CAPSTONE PROJECT
AND
INDEPENDENT STUDY HANDBOOK

Washington University School of Medicine
Program in Audiology and Communication Sciences (PACS)

2021-22 Academic Year

Updated September 14, 2021
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### TERMINOLOGY USED IN THIS GUIDE

<table>
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<tr>
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<th>EXPLANATION</th>
<th>REFERRED TO THROUGHOUT THIS GUIDE AS</th>
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<td>Capstone Project</td>
<td>All students pursuing the Doctor of Audiology (Au.D.) degree are required to demonstrate the ability to execute a project related to audiology that fosters their own specific clinical, research, or educational interest.</td>
<td>Project</td>
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<td>Independent Study</td>
<td>All students pursuing the Master of Science in Deaf Education (M.S.D.E.) degree are required to complete an Independent Study that integrates knowledge and practice in the field of deaf education on topics of importance to the profession.</td>
<td>Study</td>
</tr>
</tbody>
</table>

### M.S.D.E. Independent Study

**DESCRIPTION**

Students will complete an Independent Study that integrates knowledge and practice in the field of deaf education on topics of importance to the profession. At the beginning of the fall semester in the 2nd year, each student will be presented with a series of questions that deaf education faculty have deemed essential concepts (available in Appendix C) that pre-service teachers must master prior to entering the profession. The student must prepare written answers to the questions and submit them to a committee of three faculty members by the end of the fall semester (see Academic Calendar for specific due date). Committees of three faculty members will be assigned by the Director of Deaf Education Studies.

Each member of the committee will provide written feedback to the students about their independent studies, as well as a recommended letter grade (provided to the Director of Deaf Education), no later than January 31st. At the end of the spring semester, the Director of Deaf Education will assign grades (via PACS 570) on the Independent Study projects based in part on the committee’s recommendations.

Students will use their Independent Study document and committee feedback to prepare for the comprehensive oral examination, which will take place mid-spring semester (typically March). The student’s Independent Study committee will be the same as for the oral examination. The committee will use the Independent Study as a guide to select examination questions. The student will prepare a brief presentation to be given at the start of the oral examination, prior to the question and answer session.

**ACADEMIC CREDIT**

Academic credit for the course PACS 570 – Independent Study is assigned in the final semester of study. Students will earn two (2) semester hours of credit for the Study. The Director of Deaf Education Studies is responsible for submitting the final grade.

**SYLLABUS**

A current syllabus for PACS 570 is available in Appendix A.

**LENGTH**

While student work will vary, final papers should –be no longer than approximately 5000 words for the Independent Study.
FORMATTING INSTRUCTIONS

1. **Style.** The American Psychological Association (APA) documentation format should be used. The *Publication Manual of the American Psychological Association, 7th Edition* (2020) may be purchased for reference. Helpful information can also be found at: https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_style_introduction.html

2. **Margins.** When typing the final manuscript, margins should be one-inch on top, bottom and both sides.

3. **Fonts.** When typing the final manuscript, Times New Roman, 12-point should be used.

4. **Spacing.** When typing the final manuscript, all textual material should be double-spaced.

5. **Identification.** Your last name should be on the header (top) of the right side of each page starting on page ii.

6. **Quotations.** Long quotations may be indented and single-spaced.

7. **Pagination.** Page numbers should appear centered at the bottom of the page. Margins, listed above, should be outside the page number. The number should be separated from the text by approximately one-half inch.

8. **Cover Page.** The final manuscript should include a cover page that conforms precisely to the sample and instructions in Appendix E. Every page should have a page number except the cover page.

9. **Reference Page.** Include a reference page with all references listed in APA format.

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**Au.D. Capstone Project**

**DESCRIPTION**

All students pursuing the Doctor of Audiology (Au.D.) degrees are required to demonstrate the ability to independently execute a project that fosters their own specific clinical, research, or educational interest. The purpose of the Capstone experience is to provide an opportunity for the student to demonstrate critical thinking, develop/hone advanced writing skills, and most importantly, to provide the student with an opportunity to develop an in-depth study of an area of audiology, including but not limited to clinical audiology program development, hearing science and/or clinical research, healthcare and/or professional advocacy, and clinical audiology education.

