

# NIIMBL – BIOPHORUM BUFFER STOCK BLENDING SYSTEM

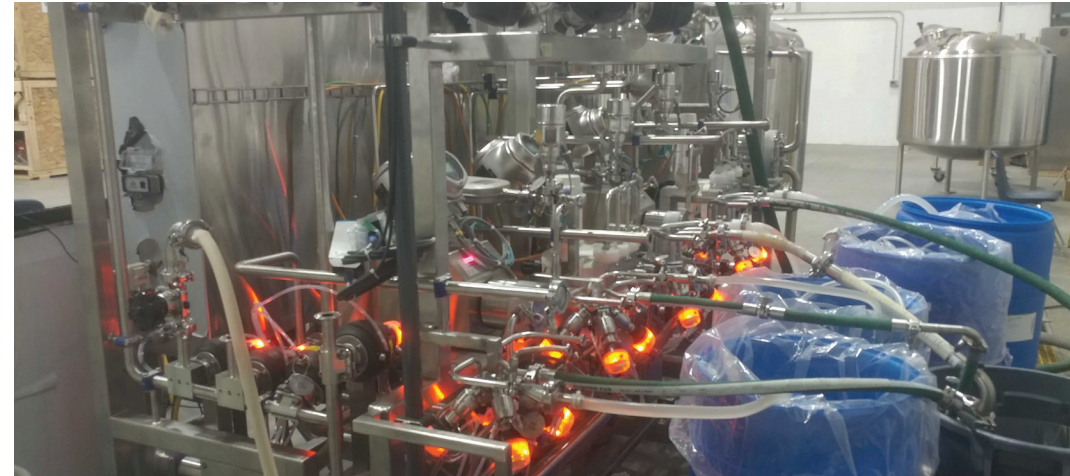


## NIIMBL, Newark, DE

Type:  
NIIMBL-led Project

Participating Organizations:  
Merck & Co., Inc., MilliporeSigma,  
Janssen Research & Development, LLC,  
Sanofi, and GlaxoSmithKline

» Jeff Johnson



## INDUSTRY NEED

Buffers play a vital role in the stabilization of proteins during downstream processing. However, current buffer preparation methods are wasteful, require significant capital equipment, have a large footprint on the manufacturing floor, and involve significant labor.

## SOLUTION

A portable, flexible system will blend highly concentrated single component stock solutions to make buffers, opening up valuable real-estate space and reducing labor. NIIMBL and industry partners collaborated with BioPhorum Operations Group and its member companies to build an open source buffer stock blending system for which the design and supporting dataset is available to the industry, to improve buffer preparation processes.

## OUTCOME

The system has been delivered to the NIIMBL facility in Newark, DE. The community will soon be invited to test the system for implementation in their own facilities. Estimates from the white papers supporting the initial design suggest the system will reduce floor footprint by 61%<sup>1</sup>, save \$20M per facility built, and reduce the buffer preparation time by ~30%<sup>2</sup>

<sup>1</sup> Biophorum Operations Group. *An Economic Evaluation of Buffer Preparation Philosophies for the Biopharmaceutical Industry*, December 2019.

<sup>2</sup> Biophorum Operations Group. *NIIMBL-Biophorum Buffer Stock Blending System: A More Advanced Concept for Buffer Manufacturing*, December 2019

This project was developed with an award from the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) and financial assistance from the U.S. Department of Commerce, National Institute of Standards and Technology (70NANB17H002).



Photos courtesy of the University of Delaware

“NIIMBL has been very flexible and easy to work with to achieve this NIIMBL-BioPhorum Buffer Stock Blending (BSB) System, rapidly responding to this unique opportunity with both funding and resources to drive the project to realization.”