

FORMAT INSTRUCTIONS FOR ANALYTICAL SCIENCES THESIS BACKGROUND ORAL

Page Limitations and Content Requirements

Section	Page Limit	Content
Project Overview (Form Page 1)	Limited to space provided on form	Succinct and accurate description of proposed work when separated from application
Table of Contents (Form Page 2)	1 Page	
Biographical Sketch (Form Page 3)	4 pages	See Instructions
Research Plan Sections A-D only (Section E is not included in the 10-page limit)	8 – 10 pages Paper at least 8 pages, but not more than 10 pages. Use 11 pt. font, single spacing with margins provided on the form page.	Text plus all figures and tables

In the second year of study, all students will demonstrate that they have mastered the literature and obtained research skills needed to effectively conduct scientific research. The TBO involves a written proposal, oral presentation, and defense before a committee of faculty members. The TBO will typically evaluate the student in four key areas:

- 1) Knowledge of the scientific literature in the student's area of research
- 2) Ability to apply information learned in courses to research problems
- 3) Demonstration of satisfactory progress towards Ph.D. This demonstration includes progress on the Ph.D. thesis project and it also includes demonstration of the ability to:
 - a) define research problems
 - b) develop suitable strategies to solve problems
 - c) implement the strategies
 - d) interpret the results of the implementation
 - e) understand the relationship of the student's work and goals to the broader field.

Students must consult with their thesis adviser to determine the desired type of content.

The TBO proposal shall be distributed by the student to the participating committee members no later than 5 p.m. CST seven (7) days prior to the scheduled TBO date in both an electronic format and hard copy. Failure to meet this deadline may result in TBO failure and is at the discretion of the committee.

Research Plan

The Research Plan should include sufficient information needed for evaluation of the project, independent of any other document. The format for preparing this section is provided below. Be specific and informative, and avoid redundancies.

The sections should be well formulated and presented in sufficient detail that it can be evaluated for both its research potential and scientific merit. **The topic should be chosen in consultation with your advisor, but the proposal itself should be written by you.**

Contents of Research Plan

Include sufficient information to permit an effective review without committee members having to refer to the literature or any previous proposal. The Research Plan includes multiple subsections, some of which have page limits. Sections A through D of this item must not exceed 10 pages, including all tables and figures. Follow the format provided below.

A. Specific Goals and Objectives (0.5 – 1 page)

List the broad, long-term objectives and the goal of the specific research proposed, e.g., to develop new technology, solve a specific problem, address a critical barrier to progress in the field, test a stated hypothesis, challenge an existing paradigm, or create a novel design.

B. Background and Significance (1 – 2 pages)

Briefly sketch the background leading to the present application, critically evaluate existing knowledge and specifically identify the gaps that the project is intended to fill. State concisely the importance and relevance of the research described in this presentation by relating the specific goals to broad, long-term objectives in the field.

C. Preliminary Studies (2 – 3 pages)

Use this section to provide an account of preliminary studies you have performed pertinent to this proposal. This information will help your committee members evaluate your progress and determine your competence to pursue the proposed project. It will also help demonstrate the utility of the proposed project.

When applicable, provide a succinct account of published and unpublished results, indicating progress toward their achievement.

D. Research Design and Methods (4 – 5 pages)

Describe the research design conceptual framework, procedures, and analyses to be used to accomplish the specific goals of the project. Include how the data will be collected, analyzed and interpreted. Describe any new methodology and its advantage over existing methodologies. Describe any novel concepts, approaches, tools or technologies for the proposed studies. Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the goals. As part of this section, provide a tentative sequence or timetable for the project. Point out any procedures, situations or materials that may be hazardous to personnel and the precautions to be exercised.

E. References

References should be formatted per the journal *Analytical Chemistry* standard and do not count toward the 10-page limit.

ANALYTICAL SCIENCES/MATERIALS CHEMISTRY THESIS BACKGROUND ORAL

Name (Last, First, Middle Initial) _____

Proposal Title _____

Mentor _____

Project Overview: State the project's broad, long-term objectives and specific goals, making reference to the significance of the project. Describe concisely the research design and methods for achieving these goals. Describe the rationale and techniques you will use to pursue these goals. **Do not exceed the space provided.**

**ANALYTICAL SCIENCES THESIS BACKGROUND ORAL
TABLE OF CONTENTS**

NAME (FIRST, LAST, MI)

SECTION 1	PAGE NUMBERS*
Face Page (Form Page 1).....	1
Table of Contents (Form Page 2)	2
Biographical Sketch (Form Page 3; not to exceed 4 pages)	3
Research Plan	
A. Specific Goals	
B. Background/Significance	
C. Preliminary Studies/Progress Report	
D. Research Design and Methods	
E. Literature cited	
	(Not to exceed 10 pages)

SECTION 2

Appendix Check if Appendix is included

Note: No page numbering is necessary. Do not include more than **two (2)** publications.

*Number pages consecutively at the bottom throughout the application. Do not use suffixes such as 6a, 6b.

BIOGRAPHICAL SKETCH
DO NOT EXCEED FOUR PAGES.

NAME OF APPLICANT	POSITION TITLE
ADVISOR/MENTOR	

EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY

NOTE: The Biographical Sketch may not exceed four pages. Follow the formats and instructions as listed.

A. Positions and Honors. List in chronological order all non-degree training, all employment after college, and any military service. State the Activity/Occupation and include beginning/end dates, field, name of institution/company, and the name of your supervisor/employer.

ACTIVITY/OCCUPATION	BEGINNING DATE (mm/yy)	ENDING DATE (mm/yy)	FIELD	INSTITUTION/COMPANY	SUPERVISOR/ EMPLOYER

Academic and Professional Honors. List any academic and professional honors. Include all scholarships, traineeships, fellowships, and development awards. Indicate sources of awards, dates, and grant or award numbers. List current memberships in professional societies, if applicable.

B. Publications (in chronological order). List your entire bibliography, separating research papers, abstracts, book chapters and reviews. Within each subsection the list should be chronological. Manuscripts listed as “pending publication” or “in preparation” should be included and identified.