

# Systems Medicine Education

*How can we integrate science and technology to optimize current health and future wellness for individuals and communities?*

## Systems Education Experiences

Baliga Lab at Institute for Systems Biology

### THE NEED

To democratize the systems medicine approach, we need to:

- Empower individuals with the skills and knowledge necessary to participate in managing their own health, and to advocate for the well-being of their communities
- Prepare a new generation of collaborative and interdisciplinary STEM and healthcare professionals for the novel demands of the systems medicine framework

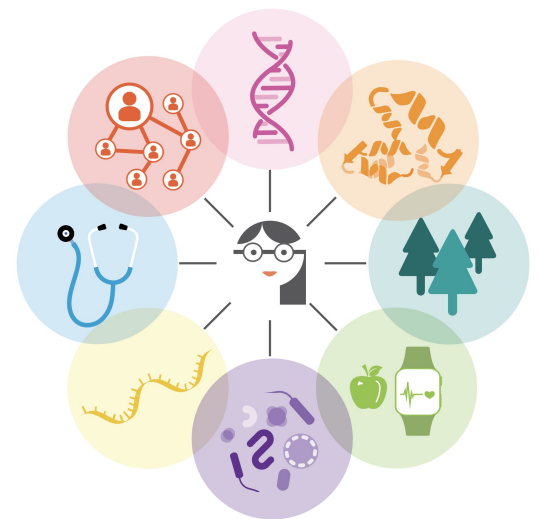
### WHAT IS SYSTEMS MEDICINE?

Systems medicine uses genetics, a breadth of personalized data, and tailored health coaching to proactively optimize wellness and minimize disease.

### MEETING THE NEED

We are developing a Systems Medicine Education curriculum for high school students to:

- Learn the principles and practices of systems medicine
- Engage in cutting edge science
- Build and deepen their interdisciplinary skills
- Explore STEM and healthcare careers focused on biology, engineering, computer science, environmental sustainability, biomedicine, big data, and technology



### OUR APPROACH

Students will be introduced to systems medicine through:

- Case studies focused on various factors impacting health (lifestyle and behavior, the environment, genetics, the microbiome, social networks, and access to healthcare) and their relevant disease outcomes (cancer, diabetes, stress)
- Role-playing STEM & healthcare professionals to experience the multidisciplinary approach of systems medicine
- Exploration of analytic tools and biological data sets to create predictive and actionable models for wellness and disease
- Investigation of a local community health issue

### BUILDING THE COURSE

#### Completed

- ✓ Develop course framework (with OSPI)
- ✓ Define scenario
- ✓ Identify existing resources

#### In Progress

- Develop curriculum and web resources
- Teacher training and optimization

#### Upcoming

- Summer Course 2019: "STEAM Towards a Healthier World"
- Broad dissemination of completed curriculum (2022)

*Initial funding provided by Douglas Howe and other major donors.  
Please see the Systems Medicine Education page for more information:*

<https://systemsbiology.org/systems-medicine-education/>