COMPREHENSIVE EXAM TIMELINE

1

SCHEDULE

Consult your committee to choose a date and time for your exam

2nd Year: January

2

RESERVE

Reserve a room through the Graduate Program Manager

2nd Year: January - February

3

SUBMIT

Complete the Comprehensive Exam Form

Two Weeks Before Exam

4

EMAIL

Send your committee your research proposition

One Week Before Exam

5

PRESENT

Demonstrate your knowledge during your oral exam

2nd Year: February - April

6

REVISE

Create and submit your Secondary Proposal

Before End of 3rd Year Fall Semester

7

APPLY

Submit your Official Application for Candidacy

After Secondary Proposal Approval

8

CELEBRATE

Receive confirmation that you have been admitted to candidacy

Semester after candidacy approval

TABLE OF CONTENTS

OVERVIEW

Although there are eight total steps for your comprehensive exam, there are three main parts (steps 4-6).

4

Research Proposition

A short document outlining your thesis research plan and any initial results, which you will email to your committee a week before your oral exam.

5

Oral Exam

A 2-hour exam that assesses your research readiness through questions about your proposition and foundational chemistry topics.

6

Secondary Proposal

A revised research proposal that you'll email to your advisor and the Graduate Program Director before the end of your third year's fall semester.

1. SCHEDULE

In consultation with your committee, choose a date and time for your oral exam.

TIPS FOR SUCCESS

- Use www.when2meet.com or a similar scheduling tool
- Start by offering days of the week and then drill down to specific times
- Plan to schedule a 2-hour block of time, although exams often end up being shorter

2. RESERVE

Email the Graduate Program Manager (chemgrad@colorado.edu) to request a room reservation.

TIPS FOR SUCCESS

- Send the date and time of your exam in your initial email

3. SUBMIT

Fill out the Comprehensive Exam Form two weeks before your exam date.

TIPS FOR SUCCESS

- Committee Member 4: your advisor/PI
- Committee Member 5: Director of Graduate Studies
  - Email: chemdgs@colorado.edu
  - Currently: Jordy Bouwman

4. EMAIL

One week before your exam, send your committee your Research Proposition. This short proposition is **one of the three main parts** of the comprehensive exam.

In ~5 pages, the proposal will outline your thesis direction, research area, and any promising research results.

TIPS FOR SUCCESS

- See Proposals 101 for more information on writing and formatting

5. PRESENT (PART 1)

The Oral Examination will include questioning on

1. **your research and**
2. **general chemistry topics**

to assess depth/breadth of knowledge, research readiness, and ability to present and discuss complex ideas.

You are expected to demonstrate a clear understanding of your thesis research, the ability to think creatively, and fundamental understanding of chemistry.

5. PRESENT (PART 2)

TIPS FOR SUCCESS

- **Know Your Proposal Inside Out:** Be ready to discuss every detail, including methodology, assumptions, limitations, and alternative approaches.
- **Anticipate Questions:** Think critically about weaknesses in your proposal and how you would address them.
- **Demonstrate Breadth and Depth:** Show you can connect your specific research to broader concepts in your field.
- **Practice Presentation:** Rehearse your presentation with peers and/or your advisor to ensure clarity and confidence.
- **Stay Calm and Professional:** Ask for clarification or pause to think when needed.

6. REVISE

After your oral exam is completed and **no later than the end of year three's fall semester,** you will email the Secondary Proposal and a copy of the research proposition to your advisor and the Graduate Program Director (chemdgs@colorado.edu) for approval.

TIPS FOR SUCCESS

- Discuss with your advisor their expectations for your secondary proposal
- The secondary proposal must be different than the research proposition
- See Proposals 101 for more information on writing and formatting

7. APPLY

Within two weeks of receiving secondary proposal approval, submit your Official Application for Candidacy (first tile of the linked page).

TIPS FOR SUCCESS

- This step must be done after your Research Proposition, Oral Exam, and Research Proposition have been completed
- You will also need to have taken 15 formal and 15 non-formal credits
- Ask chemgrad@colorado.edu if you need assistance

8. CELEBRATE

You will be notified via email when you are admitted to candidacy!

TIPS FOR SUCCESS

- Please note that candidacy status does not apply until the semester after it is granted
  - (e.g. if you are approved for candidacy in the spring, it will take effect in the summer semester)

PROPOSALS 101 (PART 1)

WHAT IS A SCIENTIFIC PROPOSAL?

A scientific proposal is a structured document that outlines a planned research project. It serves as a roadmap, detailing the objectives, methods, significance, and expected outcomes of the study.

WHY IS A SCIENTIFIC PROPOSAL IMPORTANT?

The ability to write a strong proposal allows you to:

- **Secure Funding:** A well-crafted proposal increases the likelihood of receiving grants from organizations such as the National Science Foundation (NSF) or the National Institutes of Health (NIH).
- **Communicate Scientific Ideas:** A proposal helps you articulate research questions, explain complex ideas, justify the significance of your research, and demonstrate the soundness of your methodology; which can be shared with advisors, collaborators, and funding organizations.
- **Effectively Structure Research:** A well-defined proposal serves as a blueprint, guiding you through the steps necessary to achieve your research goals.

PROPOSALS 101 (PART 2)

SCIENTIFIC PROPOSAL FORMATTING

Proposal should be around 4-5 pages in length (including figures but excluding references), single-spaced with 1" margins, and in a readable font, such as Times New Roman (11-point or larger) or Arial/Courier New (10-point or larger).

The structure and length of a scientific proposal can vary based on institutional or funding body requirements. However, a typical proposal follows the same general format (shown on the next slide).

Please consult your PI for specific guidelines and expectations.

PROPOSALS 101 (PART 3)

GENERAL STRUCTURE

1

TITLE PAGE

- Title of the research project
- Name(s) of the researcher(s)
- Institutional affiliation
- Date of submission

2

ABSTRACT

- A concise summary of the research problem, objectives, methods, and expected outcomes

3

INTRODUCTION

- Background information and context of existing literature
- Research problem, objective, and research questions
- Hypothesis (if applicable)
- Significance and potential impact of the study
- Identification of gaps in current knowledge
- Explanation of how proposed research will expand upon current knowledge

4

METHODOLOGY

- Detailed explanation of research design and approach, including data collection (experiments, surveys, simulations, etc.) and analysis methods
- Timeline for project completion.
- Ethical considerations (if any)

5

EXPECTED RESULTS AND DISCUSSION

- Anticipated findings based on the proposed methodology
- Possible experimental failures and plans to overcome them
- Discussion of potential implications and applications

6

REFERENCES

- Properly formatted citations of all sources referenced in the proposal.

QUESTIONS?

Please contact the Graduate Program Manager
(chemgrad@colorado.edu)