

U.S. Fusion Energy Sciences Program

Fusion Program Leaders Conference Call

February 2, 2004

www.ofes.fusion.doe.gov

Excellent Science in Support of Attractive Energy

Summary of Fusion Energy Sciences FY 2005 Program

ITER

- o Direct Funding of \$7M: \$1M for procurement of S/C Wire; \$6M in reserve awaiting selection of organization to host U.S. Project Office and other decisions
- o \$38 M in resources from throughout the program will support preparation for U.S. tasks

Science (\$150.8 M, +\$0.1 M)

- o +\$1 M for MST
- o No \$3 million increase for SciDAC/FSP as planned
- o No increase of \$0.8 M for NCSX research in support of construction
- o All other programs funded at about FY 2004 appropriations level

Facilities Operations (\$85.5M, +\$1 M)

- o ITER direct funding +\$4 M
- o Operation of facilities reduced from FY 2004 plan of 18 weeks each to 14 weeks each (-\$3.2 M)
- o NCSX kept at FY 2004 level instead of the planned \$4.8 M increase
- o Funding for ORNL move stretched out

Enabling R&D (\$27.8M, \$+\$0.4 M)

- o Fusion Technologies closed out in FY 2004, some parts moved to Plasma Technologies
- o FIRE program wrapped up with Physics Validation Review in FY 2004
- o Materials Research reduced \$0.2 M

NCSX Project

Due to funding constraints, the funding profile for the NCSX project is being changed

- Previous Plan, total cost \$69-83 M, completion in FY 2007
- New Plan total cost \$87-\$89 M, completion in FY 2008

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>
New Profile	7,897	15,921	15,921	22,100	19,400	5,100
Previous Profile	7,897	15,921	20,397	17,800	11,485	

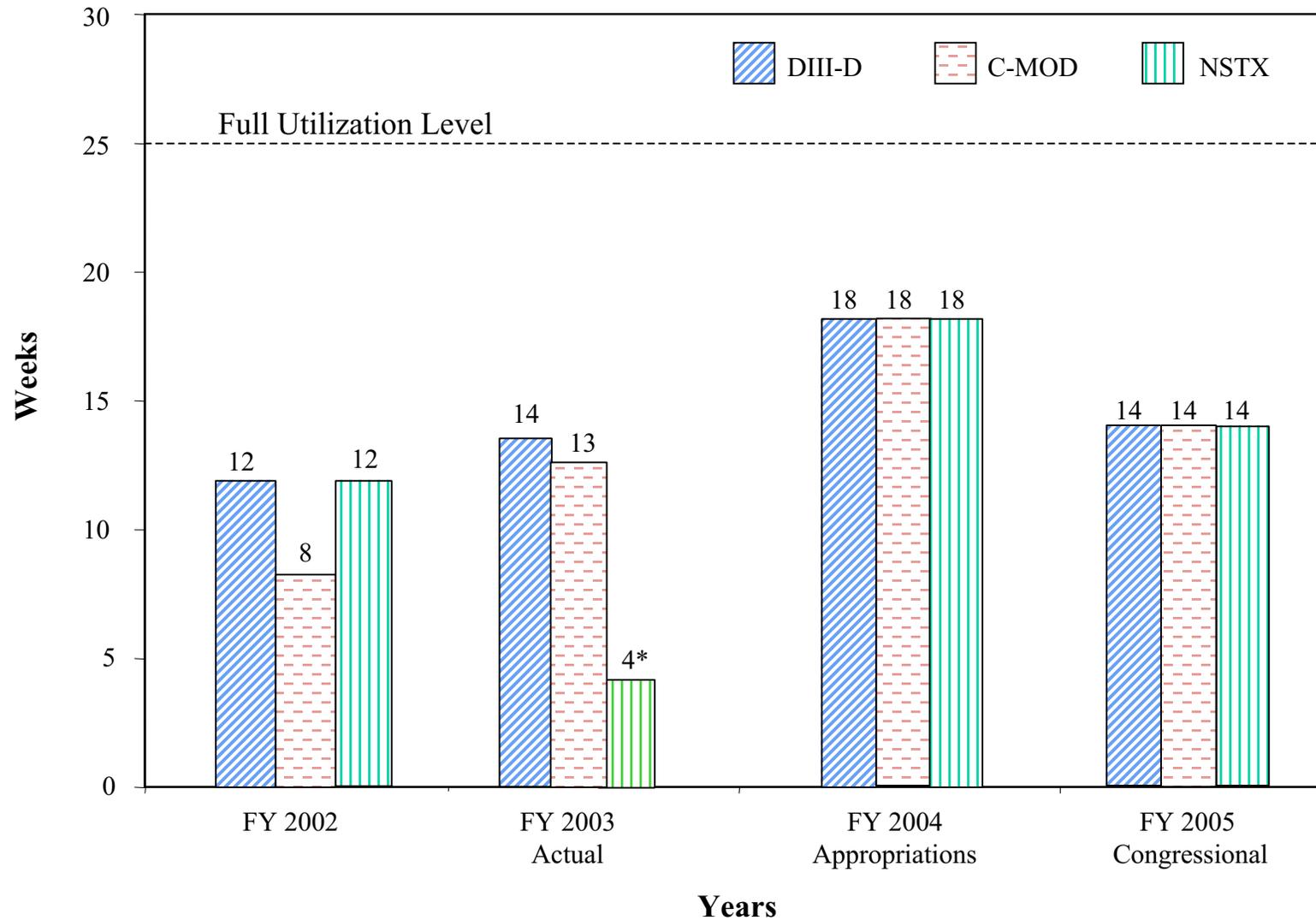
Fusion Program Resources in Preparation for ITER

