



**Minnesota**  
STATE COLLEGES  
& UNIVERSITIES

INSTITUTION

PROJECT/REQUEST

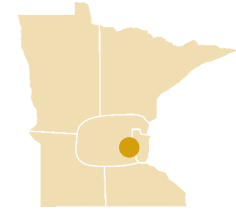
LOCATION

## Anoka-Ramsey Community College

Cambridge,  
Coon Rapids

Biomedical Device  
Manufacturing

\$1,000,000



### Project at a Glance

- Develop and expand distinct academic program areas that address skill shortages for the biomedical device industry
- Increase mobility and earning potential for current industry workers and facilitate career transition for dislocated workers
- Provide options in biomedical device technology education to serve traditional degree-seeking students and degree-holders who need to update skills and to retrain dislocated workers with varied skill sets

### Project Description

Minnesota is home to some of the world's largest medical device manufacturing companies:

- Medtronic (\$7.7 billion in annual sales)
- 3M's Medical Products division (\$4 billion in annual sales)
- St. Jude Medical (more than \$1.5 billion in annual sales).  
Source: Dunn & Bradstreet's "Corporate Report Fact Book 2003."

Minnesota also is home to manufacturing and research and development operations for other industry leaders, including Guidant and Boston Scientific, plus hundreds of small to midsize firms that continue to grow and thrive in the Minneapolis-St. Paul region.

Anoka-Ramsey Community College has developed unique academic programs to serve this industry including:

- Biomedical technologist associate degree
- Biomedical technician certificate program
- High-end clinical research professional certificate program

This project will support expansion of the college's credit programs to better serve the medical device manufacturing industry and accommodate the rapid pace of technological change. The project will provide a higher education option for traditionally underserved populations lacking basic job skills, traditional degree-seeking students looking to work in the industry and degree-holders with work experience in software design, computer applications, engineering and health care.

### Proposed program initiatives to serve industry needs include:

- Develop a clinical data manager certificate program. Clinical data management is a new skill mix that combines clinical research, software development, database management and an understanding of complex regulatory and insurance



*David Yalch, senior manufacturing technician at Medtronic, Inc., entered the biomedical field as a graduate of Anoka-Ramsey Community College.*

- reimbursement requirements. It is essential for companies of all sizes that are developing, designing, prototyping or preparing to market new or re-designed products
- Develop a configuration manager/document manager certificate program

This unique set of skills blends an understanding of production processes, quality programs, regulatory compliance needs and database management. It plays an increasingly valuable role as the complexity of regulatory and quality compliance standards has grown. Students will develop an understanding of national and international regulations and quality standards, biological sciences, database management, Enterprise Resource System integration, technical writing for regulated industries and

document management and document control practices.

- Develop an engineering technician automated manufacturing technician certificate program

This program would combine specific knowledge related to the medical device industry with an understanding of the principles and practices of engineering technology. The program focus will be on automation technology, especially helping students develop an understanding of mechatronics, measurements and calibration, machine operation, diagnostics and maintenance, and design for manufacturing.

- Develop and implement quality programs for regulated industries

All medical device companies are functioning in a global economy. They are required to comply with regulatory standards throughout the world and also with standards for quality assurance and quality control. This certificate will include specific course work on ISO 13485 (international standard for quality specific to the medical device industry) and practices for developing, implementing and auditing quality programs, in addition to increasing students' knowledge of the industry.

**Participating Institution:**

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**Project Partnerships**

- Alexandria Technical College
- Dakota County Technical College
- Inver Hills Community College
- Normandale Community College
- St. Cloud State University
- University of Minnesota
- Transoma Medical
- Possis Medical, Inc.
- Boston Scientific
- American Medical Systems
- Oak River Technology
- Synovis Interventional Solutions
- Minco
- Incisive Surgical
- Acorn Cardiovascular
- Medical Device Cluster Hubs group



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