

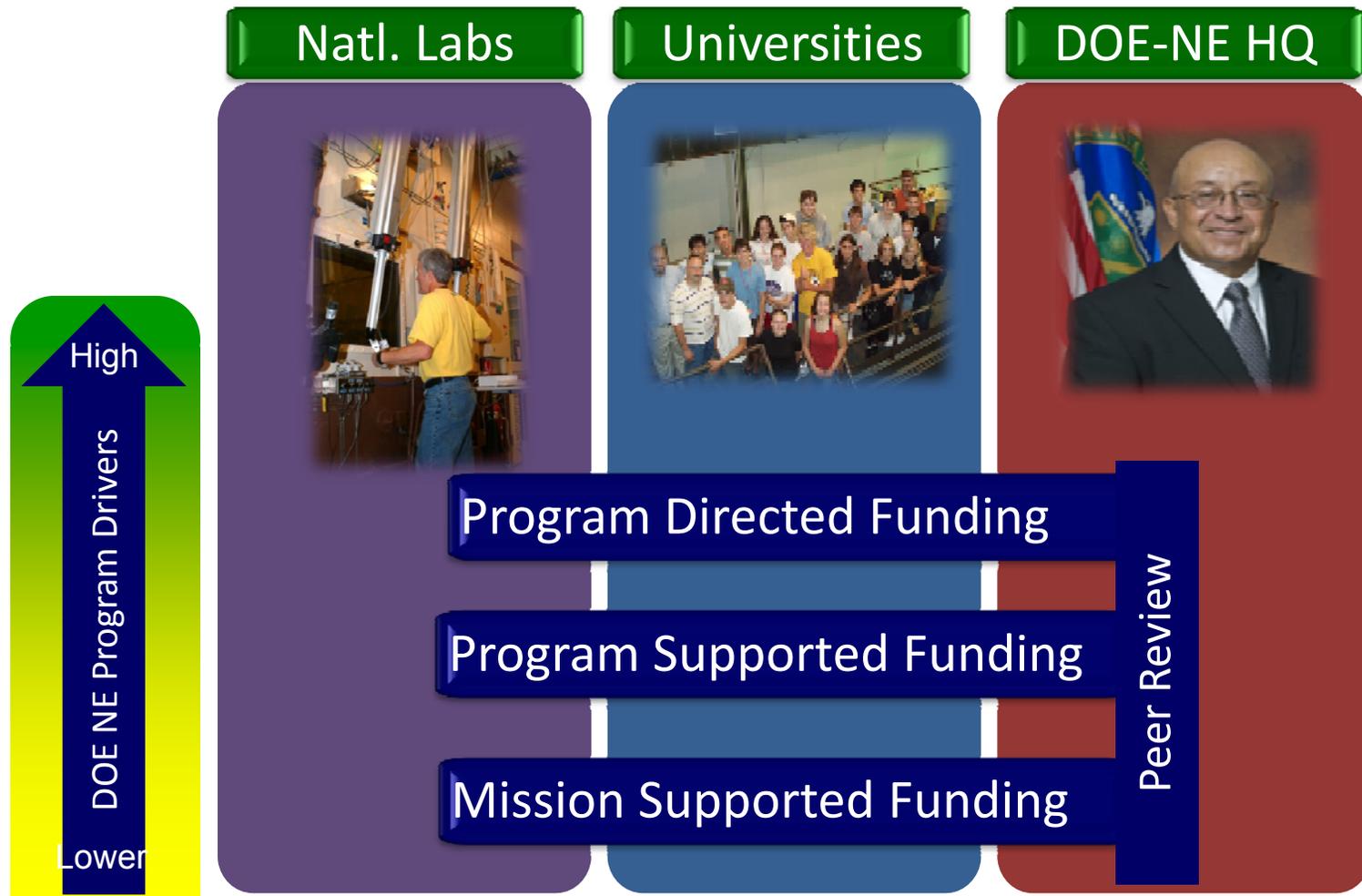


FY 2011 University Program Implementation

