

Research Accelerator

October, 2011

Research Accelerator - Vision

- Right now a cancer researcher on the 3rd floor of a lab at a major university is unlikely to know that a cancer researcher on the 1st floor has specific data or resources of mutual interest. It's even less likely among researchers across campus, across the country, around the world.
- “I am so tired of having to find collaborators based on who I went to school with, who sits next to me at meetings, who I happen to run into in the hall or in the men's room! Your concept is perfect, and much needed.” - Head of a scientific department at University College London, 2010.
- The possibility of that cancer researcher collaborating on research, or sharing a resource, with a scientist from a different discipline – a neurologist across town, or a botanist in Oregon or Singapore - is almost inconceivable right now. Yet many, if not all organisms are constructed of similar molecules and pathways. Our data driven platform can facilitate these collaborations – across disciplines and geographies – as easily as they can the sharing of resources between two scientists in the same building.
- A cancer researcher in New York, a botanist in Oregon, a zoologist in Canada, a pathologist in London and a pulmonologist in Singapore may all have observations on a common gene. Right now, unless all 5 happen to board the same flight on the same day, and are seated in the same row, they'll probably never even meet. We can make those connections systematic.

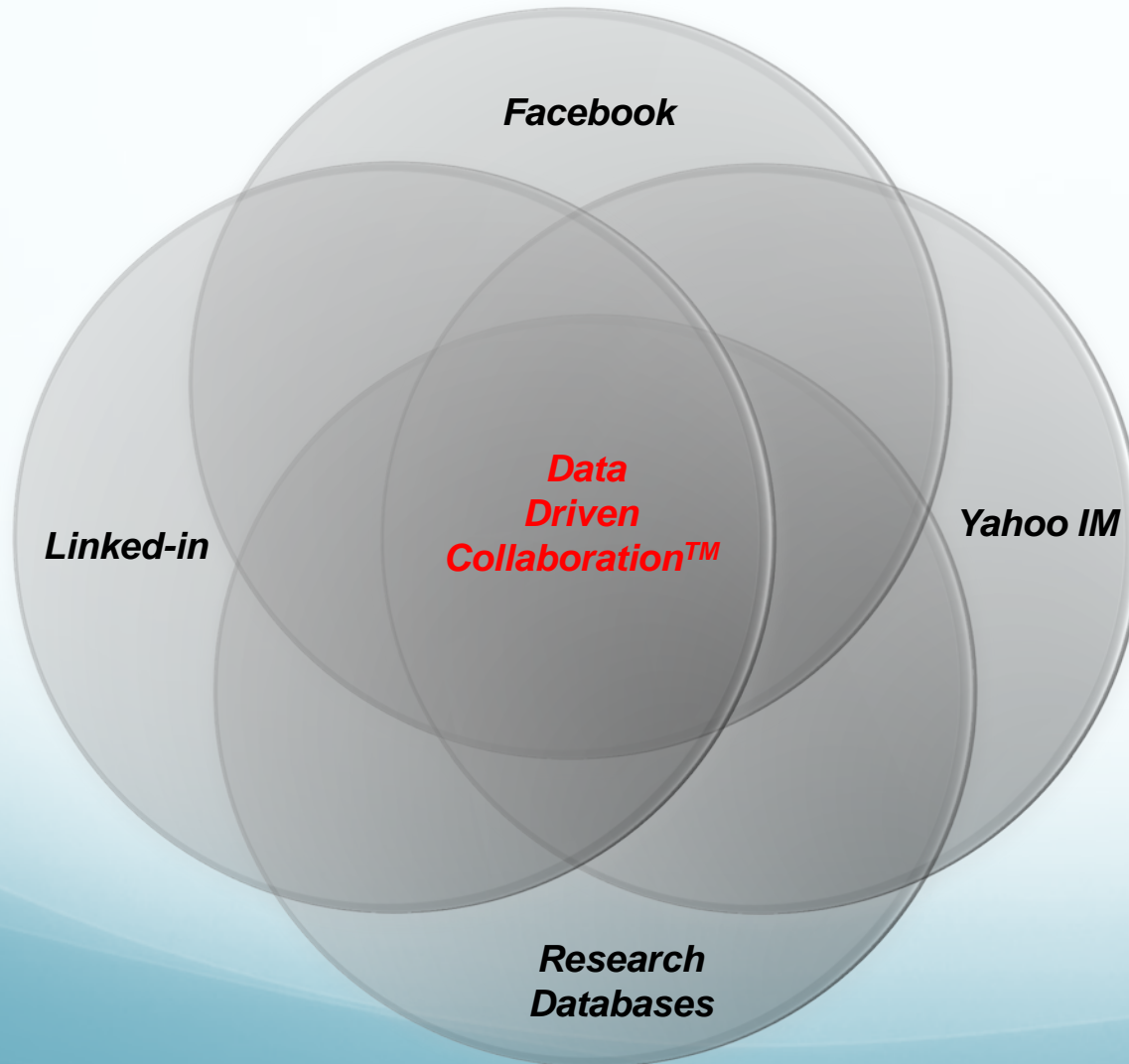
Research Accelerator - Vision

“...A new platform created at the nexus of search, social media, networking and databanks, the Research Accelerator facilitates scientific collaboration and resource sharing across institutions, disciplines and geographical boundaries...”

- Research Accelerator was built specifically for scientists, to help them easily identify and communicate with colleagues that share a common interest in data or scientific resources. The platform was designed by leading scientists, and it's goal is to expedite the advancement of scientific research, treatment and cures.
- Collaboration is increasingly essential, particularly with exponential amounts of new data available due to the mapping of the genome and growing funding pressure. But collaboration and resource sharing has until now been driven largely by social connections, attendance at conferences, geographical proximity and serendipity. And collaboration across scientific disciplines may hold enormous breakthrough potential, but no model existed for tapping it, until now.
- Research Accelerator allows scientists to quickly and easily identify potential collaborators based primarily on a shared interest in data ('data driven collaboration').
- The platform has the potential to greatly enhance the actual level of sharing and interaction among the INBRE research networks. For the first time, scientists around country that are part of an INBRE network can all have the opportunity to easily share data and resources with one another, opening up enormous opportunities to leverage each other's work.

Research Accelerator - Vision

Data Driven Collaboration™ operates in the sweet spot between social media, networking tools, instantaneous communication platforms and research databases.



- Data Driven Collaboration™ enhances the user experience by focusing on connecting people with common interests.
- Once connected, individuals and institutions can use the platform to communicate regularly and store and share data as required.
- This “Inverse Search Engine” eliminates the frustration and inefficiency associated with traditional research databases, the distracted and spurious content of social media while maintaining the positive elements of connectivity and information sharing associated with networking and instantaneous communication platforms.

Research Accelerator Platform Uses Unique Method of Data Driven Collaboration

- Platform facilitates collaboration and resource sharing easily, intuitively and securely.
- Scientists identify potential collaborators by a common interest in data (gene, disease, pathway). Not limited to common social factors, which severely limit possibilities.
- Scientists are in complete control over their listings. They list only the data, resources they choose. They decide level of disclosure and sharing for each listing. Potential access to scientists around world if they choose.
- Built in features – email, discussions, alerts, peer groups, more.
- Platform leverages technology to promote transdisciplinary collaborations and sharing across institutions.
- Platform is completely ‘turnkey’ – it requires no programming or IT work by the institution.

Research Accelerator – In Action



home search post listings alerts messages peers profile logoff

Search filters:

- Gene: -not specified-
- Pathway: -not specified-
- Disease: -not specified-
- Category: Validated antibody
- Keyword:

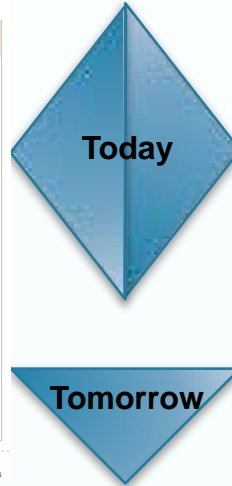
Search

4 exact matches found Save this search as an Alert

Validated antibody	
<p>Looking for a little IRF7 Antibody if you can spare it.</p> <p>Member Organization : Yale</p> <p>Would like to take just a little bit to test a hunch if you have a bit to spare it would be greatly appreciated.</p>	<p>Contact Yale Researcher</p>
<p>Looking for STAT1 / STAT2 or ISG antibodies</p> <p>Member Organization : Yale</p> <p>If you have antibody against human STAT1, STAT2, MXA, ISG15, OAS1, or ISG56 that you are willing to share I would be very grateful. -Thank you, Justin Paglino justin.paglino@yale.edu</p>	<p>Contact Yale Researcher</p>
<p>rabbit monoclonal anti-myc epitope tag, great for IHC</p> <p>Member Organization : NAVBO</p> <p>I am happy to share these 2 reagents on a collaborative basis following simple MTA execution. These rabbit monoclonals are much more sensitive than mouse clone 9E10. They work beautifully for formalin/paraffin IHC, ideal for detecting transgenes in...</p>	<p>Contact NAVBO Researcher</p> <p>Researcher's Website</p>
<p>marker for (pre)autophagosomes</p> <p>Member Organization : Yale</p> <p>I am looking for good marker(s) to stain the (pre)autophagosomes, by immunoblot or immunofluorescence. If anyone can share some with me, I appreciate it. Josephine</p>	<p>Contact Yale Researcher</p>

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New Listing

Fields marked * are required

Category * Gene Pathway Disease

Title * Description 4000 Characters Left

Share this listing with:

- Any members in these organizations :
 - Yale University
 - American Association for Cancer Research
 - Cambridge University
 - NAVBO (North American Vascular Biology Organization)
 - University College London
 - University of California, San Diego

Includes: Salk Institute for Biological Studies, J. Craig Venter Institute, SDSU, Sanford-Burnham Medical Research Institute, La Jolla Institute for Allergy & Immunology, University of California, San Diego Medical Center, Rady Children's Hospital Research Center, VA Medical Center, Palomar Pomerado Hospital
- All Research Accelerator users [publicly accessible]

Please note: choosing the option below will make your listing publicly accessible and may impact your intellectual property rights.

Add a discussion forum to this listing

Submit Save as Draft Cancel

Upcoming Enhancements (Representative Rather than Exhaustive)

- **Instant Messaging** – Allows users working intensely on a research project to collaborate in real time.
- **Unique Access to Grants/Fundraising for Research Accelerator scientists** - We plan on adding a portal for select institutions to allow them to directly solicit grants/donations from foundations and wealthy individuals. Foundations and individuals can use the Research Accelerator to identify researchers to fund.
- **Web-Based Video Lectures** - We will have the unique ability to identify researchers interested in a particular gene, for example and then bring them together for a video conference. This is revolutionary, and potentially incredibly powerful. This is not neurologists talking to other neurologists who are seeking collaborators (of course we can do that too), but potentially it is neurologists, oncologists, botanists, pulmonologists, immunologists, zoologists all for first time, with their own diverse viewpoint, examining the same basic building blocks of life.
- **Data Storage** - On the second day we launched a Research Accelerator platform at UCSD, one lab head contacted us about sharing 30,000,000 ontological resources on our platform.

Research Accelerator – Example Drivers

Trans-disciplinary Collaboration

- A vascular biologist studying blood vessels wants to identify NOGO isoforms produced in vascular endothelial cells and needs an antibody against novel NOGO isoforms to conduct a western blot.
- He adds a listing to his institution's Research Accelerator and shares it within his organization and it is broadcast to RA users at his institution.
- Within minutes he gets a response from a researcher in Neurology who studies NOGO in the brain.
- Within hours the vascular biologist has an aliquot of anti-NOGO antibody and starts the western blot the same day and forges a new collaboration with the neurologist on NOGO.
- Without Research Accelerator the vascular biologist would have had to develop his own antibody, try to find it commercially, or search the published literature and to find a suitable antibody.

Eliminating Geographic Barriers & Driving Collaboration Between Institutions

- A Scientist at the University of Colorado is looking for a novel vascular endothelial cell line to use in an *in vitro* model of pulmonary hypertension.
- He lists this as a needs resource in Research Accelerator sharing it with members of the North Atlantic Vascular Biology Organization-RA and it is broadcast to researchers world-wide that are members of NAVBO-RA.
- Within a day he receives a response from a vascular biologist at Yale.
- The cell line is shipped within a few days, experiments start in a week, and a new collaboration is formed.
- Without Research Accelerator, the researcher would have had to try to find the cell line commercially, pay for it, take months to generate it in his own laboratory, and would be working without a collaborator.

Science Education and The Development of Junior Scientists

- A Professor running a course in Pharmacology is taking Yale undergraduate students to the Amazon jungle to isolate compounds from flora and fauna that have therapeutic potential.
- Back in New Haven, the students isolate compounds and search for a faculty member to develop *in vitro* assays to determine the therapeutic potential of selected agents.
- Using RA students load descriptions of the compounds and proposal into the RA and it is broadcast to users across the Yale community.
- Faculty members respond and the student starts *in vitro* testing of agents within weeks.
- Without RA the student would have had to use word of mouth to and make an appointment to talk to faculty about their project.

Research Accelerator – User Experience

"In my position as head of the CTSA for Yale School of Medicine, I have seen and learned of many attempts at leveraging technology to achieve this very elusive goal, but Research Accelerator's data driven collaboration™ is the most unique, exciting and potentially valuable new resource I have seen." Dr. Robert Sherwin, Director of Yale's collaborative science program (called YCCI), Professor of Internal Medicine, world renown scientist.

