REDCap 6.15.x @ Indiana University
Release Notes

General Enhancements

- Updated "Help & FAQ" page, has better navigation and is easier to read.
- Piping can now work recursively in case the initial data that is piped also contains variables that should then be piped.
- The mailto link at the bottom left of a project has now been replaced with a "Contact REDCap administrator" button that, when clicked, opens the user's default email client and pre-fills the email body with their username, the title of the current project, and a link to the project. This should help administrators in case this information is not provided by the user themselves.
- When copying a user role on a project's User Rights page, the Edit Role popup now opens immediately after copying a role to allow the user to more easily modify the newly created role.
- If a user has had access to REDCap for more than 7 days and they are logging in to REDCap's home page, then it will redirect them to the My Projects page after a successful login. This is to save them a click, assuming that they have no need to view the home page at this point.
- REDCap will now also perform server-side validation to validate all submitted values prior to saving them to ensure they are valid values.
- Verifies the value via a text field's field validation type, or if a multiple choice field, verifying that the value is indeed a valid choice for the field.

  o If they are considered invalid values, then the value will not be saved, and the page will be reloaded with an error message (similar to the Required Fields error message) informing the user that invalid values were entered and should thus be corrected, if desired.
  o New server-side validation improves the overall quality of data being entered on surveys and form.

- Live Filters for reports

  o Any report can now have up to 3 fields that can be designated as a Live Filter. The Live Filters are displayed as drop-downs when viewing a report at the top-right of the page, and selecting a Live Filter will cause the report to be re-run in real time using the Live Filter value as a filter.
  o If exporting a report that has a Live Filter selected, the export popup window will provide an extra choice to allow the user to export the full report data set or to apply the currently selected Live Filter to the report when exporting.
  o Note: Currently only multiple choice fields can be used as Live Filters (as well as Events, if longitudinal, and Data Access Groups, if any exist).

- The left-hand menu of each project now has collapsible sections so that a user may collapse the section for easier navigation or to have a more compact page. The collapsed state of each section in each project is remembered using a cookie on the user's device so that when a user returns to

the project in the future, the menu section remains in the same collapsed/non-collapsed state as the last time they viewed it on that device.

- New option to download charts displayed on the "Stats & Charts" tab of the "Data Exports, Reports, and Stats" module. The charts will download as PNG image files.
- When an instrument has been enabled as a survey and the survey has the setting "Auto-continue to next survey" enabled, then a down arrow icon will now appear in the Online Designer for that survey to denote that this setting has been enabled.
- New videos for REDCap Mobile App
- When assigning projects to Project Folders, there is now a checkbox option to hide archived projects in the project list. This should make it easier for users to ignore those projects during the folder assignment process.

Survey / Survey Queue / Automated Survey Invitations

- Enhanced radio buttons and checkboxes for surveys

  o New survey feature "enhanced radio buttons and checkboxes" can be found on the Survey Settings page in the Online Designer.
  o User can enable the feature so that radio buttons and checkboxes are displayed differently on the survey page, in which they appear as large animated buttons that look more modern and stylish than traditional radios and checkboxes.
  o New feature can be enabled for any given survey in a project where it will transform *all* radios and checkboxes on the survey into the enhanced version. Note: This feature does not work for radios and checkboxes in a matrix.

- Create custom public survey link

  o On the "Public Survey Link" page in a project that utilizes surveys, users now have the option to create their own custom public survey link that begins with "http://is.gd" (e.g., http://is.gd/diabeticsurvey), in which the custom URL will simply redirect to the public survey in their project.
  o May enter a desired URL, and it will check if the URL has already been taken. If not, it will store that custom URL in the project so that it is always able to be obtained on the Public Survey Link page.
- Survey Settings page in the Online Designer, the text for the "Delete Survey" button at the bottom of the page has been changed to "Delete Survey Settings" to reduce confusion regarding what the button does.
- If the Survey Login feature is enabled in a project, it now performs a password mask for the text fields on the survey login form in order to obscure the participant's password value(s). In previous versions, the password fields were displayed as clear text. There is also a "Show value" checkbox immediately below each login field, and when checked it will remove the password mask from the field to allow the participant to view the value as clear text. Removing the mask may be necessary

in certain cases, such as entering specially formatted values like dates/times and also when using mobile devices, on which it might be more difficult to type with accuracy.