**ACCEPTABLE PROJECTS**

**Au.D. Students:** Acceptable types of Capstone projects might include:

- development or update of a materials or protocols related to clinical audiology;
- a project that is a contribution toward growth/further development of the profession (i.e., advocacy, public relations) and/or of clinical education in audiology;
- a faculty-approved comprehensive literature review on a topic relevant to audiology;
- a comprehensive tutorial related to current topic in clinical audiology;
- a project of importance or relevance to the field of audiology, as approved by the Director of Audiology Studies.

Research-focused projects may include

- laboratory work complementary to, or of interest to, a faculty advisor;
- an analysis of existing data to confirm or refute a research hypothesis;
- a clinical investigation with the advice and support of a faculty advisor;

**TIMING**

Academic coursework and practical experiences are designed to prepare the student to complete these projects. The Capstone Project is generally completed during the third year. By September 1st of the third year, students must submit a Capstone Project Proposal that outlines their topic, scope of work, and mentor(s). Early submission of the Capstone Project Proposal is encouraged for students who are interested in a Capstone that involves a research project. The final products of the Capstone Project include a written manuscript and an oral presentation. These items must be submitted...
electronically in Canvas. **Failure to successfully complete the Capstone Project (including the presentation) by the end of the third year may delay the externship placement, graduation, and/or receipt of the diploma.**

**ACADEMIC CREDIT**

*Au.D. Students:* Academic credit for the Capstone Project is assigned as follows:

<table>
<thead>
<tr>
<th>Year Three</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PACS 5700 – Capstone Project (1 semester hour)</td>
<td>PACS 5700 – Capstone Project (4 semester hours)</td>
</tr>
</tbody>
</table>

**EXCEPTIONS**

Under exceptional circumstances a student’s Project/Study may be substantively more in depth than that of a typical Project/Study. In such cases, students may petition for the assignment of up to six (6) semester hours of credit. Such petitions should (a) demonstrate that the Project/Study is beyond the breadth and scope typically required; (b) be signed by the student and advisor(s); and (c) be submitted to the PACS Office by the end of the twelfth week of classes in the semester in which credit is being assigned. The PACS Office will review the submitted request, along with the requirements of the University, and will respond in writing with the final decision on the number of semester hours of credit to be awarded for the Project/Study.

**Managing the Capstone**

**Deadline for Capstone Proposal:** *SEPTEMBER 1*

<table>
<thead>
<tr>
<th>Human Subjects (IRB Review)</th>
<th>NO Human Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Advisor: WU Faculty (Assistant Professor or higher)</td>
<td>Primary Advisor: WU Faculty or Staff (Lecturer or higher)</td>
</tr>
<tr>
<td>Second Advisor (optional): WU Faculty, Staff, or other (other requires advance approval from AuD Director)</td>
<td>Second Advisor (optional): WU Faculty, Staff, or other (other requires advance approval from AuD Director)</td>
</tr>
<tr>
<td>Submit Capstone Proposal to PACS office</td>
<td>Submit Capstone Proposal to PACS office</td>
</tr>
<tr>
<td>Approval received from AuD Director and PACS Program Director</td>
<td>Approval received from AuD Director and PACS Program Director</td>
</tr>
<tr>
<td>Submit IRB protocol to HRPO - Assurance doc is signed by PACS Program Director</td>
<td>Begin project after approval is received</td>
</tr>
<tr>
<td>Begin project after BOTH approvals have been received</td>
<td></td>
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</tbody>
</table>

**SYLLABUS**

A current syllabus for PACS 5700 is available in *Appendix B.*

**ADVISORS**

The primary Project advisor must be WU faculty (rank of Assistant Professor or higher) or staff member (rank of Lecturer or Instructor). For projects involving human subjects, the primary advisor must be WU faculty (rank of Assistant Professor or higher). **The primary advisor is responsible for submitting the final grade.** The primary advisor should preferably hold an earned doctorate-level degree.
Students may secure a second reader if desired, to be identified on the Capstone Project Proposal (see Academic Calendar for deadline). This individual should be available for general consultation and will provide comments toward the written draft(s) and oral presentation.

