

Report on SOSP 19

The 19th ACM SIGOPS Symposium on Operating Systems Principles was held October 19-22, 2003, at the Sagamore resort in Bolton Landing (Lake George), New York. The weather was good, the autumn leaves were at their peak, and attendees shared 12-13 hours a day of technical presentations, social events, and one-on-one discussions.

This was, by a sizable margin, the largest SOSP ever. Attendance was up approximately 40% from 2001 (at Lake Louise in the Canadian Rockies), and 25% from the previous all-time record, set in 1999 (at Kiawah Island, South Carolina). There were a total of 495 attendees, of whom 245 — just under half — were students. Of the remaining 250, about half were from academia and half from industry. Over 100 institutions were represented (about the same number as at Lake Louise) but delegations were larger. 18 institutions sent 10 or more people each. The largest delegations were from MIT and Microsoft, with over 30 people each. Roughly 425 attendees were from North America, just over 50 from Europe, and just under 20 from other parts of the globe. North Americans accounted for most of the increase over SOSP 2001.

The technical program included 22 papers selected from among 128 submissions — a 50% increase in submissions over 2001 and another all-time record. The program committee undertook a very detailed and time-consuming evaluation process, writing or collecting nearly 900 total reviews. All accepted papers were refined and polished under the guidance of a program committee member as part of a formal "shepherding" process.

In keeping with trends over the last few SOSPs, the conference continues to expand its technical breadth, with a decreasing fraction of the program devoted to traditional "kernel" issues and an increasing fraction devoted to such topics as distributed systems, safety and trust, robustness, and performance analysis. Five award papers were selected for submission to ACM TOCS:

- The Google File System, by Sanjay Ghemawat, Howard Gobioff, and Shun-Tak Leung of Google;
- Preserving Peer Replicas By Rate-Limited Sampled Voting, by Petros Maniatis, Mema Roussopoulos, TJ Giuli, David S. H. Rosenthal, Mary Baker, and Yanto Muliadi of Stanford;
- Implementing an Untrusted Operating System on Trusted Hardware, by David Lie, Chandramohan A. Thekkath, and Mark Horowitz (University of Toronto, Microsoft Research, and Stanford, respectively);
- Improving the Reliability of Commodity Operating Systems, by Michael M. Swift, Brian N. Bershad, and Henry M. Levy (University of Washington); and
- Backtracking Intrusions, by Samuel T. King and Peter M. Chen (University of Michigan).

Some 40 poster papers were also accepted, from among about 80 submissions, and 16 work-in-progress talks were presented in a rapid-fire session Tuesday afternoon. Lists of posters and WIP talks can be found by following the links from within the main program page located on the conference web site www.cs.rochester.edu/sosp2003.

The final day featured a keynote lecture by Al Spector, Vice President of Services and Software at IBM Research. A long-time member of the SIGOPS community, Dr. Spector is widely known in academia as a pioneer in the development of distributed transaction processing and wide-area file systems. His address focused on the challenge of complexity, particularly from the user's perspective, in the development of "the world's operating system" — the interconnected web of globally distributed services. Notes on all the technical sessions, collected by student volunteers, will appear in a future issue of *Operating Systems Review*.

A "first" for the conference this year was participation in the ACM's Student Research Competition (www.acm.org/src/). Entrants in the competition included all regular papers and posters on which student(s) were the principal authors. The four top student posters, as selected by the program committee, were scheduled for formal presentation, with slides, during the poster session on Monday. After final deliberation, the committee selected the following award recipients:

- first place: Michael M. Swift of the University of Washington, for Improving the Reliability of Commodity Operating Systems;
- second place: Petros Maniatis, TJ Giuli, and Yanto Muliadi of Stanford University, for Preserving Peer Replicas by Rate-Limited Sampled Voting;
- third place: Samuel T. King of the University of Michigan, for Backtracking Intrusions.

Michael Swift will advance to the ACM-wide inter-SIG competition. Grand prizes in this latter competition will be announced at the upcoming ACM Turing Award banquet.

Another "first" was live webcast and video archiving of the technical sessions by CMU's End System Multicast project. After editing, presentations will be included in the ACM Digital Library and will be available on the conference web site.

At Monday evening's banquet, Andrew Herbert delivered a moving eulogy for Roger Needham, whose long and illustrious career included directorships of the Cambridge University Computing Laboratory and Microsoft's Cambridge Lab. Carla Ellis shared a similarly moving tribute to Anita Borg, founder of the systems on-line community, the Grace Hopper Celebration of Women in Computing, and the Institute for Women and Technology. News was also shared of the recent unexpected death of Dick Flower of HP Labs. In a highlight of the conference, Mike Burrows of Microsoft's Cambridge Lab received the third annual Mark Weiser award.

64 student attendees, some 26%, received travel scholarships. Generous support for these came from Microsoft Research via the Student Research Competition, from the National Science Foundation (CISE CCR), from the general SIGOPS budget, and from Hewlett Packard Corp. Google supported the Monday night banquet and, independently, a lively evening reception. IBM Research supported the poster session and student research presentations. VMware

supported the work-in-progress session. Additional, unrestricted support came from Microsoft Research, Intel, Mercury, and QualComm.

Credit for the conference goes to a veritable army of volunteers, including local arrangements chair Leonidas Kontothanassis, treasurer Galen Hunt, registration chair Kai Shen, publicity chair Amy Murphy, and student scholarship chair Cary Gray. Our thanks to Jeanna Matthews for coordinating the webcast and video archiving; to Alan Cox, Chris Small, and Lisa Tolles for assembling the proceedings and the archival CD set; and to Donna Baglio, Irene Frawley, Maritza Nichols, and Jessica Wilmer of ACM headquarters. Members of the program committee included Brian Bershad, Ken Birman, Peter Druschel, Dawson Engler, John Heidemann, Kevin Jeffay, Frans Kaashoek, Barbara Liskov, Ian Pratt, Stefan Savage, Amin Vahdat, John Wilkes, and Ted Wobber; special thanks to Kevin for organizing the poster session and the student research talks. Additional members of the student scholarship committee were John Carter, Norm Hutchinson, Marc Shapiro, and Bob Wisniewski; special thanks to John for organizing student scribes. The registration desk was staffed by student volunteers from Rochester. The webcast was run by student volunteers from CMU.

The 20th SOSP will be held in England in 2005. Andrew Herbert of Microsoft Research will be General Chair. Ken Birman of Cornell will be Program Chair. We hope to see everyone there!

Respectfully submitted,

Michael L. Scott, University of Rochester, General Chair
Larry L. Peterson, Princeton University, Program Chair