

Seattle Hub  
for **SYNTHETIC BIOLOGY**



SeaBridge



**SeaBridge Postdoctoral  
Fellowship Program:  
*Information Session***

**Chan  
Zuckerberg  
Initiative**

**W**

UNIVERSITY of  
WASHINGTON

February 25, 2026

# Welcome and today's agenda

- SeaBridge introductions & overview
- Brief overview of the Seattle Hub for Synthetic Biology
- Q & A
- Wrap-up
- Examples of Fellowship proposals

# SeaBridge team



Carrie Brockway  
Executive Director,  
SeaBridge



Renee Ireton  
Director of Integrative  
Operations,  
SeaBridge



Alison (Aloe) Stanbery  
Program Director - ITI  
Fellowship, PROPEL  
NW, & SeaBridge



Nola Klemfuss  
Brotman Baty  
Administrative  
Director



Dean Owen  
Brotman Baty  
Director  
of Communication



Jay Shendure,  
Senior Director,  
Seattle Hub for  
Synthetic Biology



Marion Pepper  
Co-Director,  
Seattle Hub for  
Synthetic Biology



Cole Trapnell,  
Co-Director,  
Seattle Hub for  
Synthetic Biology



Jesse Gray  
Director of Strategy &  
Science Operations,  
Seattle Hub for Synthetic  
Biology

## Funding Partners/Investors:



Chan  
Zuckerberg  
Initiative 

# SeaBridge: Building bridges to create a global epicenter for cell & genome programming

Opportunity: The ability to reprogram human cells is poised to transform the entire landscape of biotechnology.

Barrier: The number of trained scientists necessary to innovate is shrinking.

**Goal:** Grow the local ecosystem by investing in translation of cell & genome programming technologies.



[seabridge.uw.edu](http://seabridge.uw.edu)

## Two opportunities for growth:

### LaunchPad Startup Incubator

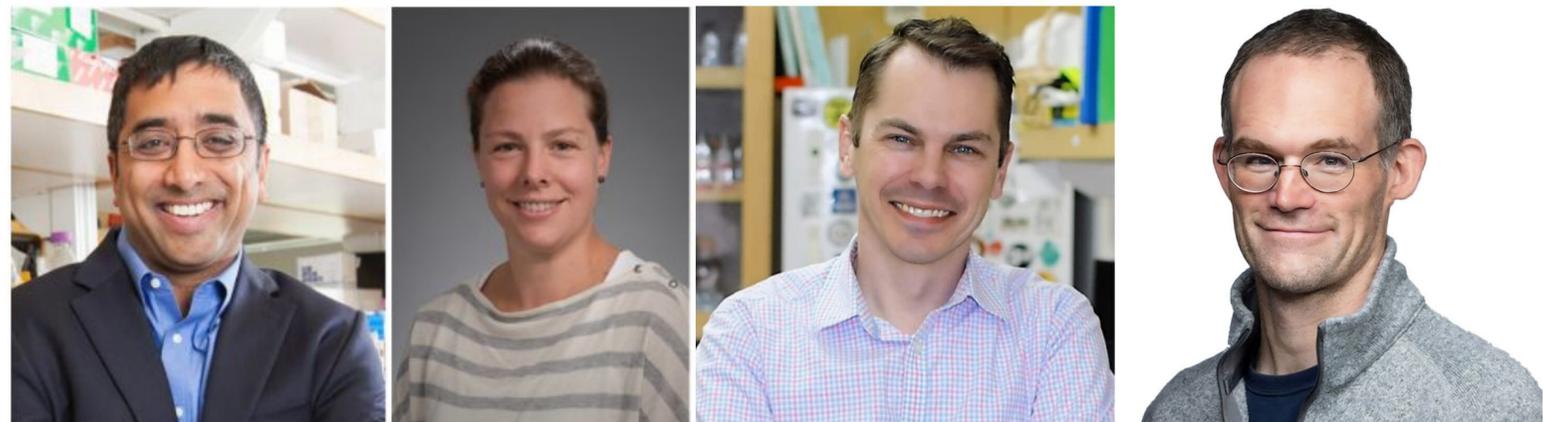
Translating  
Seattle Hub technology  
into therapies

