

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | | 1 | 2 | 3 |
| Week 32 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Week 33 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Week 34 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| Week 35 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |

Draft timeline v1
Draft timeline for Tuesday review;
bring printed and digital copies.

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|---|---------|---|------------|--------------------------------------|---|--|
| Week 36 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | | | Serve fore | Suit Send fo | Advance to candidacy Ensure doctoral candidacy status is confirmed (should already be completed by 5th year). | |
| Week 37 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| | | | Restore amplified output to 130 mW (previous benchmark) | | Define proposal... Lab culture... | Update committee membership Update committee membership if needed and file 'Request for Change in Doctoral Committee' form if required. | |
| Week 38 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| | Expand proposal draft Write 12page Research Strategy from outline per BME guidelines. | | | | | | |
| Week 39 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| | | | | | | | Confirm exam date Oral exam date scheduled. Must send final proposal to committee 2 weeks prior to exam. |
| Week 40 | 29 | 30 | | | | | |
| | | | | | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|--|--|-------------------|--------------|----------|--------|
| Week 0 | | | 1 Data backup... | 2 Surgical... | 3 +1 more | 4 | 5 |
| Week 41 | 6 | 7 | 8 Complete... | 9 Calibrate... | 10 | 11 | 12 |
| Week 42 | 13 | 14 | 15 Laser system ready Confirm laser and optics meet live imaging requirements. | 16 | 17 | 18 | 19 |
| Week 43 | 20 | 21 Design AAV vectors | 22 Reserve exam... | 23 | 24 | 25 | 26 |
| Week 44 | 27 | 28 Draft Specific Aims and Research Strategy Write 1-page Specific Aims and 12-page Research Strategy sections for proposal. | 29 | 30 | 31 | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | | | 1 | 2 |
| Week 45 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Week 46 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Week 47 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| Week 48 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|---|---|-----------|----------|-------------|---|--------|
| Week 49 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Finalize proposal draft and formatting Complete full proposal document (~13 pages) with proper formatting and submit for review. | | | | | | |
| Week 50 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| | Prepare presentation Create slide deck and practice oral exam presentation. Aim for two practice runs with lab members. | | | | | | |
| Week 51 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| | | | | | Pre-defense | AAV vectors ready Receive AAV vectors; ready for injections. | |
| Week 52 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| | | Address committee feedback Incorporate committee revisions into proposal and submit signed approval form for final approval. | | | | | |
| Week 1 | 29 | 30 | 31 | | | | |
| | | | | | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|--------|--------|---------|-----------|----------------|--------|----------|--------|
| Week 0 | | | | 1 | 2 | 3 | 4 |
| | | | | Data backup... | | | |
| | | | | Maintain... | | | |
| | | | | +1 more | | | |
| Week 2 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | | | | | | | |
| Week 3 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | | | | | | | |
| Week 4 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| | | | | | | | |
| Week 5 | 26 | 27 | 28 | 29 | 30 | 31 | |
| | | | | | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|--------|--------|---------|-----------|----------|---|----------|--|
| Week 0 | | | | | | | 1 <div>Cranial window surgeries (3 mice) Install cranial windows and inject AAV in three pilot mice with staggered timing (1 week apart).</div> |
| Week 6 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Week 7 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Week 8 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| Week 9 | 23 | 24 | 25 | 26 | 27 <div>Post-operative recovery and monitoring Monitor/medicate mice; maintain analgesia schedule.</div> | 28 | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | | | | 1 |
| Week 10 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Week 11 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Week 12 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| Week 13 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| Week 14 | 30 | 31 | | | | | |

Pilot imaging sessions (3 mice)
Acquire in vivo images for all three mice comparing AAV fluorescence vs traditional dye injection methods.

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|---------|--------|---|---|----------|--------|----------|--------------|
| Week 0 | | | 1 | 2 | 3 | 4 | 5 |
| | | | Equipment maintenance log - Q3 2026 Maintain detailed rig log for any alignment changes and communicate modifications to colleagues. | | | | |
| Week 15 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Week 16 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| | | | Pilot datasets complete Complete 3 pilot twophoton datasets | | | | Draft... |
| | | | | | | | Configure... |
| | | | | | | | +1 more |
| Week 17 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| | | Process pilot data Perform image registration and SNR analysis. Calculate contrast metrics and refine imaging protocols. | | | | | |
| Week 18 | 27 | 28 | 29 | 30 | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | | 1 | 2 | 3 |
| Week 19 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Week 20 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Week 21 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| Week 22 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |

Design U-Net architecture and training data
Design U-Net architecture for vascular segmentation and prepare training datasets from pilot images.

Configure LSCI for blood flow measurements
Configure LSCI for bloodflow measurements.

Compare labeling methods
Systematically compare imaging depth; SNR; and contrast across different labeling methods (AAV vs dye) in vivo.

Implement and test segmentation pipeline
Implement UNet pipeline; test on pilot data.

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 23 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Week 24 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Week 25 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| Week 26 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| Week 27 | 29 | 30 | | | | | |

Establish stroke protocol
Complete training and IACUC approval for stroke induction method (photothrombosis). Ensure all regulatory approvals are in place.

Induce stroke
Induce stroke in cohort to start Aim 3 imaging.