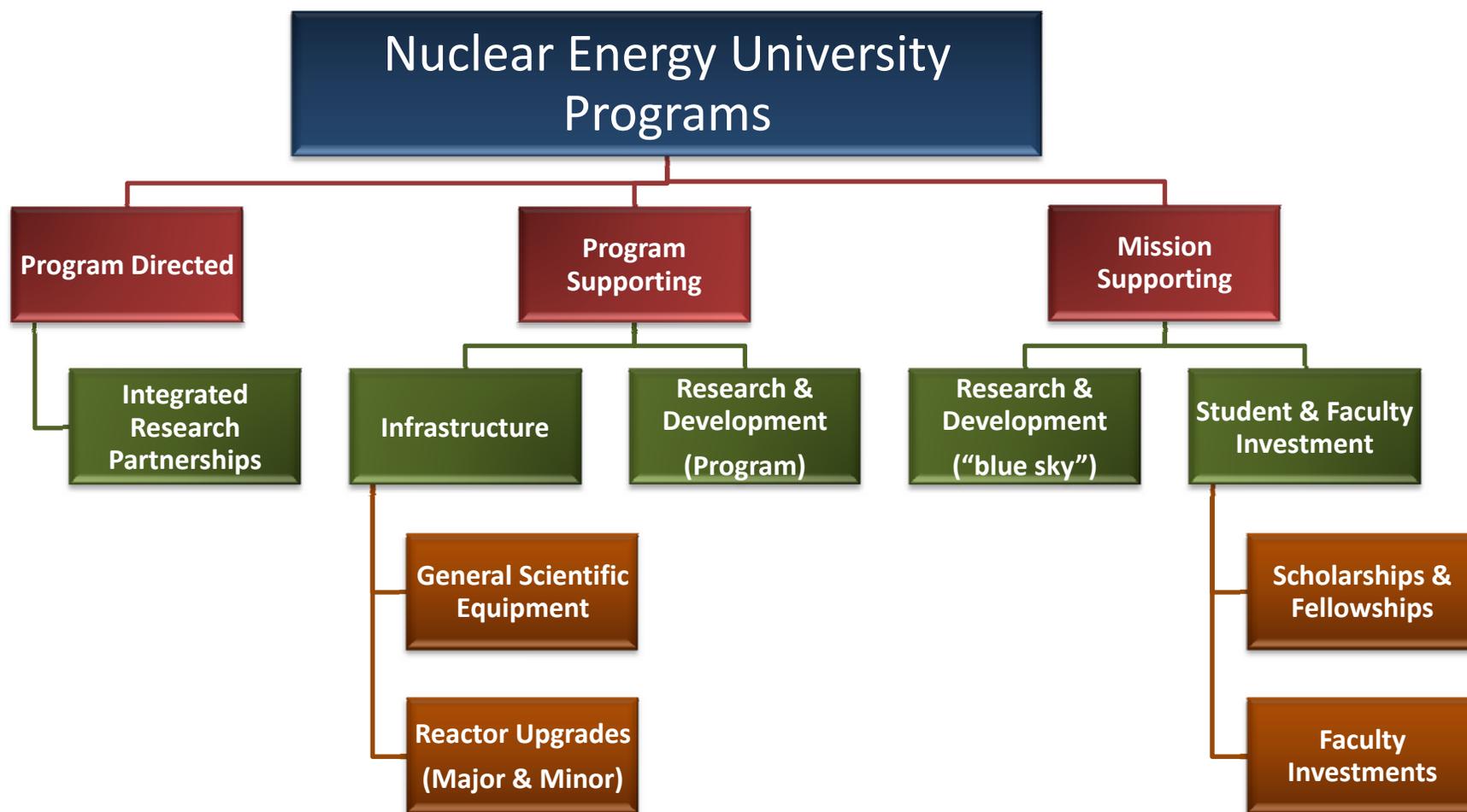
Presented by Dr. John Gilligan



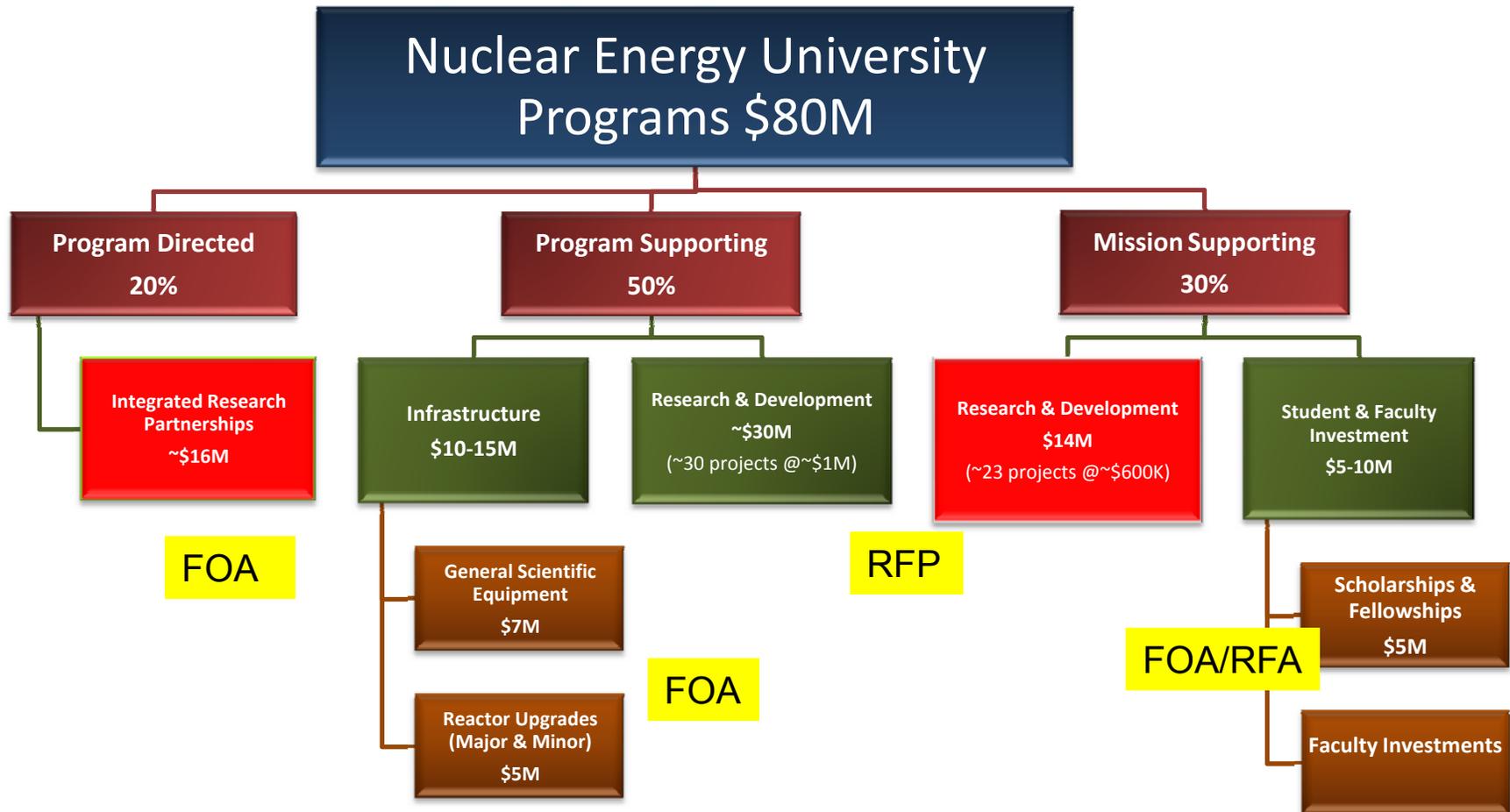
Funding to Universities is Program Driven



Proposed New NEUP Structure



Breakdown for Sample \$80M Budget



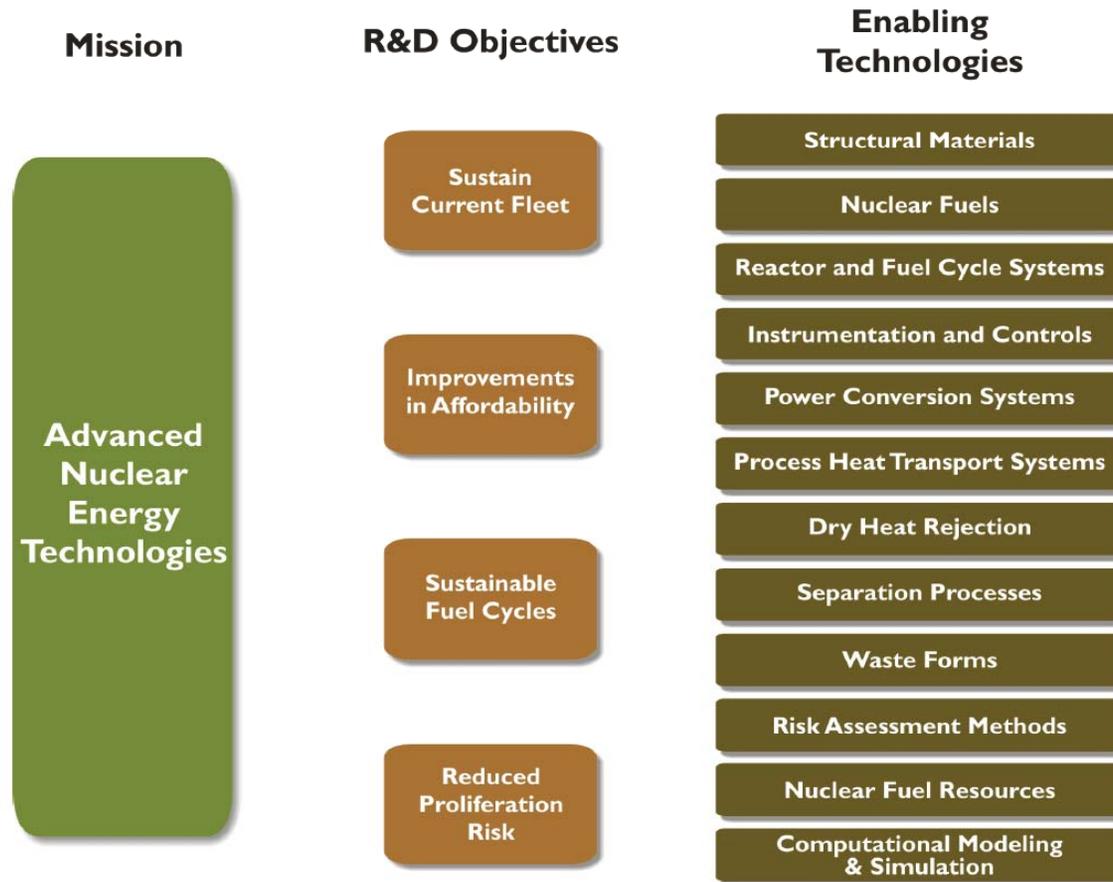
2011 Congressional Budget Request

	R&D "Bins" (general and project descriptions will be given)	2011 budget request to Congress (\$M)
Reactor Concepts (\$195M)	Small Modular Reactors	\$38.88
	Next Generation Nuclear Plant	\$103.03
	Light Water Reactor Sustainability	\$25.76
	Advanced Reactor Concepts	\$21.87
Fuel Cycle R&D (\$201M)	Sep. & Waste Forms	\$31.32
	Advanced Fuels	\$40.00
	Systems Analysis & Integration	\$15.66
	Materials Protection, Accountancy, and Controls for Transmutation	\$7.81
	Used Nuclear Fuel Disposition	\$45.00
	Modified Open Cycle*	\$40.00
NEET	Crosscutting Technology Development: Reactor Materials, Proliferation Risk Assessment, Adv., Adv. Sensors & Instrumentation, Modeling and Simulation	\$43.32

*FCR&D funds to be allocated under other FCR&D Bins

2010 DOE-NE Road Map

Figure 7. NE Mission, R&D Objectives, and Technologies



Bins and Breakout Sessions

		Modeling and Simulation	Sep. Waste Forms and Used	Safety and Licensing	Safeguards and	Materials	Power Conversion	Neutronics	Nuclear Instrument. &	Reactor Designs	Systems Analysis	Nuclear Fuels	Nuclear Physics
Reactor Concepts	Small Modular Reactors	X							X	X			
	NGNP	X				X		X	X		X	X	
	LWRS			X		X			X		X		
	Advanced Reactor Concepts	X				X	X			X	X		
Separations and Waste Forms	Sep. & Waste Forms		X										
	Advanced Fuels											X	
	Transmutation R&D												X
	Systems Analysis & Integration.										X		
	MPACT				X				X				
	Used Fuel Disposition		X										
Nuclear Energy Enabling Technologies	Reactor Materials					X							
	Proliferation Risk Assessment				X								
	Adv. Sensors & Inst.								X				
	Advanced Modeling & Simulation			X		X							X

Example: SMR Program Bin

Break Out Sessions will be organized according to technical area such as Small Modular Reactors, Mod and Sim, Nuclear Fuels, Neutronics, etc.

For Example:

Small, Modular Reactors: Many of these designs use well-established light-water coolant technology. However, these designs may include new features, such as the use of integral primary system reactor design and components that are not currently used in commercial plants.

Sample Abbreviated Workscopes:

- *SMR Integral System Test Programs, The development of a reconfigurable integral testing platform for multiple designs*
- *SMR Instrumentation and Control, Measurements, diagnostics, prognostics, controls, plant operations, architectural infrastructure*

Mission Supporting “Blue Sky”

- Nuclear Energy mission relevant, creative, innovative, research.
- Proposals should be relevant to NE's mission though may not fully align with the solicitations specific initiatives and programs.
- Examples include NS&E research in the fields or disciplines of
 - Nuclear Engineering
 - Nuclear Materials Science
 - Radiochemistry
 - Nuclear Physics
 - Health Physics
 - Nuclear Chemistry

Program Directed Integrated Research Partnerships

- Nuclear Energy Program Directed partnership between two or more Universities to address a specific need of the program or solve an identified problem
 - Scope of request to be defined by the programs
 - Develop a capability in a broad technical area
 - Example: Develop Advanced Molten Salt Reactor Testing Capability

Proposed Integrated Research Partnerships(IRP) and Blue Sky Programs

- IRPs(PD) focused on theme with deliverables(ex. separations)
 - Multidisciplinary and Multi-institutional
 - \$2.5M per year for three-six years
 - Based on DNDO, NSF models
 - Technical Quality Weight (peer review) – 50%
-
- Blue Sky(MS) projects increased in number, scope and total investment
 - Blue Sky covers all program areas along with fundamental nuclear studies
 - Technical Quality Weight (peer review)– 80%

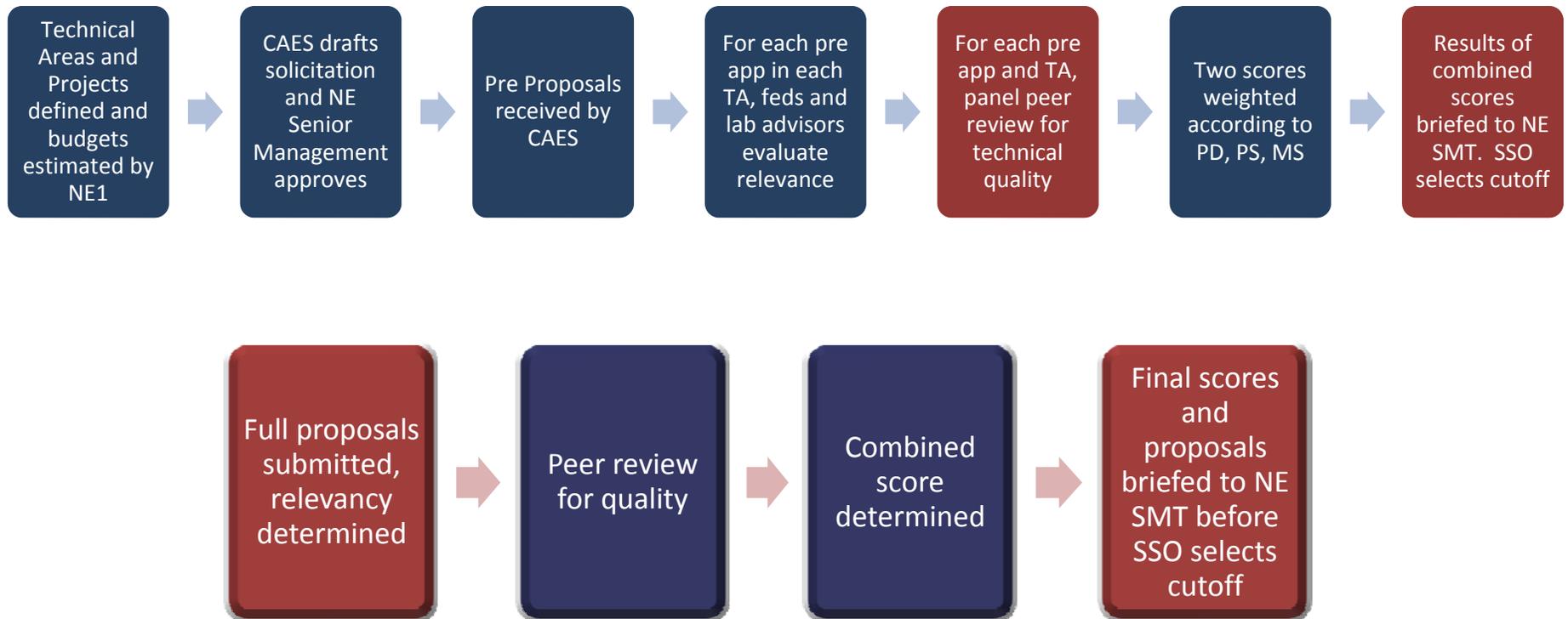
2011 Proposed Schedule

NEUP Program 2011	Proposed Schedule 2011	RPA/FOA	Pre Apps Due	Proposals Due	Awards Announced
	R&D (PS and Blue Sky)	Oct. '10	Nov.'10	Feb.'11	May '11
	Integrated Research Partnerships(PD)	Jan. '10	Mar. '11	May '11	June '11
	Infrastructure Equipment Reactors	Dec. '11		Feb.'11	May '11
	Scholarships and Fellowships	Nov. '11		Jan. '11	April '11

Reviewer Qualification and Database for 2011

- New reviewer data base created and maintained
- Qualifications based on experience and expertise
- Reviewers pre-approved by DOE-NE and reported to DOE
- Will integrate reviewer database with proposal review system
- Conflict-of-interest stringently implemented
- More qualified reviewers needed!
- Data base sign up at this Workshop

New Review Process for R&D Pre-applications and Full Proposals



Red color indicates new step

R&D Awards(2010), Enhanced Blue Sky Will Add More Variety of Projects for 2011

- Overall – Awards/Full Submissions – 42/128
- Awards to PIs for first time– 29
- Awards to junior faculty – 20
- Awards to Nuclear Engineering Faculty – 18
- Awards in materials and waste – 30
- Awards that are experimental – 30
- Number of universities receiving awards – 26
- Number of awards with lab partners - 20
- Number of universities receiving awards for first time – 8

R&D Projects are Judged Individually – Perceived Institutional Reputation is Not a Factor

Number of NEUP Awards for FY 2009 and FY 2010

USNWR Ranked in 2010		2009	2010
1	University of Michigan, Ann Arbor	4	5
2	University of Wisconsin, Madison	10	5
3	Massachusetts Institute of Technology	2	0
4	Texas A&M University (Look)	5	0
5	Pennsylvania State University	0	3
	University of California, Berkeley	2	2
7	North Carolina State University	7	2
8	Georgia Institute of Technology	2	1
9	Oregon State University	0	0
	University of Florida	2	0
	University of Tennessee	0	2
12	Purdue University	0	0

R&D Projects are Judged Individually – Perceived Institutional Reputation is Not a Factor

Number of NEUP Awards for FY 2009 and FY 2010

Ranked in 2010		2009	2010
	University of Illinois, Urbana-Champaign	1	0
14	Rensselaer Polytechnic Institute	2	2
15	The Ohio State University	3	1
16	University of Missouri, Columbia	2	2
	University of New Mexico	1	0
18	Missouri University of Science & Technology	1	0
Others			
	Idaho State University	2	3
	University of Idaho	5	0
	University of Nevada, Las Vegas	5	2
	University of Cincinnati	1	2

Coming to the Web Soon: Technical Points of Contact

TECHNICAL Breakouts FOR NEUP Workshop (*Possible alternates)	FEDERAL POC	TECHNICAL POC
Reactor Concepts Research Development and Deployment (RCRD&D): Shane Johnson/Sal Golub		
Small Modular Reactors	Tim Beville (301) 903-8251 Timothy.belville@nuclear.energy.gov	Dan Ingersoll (865) 574-6102 Ingersolldt@ornl.gov
Next Generation Nuclear Plant*	Carl Sink (301) 903-5131 Carl.sink@nuclear.energy.gov (VHTR SSC, Hydrogen) Pete Pappano (301) 903-8293 Pappanopj@ornl.gov (Materials)	Dave Petti (208) 526-7735 David.petti@inl.gov (Fuels) Richard Wright (208) 526-6127 Richard.wright@inl.gov (HT Alloys)

Summary of Proposed New Programs and Procedures for 2011

- Programs:
 - Potential Larger NEUP Budget
 - Integrated Research Partnerships (PD)
 - Expanded Blue Sky(MS)
 - Faculty Development

- Procedures:
 - Peer reviewer qualification process and database
 - Enhanced Peer Review Process and Feedback
 - Fewer technical bins and worksopes with broader reach
 - Improved review workflow for Scholarships/Fellowships and Infrastructure programs

Continuous Improvement

- Feedback from survey
- Effective outreach/workshops
- NEUP IO Exec Committee
 - Corradini(NEAC), Fentiman(NEDHO), Butler(TRTR), Nash, Lewis, Hines
- Meetings with NEAC, NEDHO, TRTR, others
- Integration with Labs, other agencies, industry
- Congressional and public advocacy

New NEUP R&D Collaboration Models

- R&D based on deliverables, applied programs (similar to 6.1, 6.2, university projects for DOD agencies), except for Blue Sky
- Frequent contact required – PIs and Lab
- Visits, white papers to key program leaders
- Joint faculty positions: INL, ANL, ORNL, PNNL...
- Interns, temporary appointments
- Joint proposals, publications, ATR/NSUF
- Look where Lab Directed Research and Development \$ are going

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Reviewer Database

Objective: Develop a web-based tool to aid in the selection of reviewers for proposal review including verification of expertise and document reviewer activities

Direct request from the Under Secretary of Energy to “develop a plan of peer review and reviewer quality and recruitment processes and practices.”

- The request specified managing conflict of interest, ascertaining the “quality of reviews,” as well as the “quality of reviewers.”

Reviewer Database

The intent of this database is to:

- Capture reviewer information
 - Provide a suite of filtering and selection tools based on reviewer data
 - Compile reviewer activities and outcomes
 - Allow automated reviewer update and maintenance of information
 - Enable verification of reviewers
- Can establish a user account and begin populating the database at the workshop!