The blood oxygenation level dependent (BOLD) signal

Physiological basis of fMRI

- Development of quantitative methods to measure blood flow and oxygen metabolism
- Modeling $O_2$ transport, neurovascular coupling, and the BOLD effect
- Experiments in humans looking at the relationships between neural activity, blood flow and $O_2$ metabolism

Richard Buxton
The blood oxygenation level dependent (BOLD) signal

Neural Activity

O$_2$ Metabolism

Blood Flow

BOLD response

Radiology Collaborations

Anna Devor
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MD/PhD Students

Val Griffeth
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Richard Buxton
Dynamics of blood flow in the human lung

Development of methods to measure the spatial/temporal dynamics of pulmonary blood flow at a scale of ~1 cm$^3$ and 5 sec

Radiology Collaborations  MD/PhD Students

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Kim Prisk  Eric Geier

Richard Buxton