



World Class. Face to Face.

**2010 USTUR Scientific Advisory
Committee Meeting
July 28, On-line Meeting**

USTUR 5-y Grant Renewal Proposal (FY11-15)

Sergei Tolmachev, PhD

USTUR Director-Designate

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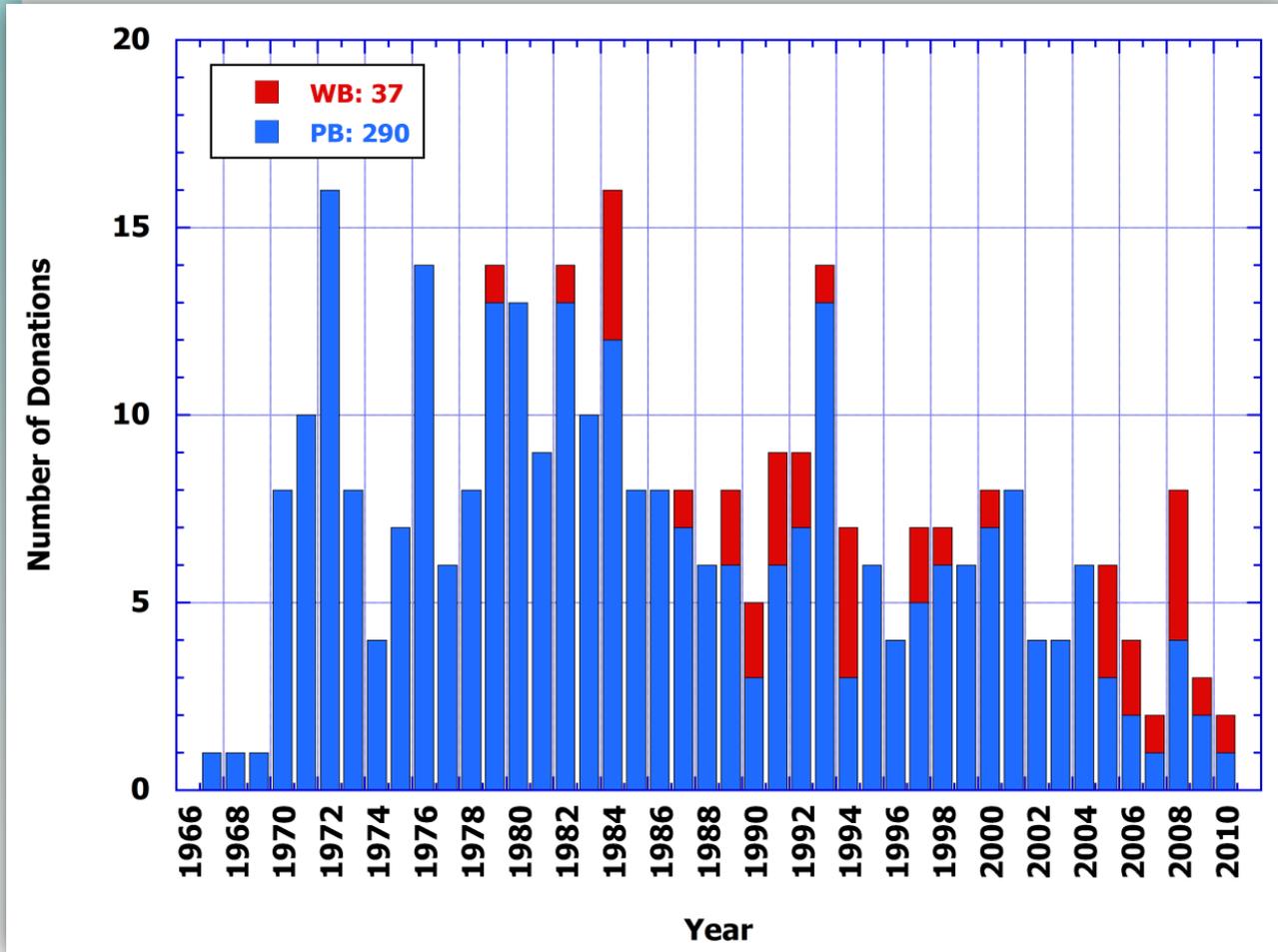
***“Learning from Plutonium and Uranium
Workers”***