PRELIMINARY PAPERWORK

Students must electronically submit the Capstone Project Proposal in Canvas (http://mycanvas.wustl.edu) by September 1st in their 3rd year of study. However, students are strongly encouraged to begin the process earlier, and Proposals will be accepted at any time before this deadline. Please refer to the PACS Academic Calendar for other deadlines.

The proposal should summarize both the scope and procedure of the Project. The “scope” defines its limits – what you intend to cover and what you intend not to cover. The “procedure” describes the manner in which you intend to complete and/or conduct your research. The Proposal should be completed in consultation with your primary advisor and second advisor (if applicable). Please see Appendix E for proposal instructions and examples.

PROPOSAL APPROVAL

The Proposal will be reviewed by the PACS Office upon submission and notification of the approval of the Proposal, primary advisor, and second advisor (if applicable) will be sent to the student via Canvas.

PROJECTS INVOLVING HUMAN AND/OR ANIMAL SUBJECTS

Strict laws, policies and procedures are in place for any activity that meets a Federal definition of human and/or animal research. Student projects are not exempt from these requirements, and any student proposing the Capstone Project that will be using human and/or animal data must receive training and written approval from the appropriate department prior to the start of the project. Upon receiving notification that the proposal has been approved by PACS, students must contact either the Human Research Protection Office or the Animal Studies Committee so that the proper training can be completed by the student and/or primary advisor, the proper forms and approvals received, and any necessary follow-up and reviews can be obtained. NO HUMAN AND/OR ANIMAL RESEARCH MAY BE CONDUCTED UNTIL ALL NECESSARY APPROVALS HAVE BEEN RECEIVED.

Animal Studies Committee:
https://research.wustl.edu/offices/iacuc/

Human Research Protection Office:
http://hrpo.wustl.edu/


EVOLUTION OF THE PROJECT

It is understood that the scope, procedure and/or title of the Project may change as you complete your work. Students will be asked to confirm the final title, primary advisor, and second advisor with the PACS Office before student presentations are scheduled for the PACS Student Research Colloquium. Please see “PRESENTATION” section below for additional information on student expectations for the Colloquium.

LENGTH

While student work will vary by discipline and project, the final Capstone Project paper should typically be 7500 words.
FORMATTING INSTRUCTIONS

1. **Style.** Unless otherwise specified by the primary and/or secondary advisor*, the American Psychological Association (APA) documentation format should be used. The *Publication Manual of the American Psychological Association, 7th Edition (2020)* may be purchased for reference. Helpful information can also be found at: [https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_style_introduction.html](https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_style_introduction.html)

   *Please notify the PACS office in advance if a format other than APA will be used.*

2. **Margins.** Margins should be one-inch on top, bottom and both sides.

3. **Fonts.** Times New Roman, 12-point should be used.

4. **Spacing.** All textual material should be double-spaced.

5. **Identification.** Your last name should be on the header (top) of the right side of each page starting on page 2.

6. **Footnotes/endnotes.** These should be single-spaced. Leave one blank line between notes.

7. **Quotations.** Long quotations may be indented and single-spaced.

8. **Pagination.** Page numbers should appear at the top right of the paper, along with the student’s last name (i.e., Smith 2). Every sheet of paper in the manuscript should be numbered.

9. **Cover Page.** The final manuscript should include a cover page that conforms precisely to the sample and instructions in Appendix E.

FINAL PROJECT

The following items should appear in the order given for the final manuscript.

1. Cover page

2. An **Acknowledgments** page should be included.

   a. **Disclosures:** Disclosures are required, as applicable to the project.

      i. **Financial Support:** All forms of financial support should be disclosed.

         1. For all federal funding, including NIH and training grants, include grant number, as applicable.

         SAMPLE A: "Research reported in this [publication] was supported by [name of the Institute, Center, or other funding component] [of the federal agency] under grant number [specific grant number in this format: R01GM012345]. The content is solely the responsibility of the authors and does not necessarily represent the official views of the [federal agency]."

         SAMPLE B: "Research reported in this Capstone Project was supported by the NIDCD of the National Institutes of Health under grant number R01GM012345. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.”

