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CU I&E Submission: Robotic Programming [1]

Who

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What

Our lab has a liquid handling robot for assistance in pipetting the hundreds of patient samples we receive daily. I redesigned the current programs to reduce steps performed and reduce the time needed to perform a task by half, as well as created new programs for newer protocols to increase functionality. The benefits are twofold: the immediate time savings, and it will save future cost by preventing the lab from needing to purchase another expensive robot as the number of patient samples is expected to nearly double over the coming year.

Why

In the high throughput diagnostic testing our lab performs most of our time is spent transferring serum samples from patient vials to testing plates. Improving the robot to reduce transfer time, as well as designing additional programs to allow increased use the robot, has made our lab much more efficient. It allows for more samples to be tested with less effort and reduces human error during transfer. Multiple employees use the robot for different studies and the faster execution time reduces employee downtime.

Where

Currently, they are only in place in the Barbara Davis Center Auto-antibody/HLA Lab. As our lab becomes a part of more studies and the additional possibility that commercial diagnostic samples could increase in the future, these programs will be used on any future bench-top robots we acquire. If other labs use Hamilton robots- especially to transfer small volumes- they could also be implemented there.

When

The first program was redesigned February 7th, 2017. I continue to develop new programs as colleagues present new suggestions.

Submitted by

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