<u>Elements</u>	<u>FY 2004 Approp.</u>	<u>FY 2005 Cong.</u>
Fusion Plasma Theory and Computation (SciDAC)	\$1,000,000	\$3,000,000
DIII-D Experimental Program	3,000,000	10,000,000
Alcator C-Mod Experimental Program	1,000,000	5,000,000
ITER Preparations	3,000,000	7,000,000
Plasma Technology	<u>0</u>	<u>13,000,000</u>
<i>Total</i>	<i>\$8,000,000</i>	<i>\$38,000,000</i>

FY 2005 Fusion Energy Sciences President's Budget Request

	FY 2003 <u>Actual</u>	FY 2004 <u>Approp.</u>	FY 2005 <u>Cong.</u>
Science	136.2	143.9	144.0
Facility Operations	66.2	84.5	85.5
Technology	38.3	27.4	27.8
SBIR/STTR	<u>6.2</u>	<u>6.8</u>	<u>6.8</u>
<i>OFES Total</i>	<i>246.9</i>	<i>262.6</i>	<i>264.1</i>
DIII-D	51.9	56.0	54.0
C-Mod	19.2	22.2	21.5
NSTX	30.1	34.7	33.6
NCSX	11.7	16.7	16.7
IFE/HEDP	17.0	15.1	13.9

Major Fusion Facilities Operating Times



*NSTX operating time was reduced due to the failure of one of the magnetic coils in February. Operations are expected to begin again this month.

Fusion Energy Sciences Budget by Institution

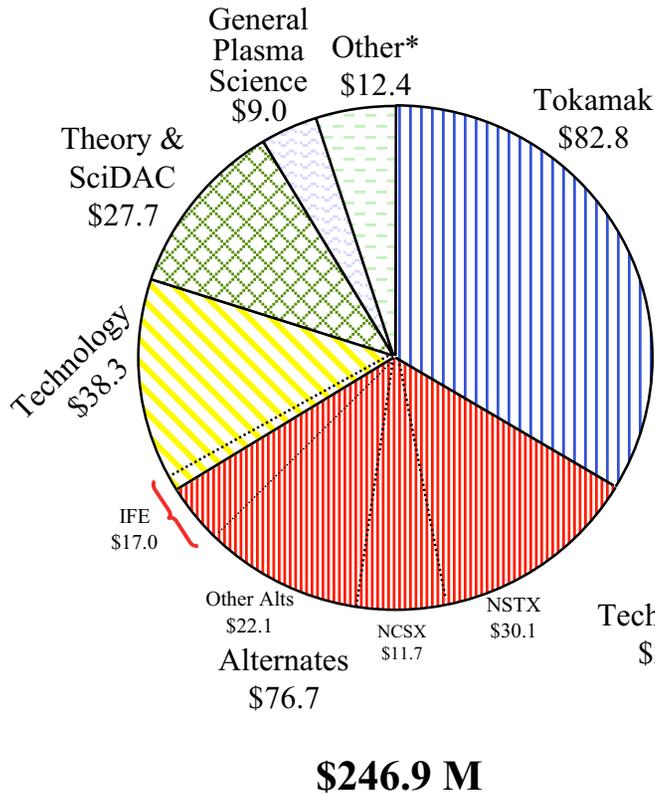
(\$ in Millions)

