Draft: FOR DISCUSSION
Reports to Universities

Criteria:

- Must create automated reporting that can be updated on a flow basis
- Must be able to be tailored to specific university needs
- Must be subsettable to a specific timeframe, department, discipline or full set of achievements

General:

1. External Awards (source: administrative records)
    a. Total $
    b. From agency
    c. Historical patterns
    d. Year and length of awards
    e. Award Types (individual PI, group PI, center, 1 year, new PI, etc)
2. Job Creation and Retention (source: administrative records)
    a. Total
    b. By Occupation
    c. Historical pattern
3. Licensing Fees*
4. STEM education undergraduate and graduate students (source: administrative records)
    a. By discipline
    b. Position retention/creation
    c. Career trajectories*
5. Faculty Productivity
    a. Publications of faculty (source: webscraping; confirmed by PIs)
    b. Citations of faculty (source: webscraping; confirmed by PIs)
    c. Patents (source: PTO; confirmed by PIs)
    d. Patent Applications(source: PTO; confirmed by PIs)
    e. Federal Advisory Boards/Committees*
    f. Degree and diversity of collaborations/networks
6. Other outcomes (engagement of community critical to develop these)
    a. Health
    b. Equity
    c. Safety
    d. Security
    e. Infrastructure
    f. environment

Additional Possible Features

Visualization of job creation
Visualization of publications
Visualization of citations
Visualization of patents and patent applications
Map of citations/patents/patent applications
Emerging scientific networks within and between university(ies)

Possible approach

Step 1: Using preexisting data and frame

1. Create frame of individuals receiving science funding. This frame should
    a. Initially use only publicly available data on PIs and coPIs
    b. Go back as far as possible (ten year window target: 2000 – 2010)
    c. Subsequently be updated on a monthly basis from administrative data from universities and funding agencies
2. Provide initial match to outcomes using existing data on patents, patent applications and citations, which allows for location and discipline specific outcomes. This would build on existing work prototyped by both science agencies and academic researchers.
3. Create prototype reports for principal investigators, universities and science agencies (see below). All should use the following approaches
    a. Use the existing frame
    b. Be structured to be updated on a monthly basis
    c. Provide visually interesting summaries and updates
    d. Provide useful and relevant information as determined by users through feedback on reports (format, content, and timing) and reported and future metrics.
4. Post prototypes on data.gov (initially on restricted access site)

Step 2: Expanding the data sources

1. Update match to outcomes on flow basis using webscraping technologies and administrative data

Step 3: Expanding the user base and engaging the community

1. Create openly accessible data enclave for researcher community
2. Announce the existence of the enclave and create prize for best report in each of the four categories (innocentive type competition)
3. Update data.gov with best reports as rated by the user community