Presented By:

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On behalf of:

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Experience in Electronic Management of BioBanks

E-BANKING OF WHAT REALLY MATTERS
View from the Research Department 2011
CONFLICT OF INTEREST

No relevant Conflict of Interest to be declared by authors.
BIOREPOSITORY TEAM
Management of biological samples repositories entitling collection, storage, retrieval and distribution processes requires strict quality procedures for handling specimens data.
THE NEED

The demand was intensified for developing software that collect comprehensive information about the samples and integrate others from many sources due to increased number of samples, the need for associating clinical and biological data and introduction of bio-specimen research science.
Overview of Biobank’s involvement in biospecimen management

Figure 5: Overview of Biobank’s involvement in biospecimen management

OUR EXPERIENCE

During the system design phase, choosing the software depends on many elements including:

- Web-based **central** solution
- Putting **specifications** and limitations to available **storage** locations
- **Tracking** of samples
- Integration with **other software**
- Documenting sample information and samples relations to each other
- **Flexibility** to be **extended** and upgraded
- Availability of a supporting **IT community**
WHY CATISSUE

1. Infrastructure

1. Administrative

1. Biospecimen Support
WHY CATISSUE

**Infrastructure:**

- Supports Windows and Linux **OS**, Oracle and MySQL **databases** *(free)*
- **Web based** application supporting multiple browsers
- Integrate with **local authentication**
- Support for **multi-site repository** within a single instance
- **Upload bulk** CSV data files (for multiple off-line or old data)
- **Multiple query** and advanced reporting options
- Support to add, edit and delete any data object using **other software**
- Integrate with **other clinical systems**
WHY CATISSUE

Administrative processes:

- Complex **longitudinal collection** and distribution **protocols**
- Configure **informed consents**
- **Flexible** **storage container** scheme creation
- Support for **protocol specific annotations** (CAP checklist, path info, etc)
WHY CATISSUE

Biospecimen support:

• Easy high-throughput **data entry**
• **Aliquot and derive** refined materials like RNA, DNA, Protein, etc
• **Track processing** of specimens throughout the lifecycle
• Record **consent** at participant, visits, and specimen level
• **Search** for specimens of interest and place a request for distribution
FUTURE POTENTIAL.. OUR PERCEPTION

• Connection to other **caBIG suite clinical trials** and **genomics** software. And direct Medical Records integration

• **Import** (mass adding)

• **Export** (exchange and exit strategy)
BY NOVEMBER 2010

- Setting up of the caTissue ® software for running our Biorepositories.
- Preparing the software platform

- **Deployment Steps:**
  - Reviewing best available commercial and open source biorepository software
  - CAISIS, Freezerworks, ATIM, CaTISSUE
  - Checking its prerequisites, scalability and interoperability
  - Testing the deployment of last freely available stable release of each software,
  - Choosing caTissue as a part of the whole future plan for research department
  - Trial to deploy a clean installation of the software
  - Using an pre-built version of caTissue deployed as VMware Virtual Machine

- **Developing sample collection protocol**
  - A protocol for procurement procedures, preparation and storage of tissue specimens and/or slides was prepared.

- **Developing a work flow chart for organizing sample collection and work flow at CCHE-Biorepository.**
After 18 months of operation; installation size including database: 2.2 GB, Increments with 700 MB/year (2013)
TELEPATHOLOGY

Leica slide scanner “SCN400” was acquired to help in remote diagnosis

CUSTOMIZED CODING

• Integrating multiple elements in sample ID directly from the protocol template in caTissue

• → Custom automated ID that represents the type of sample and number
Inventing a backup solution that ensures the coverage of day-to-day activities and distributes the backup images on **reliable geographically distant servers** was mandatory from the beginning.
PROCESS INTEGRATION WITH EMR

Cerner Millinium (EMR) Power Form → Adding patients → InfoView (Reporting tool) → Scheduled Report (+Lab results)
Planned integration with REDCap electronic data capture system

INHERITANCE – FAMILIAL RELATIONS

- Familial relations between samples
- Solved by Krishagni company in caTissue Plus
- → Adopting caTissue Plus
AUTOMATING BARCODE PRINTING

- Automatic Barcode printing is pending integration between software and network barcode printer.
INITIAL IMPLEMENTATION COST

• **Time** of staff

• **No software cost** in the initiation phase

Conforms with

“The ROI Case for caTissue” A Total Cost of Ownership (TCO) Approach, Todd Carolin | Booz Allen Hamilton  June 24, 2008

THANK YOU
For Biorepository Software support queries

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For Other Biorepository related queries

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