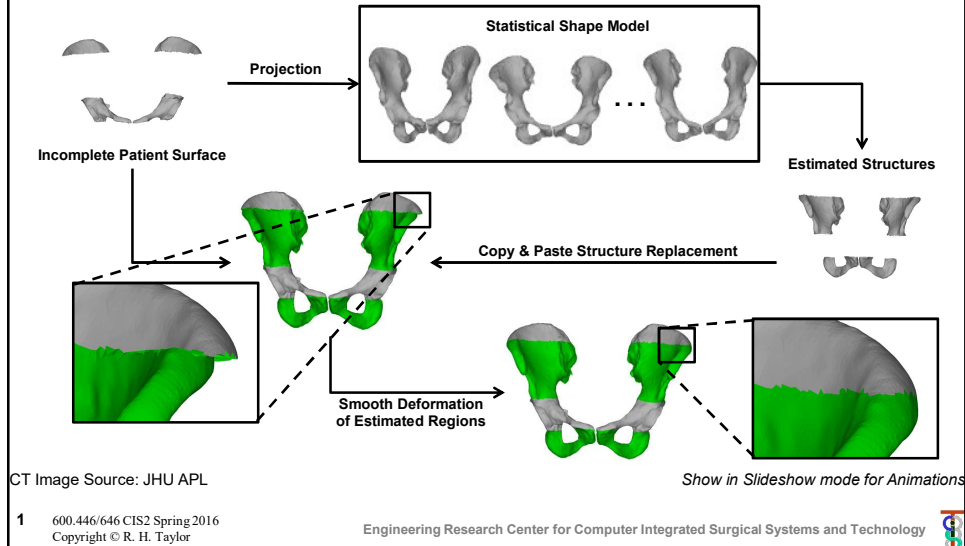


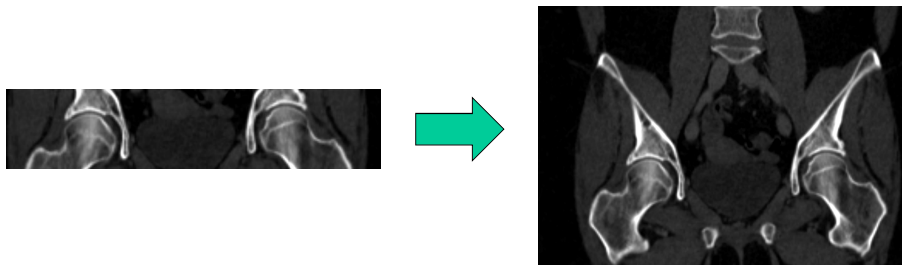
Smooth Extrapolation of Unknown Anatomy

- Estimate a full model of a patient from partial anatomy for surgical planning and/or intraoperative navigation
- Existing work is surface-based:



Smooth Extrapolation of Unknown Anatomy

- **What Students Will Do:**
 - Extend the processing to extrapolate volume data (e.g. CT) in an efficient manner
 - This will allow for intraoperative X-Ray based navigation with incomplete CT



CT Image Source: JHU APL

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Engineering Research Center for Computer Integrated Surgical Systems and Technology

Smooth Extrapolation of Unknown Anatomy

- **What Students Will Do:**
 - Extend the processing to extrapolate volume data (e.g. CT) in an efficient manner
 - Evaluate the methods using traditional atlas criteria well as with a 2D/3D registration simulation
- **Deliverables:**
 - C++ Source Code
 - Source Code Documentation
 - Report comparing the speed of execution and accuracy of the various approaches
- **Size group:** 1-2
- **Skills:**
 - C++, Image Processing, CIS 1 PA5
- **Mentors:**
 - Robert Grupp (grupp@jhu.edu), Prof. Taylor

