

# 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.