USTUR 'Core' Functions

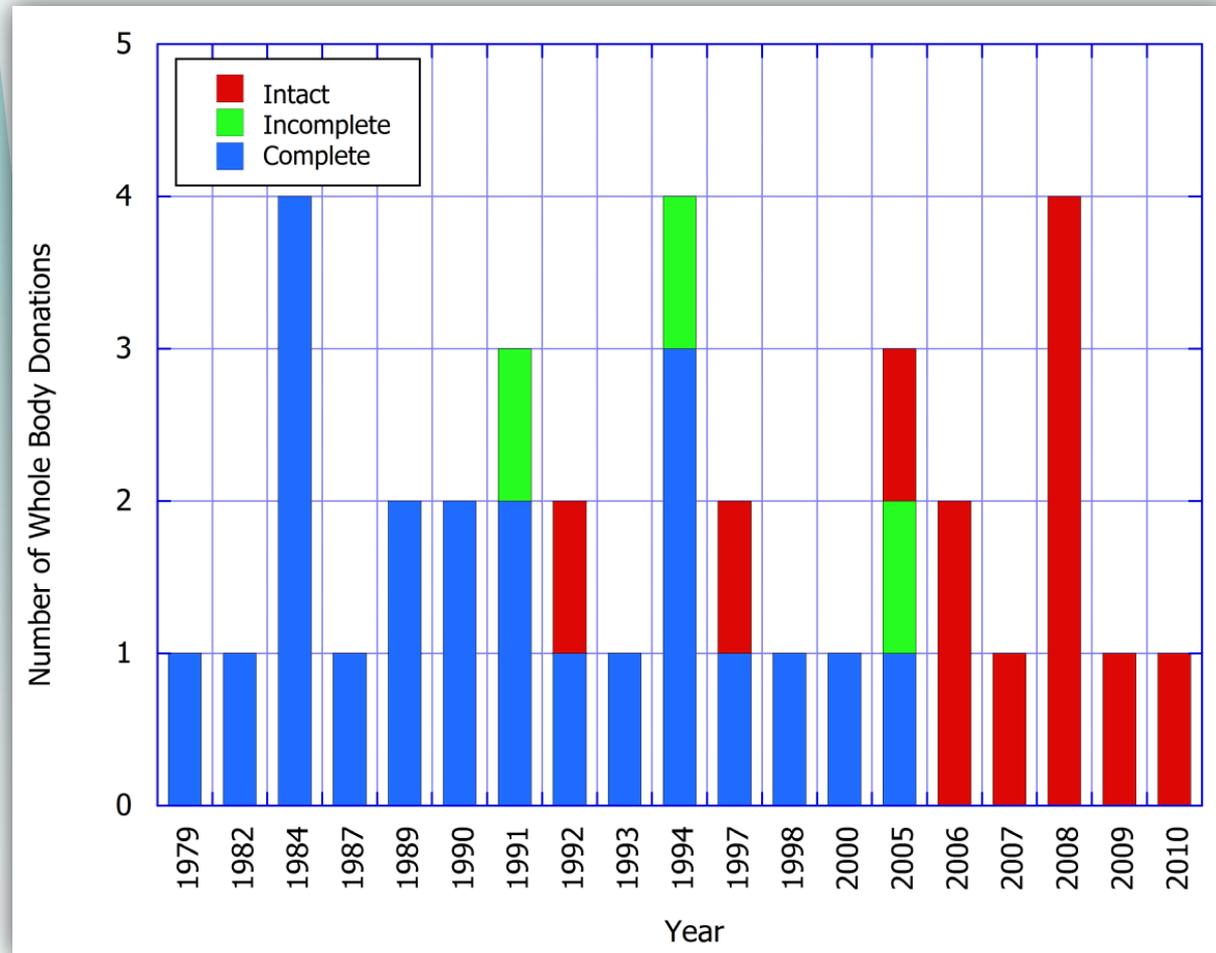
- ✓ **Accept Registrants' Tissue Donations**
- ✓ **Expediently Analyze Donated Tissues**
- ✓ **Populate a Searchable, Comprehensive Database of All Case Data**
- ✓ **Publish Results**



