ACADEMIC ANALYTICS

Research Insight User Guide

FEBRUARY 2019

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The February 2019 update adds three new content types to Research Insight: Patents, Clinical Trials, and Book Chapters. In addition, a significant update to the user interface has been made which includes new formats for the display of scholarly works and the inclusion of new content in collaborative network graphs.

Background

Research Insight is a search engine that indexes the titles and abstracts of articles, conference proceedings, books, federal grants, United States patents, clinical trials, and book chapters stored in the Academic Analytics data warehouse to provide a targeted result set for searches on keywords and faculty names. Research Insight is a separate tool on the Academic Analytics portal. Coverage is national, not limited to a single institution, department or program, and is not restricted to comparative time windows. Data coverage is as follows:

Articles:	2004 – present
Citations:	2004 – present
Conference Proceedings:	2004 – present
Books:	2003 – present
Grants:	2006 – present
Awards:	varies by award
Patents:	1990 – present
Clinical Trials:	2000 – present
Book Chapters:	2003 – present

New Data Elements

Patents, Clinical Trials, and Book Chapters are new data elements captured by Academic Analytics and as such, contain new metadata fields. These new metadata fields are described below.

Patents

Patent data includes the patent title, USPTO patent number, and the number of other US Patents that have cited the patent. While not displayed, the abstract is also indexed by our search algorithms along with the title. Inventors that collaborated on a patent are shown in the scholars section, where available. Clicking the patent number will open a new browser tab of the USPTO page for that patent.

Clinical Trials

Clinical Trials data includes the NCT ID (ClinicalTrials.gov identifier), the sponsor organization, which has authority and control over the study, the study type (Interventional, Observational, or Expanded Access), the allocation of participants (Randomized or Nonrandomized), the phase of the study, and the recruitment status. A variety of other metadata, including the summary, description, condition MeSH terms, intervention MeSH terms, and keywords associated with the trial are indexed by our search algorithms along with the title. Investigators that collaborated on a Trial are shown in the scholars section, where available. Clicking the NCT ID will open a new browser tab of the ClinicalTrials.gov page for that trial.

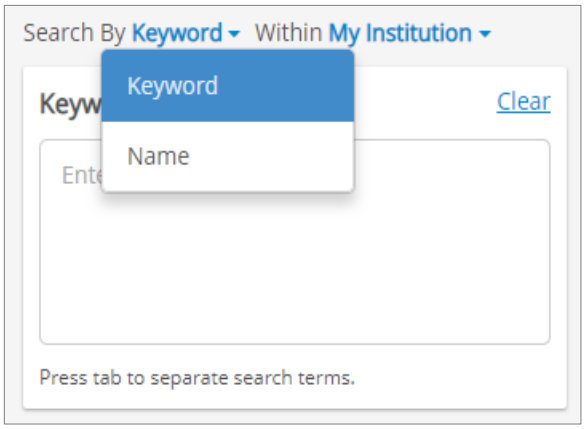
Book Chapters

Book Chapter data includes the chapter title, book title, and ISBN13. Book chapter collaborators are shown in the scholars section.

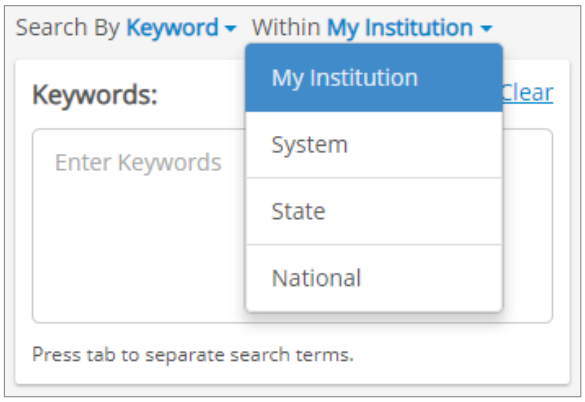
The Search Interface

Search by Keyword

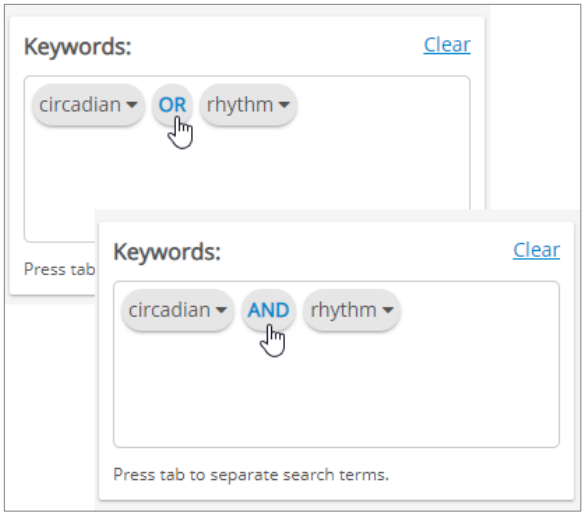
The user begins by selecting a search by keyword or faculty name. Keyword search is the default setting.



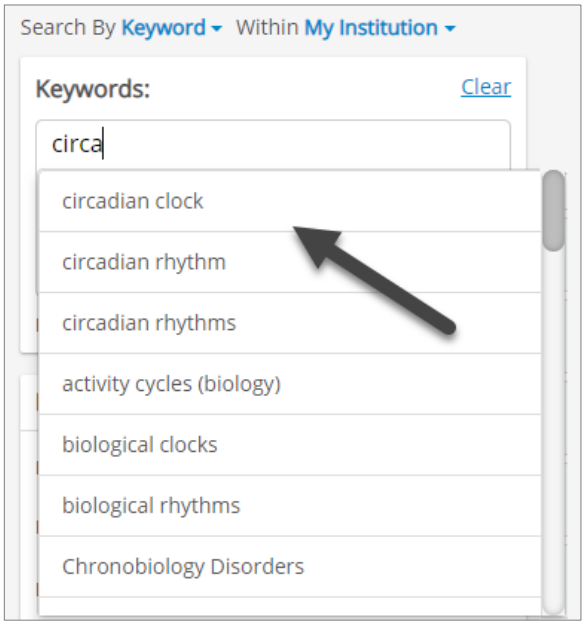
The search can be conducted across the entire country, across the user's state, across the user's university system (if applicable) or at the user's institution.



Next, the user enters a keyword into the search area. Pressing the tab button between keywords will add a Boolean "OR" operator. Clicking the operator bubble will switch the operator type from "or" to "and" or vice versa.

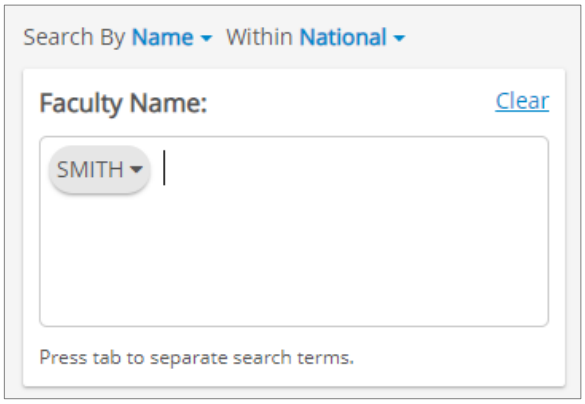


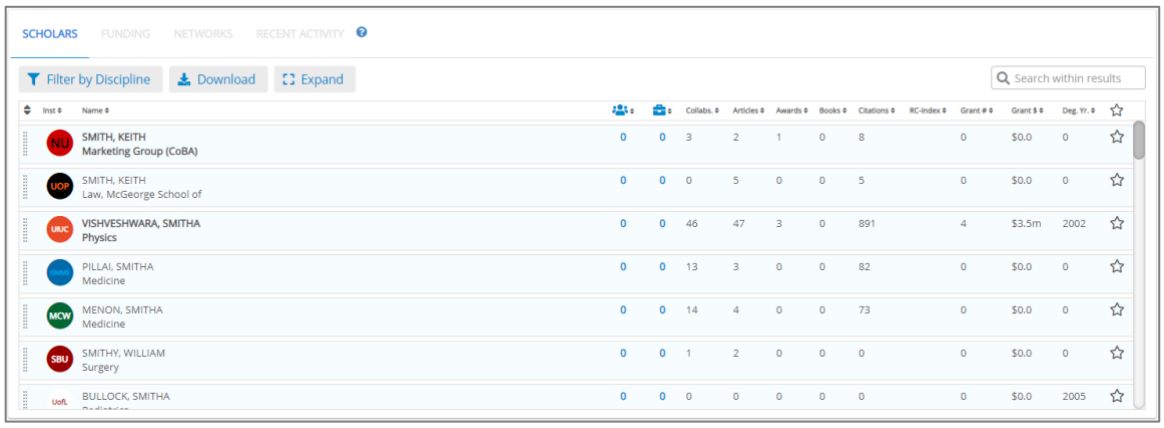
Suggested terms will appear as text is entered. Clicking a suggested term will add it to the search bar. Suggested terms are derived from several publicly available ontologies, including those published by the U.S. National Library of Medicine, the U.S. Department of Agriculture and the National Aeronautics and Space Administration.



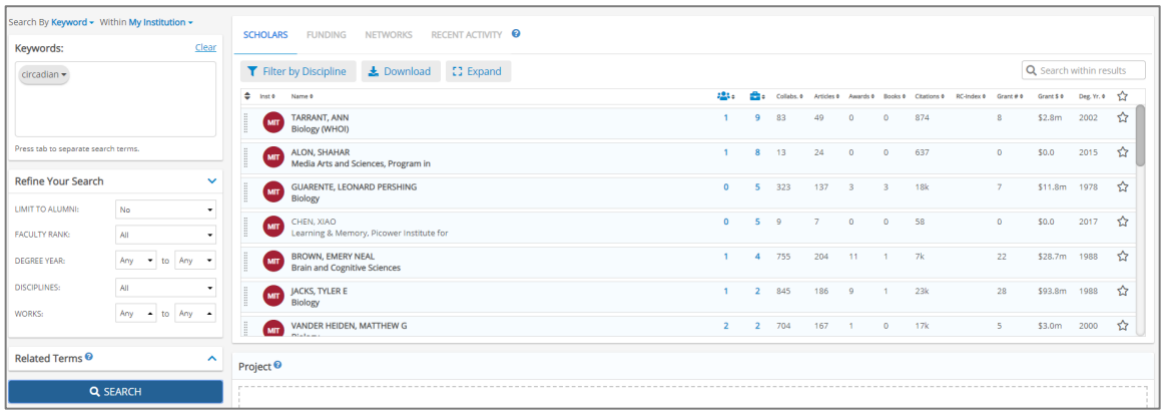
Search Results: Search by Faculty Name

A search by faculty name will return all faculty with a name similar to the name which was queried. For this type of search, Related Terms will not populate, the Activity Related to Your Search section will not be visible, and the Relevance (blue) links in the results table will show “0”.





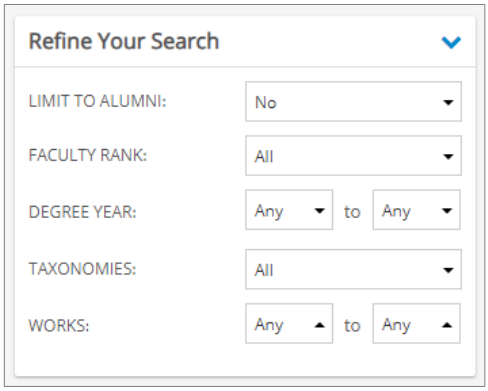
Search Results: Search by Keyword



An initial search of a research term or terms produces three displays: Results, Refine Your Search, and Related Terms.

