REDCap™

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Collaborative Data Services
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RC101
Introduction to REDCap

Agenda

- What and Why REDCap?
- Quick tour around REDCap
- Creating a data instrument
- REDCap surveys
- Exporting data
- Security
- Other capabilities
- Training & Docs

What and Why REDCap?

What is REDCap?

- REDCap == **R**esearch **E**lectronic **D**ata **Cap**ture
- REDCap is an Electronic Data Capture (EDC) system
- EDC systems are used to capture data onto an electronic system (i.e., a database)
  - EDCs are generally used by study staff to enter data from paper forms or while interviewing a participant or perhaps abstracting their chart
  - Survey systems are similar to EDCs but are primarily intended to directly survey a participant
  - REDCap is an EDC that also supports surveys

Where did REDCap come from?

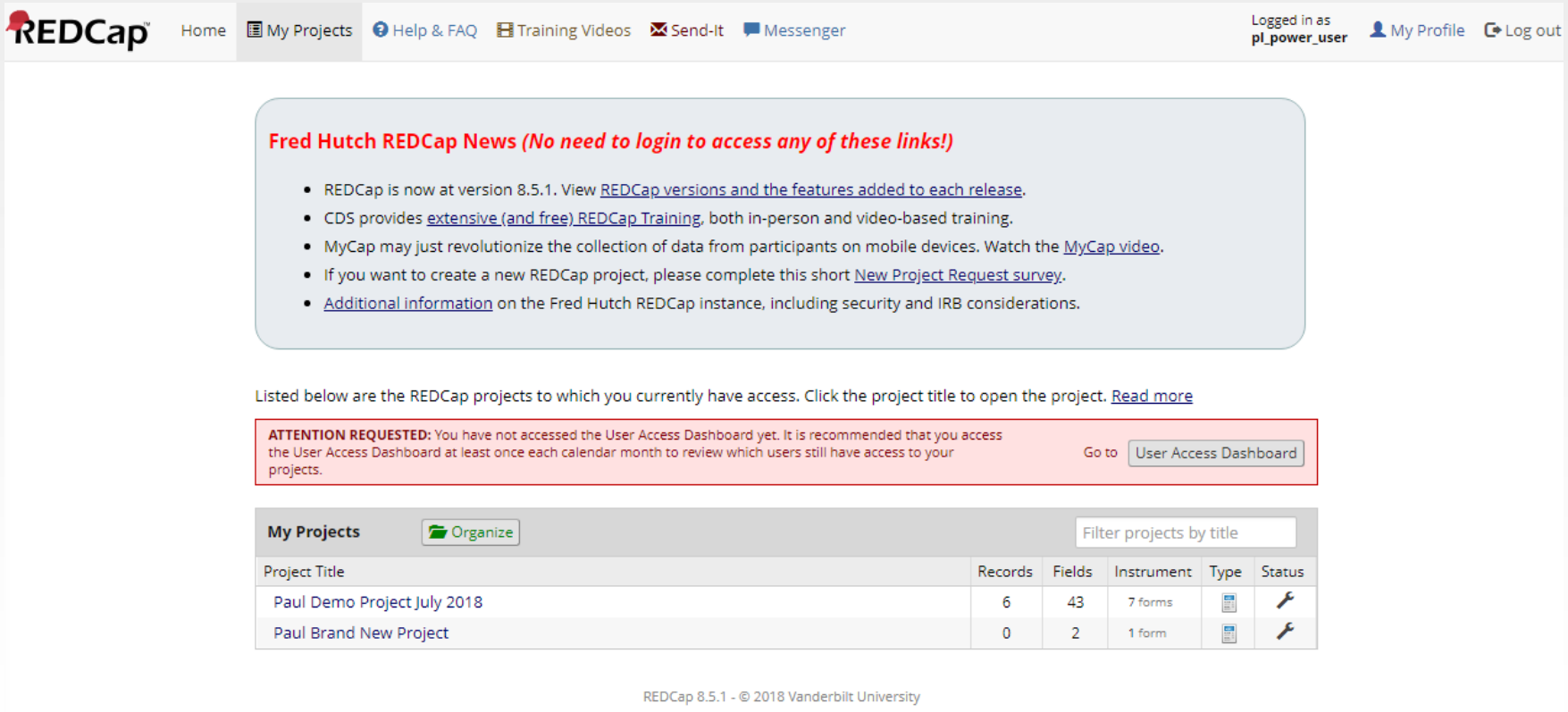
- REDCap was created and is actively maintained by Vanderbilt University for the use of universities and non-profit institutions
- Fred Hutch is a member of the REDCap Consortium
- REDCap is for non-profit data collection only
  - It may not be used by for-profit entities or for for-profit work

And where is REDCap going?

