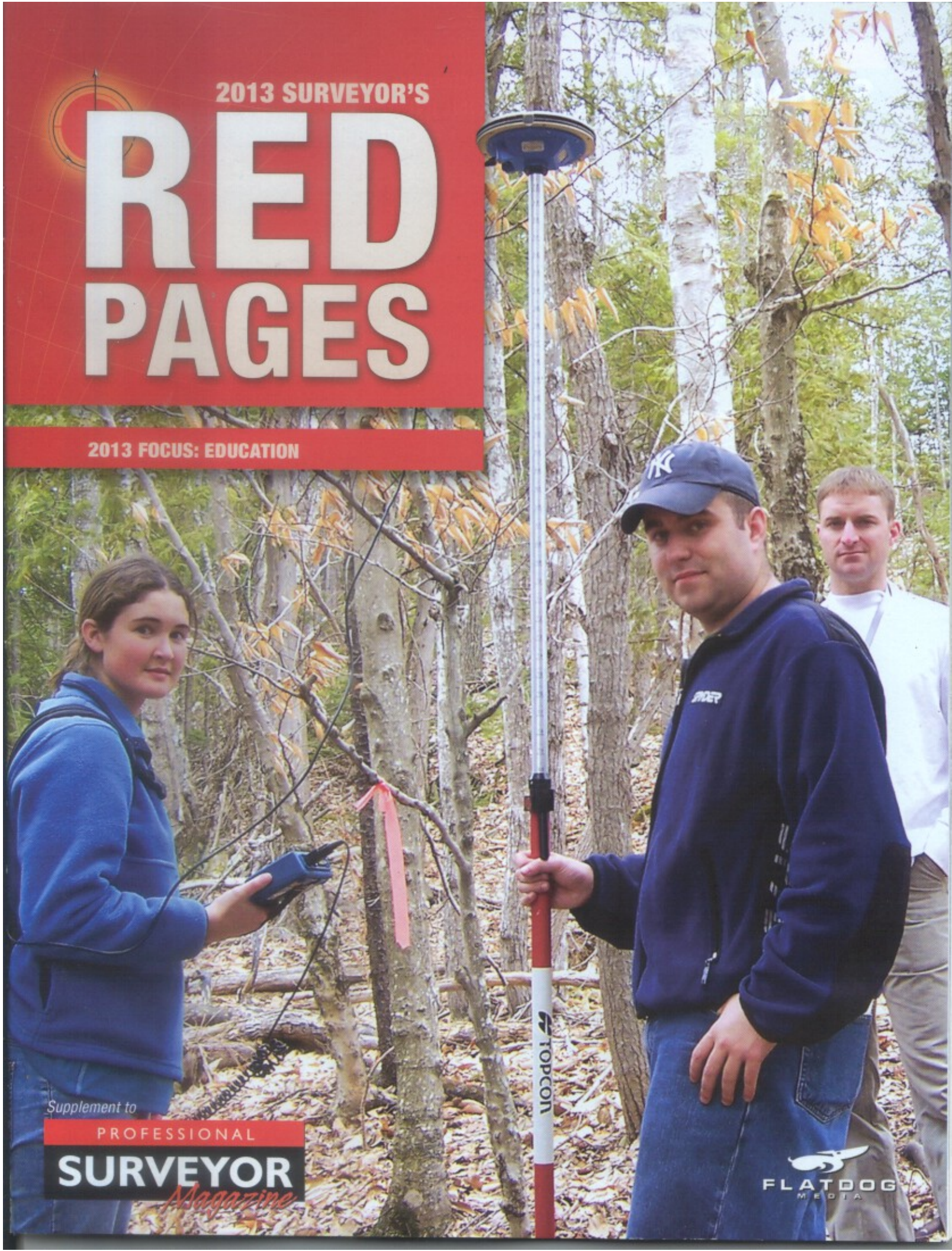
2013 SURVEYOR'S

RED PAGES

2013 FOCUS: EDUCATION



Supplement to
PROFESSIONAL SURVEYOR Magazine

FLATDOG MEDIA

Working on their capstone project are Lori-Ann Stubbs, Jonathan Miller, and David Sheehan. The project involves locating and mapping a parcel for the Hirundo Wildlife Preserve.

Maine's

Surveying Engineering Technology Program

The University of Maine's program continues to evolve by aligning the focus of courses to the needs of professional practice.

By Knud E. Hermansen, PhD and Ray Hintz, PhD

The surveying engineering technology program at the University of Maine is an ABET Accredited-accredited program leading to a Bachelor of Science degree in surveying engineering technology.

History of the Program

The surveying program at the University of Maine has a long and distinguished history of extensive and quality education. Surveying education was approved by the University of Maine board of trustees in 1978. The initial surveying program began as an option as part of the civil and environmental engineering program. A two-year option in surveying was also offered in the civil engineering technology Associate degree program at the same time.

The surveying engineering (SVE) department was created in 1988 from the surveying option in the civil and environmental engineering program. Starting in 1996, the surveying engineering program was renamed spatial information engineering (SIE) to reflect the expanded role of surveying into geographic information systems.

In 2003, the SIE program again evolved into the information systems engineering (ISE) program. At the same time, the undergraduate surveying practice component of the ISE program was transferred to the school of engineering technology and became the surveying engineering technology program (ABET Accredited/TAC). Since 2003, the surveying engineering technology program has aligned the focus of the courses to the needs of professional practice.

Students practice with a level near the university's library.