         2. For other forms of support (e.g., foundation grants, manufacturers’ support, etc.),
include the source and the type of support.

ii. Human Subjects Approval: All human subject approvals should be disclosed using APA format. Include date and approval number, as applicable. **SAMPLE:** “Research reported in this [publication, release] was approved by Washington University’s Institutional Review Board [approval # and date].”

3. The manuscript should include a **References** section at the end.

**COMPLETION AND SUBMISSION**

The dates for submission of the Project/Study to the primary advisor and second advisor for final review and edits, and for submission of the final, electronic version of the manuscript, will be published on the PACS Academic Calendar and in Canvas. The manuscript must be submitted electronically to the PACS Office as a single document by the deadline, following all formatting instructions included here. **Late submissions may delay graduation, receipt of the diploma, and/or the externship placement.**

These projects must be submitted electronically through Canvas (http://mycanvas.wustl.edu).

**PRESENTATION**

All students must present their Capstone Projects to an audience of professional colleagues. The annual PACS Student Research Colloquium is the typical forum required for this presentation. The Colloquium is generally in May, with the date(s) published on the PACS Academic Calendar. Each student will be assigned a 20-minute presentation slot, with 17 minutes designated for the presentation and three minutes for questions from the audience. Students are expected to follow this schedule strictly. In addition, all students are expected to be available during all sessions of the scheduled Colloquium, as individual day/time conflicts cannot be accommodated. Students should notify the PACS Office with as much advance notice as possible if there are extenuating circumstances.

**PUBLICATION**

Students are encouraged to consider submitting their Capstone Project for subsequent publication in scholarly or professional journals and/or for formal presentations. All such publications and presentations, including poster presentations, that include work completed as part of a Capstone Project should acknowledge the source formally using the applicable format below:

<table>
<thead>
<tr>
<th>This study was completed and published as a Capstone Project and submitted as part of the requirements for the degree of Doctor of Audiology (Au.D.) in the Program in Audiology and Communication Sciences (PACS) at Washington University School of Medicine in St. Louis.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portions of this study were completed and published as a Capstone Project and submitted as part of the requirements for the degree of Doctor of Audiology (Au.D.) in the Program in Audiology and Communication Sciences (PACS) at Washington University School of Medicine in St. Louis.</td>
</tr>
</tbody>
</table>

Similar recommendations are in place for the Ph.D. dissertation. Faculty advisors should also make appropriate acknowledgements for work completed as part of a Capstone Project or dissertation.
APPENDIX A

PACS 570 – Independent Study (2 semester hours)
Program in Audiology and Communication Sciences
Spring 2022

Instructor:
Casey Reimer, Ph.D.
caseyreimer@wustl.edu
Office hours by appointment

Course Description
Students engage in independent work on the Independent Study, which demonstrates advanced critical thinking and writing skills.

Learning Outcomes
Students who complete this course successfully will be able to:

| Demonstrate advanced analytical and writing skills, integrating information from multiple sources. | MoSPE Standard 6, Quality Indicator 1 |
| Present and defend the independent study in a professional manner. | MoSPE Standard 6, Quality Indicators 1, 4 |

Required Texts, Materials, or Equipment

- None

Course Grading
Grading for this course is determined by the Independent Study’s faculty advisor and is generally based upon the student’s overall participation and progress, timely submission of materials, quality of the final Independent Study submitted, and the oral presentation.

Schedule
See PACS Academic Calendar for due dates. Consult the Independent Study advisor to determine schedule and timeline.

Other Course Policies and Information for Students

- Please refer to the PACS Student Handbook and the Guidelines for Development of the Capstone Project and Independent Study for complete policies and procedures.

University and School Policies
DISABILITY ACCOMMODATIONS: Washington University is committed to providing accommodations and/or services to students with documented disabilities. Students who are seeking support for a disability or a suspected disability should contact the PACS Program Director or WUSM Dean for Student Affairs. The School encourages students with disabilities to identify themselves as early as possible in order to optimize the mobilization of resources and available accommodations.