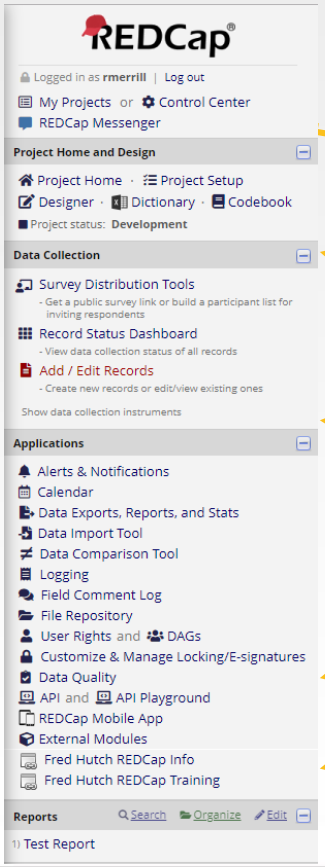
- As of Oct 2019, REDCap is installed on 3,719 partner institutions in 131 countries and is serving 772,000 projects with 1,000,000+ users
- REDCap has been cited in 7,136 journal articles
- REDCap has a vibrant & active community and is constantly being upgraded and improved

Quick Tour around REDCap

My Projects Page

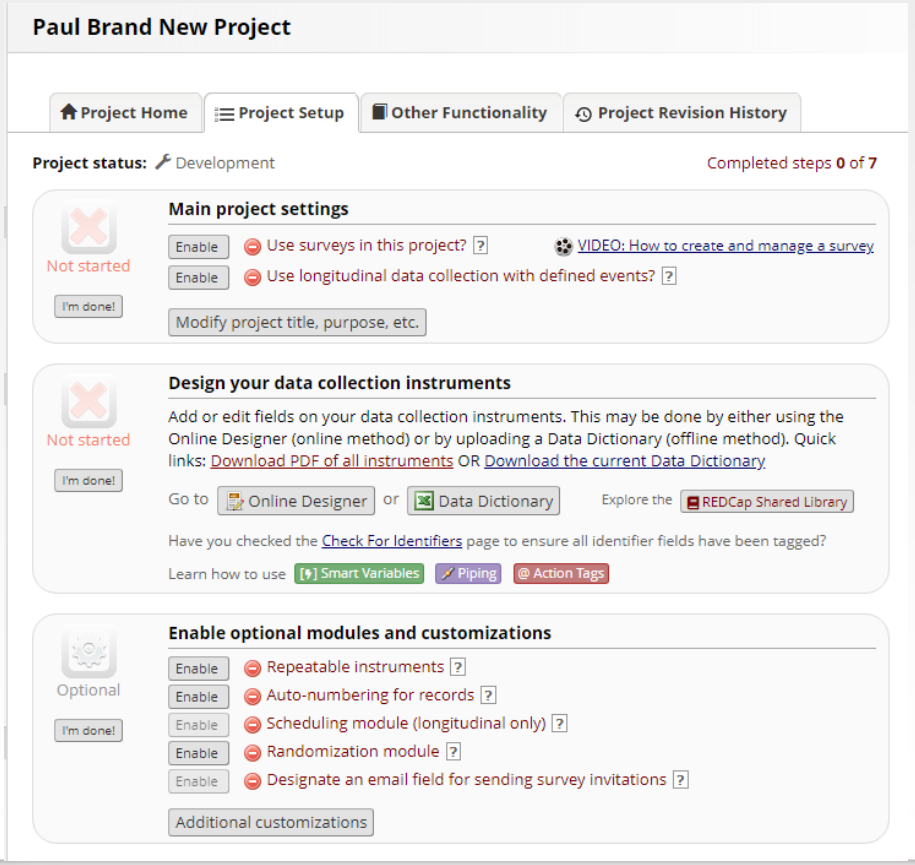


Project Navbar



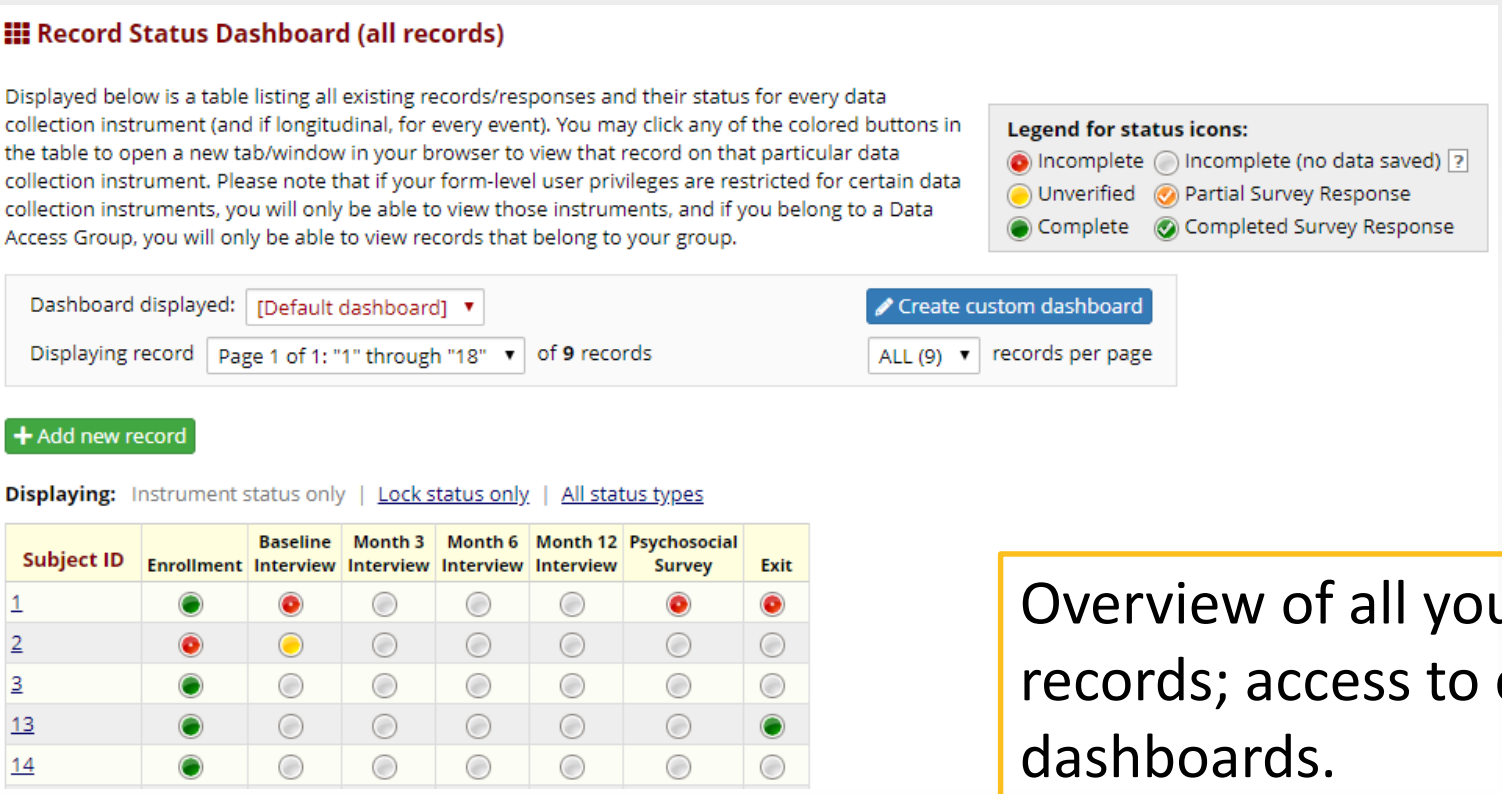
Access to most parts of REDCap including other pages (My Projects, Project Home, etc.),
Data collection,
Other stuff (Applications),
Reports,
Help

