Request for Proposals

Curate Science Redesign 2018 – Contract #1

About the Project

Science requires transparency. No platform currently exists, however, to ensure that published scientific articles comply with the relevant transparency standards. Curate Science aims to solve this problem by building a web platform for the research community to *label, link, and organize* the transparency of published findings according to the relevant standards: think *nutritional labels for scientific articles*!

Akin to the harmonization of communication standards (e.g., TCP/IP) in the 1970s (which paved the way for the Internet), we are developing harmonized "suites" of transparency standards for different kinds of empirical research. This has immense potential to accelerate scientific progress by revolutionizing the conduct and validity of meta-analyses, but also by expediting systemic/institutional reforms for various research stakeholders (e.g., it will allow journals, universities, and funders to ensure that their articles, employees, and grantees, respectively, comply with the appropriate transparency standards).

Vision: Curate Science is part of an ambitious future vision that seeks to transform how science is organized and evaluated. In this spirit, it is promising to see the research community increasingly and regularly recognizing the need for a new kind of platform (like ours) to digitally organize replications and the transparency of articles (evidence of such demand: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14 [15] [16] [17] [18] [19]] [20] [21] [22] [23] [24] [25] [26] [27] [28] [29] [30] [31] [32]).

Curate Science is currently led by a small group of researchers (and volunteers), mostly from psychology, who are leaders in the growing transparency and replication movements in the social sciences. The initiative is led by Etienne LeBel (PhD), who was recently awarded a 2-year European Commission Marie-Curie grant to scale up the Curate Science platform.

The goal of the current contract is to implement frontend user interface (UI) features to allow users to curate the transparency and replication information of scientific articles. These features have been redesigned based on a previous version of our website that focused on crowdsourcing replications in psychology. Though valuable, it became clear that a more flexible UI was needed to accommodate a wider range of article types and study methodologies. We have now redesigned the UI to better serve the research community. Contract #1 implements the main features of this revamped and scaled-up web platform.

What we already have

Backend: The backend has been completely redesigned and implemented according to a new and more flexible ontology. It is a Django/Python app deployed on Google Cloud servers using a REST API (Djanjo framework) to interact with a postgreSQL database (Github repo; models.py). It includes:

- REST API view controllers (views_api.py), model serializers (serializers.py), and API routes/endpoints (urls.py) to create, update, and view entities, including back end functionality to allow full text search.
- HTML view controllers (views.py), HTML templates, and autocomplete forms (forms.py) for our 3 main pages.

Frontend:

- We currently have draft, clickable HTML mockups for each of our 3 main pages. These mockups include all features that we ultimately need to function (though some minor UX tweaks are expected and desired).
- We also have all logos and icons and rough prototype-level CSS (though the icons need to be converted into a proper sprite, as described in the Contract #1 specs document).

