



# Introducing epiSampler 3.0

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# Why epiSampler?

## Large scale projects have large demands

- Data quality
- Specimen organization and management
- Information/Data Sharing
- Why not Excel?
  - Free-form data access means increased error rates
  - Relational databases are more powerful and efficient
  - Data must be shared manually



# A Scenario...



# Evolution of epiSampler

- 2009: Version 1.0, built in Microsoft Access
  - Benefits
    - Data and sample processing made simpler
    - Relatively stable underlying relational database
    - Standardized sample processing
  - Still lacking
    - Access data sharing algorithm not designed for weak network
    - Data sharing via ‘backups’ emailed weekly
    - Low level data validation
    - No way to ‘update’ software once installed
    - Worked only on Microsoft system
    - Kit labels printed by the Broad Institute = lead time

# Evolution of epiSampler

- 2010: Version 2.0, Custom Software written in the Java programming language
  - Benefits:
    - Able to update software over network automatically
    - Could create and print collection kits
    - Automatic data transfers to the network
    - Increased data control / less editing, more perfect data
    - Platform Independent – works on Mac and PC
    - Security: Encrypted data in custom flat file database
  - Still Lacking
    - Too complicated to use
    - Flat file database unstable at large size
    - Data transfers susceptible to corruption with power loss / network interruption
    - More difficult to access data, correct it, use it
    - Networked DB vulnerable to intrusion
    - Only one Research Project per installation

# Version 2.0

## Input Capabilities:

- Add New Subjects, Collections, and Specimens individually or in bulk
- Generate and Print Barcodes as needed
- Specimen registration
- Upload user generated data

## Tracking and Sample Management:

- Record and update sample storage
- Record sample usage
- Record sample shipments and receipt

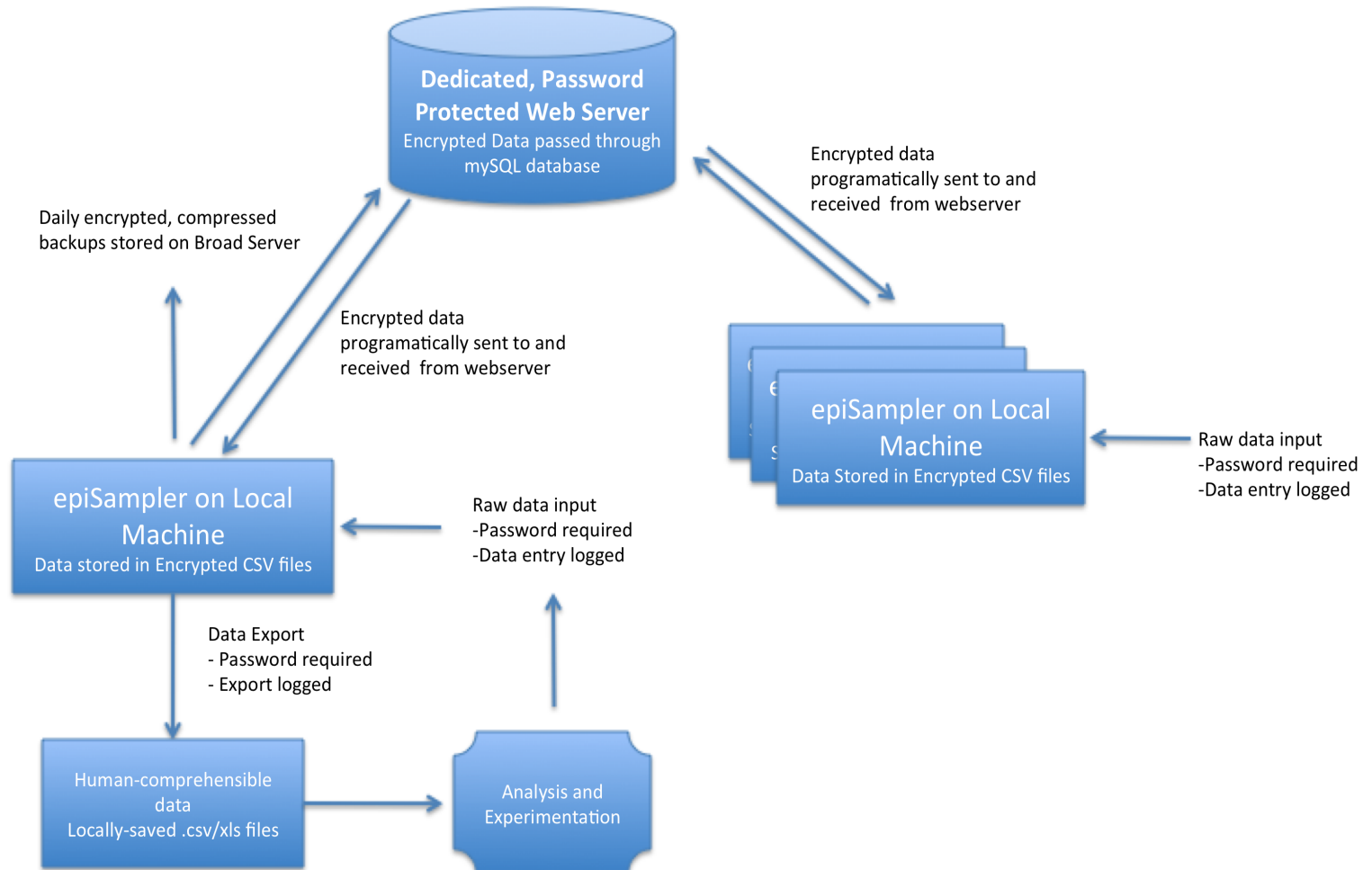
## Data Management:

- Visual Database Query
- Specimen Visualization

The screenshot displays the Version 2.0 software interface, which is divided into several functional modules:

- Batch Labels:** A section for generating labels, featuring an "Upload from .csv file" button, a "Get Template" button, a "File:" input field, and a "Browse" button. A tip states: "Tip: To get generated barcodes when importing type '<barcode>'". A preview of a label shows "ID-AT752", "EXAMPLE", and "John Doe : Collection". A "Print" button and a "Print Labels" button are also present.
- No. of Labels:** A slider control set to 13.
- Batch Information:** Fields for "Batch Title" (LASV-SEQ), "Start" (1), "Batch Subtitle" (K. Andersen Collection), and "End Collection, Serra Leone".
- Specimen ID List:** A list of specimen IDs: ID-0PUTG, ID-AAV11, ID-40L08, ID-8832R, ID-2623N, ID-E4DF1, ID-UEI8, ID-20VIV, ID-KNY8, ID-111C0, ID-CT40, ID-8A6M1, and ID-38744.
- Batch New Specimen Registration:** A section for registering new specimens, including a "Batch Registration" form with a "Batch Subtitle" field and a "Browse" button, and a "Register" button.
- AutoFill:** A section for auto-filling data, with fields for "Type" (DERIVATIVE), "Parent ID", "Collection ID", "Volume (ul)", and "Material" (Plasma). An "Add Material" button is also present.
- Specimen Data:** A table with columns: Specimen ID, Type, Parent ID, Collection ID, Volume, Material, and Notes. The table contains several rows of data, including "DERIVATIVE", "Blah Balh", "JKJK", "5", "cDNA", and "Notes".
- Specimen Overview:** A section for viewing specimen data, featuring a "Cryo Box" table with a grid of numbers (1-72) and a "Specimen Overview" table with columns: Specimen ID, Type, Parent ID, Collection ID, Volume, Material, and Notes.
- Batch Locations:** A section for managing batch locations, including a "Batch Locations" form with a "Batch Title" field and a "Browse" button, and a "Batch Locations" table with columns: Batch Title, Parent ID, Collection ID, Volume, Material, and Notes.

# Protecting the Data – a critical mission



# Evolution of epiSampler

- Designing Version 3.0
  - Goals:
    - Very stable database and data transfer
    - Automatic software updates
    - Multiple project support
    - High level of data integrity: no multiple entries, data format and values match acceptable ranges and data types, data entered in a timely fashion.
    - Ease of access to data for lab work in the field
    - Simple interface that is robust, yet intuitive



Demonstration