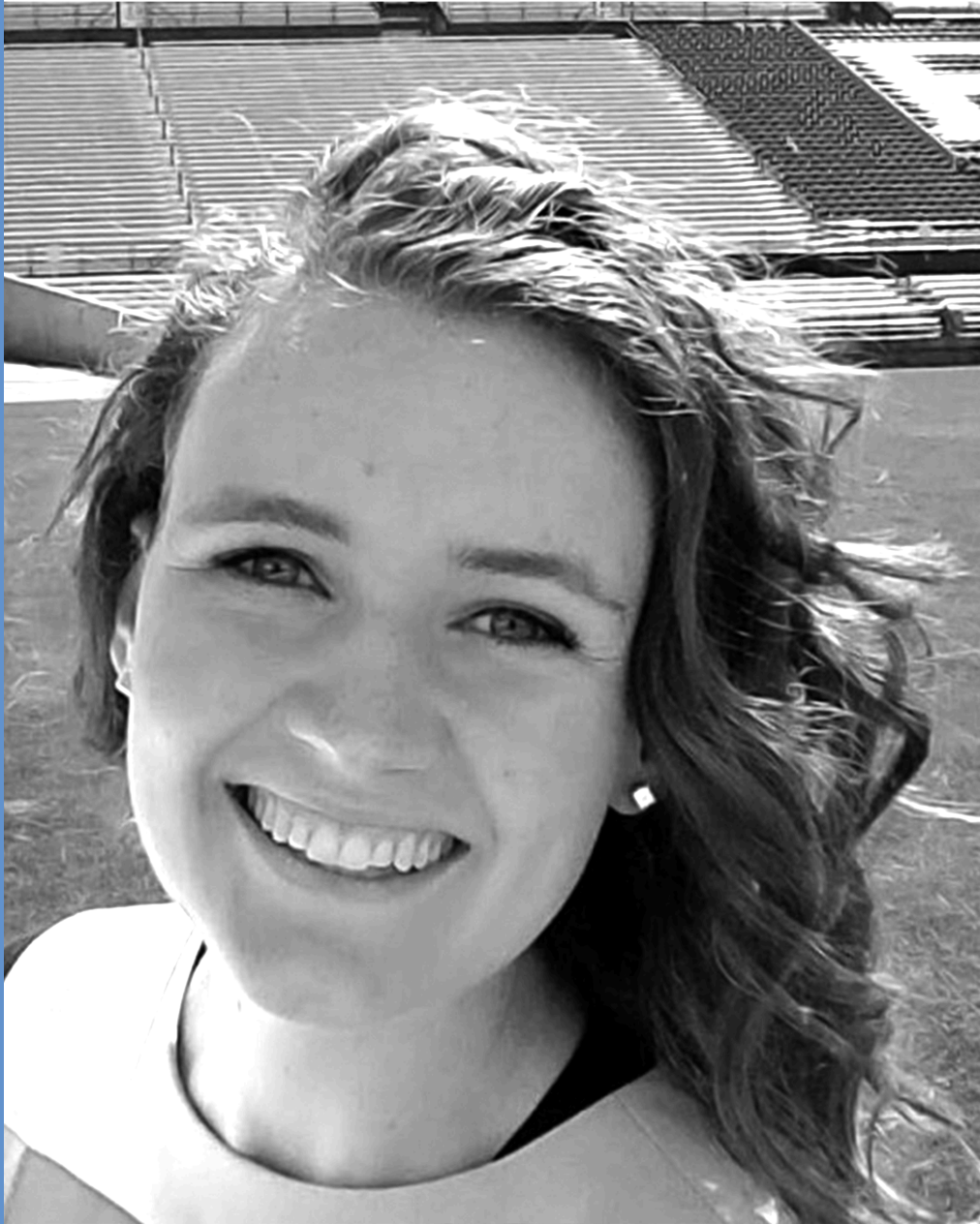




Saving Sight—Identifying the Causes and Effects of Age-Related Macular Degeneration for Earlier Intervention

