Analyzing Collaboration Using Harvard Catalyst Profiles

http://profiles.catalyst.harvard.edu

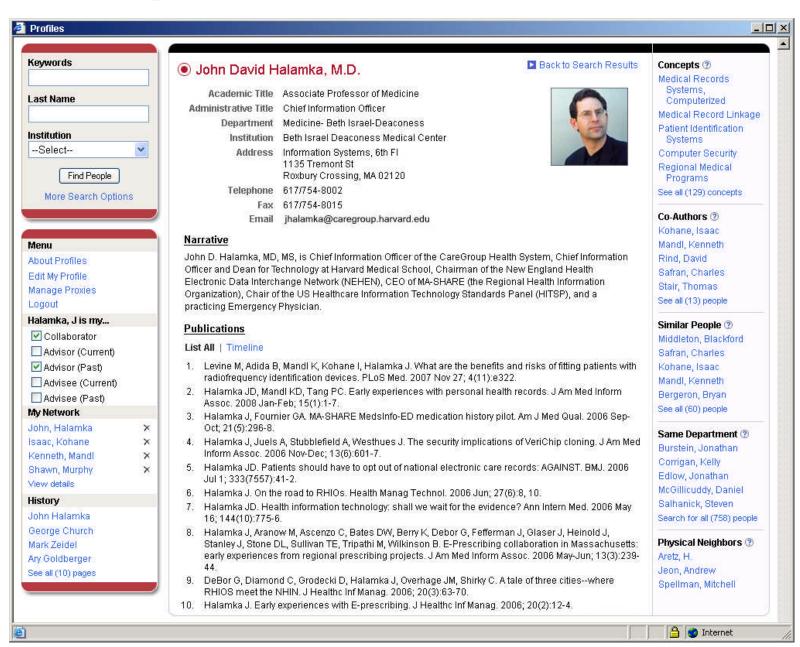
Griffin Weber, MD, PhD

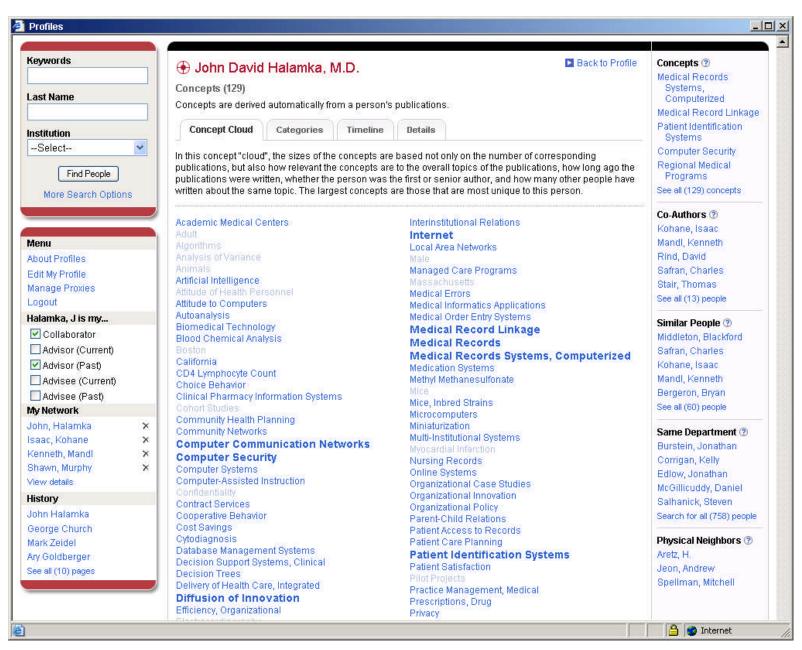
Chief Technology Officer, Harvard Medical School
Assistant Professor of Medicine, Beth Israel Deaconess Medical Center
weber@hms.harvard.edu

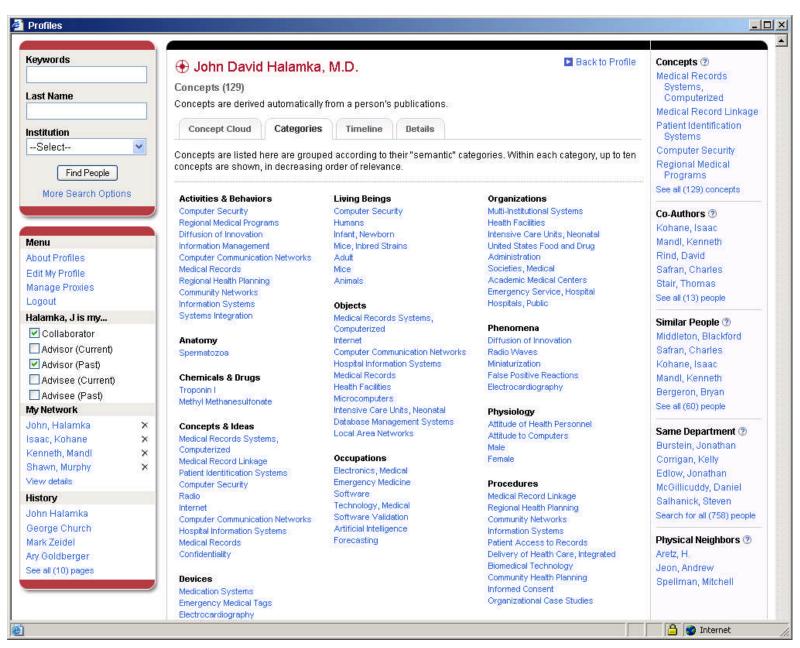
Nick Benik, Niraj Desai, Paul Gomez, Ken Huling, Shashank Jain, Melissa Kenny, Kevin Laitinen, Kellie Lucy, Krishna Nellutla, James Norman, Rob Piscitello, George Rakauskas, Jeff Rosen, Michele Sinunu, Franco Valentino, Marlon Violette, Steve Wimberg

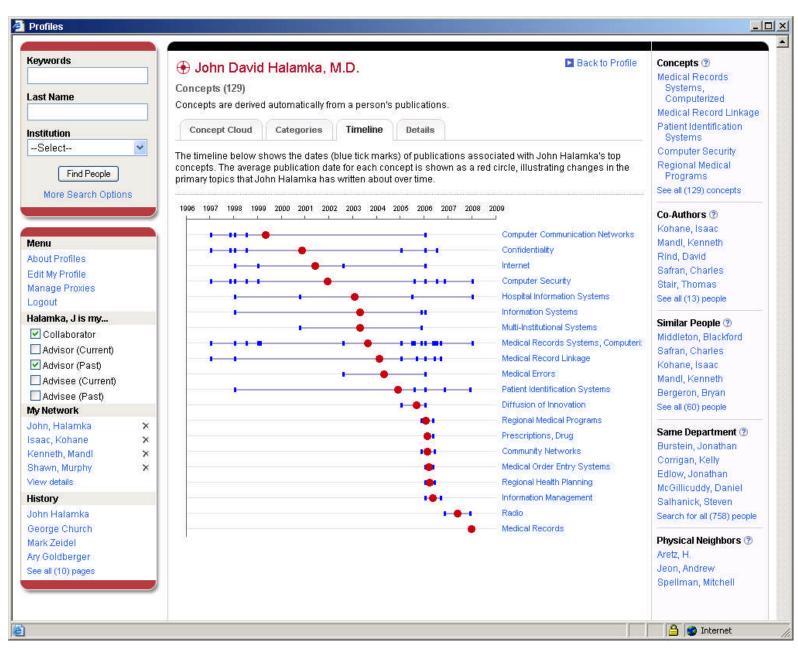
Harvard Catalyst Profiles

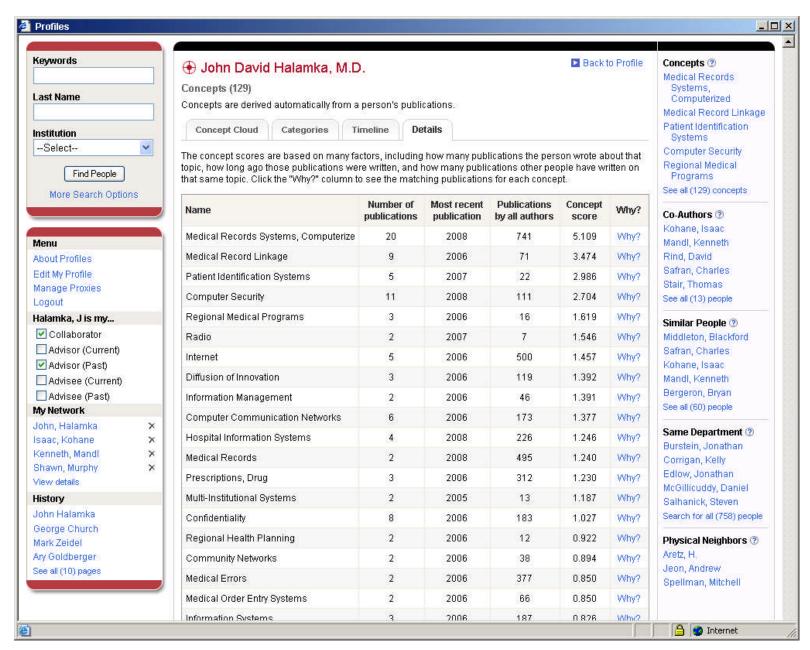
Profile (John Halamka)





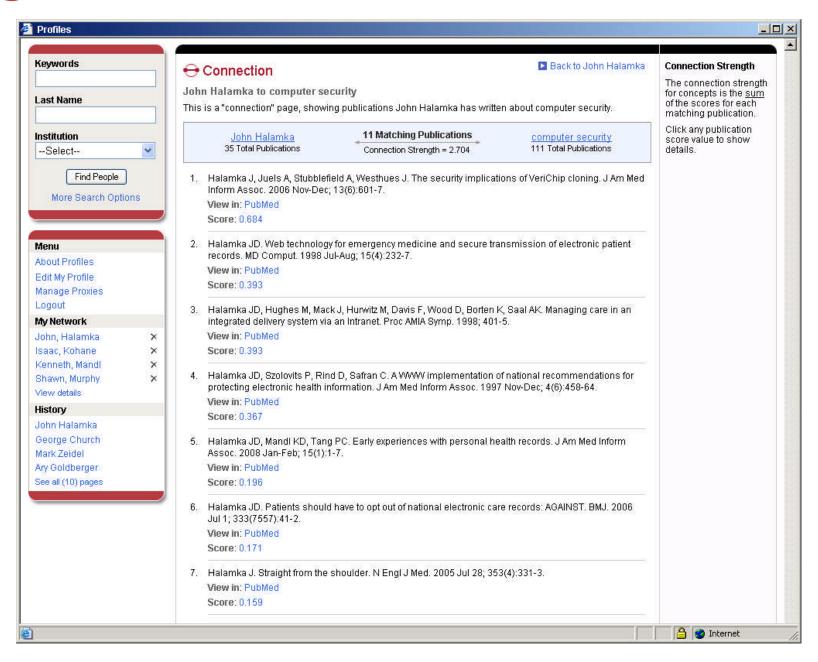




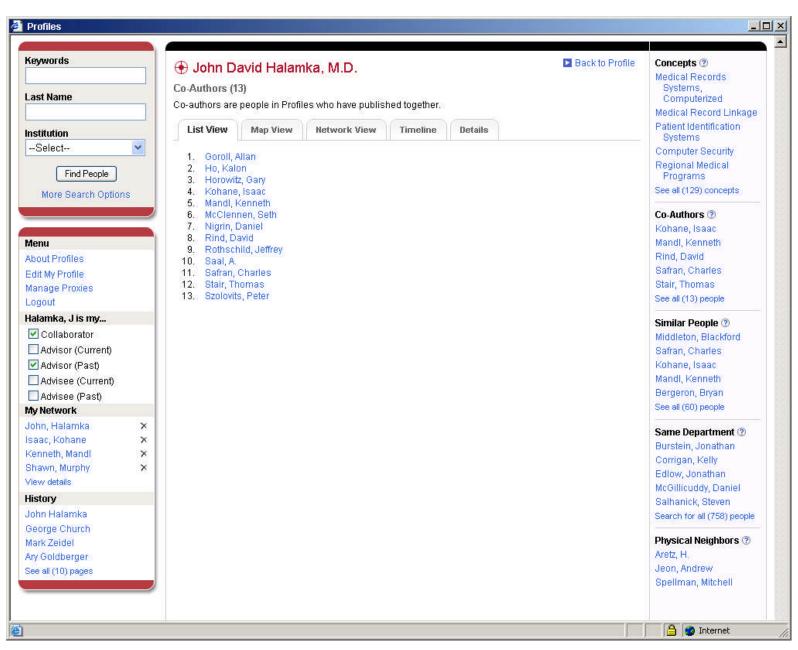




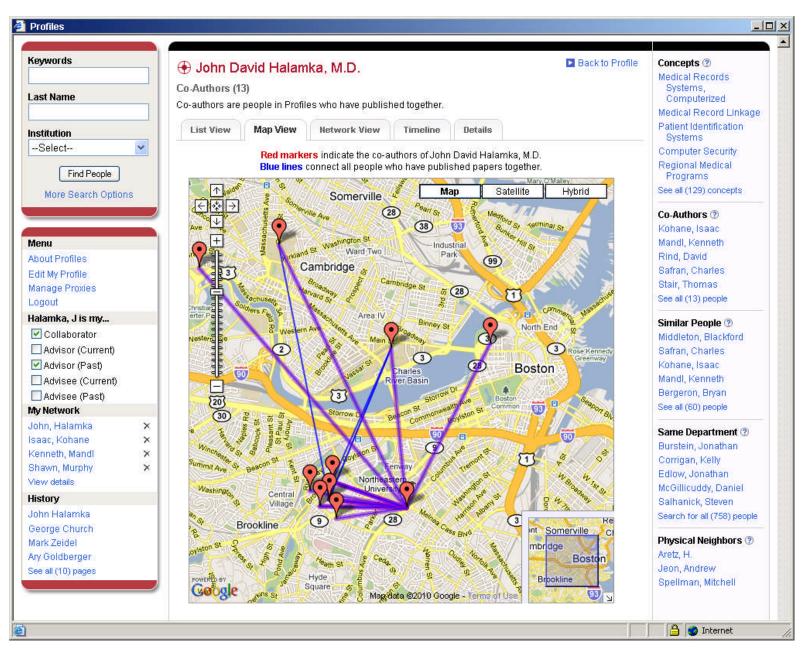
← Connection (John ← Computer Security)



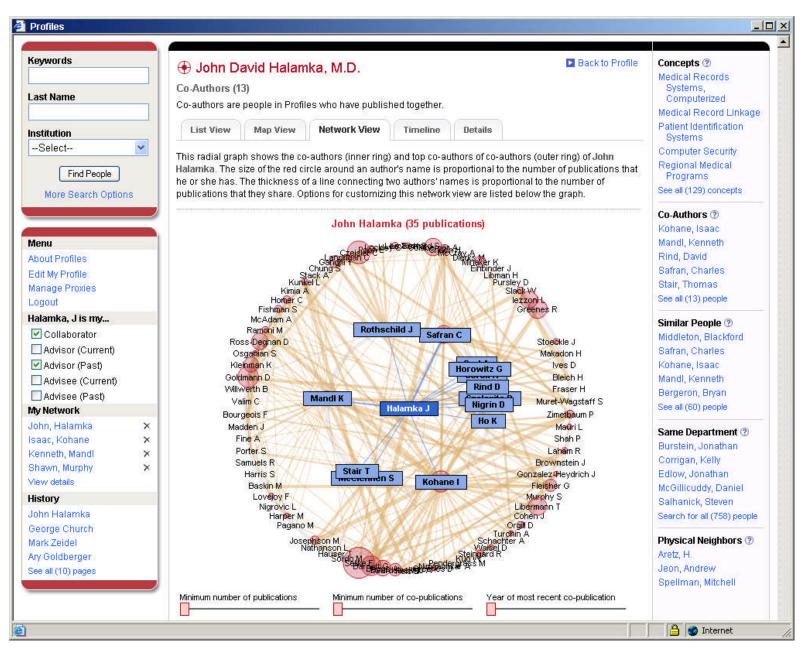
• Network (John's Co-Authors)



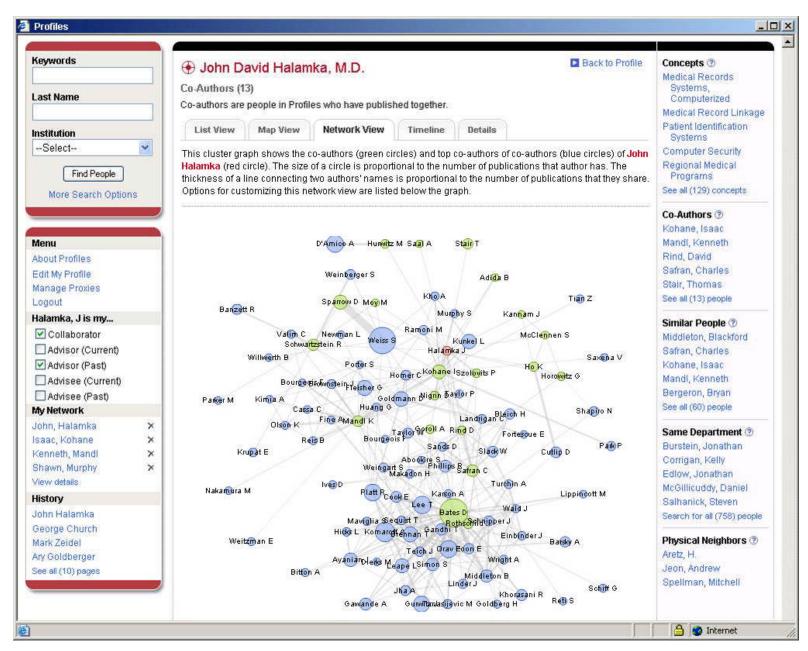
• Network (John's Co-Authors)



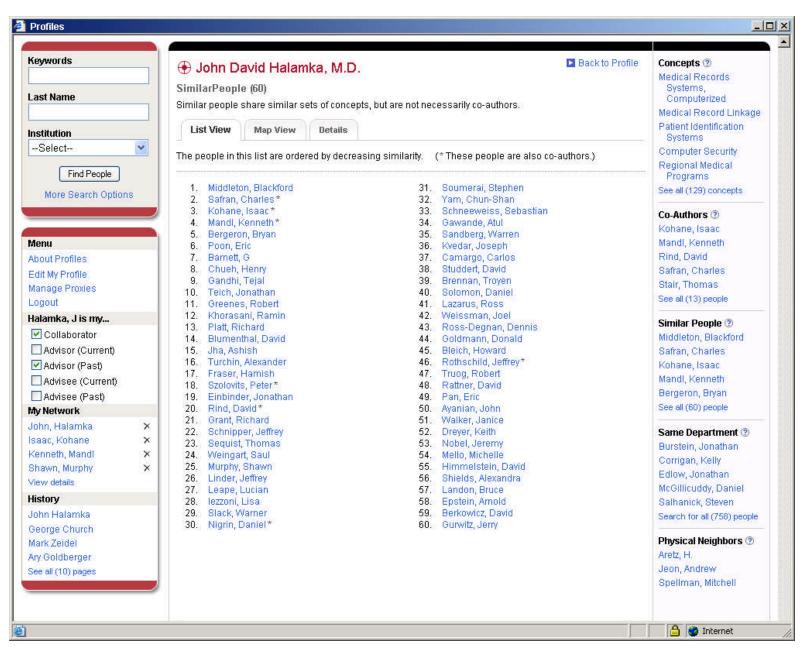
Network (John's Co-Authors)



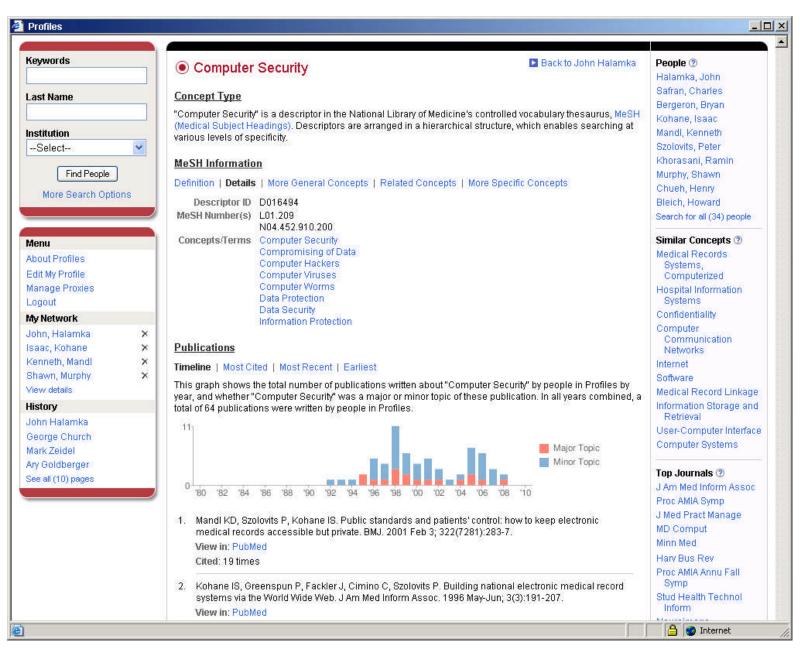
Network (John's Co-Authors)



Network (John's Similar People)

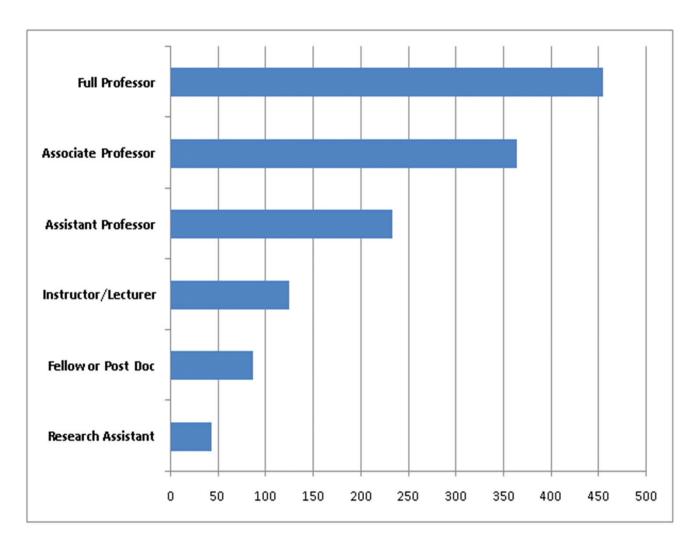


Profile (Computer Security)



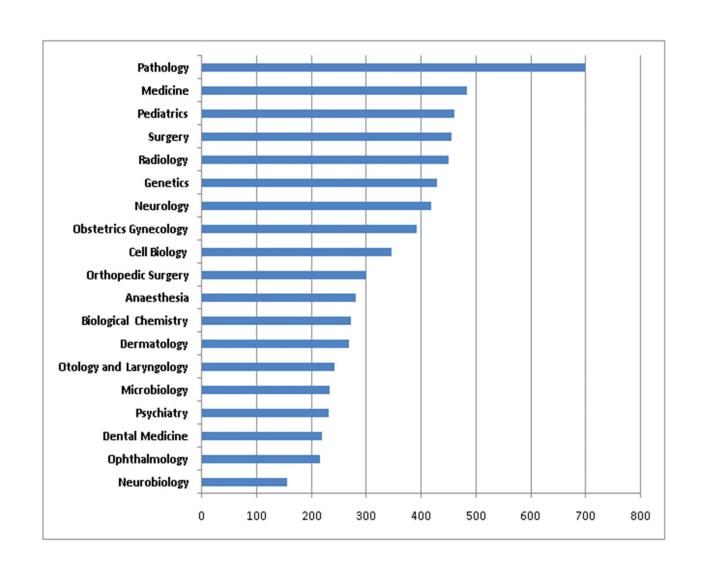
Social Network Analysis

Network "Reach"

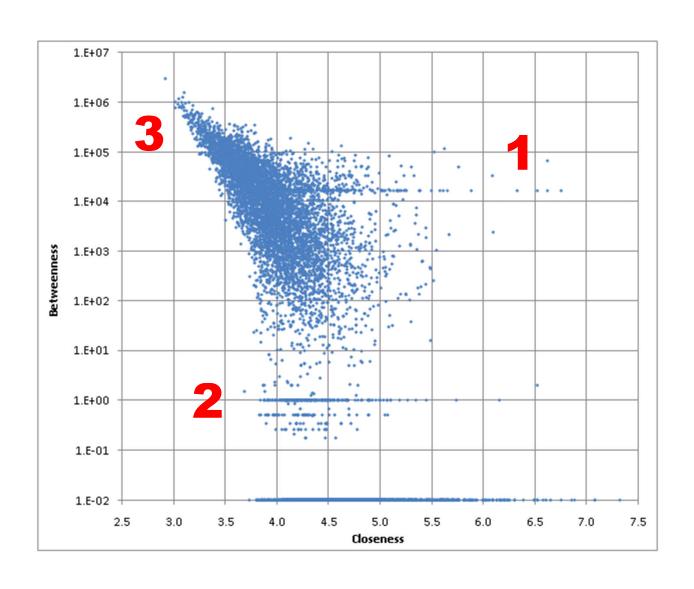


Reach – A person's co-authors plus the co-authors of those co-authors.

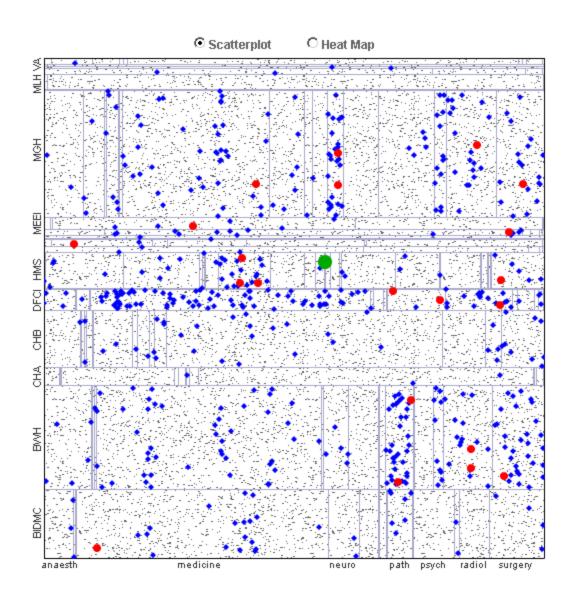
Reach by Department



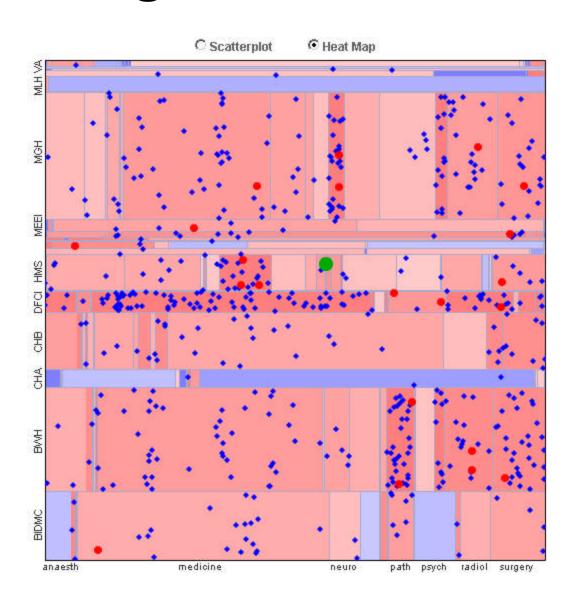
Closeness vs Betweenness



Visualizing a Person's Reach



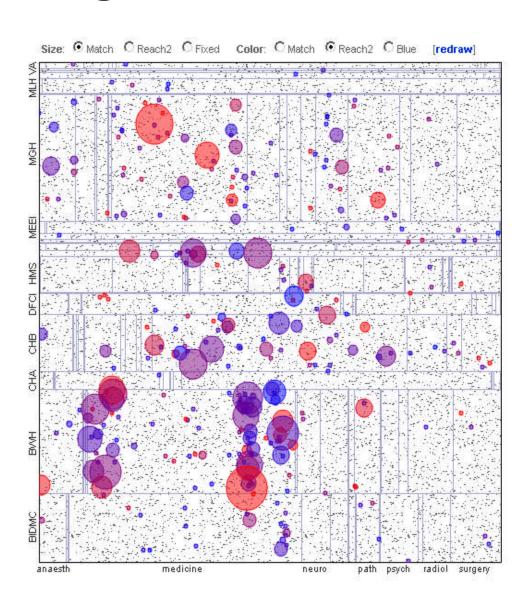
Visualizing a Person's Closeness



Recommended Collaborators

Name	Institution	Change
David Zurakowski, PH.D.	Children's Hospital	205
Yuchiao Chang, PH.D.	Massachusetts General Hospital	130
Ralph Weissleder, M.D., PH.D.	Massachusetts General Hospital	122
Nancy J. Tarbell, M.D.	Harvard Medical School	115
Ferenc A. Jolesz, M.D.	Brigham and Women's Hospital	111
Joseph Biederman, M.D.	Massachusetts General Hospital	106
E. John Orav, PH.D.	Brigham and Women's Hospital	104
Ron Kikinis, M.D.	Brigham and Women's Hospital	104
Thomas James Lynch, M.D.	Massachusetts General Hospital	102
Matthew Langer Meyerson, PH.D., M.D.	Dana Farber Cancer Instititute	100
Antonio Rafael Perez-Atayde, M.D.	Children's Hospital	100
David N. Louis, M.D.	Massachusetts General Hospital	99
Peter Libby, M.D.	Brigham and Women's Hospital	92
David Thomas Scadden, M.D.	Massachusetts General Hospital	89
Kenneth Carl Anderson, M.D.	Dana Farber Cancer Instititute	88
Bradley Theodore Hyman, M.D., PH.D.	Massachusetts General Hospital	87
John Charles Wain, M.D.	Massachusetts General Hospital	87
Gregory Y. Lauwers, M.D.	Massachusetts General Hospital	84
Massimo Loda, M.D.	Dana Farber Cancer Instititute	83
Daniel Arie Haber, M.D., PH.D.	Massachusetts General Hospital	82
Atul Kumar Bhan, M.D., M.B.,B.S.	Massachusetts General Hospital	82
Cynthia Casson Morton, PH.D.	Brigham and Women's Hospital	82
Robert Vincent Mulkern, PH.D.	Children's Hospital	81
Jay Steven Loeffler, M.D.	Massachusetts General Hospital	81
Andrew David Luster, M.D., PH.D.	Massachusetts General Hospital	81

Visualizing "Asthma" Researchers



Discovering Connections

Last Name (Person 1):	search	Griffin Weber
Last Name (Person 2):	search	John Halamka
Search for two people to see how they are connected.		

