Invited Letter

Highly Skilled Technical Workforce Helps Advance Regenerative Medicine Research & Scale Biomanufacturing

Keywords: Wake Forest Institute, WFIRM, InnovATEBIO, Forsyth Technical Community College, regenerative medicine, biomanufacturing technicians, biotechnicians industry-education partnerships

As the chief workforce development officer for the Wake Forest Institute for Regenerative Medicine and chief operating officer for the non-profit RegenMed Development Organization, I see every day the need for a highly skilled technical workforce to advance regenerative medicine and ensure that the United States remains the global leader in research, clinical translation, and scaled biomanufacturing. As a former community college president and currently co-chair of the National Industry and Workforce Advisory Council of InnovATEBIO, the NSF ATE-sponsored national center for biotechnology education, I know that community colleges, with their employer and higher education partners, can produce this skilled workforce.

The Wake Forest Institute for Regenerative Medicine (WFIRM), located in Winston-Salem, NC, is a recognized global leader in regenerative medicine, bringing together over 450 scientists, physicians, technologists, technicians, and support personnel to translate scientific and technological advances into engineered tissue and organs and cell therapies. Interdisciplinary teams work with over 400 industry, academic, and government partners to address patient needs. The RegenMed Development Organization serves as the nexus connecting academia and business, creating an economic engine for regional development – the RegenMed Hub.

While regenerative medicine research has been underway for decades, the field has reached a level of maturity where the work is often focused on production for clinical translation and ultimately scaled biomanufacturing. With this evolution comes a change in the workforce needs as skilled technicians undertake more and more of the work. While basic research at WFIRM requires creativity and problem-solving at an advanced scientific level, production for clinical translation and biomanufacturing generally requires the ability to follow established protocols and procedures without variation in a highly regulated environment. These abilities are developed in skilled technicians. WFIRM currently has approximately 50 technicians assigned to 15 core research and translation laboratories and production facilities. The growth of the Institute has resulted in a continuing need for these technicians.

The Institute's 20-year relationship with its local community college – Forsyth Technical Community College – and other community colleges with biotechnology and bioprocessing programs has resulted in a pipeline of skilled technicians for entry-level lab and production positions. In addition to serving WFIRM, these programs provide the skilled workforce needed for large and small companies that are developing in and migrating to the RegenMed Hub. The success of the partnership with the community

college is grounded in continuous communication among key leaders, employer support for faculty and curriculum development, work-based learning opportunities for students, and articulation relationships with universities supporting long-term career pathways. The community college relationship is central to advancing science and technology, serving patients, and enhancing national competitiveness in regenerative medicine.

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DOI: 10.5281/zenodo.7834552