Project Setup



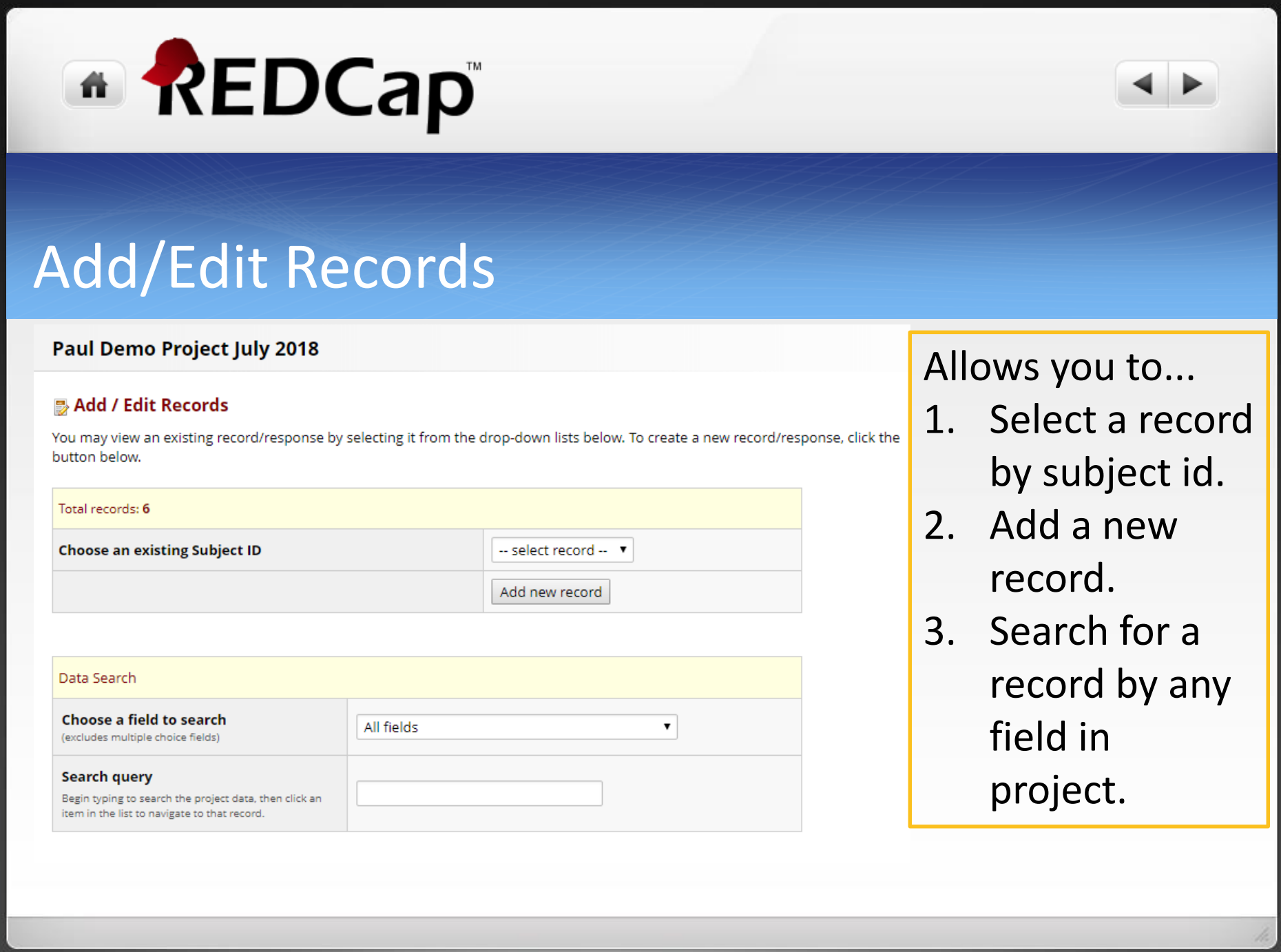
Access to online designer, data dictionary, main project settings, optional modules and customizations, user rights, etc.

Record Status Dashboard



Overview of all your records; access to custom dashboards.

Add/Edit Records

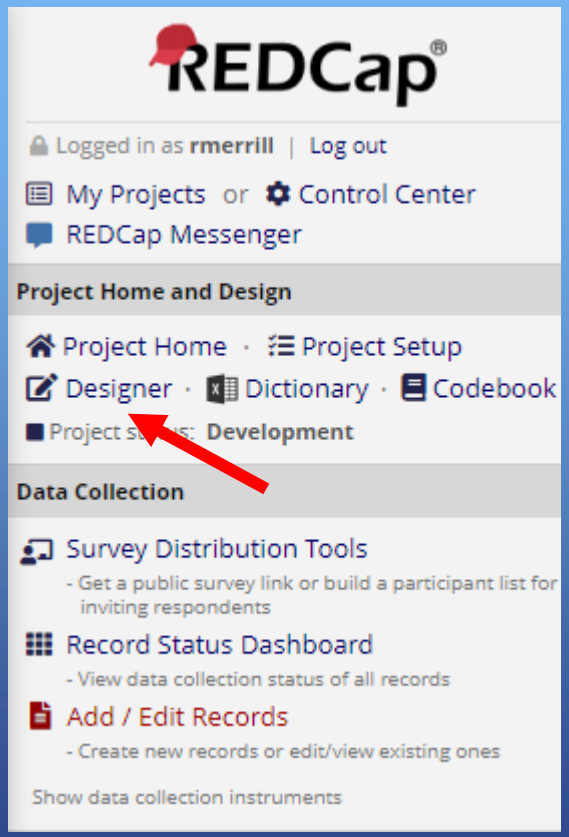


Allows you to...