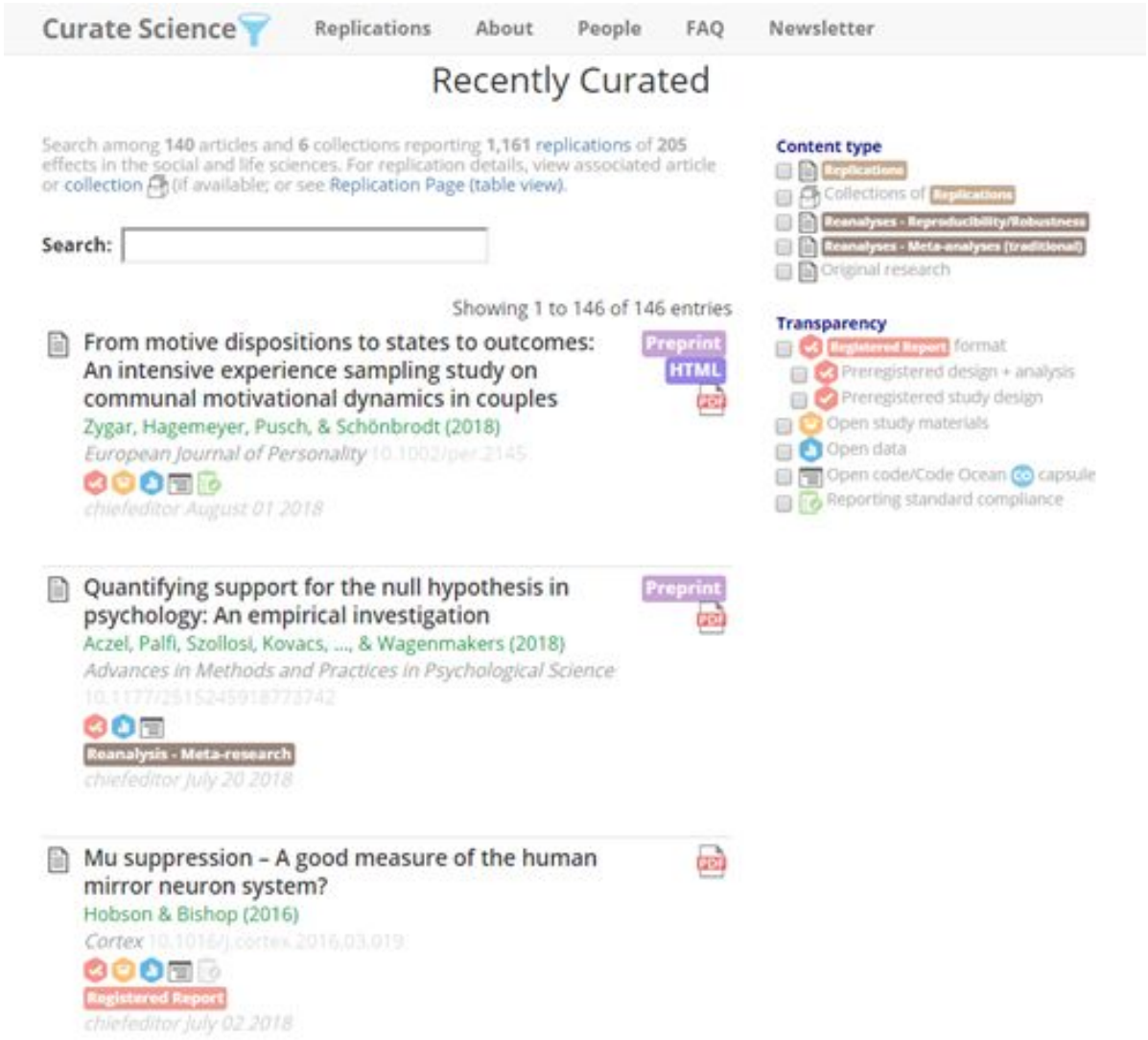
What we need (contract scope)

Purpose of the Contract:
The main frontend features are the focus of Contract #1:

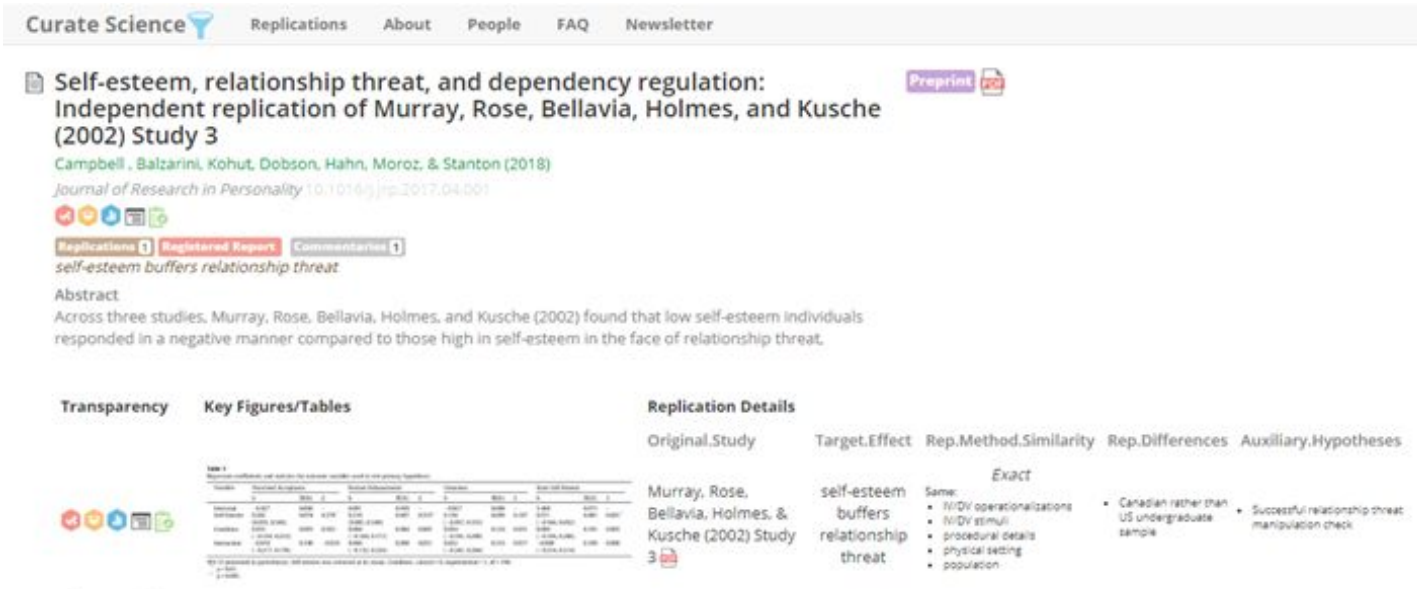
- Users can view, add, and edit the transparency information for 5 article types (same view used for all article types, however, different fields to be displayed depending on the article type):
    1. original article
    2. replication article
    3. reanalysis article (i.e., an article reporting reproducibility/robustness reanalyses of a previously published result)
    4. meta-analysis article (i.e., an article reporting a meta-analysis of several previously published studies)
    5. commentary article (i.e., an article that comments on a previously published article without reanalysis)
- For any article type, users can curate (i.e., label and hyperlink) 5 different indicators of transparency:
    1. **preregistration information:** Was this study preregistered? And how was it preregistered? (Preregistration is the practice of uploading a "frozen" document of the methods and analysis plans of a study *prior* to data collection to minimize bias.)
    2. **open/public materials:** Have all all study materials been uploaded to a public repository? (Materials are required for independent researchers to repeat a study, i.e., conduct a "replication study")
    3. **open/public data:** Have all all data files been uploaded to a public repository? (Data are required for independent researchers to reproduce an article's reported results.)
    4. **open/public code**: Have all syntax/code files been uploaded to a public repository? (Code is required for independent researchers to repeat the data processing and statistical analyses of an article's reported results.)
    5. **reporting standards compliance**: Have the authors completed the relevant checklist confirming that they have reported all necessary methodological details for the specific methodologies used in their study?
- Users can link (new sample) replications of a previously published finding/effect to their respective original study articles.