ACADEMIC INTEGRITY: All students are expected to adhere to the highest standards of academic integrity. No form of academic dishonesty will be tolerated. Academic dishonesty includes, but is not limited to, cheating on tests, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting the thoughts and/or words of another person or work previously used as your own, missing or improper citing of sources, tampering with the academic work of other students, and plagiarism. You must always provide adequate citation of other people’s work and the source of your ideas when they are not your own in written work, PowerPoint presentations, and supplemental materials. If you have questions about what might constitute academic dishonesty, please refer to the PACS Student Handbook or speak with a member of the PACS Committee on Academic and Professional Evaluation of Students (CAPES). Additional information can be found in the University Student Judicial Code (http://www.wustl.edu/policies/judicial.html).
Disclaimer: The instructor reserves the right to make modifications to this information throughout the semester. Any changes will be communicated to students by the instructor.
APPENDIX B

PACS 5700 – Capstone Project
Fall (1 semester hour) / Spring (4 semester hours)
Program in Audiology and Communication Sciences
Fall 2021-Spring 2022

Course Description
Independent work on the Capstone Project.

Learning Outcomes
Students who complete this course successfully will be able to:

| Practice in a manner that demonstrates professional duty and accountability, integrity, effective communication, sound clinical reasoning with evidence-based practice, respect and concern for individuals, and collaborative practice. | Standard 3.1.1A |
| Independently develop and carry out a research project using appropriate methodology and statistical procedures on a topic related to the field of audiology | Standard 3.1.2A #12 |
| Demonstrate original creative thought, as well as advanced analytical reasoning and effective written communication | Standard 3.1.1A |
| Present and defend the Capstone project findings in a professional manner | Standard 3.1.1A; 3.1.2A #12 |

https://caa.asha.org/wp-content/uploads/Accreditation-Standards-for-Graduate-Programs.pdf

Required Texts, Materials, or Equipment
- As recommended by advisor and (optional) secondary reader(s)

Course Grading
Final grades will be awarded based on the following:

- Grading for this course is determined by the Capstone Project’s advisor and is generally based upon the student’s overall participation and progress, timely submission of materials, quality of the final Capstone Project submitted, and the oral presentation.

- Final grade scale is determined by the Capstone Project’s advisor.

Other Information
- Please refer to the PACS Student Handbook and the Guidelines for Development of the Capstone Project and Independent Study for complete policies and procedures.
- This syllabus is subject to change
- Assignments/Content areas in Canvas will be available for uploading all documents

University and School Policies
DISABILITY ACCOMMODATIONS: Washington University is committed to providing accommodations and/or services to students with documented disabilities. Students who are seeking support for a disability or a suspected disability should contact the PACS Program Director or WUSM Dean for Student Affairs. The School encourages students with disabilities to identify themselves as early as possible in order to optimize the mobilization of resources and available accommodations.

ACADEMIC INTEGRITY: All students are expected to adhere to the highest standards of academic integrity. No form of academic dishonesty will be tolerated. Academic dishonesty includes, but is not limited to, cheating on tests, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting the thoughts and/or words of another person or work previously used as
your own, missing or improper citing of sources, tampering with the academic work of other students, and plagiarism. You must always provide adequate citation of other people’s work and the source of your ideas when they are not your own in written work, PowerPoint presentations, and supplemental materials. If you have questions about what might constitute academic dishonesty, please refer to the PACS Student Handbook or speak with a member of the PACS Committee on Academic and Professional Evaluation of Students (CAPES). Additional information can be found in the University Student Judicial Code (http://www.wustl.edu/policies/judicial.html).

Disclaimer: The instructor reserves the right to make modifications to this information throughout the semester. Any changes will be communicated to students by the instructor.
APPENDIX C: Essential Concepts for MSDE Students (updated 9/14/21)

1. How does hearing loss at birth affect spoken language development? Why do children who are deaf and hard of hearing need specialized, intensive instruction to learn how to listen and talk?

2. How do we teach a child who is deaf and hard of hearing to listen and talk?

3. What information does an audiogram give us related to access to speech and environmental sounds, and how might that information be applied to teaching children who have hearing loss?

4. Which hearing devices are appropriate for children with which amounts/types of hearing loss? How do those devices work? What is the goal of device fitting?

5. Why is targeting auditory skills development important for children who have hearing loss, what are the “steps” in an auditory skills hierarchy, and how might we evaluate and target these skills with children who have hearing loss?

