

2<sup>nd</sup> Annual Summit on

# STEM CELL RESEARCH, CELL & GENE THERAPY & CELL THERAPY, TISSUE SCIENCE AND REGENERATIVE MEDICINE &

12<sup>th</sup> International Conference & Exhibition on

## TISSUE PRESERVATION, LIFE CARE AND BIOBANKING

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### Creating a single version of the truth in translational research, connect clinical samples with clinical data

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High-volume clinical biobanks face challenges balancing time-intensive chain of custody (CoC) measures with timing, space, and personal demands. We at MD Anderson have developed a fully integrated clinical trial, lab and sample management system. The system, Prometheus, accelerates the pace of translational research by eliminating error-prone data entry and ensuring CoC. In addition to the software, we integrated a liquid handling robot to automate sample preparation (Vacutainer to cryo-storage) allowing for the dramatic decrease in the effort required to gather these samples for analysis. By striving to create a single source of truth, namely the one abstracted from the clinical record in the clinical trial data record, we clarify the exact nature of the sample and prevent artificial reclassification. By automating the preparation steps, we remove human variance in processes and provide a rich source of metadata to help explain why we may get unanticipated results in downstream assays. This was achieved by the development of trial management platform that handles information from trial design, patient acquisition, sample acquisition, processing, storage, and analysis. It utilizes best in class automation tools and storage products to ensure data and sample integrity. By redesigning processes, improving software and implementing automation, we have enabled a small team of three staff members to generate 140,000 samples per year, while maintaining high quality in both samples and work-life balance. In conclusion, in the rapidly expanding demand for samples to perform translational assays to understand the fundamental mechanics of disease, having an automated sample acquisition pipeline is required to meet the demand of modern research.

#### Biography

Mike Van Alstine has a background in Computer Science Engineering and Electrical Engineering. His software development experience focuses on customer-centric user experience and developing metrics and dashboards to facilitate process improvement. Over the past five years, he has managed a team of developers at MD Anderson and provided leadership on the development of the Prometheus platform.

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#### Notes: