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Fifth-Year PhD Requirements and Research Timeline

Program Requirements and Deadlines (Year 5)

- **Dissertation Proposal Milestone:** UT BME requires PhD students to complete the dissertation proposal (an oral research proposal exam) by the end of the third year [1] . If this milestone was delayed into the fifth year, an **extension request** should have been filed (via the Qualtrics survey/ form provided by the Graduate Coordinator) [2] [3] . Make sure the official *Dissertation Proposal Form* (signed by your committee) is submitted to the Graduate Coordinator for your file, along with an updated Program of Work [4] .

- **Program of Work (POW):** The Program of Work is an official listing of coursework and must be kept updated as you reach milestones (Qualifying Exam, Proposal, Final Defense) [5] . In BME this is usually documented through the advising forms each semester [5] . By the proposal stage, ensure your POW form is completed and approved (templates are available on UT Box).

- **Committee Membership Updates:** Your doctoral committee (minimum 4 members, with at least 3 BME Graduate Studies Committee members and 1 outside member) should have been finalized when advancing to candidacy [6] [7] . If the committee composition changes at any point, you **must file a "Request for Change in Doctoral Committee" form** with the Graduate School and get it approved [8] . This should be done *no later than 30 days before the final defense* (to avoid last-minute issues) [9] . In general, committee changes are granted only with special approval, so it's best to confirm your members well in advance [10] .

- **Advancing to Candidacy:** After passing the qualifying exam, you should have applied for candidacy and been approved by the Graduate School [11] . Fifth-year students should already be doctoral candidates – if not, this is an urgent priority. Doctoral candidates must maintain **continuous registration** in the dissertation course every long semester until graduation [12] . You need at least 6 credit hours of dissertation *BME x99W* total before you graduate (typically accomplished by two long semesters of **Dissertation** registration) [12] .

- **Full-Time Registration and Employment:** Even after finishing formal coursework, you must remain registered **full-time** (9+ hours in long semesters) to meet employment, visa, and fellowship requirements [13] . Usually, this means registering for research problems or dissertation hours to make up full-time status [13] . **Note:** After candidacy, you can switch your enrollment from research hours to dissertation hours in the semester candidacy is approved (coordinate with the Grad Coordinator) [14] . If you are more than two semesters away from defending, you can simply stay in research hours until closer to completion [15] .

- **Teaching Requirement:** All BME PhD students must serve as a TA at least once before graduating [16] . If you have not completed this yet by your fifth year, ensure you plan for a TA assignment soon

(coordinate with the department's TA application process, which opens each October for spring positions and June for fall positions [17]). Being in good standing is required to be appointed as a TA [18].

- **Annual Progress Reviews:** The BME department conducts an **Annual Graduate Student Review** for all PhD students. In early fall each year, you and your advisor must fill out a progress review form and sign it [19]. For example, the 2025 annual review form was due by September 7, 2025 [19]. Make sure to complete this every year – it typically involves summarizing your progress, meeting with your supervisor to discuss performance, and uploading the signed form by the deadline [20] [21]. Not completing the annual review could affect your good standing in the program.

- **Graduation and Defense Deadlines:** As you approach the final phase in year 5, be mindful of Graduate School deadlines in your graduation semester. You must **apply to graduate** at the beginning of the semester you intend to finish (e.g. the online graduation application opens in early September for fall grads) [22]. The **dissertation defense** (Final Oral Exam) must be scheduled well in advance: you are required to **submit a Request for Final Oral Exam form at least 2 weeks before the defense** date [23], and you must defend *at least two weeks* before the Graduate School's dissertation submission deadline of that semester [24]. In practice, this means if you plan to graduate in Spring, your defense should occur by mid-late April; for Fall, by mid-late November (exact deadline dates are published by the Graduate School [25]). All committee members should attend the defense (minimum N-1 participation is required in extenuating cases) [26], and everyone must sign off on the final dissertation. Finally, the **dissertation PDF upload and all final paperwork** must be submitted to Texas Digital Library/Grad School by 3:00 PM on the deadline day of that semester [27] [25]. Missing this cutoff means postponing graduation to the next term, so build these deadlines into your plan.