### Fellowship Program

Develop & integrate  
SeaHub technology  
by training postdocs

# Overview of Seattle Hub for Synthetic Biology

- Unique partnership between three entities
- Agreement finalized December 8, 2023
- Launched January 1, 2024
- Funding from CZI (\$35M) and Allen Institute (\$35M)
- Science at UW and Allen Institute/Dexter Yard
- 5-yr renewable commitment

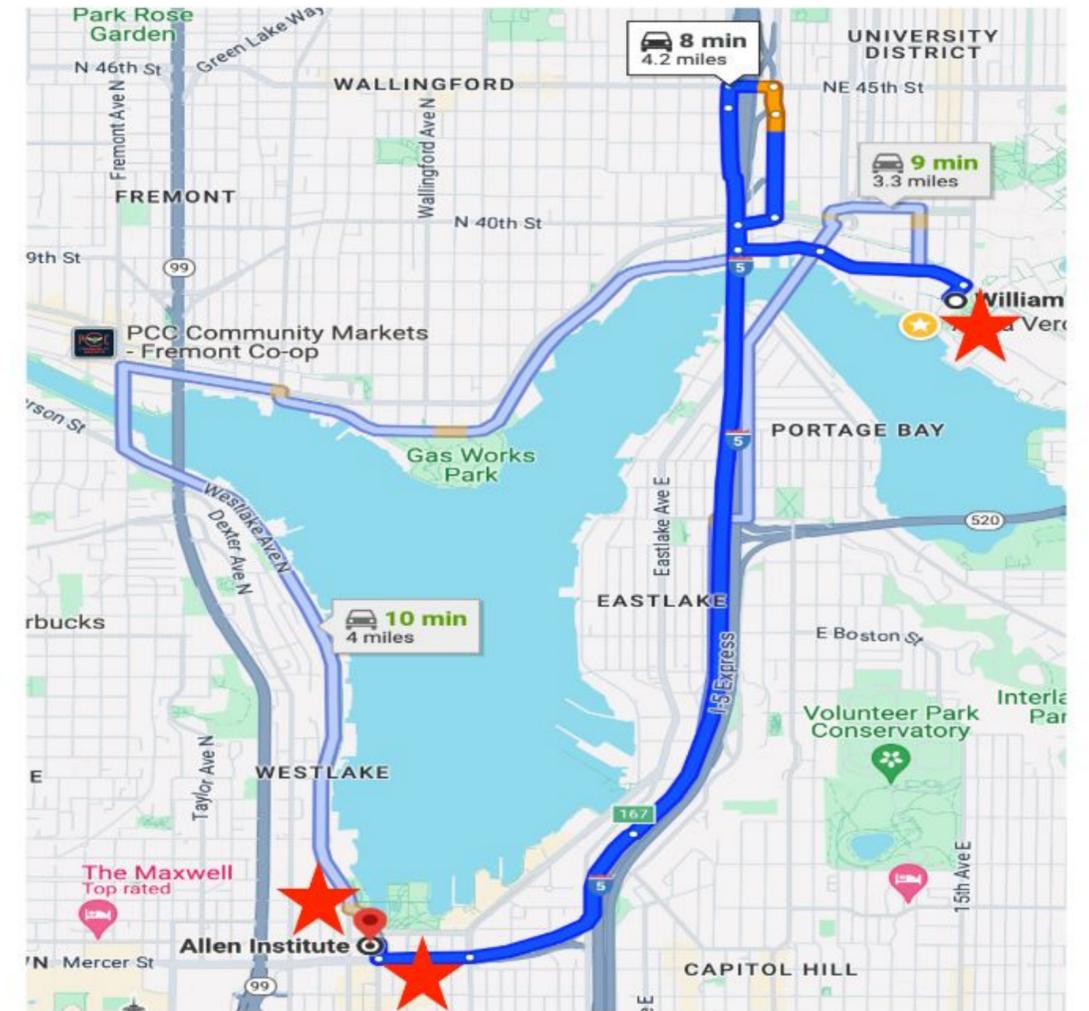


Jay Shendure  
Lead Scientific  
Director

Marion Pepper  
Co-Scientific  
Director

Cole Trapnell  
Co-Scientific  
Director

Jesse Gray  