6. What are the factors that detrimentally affect a child’s ability to hear and understand speech? How might these factors be ameliorated, if at all? How does the access to auditory information impact the development of speech production in children with hearing loss? What other factors influence speech intelligibility?

7. Describe the tenets of special education law (IDEA) and other legal mechanisms (e.g., 504 plan through ADA). Explain the role of the teacher of the deaf in working with family members and other professionals to obtain special education services for children who are d/hh of different ages.

8. Why is reading difficult for children who are deaf or hard of hearing?

9. What sorts of assessments might be appropriate to administer to children who have hearing loss? (Make sure to consider standardized, criterion-referenced, and day-to-day assessments. How could a teacher use scores from assessments to plan teaching objectives for her students? Describe the purpose of criterion-referenced language, speech, and auditory development forms.

10. Why is math a challenging subject for children with hearing loss? What are some instructional strategies that can be used to address this area of concern?
APPENDIX D: CAPSTONE CHECKLIST

CAPSTONE CHECKLIST

✓ Review literature and generate possible research questions and/or project topics/ideas.
✓ Identify a possible primary advisor and meet with him/her to discuss your ideas. Secure his/her consent as your primary advisor.
✓ Identify the Second Advisor (optional). Secure his/her consent as your second advisor.
✓ Develop the Capstone Project Proposal; submit this to your primary advisor and second advisor for review and signatures.
✓ Submit the final, signed Capstone Project Proposal to the PACS office no later than September 1st of the third year of study (the due date is published on the PACS Academic Calendar). Students are strongly encouraged to complete this process before this deadline, and proposals will be accepted by the PACS office at any point during the student’s enrollment during the first two years.
✓ Upon receipt and approval by PACS of the Capstone Project proposal, including the approval of the primary and second advisors, begin work on the Capstone Project (after all necessary University-required approvals are obtained).
✓ Obtain all University-required approvals, including those of the Human Studies Committee and/or Animal Studies Committee.
✓ Complete the Project in consultation with the primary and second advisors.
✓ Submit the final electronic copy of the Capstone Project to the PACS office by the date indicated on the PACS Academic Calendar. Follow all formatting instructions.
✓ Present the Capstone Project at the annual PACS Student Research Colloquium.

Please refer to the PACS Academic Calendar for specific due dates, presentation dates, and other deadlines.
APPENDIX E: CAPSTONE PROJECT PROPOSAL INSTRUCTIONS AND EXAMPLES

The purpose of the Capstone Project (“Project”) Proposal is to summarize the preliminary plans for both the scope and procedure of the Project. The “scope” defines its limits – what you intend to cover and what you intend not to cover. The “procedure” describes the manner in which you intend to complete and/or conduct your research. The Proposal should be completed in consultation with your primary and second advisors.

The example provided should be used to guide the student.

Formatting should be as follows:

- **Margins:** One inch
- **Font:** Times New Roman, 11-12 point, normal scale and spacing (kerning)
- **Line Spacing:** 1½ lines

The first line should read “Capstone Project Proposal” and should be bolded.

Leaving one blank line after the heading, list your full name.

The next line should read “Primary Advisor:” followed by the full name and highest degree of your primary advisor in regular (un-bolded) text. Please refer to the advisor guidelines for acceptable advisors.

Second advisors (required for Au.D. students) and/or other participating faculty and staff members should be included on the next line, as appropriate, and should follow the same format as the Faculty Advisor line. The header for this line should reflect the role of the individual(s) listed. **This information should only be included if it applies to your project.**

The next line should read, “Submitted:” followed by the current date in Month Date, Year format (e.g., September 29, 2012) in regular (un-bolded) text.

Leaving one blank line after the date, list your title. This should be in bold, underlined text.

Leaving one blank line after your title, include a description of your Study/Project, along with the scope and procedure information explained above.

Leaving one blank line after the scope and procedure section, include a signature section. The student, primary advisor, and second advisor should sign the bottom of the proposal.

Proposals are generally 1-2 pages in length, but may be longer, as determined by the student, primary advisor and second advisor.

