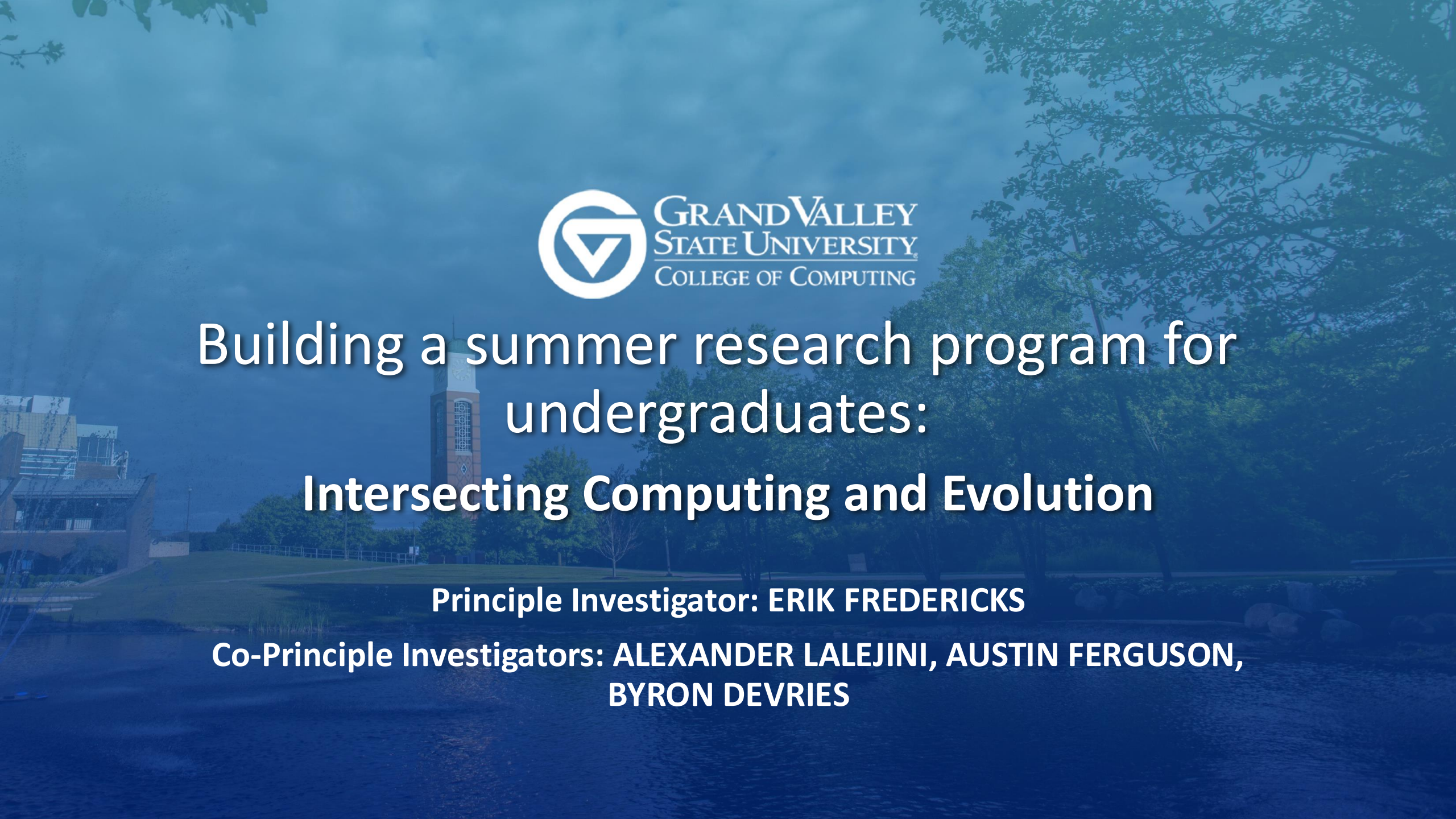


Building a summer research program for undergraduates:

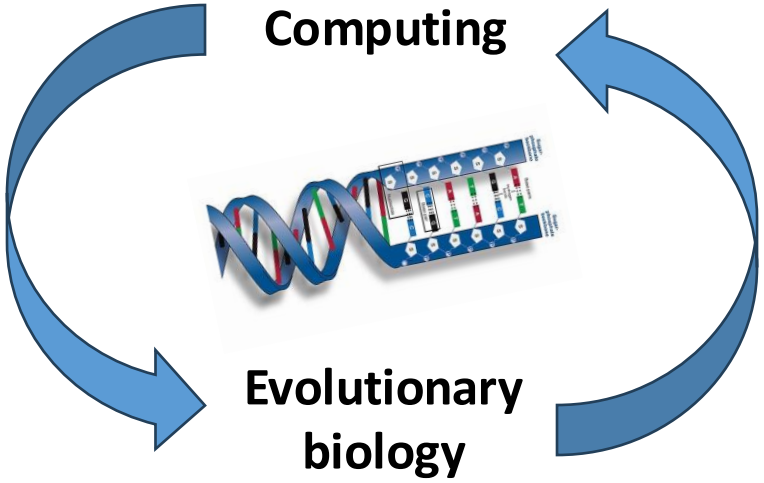
Intersecting Computing and Evolution

Principle Investigator: ERIK FREDERICKS

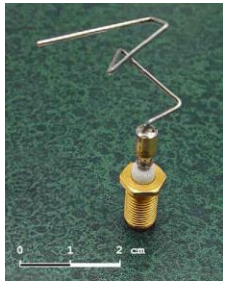
Co-Principle Investigators: ALEXANDER LALEJINI, AUSTIN FERGUSON, BYRON DEVRIES

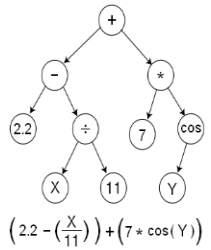
Use computational modeling to **better understand evolution**.

Use "evolutionary algorithms" as novel laboratory protocols to **optimize microbial functions of interest.**

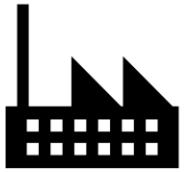


Exploit our understanding of evolution to design new algorithms to **"evolve" solutions to challenging problems**.


"Creative" design



Generating mathematical models


Manufacturing process optimization


Robot control systems

We aim to build a 10-week, interdisciplinary summer research experience for undergraduates at GVSU.

- Provide new summer opportunities for students in the Greater Grand Rapids area
- Train students in interdisciplinary science
- Teams of students will work on synergistic projects on:
  - Evolutionary theory
  - Computational problem-solving
- Introduce the Greater Grand Rapids area to nationally recruited STEM talent

Collaboration and Funding

- **We are seeking collaboration opportunities from:**
  - Local industry leaders to act as project sponsors, collaborators, and/or mentors
  - Faculty across disciplines to act as mentors
  - Students to support REU module development and validation

- **We will be seeking funding mainly from the NSF**