HAMPTON UNIVERSITY
The Standard of Excellence, An Education for Life

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Hampton University Physics Department Pegasus Trips
MSU University October 19-21, 2017 Report
Prepared by: Paul Gueye

General overview of the Pegasus Trips

In the Fall 2016, the Physics Department of Hampton University established a new annual initiative labeled "*Pegasus Physics Trips*", modeled after the 2014 precursor trip to the National Radio-Astronomy Observatory of the Physicists Inspiring the Next Generation (www.nsbping.org) program. It is a series of one to two days long visits to four majority institutions (Yale University, Michigan State University, Brown University and Purdue University), on average two per semester.

The primary goal for these visits is to provide an avenue for undergraduate students to attend graduate school, for MS students to consider pursuing a PhD degree and for PhD students to look for postdocs. They also provide an additional emphasis on the needed qualifications and attitude to apply and be successful in graduate school.

The 2017 visits differ from 2016 as they included students from other majors than physics and engineering, as well as high school students. The first visit was conducted to MSU on October 19-21, 2017 and included students from Physics, Engineering and Biology Departments from two Historically Black Colleges and Universities (Hampton University and South Carolina State University) and Old Dominion University. The participants also included one faculty member. Many students did not attend the trip to MSU since one graduate student participated to the MSU trip in the Fall 2016, three undergraduate students participated in the MSU/NS3 summer program and others have personal constraints that lead them to cancel.

The name, affiliation and classification of the participants are listed in Appendix A. It consists of 22 students: 14 undergraduate students, three graduate students and 5 high school students from which 11 are males and 11 are females. Individual reports from all participants were requested along with responding to a post-visit survey.

MSU trip

This short report focuses on the first visit that was held at Michigan State University on October 19-21, 2017. The schedule is listed in Appendix B. The post-survey form and results are also appended to this summary along with all individual responses as provided.

The participants (Figure 1) flew in from Hampton University on Thursday. All participants arrived around noon.

While the overall visit was well appreciated (44.4% ranked it as good), the activity that was ranked the highest was the presentation by Dr. Artemis Spyrou (72.7% ranked as excellent) followed the ones by Stephen Thomas and the individual meetings with faculty (both with a 63.6% ranked as excellent), then the presentation by Dr. Judi Brown-Clark (54.5% ranked as good). For the latter, a 1 hr video conference call was setup on the Monday immediately

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following the visit (December 5, 2016 at 6:00pm) to elaborate on the experience and possible apprehension from African America students going to a majority institution.

Figure 1: Participants to the Pegasus trip to Michigan State University on October 19-21, 2017 Top left: arrival at Lansing airport; Top right: first day at NSCL/FRIB; Bottom left: on the way to the dairy (ice cream) shop; Bottom right: lots of scientists learning the science of bowling.

There were several outcomes from this visit which were very similar to the Fall 2016 visit:

- The students did not know about the plethora of possibilities offered for graduate programs along with how their current studies connected with a national facility. Many express strong interest to follow-up with a summer internship at MSU and/or NSCL/FRIB and started to consider attending the school for their graduate studies;
- The best agenda items were the individual meetings with faculty (80%), similar to the Fall 201 visit, and the presentation from Judi Brown-Clark (which was noted as very inspiring and put the visit in perspective);
- The interactions with the graduate students has proven to be a key factor in putting a welcoming, positive perspective and attitude toward pursuing a graduate degree;

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Appendix A: List of participants to the HU Physics Pegasus Trips