Director of Strategy &  
Science Operations

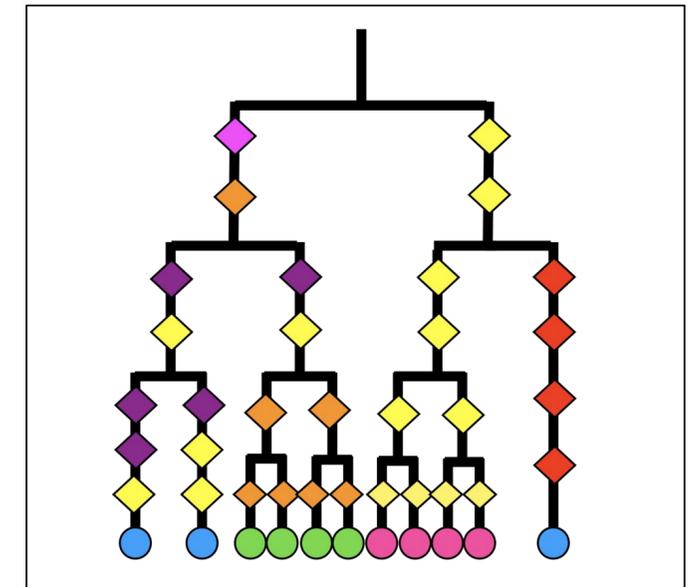


# Seattle Hub for Synthetic Biology mission & science

*Our mission is to generate the foundational datasets, models and molecular infrastructure to reengineer cells to record their own histories and reprogram disease to health.*

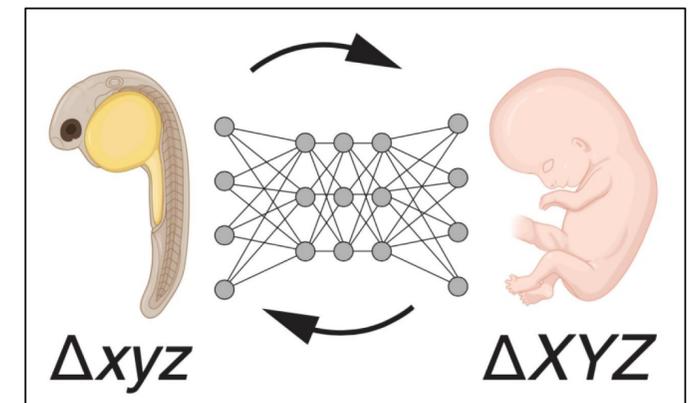
## Longitudinal recording

- Turning cells & organisms into their own historians via DNA-based molecular recording (e.g. DNA Typewriter, ENGRAM)
- Initial focus on tech-dev, development and immunology

