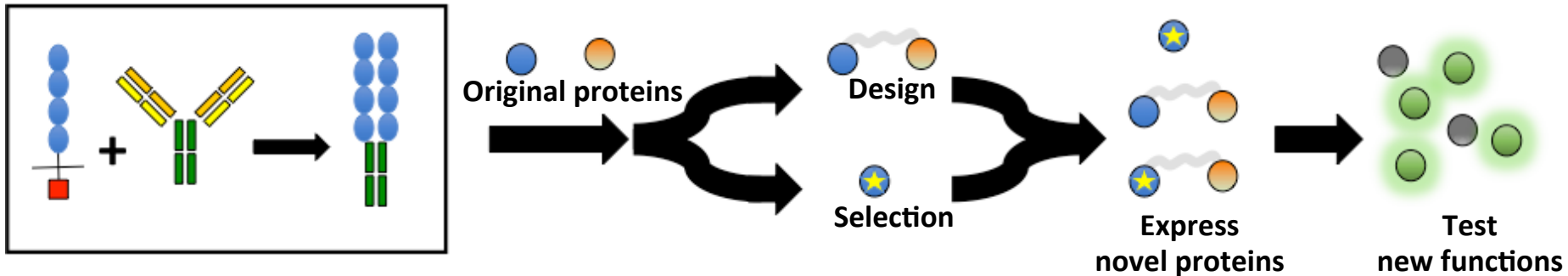


Overview:

- Introduce students into the concepts of engineering proteins with new or improved functions
- Gain hands-on experience designing and testing novel engineered proteins



Lectures

1. Overview; How to design a new protein
2. Using directed evolution to select variants
3. Rational design tools and resources
4. High-throughput screening of phenotypes
5. Pitfalls and obstacles
6. Antibody engineering

Labs

1. Forward genetics screen of protein of interest
2. Rational design of a novel protein chimera
3. Selection of new functional phenotypes
4. Combining designed and screened variants
5. Expression and purification of novel proteins
6. Functional testing of proteins