

data landscapes

March 20, 2007 5:55 AM

Map of Science. <<http://mapofscience.com/>> Science is the most interconnected of all human activities and **requires a series of maps to chart its changing landscape** <<http://news.bbc.co.uk/2/hi/science/nature/3608385.stm>>. Scientific method: **relationships among scientific paradigms** <http://www.seedmagazine.com/news/2007/03/scientific_method_relationship.php>.

posted by **nickyskye** (15 comments total)

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You know what's at the center of that ring? GOD!

Seed magazine could be so very awesome if they increased the science content by 5% and the geewhiz content by 40%. As always, their image is initially beautiful and but doesn't impart the information it claims to.

The actual site could be really neat if there were more detail available. The fact that they list, for instance, only Boston and Paris as cities under geography indicates they actually have more and this is just a taste. Pretty cool.

posted by **DU** at **6:11 AM** on March 20, 2007

Yeah, that's pretty much impossible to read.

posted by **delmoi** at **6:32 AM** on March 20, 2007

The **large version** <<http://www.seedmagazine.com/news/uploads/scimaplarge.jpg>> is amazing. Looks like you can order free 24" prints of it from **information esthetics** <<http://informationesthetics.org/node/20>>.

I miss doing Biology at Uni... I seem to remember learning about stuff as interesting & amazing as this every day...

posted by **algreer** at **6:55 AM** on March 20, 2007

What I was looking for there was something more interesting - like punching in a topic (such as "evolution") and getting a map showing what science disciplines provide evidence for it, and what science disciplines depend on it. That would have been pretty neat. Say something like "string theory" for example, a subject I have heard of but have little concept of, it would help me nail down where it lies in the spectrum of things and why it is important. The unlabeled nodes just don't seem to be that useful.

Also, correct me if I'm wrong - but shouldn't medicine be a sublevel of biology and/or chemistry and not a separate chunk of science unto itself?

posted by **caution live frogs** at **7:12 AM** on March 20, 2007

Medicine is the art of interfering with biology.

posted by **zennie** at **7:14 AM** on March 20, 2007

Is this a usable map? I don't know, I'll leave that to the (non-lay) scientists. But it's quite beautiful. Astrophysics is up at the top with links and nodes reaching up to a zenith; Fluid Mechanics is amidst a sea of black lines curving around the aerodynamic discs like smoke in a wind tunnel; Quantum Physics has a sturdy base of nodes and links but trails off the page in strings of language. I'd like to crop and frame certain sections. They would easily be taken as modern art.

posted by **Terminal Verbosity** at **7:39 AM** on March 20, 2007

Paging Mr. Tufte. You're needed in the "Map of Science" room, stat.

posted by **chimaera** at **9:11 AM** on March 20, 2007

Also, correct me if I'm wrong - but shouldn't medicine be a sublevel of biology and/or chemistry and not a separate chunk of science unto itself?

The diagram appears to show the links between publications in various fields - not the hierarchy of the disciplines. Medical publications overlap those in chemistry (pharmacology) and biology (anatomy, biochemistry) but there is a fair body of medical literature (surgery etc.) which is pretty much on its own. The same comment would apply to Earth Sciences which overlap Physics (Geophysics), Chemistry (Geochemistry) and so forth.

posted by **speug** at **9:19 AM** on March 20, 2007

I'm with caution live frogs in hoping someone links a metasearch engine to the visual display interface aspect of this. I guess it's only a matter of time. For now I'll just ooh and awe over the gorgeous "big picture." Thanks, nickyskye.

posted by **tidecat** at **10:30 AM** on March 20, 2007

My fiancé, Julie, curates the exhibit for which that map was created. Right now it, along with many other maps, is in the New York Hall of Science.

Lots more at **their website** <<http://scimaps.org/>>.

posted by **ztdavis** at **11:46 AM** on March 20, 2007

What a blunder to use networking, clustering algorithms, scientific visualization, text extraction, and databases to present this data of all science and not include anything from the field computer science. I'm embarrassed for them.

posted by **about_time** at **11:57 AM** on March 20, 2007

The cluster in the center of the top left quadrant is computer science. This is clearer in the third link.

posted by **FreedomTickler** at **12:03 PM** on March 20, 2007

The value of this is the broad perspective. Looking at an individual discipline is a lower priority; there are already huge databases where you can look up "keyword: evolution" and turn out the results by journal, which is as good as dividing by discipline. Takes a little work, yeah, but not as much of a challenge.

These Map of Science people have looked up a very large number of keywords at once, and graphed it to gain a visual representation of trends and distribution. The trends, not the details, are the goal here, IMO. I imagine there are a number of interesting things they can tease out of the set, such as unexpected ties and the "hot spots" where collaboration and development meet.

Not to be cynical, but if you were, say, a large research university or an investment firm, something like this would be very interesting when you are allocating resources. Similarly, for scientists this might be interesting as a potential map to funding.

Is this a usable map?

I'm reminded of high school communications class, when my teacher insisted that a road map of the state was more useful than a high-resolution satellite photo of the state. Usefulness is entirely dependent on who you are and what you want to find. If you want a route from A to B in a car, the first is useful, but if you want a promising location for a wildlife sanctuary, the second is useful.

posted by **zennie** at **12:40 PM** on March 20, 2007

My fiancé wrote to me in an e-mail:

oOOo, we're on metafilter.

I work in the department at Indiana University who has worked in collaboration with these scientists and artists to create and display these Maps of Science. I co-curate this exhibit: <http://scimaps.org/> which displays earlier versions of the Map of Science both as a wall mounted map and as an Illuminated Diagram display.

Speug had it right-- this visualization is generated based on how many times different scientific journals cite each other. More citations draw the nodes closer together. Its based on some 1.3 million papers. When you have a chance to look at the data on a computer you see that papers from certain areas of science, say physics, show up in many places all over the map. Its very interesting to see how interrelated science really is.

posted by **ztdavis** at **3:43 PM** on March 20, 2007

Hmm. My first thought as a linguist was that Linguistics ought to be in here — camped out between CS, brain research and social science, probably — but damned if I can find it. Then again, half the stuff in that region of the map is illegible even at the largest size, and it's impossible to scan quickly through text that's moving all wiggly-like across the page. And that's a pretty sparsely-populated region. I'd hate to be trying to hunt down a keyword in, say, the medicine–virology–cell-biology clusterfuck down at the bottom.

I guess this means I'm with the haters. This is pretty, and its initial impact is a nice, satisfying "WHOA," but it's hard to find and extract a specific piece of information that you want.

Even an index (like you get on any good road map: Liberty Avenue, J4; Computational linguistics, E7) would be a huge help.

Still, some of the large-scale correlations are interesting in their own right. It surprised me how close Math is to Fluid Mechanics, for instance, or how much closer the bulk of Cell Biology is to Virology than it is to Organic Chemistry. But maybe that just means my mental map of the hard sciences is out of whack. I dunno, you tell me — if I hung out with lab scientists instead, would that stuff have been obvious?

posted by **nebulawindphone** at **6:25 AM** on March 28, 2007



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