American Recovery & Reinvestment Act
Economic Stimulus Fund
Provost’s Council on Research, March 17, 2009

Steven J. Fluharty, PhD
Vice Provost for Research
OUTLINE

• A Grand Agenda
• Funding Opportunities/Priorities
• Challenges & Institutional Preparedness
“...We will restore science to its rightful place, and wield technology's wonders to raise health care's quality and lower its cost. We will harness the sun and the winds and the soil to fuel our cars and run our factories. And we will transform our schools and colleges and universities to meet the demands of a new age. All this we can do. And all this we will do.”

Barack Obama
Inaugural Address
January 20, 2009
A GRAND AGENDA
AMERICAN RECOVERY & REINVESTMENT ACT

• To preserve and create jobs and promote economic recovery
• To assist those most impacted by the recession
• To provide investments needed to increase economic efficiency by spurring technological advances in science and health
• To invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits
• To stabilize State and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive state and local tax increases
A GRAND AGENDA

PENN’S RESEARCH ENTERPRISE & PHILADELPHIA

• Over $787.5 million in total research awards

• An estimated $3.15 billion additional impact*

• ~22,000 research / research support positions

• Over 350 new research discoveries annually

• Over 100 new research licenses annually

• Since 1990, >100 new companies & >1500 employees located in Philadelphia

*TrippUmbach
A GRAND AGENDA
AMERICAN RECOVERY & REINVESTMENT ACT

• Timeline
  ▪ February 17th - ARRA signed into law
  ▪ February 19th - federal agencies begin reporting their formula block grants
  ▪ March 3th - federal agencies to begin reporting use of funds
  ▪ May 3rd – federal agencies to make performance plans public
  ▪ May 3rd – federal agencies to begin reporting on their allocations
  ▪ May 15th – detailed agency financial reports to become available
  ▪ May 20th – federal agency to begin reporting their competitive grants and contracts
  ▪ July 15th – recipients of federal funding to begin reporting on their use of funds

148 days between signing of the law and deadline for first reports
$21.5B in total federal R&D funding budgeted
- $18.0 billion for the conduct of R&D
- $3.5 billion for R&D facilities and capital equipment

Additional funding targeted for non-R&D science and technology-related programs, including:
- Higher education construction
- Educating teachers
- Workforce development for healthcare and Life Sciences professionals
- Technology upgrades

$300M to $500M in ARRA funds will be utilized by the Commonwealth of Pennsylvania for higher education building repair, renovation, and modernization projects
- Uncertain if funds will be available to private institutions
**A Grand Agenda**

**American Recovery & Reinvestment Act**

<table>
<thead>
<tr>
<th>Federal Agency</th>
<th>Budget FY2008</th>
<th>ARRA Funds 2009</th>
<th>Ratio of Stimulus to FY2008 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIH</td>
<td>$29,607</td>
<td>$10,400</td>
<td>35%</td>
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<tr>
<td>NCRR*</td>
<td>$1,149</td>
<td>$1,300</td>
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<tr>
<td>NSF</td>
<td>$6,055</td>
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<td>NIST</td>
<td>$737</td>
<td>$600</td>
<td>81%</td>
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<td>NASA</td>
<td>$17,179</td>
<td>$1,000</td>
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*Part of NIH budget*
**CHALLENGES & INSTITUTIONAL PREPAREDNESS**

**PENN CONSIDERATIONS**

<table>
<thead>
<tr>
<th>Dept/Agency</th>
<th>2009 (w/ Stimulus)</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<tbody>
<tr>
<td>NIH*</td>
<td>$40.7</td>
<td>$30.8</td>
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<td>$33.3</td>
<td>$34.1</td>
<td>$35.3</td>
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<td>NSF</td>
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<td>$7.2</td>
<td>$8.5</td>
<td>$9.1</td>
<td>$9.7</td>
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</tbody>
</table>

* Based on historical ratio of NIH to DHHS budget: 39%
A GRAND AGENDA
AWARDS BY SPONSOR TYPE

FY2008 Total Awards, all sources = $808,886,800
OUTLINE

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• Challenges & Institutional Preparedness
FUNDING OPPORTUNITIES & PRIORITIES
NIH ALLOCATIONS OF INTEREST TO PENN