Contract Scope/Technical Requirements

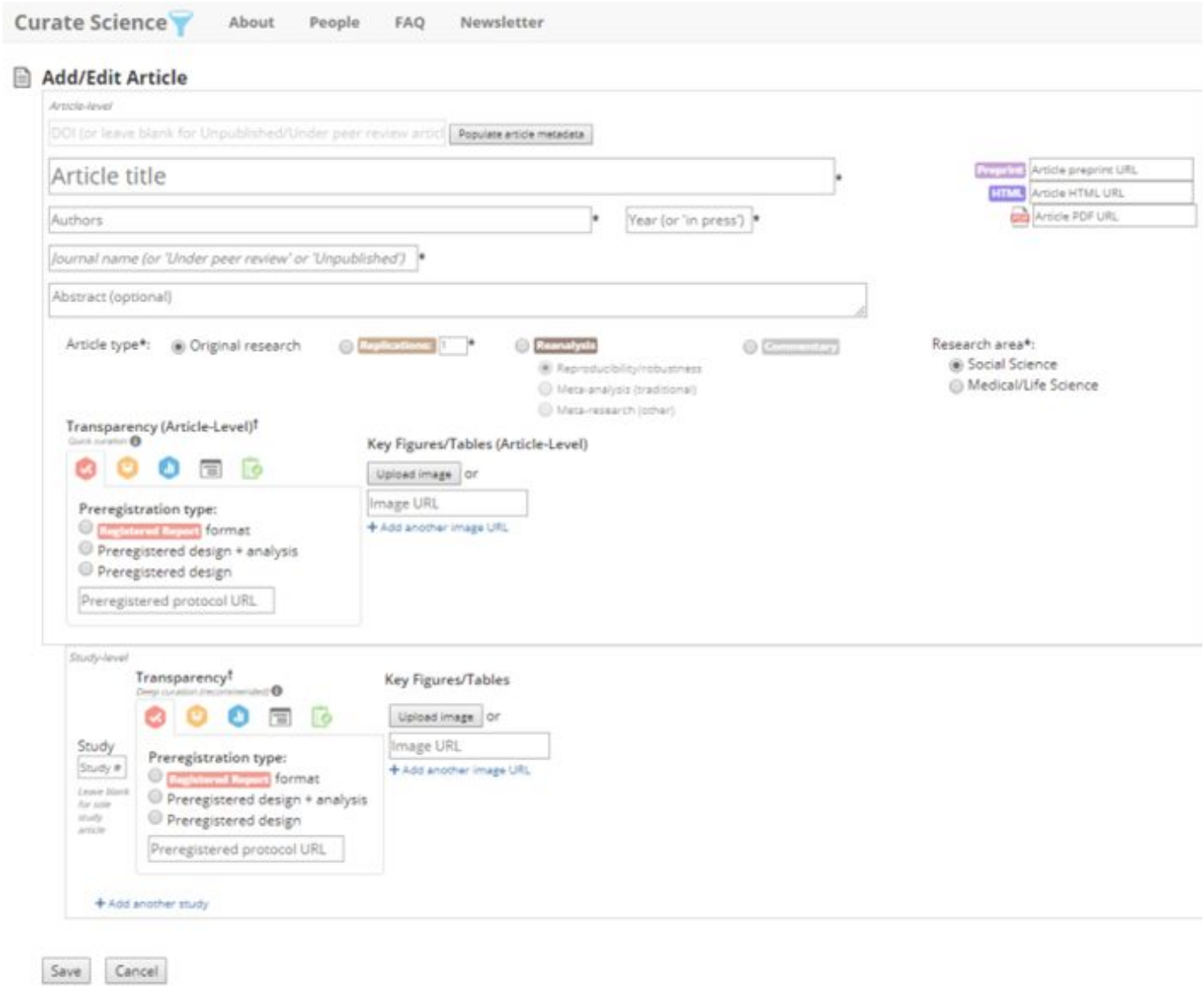
- Homepage
    - Full text search on article title, article abstract, and author names fields
    - Search results page (ability to filter by content type and transparency information)
    - Browse recently curated articles (ability to filter by content type and transparency information)
    - Login and logout functionality



- Article page
    - View article-level and study-level transparency information, key figures/tables, and replication details



- New/Edit Article page
    - Add new article functionality
    - Automatic article metadata field population functionality using CrossRef lookup service
    - Add new author functionality via modal window



- Minor UX work to improve the layout of, and workflow for, each of the 3 main pages (i.e., Homepage, Article page, and New/Edit Article page).

