

Secure Data Collection with REDCap

RISE Through Research

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Agenda

- General Information
- How to Use REDCap
 - Building a Project
 - Testing a Project
 - Production Phase
- FSU REDCap

Research Electronic Data CAPture

Record ID	Welcome	Treatment A: Intro	Treatment A: High Risk	Treatment A: Medium Risk	Treatment B: Intro	Treatment B: High Risk	Treatment B: Medium Risk	Thank You
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Introduction

- REDCap is a secure, web-based application that facilitates data collection for research and operational purposes
- Created in 2004 at Vanderbilt University
- “REDCap’s developers firmly believed that nobody could know the research as well as the researcher. So a **user-friendly web-based interface** was introduced to put the researchers in total control of their work. [... R]esearchers could directly manage their own projects whenever and however they wished, through any browser on any device.”

General Use - Compliance

- Access Control
 - User Rights, User Roles, DAGs
- Audit Trail
 - Logging and Email Logging
 - Project Snapshots
- Data stored on FSU servers - HIPAA Compliant
 - Microsoft Azure

Training

- Video tutorials and help text from Vanderbilt University
 - <https://docs.rcc.fsu.edu/redcap/#how-to-library>
 - 'Help & FAQ' tab in REDCap
- FSU Lunch Learn and Collaborate Sessions [Virtual]
 - The last Wednesday of every month Jan-Oct at 12:30pm
 - April LLC: Logic and Syntax
 - Archives of previous sessions
 - docs.rcc.fsu.edu/redcap/#consortium-lunch-learn-and-collaborate-meetings
- Self Guided Training Canvas course
 - <https://canvas.fsu.edu/enroll/RDXCKF>

Support

- Request Portal: <https://redcap.fsu.edu/surveys/?s=ECXT9EWN38JJY8LL>

Support provided for all users:

- User Account Creation
- 1 on 1 consultation
- Technical Support
- Guidance on project build best practices
- Project change requests - Move to production, approve draft changes, API, etc
- Downtime and upgrade communications