The Proposal should be submitted no later than the date published on the PACS Academic Calendar (generally the last business day in September).

It is understood that the scope, procedure and/or title of the Project may change as you complete your work. Students will be asked to provide the final title to the PACS Office before student presentations are scheduled for the PACS Student Research Colloquium.
Capstone Project Proposal

Jane Doe

**Primary Advisor:** Rosalie M. Uchanski, Ph.D.

**Second Advisor:** Lisa S. Davidson, Ph.D.

**Submitted:** September 1, 2019

Spectral Resolution and Speech Recognition in Pediatric Listeners with Normal Hearing

For adults with cochlear implants, new measures of spectral resolution ability are reported to be strongly correlated with speech perception scores (Henry & Turner, 2003; Henry et al., 2005; Won et al., 2007; Litvak et al., 2007). In this Capstone Project, I will determine the ability of normal-hearing children to resolve spectral information and will examine how this ability develops with age. I will also examine the relationship between spectral resolution ability and speech recognition in noise for these listeners. The data from this study will serve as normal-hearing benchmarks for future comparisons with performance from children with impaired hearing. If an eventual relationship is found between spectral resolution ability and speech recognition for hearing-impaired pediatric patients, then performance on this psychoacoustic task could become a useful, non-linguistic predictor of speech recognition for children with various device configurations, such as cochlear implants, hearing aids, or the two devices combined.

Approximately 24 children with normal hearing, ages 7-17 years, will be recruited. Each participant will complete one, two-hour test session consisting of audiologic screening, psychoacoustic tests of spectral resolution, and speech recognition in noise. For the spectral resolution task, the participant responds by choosing which stimulus of three broadband noises is the “odd man out.” These noises will have varying spectral properties like those used in recent studies (e.g., Henry et al., 2005; Won et al., 2007; Saoji et al., 2009). Speech recognition in noise will be assessed using the BKB-SIN test. Data will be compiled, and correlations between spectral resolution ability and speech recognition scores will be calculated. In addition, the effect of age on spectral resolution will be examined with a simple linear regression model.
APPENDIX F: COVER PAGE INSTRUCTIONS AND SAMPLES

The Cover Page must be included with the final manuscripts submitted for the Capstone Project ("Project") and the Independent Study ("Study").

Formatting is as follows:

- All margins are 1”
- Font is Times New Roman, 14 pt, bold.
- Single spaced
- Three blank lines between top margin and title
- One blank line between title, “by”, and your name
- Three blank lines between your name and the Capstone Project/Independent Study statement
- One blank line between the Capstone Project/Independent Study statement and your degree
- Four blank lines between your degree and the school
- Two blank lines each between program, date, and “approved by…” (latter is for Au.D students only)
- Three blank lines between advisor’s name and abstract. (Au.D. students only)
- Abstract should be italicized. (Au.D. students only)
- Center everything on the page.

Other instructions:

- Cover page should not exceed one page.
- List the primary and second advisors in the correct order, beginning with the primary advisor and proceeding with others in alphabetical order by last name. Titles or degrees are optional, as are departmental or institutional affiliation. (Au.D. students only)
- Use your full name.
- Use the month, date and year in which your degree is to be conferred.
- Everything not discussed above is required to appear just as shown on the samples provided.
[YOUR FULL TITLE HERE IN ALL CAPS]

by

[Your Full Name]

A Capstone Project
submitted in partial fulfillment of the
requirements for the degree of:

Doctor of Audiology

Washington University School of Medicine
Program in Audiology and Communication Sciences

May 19, 2023

Approved by:
[Capstone Project Primary Advisor Name, Degree], Capstone Project Advisor
[Capstone Project Second Advisor Name, Degree], Capstone Project Advisor

Abstract: [1-2 sentences summarizing your project.]
ESSENTIAL CONCEPTS OF DEAF EDUCATION

by

[Your Full Name]

An Independent Study
submitted in partial fulfillment of the requirements for the degree of:

Master of Science in Deaf Education

Washington University School of Medicine
Program in Audiology and Communication Sciences

May 20, 2022

Submitted to:
Independent Study Committee Members
[Committee Member Name, Degree]
[Committee Member Name, Degree]
[Committee Member Name, Degree]