CHARLIE BAYNE

Inquisitive, self-motivated biologist looking for exciting opportunities

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EXPERIENCE

Kaleido Biosciences, Inc

Research Associate II, Biology (2018 - Present)
Research Associate I, Biology (2016 - 2018)
Served as a member of multiple project teams aimed at identifying and developing therapeutics for indication areas and on a team responsible for advancing the technology and capability of Kaleido's *in vitro* screening platform. Responsibilities as a team member included contributing in a collaborative, fast-paced environment to determine the best path to drive the project forward as well as designing, executing, and analyzing experiments.

- Identify novel compounds as leads for future clinical development as as member of therapeutic projects.
- Developed and implemented solutions to dramatically increase the throughput and predictability of Kaleido's in vitro screening platform.
- Developed assays as necessary to achieve project goals.
- Used R and Tableau to analyse and report the results from large multidimensional data-sets associated with shallow shotgun sequencing, 16S rRNA sequencing, kinetic plate reader data, among others.
- Developed an assay and corresponding R package to allow for the high-throughput capture, curve modeling, feature extraction, and analysis of kinetic pH and OD600 data obtained from in vitro testing of Kaleido's compounds.
- Took samples from DNA extraction to 16S rRNA gene sequencing using the Illumina Miseq platform.
- Organized research meetings for the Biology department.

University of Virginia, Department of Microbiology

Laboratory Technician II (2015 - 2016)
Studied the molecular mechanisms responsible for *Chlamydia trachomatis* pathogenesis in eukaryotic host cells as a member of the Derrè lab.

- Conducted a high content microscopy screen designed to identify host mRNAs necessary for the transition from RB to EB in developmental cycle of *Chlamydia trachomatis*.
- Supported two publications with experimental work.

Dickinson College, Biology Department

Independent Student Research (2014 - 2015)
Studied the structure/function relationship of turnip crinkle virus associated satC.

EDUCATION

BS Biochemistry and Molecular Biology

Dickinson College

2011 – 2015 Carlisle,PA

GPA = 3.79, *magna cum laude*

TRAINING

- **Data Science Specialization.** Series of 10 courses offered through Coursera focusing on using R as a tool to conduct data analysis
- **Introduction to i-Series and Method Programming Course.** Week long training course at Beckman Coulter headquarters.

SKILLS

Assay Development | Next Generation Sequencing | Flow Cytometry | Colorimetric Assays | Anaerobic Microbiology | Laboratory Automation | Molecular Biology / Cloning | Tissue Culture | High Content Microscopy

R Programming | Tableau | Gen5 | Snapgene | BLAST | Sapio LIMS | Microsoft Office | Git

PUBLICATIONS/POSTERS

1. Liu C., Yatsunenko T., Jose A., Mahowald M., Beauchemin N., **Bayne C.**, Konopnicki C., Rock J., Li L., Pruyne J. Chemical Modulation of the Gut Microbiome Alleviates Chemotherapy-Induced Toxicity. Presented at Keystone Microbiome: Therapeutic Implications, 2019
2. **Bayne C.**, Jose A., Yatsunenko T., Conrad M., Konopnicki C., Leff J., Tan J., Beauchemin N. High-throughput *in vitro* system to test compound effects on the human microbiome. Presented at Beneficial Microbes Conference,2018
3. Cortina, M. E., Ende, R. J., Clayton Bishop, R., **Bayne, C.**, Derré, I. (2019). Chlamydia trachomatis and Chlamydia muridarum spectinomycin resistant vectors and a transcriptional fluorescent reporter to monitor conversion from replicative to infectious bacteria. PLoS ONE, 14(6). https://doi.org/10.1371/journal.pone.0217753
4. Stanhope R., Flora, E., **Bayne, C.**, Derré, I. (2017). IncV, a FFAT motif-containing Chlamydia protein, tethers the endoplasmic reticulum to the pathogen-containing vacuole. Proceedings of the National Academy of Sciences of the United States of America, 114(45). https://doi.org/10.1073/pnas.1709060114
5. **Bayne, C.** F., Widawski, M. E., Gao, F., Masab, M. H., Chattopadhyay, M., Murawski, A. M., … Kushner, D. B. (2018). SELEX and SHAPE reveal that sequence motifs and an extended hairpin in the 5' portion of Turnip crinkle virus satellite RNA C mediate fitness in plants. Virology, 520. https://doi.org/10.1016/j.virol.2018.05.010