

Molecular Medicine Core

- Screen for mutations in diseased tissues
- Data dictates treatment strategy

Mutations associated with Diseases

- Leukemia – Abl
 - Gleevac vs. Dasatinib
- Metastatic Breast cancer – PTEN
 - Herceptin vs. clinical trial
- Lung cancer – EGFr
 - Iressa or Tarceva vs. clinical trial
- Ovarian cancer – Src activation
 - Treat with cisplatin or pretreat with Dasatinib
- Pancreatic cancer – k-Ras
 - Surafamib or clinical trial

Process

- Collect tissue from surgery
- Save fraction for analysis
- Isolate tumor cells by LCM (Pathology)
- Process cells for PCR amplification of gene of interest
- Sequence gene.
- Whole process takes 1-2 days

Personnel and Equipment

- Director, lead tech – Jing Yu, MD/PhD
- Tech – Xianglou Lin, PhD
- Two DNA sequencers
- Two PCR machines
- Computers and necessary small equipment

Operating budget

- Personnel - \$171,450
- Equipment - \$10,000
- Supplies - \$25,000
- Total - \$206,450

Needs

- A third technician (\$45,000)
- Machine to analyze polymorphisms (\$20,000)
- Endowment

Long term vision

- Focus on specific genes that are commonly mutated in cancer where the presence of these mutations can dictate treatment
- Perform a clinical trial to see how well this prediction works
- If this approach becomes a standard of care, market it to other hospitals
- Generate “lab on a chip” technology for subsets of genes to be analyzed
- Spin out a service lab, biotech company to service the region