What is an IStrand?

- **Why are IStrand objects used instead of Strings?**
  - **Strings don't have names**
  - **Strings restrict us to specific methods, or we have to write methods and pass strings to them**
  - **IStrand objects allow the methods to be in the class, this is part of what object-oriented programming is about.**

- **Why do we choose interfaces?**
  - **There is no code shared by all implementations, if there were such code, we might choose inheritance rather than interfaces**
  - **Program to a specification, decouple implementation from other parts of the program**

What is an IStrandFactory?

- **Real IStrand objects come from somewhere, who makes them?**
  - **We want to be able to have spiffy IStrand objects, slow ones, fast ones, etc.**
  - **We don't want to rewrite the code that reads strands each time we develop a new implementation, why?**
  - **How can reading code create an IStrand object?**

- **A Factory decouples creation from the code that needs to create. Instead of calling new, which requires a name, we call the factory for a new object.**
  - **Someone calls new, just not us**
  - **Defer, defer, defer**

Shotgun Reader and Reconstructor?

- **Why do we now have two classes?**
  - **Decouple different tasks, by decoupling them we allow them to very independently.**
  - **We can change reading without changing reconstruction and vice versa**

- **New reconstruction algorithms?**
  - **How would we make it possible to develop new methods for reconstructing a genome from strands?**
  - **How can we make the existing code work easily with new reconstructing methods?**

- **Software engineering and Algorithm Engineering**

Mary Shaw

- **Computer technology has become pervasive, so technical decisions affect many people who do not understand the technologies and their implications. Like all technologies, computing is not inherently good or bad -- individual computer applications and the uses of their results must be evaluated in terms of community standards. Of course, those standards evolve over time, often in response to the effects of technology.**