

**CHARGE**  
**to the RHIC Spin Plan Group**  
**T. Kirk, ALD-HENP**  
**November 9, 2004**

The RHIC Spin Plan Group is charged with creating a written report that is responsive to the recommendation from the DOE S&T Review Committee in the Executive Summary section of the "Department of Energy Office of Nuclear Physics Report on the Science and Technology Review of the Relativistic Heavy Ion Collider (RHIC) at BNL - September 20, 2004." The recommendation made in that report was: "BNL should prepare a document that articulates its research plan for the RHIC spin physics program. A copy should be submitted to DOE by January 31, 2005." The text of the report goes on to identify appropriate objectives that the plan should encompass. I accept these objectives and transmit them to the RHIC Spin Plan Group here:

*"The plan should: (1) explain what science can be done at RHIC in the context of current and future capabilities world-wide (i.e. what will be the important measurements, what will be their significance and impact and will some of these be made elsewhere prior to RHIC, etc.), (2) explain what accelerator and detector performances are needed to make the measurements (i.e. what beam energies, intensities and polarizations, what detector capabilities, etc.), (3) identify the needed resources to implement the research plan and subsequent timeline with the significant technical and scientific milestones that will be achieved (assuming projected improvements in luminosity and polarizations, estimated time for developing the 500 GeV proton beam, estimated times to implement needed detector upgrades, what funding will be needed, etc.), and (4) explain the impact of a constant effort budget to the planned research program."*

In addition to these objectives, I wish to supply some practical guidelines to the Group on the resource levels that should guide the outcome of the Plan. Specifically, I ask that you consider two RHIC Spin running scenarios: 1) 5 spin physics data taking weeks per year (averaged over two years using the combined fiscal year running concept); 2) 10 spin physics data taking weeks per year. These two scenarios will give appropriate indications of the physics goals that can be met over a period of years without involving the Group in difficult funding and cost scenarios that are not central to the calculation of the physics accomplishments over time. On the research efforts side, you should assume "constant effort" which means that inflation is compensated for the research budgets and staff is, therefore, not lost year by year.

You will also need the accelerator performance estimates provided by the accelerator physicists in the Collider-Accelerator Department and this will be provided to you. A knowledgeable member of the C-AD accelerator physics staff will be appointed to the RHIC Spin Plan Group to facilitate this purpose.

Finally, you should use the 20 Year RHIC Plan and the RHIC II planning process to integrate the spin parts of those activities with your report. The written report is due on January 31, 2005 for transmission to DOE Office of Nuclear Physics and should be reviewed by me prior to transmission to DOE.