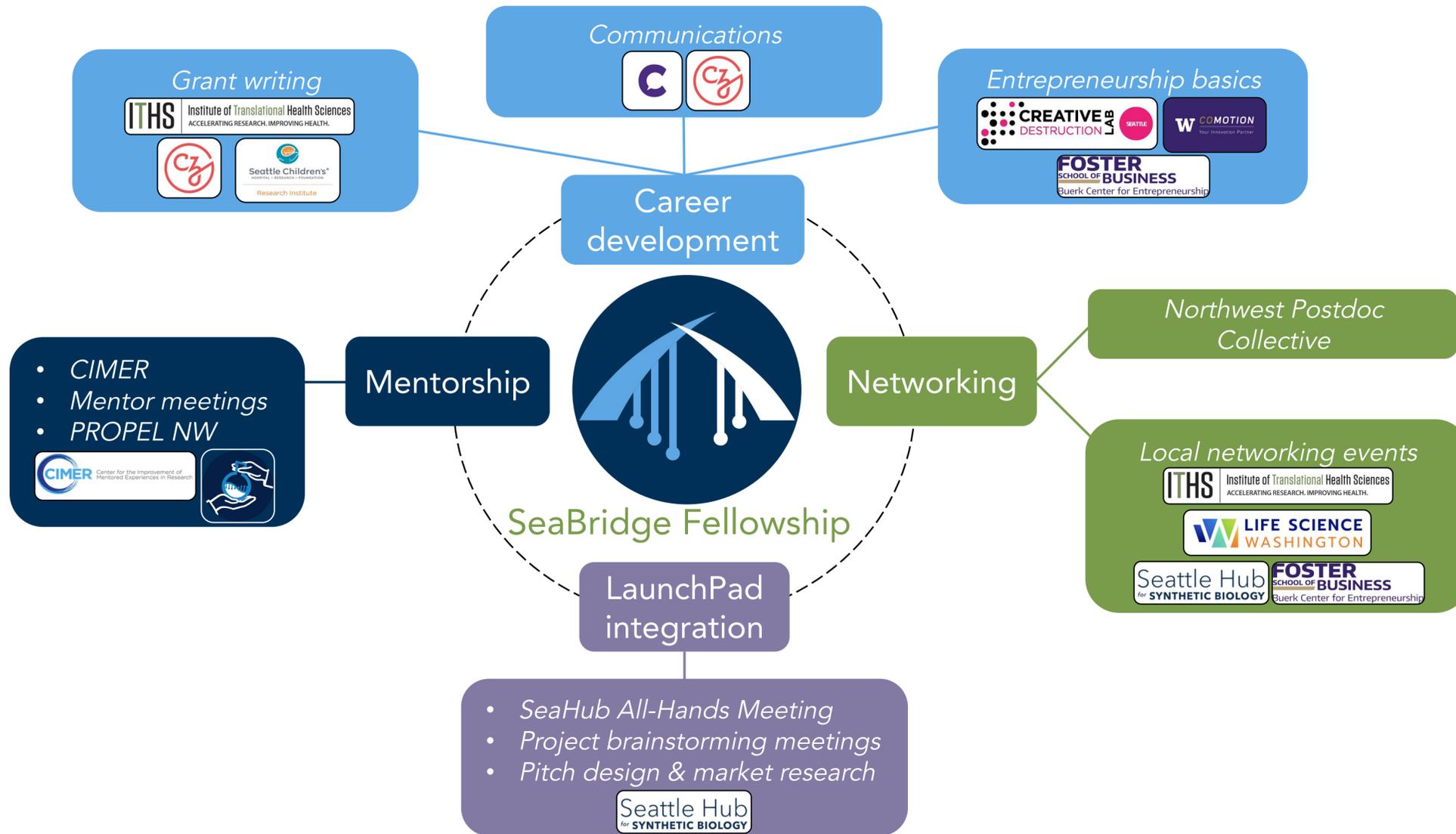


## Embryo-scale reverse genetics

- Systematically mapping the conserved genetic program of vertebrate embryogenesis at single cell resolution
- Initial focus on zebrafish embryos and mammalian gastruloids



# SeaBridge Fellowship overview



- Two-year fellowship program
- Training in career development, mentorship, & networking
- Research project focused on SeaHub tech
- Fellows embedded in host labs at any WA state institution
- Paired with SeaHub expert for scientific mentorship
- Discovery or Entrepreneurial course curriculum

Per year fellowship award includes:

- up to 50% salary & benefits
- \$2,500 travel funds
- \$10,000 career development funds

# PROPEL Northwest postbaccalaureate program



Mission: Promote inclusivity in the scientific workforce by offering *all* postbaccalaureate trainees

- ❖ Research experience
- ❖ Graduate school prep and professional development
- ❖ Scientific community (mentors, conferences, etc.)

