Attention: SPLH Majors

Are you interested in getting involved in research for the **Spring 2027** semester? If so, attached is a description of the undergraduate research program supported by the department - the SPLH departmental honors (HNRS). A detailed description of this program can be found on page 9 of this document and online at https://splh.ku.edu/opportunities. The departmental honors program has specific GPA requirements and also requires a total of 6-8 credits of research enrollment in SPLH 498 or other elligible courses that can be taken over 2-4 semesters. Students are required to complete a research project under the direction of a faculty mentor and to give a public presentation of your project at either the SPLH Undergraduate Research Symposium or some other forum (e.g., the university undergraduate research symposium; see pages 10-11). To be matched with a faculty mentor for Spring 2027, please complete **ALL QUESTIONS** on pages 2–4 of this document and return to Dr. Panying Rong **by email** at prong@ku.edu by **5:00 pm on Friday, November 20, 2026** along with a copy of your DPR and resume. Students will receive notification of their mentor matches. Please use Adobe Acrobat Reader to complete and save the forms on pages 2–4. Please save your file with your last name, e.g., Research_Application_Rong.pdf. If you do not have Adobe Acrobat Reader, you can also use your web browser (Chrome) and use the "Save As PDF" or "Print to PDF" options.

If you are interested in completing undergraduate research, but do not plan to start in **Spring 2027** please **do not** complete the attached form. A similar announcement and information will be distributed each semester for students interested in pursuing research during the following semester.

Before completing the attached form, be sure that you have room in your schedule to enroll in research credits, and an appropriate amount of time to devote to research. You should expect to spend 3 hours working on your research project each week for every credit enrolled (i.e., 1 credit = 3 hours per week, 2 credits = 6 hours per week, 3 credits = 9 hours per week). Many of these hours will likely take place during normal business hours (8-6, Mon-Fri) because you will be meeting with your mentor and other research team members for assistance with your project. When planning your course schedule (and other activities), please be sure that you are able to block out an appropriate amount of time to work on your project.

Due to the limited availability of faculty mentors, it is possible that not all students who apply to the SPLH undergraduate research program will be accommodated in a given semester. Therefore, students are advised to have a back-up plan in the event you are not matched with a faculty member and not admitted to the program. Mentor matches are completed after the next semester enrollment begins, therefore students **SHOULD** register for an alternative class as a back-up plan. Students can drop the back-up class and add either SPLH 498 as appropriate if/when a mentor match is confirmed. **You will receive an e-mail notification of your mentor match, which will also include instructions on enrolling for research credits. You cannot enroll in research credits until you receive this e-mail.** Students who are not matched with a mentor may re-apply in future semesters. Each semester, matching is done through consideration of the class standing (year in major), number of credits / semesters planned for research, number of SPLH courses completed, and GPA. Thus, not being admitted during one semester does not mean you won't be admitted in a future semester.

Please contact prong@ku.edu if you have any questions about these undergraduate research programs or undergraduate research opportunities and resources in general.

Speech-Language-Hearing Undergraduate Research Opportunities: Spring 2027

Name:		**Email:**	
Major(s):		**Minor(s):**	

Current Year (click to select): Freshman

SPLH Course	Semester Taken or Planned	Grade
SPLH 161 Survey of Comm Dis		
SPLH 220 Physics of Speech		
SPLH 462 Speech Science		
SPLH 463 Hearing Science		
SPLH 465 Clinical Phonetics		
SPLH 466 Language Science		
SPLH 565 Lang Sample Analysis		
SPLH 566 Lang Development		
SPLH 568 Intro to AUD		
SPLH 571 Intro to SLP		
SPLH 620 Communicating Brain		
SPLH 660 Research Methods		
SPLH 670/672 Practicum		
Statistics		

Please note any foreign languages you speak and your training (e.g., Spanish; 4 semesters completed at KU; study abroad in Madrid):

Research program you are completing (highlight all that apply; see descriptions at the end of this document):

- ☐ SPLH Departmental Honors
- ☐ KU Honors Program
- ☐ Human Biology
- ☐ Other (specify):

SPLH GPA: **Overall GPA:**

Number of research credits you plan to complete each semester (e.g., 3 credits Spring 2027, 3 credits Fall 2027, 2 credits Spring 2028). ***NOTE: Only complete this form if you plan to start your research in Spring 2027).***

Why are you interested in pursuing a research experience?