Last	First	Classification	Gender	Institution	Major
Gueye	Paul	Department, Chair	Male	Hampton University	Physics
Guererro	Juan	Graduate Student	Male	Hampton University	Physics
Neupane	Tikaram	Graduate Student	Male	Hampton University	Physics
Tukes	Keith	Graduate Student	Male	Hampton University	Physics
Edwards	Tracy	Undergraduate Student	Female	Hampton University	Physics
Gallego	Angelina	Undergraduate Student	Female	Hampton University	Physics
Harris	Letrell	Undergraduate Student	Male	Hampton University	Physics
Swain	Malik	Undergraduate Student	Male	Hampton University	Physics
Christopher	Angel	Undergraduate Student	Female	Hampton University	Physics
Miller	Natthew	Undergraduate Student	Male	Hampton University	Engineering
Essex	Aaron	Undergraduate Student	Male	Hampton University	Engineering
Barnes	Kynton	Undergraduate Student	Male	Hampton University	Engineering
Scott	Kennedi	Undergraduate Student	Female	Hampton University	Engineering
King	Claude	Undergraduate Student	Male	Hampton University	Engineering
Casey	Paris	Undergraduate Student	Female	Hampton University	Engineering
Jackson	Noel	Undergraduate Student	Female	Hampton University	Biology
Sanderson	Kelly	Undergraduate Student	Female	Old Dominion University	Physics
Red	Wesley	Undergraduate Student	Male	South Carolina State	Physics
Bradley	Dea'Niya	High school	Female	Hampton City School	N/A
Copeland	Kaitlin	High school	Female	Hampton City School	N/A
Short	Cedrick	High school	Male	Hampton City School	N/A
Gueye	Yannick	High school	Female	Hampton City School	N/A
Bowens	Jayla	High school	Female	Hampton City School	N/A

NSCL

201710 HBCU PEGASUS VISIT

Facility for Rare Isotope Beams (FRIB)
National Superconducting Cyclotron Laboratory

Thursday, 19 October 2017	Agenda Item	
TBD– TBD	Travelers Arriving to Lansing's Capital Region International Airport	**LAN to Owen Hall**
6:00pm - 8:00pm	Dinner with NSCL Faculty & Graduate Students	**Brody Hall**

Friday, 20 October 2017		
8:30am - 9:00am	Breakfast, NSCL/FRIB Building	**1221B**
9:00am - 9:10am	NSCL Associate Director for Nuclear Science	Remco Zegers
9:10am– 9:25am	The Graduate School Department	Ninotchska De Valle
9:25am – 9:40am	Associate Chairperson for Graduate Programs, Department of Physics & Astronomy	Kirsten Tollefson
9:40am – 9:55am	Engineering Department	Nelson Sepulveda
9:55am – 10:10am	Diversity Coordinator for BEACON	Judi Brown-Clarke
10:10am – 10:20am	WaMPS Graduate Student Organization	Terri Poxon Pearson
10:20am – 11:00am	Coffee Break	**1221B**
11:00am – 12:30pm	Individual Meetings with Faculty Members Engineering Students - Accelerator Group	**NSCL** Steve Lund **(1221A)**
12:30pm – 2:00pm	Hosted Lunch for Physics WaMPS Graduate Students	**TBD**
2:00pm – 4:30pm	Individual Meetings with Faculty Members Engineering Students will go to the Engineering Building	**NSCL**
4:30pm – 5:30pm	NSCL Tour	**Atrium**
5:30pm – 7:30pm	Social Activities with Graduate Students	**MSU Union** **Spartan Lane**

Saturday, 21 October 2017		
6:00 – 9:25am	Travelers Departing from Owen Hall	**Owen Hall to LAN**

Physics Pegasus Trip - MSU October 19-21, 2017

Survey from the two-day physics visit to Michigan State University on October 19-21, 2017

* Required

1. **Thursday Night Dinner with NSCL Faculty & Graduate Students** *
   Your opinion about the information provided and its usefulness to your future aspiration
   Mark only one oval.

   - ◯ N/A
   - ◯ Poor
   - ◯ Average
   - ◯ Good
   - ◯ Excellent

2. **Remco Zegers Presentation** *
   Your opinion about the information provided and its usefulness to your future aspiration
   Mark only one oval.

   - ◯ N/A
   - ◯ Poor
   - ◯ Average
   - ◯ Good
   - ◯ Excellent

3. **Ninotchska De Valle Presentation** *
   Your opinion about the information provided and its usefulness to your future aspiration
   Mark only one oval.