<u>Institution</u>	FY 2003 <u>Actual</u>	FY 2004 <u>Approp.</u>	FY 2005 <u>Cong.</u>
General Atomics	46.1	49.0	47.2
Lawrence Berkeley National Lab	6.1	5.9	5.9
Lawrence Livermore National Lab	14.1	14.3	13.4
Los Alamos National Lab	6.7	3.9	3.6
Oak Ridge National Laboratory	20.9	20.3	19.9
Princeton Plasma Physics Lab	62.2	70.5	68.0
Massachusetts Institute of Technology	22.8	26.9	26.9
Other Universities	46.6	47.7	47.6
All Other	<u>21.4</u>	<u>24.1</u>	<u>31.6</u>
<i>Total</i>	<i>246.9</i>	<i>262.6</i>	<i>264.1</i>

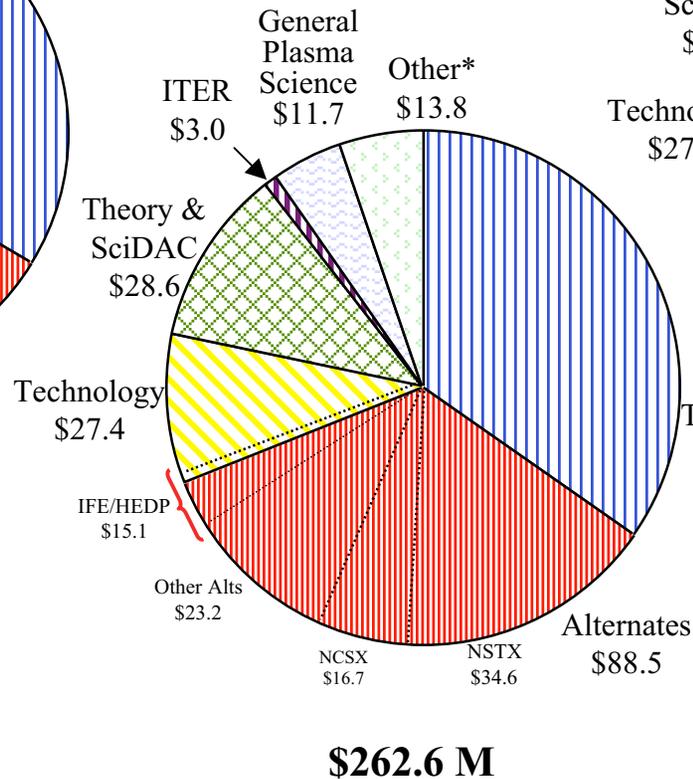
Fusion Energy Sciences Budget

(\$ in Millions)