Project Setup / Online Designer / Data Entry / Data Import

- When adding a new field in the Online Designer, the Custom Alignment setting no longer resets back to "Right Vertical (RV)" alignment every time as it did in previous versions, but instead it now reverts to the alignment value of the previous field that was opened beforehand while on that page.
- Added an "Edit" link on the left-hand project menu in the "Project Bookmarks" panel to allow users to easily navigate to the Project Bookmarks page if they have Project Design/Setup privileges.
- A field's Section Header and Field Annotation are now displayed in the Codebook for the project.

- The word "action" was added to the reserved variable name list to prevent users from creating fields with that variable name since it can cause JavaScript errors to occur on a survey or form in certain browsers when the field is used in branching logic.
- When a project is in production status, it was too difficult for users to find the Check For Identifiers page, so it has now been added to the bottom of the Project Setup page when the project is in production.
- Compatibility notice for the embedded audio option for attachments for Descriptive fields on surveys and data entry forms. The compatibility notice informs the user that the embedded audio option for attachments is not 100% compatible for all audio file types across all web browsers. This is not a limitation in REDCap, but is simply a compatibility issue across web browsers. The most compatible audio file types to use are MP3 and WAV. Other audio types may work on some browsers but not in others. Unfortunately, there is not always an easy way to know what audio file will work for which browser, especially as operating systems and web browsers evolve over time.
- Data History popup or the Data Resolution Workflow popup for a given record/field should now open a bit more quickly than before if it had been slow in the past, especially for projects with many records and/or data changes.
- Users can now only send the request one time for requesting that a production project be deleted.
- Slider fields on surveys and data entry forms are now much easier to use on mobile/touch devices.
- Delete project data - When a user moves a project to production (or requests to have a project moved to production) on the Project Setup page, it now forces them to choose if they want to delete all project data or to keep all existing records. In previous versions, it would pre-check the "delete all data" checkbox, which could sometimes cause users to unwittingly lose all their data if not paying attention to what they are agreeing to.
- Record Locking Customization page in a project now allows normal users to view the locking and e-signature information in read-only format when in production.

- User Rights page in a project prevents users from mistakenly assigning themselves to a role that does not have User Rights privileges, which could inadvertently cause them to be locked out of that page in their own project.

- User Rights: If an entire data entry form is disabled due to a user's form-level privileges being set to "read-only", the user would mistakenly not be able to add an E-signature to the form even if they have E-signing privileges. This is inconsistent since they can Lock or Unlock the form but cannot E-sign it. Users with E-signing privileges will now be able to e-sign a data entry form that is disabled. This is allowable since Locking and E-signing privileges are separate from data entry privileges.
- When in production, users can now request that a project be deleted by an administrator. Additionally, any user that has submitted this type of request may also manually cancel the request by clicking a "Cancel request" button next to the disabled button where the request was originally submitted.
- Action Tags: Are special terms that begin with the '@' sign that can be placed inside a field's Field Annotation. Each action tag has a corresponding action that is performed for the field when displayed on data entry forms and survey pages.