Filters

Filtering options are based on which type of search is selected (within My Institution, System, State, National). Filters affect returned Scholars and Networks.



All types of searches have the following filters:

Limit to Alumni

Only returns results for scholars with degree institution = user institution.

Faculty Rank

Only returns results for scholars with selected faculty rank.

Can select any combination of Professor, Associate, Assistant, or Other.

Degree Year

Only returns results for scholars with degree year in selected range.

Taxonomies

Only returns results for scholars associated with selected Level 1 taxonomic classifications.

Works

Returns results based only on works published/awarded/started in selected range.

Searches within System, State, National have the following additional filters:

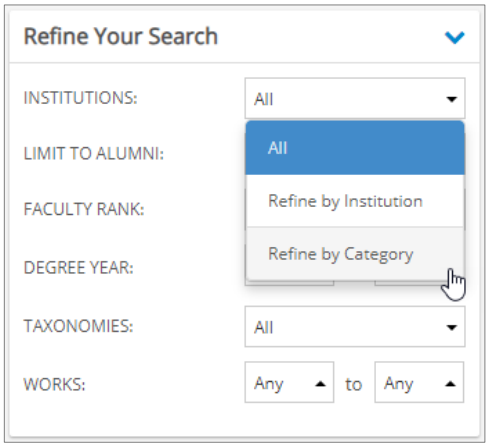
Institutions

Users can refine by category or select individual institutions.

Category options are: AAU, Public/Private, Carnegie, and Land Grant.

“Refine by Institution” allows manual selection of institutions within the system, state or nation.

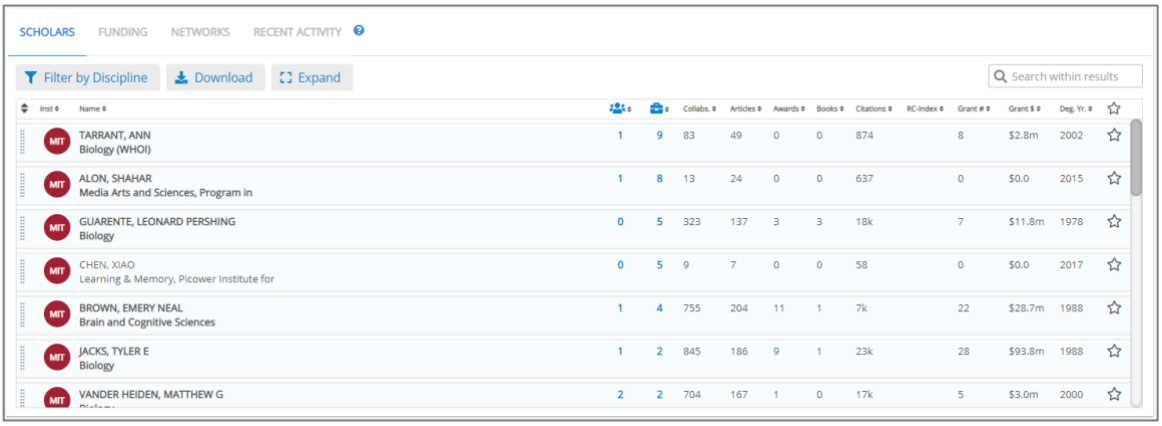
A search only returns results for scholars at selected institutions.



Results

The Results section is divided into Scholars, Funding, Networks, and Recent Activity tabs. The Scholars tab consists of a list of individuals whose research is associated with the search. The Funding tab consists of a list of funding opportunities related to the search. Networks shows national, state or institutional collaborative networks between faculty associated with the search. Recent Activity shows the most recent publications and grants associated with the search. Results can be downloaded in a CSV file by clicking the download button located in the top left of the table: Download. The results table can be expanded by clicking the expand button located in the top left of the table: Expand. The result set can be further refined by using the "search within results" search bar located on the top right of the results.

Scholars



The Scholars tab lists up to 200 faculty entries that can be filtered by discipline by clicking the filter button: Filter by Discipline. The following is shown for each scholar in the results set:

- Current Institution
- Faculty Name and departmental affiliation
- Number of collaborators with collaborations **related to the search**
- Number of works **related to the search**
- Number of total Collaborations (co-authored articles and grant co-pi's)
- Number of total Articles
- Number of total Awards
- Number of total Books
- Number of total Citations
- Recent Citation Index *

- Number of total Grants
- Total Grant Dollars
- Year of Terminal Degree

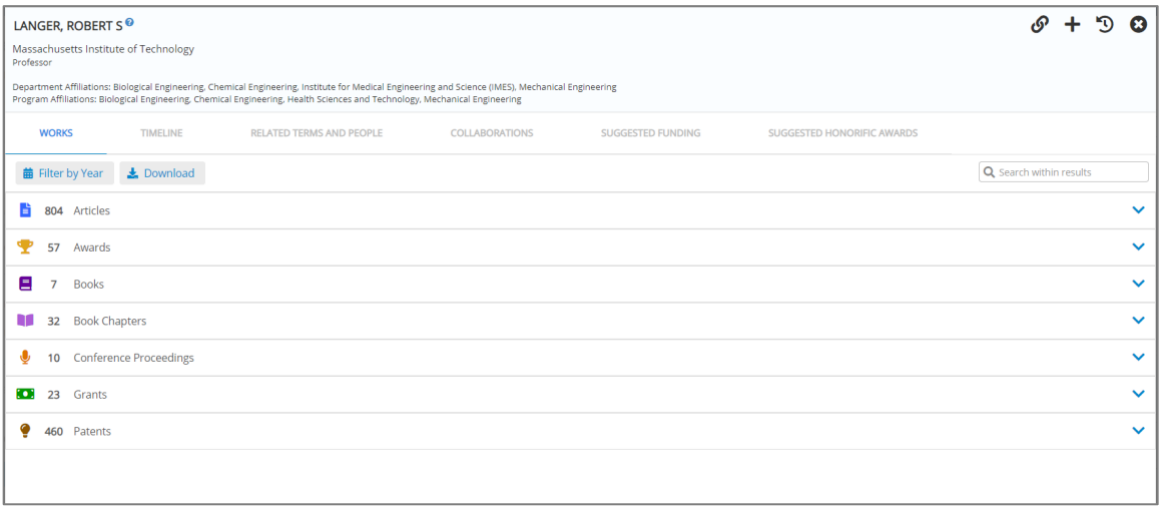
* The Recent Citations Index, or RC-Index, is a metric which allows comparison of citation activity across disciplines and academic ranks. More specifically, this is composed by first calculating the H-Index over the last 7 years of publications, and then normalizing this value relative to discipline and academic rank averages (e.g. Professors of Physics, Assistant Professors of Geology). When a scholar has multiple discipline affiliations (and perhaps multiple ranks), the average index for all such combinations is used as their RC-Index. Scholars with no known discipline affiliations or without a standard academic rank will not have an RC-Index.

Faculty Profile

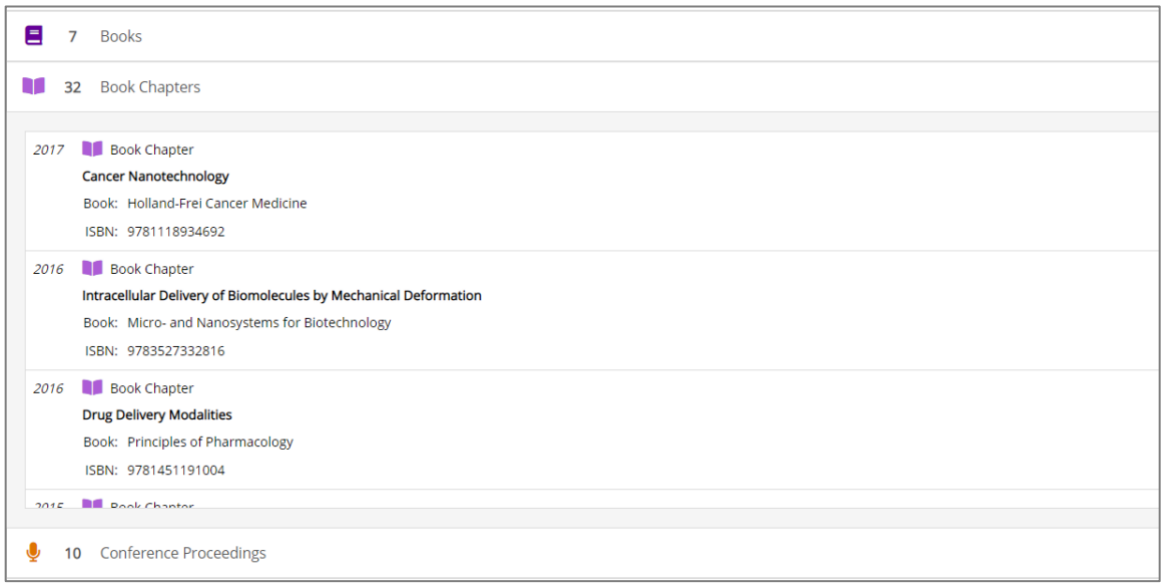
Clicking on an individual's name in the returned faculty names brings up the individual's profile. A researcher's profile includes the following displays:

Works
Timeline
Related Terms and People
Collaborations
Suggested Funding
Suggested Honorific Awards

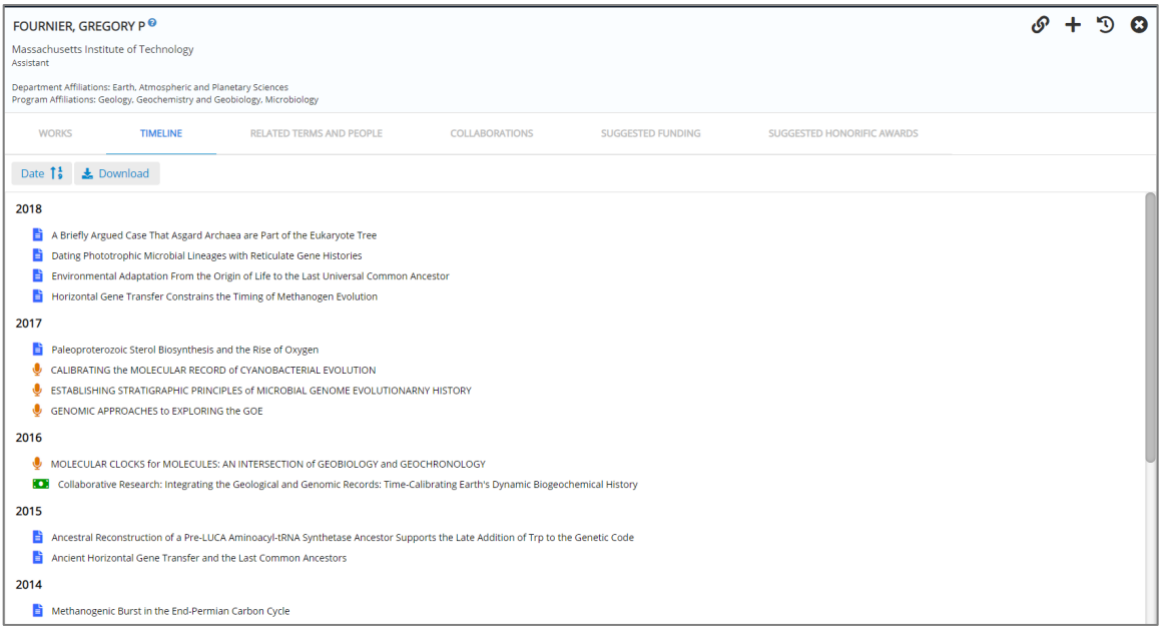
Works



This section provides a complete listing of that individual's research activity. Works includes journal articles, grants, awards, conference proceedings, books, patents, clinical trials, and book chapters. Clicking on a content type will expand the section to show the corresponding works.

