

SCIENCE AND ENGINEERING



Individuals working in this field use their expertise to improve human health. They design, build, and maintain medical equipment and instruments. They also research and develop innovative medical techniques and treatments.

Careers within this section include:

Biomedical Engineer

Biomedical Equipment Technician

Industrial Hygienist

Orthotist/Prosthetist

Research Scientist



Biomedical Engineer

What would I do?

Biomedical Engineers combine their knowledge of science and engineering to design and develop medical equipment and instruments that improve the quality of life of patients. They also develop medical procedures and methods to solve problems in medicine. Biomedical Engineers have designed devices such as pacemakers, artificial kidneys, heart valves, surgical lasers, and life support equipment. Some Biomedical Engineers teach and manage laboratories.

Biomedical Engineers may specialize in bioinstrumentation, biomaterials, biomechanics, clinical engineering, computers, rehabilitation engineering, systems physiology, telemedicine and teleradiology.

Where would I work?

Biomedical Engineers may work alone or with hospital operating teams, scientists or other specialists. They are employed in industry, research facilities, hospitals, government agencies, and undersea or space programs.

What would I earn?

\$41,000–107,000

What do I need to know?

Most Biomedical Engineers have a Bachelor of Biomedical Engineering. Others have a bachelor's degree in another engineering field and have a Masters of Biomedical Engineering. Doctoral degrees are also available and are required for teaching at the university level.

What schools can I attend?

Dartmouth College
University of New Hampshire

Dartmouth College and University of New Hampshire both offer undergraduate (BS) and graduate (MS and PhD) programs in engineering with an option in biomedical engineering.

Where can I find more information?

American Institute for Medical &
Biological Engineering
1901 Pennsylvania Avenue NW, Suite 401
Washington, DC 20006
(202) 496-9660
www.aimbe.org

Association for the Advancement of
Medical Instrumentation
1110 North Glebe Road, Suite 220
Arlington, VA 22201-4795
(703) 525-4890
www.aami.org

Biomedical Engineering Society
8401 Corporate Drive, Suite 225
Landover, MD 20785-2224
(301) 459-1999
www.bmes.org

The Whitaker Foundation
1700 N. Moore Street, Suite 2200
Arlington, VA 22209
(703) 528-2430
www.whitaker.org

Biomedical Equipment Technician

What would I do?

Biomedical Equipment Technicians (BMETs) install, inspect, maintain, calibrate, modify, and repair medical equipment and instruments used to diagnose and treat disease. BMETs may be involved in the procurement, operation, supervision, and control of equipment. They also train medical personnel to operate the equipment safely. BMETs may specialize in certain types of biomedical equipment used in radiology, nuclear medicine, surgery, dialysis, intensive care, or clinical laboratory.

Where would I work?

Most Biomedical Equipment Technicians work in hospitals, medical centers, or large clinics. Others work for manufacturers in engineering, sales or service. They are usually supervised by Biomedical or Clinical Engineers.

What would I earn?

\$30,000–50,000

What do I need to know?

Biomedical Equipment Technicians complete a two-year associate's degree from an accredited technical college. Some employers will hire people with an electronics background and offer on-the-job training. Certification is available.

What schools can I attend?

At the current time there are no academic institutions in New Hampshire offering a program for Biomedical Equipment Technicians.

However, both the United States Army and Navy offer training programs for Biomedical Equipment Technicians.

Where can I find more information?

Association for the Advancement of
Medical Instrumentation
1110 North Glebe Road, Suite 220
Arlington, VA 22201-4795
(703) 525-4890
www.aami.org

Industrial Hygienist

What would I do?

Industrial Hygienists anticipate, recognize, and evaluate health hazards in the workplace and suggest procedures to eliminate them. They review reports and conduct studies to determine if diseases or illnesses are work-related, and they recommend measures to protect employees. They also collaborate with other health professionals and management to control or remove hazardous or potentially hazardous materials from occupational environments. Industrial Hygienists may be administrators, teachers, researchers or consultants.

Where would I work?

Industrial Hygienists may work alone or with a team. They are employed by industries, government agencies, labor unions, consulting firms, insurance agencies, or environmental agencies.

What would I earn?

\$39,580–65,370

What do I need to know?

Industrial Hygienists have a bachelor's degree in one of the sciences or engineering. Most have master's degrees in industrial hygiene, occupational safety and health, environmental health engineering, or environmental health sciences.

What schools can I attend?

At the current time there are no academic institutions in New Hampshire offering a program for Industrial Hygienists. In the past, New Hampshire students have attended out-of-state schools such as Harvard University in Cambridge, MA, or University of Massachusetts in Lowell, MA.

Where can I find more information?

American Conference of Governmental
Industrial Hygienists
1330 Kemper Meadow Drive
Cincinnati, OH 45240
(513) 742-2020
www.acgih.org

American Industrial Hygiene Association
2700 Prosperity Avenue, Suite 250
Fairfax, VA 22031
(703) 849-8888
www.aiha.org

Orthotist/Prosthetist

What would I do?

