



# SIGMA PI SIGMA

The physics honor society

## Sigma Pi Sigma Chapter Project Award Final Report

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<b>Project Title</b>	[Sigma Pi Sigma: Celebrating Diversity in Physics]
<b>Name of School</b>	[University of the Sciences]
<b>Sigma Pi Sigma Chapter Number</b>	[575]
<b>Total Amount Awarded</b>	[\$500.00]
<b>Project Leader</b>	[Alyssa Petroski]

### Summary of Award Activity

Six physics majors and a high school physics teacher were inducted in the second induction-banquet of the USciences Sigma Pi Sigma Chapter. The event was attended by the University Provost, faculty, two middle school girls from the Physics Wonder Girls Camp, two industrial physicists, inductees and guests.

# Statement of Activity

## Overview of Award Activity

The second Sigma Pi Sigma Induction Ceremony-Banquet at the University of the Sciences (USciences), with the theme of “Diversity in Physics”, was made possible by a Sigma Pi Sigma Project Award on May 1, 2018, 6 pm on the USciences campus. The event was attended by 7 inductees (6 physics majors and a high school Physics teacher) and their guests, two middle school girls from the Physics Wonder Girls Program, two industrial physicists (from Intel Corporation and II-VI OptoElectronic Devices) and guests, 5 physics faculty, 1 alumnus, and the University Provost. All in all, about 30 participants and guests attended the event. The event was held at a function room in the Dining Hall Building of the USciences campus, at 6 pm on a Tuesday during Finals Week (the next day was a no-exam Reading Day which allowed the students to attend the ceremonies in a relaxed way). The latest inductees consisted of 6 sophomore physics majors (Brett Conti, Gopal Goberdhan, Stefan Hofmeister, Alyssa Petroski, Austin Vantrease, Karla Miletic), and high school physics teacher Dr. William McWatters. Administrators in attendance included Provost Dr. Peter Miller and Physics Chair Dr. Elia Eschenazi.

Sigma Pi Sigma advisor Dr. Roberto Ramos welcomed the audience and introduced the University Provost Peter Miller, who gave an inspirational message. After the message, the banquet was then served. During dinner, the audience was treated to a musical video-slideshow featuring the recently-concluded SPS Zone 3 Meeting held on the USciences campus. As the audience finished their meal, the program resumed with a description of the history of Sigma Pi Sigma by Dr. Ramos. SPS Chapter President Alyssa Petroski and Chapter Secretary Austin Vantrease then gave a powerpoint presentation of the various physics outreach activities performed by the USciences SPS during the year. Two posters with pictures of the outreach were displayed by the entrance for guests to view. This was followed by talks from three guest speakers invited by Dr. Ramos: Marisa Bauza-Roman, Ph.D. – a senior computer engineer with Intel Corporation; Marc Doyle – a product manager from II-VI OptoElectronic Devices; and William McWatters, Ed.D - a high school physics teacher with the Octorara School District. Dr. Roman and Marc Doyle are Sigma Pi Sigma members inducted by Dr. Ramos when he was SPS Advisor at Drexel University while Dr. McWatters is one of the teacher-collaborators of the USciences’ Young Physics Tournament initiative. All three speakers touched the audience with personal career stories from physicists of diverse background: Dr. Roman described her career path from Argentina to the US, pursuing the fields of engineering through biophysics and to scientific computing, Marc Doyle described how to succeed in the semiconductor industry on an BS Physics degree, while Dr. McWatters described how life-changing a physics degree was in his career. All speakers were presented with Plaques of Appreciation by Drs. Miller and Eschenazi. Two middle school girls – Sanjula Reddy and Zainab Sherif, graduates of the 2017 Physics Wonder Girls Summer Camp for Middle School Girls organized annually by Dr. Ramos, were honored for their interest and aptitude for physics and received Certificates of Participation in the Sigma Pi Sigma Event. *The diversity reflected among the speakers, guests and inductees helped underlie the theme of the induction “Diversity in Physics”.*