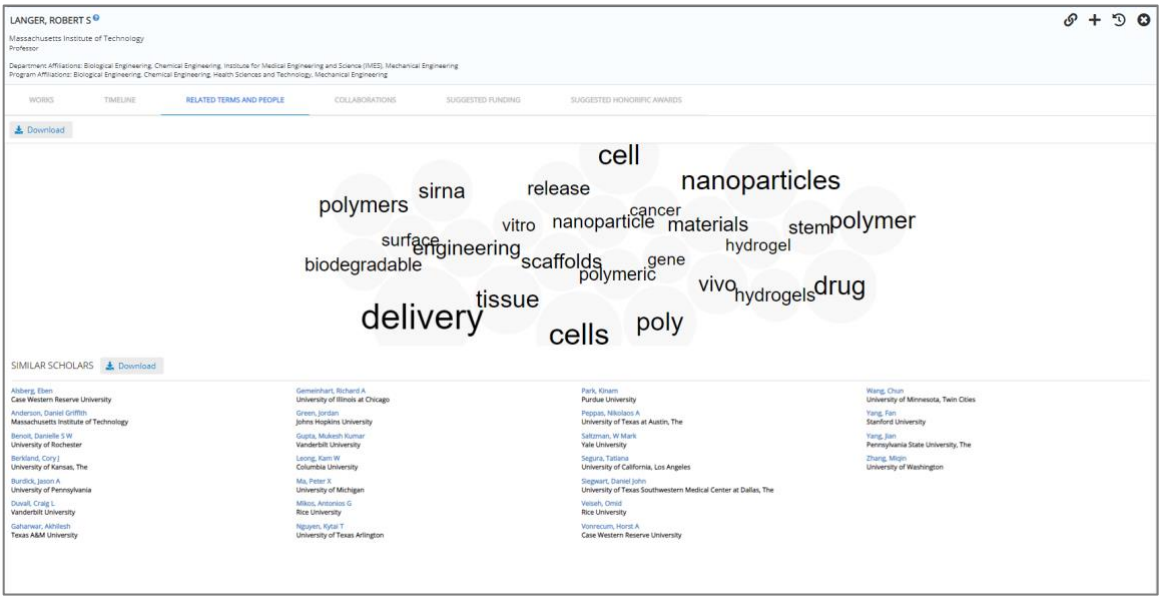


Timeline



This section presents the individual's research activity in chronological order.

Related Terms and People



This view presents Research Terms: the most relevant terms related to that individual's research, and Similar Scholars: individuals working in the same area of inquiry.

- Research Terms provides the user with more conceptual avenues to fully explore research that is being conducted in the area and its cognate topics. This resource allows users to cast as wide a net as they wish.
- Similar Scholars lists individuals working in the same area of inquiry and can be used as the first step in identifying possible candidates for a research team.

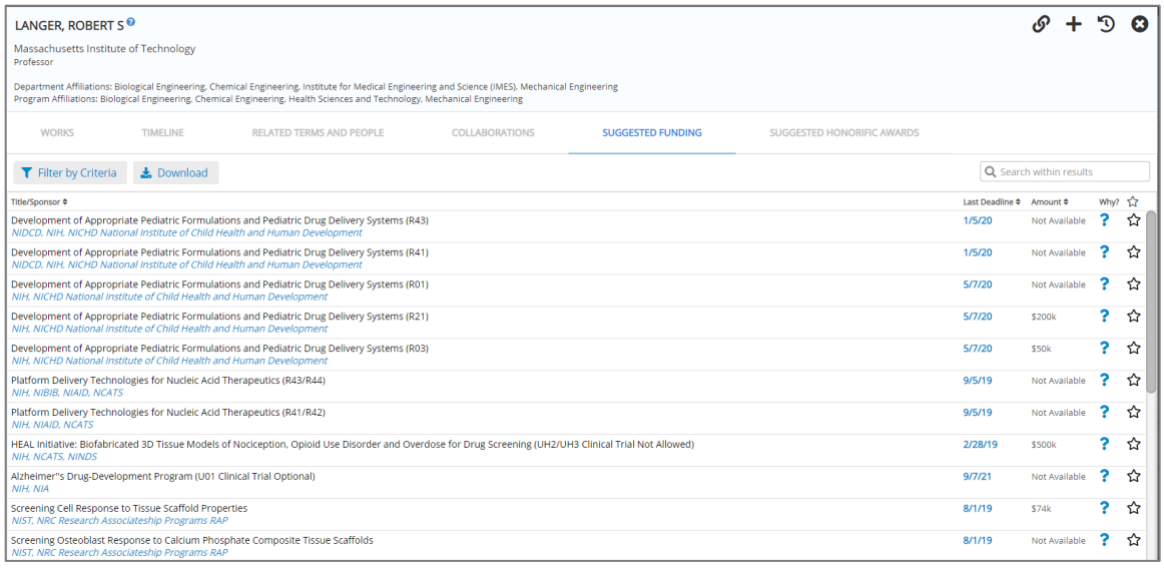
Collaborations

This section presents the connections of that individual to other faculty through article, conference proceeding, grant, book, book chapter, patent, and clinical trial collaboration, both at

their home institution and nationally. Blue nodes indicate collaborations within the scholar's home institution, black nodes indicate collaborations outside of the scholar's home institution. When a specific set of institutions have been selected in Refine Your Search, scholars from those institutions appear with green nodes. Users can zoom the view of those connections by scrolling the mouse wheel.

Suggested Funding

Suggested Funding presents a list of available funding opportunities for the selected scholar. Opportunities are identified by indexing the funding database against the scholar's research terms. The table displays the title and sponsors of the opportunity, the last deadline (clickable for calendar appointments), the amount (where available), and a "Why?" column that, when clicked, shows keywords common to both the scholar and the opportunity.



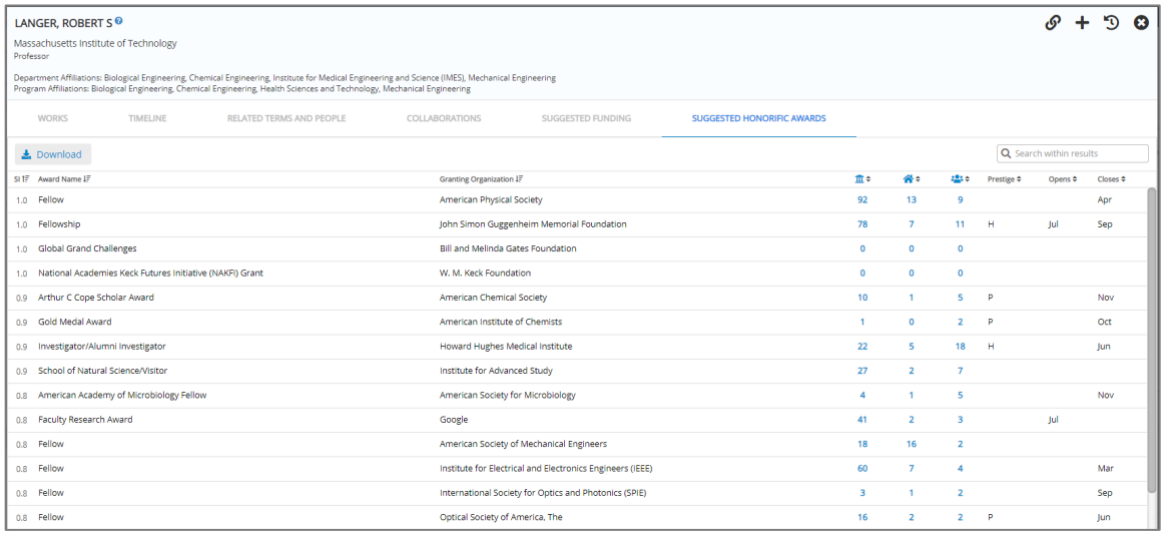
Suggested Honorific Awards

The Suggested Awards tool presents, for a given scholar, a list of awards for which the scholar could potentially be nominated. For a given scholar and award, a Suitability Index is calculated by comparing characteristics of the scholar with those of previous awardees. These characteristics

include comparative benchmarks, previous co-authorship, academic age at the time of receiving the award, institution and academic unit affiliations, and scholarly research similarity. Due to the dependence on comparative benchmarks, scholars that are not associated with either a department or program will not have any suggested awards.

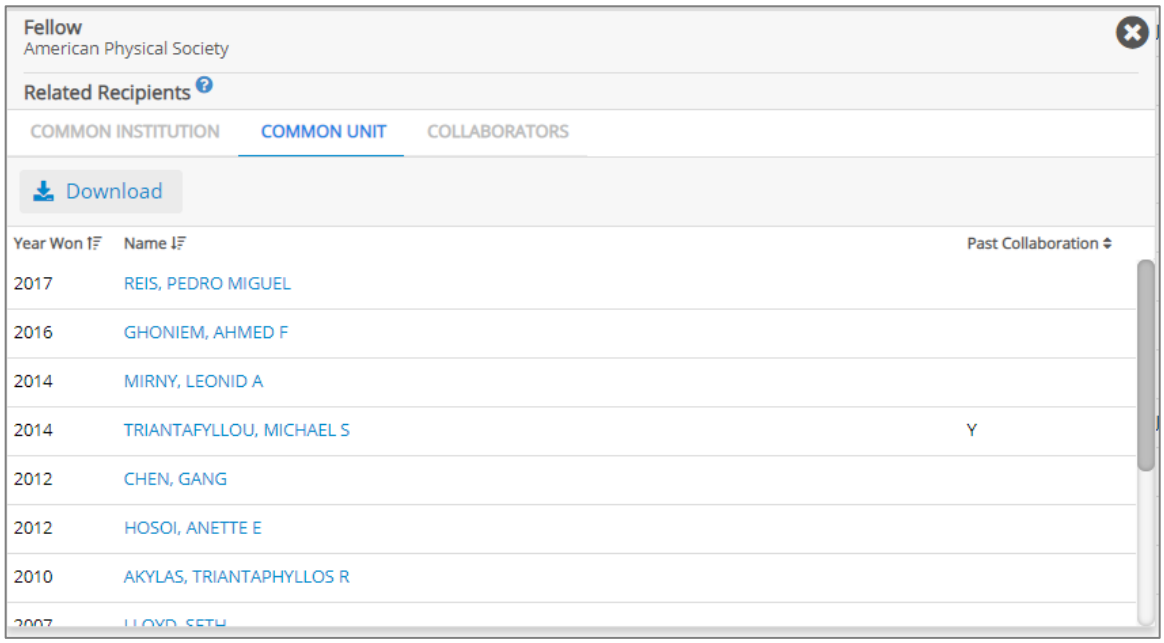
The initial view when navigating to Suggested Honorific Awards displays all awards where the scholar has a Suitability Index equal to or greater than 0.6. The view displays, from left to right:

- Suitability Index (SI)
- Award Name
- Granting Organization
- Data related to the selected scholar that may support selection as a nominator or letter writer:
    - Number of previous awardees at the same Institution
    - Number of previous awardees having a common academic unit affiliation
    - Number of previous awardees with co-authored scholarly works
- NRC prestige classification of the award
- Award nomination opening month (where available)
- Award nomination closing month (where available)