• $7.4B allocated to Institutes & Centers proportional to their budgets
  ▪ <$5.6B in R01s
    • ~14,000 awards in FY08 & FY09 reviewed R01s under consideration
    • Average NIH R01 award in FY07 ~$384K (est. FY09 $400K w/ inflation)
  ▪ Unknown dollars allocated for supplements to existing awards under consideration
  ▪ Unknown dollars allocated for other potential awards, including Center grants, training grants, R03s, and R21s
• $800M allocated to Director’s Office
  ▪ Maximum of $200M for Challenge Grants
  ▪ Unknown dollars for other initiatives
• $1.3B allocated to National Center for Research Resources (NCRR)
  ▪ $1B to construct, to repair, to renovate existing non-federal facilities
  ▪ $300M for shared instrumentation and capital equipment
• $400M allocated from AHRQ to NIH Director’s Office
  ▪ Supports health care comparative effectiveness research
FUNDING OPPORTUNITIES & PRIORITIES
NIH INSTITUTES & CENTERS

• R01s #1 stated priority for NIH
  ▪ Highly scored but unfunded applications from FY08 and FY09 will be given most consideration
  ▪ Proposals must be resubmitted with revised aims and detailed budget that equates to 2 years versus NIH norm of 4 years
  ▪ While priority score will be a factor, the final award decision will be at the discretion of the Institutes
    • Potential factors to be considered include underserved institutions, new and early stage investigators, geographical area in need of job creation
    • (Note: Pennsylvania had the third-highest number of workers losing their jobs because of mass layoffs in January, according to a report released Wednesday by the U.S. Bureau of Labor Statistics)
  ▪ Timing – all communications are on hold until further notice from the Director, NIH and the OMB
FUNDING OPPORTUNITIES & PRIORITIES
NIH INSTITUTES & CENTERS

• Competitive and non-competitive award supplements to existing R01s
  ▪ Guidelines may vary across institutes within NIH and may be by invitation only
  ▪ Supplements will not exceed costs of the parent award
  ▪ High priority areas/activities include: hiring additional personnel, purchasing equipment, adapting green technologies, supporting early stage investigators and diversity
  ▪ Additional funding and extensions to K awards will be considered when transitioning to a faculty position
National Institute for Allergy and Infectious Diseases
- $1.12B in NIH ARRA funds allocated to NIAID
- Required to spend out by September 2011
- >75% “goes to unsolicited research project grants that were submitted for funding in FY2008 and FY2009 but didn’t receive it”
  - Funds will be targeted towards projects that “generate meaningful results within two years”
- Select stated funding priorities:
  - Two-year R01s up to the 25 percentile
  - Two-year R21s and R03s up to a 179 priority score
  - Extending some R56-Bridge awards by an additional year
- Grants for new and early-stage investigators as well as supplements for existing grants will also be considered
FUNDING OPPORTUNITIES & PRIORITIES

NIH DIRECTOR’S OFFICE CHALLENGE GRANTS

- Upwards of $200M for competitive Challenge Grants
  - Focus on health- & science- problems, 15 topic areas identified
  - New program and award mechanism
  - NIH-wide RFA
    - Guidelines already released
  - Smallest component of the NIH Stimulus Program
  - Standard NIH review process
    - September Start-Date for Funding
  - 2 year awards ≤$500K in total costs per year
  - Note: the Director’s Office will retain approximately $600 to $700M at its discretion for other projects, including Challenge Grants
FUNDING OPPORTUNITIES & PRIORITIES
NATIONAL CENTER FOR RESEARCH RESOURCES

• $300M targeted towards new instrumentation programs
  ▪ Shared Instrumentation Program & High End Instrumentation Program
    • RFAs and application deadlines posted on NIH web
    • Penn has coordinated the responses to adhere to NIH guidelines

• $1B targeted towards facilities improvement programs
  ▪ Extramural Research Facilities Improvement Program & Core Facility Renovation, Repair, and Improvement
    • RFAs and application deadlines posted on NIH web
    • Limited number of institutional proposals allowed, 5 total
    • Awards vary in dollar amount, max of $15M
    • Deadlines staggered on a monthly basis, starting in May
    • President has convened an advisory committee to review proposals and make recommendations for her consideration
      – Proposals will be reviewed in light of University-wide priorities, maximum potential award value to Penn, and the likelihood of an award being made
FUNDING OPPORTUNITIES & PRIORITIES
NSF ALLOCATIONS OF INTEREST TO PENN

