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## Model-based analysis of microcirculatory parameters affecting $O_2$ transport in skeletal muscle subjected to fixed surface $PO_2$

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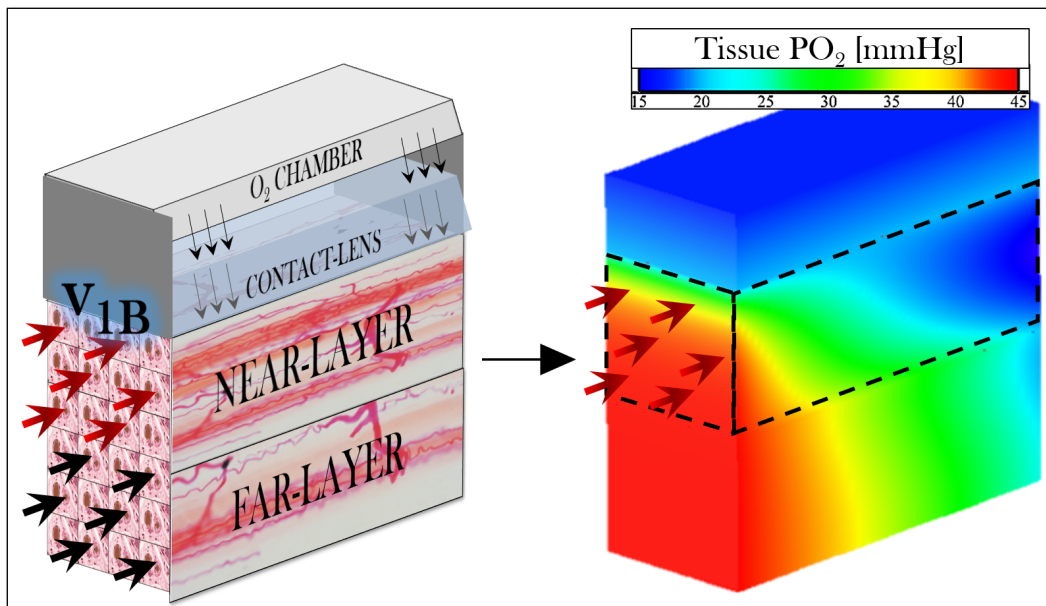
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### 1. Inspiring Minds SUMMARY

Often, diseases individuals experience throughout their body such as diabetes and sepsis (blood infection) show early signs of problems in your muscle's smallest blood vessels, termed capillaries. The medically relevant measurement of these signs, muscle tissue oxygen, is unable to be visualized using most instruments and microscopes. Therefore, the Goldman lab creates powerful mathematical equations known as partial differential equations (PDEs) using parameters these devices can obtain, and visualize tissue oxygen under several disease conditions which could see muscle using more oxygen than normal, or the number of capillary vessels decreasing. Current work is using new techniques to expand the area we can visualize, and include your body's regulation. These PDE visualizations use a fraction of the time normal computer code does, and may be used beside a patient in a hospital to tell when the oxygen in their arm or leg muscle is low enough to cause danger.



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