USTUR Donations



Radiochemical Analysis: WB



Tissue Analyses: Intact Cases

	Number of Samples (Cases)		
	^{241}Am	$^{238,239,240}\text{Pu}/^{241}\text{Am}$	$^{234,235,238}\text{U}$
WB	200 (1)	840 (7)	240 (2)
PB	--	480 (12)	40 (1)
Total	200 (1)	1320 (19)	280 (3)

Estimated Total Samples: 1800

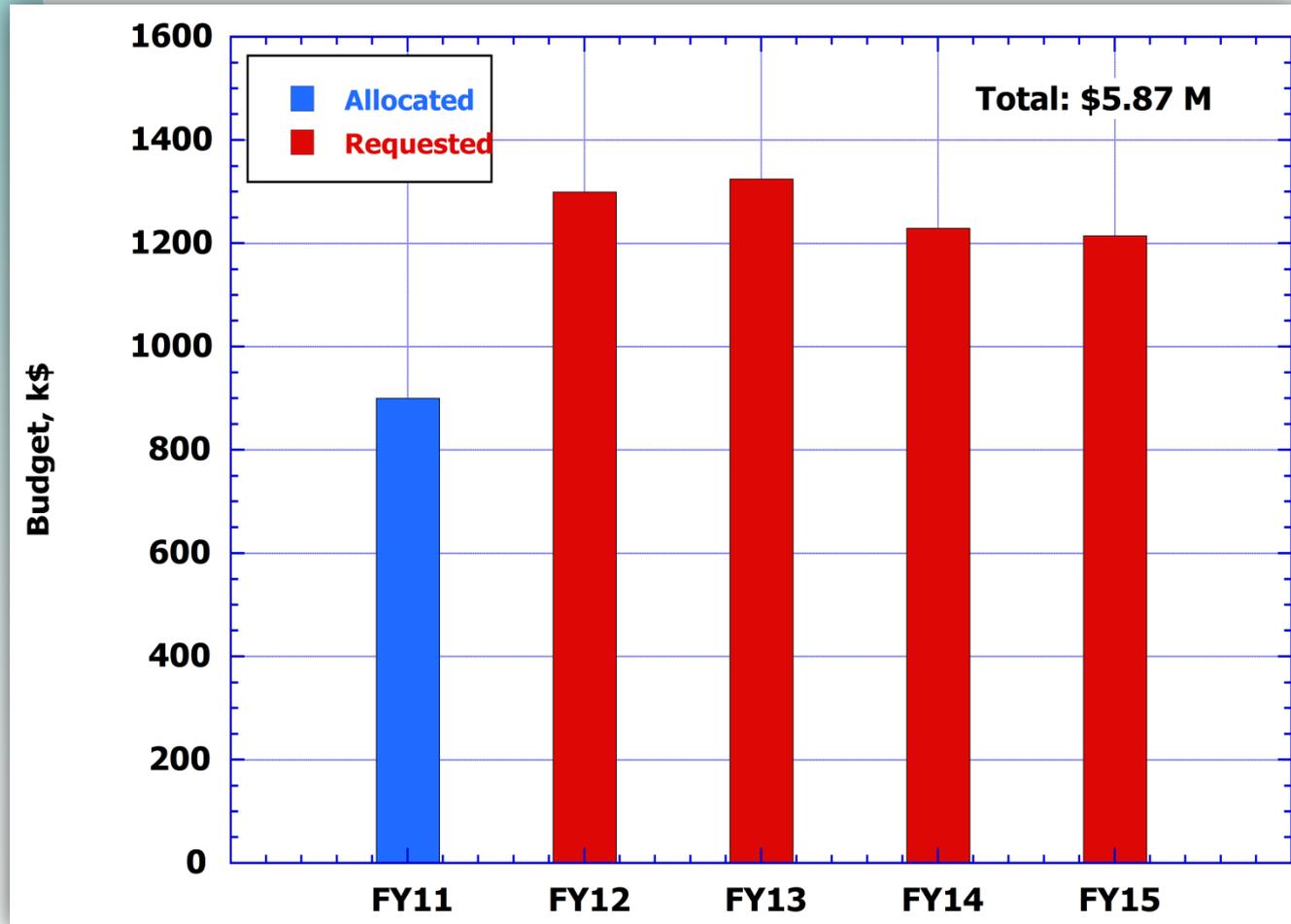
USTUR Inventory

USTUR/NHRTR holds **~5,300 frozen tissues**
and **~6,500 acid digested tissues**

- ✓ **2,840 tissues are inventoried in THEMIS**
- ✓ **Only 200 acid solutions are inventoried in THEMIS**