- $2B for competitive research grants
- $300M for major research instrumentation
- $200M for Academic Research Infrastructure program
  - Competitively awarded lab construction grants primarily at Universities
- $100M Education and Human Resources appropriation
  - $60 million to the Noyce Teacher Scholarship Program
  - $25 million to the Math and Science Partnerships program
  - $15 million to a new Professional Masters Science Program
- $400M for Major Research Equipment and Facilities Construction
  - Construction of major research facilities with unique capabilities at the cutting edge of science
Funding Opportunities & Priorities
NSF Research Award Process

- New proposals will not be solicited
- Funds will not be used to supplement existing awards
- Awarded funds will be employed to improve NSF research proposal success rate
  - 24,000 unresolved proposals under review
    - 8,000 have been completed
    - 3,000 have been rated “very good” or “better” and are ready to be funded
    - NSF could spend its entire $3B funding just these projects
- Law may permit NSF to forward fund not just annual awards (unlike NIH)
FUNDING OPPORTUNITIES & PRIORITIES
NIST FUNDING AND PRIORITIES

• $600M in additional funds
  ▪ $220 million for supporting competitive grants for measurements, research and documentary standards support advancing NIST’s mission and national support; research fellowships and the purchase of advanced measurement and research equipment for NIST
  ▪ $180 million for NIST laboratory construction
  ▪ $180 million for a competitively awarded extramural construction grants program
  ▪ $20 million transfer from HHS to support the development and testing of standards for computerized medical records
**FUNDING OPPORTUNITIES & PRIORITIES**

**DOE DESIGNATED FUNDING ALLOCATIONS**

- $2.5B for energy efficiency and renewable research, development, demonstration, and deployment projects, including:
  - $800M set aside for biomass
  - $400M for geothermal energy
  - $50M for Information and Communications technology
- $1B for fossil energy appropriation, which will fund R&D related to cleaner coal, oil, and gas technologies
- $1.6B from DOE Office of Science for extramural research, DOE laboratory research, facilities upgrades and construction, and advanced scientific computing
- $400M from DOE Office of Science for the ARPA-E (Advanced Research Projects Agency - Energy)
FUNDING OPPORTUNITIES & PRIORITIES
OTHER AGENCIES

• DOD, $200M for energy related R&D
• Agency for Healthcare Research and Quality (AHRQ), $300M
  ▪ Health care comparative effectiveness research
• NASA, $1B
  ▪ $400M for the Science portfolio of earth science, planetary science, heliophysics, and astrophysics
  ▪ $150M in stimulus funding for aeronautics research
  ▪ $400M in development funding to Constellation Systems to narrow the looming gap in U.S. human space flight capabilities between the 2010 retirement of the Space Shuttle and the 2015 launch of its replacement
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CHALLENGES & INSTITUTIONAL PREPAREDNESS

UNCERTAINTIES

• Agency-specific funding mechanisms are not finalized and are not public
  ▪ Proposal submission process
  ▪ Review and award mechanisms

• Communication of funding priorities from some agencies remain unidentified
  ▪ DOE, Office of Science and DOD

• Harmonization of stimulus package with FY2009 Omnibus and FY2010 budget
CHALLENGES & INSTITUTIONAL PREPAREDNESS
PENN CONSIDERATIONS

• Coordinate and prioritize grant proposals where appropriate
  ▪ Examples: construction projects, major and shared research instrumentation, or, any case where the number of applications is limited
• Evaluate work flow and capabilities in all other offices that support sponsored programs
  ▪ Provide temporary incremental resources to accommodate the potential additional work load as needed, e.g. HR, ORS, IRB, IACUC, etc
  ▪ Communications from IRB and IACUC concerning just-in-time protocols
• Need to develop mechanism for sharing best practices in developing school/institutional response
• Need to ensure Central Administration partners with schools to assist in responding to ARRA opportunities
• Need to establish a task force to deal with the challenges both proactively and as they arise: ORS, ORSS, Finance, PennERA, FRES, HR
CHALLENGES & INSTITUTIONAL PREPAREDNESS
PENN CONSIDERATIONS

• Develop University communication strategy including email alerts, website

• Enhance ORS proposal and award tracking to comply with OMB guidelines when they are announced including:
  ▪ Setup separate funds for any stimulus funds received
  ▪ Quarterly reports that show funds obligated and expended
  ▪ Evaluation of completion status
  ▪ Estimate of number of jobs created and retained
  ▪ Pull back of awards if project is not progressing and redirected to other awards
    ▪ *May* permit expenditures after September 2011 if money is obligated before then

• Continued diligence on COI
Questions and Discussion