

Maximillian Meier Wilderman

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EDUCATION:

Syracuse University, College of Engineering and Computer Science
Bachelor of Science, May 2022
Major: Biomedical Engineering
Master of Science, May 2023
Major: Biomedical Engineering
GPA: 3.56

SKILLS:

MATLAB + Simulink, Autodesk Inventor, Microsoft Excel + PowerPoint, Python.

RELATED COURSEWORK:

Quantitative Physiology	Biomedical Systems + Signals
Fluid Mechanics	Engineering Statics
Heat & Mass Transfer	Bioengineering Fundamentals + Lab
Engineering Materials/Processing	Biological Principles for Engineers
EE Fundamentals + Linear Fundamentals	Biomaterials & Medical Devices
Experimental Methods for Bioengineering	

ENGINEERING APPLICATIONS:

Plasmid isolation and bacterial transformation, *Biological Principles for Engineers* September – October 2019

- Isolated plasmids pKJK10 and pRSH103 were transformed into *E. coli* CSH26 and *E. coli* RP437. This will then be used to determine frequency of conjugation between donor and recipient *E. coli* plasmids. Gel-electrophoresis was used to verify the isolation of plasmids with a DNA ladder. Electroporation was used to estimate efficiency of transformation

Detection of antibiotic resistance gene, *Biological Principles for Engineers* November 2019

- Transconjugants from plasmid isolation and bacterial transformation were used to verify the presence of antibiotic resistance gene. PCR was used to amplify the number of DNA bands in the positive control, negative control and the transconjugant sample. Antibiotic resistance gene in transconjugant sample was determined by gel electrophoresis

Otolaryngology project, *Bioengineering Fundamentals* August 2019 – December 2019

- Identified and described a piece of technology used in an otolaryngology medical department, identified bottlenecks or unmet needs and proposed improvements, deployed the device in a simulated resource limited setting and developed an educational module for middle school students by using the discovery model

Undergraduate Research Assistant, *Syracuse Biomaterials Institute* September 2020- Present

- Synthesizing gold nanorods and GelMA hydrogels, nitrogen purging sensitive materials, development and DMA analysis of two-way shape memory polymers.

Mini-bioreactor project, *Bioengineering Laboratory* February 2021- April 2021

- Designed a miniature bioreactor for scaling adherent stem cells consisting of three chambers being growth, dissociation and analysis.

Academic Achievements:

- College of Engineering and Computer Science Dean's List
- College of Arts and Science Dean's List
- Nominee for Undergraduate Student Employee of the Year