

Lucas E. Bayer

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Objective

Leverage passion and background in biological and chemical engineering to assist in remediation projects alongside a team of like-minded individuals.

Education

B.S. in Biological and Chemical Engineering - CU Boulder

Anticipated May 2025

Major GPA: 3.46

- Related coursework: Process Design, Process Dynamics and Controls (in progress), Bio-Separations, Fluid Dynamics, Heat and Mass Transfer, Kinetics, and Applied Data Analysis.

B.S - Front Range Community College

Jan 2020-Aug 2020

Ecosystem Science and Sustainability - CSU

Aug 2018-Dec 2019

Work Experience

Research Assistant - Laboratory of Interfaces, Flow, and Electrokinetics

May 2023-present

- Designed, fabricated, and conducted experiments in a Fluidic Imaging Device using 3d printing, photography, and LED circuitry.
- Quantify fluid characteristics by developing image analysis scripts in Matlab. Solve numerical solvers in Python using finite difference methods and similarity solutions.

Projects

Process Design Report - Hyde Engineering

Jan 2024-present

- Design an upstream Clean-in-Place(CIP) Skid process for an oligonucleotide manufacturing train.
- Produce a piping and instrument design(P&ID), safety analysis, instrument sizing, simulation model, and economic analysis.

Poster - Division of Fluid Dynamics

Nov 2024

- Presented experimental and numerical results on Diffusiophoretic-induced Rayleigh-Taylor instability research.
- Experimentally determined the effective diffusivity of particles with an 18% error.

Market Research Lead - RDFlows

Feb 2022-April 2022

- Performed market segmentation of 46 companies sourcing lab space from CSU in a 3-person team and presented segmentation to the startup company RDflows.

Publishings

A. Gupta, S. Mirfendereski, **L. Bayer**, 'Diffusiophoresis-Induced Rayleigh-Taylor Instability'

In Progress

Skills

3D modeling, 3D printing, Matlab, ASPEN, Python, soldering, mass transfer, fluid dynamics, fabrication, MS Office.