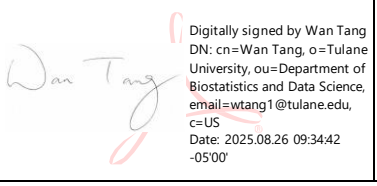
SPHTM Applied Practice Experience Proposal

Student Name	Sarah Bose
Student ID	921002217
Degree and Department	Master of Science in Public Health (MSPH), Biostatistics
Practicum Title	Biostatistical Characterization of Immune, Histological, and Clinical Outcomes in Preclinical Pulmonary Disease Models
Practicum Site Name	Tulane University Center for Applied Infectious Disease and Research (TUCAITs), School of Medicine
Practicum Site Address, City, State, Zip	1430 Tulane Avenue, New Orleans, LA 70112
Remote, Hybrid, or in person APE?	Hybrid (in-person for lab-based components; remote for statistical/data analysis)
Preceptor Name/Title/Credentials	Chad J. Roy, PhD — Professor of Microbiology & Immunology; Director, Tulane University Center for Applied Infectious Disease and Research (TUCAITs)
Below is to be completed by students who are F1 and J1 Visa Holders:	
Date Registered for SPHL 9980	
Date CPT was Received	
Date I-20 was Received	

Please sign below **after** reviewing and approving the above internship proposal plan:

Student Name	Sarah Bose	Student Signature	Sarah Bose	Date 8/19/2025
Preceptor Name	Chad J. Roy	Preceptor Signature		Date 8/19/2025
Departmental Faculty Advisor Name	Wan Tang	Departmental Faculty Advisor Signature	 Digitally signed by Wan Tang DN: cn=Wan Tang, o=Tulane University, ou=Department of Biostatistics and Data Science, email=wtang1@tulane.edu, c=US Date: 2025.08.26 09:34:42 -05'00'	Date 8/26/2025

For F1 and J1 students: OISS Advisor Name		OISS Advisor Signature		Date

Provide a brief background of the practicum site. Include the history of organization, mission and vision statements, population or community serviced, activities or services provided, practice setting.

The practicum will be conducted within the Tulane University Center for Applied Infectious Disease and Research (TUCAITs), part of the Tulane School of Medicine. TUCAITs has a long history of advancing infectious disease research, with expertise spanning biodefense, emerging respiratory pathogens, and translational preclinical models. Its mission is to improve global health through applied infectious disease science, combining laboratory, animal model, and public health approaches. TUCAITs serves both the scientific community and broader public health stakeholders by developing models, tools, and evidence to inform vaccine, antiviral, and therapeutic development. The practice setting includes laboratory environments, applied biostatistics, and translational biomedical research.

Please include your preceptor's role and qualifying background experience.

The practicum will be supervised by Dr. Chad Roy, PhD, Professor of Microbiology and Immunology at Tulane University School of Medicine and Director of TUCAITs. Dr. Roy is an internationally recognized expert in aerobiology and respiratory infectious disease models, with extensive experience in translational research on airborne pathogens and fibrotic lung injury. His leadership and expertise in both high-containment laboratory science and applied preclinical modeling provide the necessary background for mentoring in this biostatistical practicum.

Provide a description of the practicum opportunity. Please describe the activities, your role/responsibilities, and the scope of work. Align your proposed work products to your activities and your role and responsibilities to the objectives and competencies proposed for your practicum. Please note, if this is a workplace practicum, attach your current job description in addition to the description of your APE.

This practicum will focus on the biostatistical characterization of immune, histological, and clinical outcomes in preclinical pulmonary disease models to inform translational research on influenza and idiopathic pulmonary fibrosis (IPF).

Activities will include:

- Applying statistical methods to analyze data from two murine pulmonary disease models:
    - Bleomycin-induced fibrosis model (idiopathic pulmonary fibrosis surrogate)
    - PR8 influenza viral infection model

- Developing reproducible R-based workflows for data management, longitudinal modeling, and survival analysis
- Creating annotated codebases, visualization packages, and results sections that support manuscript preparation and internal reporting
- Linking statistical outputs to public health implications of influenza and fibrotic lung disease research

Scope of work and alignment with competencies:
The practicum emphasizes reproducibility, data visualization, and translational interpretation. Deliverables, including annotated codebases, statistical analysis plans, and draft manuscript sections, directly align with objectives (developing workflows, producing interpretable results, and ensuring transparency) and competencies in both foundational public health and biostatistics.

Please watch this short video on positionality statements: https://tinyurl.com/t7wwv63c

After watching the video, please write your personal positionality statement.

As a biostatistician-in-training, I bring to this practicum a perspective shaped by my quantitative training and experience in high-containment laboratory research. I recognize that I tend to privilege reproducibility and statistical rigor as primary measures of scientific quality. At the same time, I am mindful that these approaches must remain collaborative and integrated with the biomedical expertise of my colleagues. My goal is to use data science to bridge preclinical research with actionable public health insights, while remaining reflexive about how my disciplinary background influences the way I frame and interpret scientific problems.

Provide 2-3 SMART* objectives for the proposed APE:

	Objective
1	Develop and execute reproducible statistical workflows in R for immune, survival, and histological data analysis in influenza and fibrosis murine models by November 2026.
2	Produce and disseminate publication-ready figures, tables, and results through at least one manuscript draft or internal report by December 2026.
3	Compile and submit a reproducible, annotated codebase and statistical analysis plan, stored on GitHub by December 2026.

