STATEMENT OF TEACHING PHILOSOPHY AND EXPERIENCE

As a scientist and educator, I am devoted to helping my students develop their independence, curiosity, and critical thinking skills so they can not only understand scientific material but also participate actively in group research and hands-on exploration. Inquiry-driven learning, experiential learning, inclusivity, and mentoring are the four pillars of my teaching philosophy.

1. Inquiry-Driven and Experiential Learning:

I have valued the power of questions throughout my academic career, from my undergraduate studies in microbiology in India to my Ph.D. research in environmental microbiology and biotechnology in Poland. My courses are made to inspire students to pose, research, and resolve practical scientific issues. I combine theoretical lectures with lab and field-based experiences when investigating topics like biochemistry, environmental resilience, or microbial diversity. In my opinion, the most effective learning occurs when observation and experimentation are combined. Students are required to analyse and interpret data from plant, soil, and water samples, take part in field research, and work together on community-level projects.

2. Hands-On Research and Laboratory Practice:

I have more than seven years of research and lab experience, and I place a high value on developing my skills in molecular, biochemical, and bioinformatic techniques-DNA extraction, PCR, microbial quantification, flow cytometry, and phylogenetic analysis-while incorporating protocols that are in line with modern scientific practice. I frequently teach students how to use cutting-edge technologies (such as QIIME2, RStudio, LC-MS, and Biolog systems) to design and carry out independent projects, optimise workflows, and interpret results. My fieldwork on research cruises and in agricultural environments has given me many chances to involve students in real scientific studies, which has helped them become more resilient and adaptable.

3. Inclusivity and Multicultural Engagement:

Having worked and mentored in a variety of cultural settings in the US, Germany, Poland, and India, I aim to create classrooms that are friendly, vibrant, and sensitive to other cultures. I am sensitive to the diverse backgrounds of my students and work to foster an environment where they can respect and benefit from one another. This goal is further supported by my multilingual communication skills, which enable me to engage with students in their own environment.

4. Mentorship and Student Development:

Mentoring younger researchers and enabling students to grow as leaders and team players are causes close to my heart. I encourage students to take charge of their education, collaboration and project management abilities, and investigate novel research topics. In my capacity as a postdoctoral mentor, I have helped graduate students with their training, organised interdisciplinary teams, and encouraged their submissions to international journals.

5. Teaching Experience:

Microbiology, environmental science, molecular biology, and bioinformatics are among the subjects I have mentored and guided at both the beginning and advanced levels. I have experience in creating lab programs for a variety of student populations and overseeing and guiding independent research projects. In addition, I have led workshops on experimental design and scientific programming; giving talks and presentations at significant international conferences; published numerous scientific articles in international journals and many more.

I am excited to work with my colleagues, share my teaching philosophy and experience, and motivate the upcoming generation of natural science leaders at Deep Springs College.

Sincerely,
Dr. Kalisa Amarsingh Bogati