What areas of research / clinical practice interest you and why?

What days/times will you likely be available to meet with your mentor and work on your project?

Potential research projects are described on pages 5–9. Please rank in order the faculty who you would like to work with. Lower numbers = faculty you would *most* like to work with (i.e., #1 choice). Do not put a number next to anyone who you would NOT want to work with. If you would like to propose your own project, please provide details about your project in the space provided on the next page.

Rank	Faculty Name
1	
2	
3	
4	

Description of Student-Initiated Research Project (only required for those proposing their own research topic)

Return pages 2–4 with your resume and current DPR checklist to prong@ku.edu by 5:00 pm on Friday, November 20, 2026 if you wish to apply for the Departmental Honors Program in Spring 2027.

SPLH Spring 2027 Research Opportunities

Davidson; Comprehension and Language Learning Lab; meghan.davidson@ku.edu
Needs: 1–2 students completing 2–3 credits each semester for 2–4 semesters (can include summer)
Coursework: SPLH 466 is required; SPLH 565, SPLH 566, and SPLH 660 are helpful but not required.
Potential projects:

a. *GLP Delphi project.* This project aims to get consensus on a checklist identifying characteristics of gestalt language process across researcher, clinician, autistic adult, and caregivers of autistic children's perspectives. Students involved in this project will assist with data processing and participant communication.

b. *Intervention studies.* Two pilot intervention studies are currently being planned in the lab—one on word learning and the other on gestalt language processing in autistic children. Students assisting with these projects may provide support and/or assist with data collection during these studies. Students will also assist with data processing and coding.

c. *Dissemination.* Students working on the dissemination team will read research studies and create social media posts, presentations, and trainings on topics related to language, reading, social communication, and education in autism. Students may also assist with analyzing data about the lab's social media as well as designing studies to examine the impact of social media on clinical-decision making.

d. *More or Less Social Comprehension Project.* This project takes a deeper look at both child factors (linguistic and social) and text factors (linguistic and social) in 9- to 12-year-old autistic children's comprehension of more and less social texts. Students involved in this project will code participant's responses to comprehension questions and assist with preparation and processing of participant data.

e. Students may propose an individual project of their own on language comprehension, literacy, social communication, text analysis, and implementation and dissemination science. Please see our lab website at https://call-lab.ku.edu/undergraduate-research-0 for more details about the undergraduate research experience in our lab.

Hunter; Speech Perception, Cognition, and Hearing Lab; c.hunter@ku.edu
Needs: 1–3 students completing 2–3 credits each semester for 2–4 semesters
Potential projects:

a. *Development of electrophysiological biomarkers of listening effort.* Listening effort refers to the mental effort used to succeed in understanding speech in noisy or otherwise adverse listening conditions. This project aims to develop a direct, neural measure of listening effort using electroencephalography (EEG). Students will gain hands-on skills with EEG and behavioral data collection and/or data analysis, and will learn about research methods and the neurocognitive processes that support speech perception in challenging listening conditions through literature review and group discussions.

b. *Connecting different measures of listening effort and fatigue.* Listening effort and listening-related fatigue have been identified as important aspects of quality of life in people with hearing loss. However best practices for quantifying these constructs are not yet established, and different measures do not necessarily tap into the same aspects of effort. The goal of this project is to better understand a variety of listening effort measures and how they relate to each other and to cognitive and hearing factors. Students may assist with data collection using a variety of assessment tools (for example, memory accuracy, response time, surveys), and may learn to use software such as RStudio, Praat, and MATLAB for data visualization and analysis.

c. *Student-initiated research.* Students with a semester or more of experience in the lab may have the opportunity to develop their own research projects on topics relating to speech perception, cognition, and hearing.