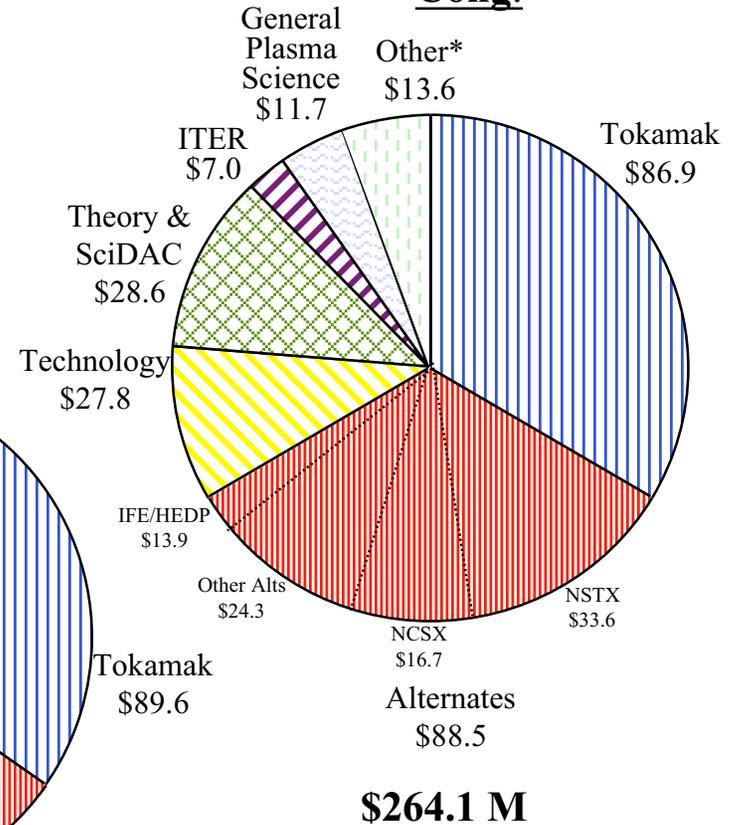
**FY 2003
Actual**



**FY 2004
Approp.**

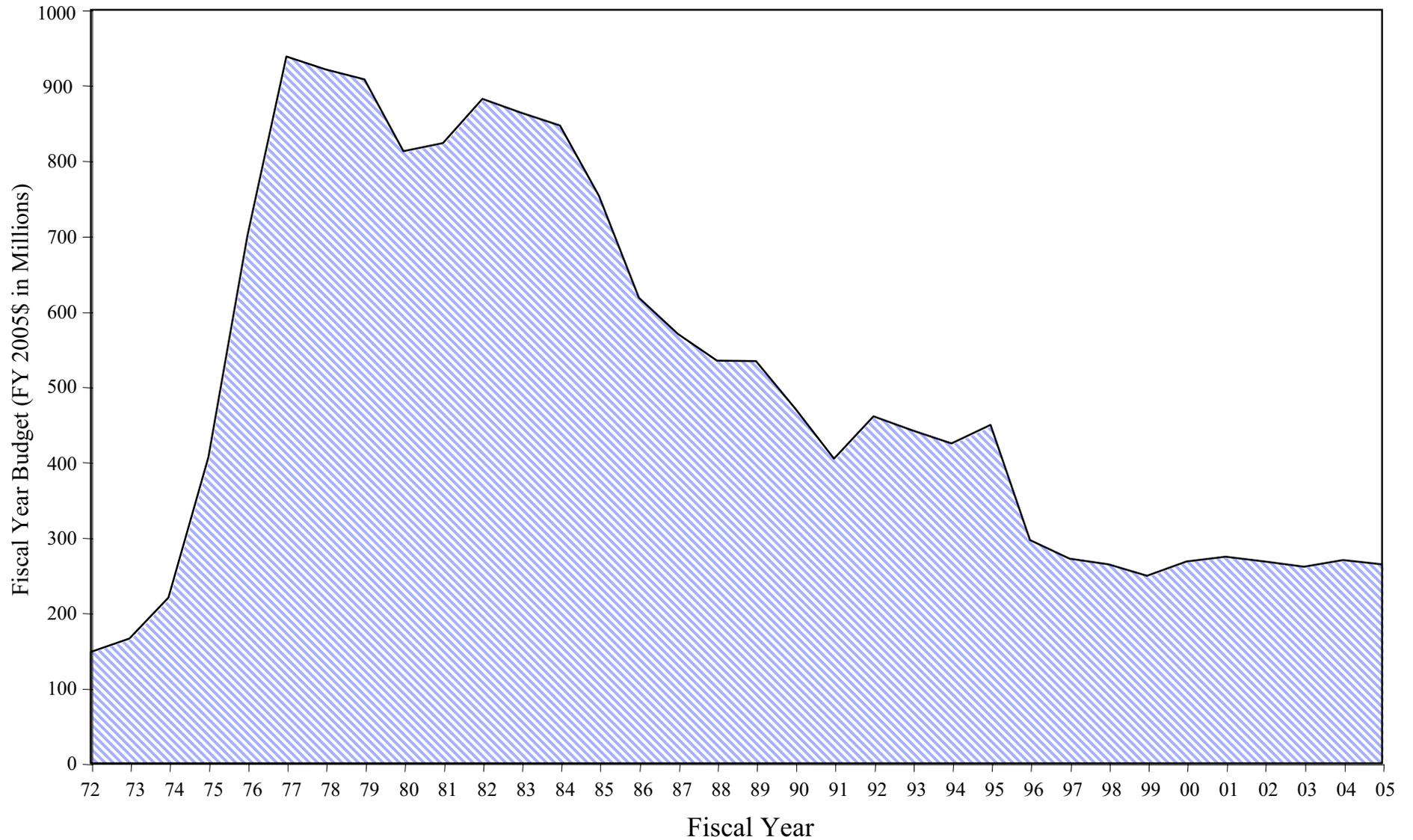