KELSEY BRADSHAW

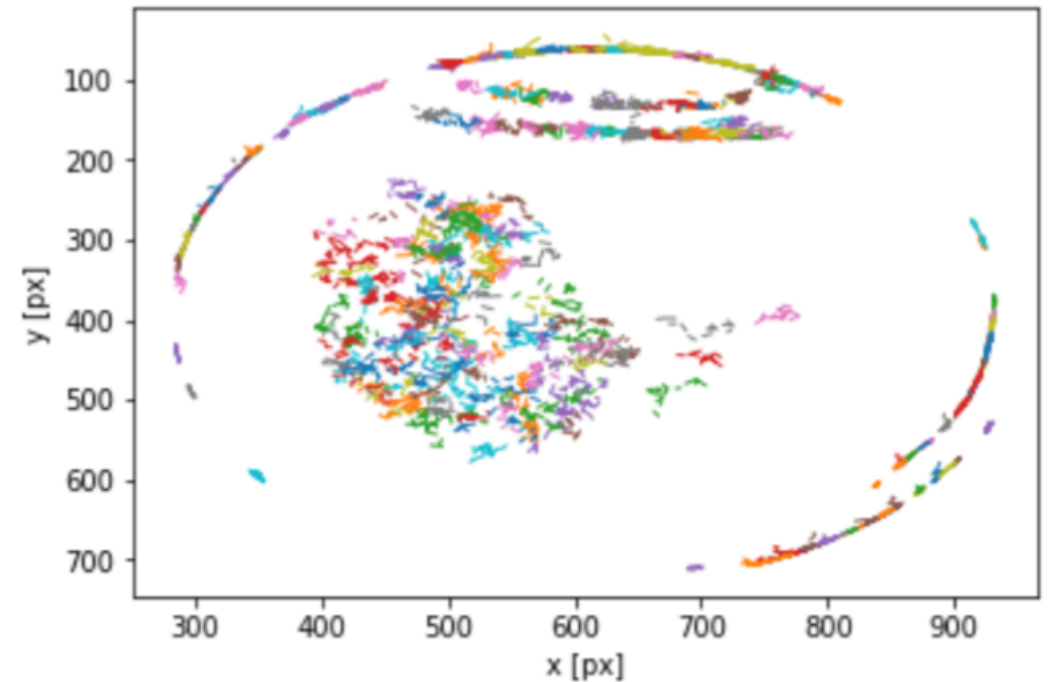
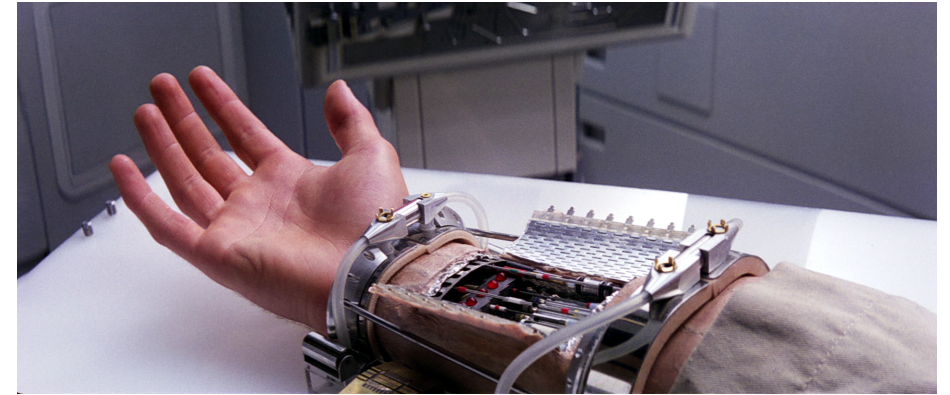


About Me

- Senior
- Biological Engineering Department
- Engineering Undergraduate Research Program grant recipient
- Originally from Gorham, Maine
(What's drew you to USU/what's the connection?)
- University of New Mexico

How I Got Started

- Star Wars: The Empire Strikes Back
- Brigham Young University
- Computer science work on proving microgravity to help astronauts
- Age-Related Macular Degeneration has affected members of my family



My Project

- Age-related macular degeneration (AMD) affects 11 million people affected in US alone and the risk is 30% for people over the age of 75
- Project focuses on identifying the causes and effects of AMD using probabilistic computation models to figure out how it expresses in blood vessel growth