McDonald; Speech in Little Bilinguals Lab; mcdonaldm@ku.edu
Needs: 1–2 students completing 2–3 credits for 2–4 semesters.
Coursework: SPLH 220 and SPLH 465 are required, SPLH 566 and SPLH 660 are helpful but not required.
Potential projects:

a. *Perception-production link.* This project aims to understand how the perceptual ability of 4–6-year-old bilingual children to differentiate sounds in their two languages links to their ability to produce speech sounds that are distinct in their languages. For example, does a bilingual child who has a strong ability to tell that a sound is an English vs. Korean speech sound also have a less pronounced accent when they speak either of these two languages? Students can be involved with testing, interact with eye-tracking data and/or interact with Praat to analyze speech productions.

b. *Predicting speech sound development with machine learning.* Standardized tests tend to be normed on monolingual English populations in the US. This project will examine if machine learning models which also take child environment and bilingual language characteristics into account can make more accurate predictions about what typical bilingual speech sound development looks like. Students will work with 3–6-year-old child production data from standardized tests to extract the many variables necessary for machine learning models. Students may also gain knowledge of PhonBank and Phon software to share the speech samples through online platforms. Knowledge of German, Mandarin, or Korean is helpful but not required since children also make recordings in English. Student with specific language knowledge can be involved with testing as well.

c. *Distributional learning of speech sounds*. Can naïve listeners learn a new phoneme contrast from accented speech? This project tests monolingual English children's ability to differentiate two Serbian /l/-like sounds which don't exist in English. Is learning to differentiate these sounds from a native Serbian speaker easier to do from a native English speaker (who has an accent in Serbian) who matches the child's own language background? Students have the opportunity to work with eye-tracking data.

d. *Student led projects.* Students with an interest in speech sound development, bilingual development, or even bilingualism in adults are free to propose their own projects. The lab has technology to support various data collection techniques including voice recording, eye-tracking, pupillometry, and many other behavioral measures (e.g., reaction time, standardized testing, etc.). We conduct research in person and online and welcome project on languages that we are not yet examining.

Rojas; Bilingual Language Lab; raul.rojas@ku.edu
Needs: 2–4 students completing 3 credits for 2–4 semesters.
Coursework: Completion or co-enrollment in SPLH 565 (or equivalent); SPLH 660 helpful but not required.
Language proficiency: Moderate (or higher) oral and literate proficiency in Spanish necessary to participate in the potential projects described below.
Potential projects:

a. *The Impact of Parents in the Language Development of Young Spanish-Speaking Children.* The goal of this study is to describe father-child interactions in Spanish-speaking families experiencing low income, compare these to mother-child interactions, and examine their relations to child language development and literacy achievement. Students involved in this project will be trained to orthographically transcribe and code video recorded parent-child

play interactions primarily in Spanish with a specific focus on code switching and pragmatic behaviors.

b. *Culturally and linguistically sensitive intervention for Hispanic autistic children.* The goal of this study is to develop a culturally and linguistically responsive adaptation of the Pathways intervention program for Hispanic autistic children and their parents. Students involved in this project will be trained to orthographically transcribe and code video recorded adult-child interactions primarily in Spanish with a specific focus on intentional communication including verbal, vocal, and gestural behaviors.

Raza; Laboratory of Human Molecular Genetics at SPLH; razam@ku.edu
Needs: 1–2 students for 2–4 semesters.
Coursework: Enrolment in SPLH 453 is recommended.
Potential project:

a. *Our research project aims to identify genetic factors associated with language impairment.* We identify and enrol families with DLD in Pakistan and gather language data using standardised and locally developed assessments. Based on these assessments, we assigned participants as affected or unaffected. We also collect saliva samples from all available family members and isolate DNA for next-generation sequencing. We then used molecular tools to identify rare, protein-coding genetic variants associated with DLD. Students may be involved in the data management, genetic analysis and DNA sequencing.