**FY 2005
Cong.**



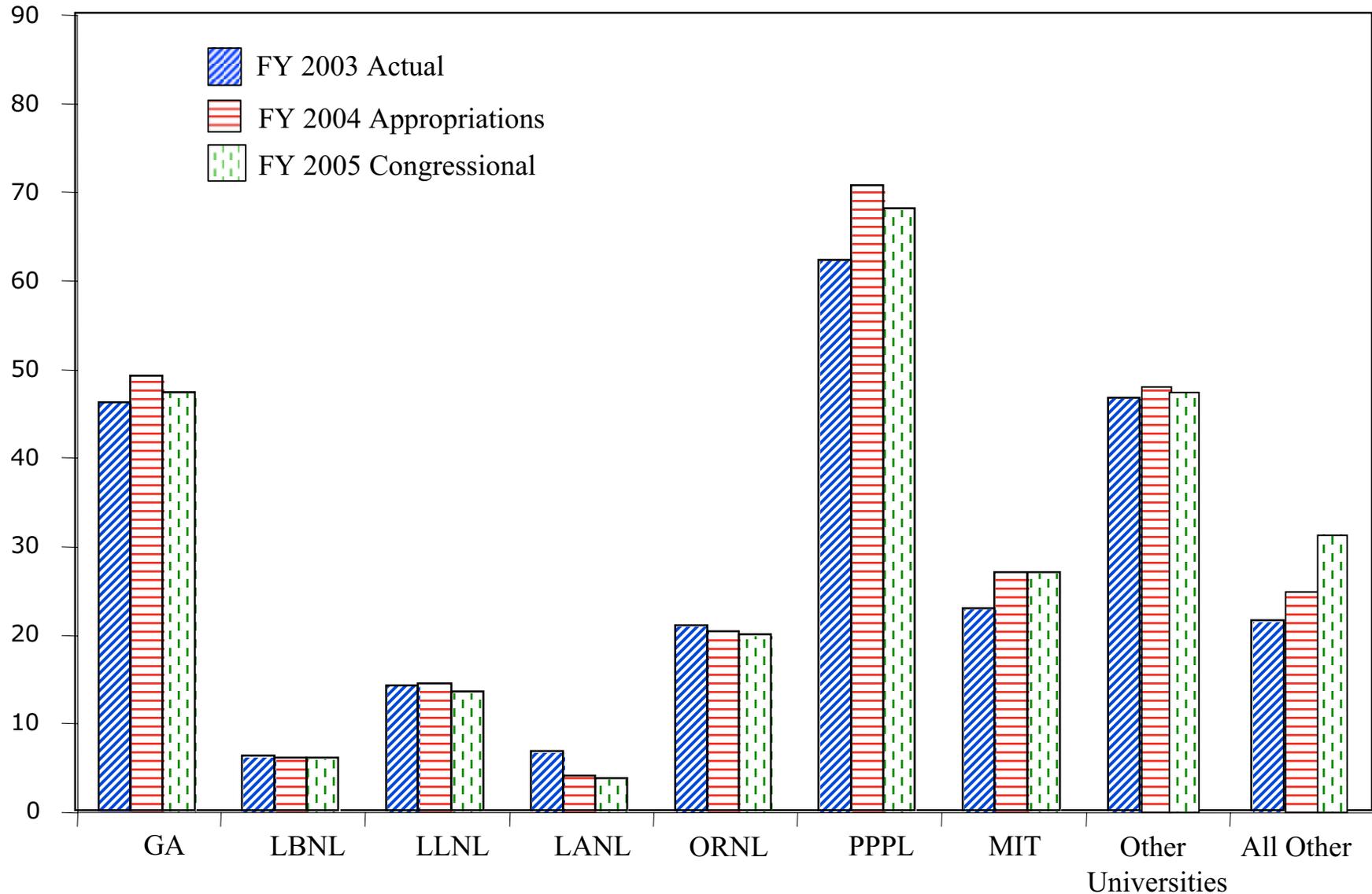
*SBIR/STTR
GPP/GPE
ORNL Move
Reserve
Environmental Monitoring

