COLLABORATIVE PORTFOLIO ANALYSES

Examples of approaches and benefits

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Why conduct a shared portfolio analysis?

- **Shared framework for categorizing research**
  - Analysis of trends in support across organizations
  - Identification of gaps, synergies, and opportunities for coordination or collaboration
  - Resource for identifying researchers for review panels, workshops, and working groups
What to analyze

Purpose of the analysis dictates approach

• How do funded research projects align with a strategic plan or other defined priorities?
• How is support distributed across scientific topics?
• How is support distributed across stages of research? (e.g., basic, translational, clinical)
• What mechanisms of support are available across different sources? (e.g., research grants, training, resources, infrastructure, workshops/conferences, etc.)
• What trends emerge across portfolios over time?

Multiple, complementary coding dimensions may be desired
IACC: Interagency Autism Coordinating Committee

- Annual analysis of portfolio alignment with *IACC Strategic Plan*
- Subcategories independent of plan objectives added for complementary view
- Helps outline gaps, opportunities

10 Federal agencies, 8 private organizations

http://iacc.hhs.gov
IADRP: International Alzheimer's Disease Research Portfolio

- Led by the National Institute on Aging (NIA) and the Alzheimer's Association, with 11 other participating organizations
- **CADRO**: Common Alzheimer's Disease Research Ontology, developed to integrate and compare research portfolios from public and private organizations in US and abroad

Three-tier classification system, with seven major categories:
- **Molecular pathogenesis and pathophysiology of AD**
- **Diagnosis, assessment and disease monitoring**
- **Translational research and clinical interventions**
- **Epidemiology**
- **Care, support, and health economics of AD**
- **Research resources**
- **Consortia and public private partnerships**

Categories stratified into research topics; divided into research themes

http://iadrp.nia.nih.gov/
Example - Distribution of Projects Across CADRO's Research Categories, 2011

- **Alzheimer's Association**
  - Category A: Molecular Pathogenesis and Physiology of Alzheimer's Disease
  - Category B: Diagnosis, Assessment and Disease Monitoring
  - Category C: Translational Research and Clinical Interventions

- **National Institutes of Health**
  - Category D: Epidemiology

- **Department of Veterans Affairs**
  - Category E: Care, Support and Health Economics of Alzheimer's Disease

- **Agency for Healthcare Research & Quality**

- **Centers for Disease Control & Prevention**

**Percentage of Total Number of Research Grants**

- 25%
- 50%
- 75%
- 100%
ICRP: International Cancer Research Partnership

Alliance of over 50 governmental and non-governmental cancer organizations in the US, Canada, the UK, France, The Netherlands, Australia, and Japan

- **Common Scientific Outline (CSO)**, a classification system organized around seven scientific areas in cancer research:
  - Biology
  - Etiology (causes of cancer)
  - Prevention
  - Early Detection, Diagnosis, and Prognosis
  - Treatment
  - Cancer Control, Survivorship, and Outcomes Research
  - Scientific Model Systems

- Complementary cancer type/site coding
- Portfolio analyses based on the CSO have identified gaps to address through strategic planning and joint initiatives
- CSO widely used/adapted by other organizations (US and abroad) for cancer research and biomedical research more generally

https://www.icrpartnership.org/
## Table 2: CSO profile of high investment cancer sites (all partners) in the calendar year 2008

*(Investment (USD $M))*

<table>
<thead>
<tr>
<th>SITE</th>
<th>CSO1 Biology</th>
<th>CSO2 Etiology</th>
<th>CSO3 Prevention</th>
<th>CSO4 Early detection, diagnosis &amp; prognosis</th>
<th>CSO5 Treatment</th>
<th>CSO6 Cancer control, survivorship &amp; outcomes</th>
<th>CSO7 Scientific model system</th>
<th>2008 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder</td>
<td>$4.2</td>
<td>$9.4</td>
<td>$3.2</td>
<td>$7.9</td>
<td>$5.7</td>
<td>$3.0</td>
<td>$1.0</td>
<td>$34.4</td>
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<tr>
<td>Breast</td>
<td>$238.4</td>
<td>$133.7</td>
<td>$53.3</td>
<td>$168.7</td>
<td>$226.1</td>
<td>$141.5</td>
<td>$32.8</td>
<td>$995.7</td>
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<td>Colorectum</td>
<td>$49.1</td>
<td>$65.7</td>
<td>$49.1</td>
<td>$50.2</td>
<td>$60.9</td>
<td>$66.2</td>
<td>$11.2</td>
<td>$352.5</td>
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<td>Corpus uteri</td>
<td>$4.2</td>
<td>$6.2</td>
<td>$1.6</td>
<td>$1.7</td>
<td>$8.7</td>
<td>$3.2</td>
<td>$.6</td>
<td>$26.1</td>
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<tr>
<td>Haematological malignancy</td>
<td>$153.2</td>
<td>$83.0</td>
<td>$10.4</td>
<td>$43.0</td>
<td>$227.0</td>
<td>$27.6</td>
<td>$23.4</td>
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<tr>
<td>Kidney</td>
<td>$11.1</td>
<td>$4.1</td>
<td>$1.6</td>
<td>$5.3</td>
<td>$17.2</td>
<td>$3.4</td>
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<tr>
<td>Lung</td>
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<td>$42.7</td>
<td>$44.2</td>
<td>$43.3</td>
<td>$60.7</td>
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<td>Melanoma of skin</td>
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<td>$16.1</td>
<td>$8.5</td>
<td>$17.4</td>
<td>$53.2</td>
<td>$4.3</td>
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<td>Ovary</td>
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<td>$20.2</td>
<td>$7.6</td>
<td>$31.6</td>
<td>$54.4</td>
<td>$8.1</td>
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<tr>
<td>Pancreas</td>
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<td>$15.2</td>
<td>$3.9</td>
<td>$18.0</td>
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<td>$4.1</td>
<td>$6.0</td>
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<td>Prostate</td>
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<td>$70.0</td>
<td>$117.7</td>
<td>$47.4</td>
<td>$12.3</td>
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<td>Thyroid</td>
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<td>$.5</td>
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<td>$1.7</td>
<td>$1.3</td>
<td>$.6</td>
<td>$15.5</td>
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<td>Other sites</td>
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<td>$144.4</td>
<td>$58.2</td>
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<td>$70.9</td>
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<td>Not site specific</td>
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<td>$69.7</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>$667.5</strong></td>
<td><strong>$329.6</strong></td>
<td><strong>$645.4</strong></td>
<td><strong>$1291.7</strong></td>
<td><strong>$510.1</strong></td>
<td><strong>$190.9</strong></td>
<td><strong>$4838.8</strong></td>
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</table>

General themes and lessons

• Typical (initial) approach:
  • participating organizations agree to a common coding framework
  • each funding organization contributes and codes their own portfolios

• The common coding framework should be
  • Relevant – align with goals for the analysis
  • Simple – balance complexity with feasibility
  • Multi-dimensional – to enable complementary analyses
  • Standardized – categories should be clearly defined
  • Consistent – robust across users and time
  • Flexible – enough to allow for emerging concepts
Discussion

• Would a shared portfolio analysis by ICARE members be useful?
• What types of questions should a shared analysis address? What categories for scientific content or type of funding should be included?
• How would we carry out the analysis? What would be the roles and responsibilities of ICARE members?
• How frequently would we want to update the analysis?
• Identify potential next steps and volunteers for small working group