    - @HIDEBUTTON - Hides the 'Now' or 'Today' button that is typically displayed to the right of date, time, and date/time fields.
    - @APPUSERNAME-APP - In the REDCap Mobile App, this action tag sets a field's value to the app username of the current mobile app user - i.e., their username in the mobile app, which is not necessarily the same as their REDCap server username. NOTE: For use only in the REDCap Mobile App.
    - @USERNAME - Sets a field's value to the username of the current REDCap user. If this is used on a survey, the value will be "[survey respondent]". Once the value is captured, it will not be changed when visiting the page at a later time.
    - @DEFAULT - Sets a field's initial value.
        - This action tag allows a field to have a specified default value when viewing the field on a survey or data entry form that has not yet had any data saved for it (i.e., when the form status icon is gray or when a survey has not been started).
        - The format must follow the pattern @DEFAULT="????", in which the desired default value should be inside single or double quotes.
        - For checkbox fields, simply separate multiple checkbox values with commas - e.g., @DEFAULT='1,3,6'. NOTE: The default value does *not* get applied during any data imports (via API or Data Import Tool) but only operates when viewing survey pages and data entry forms.
        - For text fields, you may even perform Piping inside the default value to pipe data from another field in the project - e.g., @DEFAULT="Name: [first_name] [last_name], DOB: [dob]".
        - NOTE: If being used on a date or datetime field, the date value inside the quotes must be in Y-M-D format - e.g., @DEFAULT='2007-12-25'.
        - If this action tag is used on a survey question that is utilizing a survey pre-fill method (via query string or POST submit), then the pre-fill values supplied will override the default values provided by the action tag.

- Performing data exports or viewing reports for projects containing very large amounts records, especially in conjunction with lots of events and/or fields, should not halt the export process very often anymore. In the past this might cause REDCap to display an error message saying "the data export is not able to complete" due to the large amount of data being exported or viewed. In the case when too much web server memory is used during the data export process, REDCap will now invisibly revert to a backup process that utilizes a local temp file on the server for temporarily storing data during the export process (rather than relying on server memory solely for this). This will allow the export process to complete successfully; however, the process will take several times longer to complete than if simply using server memory.
- Users may now export a project's data in CDISC ODM format. This new option is found on the "Data Exports, Reports, and Stats" page in the data export popup when selecting export format.
- An entire REDCap project can now be exported as a single XML file (which happens to be in CDISC ODM format). The file includes events, arms, instruments, fields, and project attributes – even descriptive field attachments. If the project contains data, then the user can also optionally export the project data (including uploaded files) in the same XML file. This XML file can serve as a snapshot or backup copy of the project, and can even be imported on the Create New Project page to create a clone (more or less) of the project.
- Create a new project from a REDCap XML file (or other XML file containing metadata in CDISC ODM format). This is a new option on the Create New Project page, which allows the user to optionally upload their XML file rather than choosing a project template or creating the project from scratch.
- Import users (import new users into a project while setting their user privileges, or update the privileges of existing users in the project.) - requires API Import privileges and User Rights privileges
- Users may now download and upload arms and events as a CSV file on the "Define My Events" page, as well as download and upload the instrument-event designations as a CSV file on the "Designate Instruments for My Events" page. Using these methods, users can now fully reconstruct the structure of a project if they wish to copy it, in which they could download the data dictionary file, arms file, events file, event mappings file, and data export file, and then upload all of them into a new project to recreate it. In previous versions, this could only be done for classic projects, but this now allows it to be done for longitudinal projects. When uploading the CSV file for arms, events, or event mappings, it will display a preview to the user to show what changes will be made, such as which things may be added, modified, deleted, or stay the same.
- Links for "select all" and "deselect all" were added to the "Designate Instruments for My Events" page to allow users to more easily check off the checkboxes if many instruments and/or events exist in the project.

API / Plugins / Hooks

- New API methods (please see the API documentation embedded in REDCap for details regarding these methods)

