Euro-Par 2006
Dresden, Germany
29th August - 1st September 2006

Workshop in conjunction with Euro-Par 2006

Petascale Computational Biology and Bioinformatics

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There have been announced multiple plans to create peta-scale computing environments. The topic of this workshop will be to address what bioinformatics or computational biology applications can or should accomplish with such facilities, and what obstacles must be overcome in order to implement and use effective and important problems in the life sciences (biology, biochemistry, environmental sciences, etc.)

Suggested topics for papers and posters include, but are not limited to, the following specific subjects:

●What does Petascale mean in terms of computation, and what are the possibilities of using different ways of assembling a PetaFLOPS system? What does it take to create a computational biology or bioinformatics application that achieves a sustained PetaFLOPS of calculations? What does it take to do this in terms of a PetaFLOPS of capacity in a traditional supercomputer, a FPGA-based or hybrid system, a PetaFLOPS in a grid computing system, or a PetaFLOPS worth of volunteer systems contributed across relatively slow commodity networks?

●What sort of computational biology and bioinformatics applications that exist now can be scaled up to perform useful work and provide new insights on these various types of Peta-scale platforms.

●Given a resource capable of a PetaFLOPS of sustained performance, what sort of new and novel applications could be written? What would we model? What would we analyze? What are the programming environment requirements to take advantage of such a system?

●Petascale computing means of course more than PetaFLOPS of calculations. It means PetaBytes of storage. What are the I/O and data management requirements of computational biology and bioinformatics applications that will take advantage of PetaBytes to hundreds of PetaBytes of life sciences data? How will we manage, organize, reliably archive, and reliably retrieve and use Petascale life science data stores?

●How will Petascale computational biology and bioinformatics applications be organized and accessed so as to have the greatest possible impact on the largest possible community of researchers?

●What evolutionary path of applications and problems will aid the process of moving from the current state of bioinformatics and computational biology to effective Petascale applications? What are the steps along the way for the high performance computing community and the life sciences research community?

Submission Guidelines

Submissions should include an abstract, keywords, the e-mail address of the principal author (contact person), and must not exceed 15 pages, including tables and figures, with PDF or PostScript. However, short papers of around 4 pages are encouraged for work-in-progress contributions. Please make your electronic submission to the following address: bioworkshop@europar2006.de

Submission of a paper should be regarded as a commitment that, should the paper be accepted, at least one of the authors will register and attend the conference workshop to present the paper or the poster.

Papers will be refereed and accepted on the basis of their scientific merit and relevance to the workshop topics.

Publication

The proceedings of the workshop will be published in the dedicated Euro-Par workshop proceedings.

Workshop Chairs:

- Dr. Craig Stewart (Indiana University, USA)
- Dr. Michael Schroeder (Technische Universität Dresden, Germany)
- Dr. Matthias Müller (Technische Universität Dresden, Germany)

Please send your papers or any questions to: bioworkshop@europar2006.de

For more details see:
http://www.europar2006.de/

Important Dates

Submission of Papers:	15 June 2006
Notification of Acceptance:	15 July 2006
Camera-Ready Papers:	16 September 2006