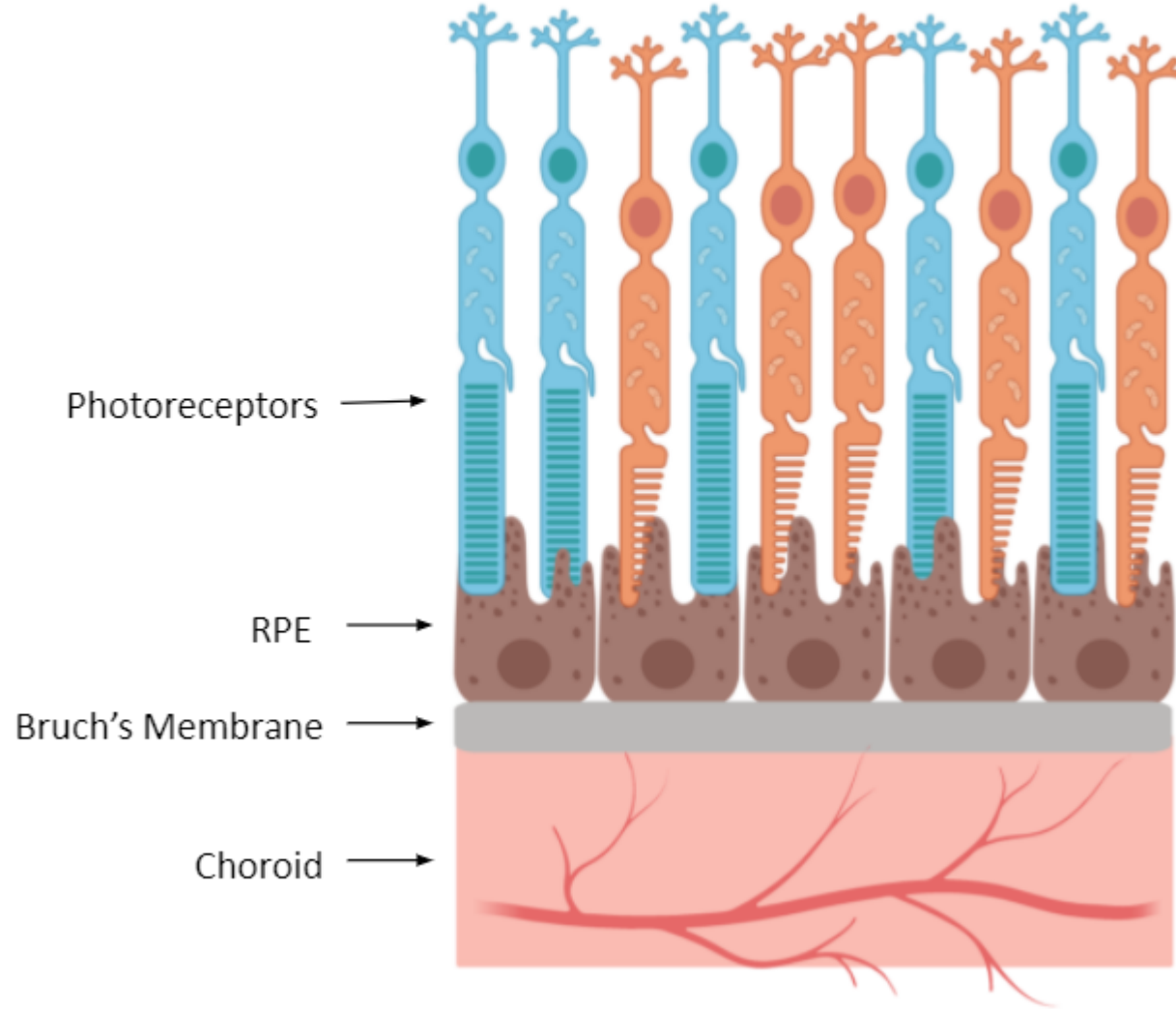


Healthy

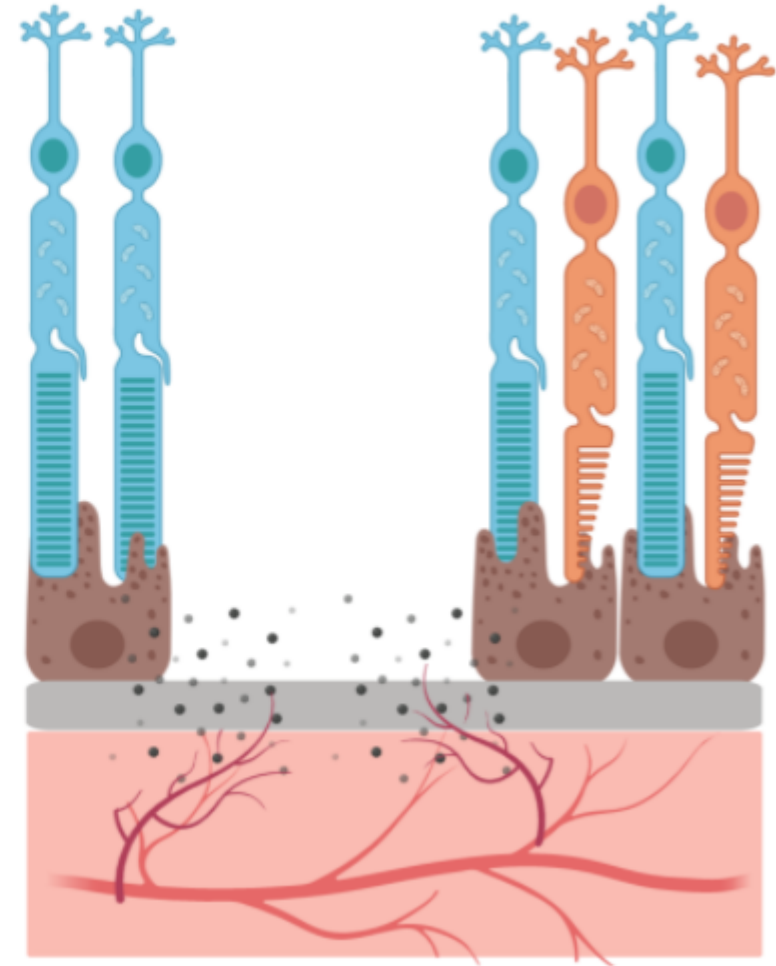


Age-Related Macular
Degeneration

Normal

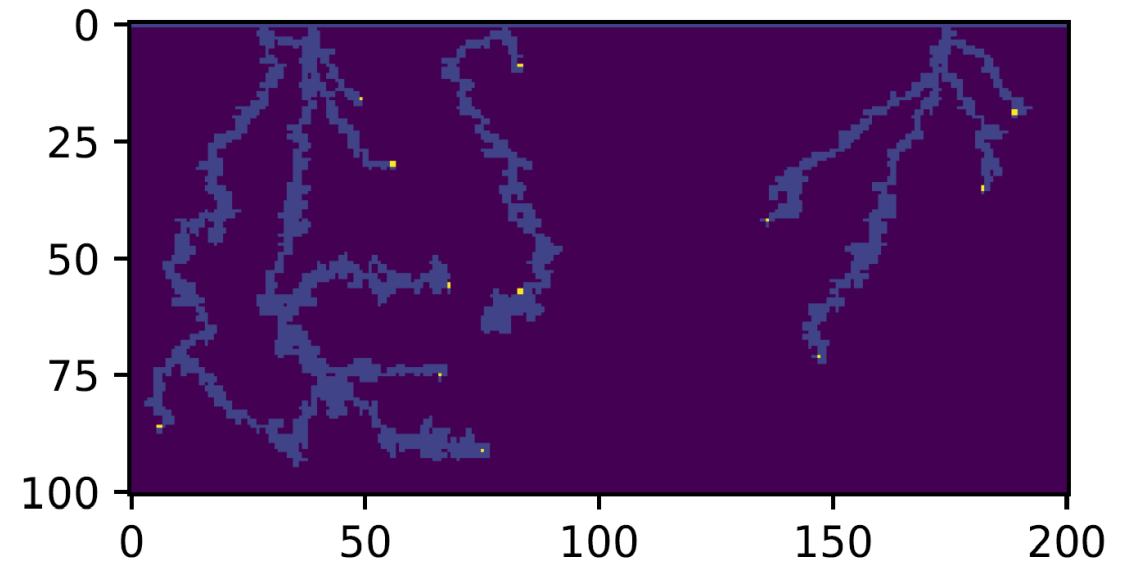


Cell-Cell Detachment Leading to Angiogenesis



My Results

- The model will be able to predict future extent and severity of the disease
- This will enable earlier diagnosis and treatment, potentially saving patient's vision, as the current treatments preserves eyes as is



Simulation of most probable growth of 5 blood vessels

Impact on Utah

- Statistically there are 20,000 people in Utah alone suffer from AMD
- Computer simulation reduces the time and money needed to study AMD
- Earlier diagnosis can enable us to treat earlier and save their vision

My Research Experience

- Networking
- Computer Science
- Hands-on application of education