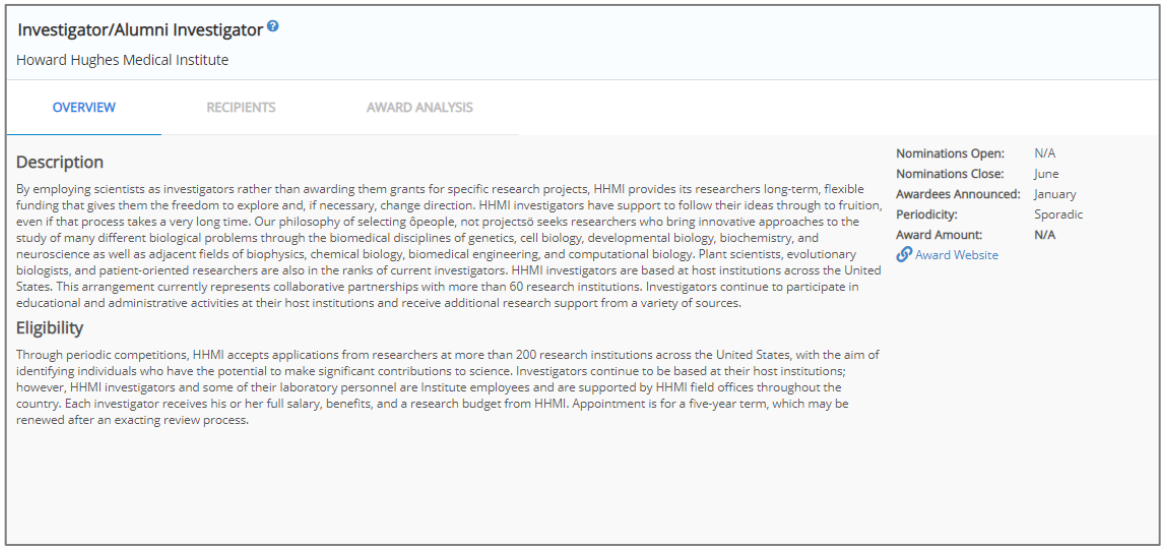
SI	Award Name	Granting Organization				Prestige	Opens	Closes
1.0	Fellow	American Physical Society	92	13	9			Apr
1.0	Fellowship	John Simon Guggenheim Memorial Foundation	78	7	11	H	Jul	Sep
1.0	Global Grand Challenges	Bill and Melinda Gates Foundation	0	0	0			
1.0	National Academies Keck Futures Initiative (NAKFI) Grant	W. M. Keck Foundation	0	0	0			
0.9	Arthur C Cope Scholar Award	American Chemical Society	10	1	5	P		Nov
0.9	Gold Medal Award	American Institute of Chemists	1	0	2	P		Oct
0.9	Investigator/Alumni Investigator	Howard Hughes Medical Institute	22	5	18	H		Jun
0.9	School of Natural Science/Visitor	Institute for Advanced Study	27	2	7			
0.8	American Academy of Microbiology Fellow	American Society for Microbiology	4	1	5			Nov
0.8	Faculty Research Award	Google	41	2	3		Jul	
0.8	Fellow	American Society of Mechanical Engineers	18	16	2			
0.8	Fellow	Institute for Electrical and Electronics Engineers (IEEE)	60	7	4			Mar
0.8	Fellow	International Society for Optics and Photonics (SPIE)	3	1	2			Sep
0.8	Fellow	Optical Society of America, The	16	2	2	P		Jun

The three entries above for “Number of previous awardees…” are displayed in blue text and are clickable. Clicking on any of them will open the Related Recipients dialog box and display the corresponding data set. This dialog box shows, for the selected scholar and award, the previous awardees who are affiliated with the same Institution (Common Institution), who are affiliated with the same academic unit (Common Unit), and who are previous collaborators. Note that “previous collaborators” are defined as having an article, conference proceeding, grant, or book collaboration with the selected scholar. The scholar profiles of previous awardees can be viewed by clicking their name.

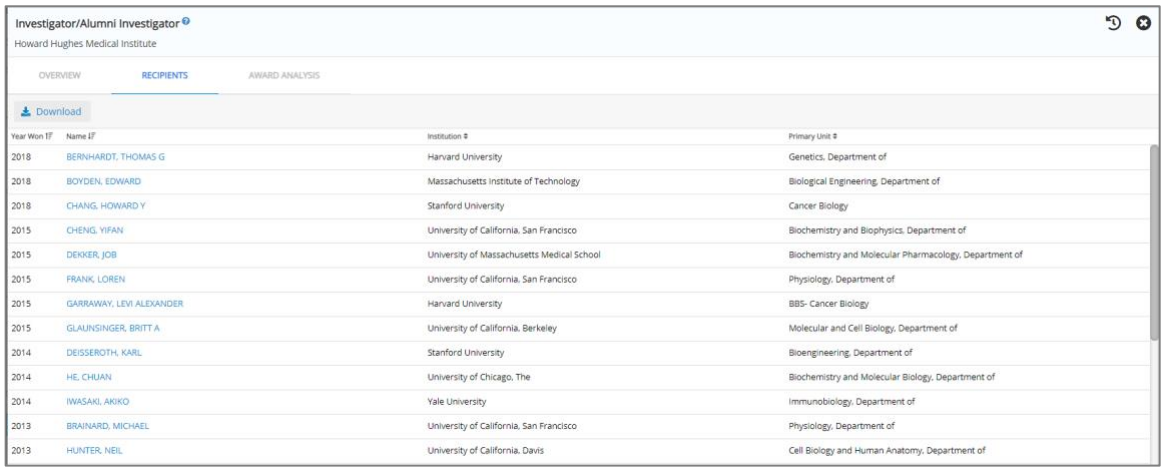


Clicking anywhere else within an award entry will transition to the Award Profile. The Award Profile contains an overview of the award, a listing of up to the 100 most recent recipients, and an analysis of select previous awardee characteristics.

The Overview tab shows a description of the award and any eligibility requirements, along with the opening and closing months for nominations, the month that new awardees are announced, the periodicity of the award, any associated monetary amount, and a link to the award website.

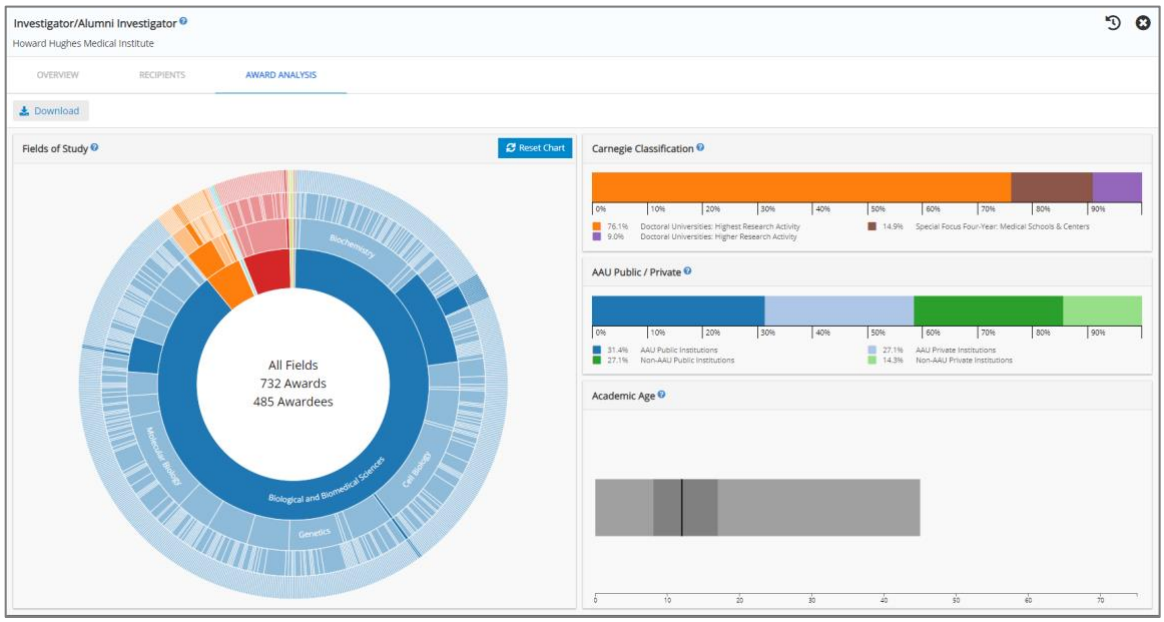


The Recipients tab shows up to the 100 most recent recipients of the award. Specifically, it displays the year won, name, institution, and primary unit affiliation for the awardees. Clicking anywhere within an entry will navigate to the corresponding scholar profile.

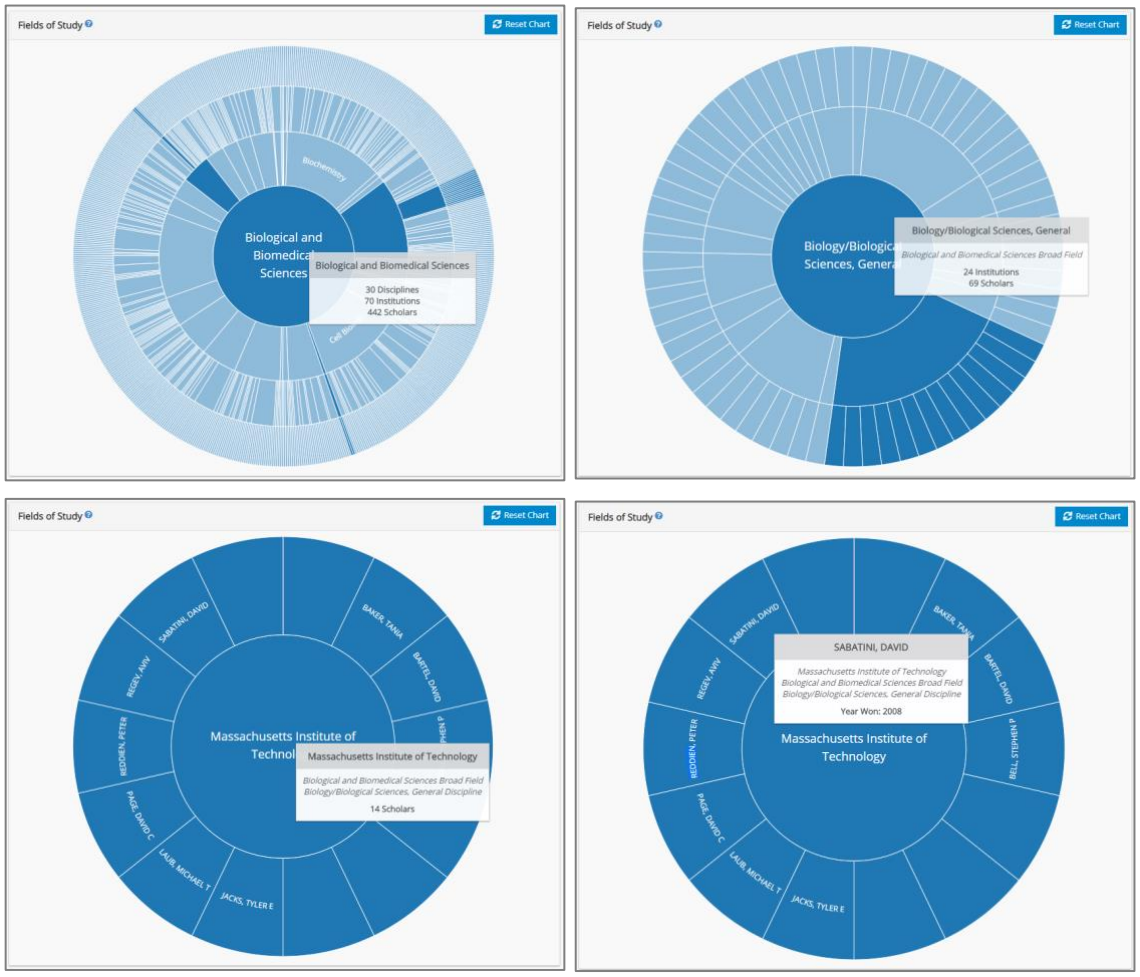


Year Won	Name	Institution	Primary Unit
2018	BERNHARDT, THOMAS G	Harvard University	Genetics, Department of
2018	BOYDEN, EDWARD	Massachusetts Institute of Technology	Biological Engineering, Department of
2018	CHANG, HOWARD Y	Stanford University	Cancer Biology
2015	CHENG, YIFAN	University of California, San Francisco	Biochemistry and Biophysics, Department of
2015	DEKKER, JOB	University of Massachusetts Medical School	Biochemistry and Molecular Pharmacology, Department of
2015	FRANK, LOREN	University of California, San Francisco	Physiology, Department of
2015	GARRAWAY, LEVI ALEXANDER	Harvard University	BBS- Cancer Biology
2015	GLAUNSINGER, BRITT A	University of California, Berkeley	Molecular and Cell Biology, Department of
2014	DEISSEROTH, KARL	Stanford University	Bioengineering, Department of
2014	HE, CHUAN	University of Chicago, The	Biochemistry and Molecular Biology, Department of
2014	IWASAKI, AKIKO	Yale University	Immunobiology, Department of
2013	BRAINARD, MICHAEL	University of California, San Francisco	Physiology, Department of
2013	HUNTER, NEIL	University of California, Davis	Cell Biology and Human Anatomy, Department of