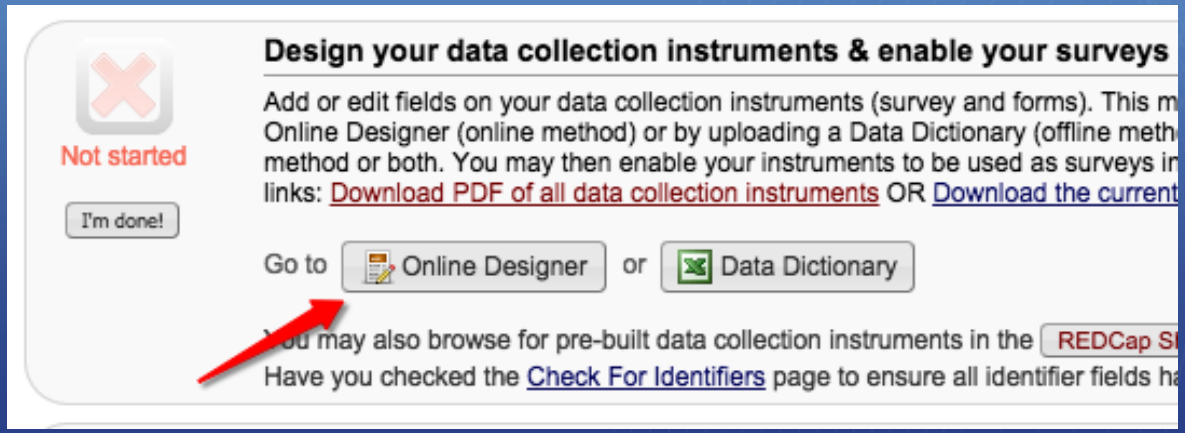
1. Select a record by subject id.
2. Add a new record.
3. Search for a record by any field in project.