- *Specific, Measurable, Achievable, Relevant, Timebound
- Refer to the APE Manual for tips on writing appropriate SMART objectives
- MPH should use level's 3 and 4 of Bloom's Taxonomy verbs to start objectives, DrPH should use level's 5 and 6 of Bloom's Taxonomy verbs to start objectives
- Or watch this video on SMART objectives

Provide 5 or more competencies that will be met by this APE. At least 3 must be from CEPH foundational competencies, and at least 2 or more may be from concentration specific competencies. CEPH Competencies may be found in the APE handbook, on the website, or here: https://media.ceph.org/documents/2021.Criteria.pdf. Program competencies are available on the website under each department, then program: https://sph.tulane.edu/departments.

	Type of Competency (General or Concentration)	Competency	Which of your Objectives target the competency?
1	Foundational	C1: Apply epidemiological methods to the breadth of settings and situations in public health practice	1, 2
2	Foundational	C3: Interpret results of data analysis for public health research, policy, or practice	2, 3
3	Foundational	C5: Communicate audience-appropriate public health content, both in writing and through oral presentation	2
4	Program - Biostatistics	B1: Apply appropriate statistical methods for analyzing continuous, categorical, and time-to-event data	1, 2
5	Program - Biostatistics	B2: Use statistical software for data management and statistical analysis	1, 3
6	Program - Biostatistics	B3: Develop statistical analysis plans for public health or biomedical research	3

Provide at least 2 (or more) proposed work products that will be developed and delivered by the conclusion of this APE. Work products may include a variety of documents or deliverables including, but not limited to: PowerPoint presentation slide deck that was created for a presentation, recording of presentation or webinar, a program evaluation, recruiting materials for workshop, curriculum developed, evaluations for workshop, de-identified dataset created, cleaned, or analyzed for organization, disaster management plans, executive summary or report for administrators of organization, policy resolution, policy analysis, needs assessment, gap analysis, SWOT analysis, etc.

Practice-based products that demonstrate MPH competency achievement	
Specific products in portfolio that demonstrate application or practice*	**Competency as demonstrated**
Statistical Analysis Plan Structured outline of hypotheses, methods, and justification	1. B3, C1

Annotated Codebase Modular R scripts with full documentation, stored in GitHub/.Rmd	2. B2, C3
Data Visualization Package Publication-ready plots and tables for manuscripts/presentations	3. B1, C5
Written Summary/Manuscript Sections Draft Results and Methods sections integrating findings	4. C3, C5
Final Practicum Report Comprehensive report linking objectives, competencies, and public health implications	5. All

* Include name of work product and description of **how** it demonstrates the competency

Provide a description of the proposed timeline for the APE including start date, estimated end date, and how many hours/week estimated to be spent at the practicum site.

APE Start Date	APE Anticipated Finish Date	Estimated Hours Spent on APE Per Week:
8/1/2025	4/12/2026	~15 hours

To be filled out by the student:

Local Address:	68317 Frier Court Mandeville LA 70471
Personal Email and Phone Number:	Sbose2@tulane.edu; 9855023675
Emergency Contact:	Robert Bose; 9857734346

Appendix A: Placement Agreement

Student name Sarah Bose

Address 68317 Frier Court Mandeville LA 70471

Phone & email Sbose2@tulane.edu; 9855023675

Agency Tulane University School of Medicine; TUCAiTs

Address 1324 Tulane Ave, New Orleans, LA 70112

Preceptor name & degrees Chad J. Roy, PhD, Professor of Microbiology & Immunology; Director, Tulane University Center for Applied Infectious Disease and Research (TUCAITs)

Phone & email (504)988-0465; croy@tulane.edu

Tulane SPHTM advisor Dr. Wan Tang

Phone & email wtang1@tulane.edu

I. The student agrees to:

1. **Acquire as much information about the agency as possible before beginning the placement.**
2. **Determine, with the agreement of the agency preceptor and university faculty advisor, goals and objectives of the practicum. (These must be attached to this form)**
3. **Be aware of all provisions of the practicum expectations and agreements.**
4. **Provide the agency with a personal resume.**
5. **Consider themself an integral part of the mentoring agency and to follow the rules and regulations of the agency.**
6. **Maintain complete client confidentiality.**
7. **Prepare thoroughly for each task to be carried out related to the placement.**
8. **Exhibit professionalism in all aspects of the internship including attendance, appointments, meetings, and discussions with supervisors and others.**
9. **Consult with the agency preceptor when unsure of appropriate measures needed.**
10. **Complete a minimum of 120 hours of contact time in the agency and to keep a log of activities. In some cases, the minimum 120-hour contact time may be completed in more than one agency if an integrated practicum plan is approved by the faculty advisor.**
11. **Complete and upload all documentation to Canvas by deadlines.**

II. The agency preceptor and the agency agree to:

1. **Aid the student in outlining the practicum goals and objectives before beginning.**
2. **Explain the structure and function of the agency.**
3. **Help the student plan a specific program.**
4. **Invite the student to agency, interagency, and community meetings.**

5. **Supervise the student.**
6. **Provide a model of professional work habits and attitudes.**
7. **Evaluate student performance on forms provided.**

Along with the learning objectives, but different from them, students must outline the responsibilities and activities of this practicum. Provide these in the space below or attach them to this form.

By signing this agreement, all parties agree to the roles and responsibilities outlined above and a coordinated plan that outlines the duties and activities of this practicum.

SIGNATURES

Student Sarah Bose

Preceptor [signature]

Date 8/19/2025 Date 8/19/2025