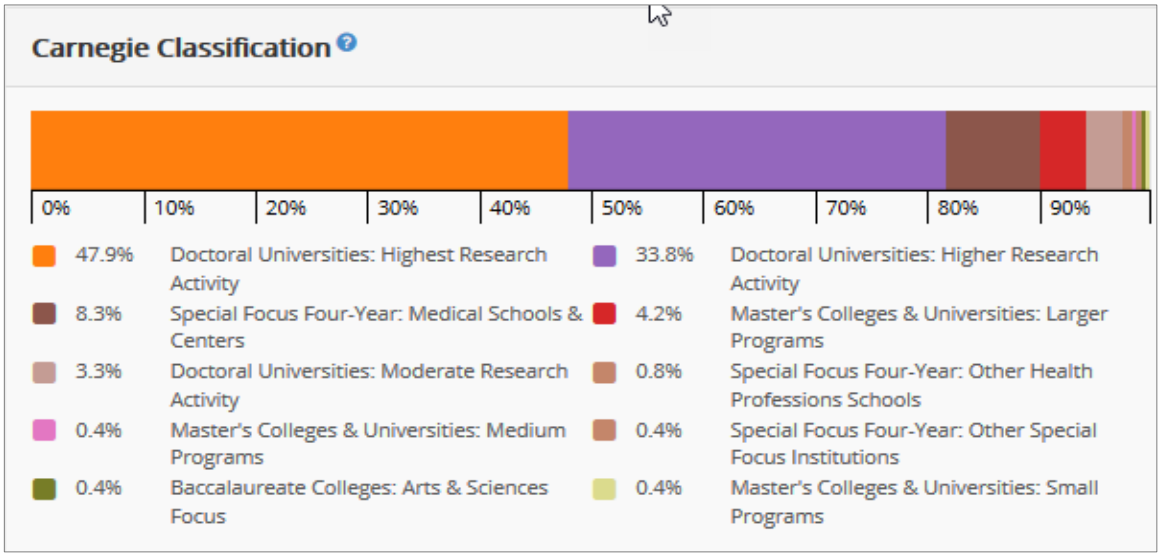
The Award Analysis tab contains a wealth of information for certain characteristics of all previous awardees. The view is comprised of the fields of study sunburst, the Carnegie classification and AAU public / private bar charts, and the academic age box plot distribution.



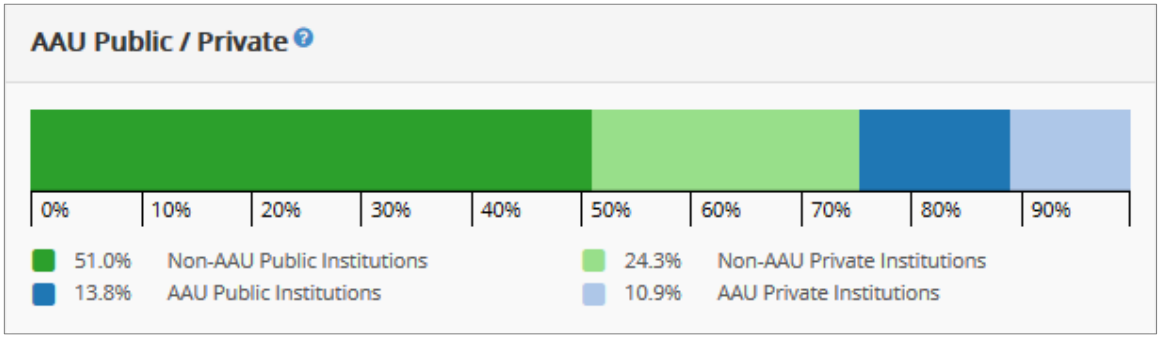
The Fields of Study sunburst is an interactive graphic showing the broad field, discipline, and institution affiliations of previous awardees. The default, fully expanded view displays data for all fields of study, and a count of the number of awardees for the selected award. Moving out from the center there are 4 rings: broad fields, disciplines, institutions, and scholars. Clicking on any of the affiliation sections will contract the view so that the remaining outer rings are relevant to the selected section. For instance, clicking on a broad field will contract the graphic to show disciplines, institutions, and awardees that are affiliated with the selected broad field. Clicking on the center of a contracted view will expand the graphic by one layer, while clicking on the Reset Chart button will revert the graphic to its default state. Hovering over a segment will display a tool tip, showing the inner ring path to the segment (*italics*) and metadata for outer rings related to the segment (**bold**).



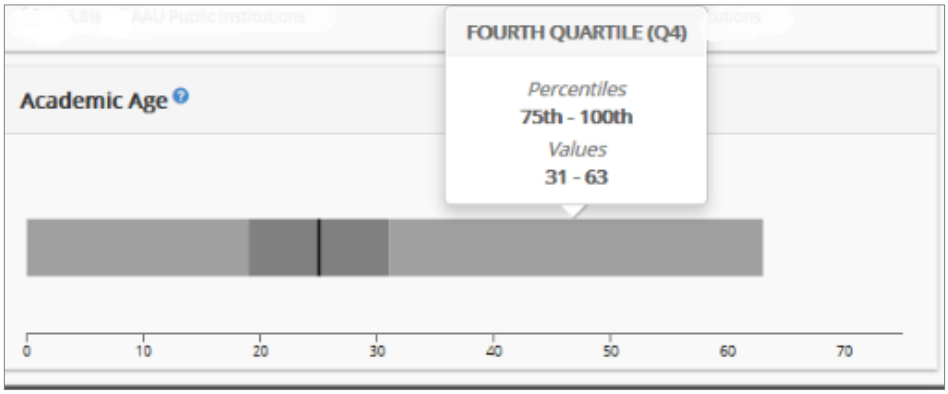
The Carnegie Classification bar chart shows the percentage of previous awardees that currently reside at institutions having a given Carnegie Classification.



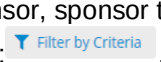
The AAU Public / Private bar chart shows the percentage of previous awardees that currently reside at institutions having a given combination of AAU Membership and Public / Private Control.



The Academic Age box plot shows the distribution of the academic ages of previous awardees at the time they received the award.



Funding

The Funding tab lists up to 200 opportunities sorted by relevance. Records include grant title, last deadline, sponsors, and are clickable to display a funding profile. Funding opportunities can be filtered by sponsor, sponsor type, submission type, category, status, and grant type by clicking the filter button: 

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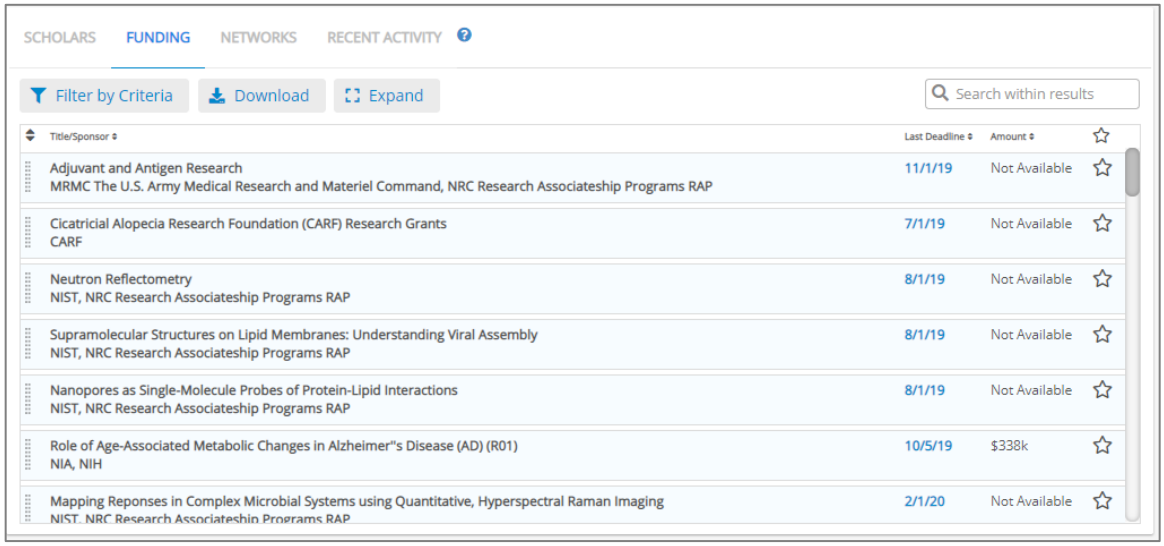
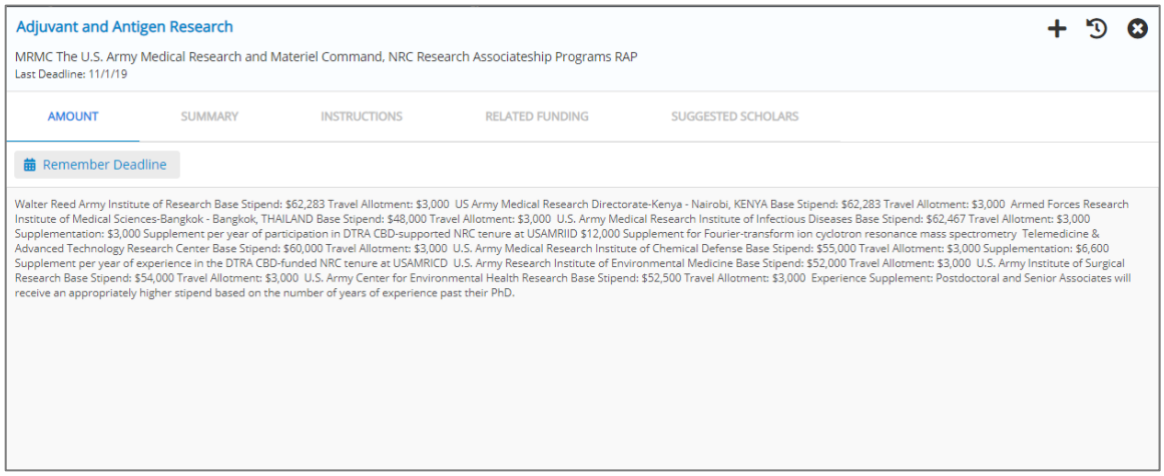