Proposed 5-y Budget



'Core' Activities: FY 2011

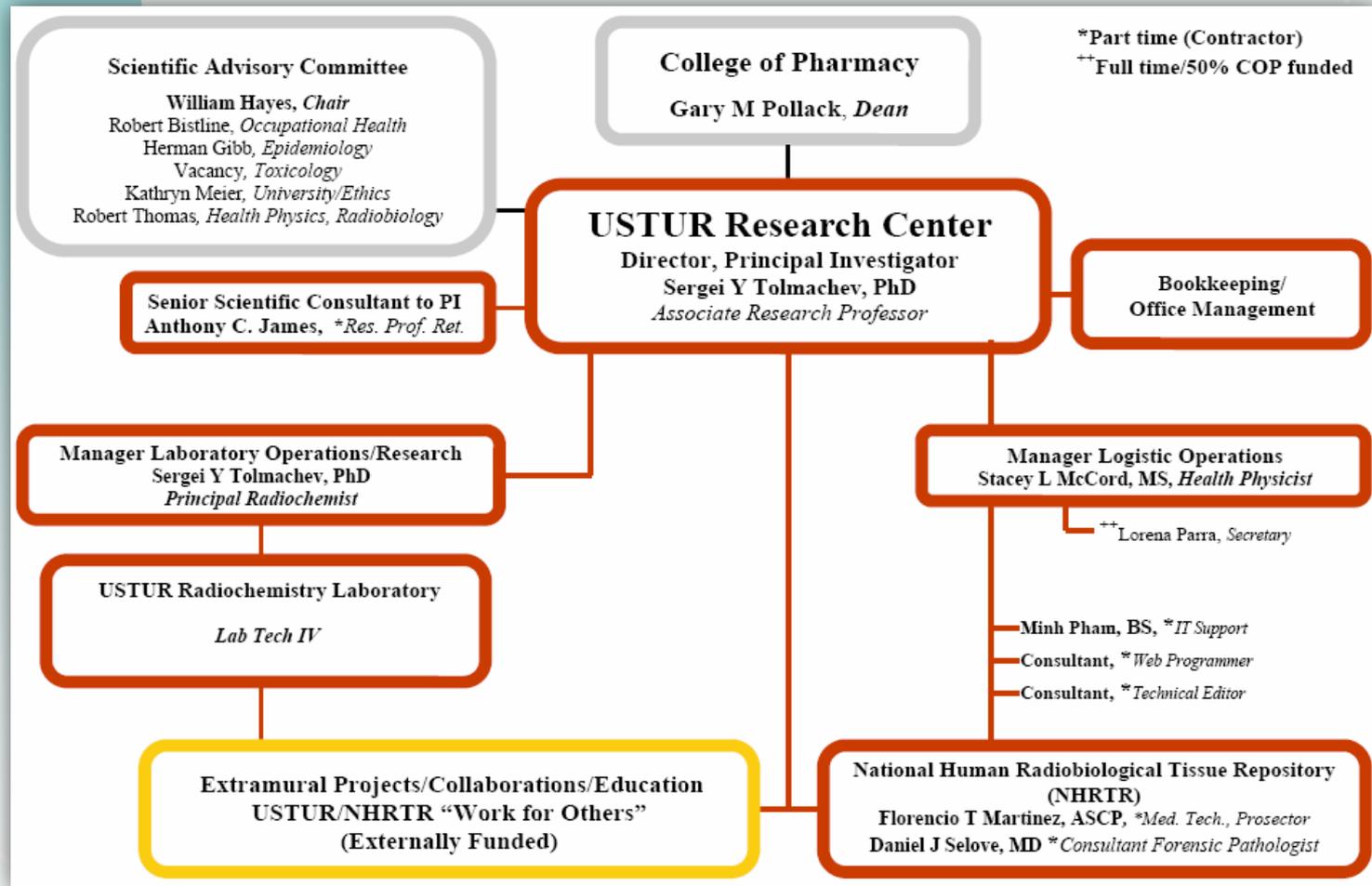
- **Accepting Registrant Tissue Donations / Dissection/ Tissue Samples Inventory**
 - ✓ Florencio Martinez (800 h) – personal contract; Students – WSU Nursing Program (Tri-Cities)
- **Analysis of Donated Tissues**
 - ✓ Lab Tech IV (new hire), SYT
 - ✓ Leasing of MW digesting system and purchasing of hot-block unit and electrodeposition system
 - ✓ 'Survey' Analyses of Intact Cases: 150 samples

