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## Data Acquisition, Management and Tracking

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DATA ACQUISITION,  
DATA MANAGEMENT AND  
SUBJECT TRACKING IN  
CLINICAL AND  
TRANSLATIONAL RESEARCH

Seeking solutions to  
persistent challenges

# Data Acquisition, Management and Tracking

*Symposium Moderators:*

**Bruce A. Barton, PhD**

Research Professor

UMMS Dept. of Quantitative Health Sciences

Director, Quantitative Methods Core

**Mary E. Costanza, MD**

Professor of Medicine, UMMS Dept. of Medicine

# Data Acquisition, Management and Tracking

## **Bruce Barton: Disclosure**

I have no actual or potential conflict of interest in relation to this program/presentation.

# Data Acquisition, Management and Tracking.

## Mary Costanza: Disclosure

I have no actual or potential conflict of interest in relation to this program/presentation.

# Data Acquisition, Management and Tracking

## Background

Clinical studies involving recruiting and observing human subjects over time requires

- Data of many types to be collected from many sources
- Data must be integrated into 1 system, using a variety of data interfaces
- This system must track subjects, generate management reports & develop analytic reports

HOW IMPORTANT  
IS  
DAMT ANYWAY?

# Why DAMT is Important

- Without GOOD Data Management, you risk:
  - Not getting funded
  - Not able to use for analysis
  - Not able to publish
  - Not able to verify results
  - Not able to sleep at night
- Without GOOD Tracking, you risk:
  - Losing specimens
  - Losing patients
  - Losing your mind

# Why DAMT is Important

- Funding agencies now want Data Management Plans
- Badly designed data capture systems may produce data that is uninterpretable
- Journals are frequently now requesting data that went into analysis (and sometimes the programs)
- If someone questions results, you may not be able to reproduce them from scratch – part of QC and Reproducible Research
- You think that you have insomnia now? Just wait!!!

# Why DAMT is Important

- Without specimen tracking, easy to lose specimens in freezers and in transit
  - Picture specimens sitting on a loading dock in Dallas in July – not pretty
- Without patient tracking, lose patient visits, create protocol violations, lose data for analysis
  - Data may not be fully missing at random – so cannot impute
- Without tracking systems, you have no control of the study or project

# Bottom Line

- Without reliable data, cannot do reliable statistical analysis
- Without reliable analysis, why did you do your study?



Research Conveyor Belt

# DAMT: Definitions

- In the following presentations and slides, the definition of “data management” varies:
- QMC: research data management for research studies, such as clinical trials, and research endeavors, such as animal labs
- IT: clinical data management using EHR/EMR systems
- Library: data management for organizing data files for long-term access, storage, archiving

# Data Acquisition, Management and Tracking

## Specific problems

- Designing effective and complete field naming conventions
- Handling potentially conflicting data from various sources
- Designing routines for updating data fields in real time
- Developing customized applications to support complex DAMT tools

# Data Acquisition, Management and Tracking

## Symposium purpose

- To begin a dialogue among faculty and staff involved in addressing the clinical data challenges of DAMT
- To identify & characterize important and recurring challenges
- To identify local resources that could facilitate DAMT system design and implementation
- To explore potential solutions to common DAMT problems

# Data Acquisition, Management and Tracking

## Symposium Format

*Case study presentation:*

**Roger Luckmann, MD, MPH**, UMMS Dept. of Family  
Medicine and Community Health

*Panel discussion:*

**Rebecca Gore, PhD**, Biostatistician Programmer, UML  
**Dane Netherton**, Database Administrator, UMMS QHS/QMC  
**Paul Ranauro**, UMMS Information Services

*Audience Participation*

# Data Acquisition, Management and Tracking

## Audience and Panel Discussion

- What are the important & recurring problems?
- What local resources are available?
- What can we do to improve DAMT?