Creating a Data Instrument

Creating a data form using the designer

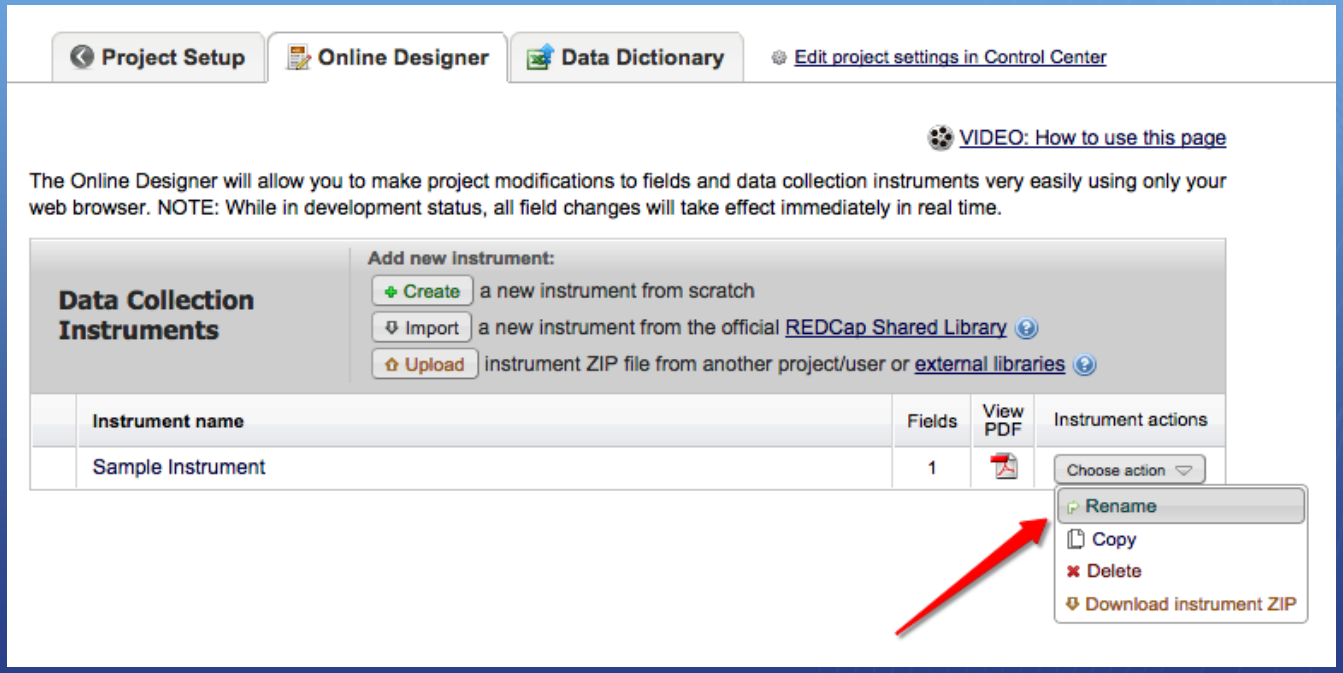


- Starting the designer
  - Click **Designer** link under Project Home and Design on left-hand navigation bar
  - Click **Online Designer** button under Design your data collection instruments & enable your surveys under Project Setup tab



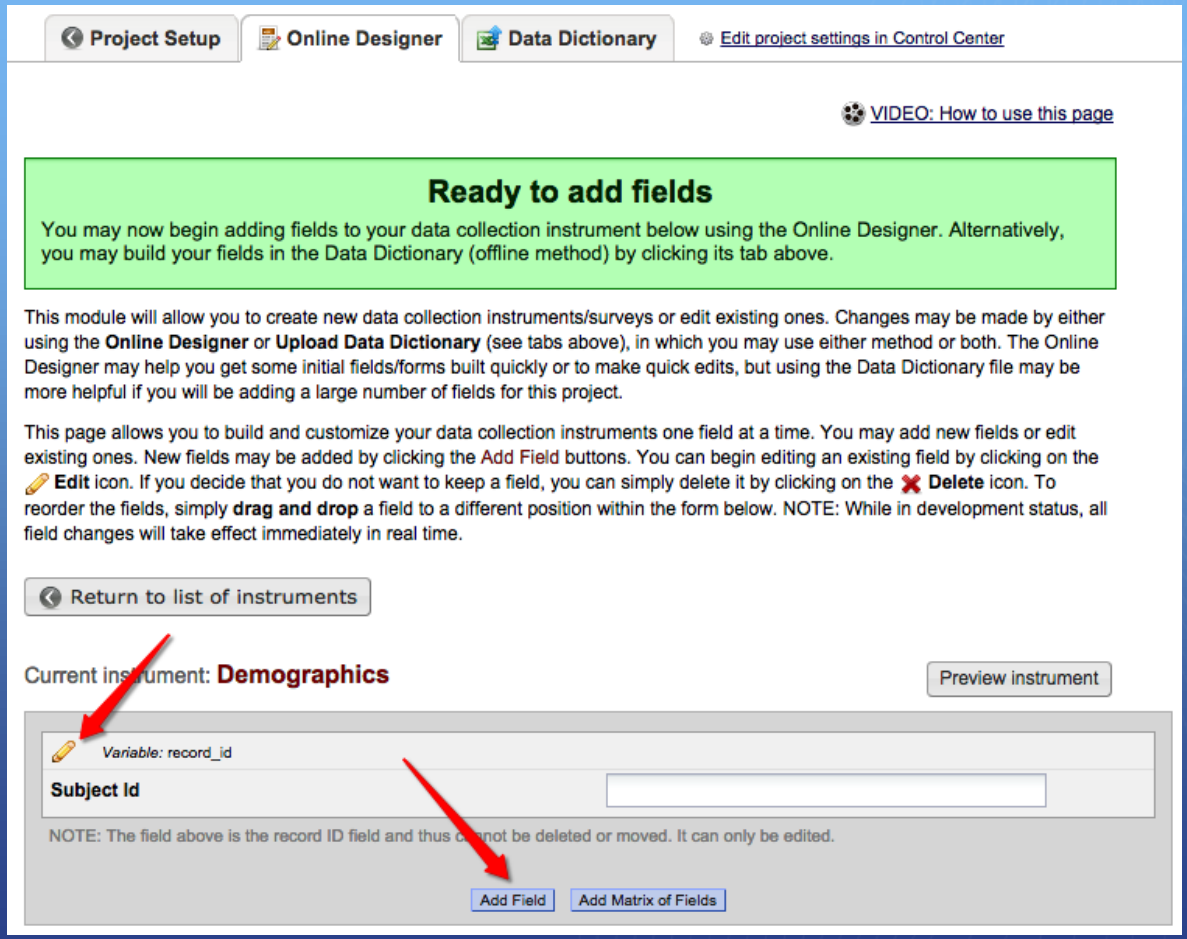
Initial Project

- For new projects using the Fred Hutch template, you will start with a single data collection instrument, **Sample Instrument**
- Do **not** delete this instrument; rename it instead