'Core' Activities: FY 2011

- **Populate a Searchable, Comprehensive Database**
 - ✓ Stacey McCord, Lorena Parra, ACJ
- **Publish Results and Case Analyses**
 - ✓ ACJ, SLM, SYT, USTUR Research Center collaborators



USTUR 'Core' Structure: FY2011



USTUR Research Network

USTUR Research Center (Intramural Project)

Sergei Y Tolmachev, PhD, Director, *Associate Research Professor*

Radiochemistry/Mass Spectrometry

Sergei Y Tolmachev, PhD

- Expeditionary Analysis of Donated Tissues
- Application of New Actinide Separation Techniques
- Application of Advanced Measurement Techniques

Tissue Repository & Databases

Stacey L McCord, MS

National Human
Radiobiological Tissue
Repository (NHRTR)

Case Narratives, Health
Physics, Radiochemistry,
Pathology

Extramural Projects/Collaborations

- WSU, Pullman (Np, Cm)
- NAU, Flagstaff (U, Pu, Am)
- NWU, Chicago (Synchrotron XRF)
- HC, Ottawa (U, Pu)
- UMB, Norway (U, Pu, Am)
- U. Ghent, Belgium (U, Pu, Am, Be, Asbestos)
- UTS, Sydney (U, Pu, Be, Asbestos)
- U. Laval, Quebec (U, Be)
- SRS, Aiken (Be)

PNNL/Radiation Biology
William F Morgan, *Director*
Christopher E Nielsen, *WSU MS Student*
Additional PNNL Staff/Students

EURADOS/WG-7
Maria Lopez, *Chair*

EU/SOLO/HPA
John Harrison, *Coordinator*

Sabbatical Researcher
Bastian Breustedt, PhD, KIT

“Work for Others”