Orthotists and Prosthetists make artificial limbs and orthopedic devices for patients. Working with computers, drills, hammers, rotary saws, and other machines, they cut, grind, carve, and bend a variety of material to create special devices to help people walk or otherwise regain active lives. Orthotists create braces and strengthening devices to assist the patient. Prosthetists design, make and adjust artificial limbs.

Where would I work?

Orthotists and Prosthetists may be self-employed or work in rehabilitation centers, laboratories, specialty clinics, nursing homes or hospitals. They are frequently

assisted by Orthotic or Prosthetic Assistants or Technicians.

What would I earn?

\$43,000–58,000

What do I need to know?

Most Orthotists and Prosthetists complete a bachelor's degree in orthotics or prosthetics, and complete a residency program. Others earn a bachelor's degree in engineering, kinesiology, biology or bioengineering before completing a one-year certificate program. A certification exam is required to practice.

What schools can I attend?

At the current time there are no academic institutions in New Hampshire offering a program for Orthotists or Prosthetists. In the past, New Hampshire students have attended out-of-state schools such as Newington Certificate Program in Orthotics and Prosthetics in Newington, CT.

Where can I find more information?

American Academy of Orthotists and Prosthetists
526 King Street, Suite 201
Alexandria, VA 22314
(703) 836-0788
www.oandp.org

Research Scientist

What would I do?

Research Scientists study disease, drugs, microorganisms, behavior, the environment, and other areas related to human health. Their work helps to prolong life by preventing and curing illness. They research disease and the body's response to disease, develop new vaccines and treatments to combat disease, and develop tests to detect disease or other abnormalities. They design and build laboratory instruments, space vehicles, and underwater equipment. They also conduct survey research and health services evaluation.

Research Scientists may specialize in anatomy, bacteriology, behavioral science, biochemistry, biophysics, embryology, epidemiology, forensics, genetics, immunology, marine biology, microbiology, molecular biology, parasitology, pathology, pharmacology, physics and virology.

Where would I work?

Research Scientists may work alone or with a team and often have laboratory assistants to perform routine work. Most researchers work in government, university, or commercial laboratories and must adhere to strict safety procedures to avoid exposure to dangerous organisms or toxic substances. Some researchers teach in universities or act as consultants to business firms or government agencies.

What would I earn?

\$47,000–78,000

What do I need to know?

Research Scientists have at least a master's degree in a scientific field. A doctoral degree is required for advanced research positions or a teaching position.



What schools can I attend?

Dartmouth College
Dartmouth Medical School
University of New Hampshire

Where can I find more information?

American Institute of Biological Sciences
1444 I Street, NW, Suite 200
Washington, DC 20005
(202) 628-1500
www.aibs.org

American Society for Biochemistry and
Molecular Biology
9650 Rockville Pike
Bethesda, MD 20814-3996
(301) 634-7145
www.asbmb.org

National Academy of Sciences
500 Fifth Street, NW
Washington, DC 20001
(202) 334-2000
www4.nationalacademies.org/nas/nashome.nsf

Society for Integrative and Comparative Biology
1313 Dolley Madison Boulevard, Suite 402
McLean, VA 22101
(703) 790-1745
(800) 955-1236
www.sicb.org

Experience the

McINTOSH COLLEGE DIFFERENCE



STACY BEAUCHEMIN
Certified Medical Assistant
Dover Foot Specialty Center
Medical Assisting Graduate

I LOVE TAKING CARE OF PEOPLE. Before I attended McIntosh College for Medical Assisting, I worked for my dad at his waterproofing company in South Berwick, Maine. When medical issues arose in my family, I realized that taking care of people is my heart's desire and that seemed to be a good choice for me to pursue at school.

I WAS HOME-SCHOOLED AND SOME PEOPLE TOLD ME I'D NEVER MAKE IT IN HIGHER EDUCATION ... I DIDN'T HAVE THE SOCIAL SKILLS OR I WASN'T SMART ENOUGH. But my family encouraged me to go back to school, so I fished through the phonebook and found McIntosh College. They called me back within the hour and the Admissions advisor was so nice. I was interested in another program but my advisor encouraged me toward Medical Assisting, because I loved working with people. Within three days, I was enrolled in college.

THE CLASS SIZES ARE REALLY SMALL AND THE TEACHERS ARE REALLY CARING. My favorite teacher, Rose Rowe, would paint a picture based on stories in the news and from daily life, and would apply them to my general classes. She brought our subjects to life.

AT MCINTOSH, YOU DON'T JUST LEARN IN TEXTBOOKS BUT BY PRACTICING ON EACH OTHER DOING REAL-LIFE SCENARIOS. My internship class with Tracey Bergeron was my favorite because you get to get out and experience real-life medical practice. I did my internship at Berwick Family Health where I drew blood, helped with physical exams, and did clinical and administrative work like filing charts and filling out insurance forms. I had excellent hands-on experience.

MCINTOSH HELPED ME GET THIS JOB. MY CLINIC CALLED THE SCHOOL AND SAID THEY WANTED TO HIRE A MCINTOSH GRADUATE. Kim Dugal called me, I applied and the next day I went in for an interview. They called me the next day and I got the job. If you're serious about your education, and you want a special bond with your teachers, this is a special place to go.



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