CST Board of Visitors

April 17, 2015

Vision - Status Report
Kudos
Transformation
Challenges
Temple University
College of Science & Technology, SERC Building

https://www.youtube.com/watch?v=d_l6dUk8fBU

Center for Biophysics (Ron Levy)
Center for Materials Theory (John Perdew)
Center for Biodiversity (Blair Hedges)
Center Data Analytics (Zoran Obradovic)
Center for Genetics & Genomics (Jody Hey)
Center for Networking (Jie Wu)
Institute for Genomics & Evolutionary Medicine (Sudhir Kumar)
Institute for Computational Molecular Science (MLK)

Temple Materials Institute

$$$ DOE EFRC $$$ (John Perdew)

Center for the Computational Design of Functional Layered Materials
The discovery of high-temperature superconductors, the determination of DNA's double-helix structure, the first observations that the expansion of the universe is accelerating—all of these breakthroughs won Nobel prizes and international acclaim. Yet none of the papers that announced them comes anywhere close to ranking among the 100 most highly cited papers of all time.

Citations, in which one paper refers to another work, are the standard means by which authors acknowledge the source of their methods, ideas, and findings, and are often used as a rough measure of a paper’s importance. Fifty years ago, Physicist Garret Hotelling published the Science Citation Index (SCI), the first systematic effort to track citations in the scientific literature. To mark the anniversary, Nature asked Thomson Reuters, which now owns the SCI, to list the 200 most highly cited papers of all time. (See the full list at www.nature.com/top100.) The search covered all of Thomson Reuters’ Web of Science, an online version of the SCI that also includes databases covering the social sciences, arts and humanities, conference proceedings and some books. It lists papers published from 1900 to the present day.

The exercise revealed some surprises, but not that it was staggering 12,119 citations to rank in the top 100—and that many of the top hits are not papers that do make the cut. A few, for example, are the first observations of carbon nanotubes (number 38) and indirect classic discoveries. But the vast majority describe experimental tools or software that have become essential in their fields.

The most cited work in history, for example, is in 1954 paper describing an assay to determine the amount of protein in a solution. It has been gathered more than 75,000 citations —a record that always puzzled its lead author, the US biochemist Oliver Lovery. “Although I really know it is not a large paper... I secretly get a kick out of the response,” he wrote in 1977.

The 200th and the last of the SCI, a study by Russian researchers, is a landmark discovery in the 1970s of the protein ribonuclease, which is used in many processes that require the destruction of nucleic acids. And the 100th most cited paper was published in 1981, a study of the biological effects of high magnetic fields on humans.
#16: Generalized gradient approximation made simple

#45: MEGA4: Molecular Evolutionary Genetics Analysis (MEGA)

#79: Comparison of simple potential functions for simulating liquid water

#93: Accurate and simple analytic representation of the electron-gas correlation-energy

**Web of Science**: Temple University College of Science & Technology has 4 of the top 100 science publications!!
$$$$$ Research Funding $$$$$

Temple made it into the top 100 for funding in 2013

http://ncsesdata.nsf.gov/profiles

First-25  >$2 Billion ↔ $725 Million
Second-25 $725M ↔ $425 M
Third-25 $300M ↔ $200 M
Top 100 > $200 M

The good news should continue ..
Current Recruiting

Darius Torchinsky – Caltech – Physics
Yugang Sun – Argonne National Lab – Chemistry
Sergei Pond – UC San Diego Medicine – Biology
Claudia Bank – EPFL – Biology
Joshua Schraiber – U Washington - Biology
Gillian Queisser – Math – Germany – Math
Steven M Chemtob – Wash U – EES
Atsuhiro Muto – Penn State - EES
Qiang Zeng – Penn State - CIS
Challenges

New Building (IRB)

New Budget Model

New Courses

Challenges