Rong; Speech Science and Disorders Lab; prong@ku.edu
Needs: 2 students completing 2–3 credits each semester for 2–4 semesters.
Coursework: completion or co-enrollment in SPLH 462, 620, 660 and statistics helpful but not required.
Potential projects:

a. *Integrate AI and computational tools into the assessment of communication disorders.* Speech and voice impairments are common in individuals with neurodegenerative diseases such as amyotrophic lateral sclerosis (ALS, also known as Lou Gehrig's disease) and Parkinson's disease (PD). Early detection of speech/voice impairments in these diseases is critical for timely access to optimal clinical care (e.g., behavioral intervention, voice banking, AAC) for maximized patient benefit. However, early-stage speech/voice changes are difficult to detect using traditional clinical methods (i.e., listening by ears). This project aims to develop and apply novel AI and computational tools for automated detection and monitoring of subclinical speech/voice changes that are undetectable by human ears. Students will gain experience with novel technologies to analyze neurophysiological, biomechanical, and acoustic features of normal and disordered speech. In addition, students will learn to integrate traditional knowledge-based methods with contemporary data-driven models to identify objective markers of acquired communication disorders such as dysarthria. Students who enroll for more than two semesters may have opportunities to help with participant testing.

b. *Advance personalized care for progressive communication disorders.* Personalized medicine is receiving increasing attention across medical and health professions. In speech-language pathology, tailoring treatment and intervention to individual communication needs is key to optimizing outcomes, particularly for complex conditions such as neurodegenerative diseases. This project aims to develop personalized models to guide clinicians in selecting and proactively adapting interventions to meet the evolving communication needs of individuals with neurodegenerative diseases throughout disease progression. Students will gain experience in: (1) conducting speech production and/or perception experiments; (2) using software such as Praat and MATLAB to process and analyze physiological and behavioral data; and (3) applying statistical and machine learning techniques to characterize complex patterns of speech impairment across individuals.

c. *Student-initiated projects.* My lab is equipped with state-of-the-art equipment for studying neurophysiology (surface electromyography), biomechanics (orofacial motion tracking), and acoustics (audio recording) of speech. In addition, a variety of commercial and custom-developed software programs are available, enabling efficient data processing and analysis. Specific resources can be found on the lab website: https://ronglab.ku.edu/. Students are encouraged to develop their own projects using the resources available in the lab. In these projects, students will receive training on all stages of the research process including literature review, formulation of research questions/hypotheses, study design, data collection, analysis, as well as the interpretation and presentation of research findings.

Vitevitch; mvitevit@ku.edu;
Needs: 2–3 student completing at least 1 credit each semester for 2–3 semesters.
Summary of Research Program:
Prof. Mike Vitevitch examines how information related to spoken words is stored in the mental lexicon, and how the organization of those words in memory enables us to access that information so quickly and accurately even under adverse listening conditions. Much of his work uses the mathematical tools from the emerging field known as network science to measure the structure that exists among phonological word-forms in the mental lexicon. Conventional tasks from Psycholinguistics, re-analyses of data from psycholinguistic mega-studies, and computational models are then used to examine how that global structure influences language-related processes such as spoken word recognition. The tools of network science are also used in other ways to gain insight into the speech, language, and hearing sciences more broadly (e.g., the "science of science," or in clinically relevant ways).

Suggested Readings:
What is network science?
Barabási, A. L. (2009). Scale-free networks: A decade and beyond. Science, 325, 412– 413.

A review of work using network science to understand spoken word recognition
Vitevitch, M.S. (2022). What can network science tell us about phonology and language processing? topiCS in Cognitive Science, 14, 127-142.

The "science of science"
Fujita, Y. and Vitevitch, M.S. (2022). Using network analyses to examine the extent to which and in what ways Psychology is multidisciplinary. Humanities and Social Sciences Communications, 9, 168.
Vitevitch, M.S. (2023). Speech, language, and hearing in the 21st Century: A bibliometric review of JSLHR from 2001-2021. Journal of Speech, Language, and Hearing Research, 66(9), 3428-3451.

