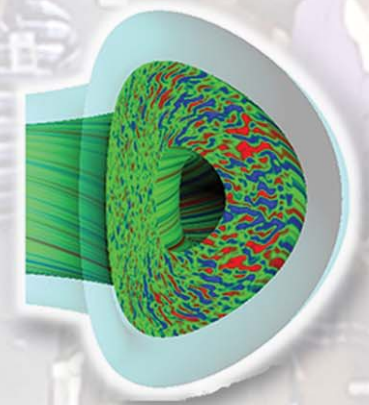
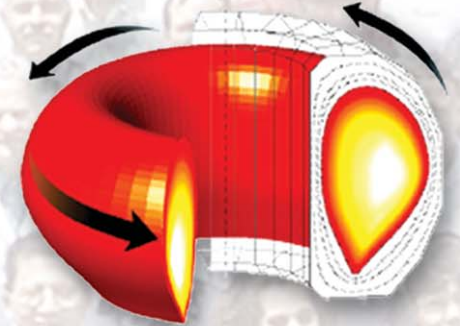


# Wrapup Discussion

by  
R.D. Stambaugh

Presented to  
DIII-D Program  
Advisory Committee

January 31–February 2, 2006



# DIII-D is a Large, International Program

- 90 institutions participate
- 515 active users
  - 119 GA
  - 396 others
- 317 scientific authors (2004)
  - 577 cumulative
- 1082 visits to GA (2000–2004)
- Students and faculty have been from
  - 65 universities
  - 28 states



Active Collaborations 2004

## US Labs

ANL (Argonne, IL)  
 LANL (Los Alamos, NM)  
 LBNL (Berkeley, CA)  
 LLNL (Livermore, CA)  
 ORNL (Oak Ridge, TN)  
 PPPL (Princeton, NJ)  
 SNL (Sandia, NM)

## Industries

Calabasas Creek (CA)  
 CompX (Del Mar, CA)  
 CPI (Palo Alto, CA)  
 Digital Finetec (Ventura, CA)  
 DRS (Dallas, TX)  
 DTI (Bedford, MA)  
 FAR Tech (San Diego, CA)  
 IOS (Torrance, CA)  
 Lodestar (Boulder, CO)  
 SAIC (La Jolla, CA)  
 Spinner (Germany)  
 Tech-X (Boulder, CO)  
 Thermacore (Lancaster, PA)  
 Tomlab (Willow Creek, CA)  
 TSI Research (Solana Beach, CA)

## US Universities

Auburn (Auburn, Alabama)  
 Colorado School of Mines (Golden, CO)  
 Columbia (New York, NY)  
 Georgia Tech (Atlanta, GA)  
 Hampton (Hampton, VA)  
 Lehigh (Bethlehem, PA)  
 Maryland (College Park, MD)  
 Mesa College (San Diego, CA)  
 MIT (Boston, MA)  
 Palomar (San Marcos, CA)  
 New York U. (New York, NY)  
 SDSU (San Diego, CA)  
 Texas (Austin, TX)  
 UCB (Berkeley, CA)  
 UCI (Irvine, CA)  
 UCLA (Los Angeles, CA)  
 UCSD (San Diego, CA)  
 U. New Mexico (Albuquerque, NM)  
 U. Rochester (NY)  
 U. Utah (Salt Lake City, UT)  
 Washington (Seattle, WA)  
 Wisconsin (Madison, WI)

## Russia

Ioffe (St. Petersburg)  
 Keldysh (Udmurtia, Moscow)  
 Kurchatov (Moscow)  
 Moscow State (Moscow)  
 St. Petersburg State Poly (St. Petersburg)  
 Triniti (Troitsk)  
 Inst. of Applied Physics (Nizhny Novgorod)

## European Community

Cadarache (St. Paul-lez, Durance, France)  
 Chalmers U. (Goteberg, Sweden)  
 CFN-IST (Lisbon, Portugal)  
 CIEMAT (Madrid, Spain)  
 Consorzia RFX (Padua, Italy)  
 Culham (Culham, Oxfordshire, England)  
 EFDA-NET (Garching, Germany)  
 Frascati (Frascati, Lazio, Italy)  
 FOM (Utrecht, The Netherlands)  
 Helsinki U. (Helsinki, Finland)  
 IPP-CNDR (Italy)  
 IPP (Garching, Greifswald, Germany)  
 ITER (Garching, Germany)  
 JET-EFDA (Oxfordshire, England)  
 KFA (Julich, Germany)  
 Kharkov IPT, (Ukraine)  
 Lausanne (Lausanne, Switzerland)  
 IPP (Greifswald, Germany)  
 RFX (Padova, Italy)  
 U. Dusseldorf (Germany)  
 U. Naples (Italy)  
 U. Padova (Italy)  
 U. Strathclyde (Glasgow, Scotland)

## Japan

JAERI (Naka, Ibaraki-ken, Japan)  
 JT-60U  
 JFT-2M  
 Tsukuba University (Tsukuba, Japan)  
 NIFS (Toki, Gifu-ken, Japan)  
 LHD  
 Hiroshima University (Japan)

## Other International

Australia National U. (Canberra, AU)  
 ASIPP (Hefei, China)  
 Dong Hau U. (Taiwan)  
 KBSI (Daegon, S. Korea)  
 KAERI (Daegon, S. Korea)  
 Nat. Nucl. Ctr. (Kurchatov City, Kazakhstan)  
 Pohang U. (S. Korea)  
 Seoul Nat. U. (S. Korea)  
 SWIP (Chengdu, China)  
 U. Alberta (Alberta, Canada)  
 U. of Kiel (Kiel, Germany)  
 U. Toronto (Toronto, Canada)