With the help of Sigma Pi Sigma members Dr. Marisa Roman and Marc Doyle, Dr. Ramos inducted the 7 nominees. After the reading of the charge, SPS President Alyssa Petroski gave the “Inductee Response” on behalf of the new members. Pictures of the Induction can be found at USciences SPS Facebook: <https://www.facebook.com/media/set/?set=oa.10156259138204330>

## Impact Assessment: How the Project/Activity/Event Met the Purpose of the Award

The project award made possible a celebration of outstanding academic performance of USciences physics majors and the outstanding contributions to society by two industrial physicists and a well-regarded physics teacher. The event underscored a diversity in physics interests, backgrounds, experiences, professions, and ethnicities among the inductees, speakers, guests (See the Pictures enclosed in the Report). In addition, this event represented a happy and proud convergence of administration (University Provost), faculty (Department Chair, Faculty Mentors), students (physics majors and physics major-inductees), alumni (O.Wackwitz), industrial physicists and existing Sigma Pi Sigma members (Dr. Marissa Roman and Marc Doyle), high school teacher (Dr. William McWatters), middle school girls interested in physics (Zainab Sherif and Sanjula Reddy) and community (guests of inductees). The presentations demonstrated the vibrance of SPS physics community outreach activities in and beyond the campus of USciences and the passion with which physics is being pursued by the inductees, speakers and honorees. It also strengthened the relationships and networking among these different groups. For example, the two middle school girls participated in Dr. Ramos's "Physics Wonder Girls Summer Camp" for middle school girls and expressed interest in participating in future physics events; Dr. Bill McWatters collaborates with the Physics Chair on the Young Physicists Tournament initiative; and Dr. Roman and Marc Doyle have expressed interest in supporting future initiatives by USciences Physics. The University Provost expressed strong pride in the reputation that USciences physics students and faculty are making, as evidenced by their academic and outreach achievements, national SPS awards, and the connection made with the profession of physics outside the university.

A post-event survey of inductees also indicated success of the event. When asked what aspect of the program they enjoyed, most pointed to the highly inspiring talks of three guest speakers. Quotes from inductees about the talks they heard were very compelling:

*"An excellent and fulfilling physics career can come about and be pursued through many avenues. That is a very refreshing and encouraging point to be made, at least to me.", and*

*" I liked the guest speakers sharing how they got where they are and giving motivational speeches for those who may be having trouble deciding on future plans. "*

When asked what inductees viewed were the most significant take-aways of the event, many were moved by the stories of the speakers, and responded with:

*"To be passionate about what you do, and the path you want to take will be the one you do, whether you know it or not.", and*

*"Your future is not set in stone, you have wiggle room to do different things and gain more experiences. And also hard work now will pay off later."*

When asked to rank their impression of the event's organization (5 – very organized; 1- least organized), majority of those who responded rated it with a 5.

## Key Metrics and Reflection

Who was the target audience of your project?	<b>Physics majors, alumni, university administration, physics faculty, industry, K-12 teachers/students</b>
How many attendees/participants were directly impacted by your project? Please describe them (for example “3 alumni” or “10 physics majors”).	<b>6 physics major-inductees, 5 physics faculty, 1 alumnus, 2 industrial physicists, 1 high school physics teacher, 2 middle school students, University Provost, parents/guests</b>
How many students from your Sigma Pi Sigma chapter were involved in the activity, and in what capacity?	<b>Two SPS Officers, Alyssa Petroski (SPS President) and Austin Vantrease (SPS VP) gave a physics outreach presentation and Petroski gave an “Inductee Response” to the New Member Charge.</b>
Was the amount of money you received from Sigma Pi Sigma sufficient to carry out the activities outlined in your proposal? Could you have used additional funding? If yes, how much would you have liked and how would the additional funding have augmented your activity?	<b>Sigma Pi Sigma Project Funds were very helpful but we had to supplement it with Departmental and local SPS funds.</b>
Do you anticipate repeating this project/activity/event in the future, or having a follow-up project/activity/event? If yes, please describe.	<b>The USciences chapter would like to follow-up this project in the future. We would like to have more alumni guests and more inductees from surrounding institutions with no ΣΠΣ chapters</b>
What new relationships did you build through this project?	<b>New relationships with existing ΣΠΣ members in the semi-conductor industry, a high school teacher, and two middle school girls were built and strengthened.</b>
If you were to do your project again, what would you do differently?	<b>We plan to honor more alumni, non-physics majors who excel in physics as potential inductees.</b>

