

HPC Innovation Award Program Application Form

PROGRAM BACKGROUND:

High performance computing (HPC) has long been recognized as a strong contributor to scientific advancement, industrial innovation, and the quality of human life. But few HPC success stories have been documented and quantified, and the relationship between investments in HPC and subsequent returns (ROI) is not well understood.

- By HPC, we mean technical computing which includes modeling and simulation, highly computational analysis, AL, ML, DL, big data and quantum computing.

The program's main goals are to:

- Showcase success stories involving HPC in science and industry
- Help other users better understand the benefits of adopting HPC and justify HPC investments
- Create a large database of ROI and innovation success stories to model the impact of investing in HPC
- Demonstrate the value of HPC to funding bodies and expand public support for increased HPC investments

We are interested in ROI examples from today or dating back as far as 10 years.

We encourage you to complete and submit a separate application form for each ROI / Innovation success story. Your organization likely has 100's of examples, and it would be great if you could provide 3 to 5 today.

- For example, many of the job runs on your HPC system support a specific product or product improvement or research project, and we are looking for just a few data points on each one. Examples include the creation of a single movie, the design of a new car engine or the design of a new water pump.

Our HPC team is available to answer questions, including how to quantify your achievements -- Feel free to contact us at: anorton@hyperionres.com

You can track the results of this research, and download the findings, at: www.hpcuserforum.com/ROI

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SUCCESS STORIES IN HIGH PERFORMANCE COMPUTING

Name: _____ Organization: _____

Phone: _____ Email: _____

Q1. What is the name (or title) of this project or accomplishment or innovation? _____

Q2. Briefly describe the project/accomplishment/innovation (including why it's important to the world or to your organization, e.g. discovered something new, did something for the first time, found a new way to predict things, figured out how to make something work better, saved money or made a lot of money, etc.): _____

Q3. Which industry or sector best fits your organization?

- | | |
|---|---|
| a) ___ Energy, Petroleum Oil and Gas | g) ___ Transportation and Logistics |
| b) ___ Chemical | h) ___ Entertainment, Animation, Movies |
| c) ___ Pharmaceutical, & Bio | i) ___ Government |
| d) ___ Financial or Economic Modeling and BI | j) ___ Academia / University |
| e) ___ Manufacturing | k) ___ Other (specify): _____ |
| f) ___ IT, Electronics and Telecommunications | |

Q4. Overall, what was the primary innovation/ROI area that this project provided to your organization (please select only one):

- a. ___ Helped Us Make Better Products
- b. ___ Major Scientific Breakthrough
- c. ___ Cost Savings
- d. ___ Created A New Approach
- e. ___ Discovered Something New
- f. ___ Helped Society
- g. ___ Other Area

Q5. Did this accomplishment generate a financial ROI or an Innovation or both?

- a. ___ **Financial ROI** (Please complete all questions)
- b. ___ **Innovation only (Please skip to QUESTION 9)**
- c. ___ **Both** (Please complete all questions)

FOR PROJECTS THAT CREATED A FINANCIAL ROI:

Q6. What are (or is expected to be) THE TOTAL REVENUES/SALES from this project/program/discovery:

- | | |
|---------------------------------|--|
| a. ___ \$1 to \$100,000 | i. ___ \$10 to \$25 million |
| b. ___ \$100,000 to \$250,000 | j. ___ \$25 to \$50 million |
| c. ___ \$250,000 to \$500,000 | k. ___ \$50 to \$75 million |
| d. ___ \$500,000 to \$750,000 | l. ___ \$75 to \$100 million |
| e. ___ \$750,000 to \$1 million | m. ___ \$100 to \$200 million |
| f. ___ \$1 to \$2.5 million | n. ___ \$200 to \$500 million |
| g. ___ \$2.5 to \$5 million | o. ___ \$500 million to \$1 billion |
| h. ___ \$5 to \$10 million | p. ___ Over \$1 billion (How much? \$ ___ B) |

Q7. What are (or will be) the TOTAL PROFITS or COST SAVINGS from this project/program/discovery:

- | | |
|---------------------------------|---|
| a. ___ \$1 to \$100,000 | i. ___ \$10 to \$25 million |
| b. ___ \$100,000 to \$250,000 | j. ___ \$25 to \$50 million |
| c. ___ \$250,000 to \$500,000 | k. ___ \$50 to \$75 million |
| d. ___ \$500,000 to \$750,000 | l. ___ \$75 to \$100 million |
| e. ___ \$750,000 to \$1 million | m. ___ \$100 to \$200 million |
| f. ___ \$1 to \$2.5 million | n. ___ \$200 to \$500 million |
| g. ___ \$2.5 to \$5 million | o. ___ \$500 million to \$1 billion |
| h. ___ \$5 to \$10 million | p. ___ Over \$1 billion (How much? \$_____ B) |

FOR PROJECTS THAT CREATED AN INNOVATION:

Q8. What was general category of the innovation? (Please select just one)

- a. ___ **Basic Research**, including major discoveries and pioneering breakthroughs
b. ___ **Applied Research**, including incremental innovations and process improvements

Q9. How would you rate the IMPORTANCE this innovation compared to all other innovations in this field over the last ten years, using a scale of 1 to 5 (Please select just one, with 5 being the highest)?

Rating

- 5 ___ One of the **top 2 to 3** innovations in the last decade
4 ___ One of the **top 5** innovations in the last decade
3 ___ One of the **top 10** innovations in the last decade
2 ___ One of the **top 25** innovations in the last decade
1 ___ One of the **top 50** innovations in the last decade

Q10. How would you rate the IMPACT of this innovation to multiple organizations, using a scale of 1 to 6 (Please select just one, with 6 being the highest)?

Rating

- 6 ___ It is useful to over 50 organizations
5 ___ It is useful to 10 to 49 organizations
4 ___ It is useful to 6 to 9 organizations
3 ___ It is useful to 2 to 5 organizations
2 ___ It is only useful to 1 organization
1 ___ It is recognized ONLY by experts in the field

FOR ALL PROJECTS – HPC INVESTMENTS REQUIRED FOR THE PROJECT:

Q11. HPC INVESTMENTS -- What was the total HPC Investment for the project?

(Note: only count or estimate the portion that was used for this project, and specifically for HPC resources -- include only the direct system costs, e.g. hardware, software, applications, interconnects, and storage used to accomplish this achievement -- If you used external HPC system resources, please include only the direct costs that you paid or the estimated value in order to accomplish this achievement).

- | | |
|---------------------------------|---|
| a. ___ \$1 to \$100,000 | i. ___ \$10 to \$25 million |
| b. ___ \$100,000 to \$250,000 | j. ___ \$25 to \$50 million |
| c. ___ \$250,000 to \$500,000 | k. ___ \$50 to \$75 million |
| d. ___ \$500,000 to \$750,000 | l. ___ \$75 to \$100 million |
| e. ___ \$750,000 to \$1 million | m. ___ \$100 to \$200 million |
| f. ___ \$1 to \$2.5 million | n. ___ \$200 to \$500 million |
| g. ___ \$2.5 to \$5 million | o. ___ \$500 million to \$1 billion |
| h. ___ \$5 to \$10 million | p. ___ Over \$1 billion (How much? \$_____ B) |

Q12. If this project/program/discovery created new jobs, about how many full-time equivalent jobs were created?
_____ (number of jobs created or saved).

Thank you!