U.S. Fusion Energy Sciences Budget History



Fusion Energy Sciences Funding by Institution

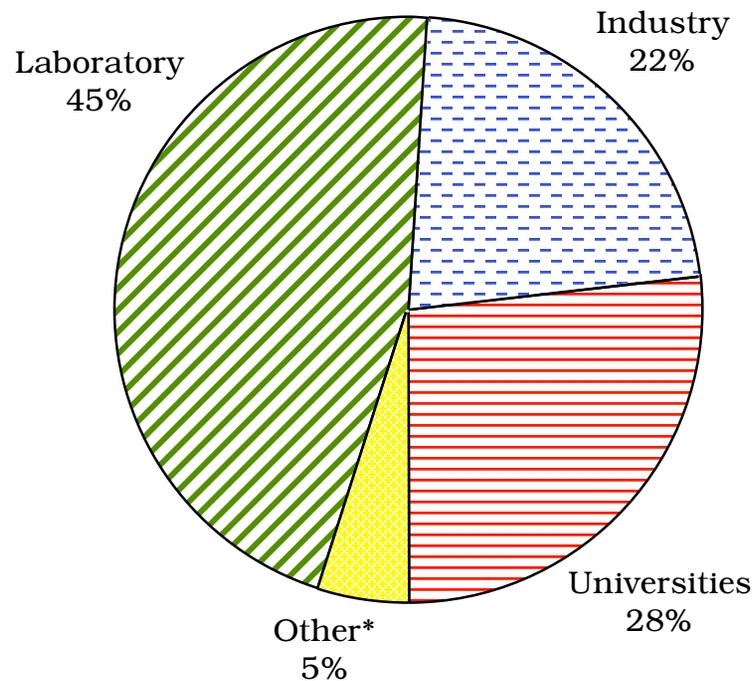
(\$ in Millions)



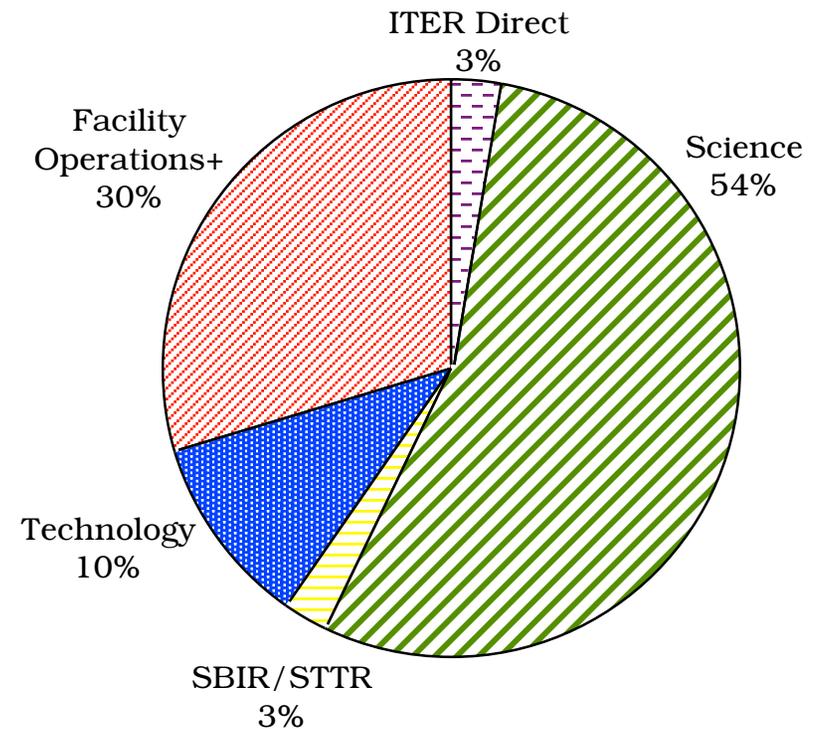
Fusion Energy Sciences Funding Distribution

FY 2005 Congressional
\$264.1M

Institution Types



Functions



*NSF/NIST/NAS/AF/Undesignated funds

+Includes NCSX Project

Fusion Energy Sciences University Funding

(\$ in Millions)

	FY 2003 <u>Actual</u>	FY 2004 <u>Appropriations</u>	FY 2005 <u>Congressional</u>
Massachusetts Institute of Technology	22.8	26.9	26.9
Other Universities	<u>46.6</u>	<u>47.7</u>	<u>47.6</u>
<i>Total University</i>	<i>69.4</i>	<i>74.6</i>	<i>74.5</i>
 <u>By Subprogram</u>			
Science	46.3	51.0	50.1
Facility Operations	10.8	13.8	13.6
Technology	<u>12.3</u>	<u>9.8</u>	<u>10.8</u>
<i>Total University</i>	<i>69.4</i>	<i>74.6</i>	<i>74.5</i>