   - ◯ N/A
   - ◯ Poor
   - ◯ Average
   - ◯ Good
   - ◯ Excellent

4. **Kirsten Tollefson Presentation** *
   Your opinion about the information provided and its usefulness to your future aspiration
   Mark only one oval.

   - ◯ N/A
   - ◯ Poor
   - ◯ Average
   - ◯ Good
   - ◯ Excellent

5. **Nelson Sepulveda Presentation** *
   Your opinion about the information provided and its usefulness to your future aspiration
   Mark only one oval.

   - ◯ N/A
   - ◯ Poor
   - ◯ Average
   - ◯ Good
   - ◯ Excellent

6. **Judi Brown-Clark Presentation** *
   Your opinion about the information provided and its usefulness to your future aspiration
   Mark only one oval.

   - ◯ N/A
   - ◯ Poor
   - ◯ Average
   - ◯ Good
   - ◯ Excellent

7. **Terri Poxon Pearson Presentation** *
   Your opinion about the information provided and its usefulness to your future aspiration
   Mark only one oval.

   - ◯ N/A
   - ◯ Poor
   - ◯ Average
   - ◯ Good
   - ◯ Excellent

8. **Individual Meetings (morning and afternoon)** *
   Your opinion about the information provided and its usefulness to your future aspiration
   Mark only one oval.

   - ◯ N/A
   - ◯ Poor
   - ◯ Average
   - ◯ Good
   - ◯ Excellent

9. **Physics Lunch with WaMPS Graduate Students** *
   Your opinion about the information provided and its usefulness to your future aspiration
   Mark only one oval.

   - ◯ N/A
   - ◯ Poor
   - ◯ Average
   - ◯ Good
   - ◯ Excellent

10. **NSCL Tour** *
    Your opinion about the information provided and its usefulness to your future aspiration
    Mark only one oval.

    - ◯ N/A
    - ◯ Poor
    - ◯ Average
    - ◯ Good
    - ◯ Excellent

11. **Friday night Dinner/Social Activities with Graduate Students** *
    Your opinion about the information provided and its usefulness to your future aspiration
    Mark only one oval.

    - ◯ N/A
    - ◯ Poor
    - ◯ Average
    - ◯ Good
    - ◯ Excellent

12. **Best Agenda Item** *
    Your opinion about what you liked the most during your visit
    Mark only one oval.

    - ◯ Thursday dinner with NSCL Faculty & Graduate Students
    - ◯ Presentations (R. Zegers, S. Thomas, K. Tollefson, P. Pierre, J. Brown-Clark)
    - ◯ Friday lunch with WaMPS graduate students
    - ◯ Friday night dinner/social activities with physics graduate students
    - ◯ Individual meetings
    - ◯ NSCL Tour

13. **Please indicate how globally (below) and how each of the following (next questions, short answers) added to your experience**
    Mark only one oval.

