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# HIGH PERFORMANCE COMPUTING

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NEW YORK STATE USERS  
ALLOCATION POLICY  
FOR THE  
NEW YORK CENTER FOR COMPUTATIONAL  
SCIENCES (NYCCS)

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## 1 INTRODUCTION

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New York State, SUNY Stony Brook, and Brookhaven National Labs are partners in one of the fastest supercomputers in the world. The supercomputer is located at Brookhaven National Labs “New York Blue” is the centerpiece of the New York Center for Computational Sciences, a cooperative initiative between Stony Brook and Brookhaven that will foster research collaborations among research institutions, universities and companies throughout New York State.

New York State has reserved time on this machine to pursue a variety of research activities as it sees fit. New York State has determined that its priority for the use of its share of the New York Blue is to conduct scientific research which supports economic development.

NYSTAR believes that simulation, data analysis and visualization will lead to faster breakthroughs giving NYS researchers a competitive edge both in product development and scientific discovery. NYSTAR supports a user friendly policy that promotes access and provides assistance for NYS researchers.

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## 2 GOALS

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NYSTAR goals in allocating supercomputing time are to:

1. Enable scientific breakthrough discoveries in all fields benefiting society.
2. Attract world class researchers from both the academic and private sector.
3. Build skill sets in data analysis, simulation engineering, and visualization.
4. Attract business users and provide mission critical solutions to their problems.
5. Decrease time to market for product and research breakthroughs.
6. Create new industries and business opportunities.
7. Attract more federal research dollars.

NYSTAR believes that the creative talents of the State’s leading researchers will be enhanced by the opportunity to work with some of the best computational tools in the world.

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### **3 USER POLICY**

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NYSTAR has adopted the user policy of the New York Center for Computational Sciences (NYCCS) for all its designated users. All NYSTAR designated users shall adhere to all rules, policies and requirements set forth by the New York Center for Computational Sciences (NYCCS).

The New York Center for Computational Sciences (NYCCS) user policy can be found in the Appendix.

New York Center for Computational Sciences (NYCCS) reserves the right to deny or limit use for any violation of the rules, policies and requirements.

#### **3.1 MEDIATION**

If any of the policies in place either restrict your work or will not allow you to complete your work for whatever reason it is the responsibility of the Principal Investigator to contact NYSTAR for possible mediation between the policies and the investigator. NYSTAR makes no representation that the issue will be resolvable.

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### **4 SCIENTIFIC PREFERENCE**

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NYSTAR has determined that the general scientific domains that will be given preference in allocation time are:

Nanotechnology  
Computational Science  
Energy Research & Cleantech Research  
Biotechnology Research  
Applied Materials

It will be up to the Principal Investigator to provide research justification to one or more of these areas.

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### **5 NYSTAR ALLOCATION PROCESS**

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NYSTAR has adopted the following allocation policy for the New York Center for Computational Sciences (NYCCS). All project requests should be submitted using our online application form and will be subject to the following:

## 5.1 APPLICATION ELIGIBILITY

Eligibility will be determined by the following:

1. Peer reviewed non-proprietary research which is sponsored, co-sponsored or partly sponsored by any New York State funding initiative.
2. Peer reviewed, non-proprietary research which is sponsored, co-sponsored or partly sponsored by any Federal funding initiative including but not limited to the Department of Defense (DoD), National Science foundation (NSF), Department of Energy (DOE), and National Institute of Health (NIH).

**An application for use may be considered acceptable at the discretion Executive Director of NYSTAR and NYCCS on a case by case basis for:**

1. Research conducted has non-proprietary status and is sponsored, co-sponsored or partly sponsored by any Institution of Higher Learning located within NYS
2. Research conducted has non-proprietary status and is sponsored, co-sponsored or partly sponsored by any non-for-profit laboratory or research institute located within New York State
3. Research conducted that is sponsored by any business located with New York State with non-proprietary status
4. Research conducted and sponsored by any business located within New York State with proprietary status. \*
5. Research conducted and sponsored by any entity for the purpose of collaborating and expanding the research capability of New York Sate. \*

\* Projects with proprietary status may incur charges for CPU usage and setup fees which will be determined by a separate fee schedule by NYCCS.

## 5.2 QUEUING

NYSTAR with the assistance of the New York Center for Computational Sciences Director will queue eligible applicants in a way to maximize the computational resources that were requested. In cases where PIs need a certain time or date NYSTAR will make every attempt to accommodate.

As usage increases NYSTAR reserves the right to establish a policy of preferred use based on NYSTAR goals defined in section 2 of this document.

NYSTAR reserves the right to re-assign allocation units as it sees fit for whatever reason.

### 5.3 ALLOCATION UNITS

Due to the architecture of the Blue Gene system NYSTAR will allocate time for its designated users in Allocation Units (AU). An Allocation Unit is defined as follows:

$$1 \text{ AU} = 18,000 \text{ Nodes for 1 wall clock hour}$$

To determine Allocation Units

$$\text{AU} = ((\text{number of Nodes used} * \text{one wall clock hour}) / 18000)$$

Example:

$$9000 \text{ Nodes used for a one wall clock hour} = \frac{1}{2} \text{ AU}$$

Due to the number of processors in the NYCCS Blue Gene computers multiple jobs can run simultaneously and therefore does not need dedicated time (wall clock) like in other architectures.

### 5.4 MASSIVE RESEARCH ALLOCATION

Research conducted that needs more than 14AU's in any one month shall be reviewed by the Executive Director of NYSTAR.

Researchers with projects that are computationally massive in scope, and whose resource requirements may not be met by NYSTAR, are reminded that they have the option to submit their requests to the National Science Foundation's Partnership for Advanced Computational Infrastructure Centers at either NCSA or SDSC and the DOE INCITE program.

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## 6 ACKNOWLEDGMENT OF NYSTAR AND NEW YORK STATE

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All related publications, conference proceedings, and progress reports that result from research using the New York State Allocation of the New York Blue resources must acknowledge NYSTAR by either of the following:

- Insertion of NYSTAR's Logo on any official publication where the research conducted on a high performance computer was allocated by NYSTAR at the NYCCS.



- Printing of this sentence "This research was conducted using the resources of the NYCCS and supported by the New York State Foundation for Science Technology and Innovation (NYSTAR)."

**Step 1**

Contact NYSTAR Director of High Performance Computing, Michael Ridley at [HPInfo@nystar.state.ny.us](mailto:HPInfo@nystar.state.ny.us) or at (518)292-5700. Mike can advise you on the feasibility of your proposed project, and give you the details of the application process, time and potential cost.

**Step 2**

Upon initial contact you will be asked to submit an application to determine your eligibility.

**Step 3**

Once eligibility is determined the applicant will be required to fill out a user application for the NYCCS, as well as receive the user policies of the New York Center for Computational Sciences. Users are responsible for any costs required by New York Center for Computational Sciences outside of approved allocation time.

**Step 4**

New York Center for Computational Sciences will contact you and set you up with an on-line account based on its policies and procedures.

**Step 5**

When project is completed the user will be required to complete an exit application. This form will track use and provide feedback on process improvements.

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**APPENDIX**

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1. NYSTAR – Application for “NYCCS” use
2. New York Center for Computational Sciences – New York State User Instructions
3. New York Center for Computational Sciences – User Form and Responsibility Agreement
4. NYSTAR Project Completion Survey