How to Build a REDCap Project

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Project Workflow

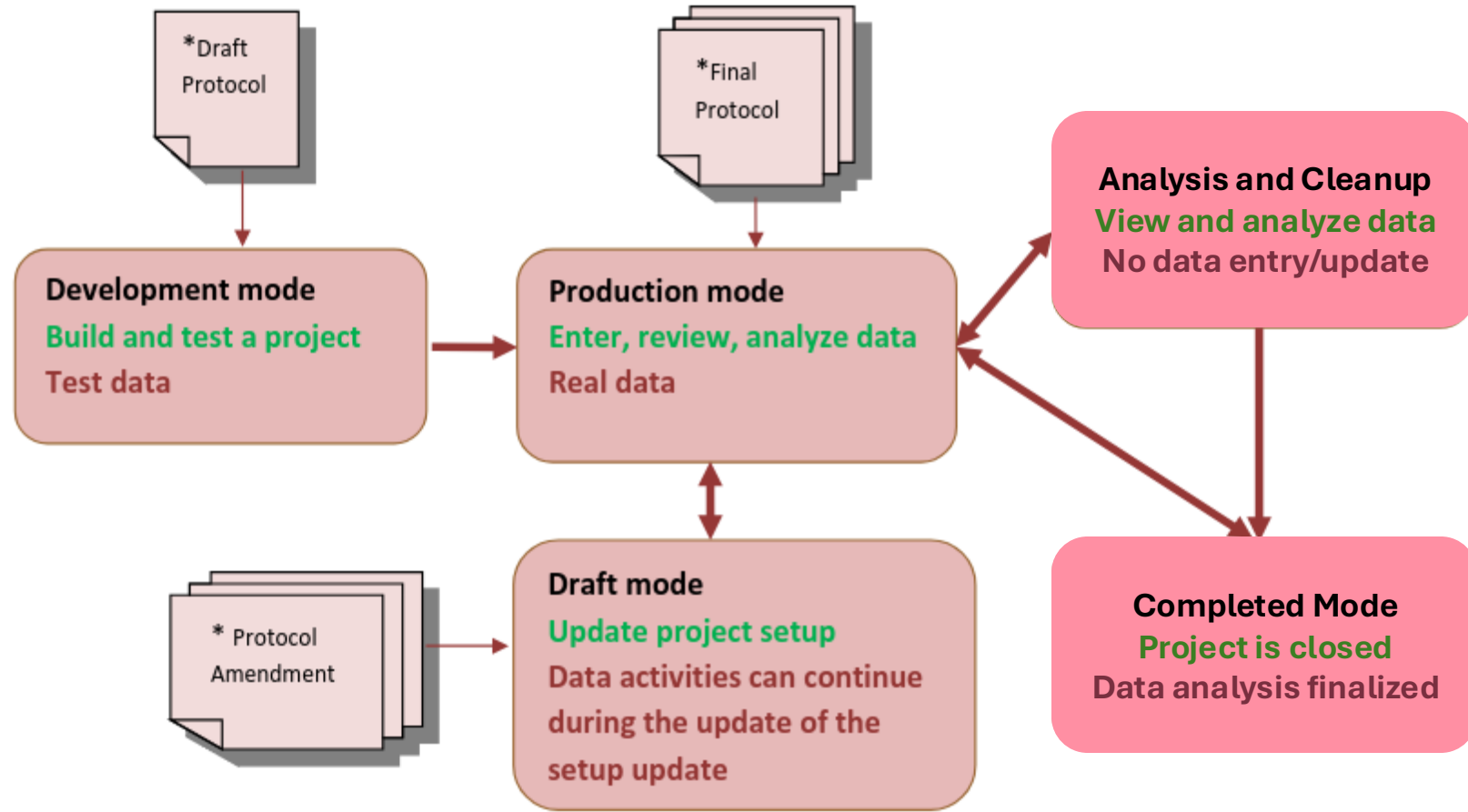
Project Types

Variables

User Rights

Communications

Project Workflow



* if IRB approval required

Build a Project

- Creating a new project will start in Development mode - only test data in this mode

Three types of data collection:

- By the study team - data entry forms
- By the study participants - surveys
- Mix of both (ex. screening before study enrollment)

Two types of projects:

- Classic - one record per patient
- Longitudinal - one record per patient, organized by event, can define multiple arms

Build a Project: Data Instruments

- **Data Instrument:** survey page or data entry form

Instrument Name	Instrument Type
Screening	Survey
Consent	Survey
Initial Data	Survey
Clinical Notes	Data form
Follow-up	Survey



Creating Fields (Variables)

Form 1

+ Adding new Record ID 1.

Record ID	1
Date	<input type="text"/> Today M-D-Y
Radio	<input type="radio"/> First Answer <input type="radio"/> Second Answer <input type="radio"/> Third Answer reset
Drop Down list	<input type="text"/>
Check all that Apply	<input type="checkbox"/> First Answer <input type="checkbox"/> Second Answer <input type="checkbox"/> Third Answer
New Section	
Yes/No	<input type="radio"/> Yes <input type="radio"/> No reset
Time	<input type="text"/> Now H:M
Signature	Add signature
Scale	Low Medium High <input type="range"/> Change the slider above to set a response reset
Form Status	
Complete?	<input type="text"/> Incomplete
Lock this instrument?	<input type="checkbox"/> Lock

If locked, no user will be able to modify this instrument for this record until someone with Instrument Level Lock/Unlock privileges unlocks it.

Creating Fields (Variables)

Edit Field ✕

You may add a new project field to this data collection instrument by completing the fields below and clicking the Save button at the bottom. When you add a new field, it will be added to the form on this page. For an overview of the different field types available, you may view the [Field Types video](#).

Field Type: Text Box (Short Text, Number, Date/Time, ...) Codebook

Question Number (optional)
Displayed only on the survey page

Field Label Use the Rich Text Editor ?

Your email

Action Tags / Field Annotation (optional)

Learn about [@ Action Tags](#) or [using Field Annotation](#)

Variable Name (utilized in logic, calcs, and exports)

Enable auto naming of variable based upon its Field Label?
ONLY letters, numbers, and underscores

How to use [Smart Variables](#) [Piping](#) [Field Embedding](#)

Validation? (optional) Email v

- or -

-- select ontology service -- v

Required?* No Yes
* Prompt if field is blank

Identifier? No Yes
Does the field contain identifying information (e.g., name, SSN, address)?