WSU, Tri-Cities
Nursing Program
Phyllis Morris, *Director*

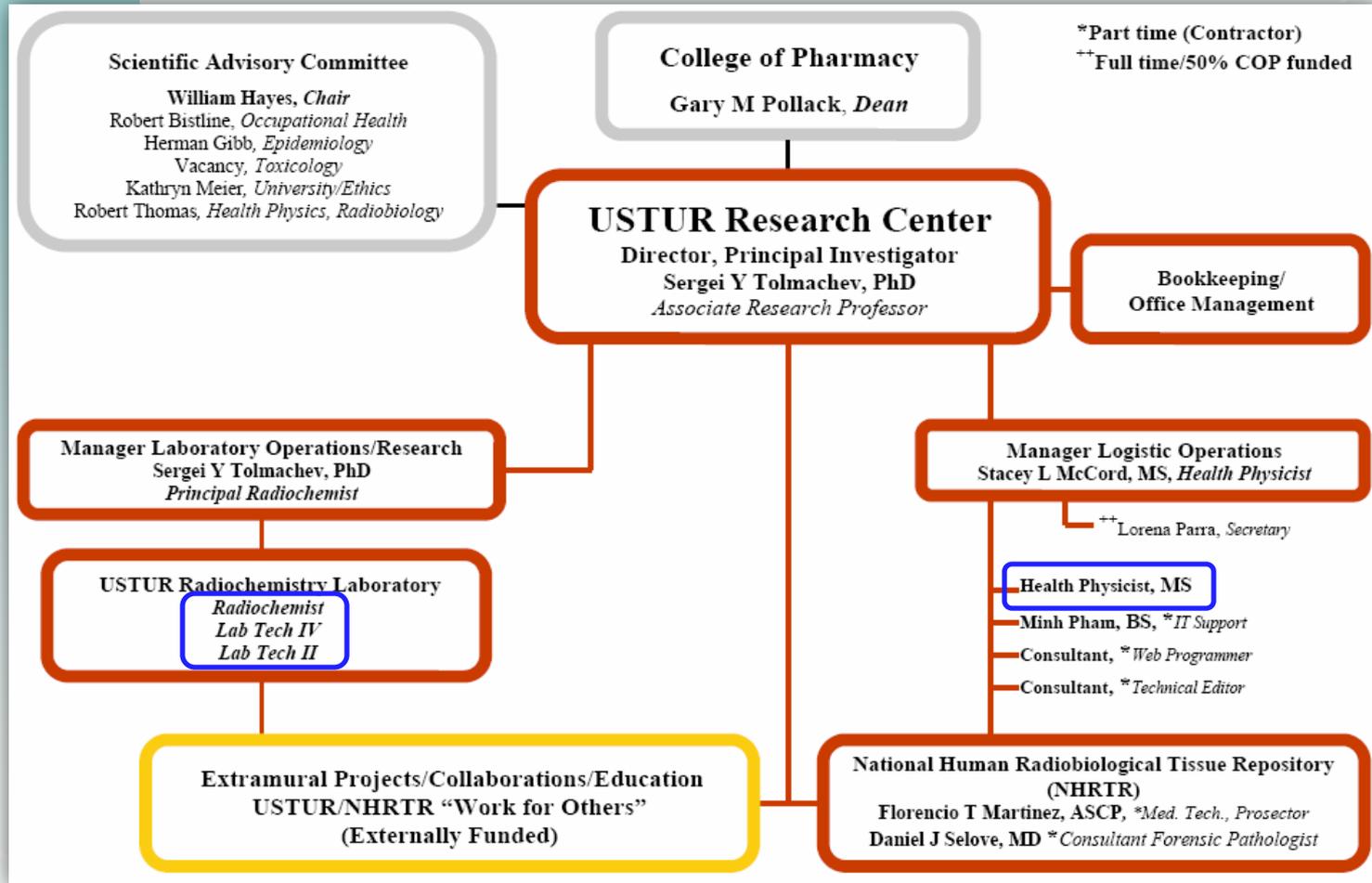
ISU Health Physics
Richard R. Brey, *Director*

'Core' Activities: FY 2012

- **Analysis of Donated Tissues**
 - ✓ Radiochemist, Lab Tech II (new hires), SYT
 - ✓ Purchasing of MW autoclave (large samples) and acid distillation unit (for U and ICP-MS work)
 - ✓ Analysis of Intact Cases: 300 samples
- **Databases**
 - ✓ Health Physicist (MS; new hire) – SLM
 - ✓ Purchasing/Commissioning of LIMS – SLM, SYT