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--|--|--|----------|--------|-----------------|--------|
| Week 0 | | | 1 | 2 | 3 | 4 | 5 |
| | | | Equipment maintenance log - Q4 2026 Maintain detailed rig log for any alignment changes and communicate modifications to colleagues. | | | | |
| Week 28 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | | | Acute-phase imaging Conduct two-photon + LSCI imaging sessions in acute phase (0-1 week post-stroke) to capture immediate vascular changes. | | | | |
| Week 29 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| | | Adapt ML pipeline for stroke data Adapt machine learning segmentation pipeline for stroke dataset analysis and vascular feature detection | | | | Submit... | |
| | | | | | | Enhanced AAV... | |
| Week 30 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| | Transition-phase imaging Transition-phase imaging (24 wks). | | | | | | |
| Week 31 | 27 | 28 | 29 | 30 | 31 | | |

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| Week 0 | | | | | | 1 | 2 |
| Week 32 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Week 33 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Week 34 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| Week 35 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Week 36 | 31 | | | | | | |

Optimize MRI protocols for early chronic phase (2-4 weeks post-stroke) to detect microvascular changes.

Stabilization-phase imaging
Conduct imaging sessions in early chronic phase (5-8 weeks post-stroke) to observe vascular remodeling processes.

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--|--|---|----------|--------|--|--------|
| Week 0 | | 1 <div>Annual progress...</div> <div>Maintain...</div> | 2 | 3 | 4 | 5 | 6 |
| Week 37 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Week 38 | 14 | 15 | 16 <div>Extended chronic imaging Extended chronic imaging (~12 wks)</div> | 17 | 18 | 19 | 20 |
| Week 39 | 21 <div>Stroke data complete Completion of all planned longitudinal imaging sessions for stroke st</div> | 22 | 23 | 24 | 25 | 26 <div>Integrate flow data Integrate LSCI flow with twophoton data.</div> | 27 |
| Week 40 | 28 | 29 | 30 | | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | 1 | 2 | 3 | 4 |
| Week 41 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Week 42 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Week 43 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| Week 44 | 26 | 27 | 28 | 29 | 30 | 31 | |

Equipment maintenance log - Q1 2027
Maintain detailed rig log for any alignment changes and communicate modifications to colleagues.

Analyze neurovascular coupling
Quantify microvascular network changes and neurovascular coupling dynamics from post-stroke imaging data.

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|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | | | | 1 |
| Week 45 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Week 46 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Week 47 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| Week 48 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| Week 49 | 30 | | | | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|-----------------|--------|----------|--------|
| Week 0 | | 1 | 2 | 3 | 4 | 5 | 6 |
| Week 50 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | | | | Prepare... | | | |
| | | | | Draft second... | | | |
| Week 51 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| | | | | | | Draft... | |
| | | | | | | PhD... | |
| | | | | | | +1 more | |
| Week 52 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| Week 53 | 28 | 29 | 30 | 31 | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|--------|--------|---------|-----------|----------|--------------|----------|--------|
| Week 0 | | | | | 1 | 2 | 3 |
| | | | | | Apply for... | | |
| | | | | | Maintain... | | |
| | | | | | +1 more | | |
| Week 1 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Week 2 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Week 3 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Week 4 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
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| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|--------|--------|---------|------------------|----------|--------|----------|--------|
| Week 5 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | | Draft Methods... | | | | |
| | | | Draft... | | | | |
| Week 6 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| | | | | | | | |
| Week 7 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| | | | | | | | |
| Week 8 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| | | | | | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Week 10 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Week 11 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| Week 12 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| Week 13 | 29 | 30 | 31 | | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | 1 | 2 | 3 | 4 |
| Week 14 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Week 15 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Week 16 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| Week 17 | 26 | 27 | 28 | 29 | 30 | | |

Equipment maintenance log - Q3 2027

Maintain detailed rig log for any alignment changes and communicate modifications to colleagues.

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | | | 1 | 2 |
| Week 18 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Week 19 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Week 20 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| Week 21 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Week 22 | 31 | | | | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|------------------|-----------|----------|--------|---|--------|
| Week 0 | | 1 | 2 | 3 | 4 | 5 | 6 |
| | | Request final... | | | | | |
| | | Maintain... | | | | | |
| Week 23 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | | | | | | | |
| Week 24 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| | | | | | | Dissertation draft complete Complete PhD dissertation draft compiled and ready for committee review. | |
| Week 25 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| | | | | | | | |
| Week 26 | 28 | 29 | 30 | | | | |
| | | | | | | | |

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | 1 | 2 | 3 | 4 |
| Week 27 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Week 28 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Week 29 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| Week 30 | 26 | 27 | 28 | 29 | 30 | 31 | |

Equipment maintenance log - Q4 2027
Maintain detailed rig log for any alignment changes and communicate modifications to colleagues.

PhD Defense
Defend dissertation in oral exam.

Revise dissertation
Incorporate committee feedback and revisions after defense. Obtain final approval signatures.

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------|--------|---------|-----------|----------|--------|----------|--------|
| Week 0 | | | | | | | 1 |
| Week 31 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Week 32 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Week 33 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| Week 34 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| Week 35 | 30 | 31 | | | | | |

Submit dissertation

Upload approved dissertation PDF and submit all required forms to Graduate School by deadline.