Research Aims and Timeline for Year 5

Your dissertation project is organized into three major aims: **(1)** AAV design for stable vascular imaging, **(2)** dual-color (dye-free) neurovascular imaging platform, and **(3)** chronic stroke model imaging [28]. Below is a structured timeline (Gantt-style by semester) breaking down each aim into key subtasks, along with recurring administrative responsibilities each term. This timeline assumes you are in your fifth year (2025–2026) and targeting completion of your PhD by the end of that year (or early in the sixth year).

1. **Fall 2025 (Year 5):**
2. *Aim 1 – AAV Design:* Finish any remaining vector development and **produce AAV-mScarlet** viral batches for vascular labeling. Conduct **in vivo pilot tests** in healthy animals to ensure the AAV delivers stable, long-term expression of the fluorescent protein in cerebral vasculature. Collect baseline imaging data to confirm that vessels can be visualized chronically without dye injection.
3. *Aim 2 – Dual-Color Imaging:* Begin developing the second component of the imaging platform. For example, **select or engineer a neuronal-labeling AAV** (e.g. an AAV expressing a green fluorescence in neurons or astrocytes). **Calibrate the imaging setup** (microscope filters, detection channels) for spectral separation between the red vascular label and the new label. If possible this semester, perform a preliminary co-injection of the vascular AAV and neuronal AAV in a test animal to verify that dual-label imaging is feasible (two distinct fluorescence signals with no cross-talk).

4. *Administrative:* Complete the **2025 Annual Progress Review** with your advisor (due early September) [19] . Plan and host any fall semester events for student organizations – for instance, a **BOGO** (BME Graduate Organization) social or professional development event, and an **SPIE Student Chapter outreach** event (e.g. a lab tour or demo for undergrads or the community). Also prepare for the **SPIE Student Chapter Annual Report and Activity Grant** application due by **December 1, 2025** (this combined report secures chapter funding for 2026) [29] . This will involve compiling the year's chapter activities and proposing events for next year's grant. Ensure it's submitted on time to maintain the chapter's active status and funding.

5. **Spring 2026 (Year 5):**

6. *Aim 2 – Dual-Color Imaging:* Complete the dual-imaging platform development. **Execute full dual-color imaging trials** in vivo – administer the vascular AAV (from Aim 1) and the neuronal labeling AAV to your experimental animals (if not already done), and allow appropriate expression time. Then perform **two-photon imaging sessions** to capture simultaneous neuronal and vascular images. Optimize imaging parameters and data acquisition methods so that both channels are clearly captured. By the end of this aim, you should demonstrate a working "dye-free" imaging platform that provides artifact-free visualization of neurovasculature [30] . Gather sufficient data (e.g. images, videos) showing the capability of the platform in healthy brain, which will be important before applying it to the stroke model.

7. *Aim 3 – Stroke Model Imaging:* While finishing Aim 2, start preparations for the stroke study. **Establish the stroke model** in your animals (e.g. perform surgical or photothrombotic stroke induction in a cohort of animals once baseline imaging is done). Plan the timeline of imaging post-stroke – for example, immediate post-stroke imaging, and then **chronic imaging at multiple time points** (such as 1 week, 2 weeks, 1 month, etc. after stroke) to observe vascular remodeling over time. If early time points fall in spring, begin capturing those. Ensure all surgical protocols and animal approvals are in place before starting.

8. *Administrative:* Continue with organizational duties in parallel. Plan a **spring SPIE/BOGO event** (for example, a workshop or networking event in late spring). There may be fewer formal deadlines this semester, but keep an eye out for any **SPIE student chapter opportunities** (e.g. SPIE Officer Travel grants or conference sponsorships) and prepare applications if relevant. Also, if you intend to graduate in Summer 2026, **submit your graduate application** to the Graduate School (typically by early June, or the deadline specified for summer graduation) and start coordinating possible defense dates with your committee. Spring is also a good time to **present your work** at a conference (e.g. SPIE Photonics West or an imaging symposium) – this isn't a program requirement, but it's a valuable milestone to aim for in Year 5.

