# Condor Team 2011



## Established 1985

# Welcome to Condor Week #13

## (year #28 for our project)

MORGRIDGE
INSTITUTE FOR RESEARCH
AT THE UNIVERSITY OF WISCONSIN-MADISON

CENTER FOR
HIGH THROUGHPUT
COMPUTING

Open Science Grid

# Open Science Grid
## was funded for another five years!

"The members of the OSG consortium are united in a commitment to promote the adoption and to advance the state of the art of *distributed* high throughput computing (DHTC)"

"We present a five year plan to sustain and extend our fabric of DHTC services, to transform the computing landscape on our campuses through a new generation of technologies that enable scientists to access "any data, anytime, anywhere" via a single identity, and to facilitate the transformation of the LHC computing capabilities from petascale to exascale."

"We define DHTC to be the shared use of autonomous resources toward a common goal, where all the elements are optimized for maximizing computational throughput. Sharing of such resources requires a framework of mutual trust whereas maximizing throughput requires dependable access to as much processing and storage capacity as possible."

# High Throughput Computing

We first introduced the distinction between High Performance Computing (HPC) and High Throughput Computing (**HTC**) in a seminar at the NASA Goddard Flight Center in July of **1996** and a month later at the European Laboratory for Particle Physics (CERN). In June of 1997 HPCWire published an interview on High Throughput Computing.

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HIGH THROUGHPUT COMPUTING: AN INTERVIEW WITH MIRON LIVNY          06.27.97
by Alan Beck, editor in chief                                     HPCwire
=============================================================================

     This month, NCSA's (National Center for Supercomputing Applications)
Advanced Computing Group (ACG) will begin testing Condor, a software system
developed at the University of Wisconsin that promises to expand computing
capabilities through efficient capture of cycles on idle machines. The
software, operating within an HTC (High Throughput Computing) rather than a
traditional HPC (High Performance Computing) paradigm, organizes machines
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# Why HTC?

For many experimental scientists, scientific progress and quality of research are strongly linked to computing throughput. In other words, they are less concerned about instantaneous computing power. Instead, what matters to them is the amount of computing they can harness over a month or a year --- they measure computing power in units of scenarios per day, wind patterns per week, instructions sets per month, or crystal configurations per year.

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# High Throughput Computing
## is a
## 24-7-365
## activity

**FLOPY ≠ (60\*60\*24\*7\*52)\*FLOPS**

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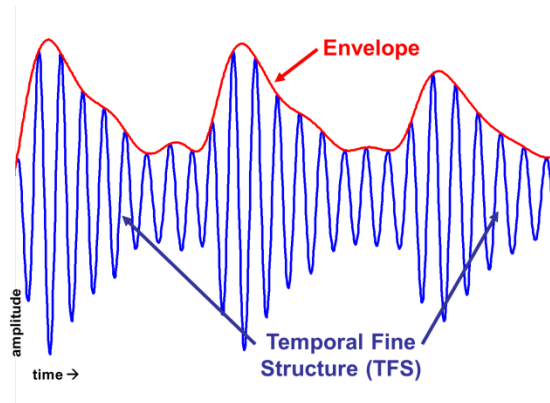CENTER FOR HIGH THROUGHPUT COMPUTING

http://chtc.cs.wisc.edu

From July 2010 – June 2011:
45 million hours used by
54 research groups in
35 departments

Researchers who use the CHTC are located all over campus (red buildings)