Custom Alignment Right / Horizontal (RH) v
Align the position of the field on the page

Field Note (optional)
Small reminder text displayed underneath field

Save
Cancel

REDCap Features

- Branching Logic
 - when fields/questions need to be hidden for data entry under certain conditions
- eConsent Framework
 - Electronic informed consent
- Data Validation
 - Run checks for missing or invalid data

User Rights

Privileges for Viewing and Exporting Data

Data Viewing Rights pertain to a user's ability to view or edit data on pages in the project (e.g., data entry forms, reports). Users with 'No Access' Data Viewing Rights for a given instrument will not be able to view that instrument for any record, nor will they be able to view fields from that instrument on a report. Data Export Rights pertain to a user's ability to export data from the project, whether through the Data Exports page, API, Mobile App, or in PDFs of instruments containing record data. Note: Data Viewing Rights and Data Export Rights are completely separate and do not impact one another.

	Data Viewing Rights				Data Export Rights			
	No Access (Hidden)	Read Only	View & Edit	Edit survey responses	No Access	De-Identified*	Remove All Identifier Fields	Full Data Set
Example Survey (survey)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Test2 (survey)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Test3 (survey)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Test4	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

* De-identified means that all free-form text fields will be removed, as well as any date/time fields and Identifier fields.

New User Notification

Notify user of their project access via email?

Basic Privileges

Expiration Date (if applicable) (M/D/Y)

Highest level privileges:

- Project Design and Setup
- User Rights
 - No Access
 - Read Only
 - Full Access
- Data Access Groups

Other privileges:

- Survey Distribution Tools
- Alerts & Notifications
- Calendar
- Add/Edit/Organize Reports
Also allows user to view ALL reports (but not necessarily all data in the reports)
- Stats & Charts
- Data Import Tool
- Data Comparison Tool
- Logging
- Email Logging
- File Repository
- Data Quality
[What is Data Quality?](#)
- API
[What is the REDCap API?](#)
- Create & edit rules
- Execute rules
- API Export
- API Import/Update
- External Modules
- API ?

Communications

- Alerts and Notifications
 - Sending messages to participants and study team
 - With conditional logic
- Survey Notifications
 - Automatically notifies the study team if surveys are completed

Testing a REDCap Project

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Data Input

Communications

Data Review

Data Input

- Survey Distribution Tool – public link or participant link
- Data entry – study team/ REDCap users only
- Data import tool
 - Collected data in csv or xml format elsewhere

Communications

Make sure to test your communication modes

- Alerts and Notifications
 - Sending messages to participants and study team
- Survey Notifications
 - Notifies the study team if surveys are completed
- Automatic Survey Invitations
- Mosio (SMS)

Data Review

- Record Status Dashboard
- Data Exports
 - PHI Data - deidentification
- Data Reports
- Stats (minimal data visualization)

Production

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Moving to Production

Collecting Real Data

Post-Production Changes

Data Analysis

Project Completed?