- o Arm import/delete - for longitudinal projects only; requires API Import privileges and Project Design/Setup privileges
- o Event import/delete - for longitudinal projects only; requires API Import privileges and Project Design/Setup privileges
- o Import instrument-event mappings - for longitudinal projects only; requires API Import privileges and Project Design/Setup privileges
- o Import metadata, i.e. data dictionary - available only in development status; requires API Import privileges and Project Design/Setup privileges
- Changes to existing API methods
  - o Export Project XML – New API method – Returns the contents of an entire project (records, events, arms, instruments, fields, and project attributes – even uploaded files and Descriptive field attachments) as a single XML file, which is in CDISC ODM format.
  - o Export Records – Parameter for data format now accepts value of "odm" to export data in CDISC ODM format. This only returns data (not the project structure/metadata).
  - o Import Records – Parameter for data format now accepts value of "odm" to import data in CDISC ODM format. This only returns data (not the project structure/metadata).
  - o For the API method "Export Users", many more user privilege rights are included in the response. The following is the full header list:
    username,email,firstname,lastname,expiration,data_access_group,data_access_group_id,design,user_rights,data_access_groups,data_export,reports,stats_and_charts,manage_survey_participants,calendar,data_import_tool,data_comparison_tool,logging,file_repository,data_quality_create,data_quality_execute,api_export,api_import,mobile_app,mobile_app_download_data,record_create,record_rename,record_delete,lock_records_all_forms,lock_records,lock_records_customization,forms
  - o For the API method "Export Users", when requesting a response in CSV format, form-level rights are returned in a different format in order to prevent possible duplication of other new user privileges that are returned, in which all form rights will now be consolidated into a single column named "forms" (whereas in previous versions each form was represented as an individual column). The last column of the CSV string returned will have "forms" as the header, and the value will be each [unique] form name and its numerical value as a colon-separated pair with all the form value pairs strung together as a single comma-separated string (e.g. "demographics:1,visit_data:3,baseline:1"). See a full CSV example below of two users exported from a project.
    username,email,firstname,lastname,expiration,data_access_group,data_access_group_id,design,user_rights,data_access_groups,data_export,reports,stats_and_charts,manage_survey_participants,calendar,data_import_tool,data_comparison_tool,logging,file_repository,data_quality_create,data_quality_execute,api_export,api_import,mobile_app,mobile_app_download_data,record_create,record_rename,record_delete,lock_records_all_forms,lock_records,lock_records_customization,forms

    harrispa,test1@gmail.com,Joe,User,,,,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,0,0,0,0,0,"demographics:3,baseline_data:1,visit_lab_data:1,patient_morale_questionnaire:1,visit_bloo

d_workup:1,completion_data:1,completion_project_questionnaire:1,visit_observed_behavior:1"

taylorr4,test2@gmail.com,Joe,User,2015-12-08,group_a,1,0,0,0,2,1,1,1,1,0,0,0,1,0,0,0,0,0,0,1,0,0,0,0,0,"demographics:3,baseline_data:1,visit_lab_data:1,patient_morale_questionnaire:1,visit_blood_workup:1,completion_data:1,completion_project_questionnaire:1,visit_observed_behavior:1"

- o For the API method "Export Users", when requesting a response in XML format, the main parent tags at the beginning and end of the response will no longer be <records> but instead will be <users> to be less confusing (since "records" often denotes something else in REDCap) and also to be more consistent with how other API methods return XML items.
- o For the API method "Export Users", the new "data_access_group_id" field was added, in which it returns the numerical group ID number that the "data_access_group" field used to return in previous versions. And now, the unique group name of a user's Data Access Group is returned for the "data_access_group" field rather than the numerical group ID number.
- o The API method "Export Instrument-Event Mappings" now returns a different structure if exporting as JSON or XML (however, the CSV format will remain the same). It will now export with "arm_num", "unique_event_name", and "form" as attributes of each item/mapping, as seen in the JSON/XML examples below.
- o JSON example:

  [{"arm_num":1,"unique_event_name":"event_2_arm_1","form":"demographics"},

  {"arm_num":1,"unique_event_name":"event_2_arm_1","form":"baseline_data"},

  {"arm_num":3,"unique_event_name":"visit_2_arm_3","form":"completion_data"}]

- o XML example:

  <?xml version="1.0" encoding="UTF-8" ?>

  <items>

  <item><arm_num>1</arm_num><unique_event_name>event_2_arm_1</unique_event_name><form>demographics</form></item>

  <item><arm_num>1</arm_num><unique_event_name>event_2_arm_1</unique_event_name><form>baseline_data</form></item>

  <item><arm_num>3</arm_num><unique_event_name>visit_2_arm_3</unique_event_name><form>completion_data</form></item>

  </items>

- o For "Export Project Information" API method, the following two project attributes were added:
  - secondary_unique_field – The variable name of the secondary unique field defined in the project (if applicable).