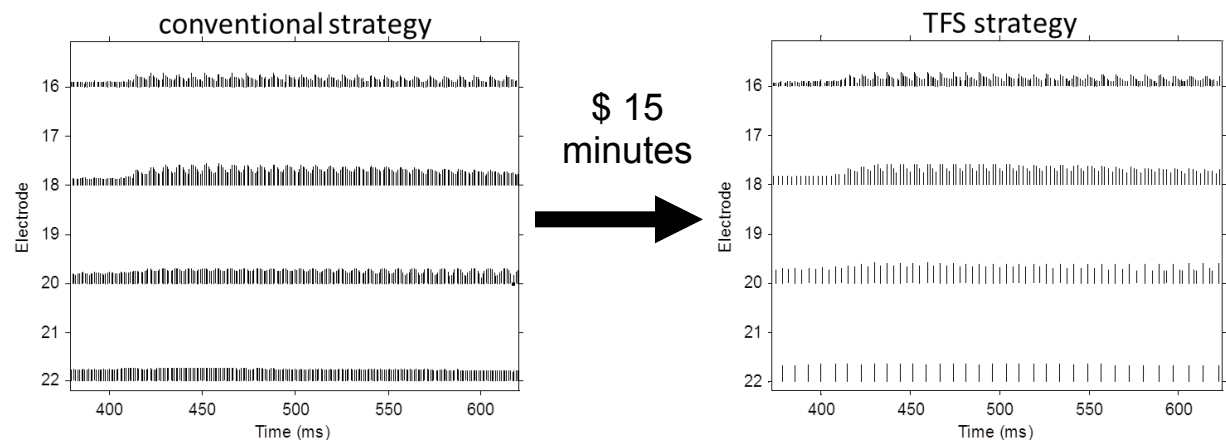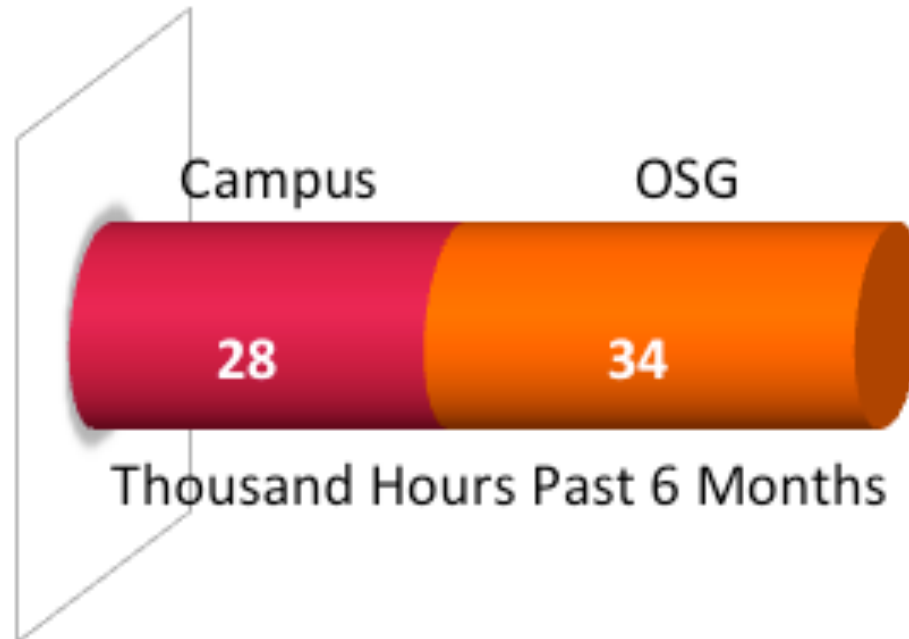# Better hearing with Cochlear Implants



The algorithm for extracting the fine structure and shifting the pulses is computationally expensive, and creating the over 25,000 stimuli for a cochlear implant experiment would take a lab computer 260 days to complete.

***OSG allowed us to make all the stimuli within a day.***

Tyler Churchill
Binaurial Hearing and Speech Lab
Waisman Center

Thousand Hours Past 6 Months

Campus 28    OSG 34



conventional strategy    $ 15 minutes →    TFS strategy

# Subject: [Chtc-users] Daily CHTC OSG glidein usage 2012-05-01

Total Usage between 2012-04-30 and 2012-05-01

| User | Hours | Pct |
| --- | --- | --- |
| 1 Statistics_Wahba | 29169.6 | 48.97% |
| 2 Atlas | 13253.1 | 22.25% |
| 3 Physics_Perkins | 8786.2 | 14.75% |
| 4 BMRB | 4086.9 | 6.86% |
| 5 CMS | 2295.3 | 3.85% |
| 6 ChE_dePablo | 1482.8 | 2.49% |
| 7 Chemistry | 484.1 | 0.81% |
| 8 MIR_Thomson | 9.5 | 0.02% |
| 9 Statistics_Shao | 1.1 | 0.00% |
| TOTAL | 59568.5 | 100.00% |

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# Thank you for building such



# a wonderful (D)HTC community