



Minnesota STATE COLLEGES & UNIVERSITIES

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 more undergraduates than the University of Minnesota and all of the state's private colleges combined. Today, the system is playing a critical role in educating Minnesota's biosciences workforce.

Partnering With Industry To Train Today's Workforce

The Minnesota State Colleges and Universities system is the leader in providing customized training to Minnesota employers statewide. 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 more than 6,300 employers, providing workers with knowledge and 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 by the 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.
- **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.

- **Biotechnology laboratory technician**
Two system colleges offer two-year degree programs designed to train individuals to work as laboratory technicians at biotechnology and life science companies in the medical, agricultural, and industrial sectors. Minneapolis Community and Technical College offers an associate in science degree. Students may pursue positions in industry immediately upon graduation or to transfer their credits to the University of Minnesota's chemistry department or to St. Cloud State University for completion of a bachelor's degree. Minnesota West

Community and Technical College offers two degree options at its Worthington campus. Students may complete an associate in science degree, and then transfer to a university to seek a bachelor's degree. Alternatively, students may complete an associate's in applied science and enter industry upon graduation.

- **Nanotechnology technician**
Through a two-year degree program that includes a capstone semester at the University of Minnesota, Dakota County Technical College prepares

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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.
- **Clinical research coordinator**
Rochester Community and Technical College offers both diploma and two-year-degree programs that train students to manage clinical trials. Graduates of the programs, which were developed in collaboration with the Mayo Clinic, are prepared to develop research protocols; screen, recruit and enroll participants; collect and maintain data; dispense study drugs; manage the use of medical devices; and ensure accuracy of all documentation.
- **Biotechnology transfer degree**
Pine Technical College recently launched a two-year associate degree prepares graduates for transfer to a bachelor's degree program in food science, food safety or manufacturing technology at a four-year institution. Together, the two degree programs focus on the

application of biological science and biochemistry to the preparation of new and enhanced agricultural, environmental and industrial products.

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 provides students with 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**, offers a bachelor's degree program in biotechnology that uses an interdisciplinary approach integrating 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.

- **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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