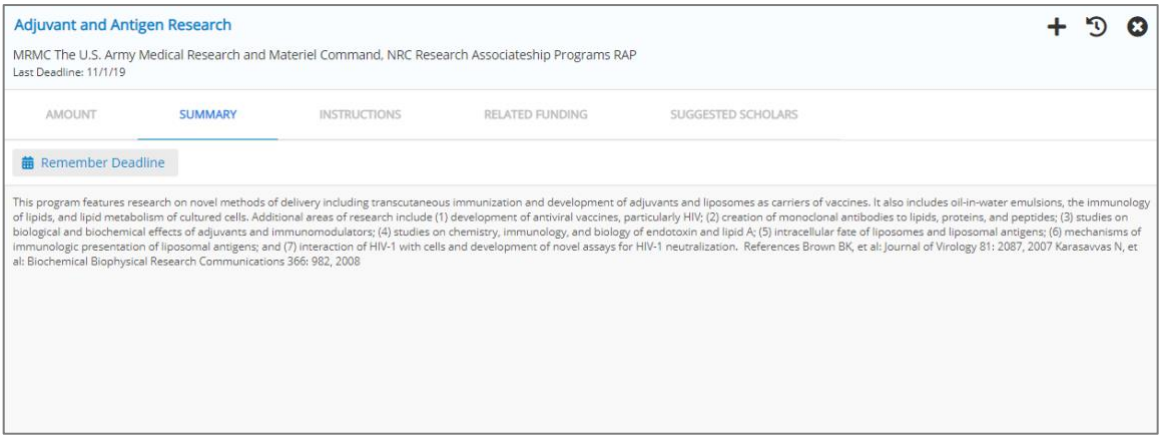
Clicking on a funding opportunity in the Funding Results brings up the opportunity's profile. The title is a link to the external funding opportunity site, and the header also contains the sponsor(s), dollars per award, and last deadline. The Remember Deadline button on the left allows the user to export the next upcoming or last deadline to the calendar of their choice. The funding profile contains the following sections:

Amount



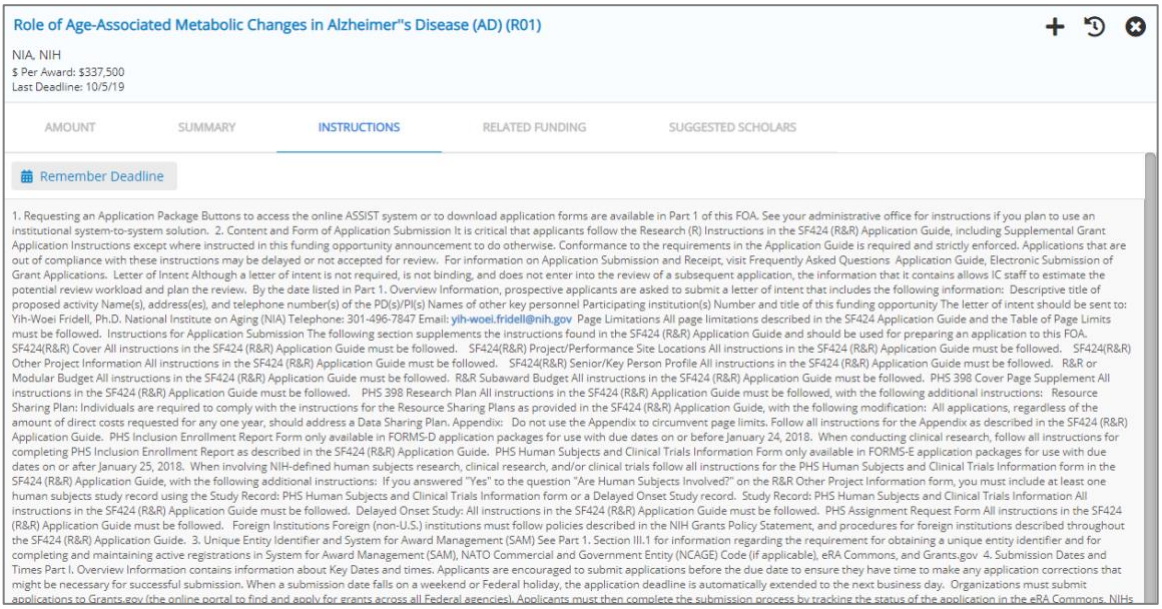
This section provides information related to the dollar amount and number of grants.

Summary



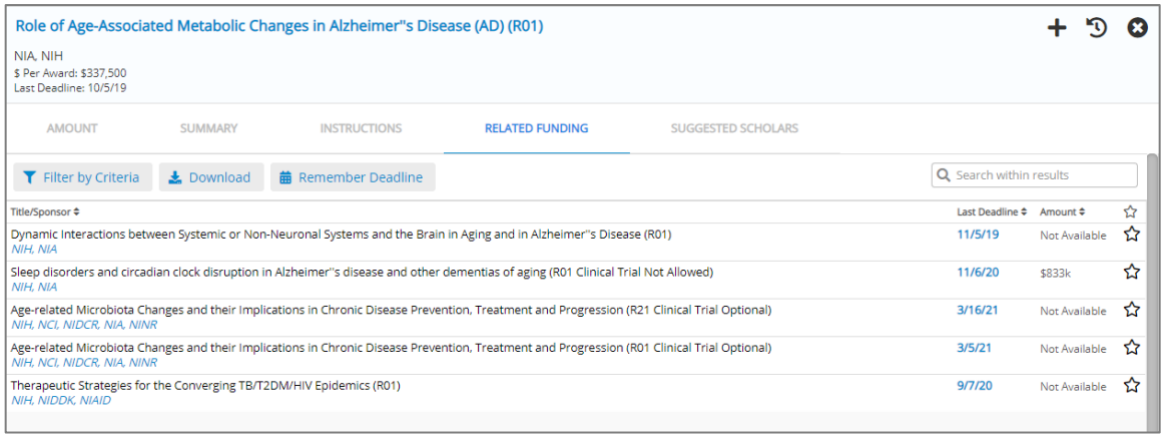
This section contains the description of the grant, such as background or research objectives. Any email addresses or web links appear as blue, boldface hyperlinks.

Instructions



This section details the application process for the funding opportunity. As with the Summary section, any email addresses or web links appear in blue boldface.

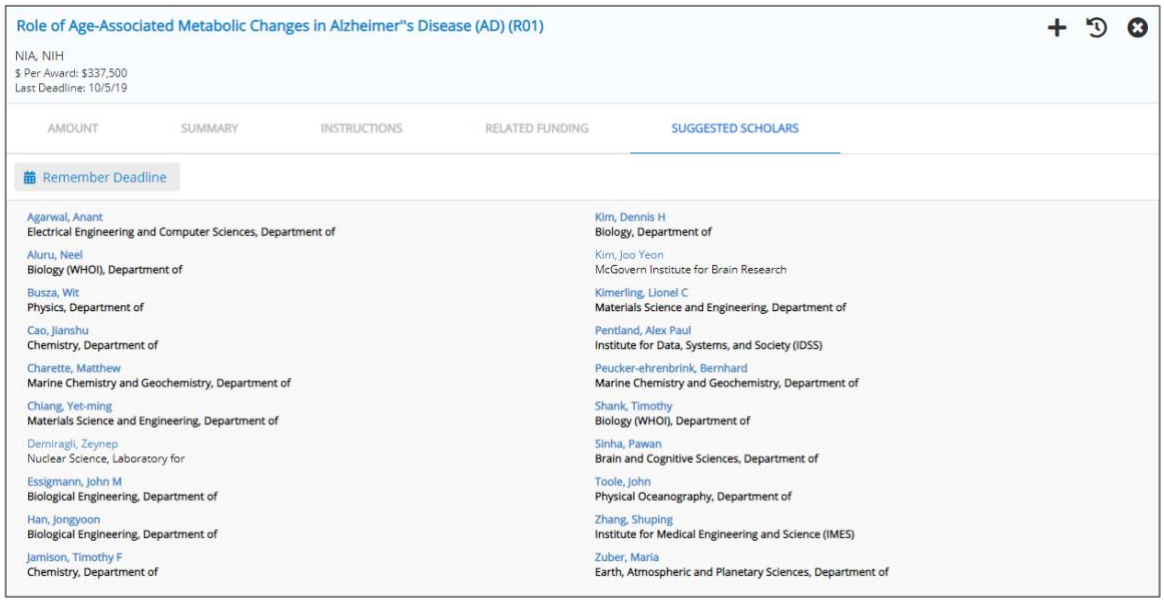
Related Funding



This section provides a selection of funding opportunities that are related to the selected opportunity. The relation is determined through analysis of the text which appears in the Summary sections. Each opportunity can be exported to a calendar through the date link in the Last Deadline column or viewed by clicking on the entry.

Suggested Scholars

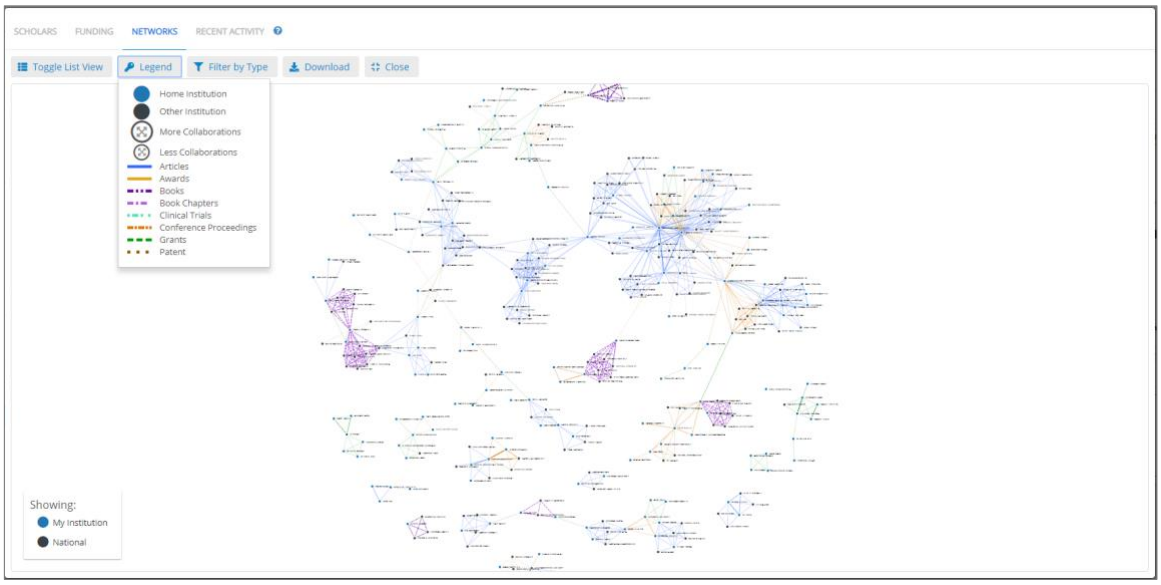
Suggested Scholars lists individuals working in the same area of inquiry and can be used as the first step in identifying possible candidates for a research team.