Other ways network science has been used in the speech, language, and hearing sciences
Benham S., Goffman L. and Schweickert R. (2018). An application of network science to phonological sequence learning in children with developmental language disorder. Journal of Speech, Language, and Hearing Research, 61(9), 2275-2291.
Siew, C.S.Q., Pelczarski, K.M., Yaruss, J.S. and Vitevitch, M.S. (2017). Using the OASES-A to illustrate how network analysis can be applied to understand the experience of stuttering. Journal of Communication Disorders, 65, 1-9.

Potential projects:

a. A "lip-reading" network with nodes representing words, and edges connecting the stimulus word to the erroneous responses made by participants who saw videos (but no audio) of words being spoken. This is a computational project using already-collected data. Experience with Excel as a minimum. Instruction will be provided for additional computational skills.

b. A network analysis of an audiological scale/questionnaire of some sort. This project would be

similar to the analysis in Siew, Pelczarski, Yaruss and Vitevitch (2017). Experience with Excel as a minimum. Familiarity with R (statistical software) preferred, but instruction will be provided for additional computational skills.

c. A bibliometric analysis of a leading audiology/hearing journal. This project would be similar to the analysis of JSLHR in Vitevitch (2023). Experience with Excel as a minimum, but instruction will be provided for additional computational skills.

d. A project related to the student's interest. Negotiation between and mutual agreement of student and instructor required.

Description of Research Programs

SPLH Departmental Honors (from the Undergraduate Catalog). Most departments and programs allow qualified majors to work toward graduation with departmental honors. Graduation with departmental honors is awarded in recognition of exceptional performance in the major, completion of a program of independent research or an alternative project, and a strong overall academic record.

In addition to the requirements of individual departments and programs (which must be approved by the College committee on undergraduate studies and advising), the College requires the following for graduation with departmental honors:

1. Candidates must declare the intention to work for departmental honors with the appropriate departmental honors coordinator(s) no later than the time of enrollment for the final undergraduate semester, but sooner if required by the department(s). Copies of the intent form should be returned to College Student Academic Services.
2. At the end of the final undergraduate semester, the candidate must have achieved a grade-point average of at least 3.5 in the major. No minimum grade-point average is required to declare candidacy for graduation with departmental honors unless specified by the department.
3. Each candidate's departmental honors work must include independent research or an acceptable alternative project. The results of research are presented in a form appropriate to the requirements of the major department. Equivalents to the independent research component are established by approved departmental honors programs. In courses meeting the independent research requirement, the candidate must earn a grade of B or higher. Successful completion of all departmental honors requirements must be certified to the departmental honors coordinator(s) by a panel composed of at least three members of the College faculty who have read the report of the independent research and heard the oral presentation, where required.

In SPLH, student research is performed under the mentorship of a faculty member. The project may be an independent research idea generated by the student or may be a more collaborative project closely related to the mentor's research program. Students must complete 6 to 8 credits of enrollment in SPLH 498 Departmental Honors Research with their faculty mentor. Students are required to present their final project at a departmental research symposium during the semester of completion.

KU Honors Program Contact honors@ku.edu

Students in the University Honors Program must finish 8 honors units, a freshman honors seminar (or current/transfer honors seminar) and have a minimum 3.25 GPA in courses at KU to complete the Honors Program (your KU GPA rather than the KU+Transfer GPA).

Breakdown of the 8 Honors units:

1. Honors Courses Requirement (minimum of 6 courses). Must be fulfilled by completing Honors Courses, Graduate Level (700+) Courses, a Less Commonly Taught Language, and/or an Honors Course Contract. The freshman honors seminar (or current/transfer honors seminar) is a separate requirement and does not count towards this requirement.
2. Honors Experiences Requirement (minimum of 1). Must consist of the following Honors Experiences: Study Abroad, departmental honors, documented Research experience, approved and documented Internship experience or approved and documented Community Service. Students interested in using an Honors Experience which will not appear on their transcript for one of their honors units are required to fill out an Honors Experience Form. For questions about fulfilling this requirement, call 785-864-4225.

3. The 8th unit may be fulfilled with either an Honors Course or Honors Experience.