LEHIGH UNIVERSITY

Colette LaMarche <cdl215@lehigh.edu>

OIA Doctoral Travel Grant for Global Opportunities DTG-GO

1 message

cdl215@lehigh.edu <noreply@qemailserver.com> Fri, Sep 15, 2017 at 5:14 PM
Reply-To: "cdl215@lehigh.edu" <cdl215@lehigh.edu>
To: cdl215@lehigh.edu

Someone has applied for DTG-GO

Recipient Data:
Time Finished: 2017-09-15 17:14:53 EDT
IP: 216.15.89.20
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Response Summary:

First Name
Justin

Last Name
Ewigleben

Email
jre315@lehigh.edu

Phone number
2022076243

College of enrollment
Arts and Sciences

Major field of study
Physics

Faculty advisor name
Rosi Reed

Do you currently have a university assistantship or fellowship? If yes, choose the correct box below.
Teaching assistant

Are you currently funded by an external organization? If yes, choose the correct box below.

Choose the type of activity
Presentation at Conference

Title
Quark Matter 2018

Location and Dates of Program/Conference
Venice, Italy. May 13-19, 2018

AbstractPlease provide a 3 - 5 sentence abstract (no more than 250 words) that clearly describes what is proposed and how the proposed experience will enhance the applicant's education significantly. Please note: This abstract must be suitable for use in a media release if the proposed activity is funded.

The exact manner under which quarks and gluons, the fundamental particles that make the matter we interact with in our daily life, come together to form hadrons (protons and neutrons), in a process called hadronization, is still unknown. The Beam Energy Scan I program at the Relativistic Heavy Ion Collider failed to answer some fundamental questions, and so a BES-II program was proposed, in addition to upgrades to the detectors at the Solenoidal Track at RHIC (STAR) and to RHIC. I have been working on one of these key detector upgrades, known as the Event Plane Detector (EPD). The EPD will allow more accurate measurements of the impact parameter and the event plane of the collisions. The EPD is planned to be finished this year, to be installed early next year for the next run. I plan to present the first results from the EPD at the next Quark Matter conference in Venice, Italy. These will be the first results from a key upgrade to STAR for a fundamental physics program that has been going on for over a decade. The ability to present these results would allow me to present the details of the detector to an international audience made up of the best in the field of heavy ion collisions. I would also be able to keep on the frontier of physics from other collaborations around the world, such as the Large Hadron Collider (LHC), and network with other institutions to possibly lead to future collaborations.

Detailed proposal of research/scholarly workIn no more than 1000 words, describe the objectives and approach of your proposed research activity. Make clear how it relates to your immediate and long-term doctoral goals. Include a time-line for preparing for and completing the proposed activity.

The BES-II program at RHIC is a search for the critical point and phase transition from the deconfined state of matter known as the quark gluon plasma (QGP) and the hadronic state of matter that we interact with in our everyday life, made up of protons and neutrons. The BES-II program is coupled with key upgrades to the Solenoidal Track at RHIC (STAR) in order to make precision measurements. Our group at Lehigh has been working on one of these upgrades, known as the EPD. The EPD is a replacement for the now-existing Beam-Beam Counter at STAR. The EPD allows for better impact parameter and event plane determination, key measurements for finding the critical point of quantum chromodynamics (QCD).

The EPD is planned to be finished by the end of this year, with work ongoing at Lehigh and the Ohio State University, and is set to be installed at STAR in January of next year in time for the next run at RHIC. An eighth of the EPD was installed last year and the results of this first test run are set to be published in a journal by the end of this year.

I hope to present my work on the detector as well as the first results at the upcoming Quark Matter 2018 conference in Venice, Italy. Quark Matter is a conference that has been held every 18 months since 1980, regularly attracting over a thousand heavy ion physicists, both theorists and experimentalists, from around the world. It is the biggest conference of its type, covering all of the different experiments (including the Large Hadron Collider experiments at CERN) and a broad array of topics in relativistic heavy ion collisions.

With the help of the travel grant, if I receive it, I will be able to present my work at QM2018. Presenting the first results for a key detector upgrade for the BES-II program would raise my visibility as a detector expert in the field. This will also allow me to see the most up to date research in all areas of heavy ion collisions, and meet and network with the top physicists in the field. The presentation of these results will be a big first step in continuing on to finish my dissertation research at Lehigh.

Total budget. Enter numbers only, no currency signs.
2500

Funds secured from other sources. Please list each source and the amount below. Enter numbers only, no currency signs.
700 - Quark Matter Student Support
300 - Departmental Support

Remaining balance. Enter numbers only, no currency signs.
1500

Amount you are requesting as a DTG-GO grant. Enter numbers only, no currency signs.
1500

Please upload a Faculty Letter of Support Specifically detailing the impact this experience will have on your degree program.
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