



Minnesota
STATE COLLEGES
& UNIVERSITIES

Minnesota State Colleges and Universities: Building a Bioscience Workforce for Minnesota

The Minnesota State Colleges and Universities system educates 62 percent of Minnesota's undergraduates, trains its essential professionals, strengthens the economy - and does it all consistently and cost-effectively. Together, the system's 32 public colleges and universities serve four times as many undergraduates as the University of Minnesota or all of the state's private colleges. Today, the system is playing a critical role in educating Minnesota's biosciences workforce.

Partnering with Industry to Build a Better Workforce

The Minnesota State Colleges and Universities system is the leader in providing customized training to Minnesota employers. Customized training teams at every college and university help businesses identify their specific needs and develop training to be delivered on site, on campus or online. Each year, the system delivers tailored training to 6,000 employers, providing workers with skills ranging from technical writing and team-building to cardiovascular physiology and Food and Drug Administration regulations.

Providing Bioscience Training That's Right on Target

The system's colleges and universities respond to workforce needs by creating innovative programs to prepare workers for bioscience careers. The following is a sampling of biosciences-related certificate and associate degree programs offered Minnesota State Colleges and Universities.

- **Biomedical technologist.** Anoka-Ramsey Community College offers certificate and associate degree programs that train workers for entry-level positions and career advancement in biomedical companies. Successful graduates work in product development, testing and production jobs.
- **Clinical research professional.** Through this innovative one-year certificate program, Anoka-Ramsey Community College enrolls students with a degree in nursing, pharmacology or biological sciences and prepares them for a new career in clinical research monitoring, clinical research coordination, clinical data management and regulatory affairs.



Minnesota State Colleges and Universities are responding to the needs of an emerging industry with tailored programs in medical, industrial and agricultural biosciences and related fields.

- **Biomedical equipment technician.** Dakota County Technical College prepares individuals for employment as biomedical equipment technicians in this two-year degree program. Students learn to maintain life support equipment in hospitals, medical centers and research laboratories.
- **Nanotechnology technician.** Through a two-year degree program that includes a capstone semester at the University of Minnesota, Dakota County Technical College prepares individuals for careers in business, marketing, research or production in nanobiotechnology, nanomaterials or nanoelectronics companies.
- **Renewable energy technician.** Minnesota West Community and Technical College offers the only degree program in the country that is training students to operate ethanol production plants.

Teaching the Scientists and Engineers of Tomorrow

Minnesota's seven state universities offer a range of bachelor's and master's degree programs in science and engineering, providing future workers with the knowledge and skills that bioscience companies need to remain competitive. In addition to traditional biology, chemistry and engineering degrees offered by the universities, many specialized degree programs have been developed to prepare students for a bioscience career. For example:

- **Bemidji State University** offers a bachelor's degree with a cellular and molecular biology emphasis that offers students an opportunity to conduct cancer biology research and pathogen studies using techniques such as polymerase chain reaction and DNA sequence analysis.
- **Minnesota State University, Mankato**, has a bachelor's degree program in biotechnology that uses an interdisciplinary approach that integrates advanced training in biology and engineering to prepare students for a career in industry.
- **Minnesota State University Moorhead** offers a biology/chemistry double major with a biochemistry and biotechnology emphasis that integrates biology and chemistry courses with advanced laboratory skills in such areas as DNA, cell culture and protein studies.
- **St. Cloud State University's** biotechnology degree program emphasizes hands-on learning through internships and the use of state-of-the-art equipment, including an automated DNA sequencer. The university also offers a unique master's degree program in engineering management.
- **Southwest Minnesota State University, Marshall**, in cooperation with the University of Minnesota, offers a bachelor's degree program in agricultural industries and marketing, preparing students for careers at such companies as Bayer, CENEX/Land O'Lakes and Diversified Pharmaceutical Services.
- **Winona State University** offers the country's only undergraduate degree in composite materials engineering. The program prepares students for careers in research and industry, including jobs in medical device companies.

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