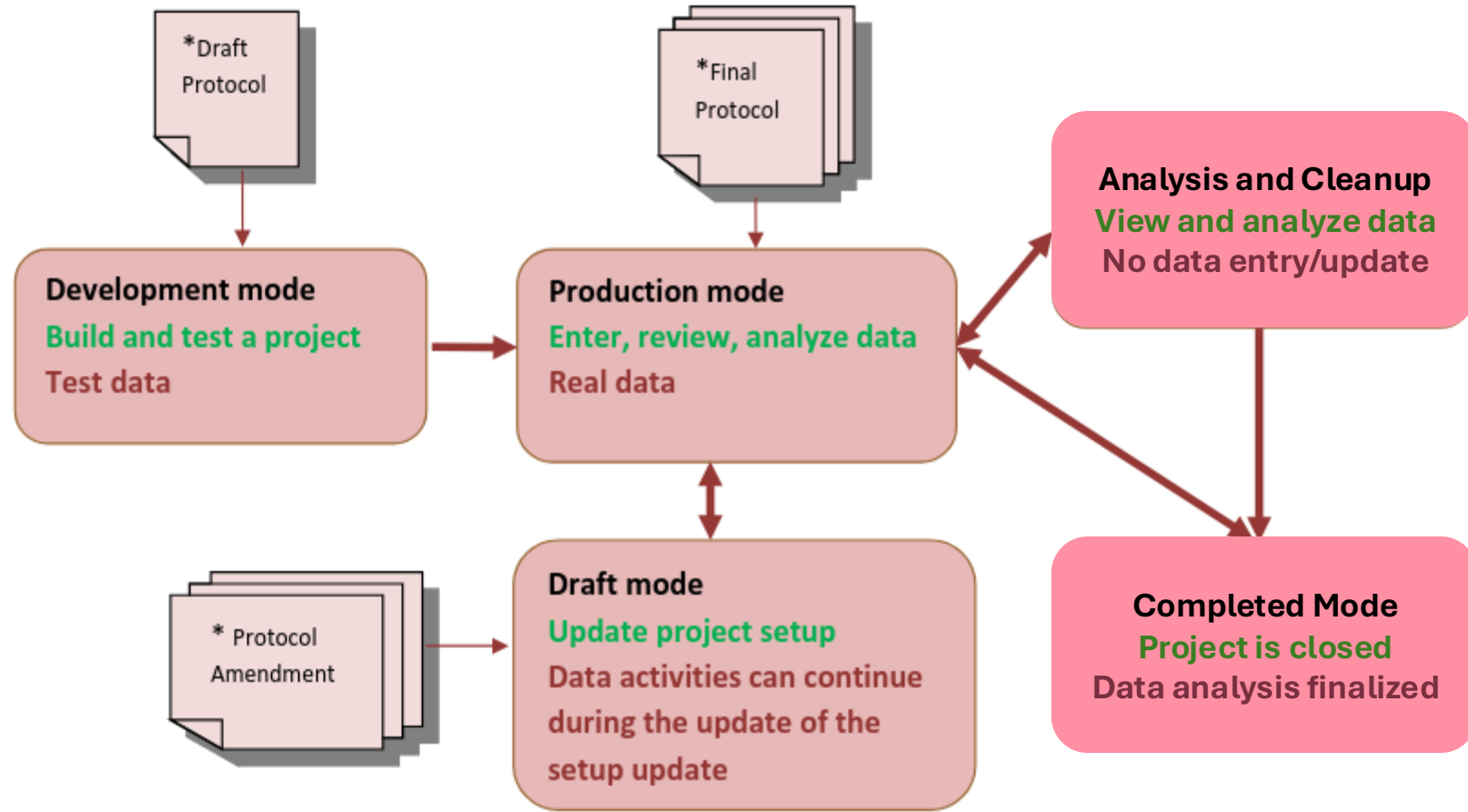
Moving a Project to Production

- Move to Production Survey required documents:
 - the IRB documentation
 - HIPAA training completion documentation for the team
 - Confirm that all data will be removed from the project
- Awaits approval from the REDCap Admin team

Collecting Real Data

- Survey Distribution Tool – public link or participant link
- Data entry – study team/ REDCap users only
- Data import tool
 - Collected data in csv or xml format elsewhere

Post Production: Draft mode



* if IRB approval required

Post Production Changes

- Enter Draft Mode
 - Create and edit instruments, partial modification of fields allowed
- Draft Preview Mode
 - view changes in data forms (not viewable as a survey)
- Submit changes for review, with REDCap Admin team approval

- Data Exports, Reports, and Stats

De-identification options (optional)

The options below allow you to limit the amount of sensitive information that you are exporting out of the project. Check all that apply.

Known Identifiers:

- Remove All Identifier Fields (tagged in Data Dictionary)
- Hash the Record ID field (converts record name to an unrecognizable value)

Free-form text:








- Remove unvalidated Text fields (i.e. Text fields other than dates, numbers, etc.)
- Remove Notes/Essay box fields

Date and datetime fields:

