Kimberly Hane

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EDUCATION:

Cedar Crest College, Allentown, Pennsylvania
B.S. in Genetic Engineering, *B.S. in Forensic Science*: May 2021
3.82 GPA, Honors Program and Dean's List Fall 2017 – Present
Honors Societies: Beta Beta Beta (Biology); Gamma Sigma Epsilon (Chemistry); Delta Delta Epsilon (Forensic Science); Delphi (Academic Achievement)

RESEARCH EXPERIENCE:

University of California San Francisco Summer Research Training Program (Summer 2020)
Admitted into program but program was cancelled due to COVID-19 Pandemic.

Undergraduate Research Scientist (Summer 2019 – Present)
Cedar Crest College Department of Biological Sciences, (Dr. K. Joy Karnas)
Project Goal: To use primer sets designed to amplify a gene from oral cavity-specific bacteria to distinguish expirated blood from impact spatter found at a crime scene using qPCR.

Undergraduate Research Scientist (Spring 2018 – Present)
Cedar Crest College Department of Biological Sciences, (Dr. K. Joy Karnas)
Project Goal: To identify bodily fluids such as—saliva—due to differences in methylation status at specific CpG islands. The differences in methylation status can be determined using High Resolution Melt (HRM) analysis.

Undergraduate Research Scientist (Spring 2018)
Cedar Crest College Department of Biological Sciences, (Dr. K. Joy Karnas)
Project Goal: To assess the ability of the AcrAB-TolC efflux pump to remove chemicals from the cell using the Nile Red Assay. This real-time dye assay measures the fluorescence of the lipophilic dye, Nile Red, as it is pumped out of the cell. This potentially correlates to the efflux pump's abilities to pump harmful substances, like antimicrobial agents, out of the cell.

Freshman Biology Research under a Research Director (Spring 2018)
Cedar Crest College Department of Biological Sciences, (Dr. André Walther)
Project Goal: To use selective media to colonize protein-protein interactions between Replication Factor A (RPA) and various proteins produced by *Saccharomyces cerevisiae*. The amount of protein-protein interaction on each selective media was determined by plate growth. These protein-protein interactions could indicate a potential underlining cause of cancer.

TEACHING EXPERIENCE:

Walk-In Peer Tutor (Fall 2019-Present)
Courses: BIO 123 – Foundations of Biology; BIO 248 – Biostatistics; BIO 124 – Principles in Cell and Molecular Biology; BIO 231 – Genetics; BIO 335 – Molecular Genetics I
Provide tutoring for any student seeking help or guidance for the subject matters listed above.

Freshman Biology Instructional Assistant (Fall 2018)
Courses: BIO 123 – Foundations of Biology
Aided the instructor in guiding students through each of the laboratory assignments. Assisted in grading work and setting/cleaning up laboratory equipment and solutions as requested.

LEADERSHIP EXPERIENCE:

Department of Biological Sciences Laboratory Assistant (Fall 2017 – Present)
Maintain laboratory equipment including Agarose and Polyacrylamide gel apparatuses, thermocyclers, and centrifuges. Stocked laboratories with necessary solutions, cleaning supplies, micropipette tips, and microcentrifuge tubes. Tided up laboratories through proper sterilization of hazardous waste in the autoclave and aided various professors in laboratory management and preparatory work before the week's laboratory courses had class. As of Fall 2019, promoted to lead assistant overseeing the other departmental work study students**.**

Beta Beta Beta (Biology) Honors Society Executive Board
- President, 2020-2021 Academic Year
- Secretary, 2019-2020 Academic Year

Delta Delta Epsilon (Forensic Science) Honors Society Executive Board
- President, 2020-2021 Academic Year

Gamma Sigma Epsilon (Chemistry) Honors Society Executive Board
- Vice-President, 2020-2021 Academic Year

PROFESSIONAL DEVELOPMENT (* means presenting author):

American Association for the Advancement of Science 2021 Annual Meeting (Virtual; Winter 2021)
K. Hane* and K. J. Karnas. qPCR and Microbe Identification for Forensic Blood Pattern Analysis – virtual electronic poster

Northeastern Association of Forensic Scientists 46th Annual Meeting (Virtual; Fall 2020)
K. Hane* and K. J. Karnas. Use of the Methylation Status of the MyoD Family Inhibitor (*MDFI*) for Saliva Identification – virtual oral presentation

Pennsylvania Academy of Science 96th Annual Meeting (Spring 2020)
K. Hane* and K. J. Karnas. Quantitative PCR for Crime Scene Bloodstain Identification – poster presentation. Abstract accepted but meeting cancelled due to COVID-19 Pandemic

Northeastern Association of Forensic Scientists 45th Annual Meeting (Fall 2019)
Attended only; did not present

Pennsylvania Academy of Science 95th Annual Meeting (Spring 2019)
Attended only; did not present

Lehigh Valley Molecular and Cellular Biology Society 2nd Annual Meeting (Spring 2018)
K. Hane*, J. Marotta*, and K. J. Karnas. Optimization and Analysis of the Nile Red Efflux Pump Assay Across Bacteria Species – poster presentation

Pennsylvania Academy of Science 94th Annual Meeting (Spring 2018)
K. Hane*, J. Marotta*, and K. J. Karnas. Optimization and Analysis of the Nile Red Efflux Pump Assay Across Bacteria Species – poster presentation

PROFESSIONAL GRANTS AND AWARDS:

2020 George W. Chin Memorial Scholarship (Fall 2020)
Awarded by the Northeastern Association of Forensic Scientists

Beta Beta Beta Research Foundation Program (Fall 2019)
Awarded a research grant for project titled "Crime Scene Analysis: Identification of Saliva Using High Resolution Melt Curves."

PAS Undergraduate and Graduate Research Grants Program (Spring 2019)
Awarded a research grant for project titled "Identification of Menstrual Blood Using High Resolution Melt Analysis."

LABORATORY SKILLS:

Comfortable in a variety of laboratory settings, including Genetic Engineering labs, Organic Chemistry labs, and General Chemistry and Biology labs.
Techniques: Polarized Light Microscopy, Fluorescent Microscopy, PCR, qPCR, HRM analysis, Sanger DNA sequencing, agarose gel electrophoresis, SDS and Native PAGE gels, UV/Vis spectrophotometry, DNA isolation and purification, and protein isolation and purification.