SHELBY GOLDEN

SCIENTIST AND MATHEMATICIAN

CONTACT

www.linkedin.com/in/shelby-golden

https://github.com/sgolde13

EDUCATION

Master of Science in Applied Computational Mathematics

Johns Hopkins University
GPA: 3.8
2021 - 2024

Bachelors of Science in Molecular, Cellular, Developmental Biology

Bachelors of Science in Biochemistry

Minor in Applied Mathematics Emphasis in Statistics

University of Colorado at Boulder
2013 - 2017

PORTFOLIO

Examples of my work can be found below and have also been added to the Projects section of my LinkedIn profile.

Book of Workshops

A compilation of workshops delivered for master's level students at YSPH is currently being adapted for asynchronous learning.
https://ysph-dsde.github.io/Book-of-Workshops/

Resources Navigation Page

Curated public health resources and datasets, along with directions on how to access them.
https://ysph-dsde.github.io/resources-page/

PROFESSIONAL OBJECTIVE

Seeking to leverage extensive research experience and data science expertise in a dynamic role that supports innovative research and development. Aiming to contribute to impactful projects that advance scientific understanding, utilizing strong analytical skills, and a deep commitment to reliable data-driven decision-making.

RELEVANT WORK EXPERIENCE

Data Scientist I

September 2024 - Current

Yale School of Public Health

The Public Health Data Science and Data Equity (DSDE) team supports data science training, education, research, and collaboration at the Yale School of Public Health (YSPH). I actively participate in core DSDE projects, including the Resource Navigation Tool prototype, and am also contracted to support various projects across the university.

Highlights:

- Support statistical analysis design, execution, and data visualization.
- Consult on analytical projects using R, exploring AI/ML integration.
- Assist in coding and data harmonization.
- Developed and led workshops and tutorials, which I am now adapting into webpages for asynchronous learning.

Scientist

Feb 2023 - April 2023

Senior Associate Scientist

July 2021 - Jan 2023

Allogene Therapeutics

Allogene develops off-the-shelf treatments for cancer and autoimmune diseases using engineered donor T-cells known as allogeneic chimeric antigen receptor T cells (AlloCAR T™). My primary role involved being the main producer of AAV for downstream CAR T development in the Research department. In addition to this, I participated in various computationally intensive projects in collaboration with multiple departments.

Highlights:

- Produced and characterized 10-12 AAV per week for downstream AlloCAR T™ development using techniques such as transfection of suspended mammalian cell culture, titering via qPCR, sequencing, and purification with affinity FPLC on an AKTA Avant.
- Developed R-based automated data ingestion scripts for investigational new drug (IND) supporting projects.
- Explored R-based automated hierarchical gating protocols for flow cytometry data and supported computational initiatives like DataLake and Donor Attributes.

Scientist II

Aug 2020 - Jun 2021

Greffex, Inc.

Greffex engineer's vaccines and gene therapies using a patented fully deleted adenovirus vector. https://www.greffex.com/. My work involved both bacterial and tissue culture assays.

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LAB SKILLS

- Fast Protein Liquid Chromatography (AKTA Avant)
- MSD (MesoScale)
- Flow Cytometry
- Fluorescent Microscopy (GFP and immunohistochemistry)
- Tissue Culture (i.e. scale using bioreactors, transfection, transduction, and stimulation)
- Bacterial Culture (i.e. transformation)
- Mouse Experiments (injections, blood collection, perfusion, lung harvest, BALF collection, Morris Water Behavior Tests)
- Genetic Engineering (i.e. restriction digestion, ligation, and gel cutting)
- Basic Techniques: SDS-Page, Western Blots, ELISA, Bradford, Chemiluminescence, spectrophotometry, RT-qPCR, qPCR, and PCR
- Compiled and optimize lab protocols and SOP's for Basic Research and Clinical Studies

COMPUTATIONAL SKILLS

- Version Control with Git
- Collaboration with GitHub
- Languages:
  - R and RStudio (over 10 years)
  - MATLAB (~2 years)
  - Python
  - SAS (credentials on LinkedIn)
  - Limited experience: SQL, HTLM, CSS, and php
- Technical reports with:
  - Quarto (i.e. HTML and PDF)
  - Jupyter Notebook
  - LaTeX (i.e. RMarkdown and Overleaf)
- RedCap Database

Highlights:

- Engineered universal influenza and SARS-CoV-2 vaccines.
- Scaled vaccine production using adherent cell bioreactors.
- Developed and executed a Lentivirus based Pseudo Virus Neutralization Assay.

Lab Researcher — Feb 2020 - July 2020
Lab Researcher Technician — Feb 2018 - Jan 2020

National Jewish Health

Dr. Russell Bowler's lab studies COPD through both basic and clinical research studies. As the only lab personnel, I was afforded the opportunity to contribute to a wide range of projects in various capacities.

Highlights:

- Conducted and optimized various assays, such as tissue culture, MSD, SDS-PAGE/Western Blots, and PCR, including collaborative projects with GSK.
- Planned and trained for 6-month smoking trials with lung tissue harvesting in mouse models.
- Authored and refined lab SOPs, including a clinical studies blood processing protocol.
- Collaborated with statisticians to enhance data quality.
- Coordinated ancillary projects with labs at National Jewish Health and external institutions.

Lab Assistant — July 2015 - May 2017

University of Colorado at Boulder

Conducted research in Dr. Kevin Jones's lab, focusing on molecular mechanisms and therapeutic targets of down-regulated brain-derived neurotrophic factor (BDNF) in Down syndrome. Secured multiple competitive professional opportunity grants, including the Linda Crnic Institute for Down Syndrome-funded BURST grant and twice awarded the Undergraduate Research Opportunities Program (UROP) grant.

Teachers Assistant — Aug 2016 - Dec 2016

University of Colorado at Boulder
Cell Biology 1 course (MCDB 3135) and microscope lab (MCDB 3140)

MASTERS COURSES

- **Multivariable Calculus and Complex Analysis** EN.625.250
- **Statistical Methods and Data Analysis** EN.625.603
- **Theory of Statistics I** EN.625.725
- **Theory of Statistics II** EN.625.726
- **Matrix Theory** EN.625.609
- **Systems Biology** EN.605.755
- **Modeling, Simulation, and Monte Carlo** EN.625.744
- **Introductory Stochastic Differential Equations with Applications** EN.625.714
- **Probabilistic Graphical Models** EN.625.692
- **Data Science** EN.685.648
- **Statistical Models and Regression** EN.625.661