

“Theory meets experiment” workshop, BNL, May 7 2008

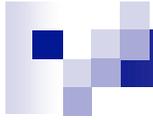
**Center of Analysis and Theory  
for Heavy Ion Experiments:  
CATHIE**

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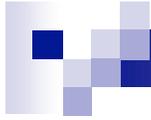
**BROOKHAVEN**  
NATIONAL LABORATORY

Brookhaven Science Associates  
U.S. Department of Energy



# Where are we heading to now?

From the era of discoveries towards  
the era of precision studies

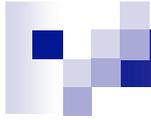


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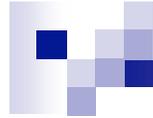
rather,

towards the era of new discoveries  
enabled by higher precision



# How do we get there?

Need to strengthen the effort in  
quantitative modeling, simulations  
and visualization, improve  
the theory-experiment interface



Phases of QCD:  
Summary of the Rutgers Long Range Plan  
Town Meeting, January 12-14, 2007

Peter Jacobs  
*Lawrence Berkeley National Laboratory*

Dmitri Kharzeev  
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Berndt Müller  
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Jamie Nagle  
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Krishna Rajagopal  
*MIT*

Steve Vigdor  
*Indiana University*

arXiv:0705.1930

April 13, 2007

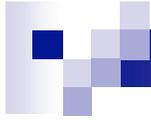


## 5.4 New Initiatives

...

Any initiatives of this nature should be launched via a competitive bidding process, open to the participation of theorists and interested experimentalists from all universities and national laboratories. This will ensure that funding of such coordinated efforts targets phenomenology of the highest quality. It will also ensure that the theory community as a whole thinks creatively about the most effective means to accomplish its goals. The size, scientific scope, duration, degree of geographical localization, and organizational mechanisms of such initiatives should emerge as outcomes of a competitive process designed to engage all parts of the theory community.

...



No call for proposals yet,

resources for theory are very limited

**What can we do now?**



## CATHIE proposal:

- Form an Advisory Board representing all major theory groups involved in RHIC physics and the RHIC experiments to oversee the activities of the new Center, such as the development of a quantitative approach to theoretical description of heavy ion collisions, and related workshops and programs.
- Conduct an open search and hire a scientist (either a theorist or an experimentalist) to coordinate the work on the quantitative modeling and simulations of heavy ion collisions. The job responsibilities would include maintaining a depository of simulation codes, running tests, and performing quantitative analyses of the data. This person would be responsible for day-to-day coordination of the activities of the groups working on the development of models of various stages of heavy ion collisions.