



# **HPC Innovation Excellence Award Program**

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# We Are Collecting A Large Set Of HPC ROI Examples

- We invite users to submit their examples at:
- [www.hpcuserforum.com/innovationaward/](http://www.hpcuserforum.com/innovationaward/)



# New HPC Innovation Award Program: [www.hpcuserforum.com/innovationaward/](http://www.hpcuserforum.com/innovationaward/)

**HPC USER FORUM**

**IDC**  
Analyze the Future

## THE INNOVATION EXCELLENCE AWARD

For the Outstanding Application of HPC Computing for Business and Scientific Achievements

HOME GOALS OBJECTIVES RANKING PROCESS PRIZES APPLICATION FORM CONTACT US

IDC is launching a new program to recognize noteworthy achievements made by users using High Performance Computing (HPC) technologies.

**SUBMIT ENTRY HERE**

Deadline for Submissions  
**OCTOBER 30 2013**

**How winners will be selected**

- » All submissions will receive a careful and complete review
- » Submissions must contain a clear description of the dollar value or scientific value received in order to qualify
- » Volunteers from the HPC User Forum Steering Committee will conduct an initial ranking of the submissions (for the list of the

### Program Goals

- Showcase success stories involving HPC in science and industry
- Help other users better understand the benefits of adopting HPC and justify HPC investments, especially for SMBs
- Demonstrate the value of HPC to funding bodies
- Expand public support for increased HPC investments
- If you have one or more HPC success stories you would like to see recognized through our program, we encourage you to complete and submit this application form. Please submit a separate form for each success story that you want considered.

### Program Objectives

While there are multiple benchmarks to measure the performance of technical computers, there currently isn't an adequate methodology to evaluate the economic and scientific value HPC systems contribute. The HPC Innovation Excellence Award Program is designed to help close that gap.

**The main objectives of the program are as follows:**

- Recognize users and their vendors for major HPC-supported achievements in industry, government and academia.
- Build a large portfolio of quantified ROI success stories to

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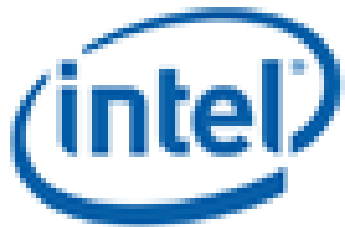
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**Bronze Sponsors**

# Sponsors – Thanks!

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# HPC Award Program Goals

- #1 Help to expand the use of HPC by showing real ROI examples:
  1. Expand the “Missing Middle” – SMBs, SMSs, etc. by providing examples of what can be done with HPC
  2. Show mainstream and leading edge HPC success stories
- #2 Create a large database of success stories across many industries/verticals/disciplines
  - To help justify investments and show non-users ideas on how to adopt HPC in their environment
  - Creating many examples for funding bodies and politicians to use and better understand the value of HPC → to help grow public interest in expanding HPC investments
  - For OEMs to demonstrate success stories using their products

# Users Have to Submit the Value of the Accomplishment

- Users are required to submit the value achieved with their HPC system, using 3 broad categories, following a very specific set of guidelines:
  - a) Dollar value of the HPC usage
    - e.g., made \$\$\$ in new revenues, saved \$\$\$ in costs, made \$\$\$ in profits, etc.
  - b) Scientific or engineering accomplishment
    - e.g. discovered how xyz really works, develop a new drug that does xyz, etc.
  - c) Value to society as a whole
    - e.g. ended nuclear testing, made something safer, provided protection against xyz, etc.

... and the investment in HPC that was required

# The Judgment Process -- Clear, Fair And Transparent

- The ranking of the accomplishments are done by only HPC USERS, following very specific rules.
- A three step process is proposed:
  1. First the submission has to be complete with a clear “value” shown
    - A number of the submissions were good, but needed a little more information – we have invited them to apply for the fall award
  2. Secondly, an assessment is made to see that it is a realistic assessment of the value/returns
    - By the HPC User Forum Steering Committee
  3. Then in cases where the value isn’t clear, or a deeper technical depth is required -- the final evaluation is by experts in the specific area/discipline

# The Winners At SC13

Site	Lead	Area	Country
Imperial College London & NAG Hector dCSE	NAG dCSE	Innovation	U.K
Spectraseis Inc, Denver, USA, & CADMOS, Univ. of Lausanne, Switzerland	Igor Podladtchikov & Yury Podladchikov	Both	U.S./ Switzerland
HydrOcean / ECN	David Le Touzé	Innovation	France
The Procter and Gamble Company	Kelly L. Anderson	Innovation	U.S.
Southern California Earthquake Center	SCEC Community Modeling Environment Collaboration	Innovation	U.S.
GE Global Research	Aero Acoustics team	Innovation	U.S.



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Univ. of Cambridge, NAG Hector dCSE	NAG dCSE	Innovation	U.K
EDISON Project - KISTI/NISN	Dr. Kumwon Cho	Both	S.Korea
Facebook	Avery Ching	Innovation	U.S.
Ford Werke GMBH	Dr. Burkhard Hupertz, Alex Akkerman	Innovation	Germany
Intelligent Light	Dr. Earl P.N. Duque	Innovation	U.S.
Oak Ridge National Lab		Innovation	U.S.
Princeton University	Dr. William Tang	Innovation	U.S.
GE Global Research	Dr. Masako Yamada	Innovation	U.S.



# The Trophy For Winners



**The Innovation Excellence Award**

For the Outstanding Application of HPC

**IDC**  
The Innovation Excellence Award

HPC USER FORUM

Global • 2011

**intel**

**HPC**

**Altair**

**BOEING**

**AFPR**  
Advanced Performance Resources

**Ford**

**ANSYS**

**KAIST**

**Department of Energy**

**Department of Defense**

**Platform Computing**

**NSTF**  
National Science Foundation

**Scientific Computing**

**Adaptive Computing**

**AMD**  
Smart Chips

**Microsoft**

**NCSA**

**HPC**

**dice**

**sgi**

**insideHPC**

**Presented to:**

**For the Outstanding Application of HPC for Business and Scientific Achievements**

# HPC Users – The Next Submission Deadline is May 15<sup>th</sup>

We invite users to submit  
their ROI / achievement examples

at:

[www.hpcuserforum.com/innovationaward/](http://www.hpcuserforum.com/innovationaward/)

# High Performance GeoComputing Laboratory at the University of California, San Diego

- Dr. Cui SDSC - UCSD, has developed a highly scalable and efficient GPU-based **finite difference code based on AWP-ODC**,
  - AWP ODC a community code developed and supported by the Southern California Earthquake Center (SCEC)
- Achieved near-perfect weak-scaling parallel efficiency and **sustained 2.33 petaflop/s on ORNL's Titan supercomputer**.
- Nearly **2 orders of magnitude speed up** demonstrated
- This achievement **makes a California state-wide hazard model** a goal that's now reachable with existing supercomputers.
- The performance of the code is expected to take physics-based seismic hazard analysis to a new level using petascale, heterogeneous computing resources, with the potential of saving hundreds of million core-hours as required by building engineering design

**SDSC**  
SAN DIEGO SUPERCOMPUTER CENTER

