

NORTH SHORE WIB:
STEM INDUSTRY PROFILE

Biotechnology

Biotechnology is the use of living systems and organisms to develop or make useful products, or “any technological application that uses biological systems, living organisms or derivatives thereof, to make or modify products or processes for specific use” (UN Convention on Biological Diversity, Art. 2). Depending on the tools and applications, it often overlaps with the (related) fields of bioengineering and biomedical engineering. For thousands of years, humankind has used biotechnology in agriculture, food production, and medicine. The term itself is largely believed to have been coined in 1919 by Hungarian engineer Károly Ereky. In the late 20th and early 21st century, biotechnology has expanded to include new and diverse sciences such as genomics, recombinant gene technologies, applied immunology, and development of pharmaceutical therapies and diagnostic tests. — WIKIPEDIA

Massachusetts Job Growth Forecast of Typical Jobs Found in Biotechnology

JOB TITLE	EMPLOYMENT 2012	EMPLOYMENT 2022	AVERAGE ANNUAL JOB OPENINGS	AVERAGE ANNUAL WAGE
Engineers	48,476	51,816	1,593	\$95,363
Life, Physical, and Social Science Technicians	12,316	14,144	582	\$47,714
Life Scientists	18,085	20,642	694	\$92,280
Physical Scientists	8,941	10,061	351	\$82,208
Medical and Clinical Laboratory Technicians	5,302	6,575	266	\$42,450
Software Developers, Applications	27,353	32,937	909	\$103,250
Software Developers, Systems Software	30,032	36,293	1,011	\$113,250

Source: Massachusetts Executive Office of Labor and Workforce Development

Necessary Skills

Workers in Biotechnology need skills such as math, science, computer skills, problem solving, writing, and research.

Participating North Shore Biotechnology Companies

- North Shore Innoventures – Beverly, MA
- New England Biolabs – Ipswich, MA

Company Profile: North Shore Innoventures

North Shore Innoventures (NSIV) is an organization that helps emerging, early stage biotechnology companies and scientist/engineer inventors to evaluate and test their ideas to determine whether these concepts can become viable business opportunities. The companies that are accepted into NSIV become part of the innovation community and benefit from shared physical resources (lab space, equipment),

and receive access to experienced entrepreneurs, investment advisors and other types of business support. This incubation business model and the nurturing environment offered by NSIV can improve the likelihood that the early stage company becomes successful with raising funds and adding jobs in the future. Start up companies remain at the incubator for up to three years before graduating into their own corporate space. NSIV currently supports about 10 biotech companies and is expanding in size. The companies employ scientists (biologists, chemists) and engineers of varying levels, and also routinely hire research interns. Start up companies are a great environment for learning new skills and taking on different and varied tasks. Hiring managers will be look for flexibility and adaptability in the candidates they interview.

Company Profile: New England Biolabs

Founded in the mid-1970s as a collective of scientists committed to developing innovative products for the life sciences industry, New England Biolabs is now a recognized world leader in the discovery, development and commercialization of recombinant and native enzymes for genomic research. Created “by scientists for scientists,” NEB is renowned for consistently providing exceptional product quality and unsurpassed technical support. For nearly four decades, NEB has been shaping the landscape of bioscience research by discovering, developing and supporting superior research reagents. In addition to NEB’s commitment to scientific innovation and customer relations, NEB notably ensures the environmental sustainability of the company’s business practices. NEB employs 400

people, about 150 of which are PhD’s. Occupations include chemists, genetic scientists, biologists, and engineers. Each summer 50 college interns join the company.

Critical Technical and Core Competencies

Identified by New England Biolabs and
North Shore Innoventures

Biotechnology companies require a high level of math and science skills as well as the ability to be part of a team and work in a fast pace environment. Employees who have applied their knowledge in some way through activities like science clubs and science fairs, or internships and jobs close to the industry, are as important, if not more so, than straight As. Individuals who can demonstrate unique experience, are problem solvers and leaders, can share life experiences, speak up and have confidence to speak as part of a group are critical. Individuals must be able to show passion about their work. Applicants must also be very careful with social media as companies do searches as part of the application process. Many companies are particularly interested in hiring women as part of diversifying the workforce.

Other North Shore Biotechnology Companies

- Cell Signaling Technology – Danvers, MA
- Thermo Fisher Scientific Inc. – Beverly, MA



70 Washington Street
Suite 314
Salem, MA 01970
Tel: 978.741.3805
www.northshorewib.com



70 Washington Street
Salem, MA 01970
Tel: 978.825.7200
www.nscareers.org