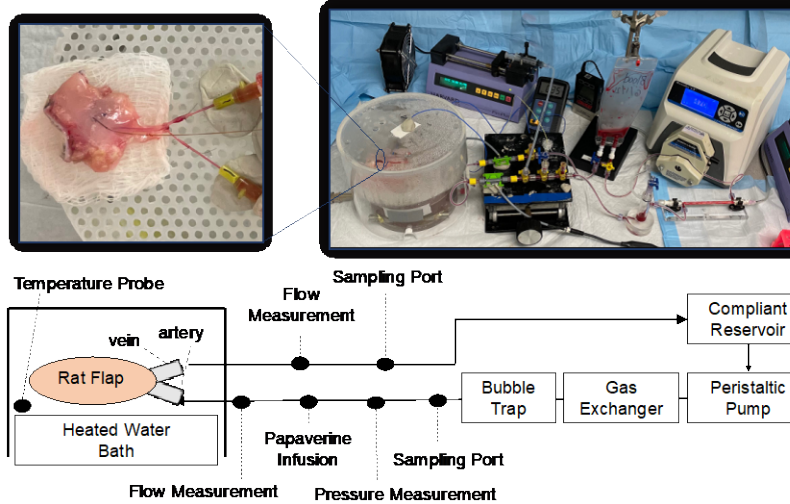


## INTRODUCTION

- Improved understanding is needed to develop an optimal perfusion system for composite tissues.
- There are no models for isolated normothermic machine perfusion of a fasciocutaneous free flap in rodents.
- Aim:** To establish a model of machine perfusion in a rat fasciocutaneous free flap to serve as an affordable testbed for future research.

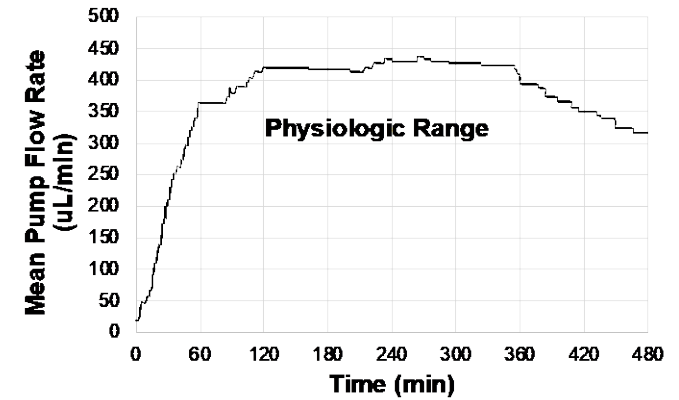
## METHODS

- A closed circuit was used to provide circulatory and respiratory support for rat epigastric free flaps (n=3).
- Continuous papaverine infusion (1 mg/hr) was used to mitigate vascular spasm.



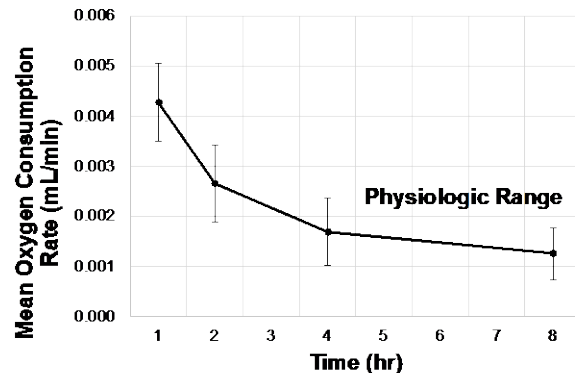
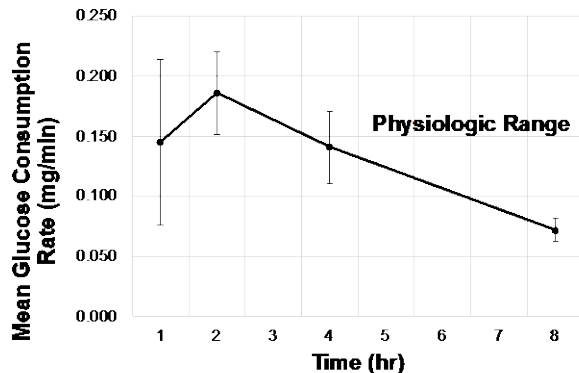
## RESULTS - 1

- Maintenance of physiologic arterial pressures (85-100mmHg) resulted in stable flow rates.



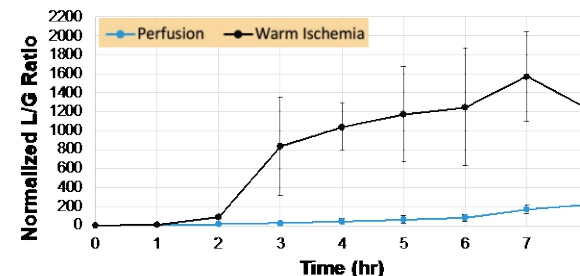
## RESULTS - 2

- Blood-based parameters showed maintained metabolic activity throughout support.



## RESULTS - 3

- Extracellular tissue lactate-to-glucose (L/G) ratio for the perfused flaps was lower than warm ischemic flap controls, as measured by microdialysis.



## CONCLUSION

- Machine perfusion, maintained tissue metabolic activity out to 8 hours of support.
- This model can be used to further assess critical elements of support and explore other novel therapies and technologies to improve free tissue transfer.

## ACKNOWLEDGEMENTS

- None