Griffin Weber and John Halamka can be connected in as few as 4 "hops" through co-authorship.

Below are the possible paths. The numbers between people indicate the strength of the connection.

```
Griffin Weber --1.250-- Lucila Ohno-Machado --1.000-- Isaac Kohane --5.000-- Kenneth Mandl --0.750-- John Halamka Griffin Weber --1.250-- Lucila Ohno-Machado --3.750-- Robert Greenes --0.500-- Charles Safran --4.250-- John Halamka Griffin Weber --1.250-- Lucila Ohno-Machado --1.000-- Isaac Kohane --0.563-- Charles Safran --4.250-- John Halamka Griffin Weber --1.250-- Lucila Ohno-Machado --1.000-- G Barnett --0.313-- Charles Safran --4.250-- John Halamka Griffin Weber --1.250-- Lucila Ohno-Machado --1.000-- Isaac Kohane --2.813-- Peter Szolovits --0.250-- John Halamka Griffin Weber --1.250-- Lucila Ohno-Machado --1.000-- G Barnett --1.500-- Allan Goroll --0.250-- John Halamka Griffin Weber --1.250-- Lucila Ohno-Machado --1.000-- G Barnett --1.299-- David Rind --0.250-- John Halamka Griffin Weber --0.250-- Lucila Ohno-Machado --1.000-- Isaac Kohane --0.750-- David Rind --0.250-- John Halamka Griffin Weber --0.250-- Raphael Bueno --3.125-- Steven Mentzer --0.938-- Marilyn Moy --0.500-- John Halamka Griffin Weber --1.250-- Lucila Ohno-Machado --0.500-- Hamish Fraser --1.000-- Peter Szolovits --0.250-- John Halamka Griffin Weber --1.250-- Lucila Ohno-Machado --0.500-- Hamish Fraser --0.250-- Kenneth Mandl --0.750-- John Halamka
```

Building a Team

Identifying Needed Skills

Enter a block of text, such as an abstract:

The vertebrate retina is comprised of seven major cell types that are generated in overlapping but well-defined intervals. To identify genes that might regulate retinal development, gene expression in the developing retina was profiled at multiple time points using serial analysis of gene expression (SAGE). The expression patterns of 1,051

search

clear

MeSH Terms Found:

The vertebrate retinal is comprised of seven major cell types that are generated in overlapping but well-defined intervals. To identify genes that might regulate retinal development, gene expression in the developing retina was profiled at multiple time points using serial analysis of gene expression (SAGE). The expression patterns of 1,051 genes that showed developmentally dynamic expression by SAGE were investigated using in situ hybridization. A molecular atlas of gene expression in the developing and mature retina was thereby constructed, along with a taxonomic classification of developmental gene expression patterns. Genes were identified that label both temporal and spatial subsets of mitotic progenitor cells. For each developing and mature major retinal cell type, genes selectively expressed in that cell type were identified. The gene expression profiles of retinal Müller glia and mitotic progenitor cells were found to be highly similar, suggesting that Müller glia might serve to produce multiple retinal cell types under the right conditions. In addition, multiple transcripts that were evolutionarily conserved that did not appear to encode open reading frames of more than 100 amino acids in length ("noncoding RNAs") were found to be dynamically and specifically expressed in developing and mature retinal cell types. Finally, many photoreceptor-enriched genes that mapped to chromosomal intervals containing retinal disease genes were identified. These data serve as a starting point for functional investigations of the roles of these genes in retinal development and physiology.

Gene Expression (5)

- 1. Joel Francis Habener, M.D. (MGH)
- 2. Constance Cepko, PH.D. (HMS)
- Donald William Kufe, M.D. (DFCI)
- C. Ronald Kahn, M.D. (JOSLIN)
- Stuart Holland Orkin, M.D. (DFCI)

Retina (3)

- Constance Cepko, PH.D. (HMS)
- 2. Richard Harry Masland, PH.D. (MGH)
- 3. Elio Raviola, M.D. (HMS)
- 4. Richard Leon Sidman, M.D. (HIM)
- 5. Eliot Lawrence Berson, M.D. (MEEI)

Neuroglia (2)

- 1. Constance Cepko, PH.D. (HMS)
- 2. Verne Strudwick Caviness, M.D., PH.D. (MGH)
- 3. Gabriel Corfas, PH.D. (CHILDRENS)
- Francine Mary Benes, M.D., PH.D. (MCLEAN)
- 5. Alan Leviton, M.D. (CHILDRENS)

Stem Cells (2)

- Constance Cepko, PH.D. (HMS)
- 2. Jeffrey Daniel Macklis, M.D. (MGH)
- George Quentin Daley, M.D., PH.D. (CHILDRENS)
- 4. Ole Isacson, DR.MED.SCI., M.B. (MGH)
- 5. Stuart Holland Orkin, M.D. (DFCI)

Analyzing Teams

Co-Author Matrix

BIDMC	John David Halamka, M.D.							
BWH		Luc	Lucila Ohno-Machado, PH.D., M.D.					
СНВ		4	4 Isaac Samuel Kohane, M.D.,PH.D.					
HMS		4	Griffin M Weber, M.D., PH.D.					
UMP		1		1	Constance Cepko, PH.D.			

Physical Distance Matrix

BIDMC	John	John David Halamka, M.D.								
BWH	1.33	Lucila	Lucila Ohno-Machado, PH.D., M.D.							
СНВ		0.15 Isaac Samuel Kohane, M.D.,PH.D.								
HMS		ı	0.09 Griffin M Weber, M.D., PH.D.							
ПІІІО	1.04	0.33	0.17	0.08	Constance Cepko, PH.D.					

Co-Authorship Distance Matrix

BIDMC	John David Halamka, M.D.								
BWH	3	Luc	Lucila Ohno-Machado, PH.D., M.D.						
СНВ	2	1	1 Isaac Samuel Kohane, M.D.,PH.D.						
HMS	4	1	2 Griffin M Weber, M.D., PH.D.						
HIVIS	4	1	2	1	Constance Cepko, PH.D.				