USTUR 'Core' Structure: FY2012

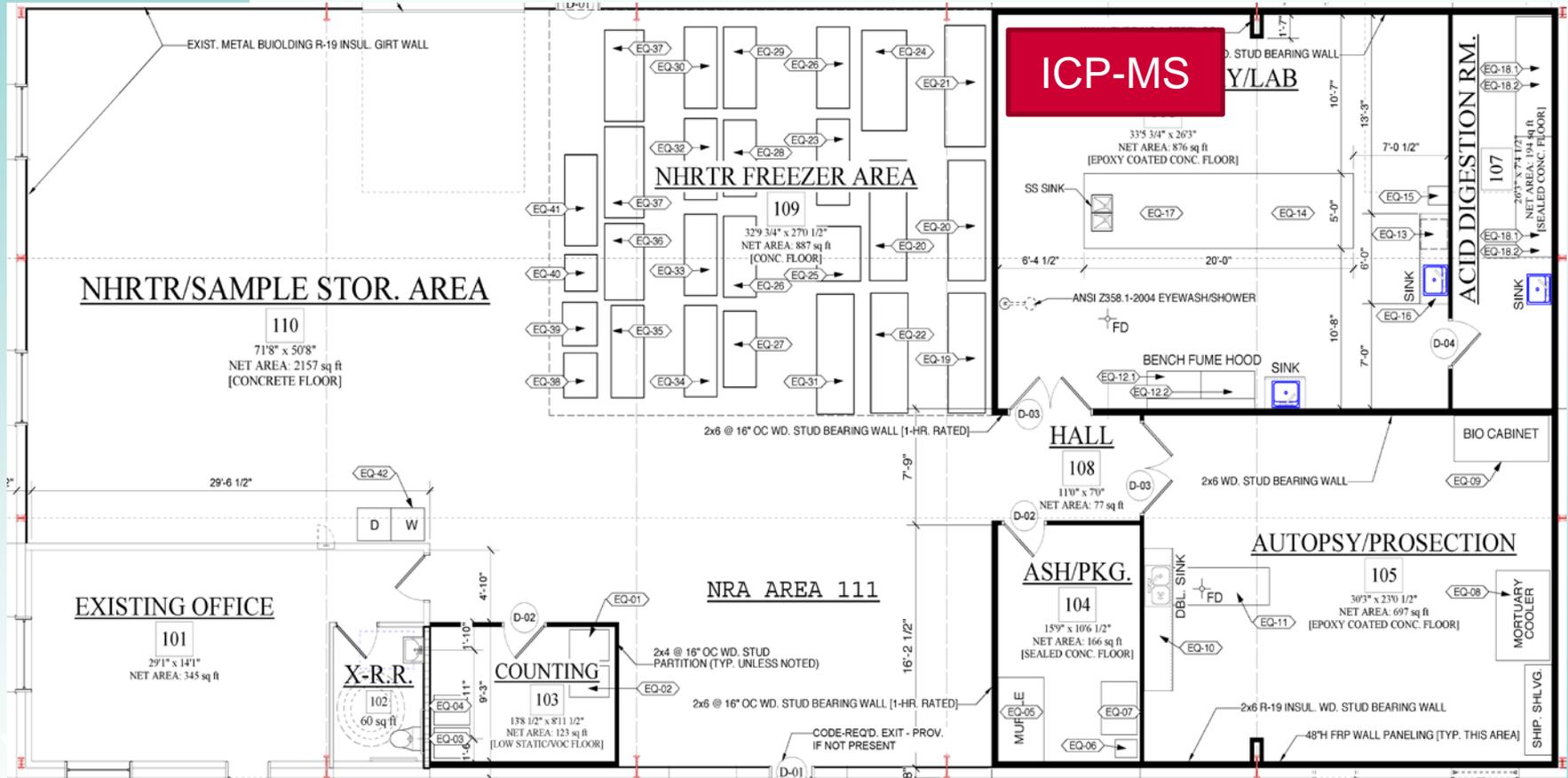


'Core' Activities: FY 2013-2015

- **Analysis of Donated Tissues**
 - ✓ FY 13: Set up of USTUR ICP-MS Lab
 - ✓ Analysis of Intact Cases: 500 samples /y
- **Databases**
 - ✓ Interpreting site health physics (HP) records
 - ✓ Entering QA'd data into the HP database
 - ✓ Creating a search engine for the HP database
- **Publication: 2 papers/y (first author) USTUR**



