

Investing in Virtual Biotechnology Education | Quincy College receives \$300,000 National Science Foundation grant

Funds will update the College's open-source, virtual lab and bioprocessing curriculum

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Suggested Caption:

Quincy College Virtual Lab in use by industry partners in 2018. The College will enhance the virtual lab and create new virtual tools for emergent technologies with a \$300,000 National Science Foundation Grant.

Quincy, MA (5/30/2019): The National Science Foundation has awarded a \$300,000 Advance Technical Education (ATE) grant to the Quincy College Biotechnology and Good Manufacturing Practice Program (BGMP) to update industry-leading biomanufacturing curriculum at Quincy College and develop a virtual 3D bio manufacturing workplaces and laboratories (v-Labs) as centerpieces of activity-based curriculum modules. The college will update curriculum, their 2016 Virtual Lab, in addition to developing new virtual tools to support emerging technologies such as continuous bioprocessing and gene therapy.

" The National Science Foundation Grant will facilitate a blended learning-by-doing instructional model that will comprise of traditional laboratory setting and virtual experimentation. This blended learning environment will boost students' understanding of bio-processing, prepares them for the hands-on training and fill the gap between academic knowledge, practical job-related understanding, and professional skills. This grant and the cutting edge biotechnology curriculum, industry leading laboratory spaces, and education offered at Quincy College is attributed in part to the leadership of Bruce Van Dyke, Chair of the [Quincy College Biotechnology and Good Manufacturing Practice Program](#); Kate Lopci, Associate Vice President for Workforce Development, Career Services, and Community

Engagement; our Biotechnology Faculty, our community partners, and of course, our students," Michael G. Bellotti, Quincy College President.

In 2016, Quincy College was the first higher education institution to integrate a virtual lab into its curriculum as a learning resource and training tool for students and incumbent workers. The Quincy College virtual lab which was launched in 2016 as a highly interactive and comprehensive tool for teaching and comprehension of disposable biomanufacturing technologies. The Virtual Single-Use Biomanufacturing Laboratory has applications not only for students, but established researchers and industry professionals.

" The National Science Foundation Grant will empower Quincy College to build upon our existing Virtual Lab -- evolving our platform to support emerging technologies meeting the needs of industry professionals and students. Activity-based curriculum modules will be developed in collaboration with academia, leading biopharma companies, and the ATE National Center for the Biotechnology Workforce. All virtual modules will be aligned with industry requirements, skills standards for biopharma technicians, and the latest biomanufacturing trends including the paradigm shift toward Manufacturing 4.0," Bruce Van Dyke, Chair of the Quincy College Biotechnology and Good Manufacturing Practice Program at Quincy College.

Through a series of workshops, webinars, and other dissemination activities, the customizable, open-source virtual lab will support education and teachers around the country with project materials and blended learning modules which can be incorporated into their curriculum and training programs. Virtual Lab short courses will be offered as professional development to bring biotech industry technicians up-to-speed with emerging technologies and latest advances in bioprocessing.

The National Science Foundation grants is synergistic with and comes on the heels of the \$725,000 grant awarded to Quincy College from the Baker-Polito Administration and the Massachusetts Life Science Center - as part of a nearly \$40 Million capital grant funding to support the state's global leadership in the life sciences sector. The biopharmaceutical industry is one of the fastest growing sectors of the world economy which requires continuously modernizes of facilities to adopt new biomanufacturing technologies. Emerging technologies in biomanufacturing are rapidly changing the landscape of drug manufacturing and require the development of new courses and skills to meet these changes.

" The National Science Foundation Grant enables Quincy College to reach beyond the South Shore, to support the next generation of biotechnology and biomanufacturing professionals by providing cost effective workforce development and career advancement training across the Commonwealth and New England. Students successfully completing these programs are job ready to perform essential techniques and operate state-of-the-art equipment. In many cases, the costs to individuals is minimal to continue their education, subsidized by state and federal funding or employer tuition reimbursement. We're very excited to be in partnership with South Shore Workforce Development, North Shore Workforce Development, and other Economic Development Workforce Boards on this project, which will greatly benefit the students to explore careers or advance their skills in the growing bioprocessing industry, " Kate Lopci, Associate Vice President for Workforce Development, Career Services, and Community Engagement.

In sharing these resources enthusiastically and collaboratively with the Commonwealth's biotechnology community, Quincy College's ambition is to empower science instructors and biopharma companies to utilizes these virtual labs as a learning platform for single-use technology, develop industry best practices, and support further development of critical, real-world lab skills through a virtually simulated online learning program.

"There is a real need in the industry for not only qualified professionals graduating from programs like Quincy College's BGMP program but also a need for customized training for incumbent workers employed in the Commonwealth's biopharma companies. Quincy College's Virtual Single-Use Biomanufacturing Laboratory was designed in collaboration with our industry partners who provided critical information on approach, design, and processes involved. The virtual lab strives to meet this real-

world need head-on, in providing a resource for continuing education and critical skill development for those entering the biotechnology industry. When coupled with Quincy College's on-site intensive [AKTA Pure training](#), [HPLC training](#), and Gas Chromatography training, Quincy College is uniquely positioned to support all levels of professionals working in existing and emerging technologies in the Biotech industry," states Bruce Van Dyke, Chair of the Biotechnology and Compliance Department at Quincy College.

To learn more about Quincy College's Biotechnology and Good Manufacturing Practice Program, visit: <https://quincycollege.edu/program/biotechnology-and-compliance/>.

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ABOUT QUINCY COLLEGE

Founded in 1958, Quincy College is a two-year, municipally affiliated community college serving approximately 4,000 students at campuses located in Quincy and Plymouth, Massachusetts. Quincy College is an open access institution that encourages academic achievement and excellence, diversity, economic opportunity, community involvement, and lifelong learning. The College facilitates valuable learning relationships that inspire students to realize their educational and professional futures. The college offers 34 associate degree programs and 24 certificate programs in a variety of disciplines, including those within Professional Programs, Liberal Arts, and Natural & Health Sciences. The college is accredited by the New England Association of Schools and Colleges, and is licensed by the Massachusetts Board of Higher Education to grant the degrees of Associate in Arts and Associate in Science. The college draws a diversity of students from the greater Boston area as well as 121 countries around the world. For additional information, visit www.quincycollege.edu

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