MeSH Similarity Matrix

BIDMC	John D	John David Halamka, M.D.							
BWH	0.713	Lucila Ohno-Machado, PH.D., M.D.							
СНВ	2.582	2.889	Isaac Samuel Kohane, M.D.,PH.D.						
HMS	0.018		0.208 Griffin M Weber, M.D., PH.D.						
HMS	0.009	0.298	0.543	0.172	Constance Cepko, PH.D.				

		indom Control	CTSA Pilot Grant Submissions 2009		
	All 20,496	All Faculty	All 837	Submit	Awarded
	Faculty	Rank Match	Applicants	Proposal	Funding
Number of Teams	279 x 10	279 x 10	279 x 10	279	41
Average Team Size	3.484	3.484	3.484	3.484	3.610
	Individual N	letrics Averag	ed by Team		
% Full Professors	5.6	15.9	15.6	15.9	23.6
% MD, PhD	7.8	9.5	17.9	17.8	21.1
Avg Number of Pubs	18.82	41.08	58.56	54.82	73.82
Avg CoAuthor Reach	147.3	311.8	491.4	456.9	500.5
Average Age	ge 42.8		50.9 45.8		46.1
	Pairwise M	etrics Average	d by Team		
% Same Institution	14.6	15.8	19.9	46.3	29.4
% CoAuthors	0.038	0.169	0.653	19.4	22.4
% CoCited	0.541	2.30	5.51	13.4	18.0
MeSH Similarity	0.040	0.323	0.591	3.653	8.575
Physical Distance	14.306	5.466	1.847	1.600	0.919
	Global CoAu	thor Network	Density (%)		
Nodes = People	0.034	0.173	0.497	0.497	1.006
Nodes = Teams	0.407	2.120	6.799	4.507	4.878

Connecting a University

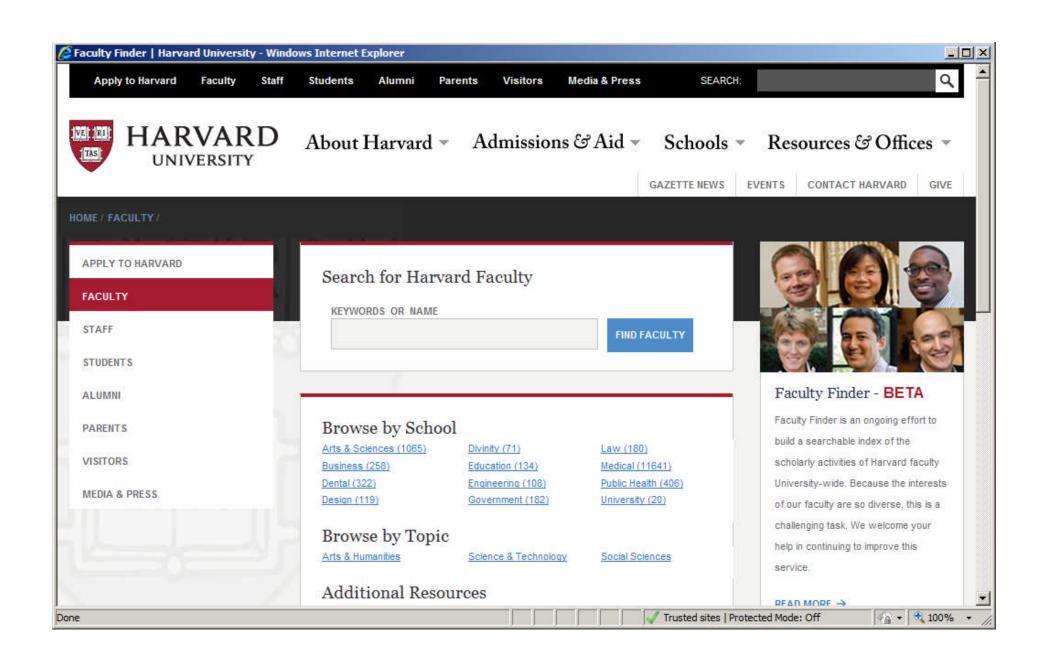
Harvard Faculty Finder

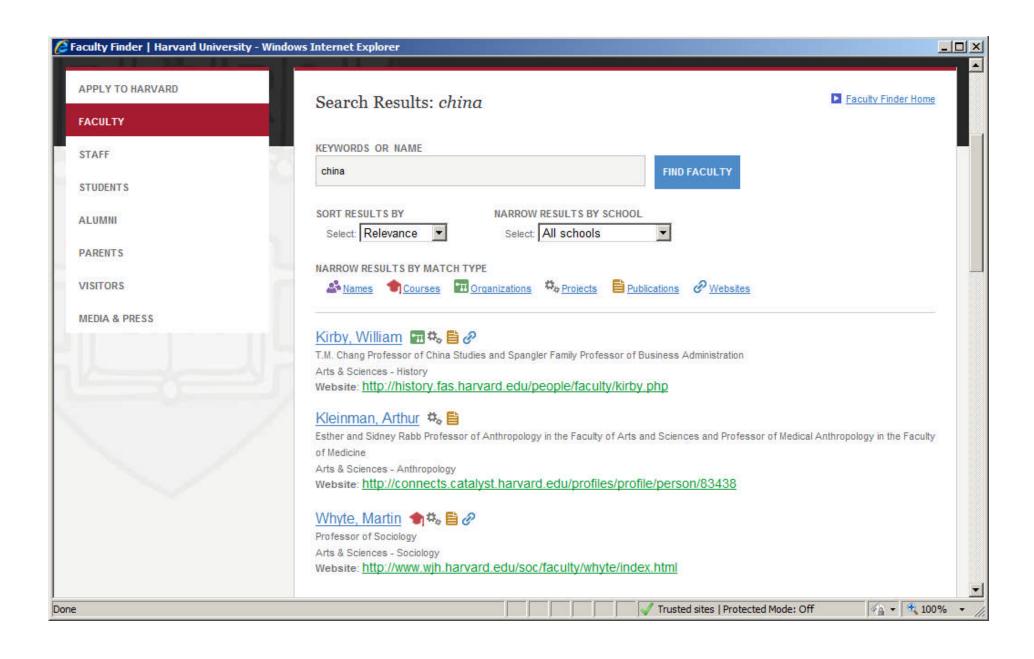
School	People
Arts & Sciences	1,053
Business	253
Dental	323
Design	116
Divinity	71
Education	135
Engineering	105
Government	175
Law	190
Medical	11,681
Public Health	391
University	23

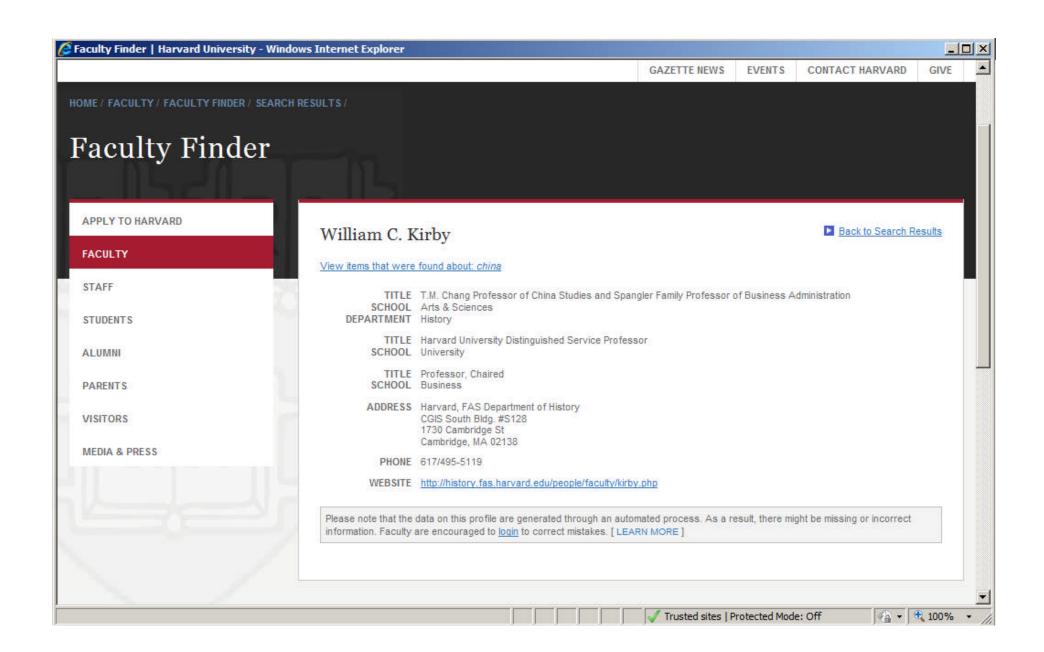
Type	Items
People	14,516
WoS Publications	419,979
WoS Keywords	581,794
WoS KeywordPlus	2,068,468
WoS Subject Areas	839,697
DSpace Articles	9,454
Books	2,793
Book Keywords	4,645
Patents	1,265
Courses	5,266
Projects	996
Project Regions	4,065

