SIGS & CACM RESEARCH HIGHLIGHTS

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The New CACM

- In 2008 ACM decided to remodel its flagship magazine, *Communications of the ACM* (CACM).
  - more like *Science* or *Nature*

- Moshe Vardi took over editorship.
  - and has done a *wonderful* job IMHO.

- One of the biggest changes was the introduction of the Research Highlights (RH) column.

Research Highlights Goals

- Call attention to "exciting" developments across all areas of research in Computer Science.
  - often drawn from "best" conference papers(ACM, IEEE, Usenix, …)

- Make the ideas accessible to a broad CS research audience.
  - with the help of a 1-page technical perspective by some senior person in the field.

- Doesn't prevent publication elsewhere (e.g., follow-on journal article.)

Some Examples: cacm.acm.org/research

- TaintDroid: An Information Flow Tracking System for Real-Time Privacy Monitoring on Smartphones

- Communication Costs of Strassen's Matrix Multiplication

- TSV Stress-Aware Full-Chip Mechanical Reliability Analysis and Optimization for 3D IC

- And Then There Were None: A Stall-Free Real-Time Garbage Collector for Reconfigurable Hardware

- Formal Verification of Phase-Locked Loops Using Reachability Analysis and Continuization

- Visual Object Detection with Deformable Part Models

- Spectral Sparsification of Graphs: Theory and Algorithms

Some Interesting CACM Statistics

- Over 90% of those surveyed read the Research Highlights section, making it second only to the news section in reader popularity.

- Readers strongly agree that Research Highlights papers are relevant to their work (54%); are well written (67%); and find the topics are appropriate and valuable (60%).

- More than three quarters (77.6%) of those surveyed indicate Technical Perspectives enhance their understanding of the Research Highlights papers.

How are papers selected?

In the past:

- Members of the editorial board nominate papers
- Whole board discusses in monthly telecon

Azer Bestavros	Matt Dwyer	David Salesin
Greg Morrisett	Amr El Abbadi	Guy Steele
Martin Abadi	Alon Halevy	David Wagner
Sanjeev Arora	Norm Jouppi	Margaret Wright
Dan Boneh	Andrew Kahng	
Andrei Broder	Henry Kautz	
Stuart Card	Xavier Leroy	
Jeff Chase	Kobbi Nissim	
Jon Crowcroft	Mendel Rosenblum	

Worked well in the beginning

However:

- It's hard for the board to cover every area
  - In the process of expanding the board now.
  - Experts are often jaded about results in their area.

- The pipeline for papers is distressingly small
  - ACM publishes something like 17,000 conference papers each year. Surely we can find 4 a month that we'd like to highlight!

Improving coverage:

- Some communities have been very successful.
    - SIGPLAN: A committee meets 3-4 times a year and nominates papers (with the help of program chairs) from the PLAN conferences.
    - SIGMICRO/ARCH: do something similar to SIGPLAN.
    - SIGGRAPH: David Salesin has formed an advisory committee that discusses the best papers from the major graphics conferences.

- We want to encourage your SIG to do something similar!
    - My suggestion is to look at SIGPLAN's approach:
    - http://www.sigplan.org/newsletters/cacm/main
    - (But you don't need anything so formal, either.)

SIGPLAN

- Website for submitting nominations (anyone)
  - just one paragraph of justification
  - plus some suggestions for whom to write the tech. perspective.
- A committee also nominates papers from all of the conferences (POPL, PLDI, ICFP, OOPSLA, …)
  - one representative for each major sub-area
  - SIGPLAN chair and past chair
  - Usually work with the conference PCs to identify best papers
- The committee meets at the major conferences to decide which nominations to forward to CACM.
- They post papers they've selected, not just those that we choose to put in RH.

My experience with the SIGs

- Not all of the papers get past the board.
  - For example, in Oct. 2012, SIGPLAN nominated 2 papers from PLDI and 2 papers from ICFP, but we only selected 1.
  - SIGGRAPH recently nominated 4 papers and we selected 2.
  - On average, we're seeing about a 50% hit rate for the major conferences; smaller/more focused conferences or workshops don't fare as well.

- But, you can't win the lottery if you don't play…

- So please consider how you might best get your respective community's paper to us.

To Summarize

• RH articles provide exposure that is unmatched in computer science --- over 100,000 ACM members.

• But we need the SIGs' help to make sure that we fairly cover all areas of CS.

• Comments and suggestions always welcome.