A Regional Program

The survey program is a New England regional program. Because it is the only four-year degree program in surveying in New England, residents from Massachusetts, Rhode Island, New Hampshire, Vermont, and Connecticut can take advantage of the New England Board of Higher Education reduced tuition rate, which is approximately half the out-of-state tuition rate.

Focus and Optional Studies

The focus of the surveying engineering technology program is to educate and train an individual to enter professional land surveying practice upon graduation. The program combines courses in surveying, business, and engineering that focus on the development of skills and infusion of knowledge needed to excel in professional surveying practice.

Surveying courses include plane surveying, construction surveying, photogrammetry, computer-aided design, data collection, remote sensing, boundary law and retracement, cadastral surveying, global positioning systems,

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land development design, and geographic information systems. Business courses include small business management, accounting, and economics. There is an emphasis on communications throughout the program.

A business minor, entrepreneurial minor, and minor in construction management are available—often without paying for extra courses. Almost all surveying students earn at least one minor. An option is available for students to earn both a BS degree in surveying engineering technology and Masters in Business Administration (MBA) in five years.

Professional Surveying Licensure

Seniors are required to take the Fundamentals of Surveying exam to graduate. As a consequence, 98% of graduates are licensed surveyors in training (LSIT) shortly after graduation. Graduates meet the educational requirements for licensure as a professional land surveyor in all states.

Two to six years after graduation, many graduates are licensed as professional surveyors. Ten or more years after graduation many graduates operate their own firms or are employed in leadership positions in government agencies or private firms. Graduates work across the United States.

Top: Students from Eastern Maine Community College in Bangor survey on Chesuncook Lake with the help of a snowmobile and sled.

Left: Former student Daniel F. Livingstone, PLS, was a non-traditional student who earned a minor in surveying to obtain his professional surveying license. He is now an employee at the James W. Sewall Company in Old Town, Maine.

Accreditation

The surveying engineering technology program is ABET Accredited/TAC accredited. As a consequence, juniors, seniors, and graduates may take the fundamentals of engineering exam in Maine. Many graduates of the surveying program are dual licensed as professional surveyors and professional engineers.

Students and Employment

Students who enter the surveying program are typically interested in working in the outdoors and do so as a graduate of the program. Older, nontraditional students are well represented in surveying classes, as are military veterans and a growing number of women. Employment of May 2012 graduates was 100%.

While many surveyors lament surveyor salaries, the fact is that surveying graduates fall in the top 30% of starting salaries among graduates at the University of Maine. Some graduates matriculate into an MS degree in GIS, surveying, or engineering. A few graduates of the surveying program have entered law school and become attorneys. Some graduates have sought and received commissions as officers in the United States armed forces.

Transfers

The surveying engineering technology program has incorporated flexibility within the program to provide easy and comprehensive course transitions for transfer students with two-year and four-year degrees in other disciplines. In most cases, a student with an AS degree from a community college will receive two full years of credit toward the four-year Bachelor of Science surveying degree at the University of Maine (2+2).

Scholarship recipients and 3.5 (GPS) Presidential Achievement Award winners Jonathan Miller, Lori-Ann Stubbs, Kara Lawson, Thomas Williams, and Hatim Gazzaz.

Faculty

There are three full-time faculty teaching in the surveying program. All full-time faculty have several years of experience in professional practice and are licensed as surveyors in at least two states. They all also have PhDs in engineering with a focus on surveying. Two faculty are also licensed as professional engineers and one faculty member is also an attorney at law. Every full-time faculty member is the recipient of the prestigious ACSM Earle J. Fennel award for outstanding surveying education. Surveying faculty have received the exclusive "Surveyor of the Year" recognition from three different state societies (PA, MA, and ME).

Advisory Committee and Professional Support

The surveying engineering technology program has strong support from the profession. The program has an advisory committee to provide direction to the program and keep the program content relevant to professional practice. Members of the advisory committee include a licensing board member, members from every New England state, private survey practitioners, photogrammetrists, and owners/managers of large and small consulting firms.

New England surveying societies are strongly associated with the program and provide financial support, including student scholarships. Similarly, 12 endowed SVT scholarships that have been funded by a wide variety of individual, company, and association sources are administered through the University of Maine Foundation. Another significant donation from state societies funded a laboratory facility dedicated primarily to photogrammetry education.

Equipment and Software

The surveying engineering technology program has the latest surveying equipment and surveying-related software. This would not be possible without the support of the Topcon educational program, financial support of the New England state surveying societies, and successful equipment proposals.

GPS equipment includes eight dual-frequency rover units (also capable of post processing), ten post-processing-only dual-frequency units, and a dual-frequency permanent base station (post processed and RTK). Nine total stations include prismless, robotic, and scanning capabilities. Both GPS and total stations include modern electronic data collection. Softcopy and scanning software is included in the photogrammetry laboratory. CAD and production survey software round out a complete software complement to a surveying education.

Location Appeal

Part of the appeal of the surveying engineering technology program at the University of Maine is its location. The University of Maine is located on an island surrounded by waters of the Penobscot River. Numerous recreational opportunities are nearby with more than 10 million acres of wild timberland, hundreds of lakes, thousands of miles of streams, and over 200 miles of coast line.

Smallmouth bass are numerous in the Penobscot River. Landlocked salmon and lake trout are native to many lakes. Maine is home of the largest concentration of wild brook trout east of the Mississippi river. Moose, deer, and turkey are common sights. There are numerous opportunities near the University of Maine to fish, hunt, ski (cross country and downhill), kayak, canoe, snowmobile, and explore the thousands of miles of recreational trails with an ATV.

Dr. Knud E. Hermansen *and* Dr. Ray Hintz *teach in the School of Engineering Technology at the University of Maine.*