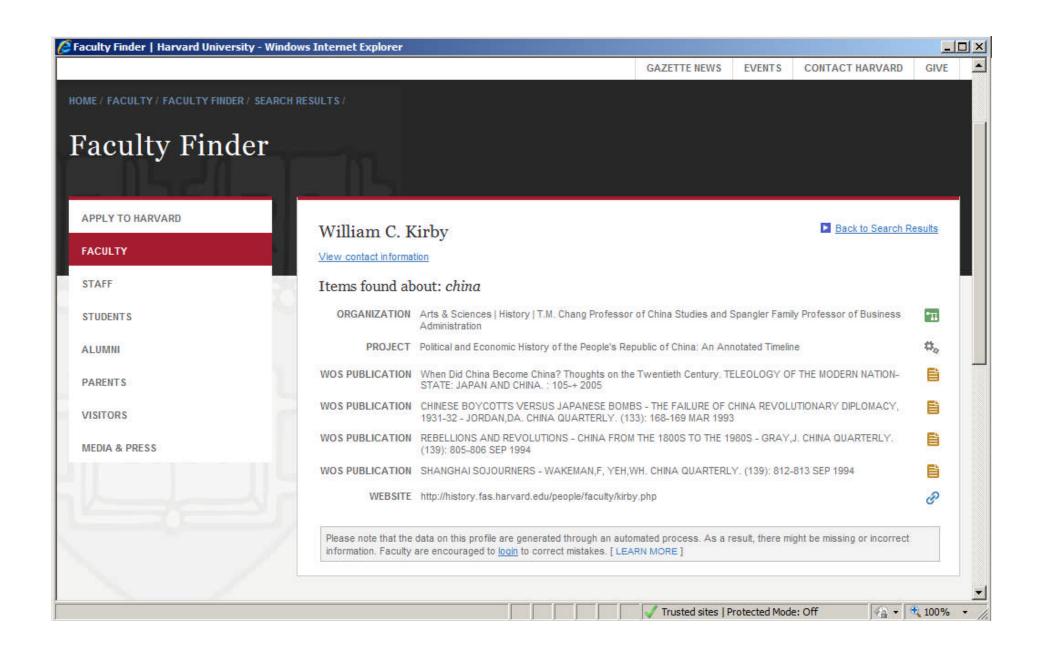
Percent of Faculty with Item Type

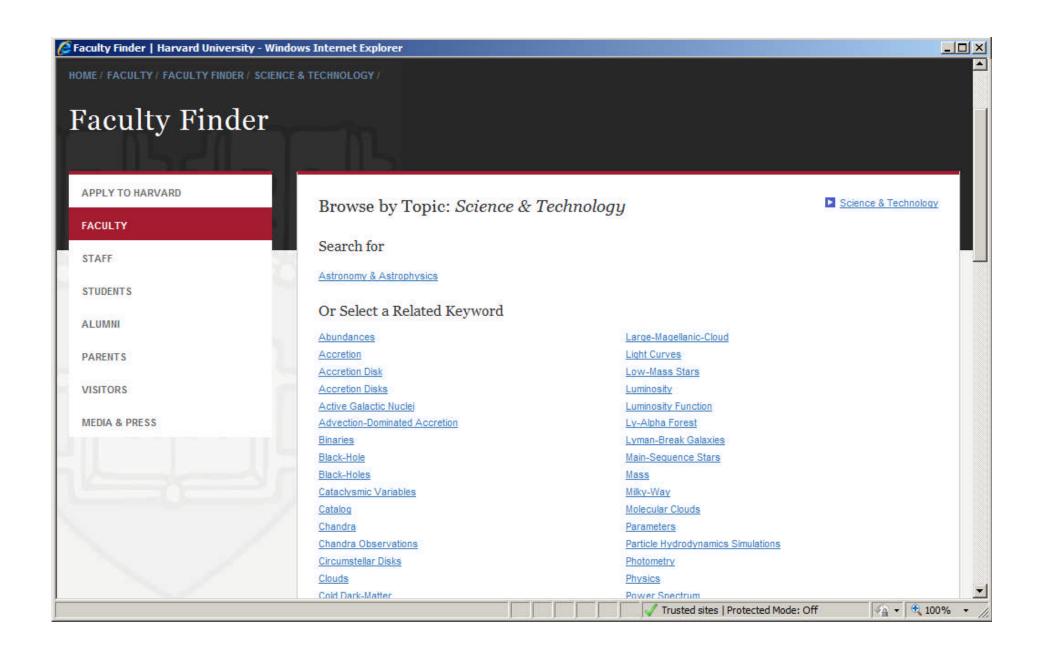
School	WoS	DSpace	Book	Patent	Project	Course	Website
Arts & Sciences	74.2	33.5	14.5	2.2	6.5	73.0	62.8
Business	86.9	5.8	13.1	1.2	50.8	38.5	91.2
Dental	60.2	2.2	0.6	2.5	0.3	1.2	100.0
Design	52.9	0.8	7.6	1.7	6.7	3.4	73.1
Divinity	59.7	4.2	15.3	0.0	2.8	48.6	43.1
Education	69.9	14.0	9.6	0.0	5.9	77.2	91.2
Engineering	87.0	54.6	8.3	20.4	2.8	75.9	71.3
Government	73.1	29.7	17.0	0.5	15.4	14.3	76.9
Law	66.1	14.1	18.8	1.0	5.7	69.3	89.1
Medical	81.0	14.8	2.1	2.6	0.3	3.7	99.9
Public Health	90.2	42.3	7.4	2.9	13.3	13.3	100.0

