



SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

Future Faces of Physics Award Proposal

Project Proposal Title	Astrophysics in the Appalachians: A Perspective on Pulsars by Dr. Natalia Lewandowska
Name of School	Marshall University
SPS Chapter Number	4123
Total Amount Requested	\$473.50

Abstract

Marshall University's chapter of the Society of Physics Students would like to invite astrophysicist Dr. Natalia Lewandowska, a postdoctoral fellow of West Virginia University, to visit our university and give two talks about her research: one public lecture and one colloquium-style talk for faculty, staff, and students of Marshall's Department of Physics.

Proposal Statement

Overview of Proposed Project/Activity/Event

The Physics Department at Marshall University has recently hosted a variety of both public and departmental lectures by esteemed figures in physics, including NASA astronaut Dr. Don Thomas, NASA Solar System Ambassador Bo Lowery with the Appalachian-American Association of Physics Teachers, world renowned sports physicist Dr. Eric Goff, and APS Distinguished Travelling Speaker Dr. Luis Orozco. Marshall's SPS chapter would now like to host our own lecture by Dr. Natalia Lewandowska, a postdoc at West Virginia University researching pulsars. We wish to be self-sufficient in this endeavor so our faculty and advisors may enjoy the event without concern for logistics and accommodations.

For her public talk, we hope to reach both college students campus wide at Marshall University, high school students in the surrounding tri-state, and community members from the metro area. Dr. Lewandowska is a representative of the North American Nanohertz Observatory for Gravitational Waves (NANOGrav) and the director of the Pulsar Search Collaboratory (PSC). Thus, this event is a great opportunity to inspire young students to pursue astronomy and related fields, as well as to illuminate the significance of this research to the general public. Execution of such outreach opportunities is one of our SPS chapter's main goals initiated this school year.

Dr. Lewandowska would also give a colloquium to Marshall's physics department on or around the same day as her public lecture. As mentioned previously, this colloquium would give faculty members the opportunity to attend a departmental event without the added stress of hosting it. In addition, SPS hopes Dr. Lewandowska's talk will reach and motivate physics students that have yet to decide on a career path. We will be inviting students to attend a lunch or dinner with Dr. Lewandowska to provide a setting for students to ask her about her career and life experiences. She will also provide students with information about studying abroad as she received her undergraduate degree and Ph.D. in Germany.

How Proposed Activity Promotes Physics Across Cultures

Marshall University's location in rural West Virginia puts us in a unique position to reach Appalachian students – an underrepresented culture in academia. Our particular region of Appalachia has struggled over the years with poverty and drug epidemics. Our chapter feels a responsibility to influence students in the surrounding area by instilling positive attitudes about science and education. Dr. Lewandowska's presence in our community has the opportunity to positively affect these types of students at the K-12 levels and beyond.

In addition, this event gives us a chance to influence women students within and outside of the department. We would be honored to add to the list of female STEM speakers that have presented at Marshall, and we are therefore delighted to host a talk from such an important representative of women in science. As Dr. Lewandowska enlightens students and the public of her research, the message from SPS would be threefold: (1) there is work for scientists in West Virginia, (2) there is work for women scientists in West Virginia, and (3) physics benefits from having equal gender representation.

Plan for Carrying Out Proposed Project/Activity/Event

The SPS member in charge of planning this event will be Ellie White as she will be coordinating with Dr. Lewandowska throughout the process. Dr. Lewandowska will be staying with Ms. White in her family home in Barboursville, WV. In addition, Ms. White has experience with event planning at Marshall; she assisted with organizing a STEM & the Arts film festival and coordinated a workshop with the business director and site director of the Green Bank Observatory on campus.

While Ms. White will take on the event planning and communication with Dr. Lewandowska, SPS Vice President Jacquelyn Sizemore will assist her by delegating tasks to the remaining chapter members. She will also be in charge of keeping communications with representatives from local schools. Ms. Sizemore has experience with delegation from a campus security supervisory role and with event planning from membership in a residence hall council.

Ms. Sizemore will also oversee the marketing campaign for this event. She will correspond with Marshall's Communications Office to distribute advertisements campus-wide. She will coordinate with Dr. Sean P. McBride - the chapter's advisor - to send information to local schools. In addition, we will be able to print and circulate fliers for the event using Marshall's Learning Resource Center.

All members of our SPS chapter will be involved with the set-up, monitoring, and tear-down of both events. This will include greeting attendees and sharing the schedule of events, as well as ensuring refreshments are prepared before the reception. The management and allocation of funds will be handled by SPS Treasurer Andrew Prostor. SPS President Jeremy McCloud will monitor completion of tasks in the event timeline and keep records for evaluation of the event. He will also delegate tasks as needed. Ms. White, Ms. Sizemore, and Mr. McCloud will work together to draft the Final Report.

Project/Activity/Event Timeline

Dr. Lewandowska's public lecture and departmental colloquium will be held in April 2020. The exact date(s) will be determined by January 6, 2020 through Ms. White's coordination with Dr. Lewandowska. Throughout the month of January, local schools will be contacted to inform teachers and students of the event. Based on this estimate, campus facilities for the colloquium and public lecture will be reserved by February 3. With the date, time, and location of the talks secured, SPS will design a flier for the public lecture during the first February meeting (the 4th or 11th) and subsequently contact the Marshall Communications Office for coordinating campus advertisements of the public lecture. Local schools will be informed of the date and time of the public lecture by March 2. Throughout the month of March, SPS members will invite friends and family to the public lecture and encourage fellow physics students to attend the colloquium. Two weeks before the talks, refreshments for the public lecture and colloquium receptions will be ordered. SPS members will meet the morning of the first talk to ensure that preparations are made. Ms. White will provide housing for Dr. Lewandowska during her visit.

Activity Evaluation Plan

The events will be evaluated based on the number and gender distribution of attendees. We would like around 50 or more attendees for the public lecture with at least 50% identifying as women or girls. For the colloquium, we seek 100% female physics student attendance and 80% total physics student attendance. We will collect email addresses and demographic information as attendees arrive, then email attendees a survey after the talks to evaluate how their views have changed concerning working in the Appalachians and equal gender representation in science. Finally, we will evaluate the success of our chapter in planning the event by (a) a checklist for meeting the deadlines established in the timeline and (b) recording SPS member participation (goal: 100%).

Budget Justification

The travel expenses and honorarium serve as a courtesy to Dr. Lewandowska. We will use receipts to determine the exact travel expenses. Her lodging will be covered by Ms. White. Other items in the budget serve to maximize attendance. The lunch and/or dinner provided to Dr. Lewandowska, students, and only a few faculty will allow an opportunity for informal interactions, mostly with students, so SPS would like to cover the costs to appeal to students who may not attend otherwise due to personal budget constraints. Finally, SPS will provide refreshments for the talk's reception to encourage attendance and interaction among participants and Dr. Lewandowska, thereby prolonging the discussion of physics in Appalachia and gender representation in science.