Frederick National Lab Resource Deployment onto RAS

Dr. Atsuo Kuki, CTO, Frederick National Lab

NFAC Meeting, February 4 – 5, 2014
Launch phase

RAS Pivot in Frederick National Lab by the numbers

- 7%
- 55 FTE
- 40%
- Frank McCormick, June, 8 months
- Primary concurrence to proceed, September, 5 months
- Full Approval to proceed with program ($10 M plus interim SBA boost), November, 3 months
- The Cancer Research Technology Directorate, November, 3 months
Deployment of teams to RAS

*Operations and Technical Support (OTS) Contract for the Frederick National Laboratory for Cancer Research
RAS teams: Post-Pivot Resources

CRTP Directorate, 136 FTEs

RAS Program

CRTP LABS in ATRF

Core Services

Dedicated

78

Project-based assignment | Dedicated to RAS

58

Project-based assignment as well as Core Services

Cancer Research Technology Core Labs

PEL LPAT PCL LMT

RAS Labs

Frederick National Laboratory for Cancer Research
### FNL CRTP Resource in RAS Teams: 55

<table>
<thead>
<tr>
<th>Category</th>
<th>FTEs</th>
<th>($ M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RAS Teams (with cores engaged)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural biology (proj 1)</td>
<td>15</td>
<td>2.3</td>
</tr>
<tr>
<td>Cellular assays and validation (proj Z)</td>
<td>14</td>
<td>2.0</td>
</tr>
<tr>
<td>Target development (proj 2,3,4)</td>
<td>14</td>
<td>2.2</td>
</tr>
<tr>
<td>Informatics, Leadership, Admin</td>
<td>9</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>CRO’s, CapX, Eqpt contracts</strong></td>
<td>-</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>RAS Reagents and Spokes (proj5, proj6)</strong></td>
<td>3</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>TOTAL FTEs</strong></td>
<td><strong>55</strong></td>
<td><strong>12.3</strong></td>
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</tbody>
</table>

Project-Based staffing. *Snapshot.* as of January 2014
## CRTP Directorate

**Overall Resources** 136 FTEs

<table>
<thead>
<tr>
<th>Category</th>
<th>FTEs</th>
<th>$ (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RAS Teams</strong></td>
<td></td>
<td></td>
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<tr>
<td>- Project Teams (p1,2,3,4 with cores engaged)</td>
<td>52</td>
<td></td>
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<tr>
<td><strong>CRO’s, CapX, Eqpt contracts</strong></td>
<td></td>
<td>55</td>
</tr>
<tr>
<td><strong>RAS Reagents and Spoke team (p5, p6)</strong></td>
<td>3</td>
<td>12.3</td>
</tr>
<tr>
<td><strong>CRTP Core Labs (flexible, especially during this transition year)</strong></td>
<td></td>
<td></td>
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<tr>
<td>- Protein Expression</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>- Protein Characterization</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>- Genomics</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>- Microscopy</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>CRTP Dedicated Labs (YT assigned)</strong></td>
<td>58</td>
<td>42%</td>
</tr>
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Cancer Research Technology Program
National Lab Character

• 180 degree rotation from inward to outward facing
• Confirmed fit of potent applied science and technology resources that are enabling RAS launch and preparations for RAS Reagent delivery

Role in Community:
• Outreach launched in multi-sector manner (see slide below)
• Strategy for enablement of national RAS community efforts
  – Reagents
  – Qualified assays

Building the mojo:
• Bring in expertise that rapidly builds momentum (Frank McCormick)
• Defining the answer to “what is a life-sciences national laboratory” by committing teams to drive towards areas of national need
Team Science, co-located expertise

- Re-organized 40 to 57% of the CRTP Directorate as project team units and core units that flex and matrix to accomplish team science

- Culture at ATRF: Converting potential energy into kinetic energy
  - Transition into the driver’s seat: Project Team Design, Prioritization of lab work
  - Project Team leads meet regularly all together (and with Frank)
  - Scholarship: intensive RAS-related reviews

- Cross-fertilization across FNL units
  - NCL – (Nanotechnology) targeting expertise, assay cascade design
  - ACL – (Antibody) immunoMRM and cell surface epitope expertise
  - Laboratory Animal Science Directorate and LASP/SAIP expertise
  - More expected to come on-line as Projects gain traction
Filling gaps to build and develop RAS capabilities

High-Level hires

Interim review at 3-month point complete

**Senior Structural Biologist – (open now)**

- Crystallographer with deep experience solving structures of protein complexes
- Coordinate high-intensity structural biology efforts with external partners

**Senior Cancer Biologist – (next)**

- Mechanistic cancer biologist with strengths in pathway biology and/or pharmacology
- Develop cellular and *in vivo* assays for KRAS inactivation

**Additional Senior RAS Program leadership roles…**
Outreach and Visits into ATRF in recent months (RAS Program)

- Structural Biology / Biophysics, Academic experts: 3
- RAS-driven Cellular Insights, Academic experts: 3
- Synthetic Lethal experts: 30
- Biotech, Specialty Tech: 3
- Big Pharma and RAS-related Tx: 2
- cCRADA Pipeline, Broad early pipeline engagement, with signed cCRADA: 0
- Non-Profit: active discussions
Distinctive Attributes of a Redeployment at FNL

• This FFRDC, opportunity and approach are unique
• Applied Science and Technology Team-based approach
  – Pivot existing technology, teams and expertise
  – Ability to assemble Project Teams and draw new Talent and Leaders
  – Ability to Design (and iteratively refine) National Program consisting of
    multiple project teams in full alignment to single new mission and purpose
• Leverages and shares talent and investment across multiple NCI
  in-place initiatives
• Vision that energizes both FNLCR and NCI and induces spirit of
  co-ownership
• Next: Build a framework for National Lab programs
  • Need sustainable path to launch and funding of new National Lab priorities
  • Demonstrate why and how FNL as a central reference implementation
    laboratory enriches academic, industrial, governmental, and
    entrepreneurial Cancer and AIDS Research