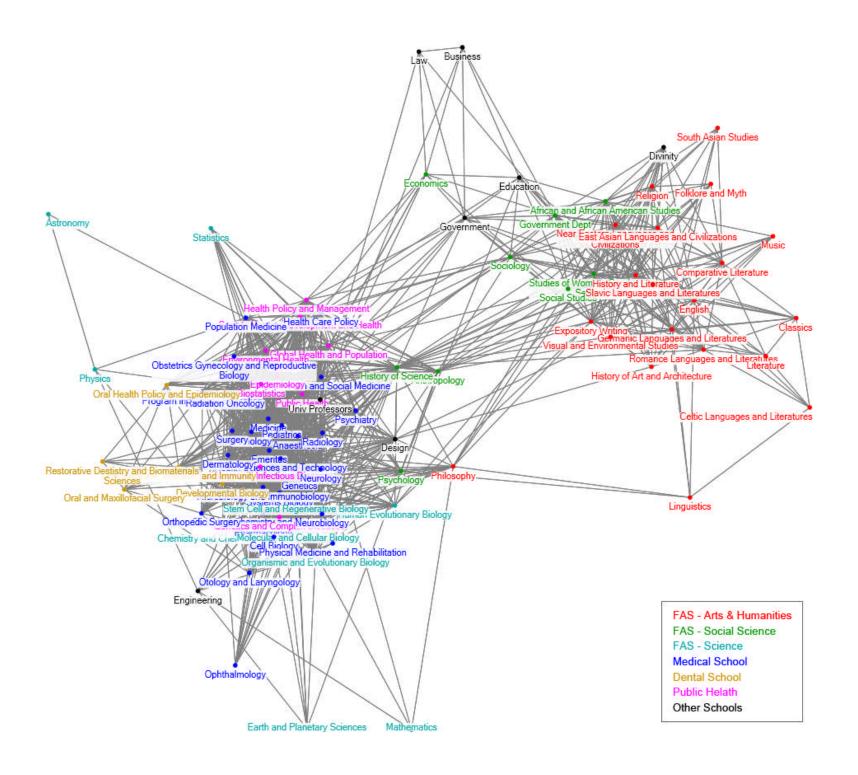












National Expertise Search

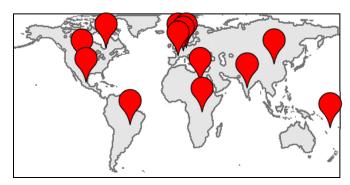
Profiles Users Group Members

UCSF Fred Hutchinson CRC Oregon Health Sci U UC Davis (CBST) Touro University U Southern California UC San Diego **Charles Drew** U Hawaii Arizona State Montana State U Colorado Denver U Nebraska-Lincoln **UW Madison U** Illinois U Chicago **Baylor College Med UT Southwestern UT Houston** Jackson State (RTRN) Ohio State Cincinnati Children's Case Western U Kentucky Vanderbilt Stem Cell U Arkansas Little Rock U Alabama Birmingham



Symplectic Limited (UK) McGill University (Canada) University of Cambridge (UK) Makerere University (Uganda) University of Leuven (Belgium) South-Valley University (Egypt) Elysium, Geneva (Switzerland) Beijing Normal University (China) University of the South Pacific (Fiji) Velammal Engineering College (India) Nati Sci Lib, Chinese Acad of Sci (China) Clinical & Biomedical Computing Ltd (UK) Jonkoping University Engineering School (Sweden) Universidad Nacional Autonoma de Mexico (Mexico) Ministério da Ciência e Tecnologia e Inovação (Brazil) Centre Interdisciplinaire de Nanoscience de Marseille (France)

Harvard Univ Minnesota Dartmouth **Univ Mass Boston Univ** Tufts Univ Boston VA Rensselaer **Univ Connecticut** Univ Rochester NYU Med Ctr Mount Sinai Sch of Med MedMeme Thomas Jefferson **UPenn** Johns Hopkins **USUHS-CNRM** NIH George Wash U Penn State Childrens Nat Med Ctr Wake Forest Leadership in Med **HSSC** Georgia Tech Piedmont Healthcare **Emory University**



University Spotlights



Harvard University
http://connects.catalyst.harvard.edu/profiles



UCSF http://profiles.ucsf.edu



University of Minnesota http://profiles.ahc.umn.edu



South Carolina http://profiles.healthsciencessc.org



UConn Health Center http://profiles.uconn.edu



Penn State http://profiles.psu.edu



Wake Forest Medicne http://profiles.tsi.wakehealth.edu



RTRN (18 RCMI Institutions) http://rtmprofiles.rtm.net/profilesweb



Boston University http://profiles.bumc.bu.edu

Direct2Experts

http://direct2experts.org

8 Research Networking Products:

Harvard Profiles, VIVO, Elsevier SciVal Experts, Iowa Loki, Stanford CAP,
 Northwestern LatticeGrid, Indiana CTSI HUB, Pittsburgh Digital Vita

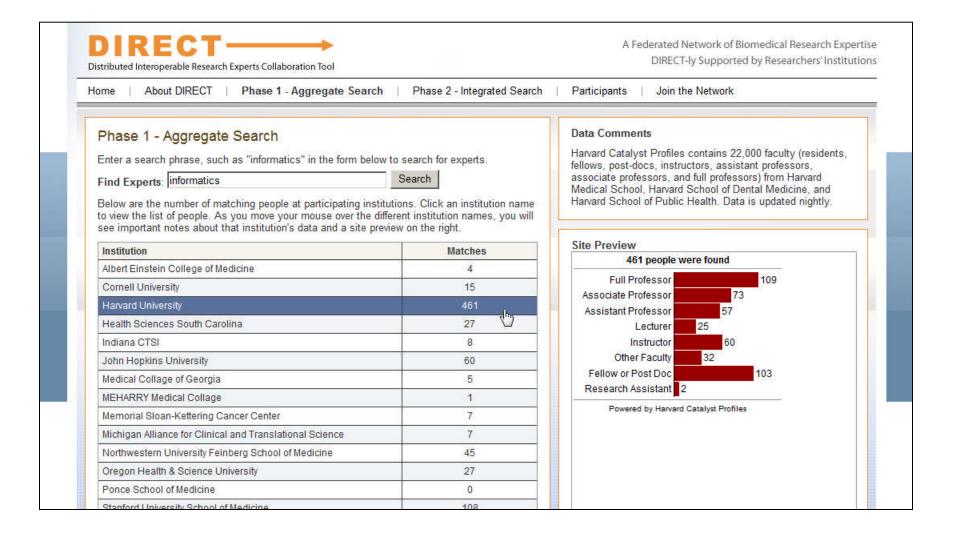
29 Institutions (50,000+ Biomedical Researchers):

- 1. Albert Einstein College of Medicine (SciVal Experts)
- 2. Cornell University (VIVO)
- 3. Harvard University (Profiles RNS)
- 4. Health Sciences South Carolina (Profiles RNS)
- Indiana Clinical and Translational Sciences Institute (CTSI HUB)
- 6. John Hopkins University (SciVal Experts)
- 7. Medical College of Georgia (SciVal Experts)
- 8. Meharry Medical Collage (SciVal Experts)
- 9. Memorial Sloan-Kettering Cancer Center (SciVal Experts)
- 10. Michigan Alliance for Clinical and Translational Science (SciVal Experts)
- 11. Northwestern University Feinberg School of Medicine (LatticeGrid)
- 12. Oregon Health & Science University (SciVal Experts)
- 13. Ponce School of Medicine (VIVO)
- 14. Stanford University School of Medicine (CAP)
- 15. The Scripps Research Institute (VIVO)

- 16. The University of Alabama at Birmingham (SciVal Experts)
- 17. University of California, Davis Health System (SciVal Experts)
- 18. University of California, San Francisco (Profiles RNS)
- 19. University of Florida (VIVO)
- 20. University of Illinois at Chicago (SciVal Experts)
- 21. University of Iowa (Loki)
- 22. University of Maryland (SciVal Experts)
- 23. University of Miami (SciVal Experts)
- 24. University of Michigan (SciVal Experts)
- 25. University of Minnesota (Profiles RNS)
- 26. University of Pittsburgh (Digital Vita)
- 27. University of Texas, San Antonio Health Science Center (SciVal Experts)
- 28. Washington University in St. Louis (VIVO)
- 29. Weill Cornell Medical College (VIVO

Direct2Experts

http://direct2experts.org



Analyzing Collaboration Using Harvard Catalyst Profiles

http://profiles.catalyst.harvard.edu

Griffin Weber, MD, PhD

Chief Technology Officer, Harvard Medical School
Assistant Professor of Medicine, Beth Israel Deaconess Medical Center
weber@hms.harvard.edu

Nick Benik, Niraj Desai, Paul Gomez, Ken Huling, Shashank Jain, Melissa Kenny, Kevin Laitinen, Kellie Lucy, Krishna Nellutla, James Norman, Rob Piscitello, George Rakauskas, Jeff Rosen, Michele Sinunu, Franco Valentino, Marlon Violette, Steve Wimberg