- ▪ display_today_now_button – Value will be "0" or "1" (i.e. False or True). If "0", then do NOT display the today/now button next to date/datetime fields on data entry forms and surveys. If "1" (default), display them.
- A new optional API parameter named "filterLogic" was API method "Export Records". filterLogic should be a string of logic text (e.g., [age] > 30) for filtering the data to be returned by this API method, in which the API will only return the records (or record-events, if a longitudinal project) where the logic evaluates as TRUE. This parameter is blank/null by default unless a value is supplied. Please note that if the filter logic contains any incorrect syntax, the API will respond with an error message.
- Create Project – New optional parameter named "odm" can be used to pass the ODM XML string of an entire project's structure (the same as output by the Export Project XML method) when creating a new project using a Super API Token. This will allow you not only to create the project with the API request, but also to import all fields, forms, and project attributes (and events and arms, if longitudinal) as well as record data all at the same time.
- A new parameter "exportFiles" (boolean) was added to the REDCap::getProjectXML developer method for plugins and hooks. The parameter, which defaults to FALSE, specifies whether or not the resulting XML will include all files (base64 encoded) that were uploaded for File Upload and Signature fields for all records in the project. Please note that while the previous version (6.12.0) exported all files in the resulting XML by default, it no longer does that and must now be specified explicitly.
- A new parameter "exportFiles" (boolean) was added to the "Export Project XML" API method. The parameter, which defaults to FALSE, specifies whether or not the resulting XML will include all files (base64 encoded) that were uploaded for File Upload and Signature fields for all records in the project. Please note that while the previous version (6.12.0) exported all files in the resulting XML by default, it no longer does that and must now be specified explicitly.
- Create project
  - Allows a user to create a new REDCap project while setting some project attributes, such as project title, project purpose, enable/disable record auto-numbering, enable the project as longitudinal, and enable surveys in the project.
  - This method requires a Super API Token that must be granted to a user by a REDCap administrator on the API Tokens page in the Control Center. After the super token has been granted, the user can view the super token on their My Profile page.

- New hook functions:
  - redcap_every_page_top - Allows custom actions to be performed at the top of every page in REDCap (including plugins that render the REDCap page header)
  - redcap_every_page_before_render - Allows custom actions to be performed by every PHP script in REDCap (including plugins) before the script itself begins to be formally processed.
- New method for hooks/plugins: REDCap::getCopyright - Returns the REDCap copyright text to be displayed on all pages - i.e., "REDCap X.X.X - © 20XX Vanderbilt University". This is recommended to be used if a hook is utilized to alter an existing REDCap page so much that the normal page footer that contains the REDCap copyright notice is no longer displayed. Thus you may use this method to display the copyright notice on that page but in a different way or in a different location.

This is to conform to the REDCap license agreement that stipulates that the REDCap copyright notice should not be removed from any REDCap pages (this excludes plugins).

- REDCap now has the Bootstrap front-end framework embedded inside it, thus allowing plugin/hook developers to utilize all the Bootstrap UI elements and features.
- New and improved SDK developer methods for plugins and hooks
  - REDCap::getProjectXML – New method – Returns the contents of an entire project (records, events, arms, instruments, fields, and project attributes – even uploaded files and Descriptive field attachments) as a single XML file, which is in CDISC ODM format.
  - REDCap::getData – Parameter for data format now accepts value of "odm" to export data in CDISC ODM format. This only returns data (not the project structure/metadata).
  - REDCap::saveData – Parameter for data format now accepts value of "odm" to import data in CDISC ODM format. This only returns data a(not the project structure/metadata).