Networks

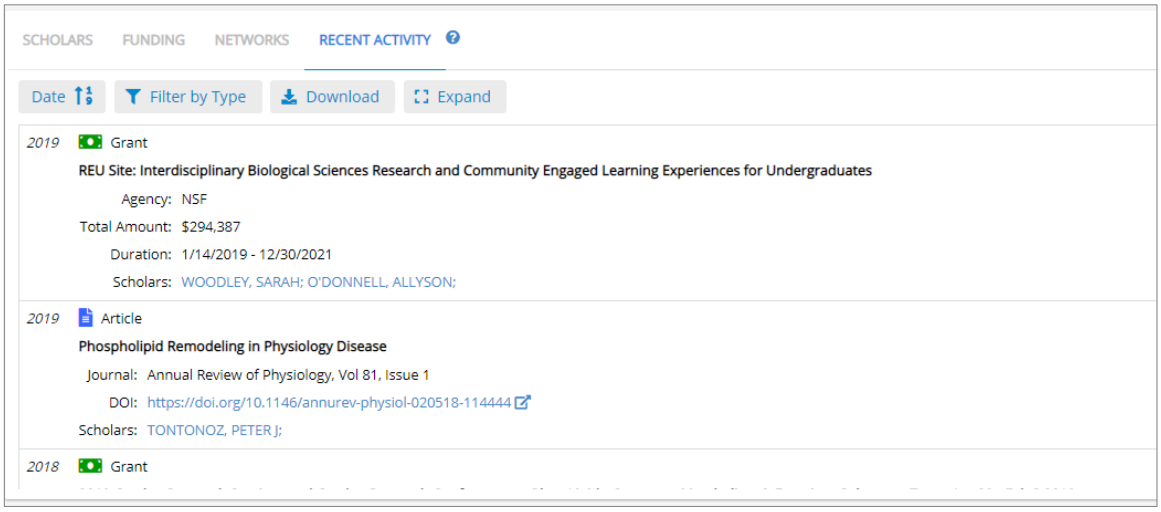
The Networks map presents established research networks focused on the searched research terms. The bottom left contains a legend with clickable options for “My Institution”, “National”, and “Selected Schools” (when such a selection has been made in Refine Your Search). Clicking an option removes corresponding faculty from the graphic; clicking again adds them back.

The “Toggle List View” button shows the individual works that make up the current Network graphic. The “Legend” button provides a visual description of nodes and edges (shown below). The “Filter by Type” button allows selection of collaborative content types. The “Download” and “Expand” /”Close” buttons download a CSV corresponding to the current graphic, and expand the view into a larger window, respectively.



Recent Activity

Recent Activity provides a list of recent articles, conference proceedings, books, awards, federal grants, patents, clinical trials, and book chapters focused on the research terms. Activity is listed chronologically. The user can focus on specific activities through “Filter by Type.”

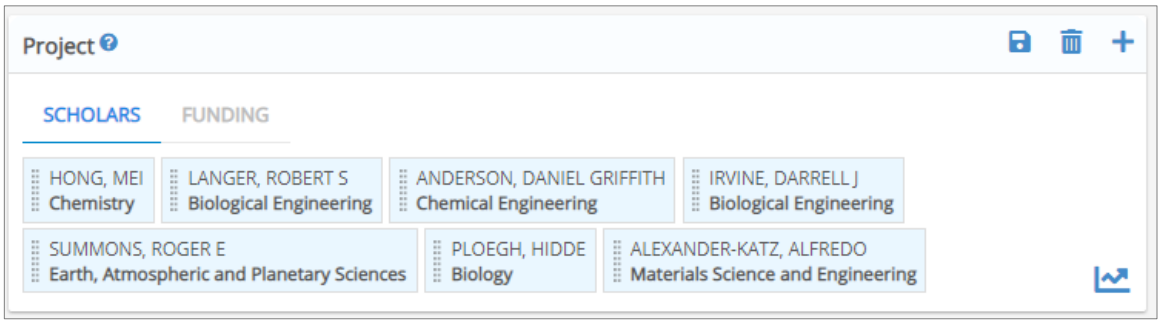


Project

The Project feature allows users to collect scholars and funding opportunities, save them for later viewing, analyze the virtual team of scholars, and view suggested funding opportunities for the team.

Build a Team

Users can drag and drop scholars and funding opportunities into the Project section.



Team Analysis

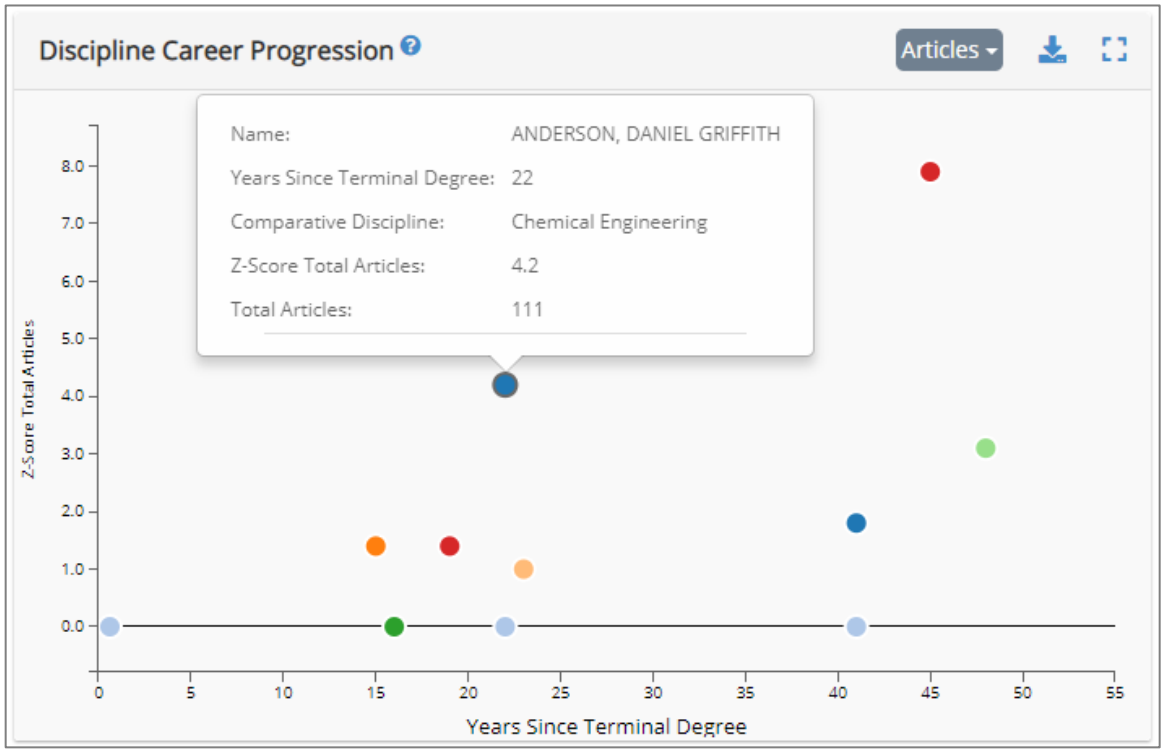
Users can view the aggregate activity of the new team by clicking the View Analysis prompt in the lower right-hand corner of the Project space: .

Select researchers to add to a team by dragging and dropping their row from the results table into the Project box below. Once you have added two or more team members to the project, a team analysis may be conducted.

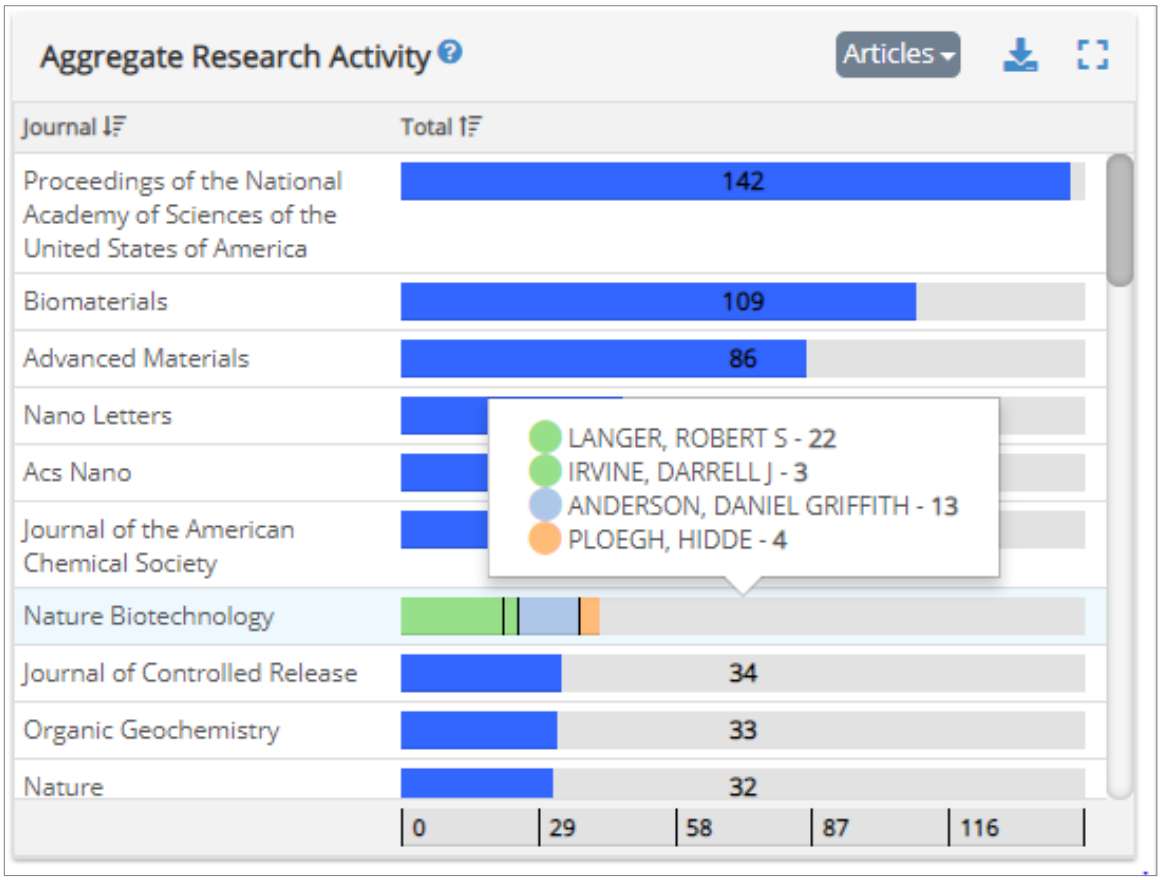
The Team Analysis screen provides users with four separate displays to view individual and aggregate contributions to the team; career progression, intra-team collaborations and expertise intersection.

Discipline Career Progression

The Team Analysis Discipline Career Progression chart demonstrates each team member's average trend in research activity relative to their own discipline. The progression is displayed per the selected variable chosen from the dropdown menu on the right. Dots represent team members and are color coded by discipline. The Y-axis represents the score for the variable and the X-axis represents years since terminal degree. Hovering on a dot provides the team member's name, years since terminal degree, comparative discipline, and information relating to the selected variable. Note that book chapters, clinical trials, and patents do not appear in this section as they have not yet been incorporated into comparative data.