9. **Summer 2026:**

10. *Aim 3 – Stroke Model Imaging:* This semester will focus on **executing the chronic imaging experiments** in the stroke model and collecting all remaining data. Perform your scheduled longitudinal imaging sessions for each animal over the summer to **map microvascular remodeling across distinct recovery phases** (acute to chronic) [31] [30] . Ensure data is collected for the late time points of recovery (e.g. 2-3 months post-stroke, if that falls in summer). Begin **quantitative data analysis** concurrently: measure vascular density, branch lengths, new vessel growth or regression

over time, compare regions, and possibly correlate these with functional outcomes if you have behavioral metrics for stroke recovery.

11. *Data Analysis and Writing:* As experiments wind down, start dedicating time to **writing your dissertation** and papers. Organize the results from each aim: Aim 1 (method validation), Aim 2 (dual-color platform results), Aim 3 (stroke remodeling findings). It's wise to draft figure plots and outline chapters as data comes in. Over the summer, aim to have an outline of the dissertation and maybe one chapter drafted (for instance, Methods and preliminary results). If graduating in summer, you will also need to **defend during the summer session**, which means coordinating with committee members' schedules early and meeting the summer submission deadline (usually in early August). Note that summer defenses are possible but you must be registered and the timeline is compressed – confirm exact dates with the Graduate School [25].

12. *Administrative:* Summer has fewer formal requirements, but if you plan to defend in fall instead, use this time to schedule your **dissertation defense** date with your committee for early Fall 2026 (to give everyone advance notice and lock in a date). Also, if you will continue into Fall, consider mentoring younger students in lab over the summer and preparing any **chapter leadership transition** for the SPIE chapter (new officers often begin in the fall, so ensure documentation from your activities is passed on).

13. **Fall 2026 (Year 6, if needed for completion):**

14. *Defense and Completion:* This term would be dedicated to **finalizing the dissertation** and graduating. Finish writing all dissertation chapters and have your supervisor review them. **Apply to graduate** at the start of Fall (by mid-September) if you didn't graduate in summer [22]. At least a month before your planned defense, update any **committee changes** if needed and submit the Request for Final Oral Exam form to schedule the defense with the Graduate School [23]. **Hold your dissertation defense by mid-November** (if graduating in Fall), to give time for post-defense revisions. Immediately after a successful defense, work on any edits required by your committee. **Submit the final dissertation** to the Texas Digital Library and all required forms by the semester deadline (typically early December by 3 PM) [27] [25].

15. *Administrative:* Even in your final semester, allocate a bit of time for departmental and chapter duties until you finish. For example, you might still help plan the **Fall 2026 SPIE/BOGO events** early in the semester, but be sure to hand off primary responsibilities to others as you approach your defense date. Most critically, ensure the **SPIE Chapter Annual Report and grant application** for 2026 (for 2027 funding) is submitted by Dec 1, 2026, if you are still an officer at that time – or transition this duty to the next officer before you depart. Completing this guarantees the chapter continues to receive funding [29]. Finally, wrap up any loose ends: submit an **exit survey** if required by the Graduate School and ensure all paperwork (committee signatures, online forms, etc.) is finalized so that you can graduate on time.

Each of these tasks and milestones is time-sensitive, so adhering to this timeline will help you successfully navigate the final year of the PhD. By breaking the work down under each aim and integrating administrative deadlines, you can manage your fifth-year workload and fulfill all program requirements on schedule. Good luck with your proposal and the completion of your PhD!

Sources:

1. UT Austin BME Graduate Handbook – *Program requirements and timelines* [1] [12] [5]

2. Jenny Kondo (BME Grad Coordinator) – *Emails on proposal deadlines, extensions, and annual review* [2] [19]
3. UT BME Grad Handbook – *Committee, candidacy, and defense procedures* [8] [22]
4. SPIE Student Chapter Notices – *Annual report and grant application deadlines* [29]

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[1] [16] Doctoral Program - Department of Biomedical Engineering
https://www.bme.utexas.edu/academics/graduate-program/phd-program

[2] [3] [4] [13] [19] [20] [21] [29] Reminder: Dissertation Proposal
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[5] Coursework - BME Graduate Program Handbook - University Wiki Service
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[6] [7] [10] [11] [12] [14] [15] Advancing to Candidacy - BME Graduate Program Handbook - University Wiki Service
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[8] [9] [22] [23] [24] [25] [26] [27] Dissertation Defense | Final Oral Exam - BME Graduate Program Handbook - University Wiki Service
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