

Jefferson Science Associates, LLC
Managing and Operating the Thomas Jefferson National Accelerator Facility
for the U.S. Department of Energy

Proposal title

Principal Investigator (PI)

Synopsis of scientific, educational, technical, and/or business merits, and alignment with and significance to Lab's current program. Add additional pages if necessary.

Proposed evaluation plan to measure success. If this is a request for renewal of funds, assessment of prior year performance. Add additional pages if necessary.

Your proposal may include letters of endorsement and other supporting information. A maximum of 10 additional pages may be appended to this proposal form.

Budget Proposal

Proposal Title

Principal Investigator (PI)

Total funds requested

To be completed by JSA: Total funds awarded

	Item Description	Amount
<p>Equipment. Lab users submitting proposals that include equipment to be used at the Lab must review with the appropriate Lab Associate Director. The provision of the name of the AD below represents the AD's acknowledgement. No signature required.</p>		
	Associate Director: _____	
	_____	_____
	_____	_____
	_____	_____
	Subtotal Equipment	_____
<p>Travel Support. Provide break-out of estimates for registration fees, lodging and transportation, catering, and facility charges (room rentals, AV equipment; etc.)</p>		
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	Subtotal Travel	_____
<p>Supplies</p>		
	_____	_____
	_____	_____
	_____	_____
	Subtotal Supplies	_____
<p>Consultants/Subcontracts</p>		
	_____	_____
	_____	_____
	_____	_____
	Subtotal Consultants/Subcontracts	_____
<p>Other Expenses. Examples include stipends and honoraria, prizes, awards. The JSA Initiatives Fund Program does not support salaries and salary-related expenses, or indirect expenses. Describe other expenses below.</p>		
	_____	_____
	_____	_____
	_____	_____
	Subtotal Other Expenses	_____
	Total Budget Proposal	_____

Budget Justification and Leveraged Support/Matching Funds information. Identify the source, type and amount of support from each institution. For in-kind support, provide estimate of value. Your identification of the authorized representative who has committed institutional support for your proposal represents the acknowledgement of that individual. If support or funds are provided by the Lab, identify the associate director (or equivalent) as the authorized representative. Add additional pages if necessary.

Dr. Alberto Accardi
Department of Physics
Hampton University
and Cesar Fernandez Ramirez
Instituto de Ciencias Nucleares
Universidad Nacional Autonoma de Mexico, Mexico

Dear Alberto and Cesar,

I am very supportive of the proposal you are submitting to JSA for continuation of the funding of foreign graduate students from developing nations to attend the HUGS summer school. HUGS is the premier graduate summer school in nuclear and hadronic physics, and is attended by US and International students. HUGS supports local expenses and some domestic travel, but cannot support international travel. Unfortunately this limitation means that students from developing nations have to often decline their participation due to the high travel costs. This limits the global impact of HUGS, which is very unfortunate, as there is growing interest and participation of scientists of developing nations in Jefferson Lab physics. Having served for many years in the HUGS program, I can assure you that all students we have had from developing nations were outstanding, and the HUGS program served them very well by broadening their knowledge and horizons.

This last HUGS (June 2016) we had two students benefit from the JSA support, Mrs. Bineta L. Amar from Cheikh Anta Diop University, Dakar, Senegal, and Mr. Rajesh Sangem from Indian Institute of Technology, Bombay, India. Both stayed for an additional week after the HUGS program ended, in which they interacted with physicists in the Theory Center of Jefferson Lab. Both gave also a seminar in the Theory Center. I personally discussed with Mrs. Amar, establishing for her a channel of discussion which is expected to benefit her in the completion of her PhD thesis.

The short experience of two years of JSA support has proved very useful for the purpose of educating young physicists from developing nations in the areas relevant to Jefferson Lab physics. It is also showing the development of longer term scientific connections between those young scientists and Jefferson Lab scientists. The results are very encouraging, and therefore I wish to very enthusiastically recommend the

continuation of the JSA support for the upcoming HUGS 2017 program.

Regards,

A handwritten signature in black ink, appearing to read 'J. Goity', with a stylized flourish at the end.

Dr. José L. Goity
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Hampton University, and
Senior Staff Scientist,
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To Dr. Alberto Accardi
Physics Department
Hampton University
Hampton, VA 23669

Ref Support letter for the “*JSA/HUGS International Fellowship for Graduate Students in Developing Countries*”

August 7, 2016

Dear Dr. Accardi,

It is with great pleasure that I am writing this letter in support of your proposal to the Jefferson Science Associates Initiative Funds entitled “*JSA/HUGS International Fellowship for Graduate Students in Developing Countries*” that is aimed at supporting graduate students from developing countries to attend the Hampton University Graduate Studies (HUGS) summer school.

Since its inception in 1985, HUGS has established itself as one of the most competitive schools in nuclear physics for graduate students in the nation. A few years ago, an international component was added to provide a unique opportunity for student from developing countries to participate in this summer school. Such addition could and has already enabled the establishment of new fruitful collaborations between Jefferson Lab and these countries.

Since the late 1990s, the Physics Department at Hampton University has slowly but steadily initiated the creation of a nuclear physics group in Senegal, West Africa, primarily focusing on JLab research in the intermediate energy regime along with the addition of a few applications (e.g., medical and accelerator physics). Because of the limited resources, the educational and research programs in this country were centered on simulation work and small-scale infrastructures. In 2009, the then Director of Research at the Ministry of Biofuels, Renewable Energy and Scientific Research, Ms. Ndèye Aram Boye-Faye, visited Jefferson Lab to discuss possible collaboration with this West African country¹. The following year, a tutorial on the use of the Geant4 simulation toolkit was held in Dakar, Senegal, to provide an overview on the understanding of experimental nuclear physics and particles interactions with matter to faculty and students of the University Cheikh Anta Diop, and two M.Sc. students, Ms. Sokhna Bineta Amar-Lo and Ms. Fatou Ka Guèye, attended the HUGS2010 summer school. The same students also attended the US Particle Accelerator School (USPAS2011) to learn about accelerator physics.

While one student (Ms. Fatou Guèye) decided to pursue a M.Sc. in materials science, the other (Ms. Bineta Amar-Lo) successfully defended her M.Sc. thesis in December 2011 entitled “*Geant4 and Pion Photo Production in the Intermediate Energy Regime*”. This work was partly supported by the Physics and Accelerator Physics Divisions at JLab. In 2016, Ms. Amar-Lo

¹ See JLab On target, May 2009: <https://www.jlab.org/news/ontarget/target-may-2009#senegal>

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attended HUGS for the 2nd time, thanks to the JLab/JSA Initiatives Funds: she presented new results of her work on pion photo-production off the proton and is expected to complete her PhD thesis in December 2016. After completion of her thesis, Ms. Amar-Lo will be collaborating with Jefferson Lab and Hampton University to establish a nuclear physics group in Dakar, Senegal.

The aforementioned participation from Senegalese physicists and the subsequent theses work would not have been possible without the very strong support from Jefferson Lab and the JSA Funds. This is a very powerful example on how small relative contributions from JLab can result in the establishment of a long-term collaboration with major contribution to the scientific program at Jefferson Lab from developing countries.

The funding from JSA has been instrumental in allowing Senegal to move toward the establishment of a local nuclear physics group. Therefore, your proposal is to be commended considering the impact that HUGS has had on the African continent and other developing countries. On behalf of the Physics Department at Hampton University, we not only strongly support your JLab/JSA proposal but are also looking forward to working closely with HUGS in the future.

If you need any additional information, please do not hesitate to contact us.

Sincerely,



Paul Guèye, PhD
Physics Department, Chair