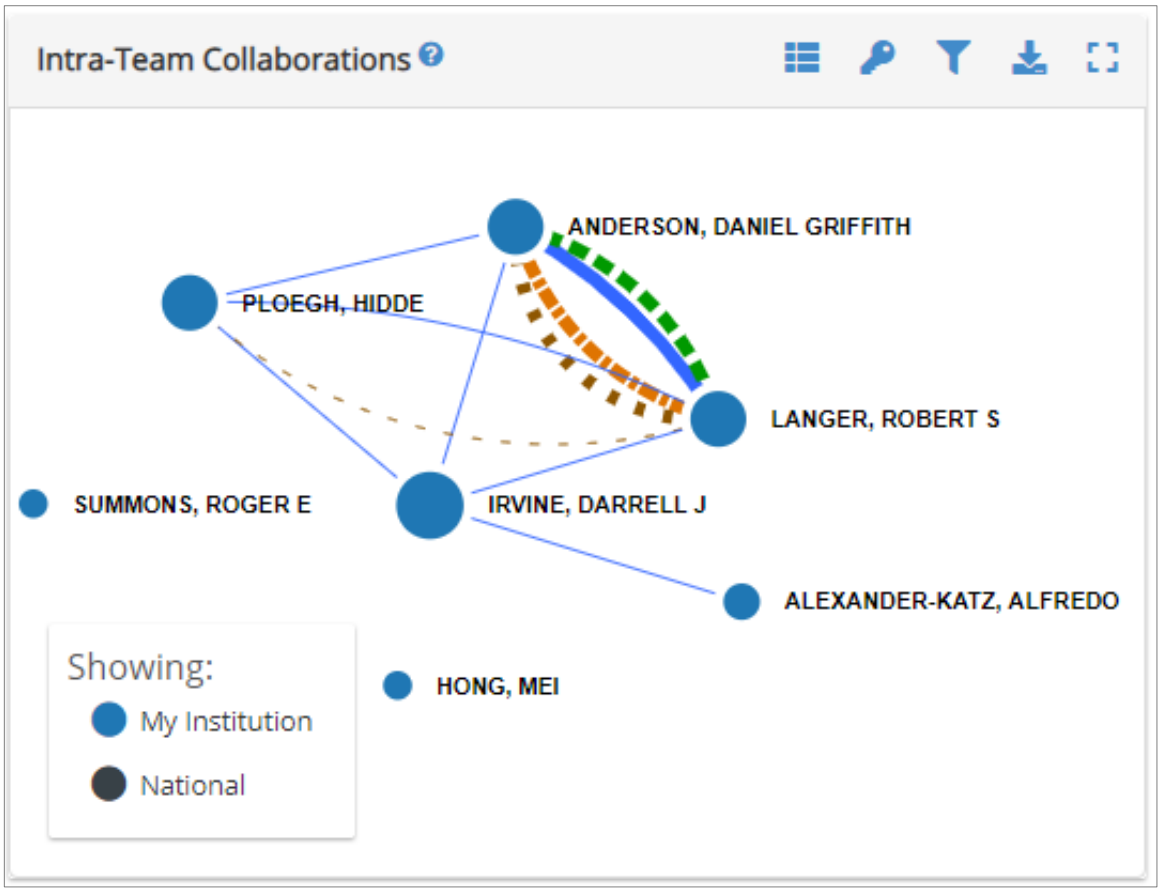


Aggregate Research Activity



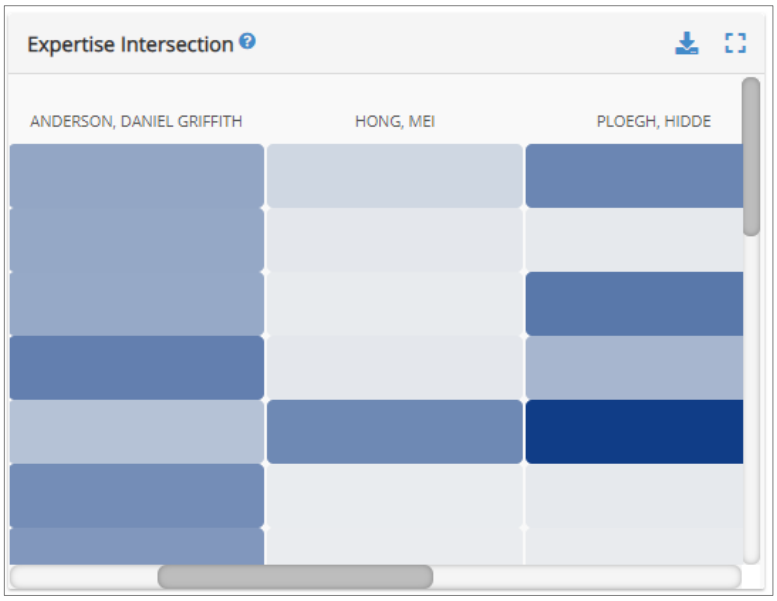
This section displays the team's aggregated research activity for articles, awards, books, book chapters, clinical trials, citations, grants, grant dollars, and patents. Hovering over a bar displays the individual contributions of each team member. Bars are color-coded by team member discipline (as indicated in the team roster in the top-left of the analysis screen).

Intra-Team Collaboration



This section displays previous collaborations among members of the team. The size of a team member's dot indicates that person's number of distinct collaborators, while the color of the dot indicates the institution affiliation ("My Institution", "Selected Schools", or "National").

Expertise Intersection



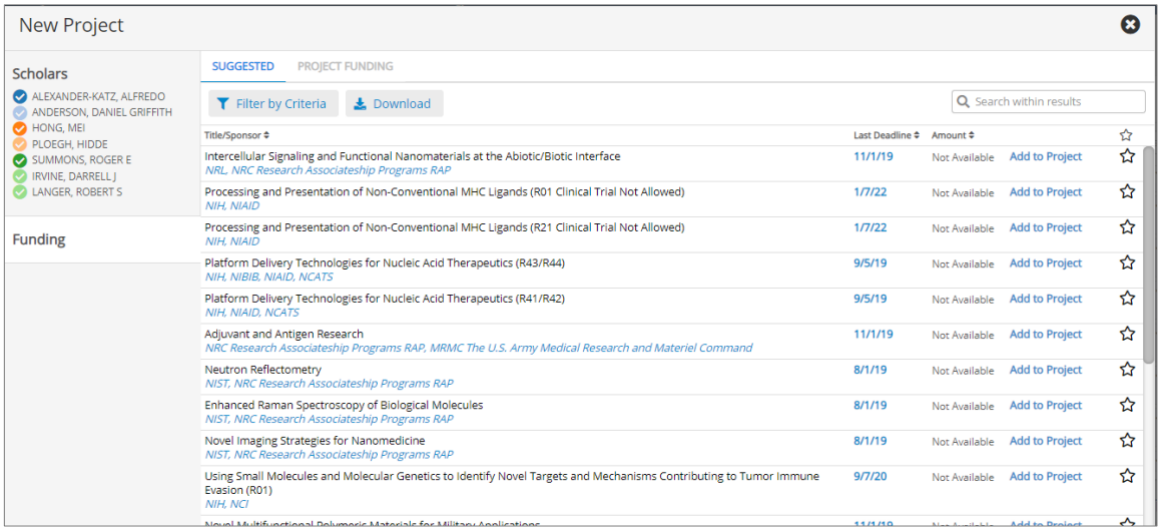
The Expertise Intersection displays the shared occurrence of key research terms in the publications of the team members. Darker cells indicate a higher number of occurrences of the word in the row for the team member in the column. Hovering over a cell will show the total number of occurrences for the specific faculty member, the highest number of occurrences among the team, and the total occurrences for the entire team.

Funding Opportunities

Team Analysis Funding presents a tabbed view of “Suggested” and “Project Funding.”

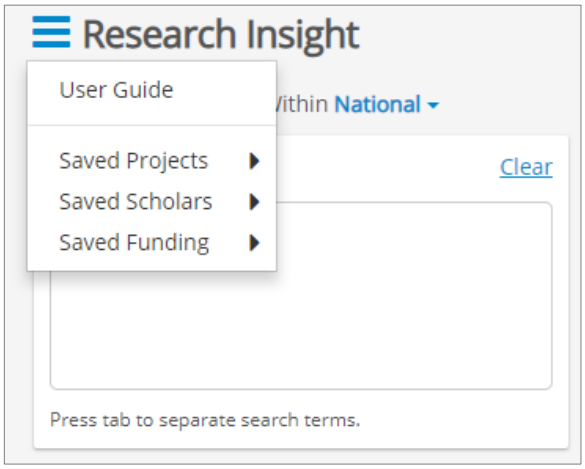
Project Funding contains funding opportunities that have been added to the Project by the user.

Suggested Funding contains funding opportunities targeted at the overall research of the Project Scholars. Each opportunity can be added to the Project Funding. Items in Project Funding will not appear in the Suggested list.



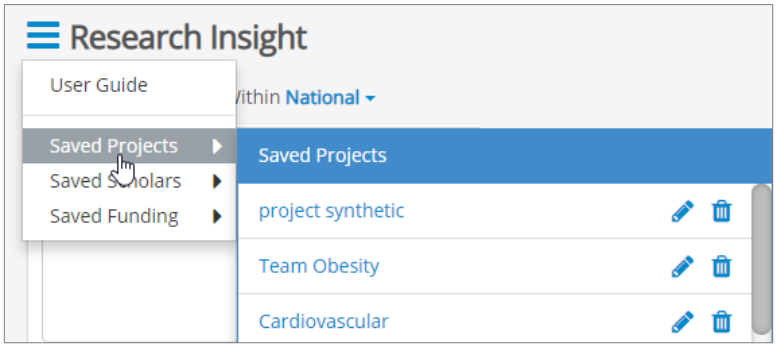
Menu

The main Research Insight menu is accessed by clicking the three-lined icon to the left of the Research Insight title.



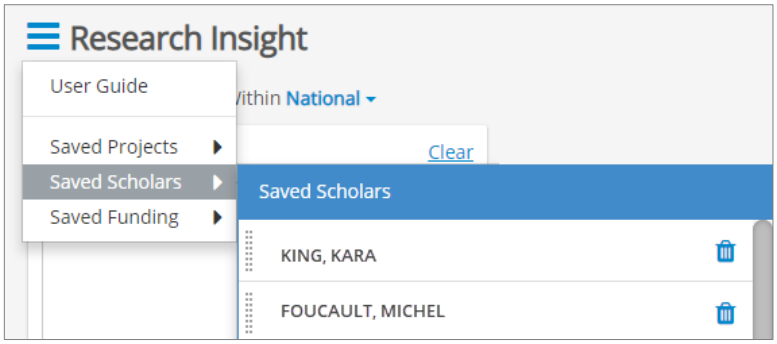
Once clicked, the menu lists the following options:

Saved Projects



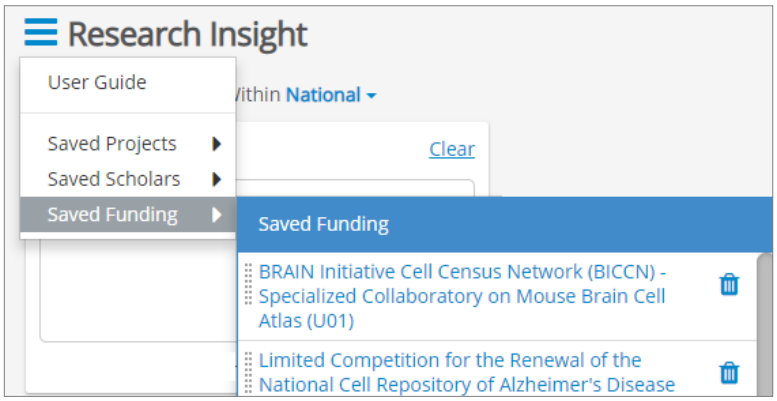
This section displays a list of previously saved projects. Projects may be loaded or deleted, and project titles may be edited from this menu.

Saved Scholars



This section displays a list of previously saved scholars. From this menu, users may drag and drop saved scholars into the current portfolio and saved scholars may be removed from the saved scholar list.

Saved Funding



This section displays a list of previously saved funding opportunities. From this menu, users may drag and drop saved funding opportunities into the current portfolio and saved opportunities may be removed from the saved funding opportunity list.