Introduction to BioFPGA

- **Field Programmable Gate Arrays (FPGAs)**
- **Reconfigurable Hardware**
- **Can be Hundreds of times faster**
- **Less power consumption, less heat, less space**
- **BUT- Traditionally hard to program**
- **Not for all algorithms!**
BioFPGA - Why Now?

- **Hardware is improving** - CRAY, SGI, Nallatech
- **Software is improving** - Mitrion, ImpulseC
- Less efficient, but much easier to port
- Several projects in the works

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FPGA projects

- Smith/Waterman
- HMMpfam
- BLAST
- DeNovo Mass spec
- Docking
- Microarray analysis
- Etc…
BioFPGA plans

- Modeled after BioPerl et al
- Consolidate code
- Standardize platforms
- Share experiences
- Construct framework
- Standardize I/O
- BioFPGA.org

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