



SIGMA PI SIGMA

The physics honor society

Sigma Pi Sigma Chapter Project Award Proposal

Project Proposal Title	Building Bridges: Connecting Colorado Springs Students through SPS and Sigma Pi Sigma
Name of School	United States Air Force Academy
Sigma Pi Sigma Chapter Number	555
Total Amount Requested	\$500

Abstract

The United States Air Force Academy Sigma Pi Sigma chapter would like to host a special induction ceremony to celebrate its 5th anniversary, with the chapters from the University of Colorado at Colorado Springs and Colorado College. Our intent is to increase membership and continue the collaboration between our chapters.

Proposal Statement

Overview of Proposed Project

Next spring semester, the US Air Force Academy (USAFA) Sigma Pi Sigma chapter will celebrate its 5th anniversary. As part of this celebration, we plan on holding a special induction ceremony that will involve not only our students, faculty and alumni, but students and faculty from the University of Colorado at Colorado Springs (UCCS) and Colorado College (CC). We have reached out to Col Mario Serna, the first faculty advisor of the USAFA Sigma Pi Sigma chapter, who is currently working for a different Air Force agency. We hope his busy schedule will allow him to visit us and conduct this special induction ceremony. After the ceremony we will have a reception, followed by a key-note address by Dr. Andrew Ludlow, a research scientist from the National Institute of Standards and Technology (NIST) in Boulder, CO.

With this event, we hope to build upon last year induction ceremony that was attended by three students and four faculty from the University of Colorado at Colorado Springs and Colorado College, including Dr. Anatoly Pinchuk, the SPS faculty advisor of the University of Colorado at Colorado Springs chapter. Dr. Willie Rockward, president of National Sigma Pi Sigma at the time, conducted last year's induction ceremony and addressed the USAFA students and faculty, as well as our distinguished guests. The ceremony was followed by a keynote presentation by Dr. Krister Shalm of NIST Boulder on his experimental tests of Bell's theorem proving that Einstein's "spooky action at a distance" is actually real.

This event was a huge stepping stone in developing a relationship with the other two schools in the Colorado Springs area and having funding for the next year induction ceremony would help cement the initiative and further our goals.

How Proposed Project Meets the Purpose of the Award

The UCCS and CC SPS chapters are not currently active. UCCS has not inducted new members into Sigma Pi Sigma in a very long time, while CC does not have a Sigma Pi Sigma chapter. We have a history of collaborating with undergraduate students from CC in a research project designed to test Einstein's theory of general relativity. The project took place during the previous two academic years and resulted in two peer-reviewed publications. CC also hosted two key-note speakers as part of this project: Kip Thorne, 2017 Nobel laureate and Shane Larson of the LIGO collaboration.

Our tentative guest speaker, Dr. Andrew Ludlow of NIST, received the 2016 Presidential Early Career Award for Scientists and Engineers (PECASE) for "developing and perfecting optical lattice atomic clocks as the most stable and accurate clocks in the world". Having a key-note speaker at our induction ceremony will continue the tradition established by CC with the hope that seminars in the hot areas of physics directed at undergraduates will take place on a regular basis and will rotate between the three institutions. The presence of such an integral person in our chapter's history as Col Serna will add greater distinction to our induction ceremony, while the presence of local alumni will foster stronger interactions between alumni and new Sigma Pi Sigma members.

Plan for Carrying Out Proposed Project

The event will take place in late April of 2019. The officers of the USAFA SPS chapter will be in charge of planning and monitoring the event. Invitations will be sent to SPS members that meet the criteria outlined in the national by-laws to join Sigma Pi Sigma. Invitations will also be sent to local Sigma Pi Sigma alumni to attend our event. An exact number of members is not known at this point, but our chapter usually inducts about 15 members, both students and faculty, each year.

The induction ceremony will be hosted at the United States Air Force Academy. Inductees and faculty from all three collaborating schools will be present at the induction ceremony where Col Mario Serna will perform the ceremony. Following this, there will be a reception with keynote speaker Andrew Ludlow. There will be hors d'oeuvres and soft beverages served.

Project Timeline

By the end of 2018, we hope to have UCCS and CC committed to joining us for the induction ceremony. Also, by the end of January, we wish to have Col Serna committed to performing the induction and Dr. Ludlow agreed to give the key-note presentation. In the days prior to the event we will decorate the reception area and make arrangements for the reception. The event itself will take place on a "to be determined date" in late April of 2019. Potential venues for this ceremony include Arnold Hall Theater at USAFA, or the newly renovated USAFA Planetarium.

Project Evaluation Plan

The goal of this collaborative induction ceremony is to foster SPS and Sigma Pi Sigma development both at the Air Force Academy and neighboring universities. Evaluation of the project will focus on the continued collaboration and growth of SPS/Sigma Pi Sigma in the Colorado Springs area.

Budget Justification

The funds requested for this event will be used for the food/soft drinks that we will serve as well as decorations for the reception. It will also cover the key-note speaker's travel expenses.