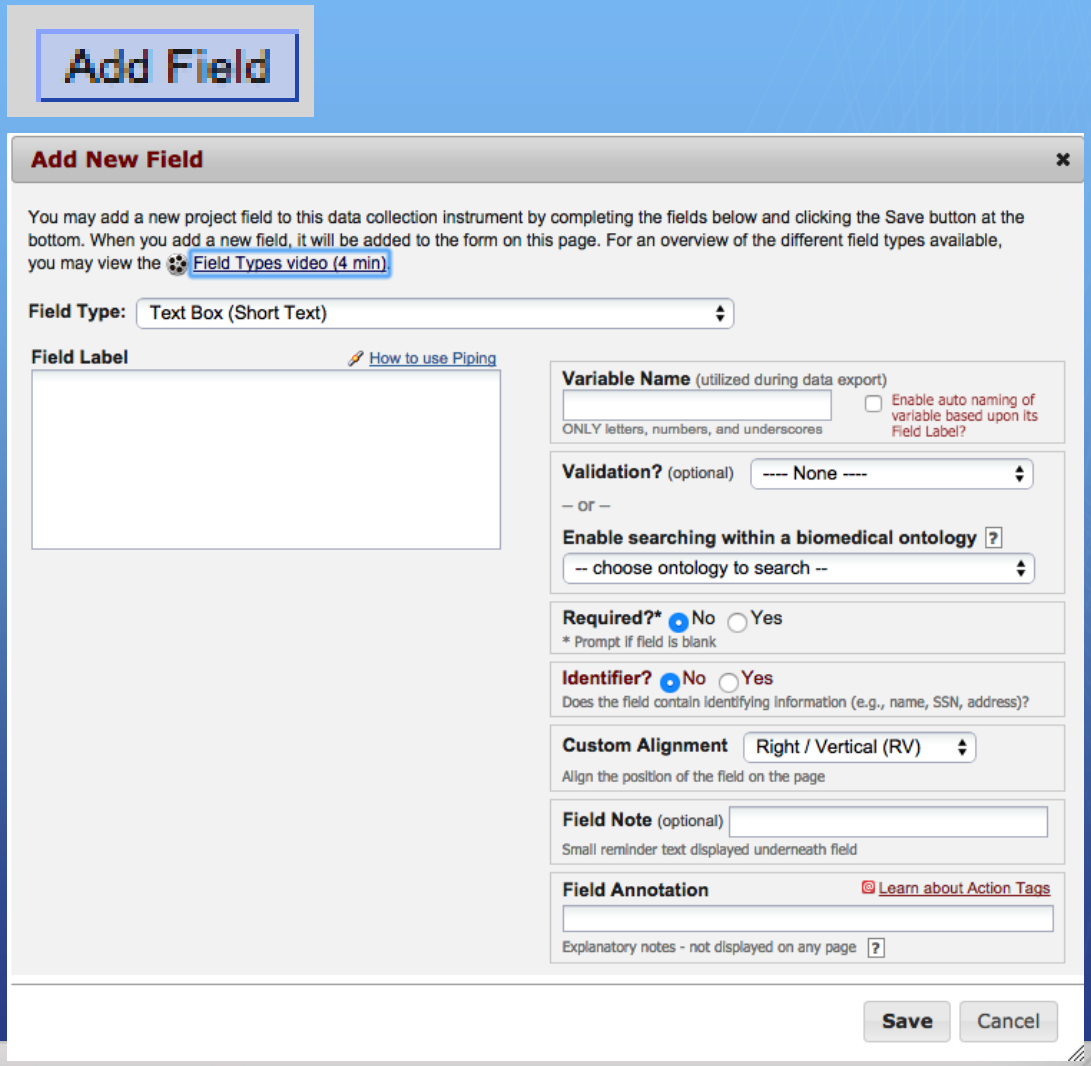
Your first form

- It will always have the **record_id (subject_id)** field
- **Don't** delete this field; it is the primary key of your project.
- You may, however, rename it



Adding a field

- Clicking the **Add Field** button, brings you to the **Add New Field** dialog
- This dialog will vary depending on the **Field Type** selected



