Oral Science, PhD

Learning Outcomes

Acquisition of Broad-Based Foundational Knowledge in Oral Science

• Demonstrate a broad-based understanding of the scientific disciplines relevant to oral science.
• Demonstrate mastery of the literature and background knowledge pertaining to one’s chosen area of research.
• Understand the principles of biostatistical analyses and appropriate engagement with biostatisticians.

Development of Critical Thinking Skills

• Critically analyze primary scientific literature.
• Rationally debate and defend scientific viewpoints using scientific principles and critical analysis skills.
• Demonstrate problem-solving skills.

Understanding of the Scientific Method and Its Application

• Formulate hypotheses or experimental objectives that address knowledge gaps in the literature.
• Formulate a logical and feasible approach to test a hypothesis or accomplish research objectives.
• Critically evaluate results and draw appropriate conclusions from the data.

Proficiency in Research

• Conduct research in a responsible and ethical manner.
• Carry out an in-depth research project and contribute intellectually and technically to all parts of its development, execution, and analysis.

Proficiency in Scientific Communication

• Demonstrate proficiency in scientific writing as evidenced by first-author manuscripts and by composing grant applications.
• Organize, defend, and communicate ideas effectively in scientific oral presentations and settings.

Interpersonal and Leadership Skills

• Demonstrate an ability to work, when appropriate, in teams or collaborative settings with a diverse workforce.
• Develop leadership skills, commensurate with experience, facilitate group discussions, teach, and/or conduct meetings.
• Effectively mentor and motivate subordinates and/or peers.
• Respond appropriately to positive or negative feedback.