

Bioinformatics, Biostatistics, and High Performance Computing Core

Perry L. Miller, MD, PhD

Director, Center for Medical Informatics
Professor, Anesthesiology and MCD Biology

Yale Center for Medical Informatics (YCMI)

- Established in 1991 as one of three formal academic centers within the School of Medicine, directed by Prof. Perry Miller.
- Staff:
 - 8 teaching faculty (professors)
 - 5 research faculty (research scientists)
 - ~20 other staff members

Spectrum of Biomedical Informatics at the Yale Center for Medical Informatics

Genomic/proteomic informatics

- **Yale Protein Expression Database - YPED (Keck Center)**
- Yale Microarray Database - YMD (Keck Center, Genetics, & Biology)
- Yale Center for Genomics and Proteomics (Mike Snyder)
- Center of Excellence in Genome Sciences (Mike Snyder)
- Population genetics (Ken Kidd)

Clinical informatics

- Informatics support of clinical research (Yale's CTSA, Yale Cancer Center, other groups at Yale and elsewhere)
- Informatics support of cancer genetics & pharmacogenetics (two national NIH-supported clinical research networks)
- Computer-based clinical decision support
- Electronic patient record system R&D

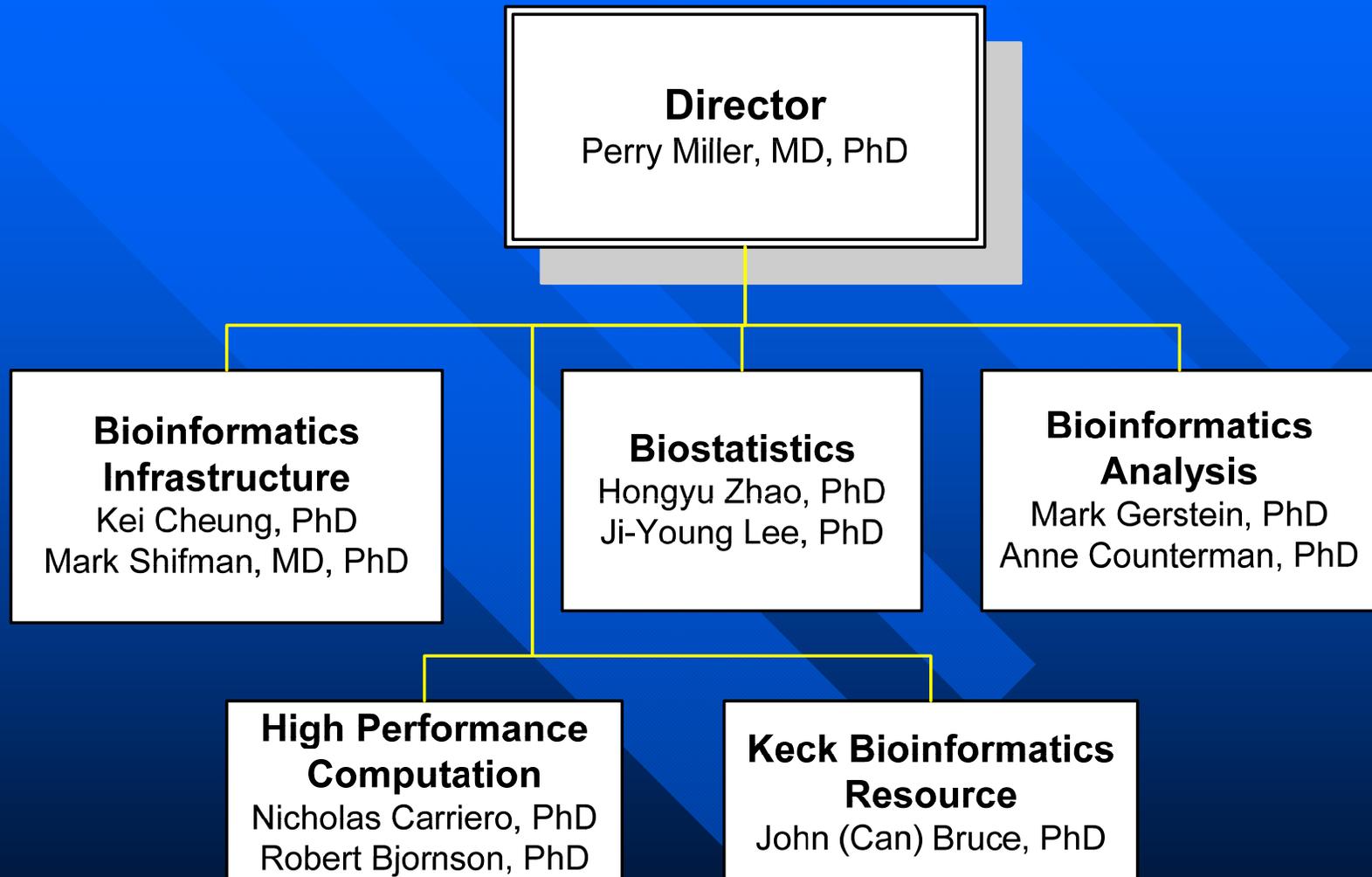
Neuroinformatics (Gordon Shepherd)

- SenseLab - integration of multidisciplinary sensory data
 - including molecular modeling and neuronal modeling
- The Neuroscience Information Framework (NIF)

Yale Center for Medical Informatics: Research Training

- Biomedical informatics training (since 1987):
 - 6 post-docs & 12 pre-docs
- Dr. Miller co-directs Yale's interdepartmental PhD program in Computational Biology and Bioinformatics.

Organizational Structure of the Core



Major Activities of the Core

- Kei Cheung & Mark Shifman (YCMI): Yale Protein Expression Database (YPED)
- Hongyu Zhao: Algorithms for quantitative proteomics
- Mark Gerstein: Analyzing protein abundance vs. gene expression
- Nicholas Carriero & Robert Bjornson: High performance computation
- John (Can) Bruce: Bioinformatics support & collaboration