



Minnesota State Colleges & Universities

Where
Bioscience
Education
Goes to Work



Minnesota
STATE COLLEGES
& UNIVERSITIES

Minnesota State Colleges & Universities:

Your Bioscience Business Partner

Minnesota is uniquely positioned to be a bioscience industry powerhouse. With its convergence of innovation in medical, agricultural and industrial technologies, the state is home to 19 Fortune 500 companies and a medical technology cluster anchored by industry giants Medtronic, Guidant and St. Jude Medical. State leaders have made it a goal for Minnesota to capitalize on these assets and become a global leader in the biosciences.

As the state's largest higher-education provider, the Minnesota State Colleges and Universities system is committed to supporting this effort. Our 32 colleges and universities are helping ensure that bioscience works for Minnesota businesses today and tomorrow. The system is a key source of:

- **Graduates who are job-ready.** With a faculty committed to teaching excellence, the system's colleges and universities produce well-trained graduates.
- **Public-private research partnerships.** Businesses across the state tap the science and engineering expertise of the system's faculty and students for help in solving real-world problems.
- **Training that's right on target.** The system is the state's leading provider of individually tailored training for businesses that can be delivered on campus, on site or online.
- **Interns who put education to work.** Students apply classroom learning to real-life projects to learn while they help companies earn.
- **Outreach to K-12 classrooms.** The system's faculty bring science, math and engineering expertise to the next generation of workers through programs serving elementary, middle and high schools.

Case study: Graduates who are job-ready

Alumni enter the workforce at full speed.

Eric Baumgardner worked part-time for Camas Inc. in Le Center, Minn., while completing his bachelor's degree at Minnesota State University, Mankato, where he majored in biotechnology and biochemistry. After graduating in 2003, Baumgardner went to work as a laboratory scientist and project leader for Camas, which makes feed additives using natural products derived from chicken eggs.

"I had a lot of hands-on work experience in college, plus we used a lot of equipment I now use in my job, so the transition to work was pretty easy," says Baumgardner. Camas President Peter Nash says Baumgardner has helped the company create many new products. **"He is developing into a very fine research scientist," Nash says.**



Case study: Public-private research partnerships

Professors have the expertise businesses need.



ark Wallert and
Joe Provost,
biology

professors at Minnesota State University Moorhead, and their students conduct sophisticated contract research and development for biomedical, biotechnology and pharmaceutical companies, and agencies.

“We interact with lots of academic and business people on the cutting edge,” says Wallert.

“That’s why we’re a good resource for businesses, because we understand the science of bioscience and the business perspective.”

Students get hands-on learning opportunities performing protein and

DNA purification for private companies and government agencies, such as the U.S. Department of Agriculture.

“The curriculum prepares students to hit the ground running after one month of training, rather than three months,” Wallert says. **“It’s really a ‘win-win’ situation for the college and businesses.”**

Case study: Training that's right on target

When employees learn, companies earn.

When CIMA LABS INC. wanted to upgrade company training materials and build their workers' skills, it benefited from Anoka-Ramsey Community College's training programs. CIMA LABS, a Cephalon company with operations in Eden Prairie and Brooklyn Park, develops and manufactures drugs using technologies that allow tablets to dissolve quickly and easily. Anoka-Ramsey has worked with more than 45 medical device, biotechnology and other life science companies since 1997.

"We have a great amount of technical expertise but wanted some assistance with training delivery and methods for information retention," says Jeff Abel, organization capability manager at CIMA LABS.

Anoka-Ramsey created training guides, held "train-the-trainer" sessions, and provided training in business writing and on the use of specific pieces of equipment. **"It was a collaboration that worked extremely well," Abel says.**



Case study: Interns who put education to work

Students can be powerful business partners.

The power of Minnesota State Colleges and Universities internship programs is being felt at TriVirix, a contract manufacturer for the medical and life science equipment industries. Asim Nigam, an intern from the St. Cloud State University master's degree program in engineering management, is putting Six Sigma, Kaizen and other lean manufacturing principles to work at TriVirix's production facility in Milaca, Minn.

"These projects are aimed at re-engineering business processes for improvement and cost savings," says Nigam. "Here I get the opportunity to apply what I have learned in school."



Case study: Outreach to K-12 classrooms

We boost the state's science IQ.

Dakota County Technical College in Rosemount works with high school students and teachers to make them aware of careers in the emerging field of nanotechnology. Nanotechnology encompasses a number of new technologies that allow the structure of matter to be controlled or constructed atom by atom or molecule by molecule. The National Science Foundation predicts that nanotechnology will employ as many as 2 million workers by 2015.

To train a workforce for today, Dakota County Technical College in 2004 launched the nation's second two-year nanotechnology degree program. To plant the seeds for a workforce of tomorrow, the college sponsors nanotechnology summer camps for high school teachers and students.

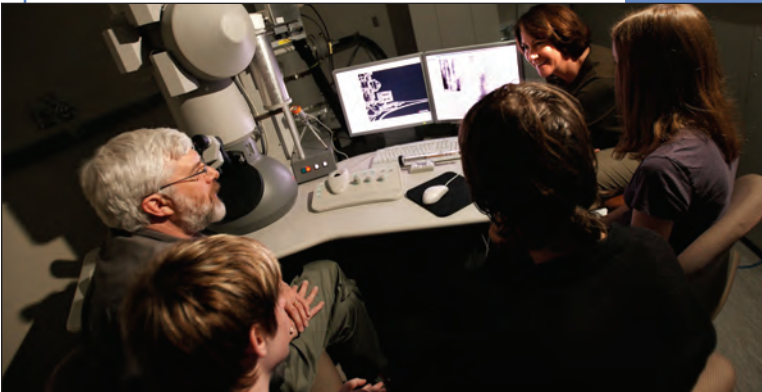
"It's a way to get students excited about all aspects of science," says Dakota County Technical College instructor Deb Newberry.

Quick Facts

- The 32 Minnesota State Colleges and Universities serve nearly twice as many Minnesota resident undergraduates as the University of Minnesota and all of the state's private colleges combined.
- More than 6,300 companies a year turn to the system for customized training.
- More than 80 percent of Minnesota State Colleges and Universities students work while in college, giving them experience valuable to their future employers.

To learn more about biosciences programs, training and research at Minnesota State Colleges and Universities, call 651-282-5514 or email bioscience@so.mnscu.edu.

www.mnscu.edu





**Minnesota
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