


JSA Initiatives Fund Proposal Summary Sheet

Proposal title:	Workshop Support for the Development of an Experiment to Conduct a Precision Measurement of the Weak Mixing Angle in Møller Scattering with a 11 GeV Beam					
<input checked="" type="checkbox"/> New proposal	<input type="checkbox"/> Renewal	Total funds requested	\$ 20,000 	Leveraged support / Matching resources	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If your proposal includes leveraged support or anticipates matching resources, identify source, amount, and secure the signature of an authorized representative of the source.						
Source/Amt	Authorized Signature:					
Source/Amt	Authorized Signature:					
Source/Amt	Authorized Signature:					

Principal Investigator (PI)	<u>(PI) Krishna Kumar, (Co-PI) Roger Carlini</u>		
<input type="checkbox"/> JLab employee	Associate Director signature _____		
<input checked="" type="checkbox"/> JLab user	Name of university	<u>University of Massachusetts, Amherst</u>	
<input type="checkbox"/> Other	Name of institution	_____	
PI's Mailing Address	<u>Physics Department, University of Massachusetts, Amherst Massachusetts</u>		
PI's Telephone / E-Mail	<u>413-545-1310 / kkumar@physics.umass.edu</u>		
Co-PI's (with affiliation)	<u>Roger D. Carlini / Jefferson Laboratory / 757-269-7123 / carlini@Jlab.org</u>		

Executive summary including the projected begin/end dates. Beginning date: 1/15/09, End date on or about 4/1/10. With the CEBAF 12 GeV upgrade, it becomes feasible to measure parity-violation in electron-electron (Møller) scattering with unprecedented precision. This would result in one of the world's most precise measurements of the weak mixing angle (a fundamental parameter of the electroweak theory) comparable in precision to the two best measurements from high energy electron-positron colliders. Such a measurement, while extraordinarily challenging, is ideally suited to make use of the stable, high luminosity CEBAF electron beam and likely could not be done elsewhere in the world. A group of us, who are involved in the 6 GeV parity-violation program, is working towards the submission of a scientific proposal in January 2009 to the JLab PAC.
Synopsis of scientific, educational, technical, and/or business merits, and alignment with and significance to Lab's current programs. The goal is to development the scientific, technical and international collaboration necessary to support an effort to achieve approval, funding and eventually conduct a cutting edge parity-violation measurement in the 12 GeV era of JLab, see attachment. We are requesting financial support to sponsor and facilitate participant travel to workshop style meetings, one at Jefferson Lab and one elsewhere, and three smaller topical technical meetings with the aim of refining the proposal and subsequently addressing the key technical challenges. This would greatly enhance the project's ability to then secure independent funding for the construction and operation of the apparatus. We note that that are implicit matching funds from the operating DoE and NSF grants of senior PI's who will participate in the meetings, as well as secretarial help at JLab and the offsite meeting locations.
Proposed evaluation plan to measure success. If this is a request for renewal of funds, assessment of prior year performance.
The success of this effort will ultimately be demonstrated by achieving full approval for and funding of the proposed scientific project and the caliber of the external collaborators and institutions we can attract .

Authorized signature for proposal from:	
JLab employee	Lab Director signature _____
JLab user	JLab Users Group Board Chair <u>Ronald Gilman</u>
Other	Institutional authorization _____

Office of SURA Chief of Strategic Services – Internal Use		
Proposal received:	Submitted for review:	Disposition: