

# PPPL Institutional Presentation

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**Office of Fusion Energy Sciences  
Budget and Planning Meeting  
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# PPPL Participates In Almost All Facets of the OFES Program

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- **Science**

- Tokamak Exp. Research

- DIII-D, C-Mod

- Int. Tokamaks, Diagnostic

- Alternative Concept Exp. Res.

- NSTX, NCSX, QPS

- Exp. Plasma Res (Alts)

- FRC, Univ. Support

- Inertial Fusion Energy

- Theory

- Fusion Plasma Theory

- Advanced Computing

- General Plasma Science

- MRX

- **Facility Operations**

- DIII-D, C-Mod

- NSTX

- NCSX

- QPS, GPP/GPE

- Burning Plasma Exp.

- **Enabling R&D**

- Plasma Tech. (CDX-U)

- Fusion Tech. (APEX)

- Adv. Design and Analysis

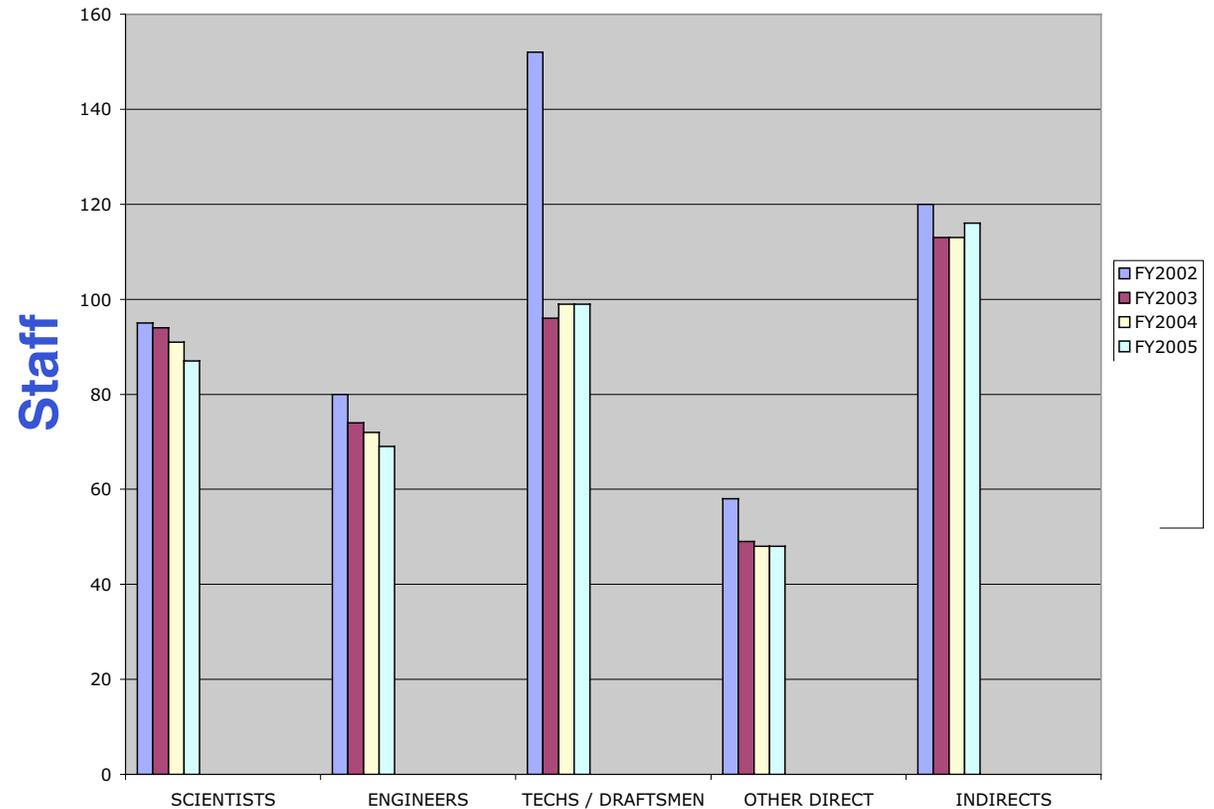
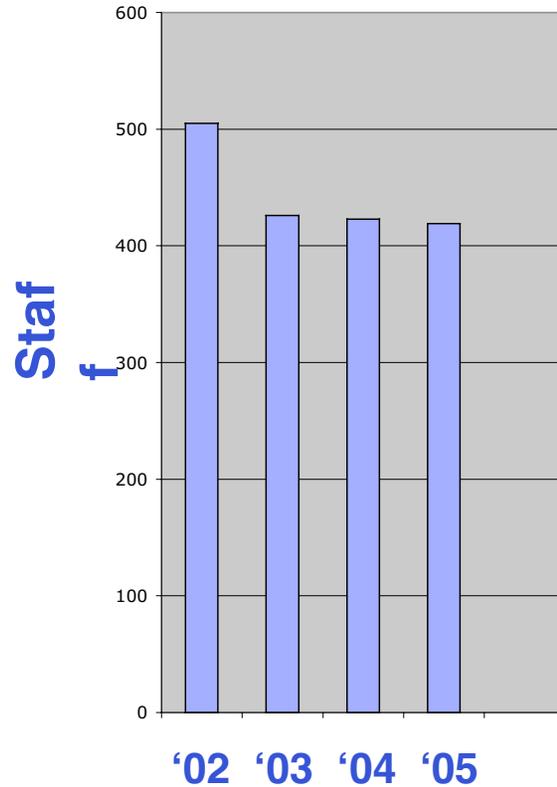
# Budget Requirements to Support OFES Programs

	FY 2002	FY 2003	FY 2004		FY 2005	
	BA	BA	Base	Incr.	Base	Incr.
<b>NSTX</b>	<b>24.4</b>	<b>26.1</b>	<b>30.4</b>	1.0	<b>30.4</b>	2.6
<b>NCSX</b>	<b>4.3</b>	<b>9.5</b>	<b>14.9</b>	0.4	<b>20.5</b>	
<b>QPS</b>	<b>0.1</b>	<b>0.3</b>	<b>0.3</b>	0.4	<b>0.3</b>	2.4
<b>FIRE</b>	<b>0.7</b>	<b>0.8</b>		0.9		0.9
<b>ARIES / Socioecon. Studies / ALPS</b>	<b>0.5</b>	<b>0.5</b>	<b>0.1</b>	0.4	<b>0.1</b>	0.4
<b>DIII-D / C-Mod Collaborations</b>	<b>6.4</b>	<b>6.7</b>	<b>6.5</b>	1.5	<b>6.5</b>	2.0
<b>International Collaborations</b>	<b>3.2</b>	<b>3.1</b>	<b>1.7</b>	1.7	<b>1.7</b>	1.7
<b>Theory/SciDAC</b>	<b>6.5</b>	<b>6.8</b>	<b>6.8</b>	0.8	<b>6.8</b>	1.1
<b>PS&amp;T (CDX-U / MRX / MNX / Diag..)</b>	<b>3.5</b>	<b>3.9</b>	<b>4.0</b>	0.8	<b>4.0</b>	0.7
<b>NSF Collaborations (MRX / MRI)</b>				0.6		0.6
<b>Beam Propagation in HIF</b>	<b>1.1</b>	<b>1.3</b>	<b>1.1</b>	1.0	<b>1.1</b>	1.7
<b>Science Education</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	0.1	<b>0.6</b>	0.1
<b>GPP / GPE / TFTR D&amp;D.....</b>	<b>17.9</b>	<b>1.9</b>	<b>2.0</b>		<b>2.0</b>	0.2
<b>Other</b>	<b>0.3</b>		<b>0.0</b>		<b>0.0</b>	
<b>Total Fusion Energy Sciences</b>	<b>69.6</b>	<b>61.4</b>	<b>68.5</b>	9.6	<b>74.1</b>	14.3
<b>ITER Costing Studies</b>		<b>0.5</b>	<b>2.0</b>		<b>2.0</b>	

**PPPL science budget is down \$1.4M in '04.**



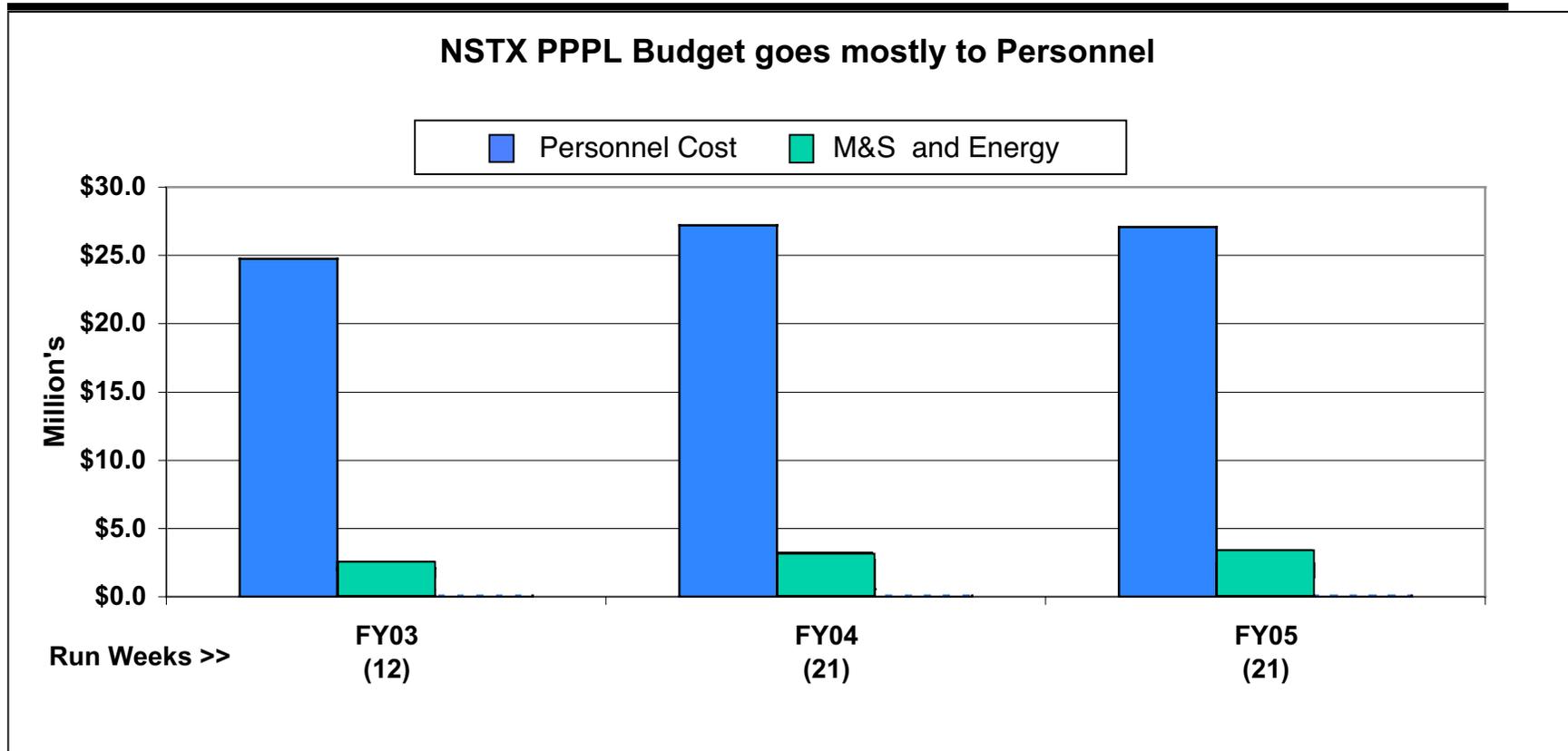
# Staffing Requirements



**Increased support for PPPL scientists and engineers in off-site research could assist in research and operations, and help sustain key PPPL areas of expertise.**



# NSTX Budget Goes Mostly to Personnel



- Energy expense goes up due to increased run weeks but M&S for upgrade remains very modest.

# Financial Issues

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- Ratio of sum of labor costs, fixed costs, and long lead procurements to total budget is high.
  - **Releasing seven additional staff in FY'03.**
- New provisions of DOE contract require increasing Institutional GSO from \$5M to \$7.6M.
- Waste management costs (\$0.95M) transferred from D&D to Projects in FY'03.
- Change in indirect allocations transferred \$550k from project funding to support of Safeguards and Security
- Emphasis by Office of Science on supporting Lab infrastructure requires increasing GPP and maintenance by \$500k by FY'05.

# Impact of a 10% Reduction

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- **Staffing Impact**

- Reduction of 40 staff (research, engineering, technical, and administration)
- Impact of severance ~20 additional losses.
- Loss of multiple core competencies.

- **Programmatic Impact**

- Reduce NSTX run weeks from 21 to 11 in FY'04 and 21 to 8 in FY'05
- First Plasma on NCSX slips by ~6 months and cost increases by ~\$2M.
- Increase in Laboratory's deferred maintenance backlog by 10-15%.
- Increase risk to the Laboratory's ability to meet environmental and other regulations.

# Summary

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- **PPPL participates in, and supports, the broad portfolio of research activities in OFES**
- **We construct and operate collaborative facilities for the community.**
- **We collaborate on other national and international off-site facilities.**
- **During the construction phase for NCSX, PPPL research and engineering staff could support a greater level of off-site collaboration.**