Contract #1 is for frontend and UX work (HTML, CSS, JavaScript, jQuery, Bootstrap) to be implemented using the existing Django/Python backend (as previously described; Github repo). No backend work is anticipated, though minor tweaks to backend code may be required (hence preference will be given to a developer with some backend Django experience).

For all details of the specs/requirements for each page, see Contract #1 specs document.

Browser support: Chrome, Firefox, and Safari (limited IE support) .
Responsive design requirements: Responsive design required for all pages, but only desktop and tablet views. That said, the homepage/search results pages, *do* need to *also* be mobile-friendly (NOTE: the supplied prototype for the homepage/search results pages are *already* mobile-friendly).

1. Deadline and Proposal Submission Process

Proposal submission deadline: Oct 20, 2018 (Midnight EST [UTC -5])

Please send complete proposals to curatescience@gmail.com.

2. Timeline

The winning bid will be notified by Oct 23, 2018. Contract #1 work will preferably start immediately upon contract negotiation/agreement (Oct 24, 2018), which means an anticipated start date of Oct 25, 2018.

The required work needs to be completed within 3 weeks of the start date (i.e., ideally by November 14, 2018). After approximately 3 days of internal testing (i.e., by November 17, 2018), iterations/bug fixes needed to get the website to comply with specs/requirements need to be completed within 1 week (i.e., by November 24, 2018).

Contract #1 is the first of 3 contracts to be completed within the next 6-8 months. If we are satisfied with the work completed in Contract #1, the additional 2 contracts will be awarded to the same developer (therefore, preference will be given to a developer who is interested in and available for all 3 contracts). Of note, this contract work is situated in the context of an upcoming 2-year full-time developer position (starting early 2019; pending approval) to further expand and improve the functionality and feature set of the web platform.

3. Elements of Proposal

Your proposal must, at a minimum, include the following elements:

- Resume/CV
- Proposal document that includes the following (PDF format):
    - A representative portfolio: a list of (at least) 3 examples of previous websites you have created that are similar (in terms of interactive UI complexity) to the website being developed for this contract.
    - A brief description of your skills set, background experience, years of experience, prior companies worked for, and relevant credentials/college/university degrees. Specifically:
        - Number of years of frontend development (HTML, CSS, JavaScript, jQuery, Bootstrap)
        - Experience with the following backend frameworks: Django/Python web framework, Django REST API, PostgreSQL, Google Cloud server
    - A brief description (250-word maximum) of the general strategy and approach that will be taken to implement the required frontend features.
        - Include a statement about the approach that will be taken for the (minor) UX work needed to improve the layout and workflow for each of the 3 main pages.
    - An itemized list of all included costs, with an explanation of all fees and costs.

Please send complete proposals to curatescience@gmail.com by Oct 20, 2018 (Midnight EST [UTC -5]).

Contract terms and conditions will be negotiated upon selection of the winning bidder.

4. Evaluation Criteria

We will evaluate all proposals based on the following criteria (in order of importance):

- Value and cost: Bidders will be evaluated on the cost of their solutions to the work needed to achieve the required Contract #1 specs.
- Previous work: Bidders will be evaluated on the examples (minimum of 3) of their work that is similar to the website currently being developed (as well as client testimonials and references; optional).
- Frontend UI/UX experience and knowledge (HTML, CSS, JavaScript, jQuery). Specific UX experience and skills are also important.
- Backend experience with: Django/Python web framework, Django REST API, PostgreSQL, Google Cloud server.
- Familiarity with scientific publishing and statistics; passion/interest in accelerating scientific progress to benefit society.
- Availability beyond Contract #1.
- Educational degrees/qualifications.

5. Budget

Our budget is currently relatively limited (small research grant). Our expectation is that the chosen developer will work at a slightly “reduced rate” (relative to market rate) in the name of developing a web platform that serves the scientific community (i.e., a collective public good within the not-for-profit domain). We hope that the unique opportunity provided to contribute to this exciting web platform will more than compensate for this.