

**Are we
achieving
what we
want?**

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What do we want?

- A few of the issues:
 - Generation and quick dissemination of novel ideas
 - Scientific correctness and validation of results
 - Full explanation of results
- I'll focus on two issues
 - Experimental methodology
 - Conferences versus Journals

Experiments

- A theory is something nobody believes, except the person who made it. An experiment is something everybody believes in, except the person who made it.

Albert Einstein

- It doesn't matter how beautiful your theory is, it doesn't matter how smart you are. If it doesn't agree with experiment, it is wrong.

Richard Feynman

- The true worth of an experimenter consists in his pursuing not only what he seeks in his experiment, but also what he did not seek.

Scientific Method vs Computer Scientific

Obsolete Scientific Method

- Hypothesis
- Sequence of experiments
- Change 1 parameter/
experiment
- Prove/Disprove
hypothesis

Computer Scientific Method

- Hunch
- 1 experiment and
change all parameters
- Discard if it doesn't
support hunch
- Why waste time? We
know this

David Patterson

What is wrong with experiments?

- Students (and perhaps also we) don't know how to run experiments
 - What can you do to data? What can't you do to data?
 - How can the reliability of experimental results improved?
 - Confidence intervals?
- Experiments are (generally) not repeatable
 - Experimental setup is not properly described
 - Source code is not available; binary code run on other data produces meaningless results
 - Data sets are not available

What can be done

- Repeatability of experiments
 - A wide spectrum of possibilities
 - IP issues
- Common and public data sets
 - At least (most) data sets should be made publicly available
- Conference papers do not necessarily need detailed experimental results
 - Indicate what experiments would be interesting to run and why
 - Reduce conference paper page limits

Journals vs

Conferences

- Fast turnaround
- Quicker dissemination
- Possibility to network
- Inconsistent reviews
- Inability to respond
- Page limits

Journals

- Archival publication
- Fuller description
- “Better” reviews
- Very long review cycle
- Long time to get published
- No one reads them



Conferences are more important than journals
Ignore journals and try to fix conferences

Myths

- Journal review times are longer
 - TODS 1st round range (2004): 3–5 months
 - VLDBJ 1st round median (2004): 4.5 months
 - 2007: 3 months
 - Conference review periods: 2.5 – 3.5 months
 - We can reduce journal review times more
- It takes too long for papers to be published in journals
 - Depends on what you mean by “published”
 - Online first publishing

What can be done

- Journal review times can be reduced further
 - In many disciplines first round review is within 3 weeks
- Article-based publishing to reduce publication delays
 - Online publishing is the primary mode
 - Papers get published as part of a volume when they are accepted (forget about issues)
 - Paper versions may or may not happen

We have been very successful over the years in convincing tenure and promotion committees and university bodies about the value of the conferences (rightfully so), we now have to convince ourselves that journals are equally valuable and important venues to publish full research results