



**TPCB Admission to Candidacy Exam (ACE)
Requirements and Procedures for
WEILL CORNELL / SLOAN KETTERING STUDENTS**

Document version: September 2014

Prerequisites: Prior to taking the ACE, students must pass all coursework required by the TPCB program.

Timing: For the entering Class of 2013 and beyond, the exam must be completed by **June 30th** in the second year of the program. Students who cannot meet this deadline must request an extension formally from the Program Director. Acceptable reasons for extension include a change of lab late in the second year, health issues, and child rearing responsibilities.

Structure: The ACE consists of (i) a Written Thesis Proposal and (ii) an Oral Defense describing the components of the proposed thesis research.

Committee: The ACE Committee will be comprised of the WCMC/MSK thesis mentor, two (2) additional WCMC/MSK TPCB faculty members, and a 4th TPCB faculty member NOT from your home institution (*i.e.*: WCMC, MSK, or RU). In addition, students must appoint one of the WCMC/MSK TPCB faculty members other than the thesis mentor to serve as administrative Chair for the examination. Any appointments of non-TPCB faculty to the Committee require prior approval of the Program Director, although additional faculty above and beyond these requirements do not.

Written Thesis Proposal:

The Written Thesis Proposal should describe the research plan for student's thesis. The student should consult with their thesis mentor while preparing drafts of the proposal, but may not plagiarize an existing grant or grant application. The proposal should represent the independent ideas and presentation of the student.

The NIH Research Proposal format is required, with a total length of not more than 10 pages:

- **Specific Aims** (exactly 1 page): Concise description of the general problem being addressed, why it is important (1–2 paragraphs), followed by a concise statement of each of the main questions to be addressed and their goals (usually 2–3 specific aims, 1–2 sentences for each).
- **Significance** (1–2 pages): Scholarly presentation of background on area being investigated. Explain the importance of the problem or critical barrier that your project addresses.
- **Innovation** (up to 1 page): Particularly novel aspects of the scientific problem and/or techniques used to address it. Explain how your project seeks to shift current research paradigms and/or advances novel concepts, approaches, or methodologies. Acknowledge prior art from the literature wherever appropriate.

- **Approach – Preliminary Results** (1–3 pages): Initial results obtained by the candidate prior to this exam that support the feasibility of the research project and demonstrate the expertise of the candidate. Research results from other lab members should be discussed under “Significance”.
- **Approach – Research Design** (3–6 pages): Overall strategy and specific methodology that will be used to accomplish the specific aims of the project. For each specific aim, provide a detailed description of experimental approaches and data interpretation methods. At the end of each specific aim, provide a paragraph entitled “Potential Problems, Alternative Strategies, and Benchmarks for Success” that discusses these issues explicitly.
- **Approach – Timeline** (<1/4 page): Provide a reasonable timeline for completion of your project during the timeframe of your PhD studies. If your project involves deliverables such as discovery of novel enzyme inhibitors, provide a brief list of milestones as well (*e.g.*, Identify at least 10 inhibitors with $IC_{50} \leq 10$ mM, etc.)

The student must submit the final draft of the Written Thesis Proposal to all four Committee members at least two weeks prior to the scheduled date of the Oral Defense. Committee members must, within two weeks, approve the proposal as written or request revisions and resubmission. All four Committee members must approve the Written Thesis Proposal and email the Program Coordinator before the Oral Defense can proceed. In the event that the Written Thesis Proposal is not approved prior to the scheduled Oral Defense date, the defense must be rescheduled. Each member of the Committee is encouraged to provide the student with a short, written critique of the proposal.

Oral Defense: The Oral Defense must be scheduled officially with the TPCB and WCMC Graduate School Offices. Technically, Committee approval of the Written Thesis Proposal is required prior to scheduling the Oral Defense. However, as a practical matter, students are strongly encouraged to schedule Oral Defense dates at least 6 months in advance to allow for coordination of faculty schedules. In the event that the Written Thesis Proposal is not approved, the Oral Defense must then be rescheduled.

At the Oral Defense, after all Committee members are convened, the student will be excused from the room. During this time, the Committee will discuss the student’s academic process, the Written Thesis Proposal, and any other pertinent issues. The Committee will vote on the Written Thesis Proposal according to the rules of the WCMC/MSK Graduate School.

The student will then be invited back into the room and the Oral Defense will continue with a presentation by the student describing the salient features of the Written Thesis Proposal. The prepared presentation should be 30–40 minutes, but it may last longer if the Committee chooses to ask extensive questions during the presentation. During and/or after the presentation, the Committee will question the student. The Committee’s questions will likely focus primarily on the significance of the problem addressed, the basic chemical and biological principles governing the problem, and the logic of the experimental approach. Furthermore, the Committee will probe the student’s knowledge of the relevant scientific areas (thus, any question is “fair game”), thereby ensuring that the student is an appropriate doctoral candidate for TPCB.

When the discussion has concluded, the student will again be excused from the room. The Committee will discuss and vote on the exam according to the rules of the WCMC/MSK

Graduate School. The Committee will prepare a written evaluation of the student, which will be forwarded to the Graduate School by the Chair. The Committee will convey the assessment to the student before the examination is adjourned.

Passed Exam: If, according to the voting rules of the WCMC/MSK Graduate school, the Committee “passes” both the Written Thesis Proposal and Oral Defense components of the student’s ACE, the student is cleared to continue with their PhD thesis research.

Tabled Exam: If, according to the voting rules of the WCMC/MSK Graduate School, the Committee “tables” the Written Thesis Proposal and/or Oral Defense component of the student’s ACE, the student must attempt to correct the deficiencies as specified by the Committee (remedies may include retaking the Oral Defense) within 2 months. Final disposition of the ACE must be completed no later than 3 months from the date of the original Oral Defense.

Failed Exam: If, according to the voting rules of the WCMC/MSK Graduate School, the Committee determines that a student has failed either the Written Thesis Proposal or the Oral Defense, an academic review by the Academic Oversight Committee will occur. The Academic Oversight Committee will consider the student’s global academic performance and can recommend that the student be allowed to reattempt the ACE or that the student be asked to leave the Program. If the student is allowed to reattempt the ACE, the Academic Oversight Committee will set an appropriate timetable.

Pass for Master of Science Only: The TPCB rules for “Pass for Master of Science Only” are as defined by the WCMC/MSK Graduate School and apply to students who the Committee deem are not suitable for advancement to PhD study but have carried out sufficient meritorious work to receive the Master of Science degree.