Field Types

- **Standard fields**
  - **Text Box**
    - REDCap supports autocomplete based on biomedical ontologies (e.g., ICD-10 codes).
  - **Notes Box** – paragraph of text
  - **Calculated Field** – numeric calculation
  - **Multiple Choice – Drop-down List** (Single Answer)
  - **Multiple Choice – Radio buttons** (Singe Answer)
  - **Checkboxes** (Multiple Answers)
  - **Yes – No** – yes/no radio button
  - **True – False** – true/false radio button
  - **Signature** – draw signature with mouse or finger
  - **File Upload** – attach documents to form
  - **Slider / Visual Analog Scale** – slider from 1 to 100
  - **Descriptive Text** – does not capture data
  - **Begin New Section** – also does not capture data
  - **Dynamic Query** (SQL) – dropdown hooked up to another project. Requires admin to setup
- **Matrix fields**
  - Adds a group of radio button or checkbox fields sharing same set of responses

Other Form Features

- Branching (skip logic)
- Validation of fields
  - Email address, date, number with min, max
- Calculated fields
- Piping of data
  - Customize labels based on data entered
- Action tags
  - Make fields read only, set default value, hide fields, etc.

This topic discussed in much greater detail in RC201 seminar

Other REDCap Features

REDCap Surveys

- A survey is a data instrument that can be completed directly by *participant*
- All data instruments *can be* enabled as surveys
- Surveys can be administered to be anonymous or non-anonymous
- Only one survey can be anonymous per project
  - Additional surveys (since they are tied to a subject) are no longer anonymous
- REDCap can invite participants to take survey via email (or text)
  - Reminders also supported
- You can setup automated invites for follow-up surveys
  - Triggered based on logic on form/survey responses

This topic discussed in much greater detail in RC202 seminar

Reporting & Exporting Data

- REDCap allows you to create reports which can be viewed or be used to export data
- Data can be exported to…
  - CSV/Excel
  - SPSS
  - SAS
  - R
  - STATA

This topic discussed in much greater detail in RC204 seminar

Security

- REDCap allows you to grant security at a very fine grain per user or per roles (groups of users)
- Can also use Data Access Groups (DAGs) to segment data per sites (i.e., Site A can only see Site A data, Site B can only see Site B data, etc.)

This topic discussed in much greater detail in RC204 seminar

Other Capabilities/Features (1 of 2)

- Development and Production modes
  - Ability to draft changes when in production
- Support for instruments that repeat on either a fixed schedule or ad-hoc
- Randomization support
- Built-in audit trail
- Support for field comments
- Data Quality Rules
- Data Import

These topics discussed in much greater detail in other seminars

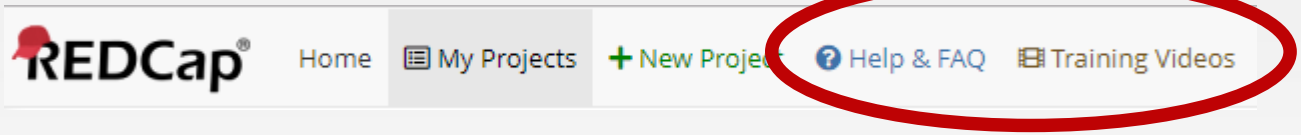
Other Capabilities/Features (2 of 2)

- Support for double-data-entry
- Records can be locked/e-signed
- REDCap supports advanced capabilities via programming hooks…
  - Data entry triggers (run code when a record is saved)
  - API programming (other systems can pull or push data from/to REDCap)
  - Data entry hooks / external modules (customize the data entry experience in REDCap)
- Offline support for mobile devices

These topics discussed in much greater detail in other seminars

Training & Docs

- Right within REDCap…
  - Note: you must close any project and go to the Home or My Projects tab



- CDS provides support in the form…
  - Free training & videos
  - Free office hours twice a month (1st & 3rd Mondays from 2-3pm)
  - Support ticketing system
  - Slack channel for peer support
  - Option to help with setup and programming
  - See Fred Hutch REDCap news at **http://redcap.fredhutch.org** for links to all above services

Summary

- REDCap is a rich research-oriented EDC with support for surveys
- REDCap is a vibrant product with a bright future
- REDCap has support for logging, import, export, longitudinal studies, email/texting, mobile devices, role-base security, …
- REDCap can be extended via a number of programming extensions
- REDCap has lots of online help, videos

More Information

- Visit… http://redcap.fredhutch.org
- For help, submit a help ticket, by emailing…
  - redcaphelp@fredhutch.org

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Thank you!

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