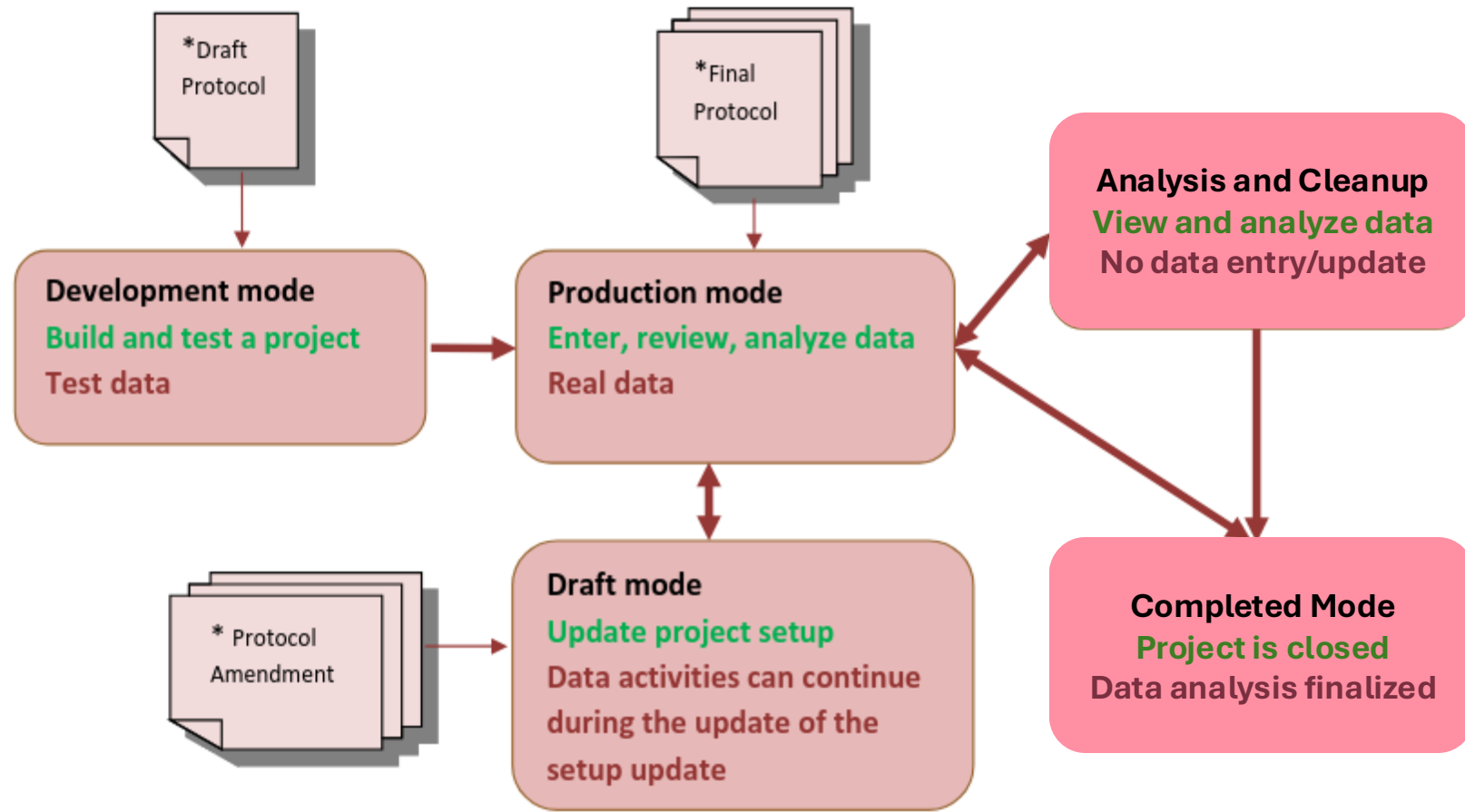
- Remove all date and datetime fields
- OR —
- Shift all dates by value between 0 and 364 days (shifted amount determined by algorithm for each record)
[What is date shifting?](#)
 - Also shift all survey completion timestamps by value between 0 and 364 days (shifted amount determined by algorithm for each record)

[Deselect all options](#)

Choose export format

-  CSV / Microsoft Excel (raw data)
-  CSV / Microsoft Excel (labels)
-  SPSS Statistical Software
-  SAS Statistical Software
-  R Statistical Software
-  Stata Statistical Software
-  CDISC ODM (XML)

Project Completed



* if IRB approval required

FSU REDCap

Agenda

ITS REDCap Statistics

Featured Projects

Costs of FSU REDCap

Useful Resources

ITS REDCap Statistics (as of March 31)

- Active Projects: 387
 - Production Projects: 153
 - Development Projects: 234
- Active Users: 404
- Projects with Mosio enabled: 7

Featured Projects

- FSU Health – Request Portal
- Kozel – FSU Neurology
- Mousa – Blood and Breastmilk Repositories

Costs of FSU REDCap

REDCap account – Free

Basic support - Free

Mosio (SMS)

- Researcher purchases license with Mosio (API token)

Consultation

- First 20 hours free, then \$55 per hour



Useful Resources

- REDCap Hub Links: <https://docs.rcc.fsu.edu/redcap/>
- New User Account (**QR code**):
<https://redcap.fsu.edu/surveys/?s=DRR9XRLW7WLHYX7W>
- Register for April LLC: <https://calendar.fsu.edu/event/redcap-consortium-lunch-learn-collaborate-meeting-april>



Questions?