From the Program Co-chairs of Hot Chips XVII (2005)

The Program Committee for Hot Chips XVII is pleased to present the latest and greatest in chips and related products, systems and research. We received more submissions this year than for any previous Hot Chips conference, and we believe that the quality of the program reflects this.

Like any conference, Hot Chips tracks the trends in its field, in this case the semiconductor, electronics and computer industries. This year, as usual, we feature some high-end CPUs, including those destined for PCs and for game machines. A prime current concern of the industry is power minimization and management, and several of the presentations will focus on this issue. As always, there are specialized processors for application domains that are believed to be large enough to support specialization and to demand the level of performance that is only available from specialized designs, such as audio, video and communications. We made a special effort this year to attract presentations from the FPGA world, which has been underrepresented at Hot Chips in the past. We've also salted the program with presentations on cutting edge and speculative technologies.

The keynote talks, tutorials and panel were specifically chosen to focus on topics of importance and current interest. Chips are (excessively) hot and one tutorial is concerned about keeping them cool. The old technology of Virtual Machines (which dates at least to the mid-1960s) has become hot again, and our other tutorial fans the flames. One keynote discusses where semiconductor technology is going and the other is concerned with whether we can take advantage of the parallelism that is becoming widely available in processor chips. And the panel addresses the perennial key issue for the industry - what is the next application that will drive industry growth?; without such an application every few years, we'll become another mature industry, like steel and automobiles.

It is interesting to observe the evolution of the contents of the Hot Chips conference. It started with a focus on high performance CPUs, most of which were going into workstations. There was a period when everyone was building graphics chips. Then everyone was building router chips. With the Darwinian nature and rapid pace of the industry, many of those products have become resume entries and items in patent portfolios, rather than something you can buy at Fry's, but the industry continues to grow, and intermittently, to prosper.

For those of you who are new to Hot Chips, it is worth reviewing how the conference operates. The program co-chairs in 1997 described conference operation in the following way, and we present that summary here, updated as necessary:

The focus of Hot Chips is to get timely technical information on important, upcoming, or previously un-presented chips and related technologies to our attendees. This conference is unusual in that it is a technical conference that is product focused. We aren't about research, although a typical conference does have some research presentations, and we (especially) aren't about marketing. In general, our bias been toward chips and related technologies which are not only "hot" (or in the case of low power, "cold"), but which are also interesting at the architectural level.

In order to do this, Hot Chips is run differently than other conferences:

• The program is not assembled, as is usual for most technical conferences, by seeing what comes in over the transom (or past our spam filter); in addition to considering unsolicited submissions, we also actively solicit presentations meeting our criteria.

• Presentations at Hot Chips are accepted on the basis of an abstract, and only copies of the speakers' slides are printed, so presenters can show their latest work with the lowest possible effort and shortest lead time. This bleeding edge focus can also result in papers that must be withdrawn when marketing and product schedule realities interfere. (This year was unusual - no one dropped out of the conference.)

• Finally, while presentations are provisionally accepted on the basis of an abstract, they aren't fully accepted until the slides are reviewed and approved by a program committee member (usually their session chair) for their technical content. Session chairs at Hot Chips are not merely decorative.

In order to reach a wider audience, the final responsibility of the program committee will be to select the "Best of the Hot"; those authors will be invited to prepare papers on their material for IEEE Micro magazine.

Obviously, this conference couldn't take place without the work by all of the members of the program committee, all of whom worked hard to solicit, select and improve presentations, and the members of the organizing committee, who make sure that there is a conference, in a room, with proceedings, registration, badges, parking, signs, computer access, publicity and food. There is always work for organizing committee members to do, and anyone interested is invited to approach the conference general chair (or others working in conference operations) to volunteer to work on future conferences. Finally, we acknowledge the speakers, without whom there would be no conference. We thank everyone involved for their efforts.

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Program Co-Chairs, Hot Chips XVII
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