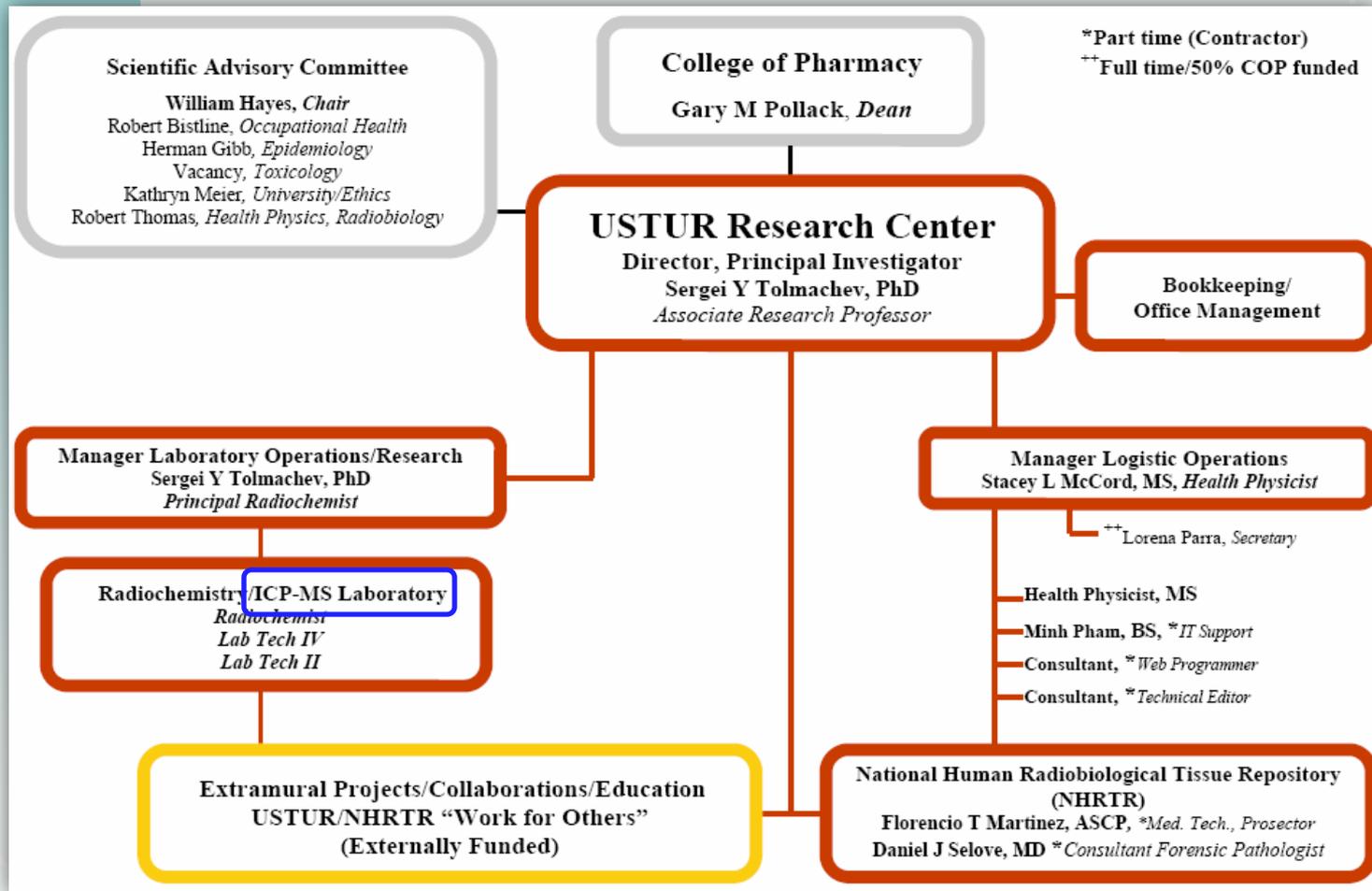
USTUR Laboratory Facilities



2340 Lindberg Loop, Richland WA



USTUR 'Core' Structure: FY2013 - 2015



FY2011 – 2015 Deliverables

- **Radiochemistry**

- ✓ **Expeditious Analysis of Donated Tissues**
- ✓ **State of the art actinide separation procedures**
- ✓ **ICP-MS Capabilities**
- ✓ **Inventory of NHRTR frozen tissues**

- **Databases**

- ✓ **Comprehensive USTUR HP database**
- ✓ **THEMIS Integrated LIMS**

- **Extensive Collaborative Scientific Network**

