BRAINS, MINDS, AND THE SURGICAL PLANNING LABORATORY

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FOUNDING CHAIR, DEPT OF NEUROSURGERY, BWH
THANK YOU TO FERENC, RON, CLARE. AND ALL SPL ALUMNI
THE SPL AS A GENERATOR OF

INTERDISCIPLINARY AND MULTINATIONAL COLLABORATIONS

VISIONARY LEADERS

REVOLUTIONARY TECHNOLOGIES
VIRTUAL REALITY 1997

STUDENTS,
MEDIA LAB
RADIOLOGY,
ENGINEERING,
TRANSCUTANEOUS MAGNETIC STIMULATION 1998
GE SIGNA—WORLD’S FIRST INTRAOPERATIVE MRI 1994-2006
BRAIN SHIFT
1995--THE “SLICER” NAVIGATION SYSTEM
21-Year-Old Woman With Intractable Seizures of the Right Leg and Hand– MRI Shows a Tumor in Motor Cortex
Before and During Intraoperative Resection

The incision
Tumor Gone, and the Brain Returns to Normal
INTRAOPERATIVE MRI IN NEUROSURGERY

- Biopsies
- Craniotomies
- Others
2005--THE FIRST HUMAN FOCUSED ULTRASOUND THROUGH INTACT SKULL
SPL COLLABORATORS 2015
2) LEADERS: SPL NSURG FELLOWS-PROFESSORS IN RED
LEADERS IN INTROPERATIVE MRI ISTANBUL 2011
Neurosurgical iMRI sites >200

Pending and inactive installations are not included.
3) DISRUPTIVE TECHNOLOGIES

- Interstitial laser therapy
- Focused ultrasound
- Robotic neurosurgery
- AMIGO
INTERSTITIAL LASER THERAPY (ILT)
Focused Ultrasound in Brain with A Phased Array Transducer (Hynynen)
ROBOTIC NEUROSURGERY
HATA 1995

Provided by Hata, Peters et al.
OR AS LABORATORY—DR. GOLBY AND AMIGO
FIGURE 5. Correlation between molecular and histopathological changes. Qualitative correlation of different phospholipid proportions with histological evaluation of tumor cell prevalence for compared specimens. Scale bar represents 100 μm.
THE SPL—BRINGING THE WORLD TOGETHER WITH COMPUTATION AND IMAGING
MAY THE NEXT 25 YEARS BE AS EXCITING AS THE FIRST