"In this difficult funding climate we all need to find ways to run our labs in a lean manner. The Research Accelerator at Yale facilitates such cost-saving measures. My lab has exchanged plasmids and cell lines with colleagues at Yale that we would otherwise have had to purchase." Kevin C. O'Connor, Ph.D. Assistant Professor of Neurology, Department of Neurology, Human and Translational Immunology Program Yale School of Medicine

The screenshot shows the YCCI Research Accelerator search interface. At the top, there are navigation links for home, search, post, listings, alerts, messages, peers, profile, and logout. Below this are search filters for Gene, Pathway, Disease, Category, and Keyword. The search results section shows 4 exact matches found. The first result is for 'Validated antibody' with a description: 'Looking for a little IRF7 Antibody if you can spare it. Would like to take just a little bit to test a hunch if you have a bit to spare it would be greatly appreciated.' The second result is for 'STAT1 / STAT2 or ISG antibodies' with a description: 'If you have antibody against human STAT1, STAT2, MXA, ISG15, OAS1, or ISG56 that you are willing to share I would be very grateful. - Thank you, Justin Pagino justin.pagino@yale.edu'. The third result is for 'rabbit monoclonal anti-myc epitope tag, great for IHC' with a description: 'I am happy to share these 2 reagents on a collaborative basis following simple MTA execution. These rabbit monoclonals are much more sensitive than mouse clone SE10. They work beautifully for formalin/paraffin IHC, ideal for detecting transgenes in...'. The fourth result is for 'marker for (pre)autophagosomes' with a description: 'I am looking for good marker(s) to stain the (pre)autophagosomes, by immunoblot or immunofluorescence. If anyone can share some with me, I appreciate it. Josephina'. Each result has a 'Contact Yale Researcher' button.

" Within a few hours I found what I needed.... I will be getting the reagent today." Michael Hurwitz, MD, PhD, Yale Cancer Center

As the head of scientific informatics from an Ivy League University School of Medicine recently commented, ...the Research Accelerator fills an enormous gap in science between published materials on one hand and vast databanks on the other. Right now, a botanist in Oregon or Singapore may have information about a gene that could be the key to helping to unlock an understanding of, or treatment for, a type of cancer - but there is no systematic or remotely practical way for an oncologist to find that data. Right now, a researcher on the 3rd floor of a lab needs a reagent or cell line or peptide, and doesn't know that a researcher on the 2nd floor, or across campus, has one that they can use. The Researcher can facilitate that resource sharing in seconds...

The screenshot shows the 'New Listing' form. It has a header 'New Listing' and a sub-header 'Fields marked * are required'. There are four dropdown menus for 'Category', 'Gene', 'Pathway', and 'Disease', all currently set to '-not specified-'. Below these are fields for 'Title' and 'Description' (4000 Characters Left). A section titled 'Share this listing with:' contains a list of organizations with checkboxes: 'Any members in these organizations:', 'Yale University' (checked), 'American Association for Cancer Research', 'Cambridge University', 'NAVBO (North American Vascular Biology Organization)', 'University College London', and 'University of California, San Diego'. A note below this section says: 'Please note: choosing the option below will make your listing publicly accessible and may impact your intellectual property rights.' Below the note are two radio buttons: 'All Research Accelerator users (publicly accessible)' (selected) and 'Add a discussion forum to this listing'. At the bottom are 'Submit', 'Save as Draft', and 'Cancel' buttons.

Management Team

Steven Greenberg - Founder

Steven Greenberg has practiced law at Cadwalader, Wickersham & Taft and Chadbourne & Parke, and was general counsel of Melissa & Doug Toys, the largest manufacturer of wooden puzzles and toys in US. He is the founder of the award winning site Jobs4.0 (www.jobs4point0.com) designed to help jobseekers over 40 find jobs at prominent employers across the U.S. Clients include GE, Pfizer, The Home Depot, Alexion Pharmaceuticals. He is a CBS radio news reporter on the labor market and the economy. He co-founded Research Accelerator in 2007 with Dr. Geoffrey Chupp.

Geoffrey Chupp, M.D. – Founder

Geoffrey Chupp, MD has been an Associate Professor of Medicine in the Division of Pulmonary and Critical Care Medicine at the Yale University School of Medicine since 1997, after completing residency and fellowship training at New England Medical Center and Boston University, respectively. In 2000 he founded the Yale Center for Asthma and Airways Diseases, garnering resources from the Yale School of Medicine and Yale New Haven Hospital to build a clinical center of excellence that is juxtaposed between clinical medicine, industry sponsored research, and NIH funded translational research on asthma severity. After publishing two articles in 2007 in the New England Journal of Medicine on a novel genetic defect that is associated with asthma, he recognized the need for a technology platform that allows scientists to share resources, ideas, and knowledge across scientific, institutional, and geographic boundaries and founded ResearchAccelerator.org with Steven Greenberg.

Contact Information:

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- Contact us to learn more about making a Research Accelerator platform available at your institution.