

千葉大学 COE スタートアッププログラム
「消化器がんの高精度低侵襲治療支援技術拠点」
第1回国際ワークショップ

First International Workshop on
Technologies to Assist Highly Accurate and Less-invasive
Diagnosis and Treatment for Gastrointestinal Cancer
Chiba University COE Startup Program

Date: March 8, 2012

Place: Chiba University

Faculty of Engineering, Bld. #15, 1F Room 110 (工学部 15号棟 1階 110教室)

13:00 **Opening Remark** CFME director, Koichi Ito

13:05 **Introduction of the Project and Labs**

Overview and Haneishi lab Hideaki Haneishi

Nakamura lab Ryoichi Nakamura

Kawahira lab Hiroshi Kawahira

Yamaguchi lab Satoki Zenbutsu

Suga lab Mikio Suga

14:20 Break

14:30 **Special Lecture**

Image Guided Liver Surgery:

Clinical Applications and Technological Trends Stefan Weber

15:40 Break

15:50 **Guest Lecture 1**

Therapeutic/diagnostic Decision Support from 3D Medical Data
Based on Computational Anatomy Yoshinobu Sato

16:30 **Guest Lecture 2**

Thermal Ablation as A Minimally Invasive Therapy for Digestive Diseases
- Utility and Problems of The RFA and HIFU - Takehide Asano

17:10 **Lab Tour at CSPC** (demo and
presentation by students)

Nakamura lab 15min

Nakaguchi lab 15 min

Yamaguchi lab 15min

Haneishi lab 15 min

18:10 **Closing**



Contact: tel: 043-290-3405(Haneishi), email haneishi@faculty.chiba-u.jp

Latest information: <http://www.cfme.chiba-u.jp/~haneishi/120213/index.html>

Facebook: <https://www.facebook.com/events/126088137517105/>

Guest Lectures



Stefan Weber, Ph.D.

Co-Director of the ARTORG

Center for Computer Assisted Surgery at the University of Bern and ARTORG

Professor for Implantation Technology

“Image Guided Liver Surgery: Clinical Applications and Technological Trends”

Surgical interventions on the liver require an in-depth three-dimensional understanding of the organ's internal vascular anatomy in order to preserve adequate postoperative organ function. Specifically, vascular in-and outflow needs to be balanced and bile collection function has to be preserved. Due to these challenges liver resections, ablations, and transplantations have become possible relatively late in surgical history and remain challenging procedures even nowadays. To date, computer based planning and instrument guidance procedures are taking liver surgery to its limits with great improvements in accuracy and outcome. In the talk, the current state of computer support in liver surgery as well as an overview of ongoing technological research in the field is given.



Yoshinobu Sato, Ph.D.

Associate Professor, Image Analysis Group, Department of Radiology

Graduate School of Medicine, Osaka University

“Therapeutic/diagnostic decision support from 3D medical data based on computational anatomy”

In this talk, we describe therapeutic/diagnostic decision support systems using 3D medical data. The system firstly reconstructs patient anatomy from 3D data, and then provides therapeutic/diagnostic decision support based on physical simulations and statistical optimizations on the reconstructed patient anatomy. The system fully utilizes computational anatomy models representing inter-patient anatomical variability specific to diseases and therapy, which are derived from the training datasets consisting of segmented datasets, diagnostic proof datasets, and past therapeutic plans. We demonstrate a couple of fully automated decision support systems for the abdominal and musculoskeletal diagnosis and therapy.



Takehide Asano, M.D., Ph.D.

Supervisor for National Hospital Chiba East, Chiba

Former Professor of Surgery, School of Medicine Teikyo University, Tokyo

“Thermal ablation as a minimally invasive therapy for digestive diseases, --- utility and problems of the RFA and HIFU ---”

Hepato-biliary pancreatic (HBP) surgery has been usually done by big surgeons with big abdominal incisions. The less invasive method, laparoscopic surgery, has been introduced even in HBP surgery and is coming to the main stream. I would like to talk about endoscopic surgery in HBP and the introduction of thermal ablation as a more minimum method.