## Partners:



## Support:



Washington Research  
FOUNDATION



# Non-exhaustive List of Potential Projects

- Use of ENGRAM to improve target identification in drug development
- Development of DNA Typewriter compatible sensors
- Use of Typewriter/ENGRAM to improve CAR-T manufacturing
- Use of Typewriter/ENGRAM to improve CAR-T performance *in vivo*
- Use of Typewriter/ENGRAM for autoimmune target identification
- Development of HSV as a tool for big DNA delivery in mouse-making
- Engineering iPSCs to reduce the need for growth factor addition
- Use of ENGRAM as a tool to evaluate toxicity of drug candidates
- Using biological recorders to create datasets for ML training
- Programmable cell therapies from iPSCs
- Implement and optimize multiplex signal recording in an organoid model in which my lab has expertise and interest

# FAQs

**1. I am currently on my 37th month of postdoc employment. Will I still be eligible to apply?**

*Yes. While SeaBridge prefers applicants to have 0-36 months of postdoctoral fellowship experience at the time of application, we will consider applicants with more than 36 months if they provide a clear explanation of why additional postdoctoral funding is needed. Fellows with more than 36 months of experience will be asked to provide this explanation in an additional portion of the application.*

**2. Will receiving the fellowship impact other benefits (retirement, etc.)? Funding will be provided as an award, thus the employment status of postdoctoral fellows at their institution should not change if they are offered a SeaBridge Postdoctoral Fellowship Award.**

**3. If an applicant is rejected, can they improve their application and re-submit? Yes, applicants may re-submit revised application. Applicants may re-submit once per 12 month period after the first submission, as long as applicant meets the eligibility criteria.**

**4. Is there a recommended time to submit an application? We have a rolling application process to make it as seamless as possible for great candidates. We recommend that applicants submit their application at the time that they can put forth their best application and at least 6 months prior to when they would like to start the fellowship.**

**5. How closely does the proposal need to be related to current research aims at SeaBridge? (i.e. how specific vs. broad of research topics are you looking for?). Synergy between the proposed project and Seattle Hub science is a major selection criteria for applications. The more synergistic the project is with SeaHub, the better.**

**6. Do we need to be specifically collaborating with someone at SeaBridge? No, but the scientific research proposed must involve Seattle Hub for Synthetic Biology technology. If you are interested in connecting with a Seattle Hub scientist, please contact us before doing so.**

# Fellowship Application Review Cycle

Applications pulled for review	Application decisions released	Fellowship Start
July 31	December	January
October 31	March	September
March 31	July	September

# Q & A

Visit our FAQs page on our website for more commonly asked questions.  
([www.seabridge.uw.edu](http://www.seabridge.uw.edu))

# Wrap-up

Contact us with additional questions!

Email: [seabridgefellowship@uw.edu](mailto:seabridgefellowship@uw.edu)

SeaBridge website:



Follow us on LinkedIn!



# Fellowship proposal example 1

I am an immunologist interested in recording specific types of T cell cues in the tumor microenvironment. I propose to work with SeaHub scientists to introduce ENGRAM-based recording of WNT signaling in skin-resident T cells in my model of melanoma using CD8+ transgenic T cells into which we introduce recording constructs.

I am interested in working with the Sense Team at SeaHub's Dexter Yard platform to accomplish this.

# Fellowship proposal example 2

I plan to study the generation of heart cells from iPSCs\* and would like to use SeaHub's DNA Typewriter system or related biological recording technologies to optimize the differentiation process.

I am interested in working with the Write team at SeaHub's Dexter Yard or the Shendure lab at UW to accomplish this.

\*There are many examples of different systems in which lineage recording or biological recording more broadly can be applied:

- Development of different organ systems
- Applications in different model systems

# Fellowship proposal example 3

SeaHub is using large scale genetic and chemical perturbations to map gene regulatory networks that activate and govern cell-type specific gene expression programs in healthy tissues, but how to engineer synthetic programs that shift cells from pathological to healthy states remains unclear.

- 1) Construct a software tool that uses SeaHub gene regulatory networks to identify the minimal set of extrinsic signals or genetic perturbations needed to restore a given disease-specific cell state to one or more healthy states.
- 2) Design an ENGRAM-based mouse with a "disease state" recorder that can be used for quantifying the efficacy of interventions meant to restore diseased cells to health, for example to measure pro-fibrotic signals. Use perturbations like bleomycin exposure, or other insults (+ known anti-inflammatory interventions or ideally interventions proposed by the tool in Aim 1)

I am interested in working with the Trapnell lab and the Sense Team