## Expenditures

The \$500 Sigma Pi Sigma Project grant was used to pay for the Sodexo-catered banquet. The budget was supplemented by local department funds and local SPS funds to pay for the three plaques of appreciation for three speakers.

### Expenditure Table

Item	Please explain how each expense relates to your project as outlined in your proposal.	Cost
Salad/Rolls/Roasted Chicken/Vegetables/Cheesecakes/IcedTea	As outlined in the proposal, the proposed grant award was expected to pay for mostly food.	\$510
Plaques for Guest Speakers (3)	Paid for 3 plaques for the two industrial speakers/ $\Sigma\Pi\Sigma$ members, and high school physics teacher.	\$116.21
	<b>Total of Expenses</b>	<b>\$626.21</b>

## Activity Photos



The second Sigma Pi Sigma Physics Honor Society Induction Ceremony-Banquet was held on May 1, 2018. It was attended by 7 inductees (6 physics majors and a HS Physics teacher) and their guests, two middle school girls from the Physics Wonder Girls Program, two industrial physicists (from Intel and II-VI Semiconductors) and guests, physics faculty and the University Provost. This year's theme was "Diversity in Physics".

USCIENCES MEDIA LINK: <https://www.usciences.edu/blog/noteworthy/posts/sigma-pi-sigma-inducts-new-members.html>



SPS President Alyssa Petroski and SPS Secretary Austin Vantrease describe the SPS outreach at USciences over the last few years.



The venue was situated in an upper function room of the University Dining Hall. Four large circular tables and a long banquet table were used for the event. Situated near the entrance were two SPS Outreach Posters featuring pictures of the SPS outreach activities during the year. During dinner, the attendees were treated to a musical slide-video of the recently concluded SPS Zone 3 Meeting hosted by USciences SPS.



Guest speaker Marisa Bauza-Roman, Ph.D. (Computer Engineer, Intel Corporation and a  $\Sigma\Pi\Sigma$  member) described her career path from engineering through biophysics and to computing, and inspired the audience with her personal story.



Guest speaker Marc Doyle, a BS Physics graduate, Sigma Pi Sigma member and Product Manager at II-VI OptoElectronic Devices shared his career story and described what skills and discipline BS Physics majors can use from their undergraduate training to advance in the semiconductor field and in their careers, in general.



Guest Speaker William McWatters, Ed.D (HS Physics Teacher, Octorara School District) encouraged inductees how their BS Physics training puts them in a small, highly-regarded group who can use their high intellect to find successful careers. A plaque of appreciation was given to him by USciences Provost Dr. Peter Miller (right) and Physics Chair Dr. Elia Eschenazi (left).



Sanjula Reddy (left) and Zainab Sherif (right) - graduates of the Physics Wonder Girls Camp for Middle School Girls organized annually by SPS Advisor Dr. Ramos, shared how the middle school physics camp changed their view of physics and how listening to real stories of physicists in industry made impressions on their view of physics careers.



The seven 2018 Sigma Pi Sigma Inductees at USciences.



One of two USciences SPS posters made by SPS Advisor Dr. Ramos were posted near the entrance of the event venue to show guests the breadth and depth of SPS Physics Outreach at USciences.

