Possible Projects List

1. Scope holding device to facilitate endoscope drying (Kalloo, Pehar, Taylor, Armand)
2. Robotic ultrasound needle placement and tracking (Fuerst, Fotouhi, Kojcev, Zettinig, Navab)
3. Smooth extrapolation of unknown anatomy (Grupp, Taylor)
4. Cranial defect segmentation (Armand, Murphy, Gordon)
5. Camera-on-a-chip inspection robot (Armand, Murphy)
6. Tracked Ultrasound for Bone Registration (Boctor, Kazanzides, Taylor)
7. Developing a real-time feedback tool for nasal surgery (Ahmidi, Ishii, Ishii)
8. Estimation of the hidden and non-planar septum surface from tactile sensor readings (Ahmidi, Ishii, Ishii)
9. Robot Force Control Algorithms for Retinal Vein Cannulation (Gonenc, Iordachita)
10. Localization of Bone Contours on X-ray Images (Vagvolgyi, Murphy, Grupp)
11. X-ray guided drill/needle placement robot (Siewerdsen)
12. Smart Xiray C-Arm Positioning (Siewerdsen)
13. Cone-Beam CT Brain Perfusion (Siewerdsen)
14. Surgical Instrument for Robotic Open Microsurgery (Taylor)
15. Robotically-Assisted Stapes Surgery (Taylor)
16. Robotically-Assisted Temporal Bone Surgery (Taylor)
17. Compliance Calibration and Correction for Cooperatively Controlled Microsurgical Robot (Taylor)
18. Mosquito Dissection (Taylor)
19. Error Correction for a Learning Health System in Radiotherapy (McNutt)
20. Photoacoustic Catheter Tracking (Cheng, Boctor)
21. Ultrasound Out of Plane Needle Detection
22. Robone: Robotic Hip Bone Cutting With Real Time Motion Reflexes (Hundt, Kazanzides)
23. New platform for evaluating ultrasound-guided technology (Boctor, Kim)
24. Real-time Photoacoustic Imaging Using Clinical Ultrasound Systems (Zhang, Boctor)
25. Force Control with Virtual Fixture for Co-robotic Synthetic Tracked Aperture Ultrasound Imaging (Zhang, Boctor)
26. Attenuation US tomography (Aalamifar, Rahmim, Boctor)
27. Three-dimensional Photoacoustic Imaging Using Robotically Tracked Transrectal Ultrasound Probe (Zhang, Boctor)
28. Fusiform Medical Devices: Orthotic Device Design Algorithms (Mathews, Shah)
29. Organ-specific optical properties for bioluminescence tomography-guided system for preclinical radiation therapy (Zhang, Wang)
30. Just-In-Time Resident Education Software Project(Williams, Murata, Cohen, Sevinc)
31. Cognitive Training Quiz Application (Agrawal, Cohen, Sevinc)
32. ReHap: Software for Prioritizing Rehab Patients (Gourhab, Cohen, Sevinc)
33. Statistical Atlas for Animated Sharks (Ahmad)

Engineering Research Center for Computer Integrated Surgical Systems and Technology