## BROAD INTEREST IS SHOWN IN THE 600 RESEARCH PROPOSALS FOR CY06-07

### FOREIGN

CEA Cadarache 6	FSZ Julich 7
EFDA-CSU 8	IPP Garching 7
ERM-KMS 1	JAERI 1
Euratom 2	U. Toronto 8
	UKAEA 11

Total: 51

### DOMESTIC

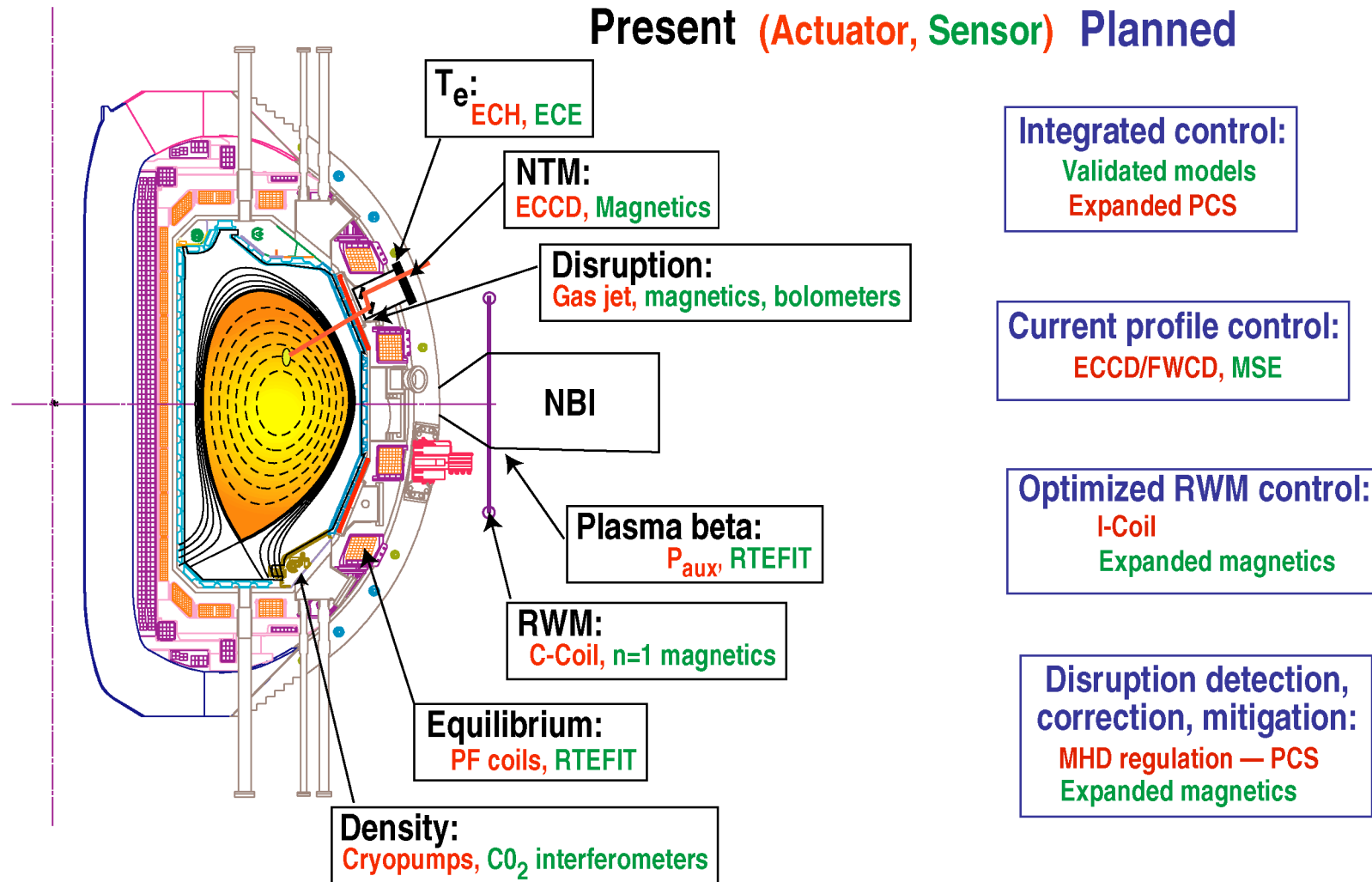
Columbia 22	ORNL 21
FarTech 4	PPPL 68
Georgia Tech 2	SNL 7
GA 283	UCI 6
Lehigh 2	UCLA 31
LLNL 44	UCSD 32
MIT 3	U. Texas 4
ORISE 3	U. Wisconsin 16

Total: 549

# The DIII-D National Fusion Program will Continue to Play a Key Role in the US Scientific Contribution to ITER and in Enabling the US to Benefit from its Participation in ITER

- DIII-D had a profound impact on the redesign of ITER
- DIII-D is developing the physics for key ITER issues and advanced ITER operation (hybrid and steady-state modes)
- Continued research on DIII-D will significantly advance the research program on ITER, reducing technical risk and saving expensive operating time
- DIII-D will be a principal training ground for the US research team for ITER

# The DIII-D Plasma Control System is the Forerunner for the ITER Control System



... in use on DIII-D, NSTX, MAST, planned for KSTAR, EAST

# DIII-D Can Be A Training Ground For U.S. ITER Researchers

- **22 U.S. universities participate in DIII-D now**
- **DIII-D has trained**
  - 31 graduate students
  - 26 post doctoral fellows
- **Post-Doc's work lead to significant contribution (e.g. IAEA 2004)**
  - W.M. Solomon (PPPL)
  - M. Groth (LLNL)
  - H. Reimerdes (Columbia)
  - E.M. Hollman (UCSD)



- **DIII-D can train more young researchers for ITER and the fusion program**