    - ◯ N/A
    - ◯ Poor
    - ◯ Average
    - ◯ Good
    - ◯ Excellent

14. **Artemis Spyrou**

    _____

15. **Judi Brown-Clark**

    _____

16. **MSU Faculty**

    _____

17. **MSU Graduate Students**

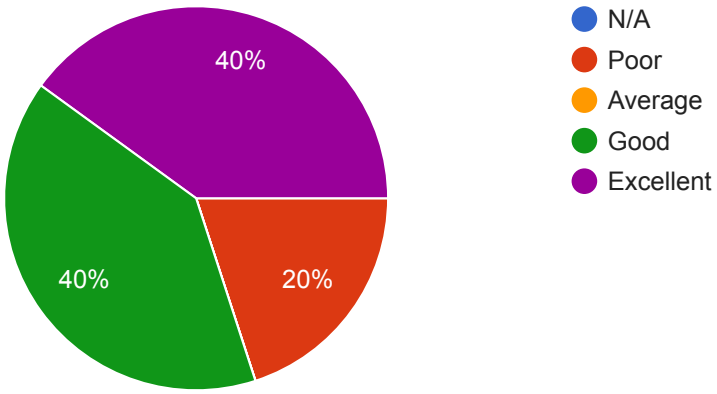
    _____

Physics Pegasus Trip - MSU October 19-21, 2017

5 responses

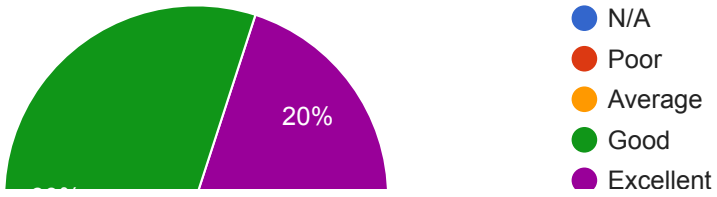
Thursday Night Dinner with NSCL Faculty & Graduate Students

5 responses



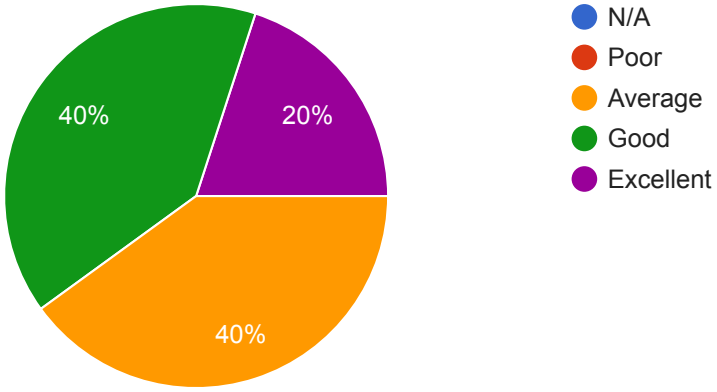
Remco Zegers Presentation

5 responses



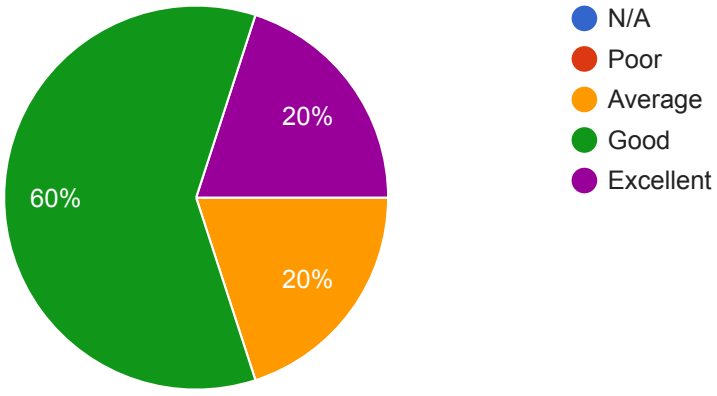
Ninotchska De Valle Presentation

5 responses



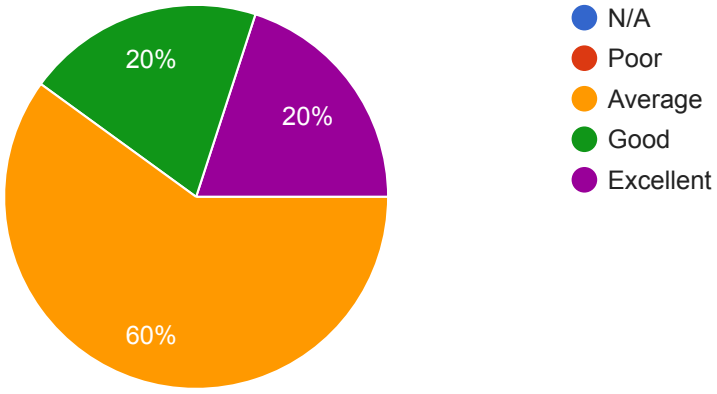
Kirsten Tollefson Presentation

5 responses



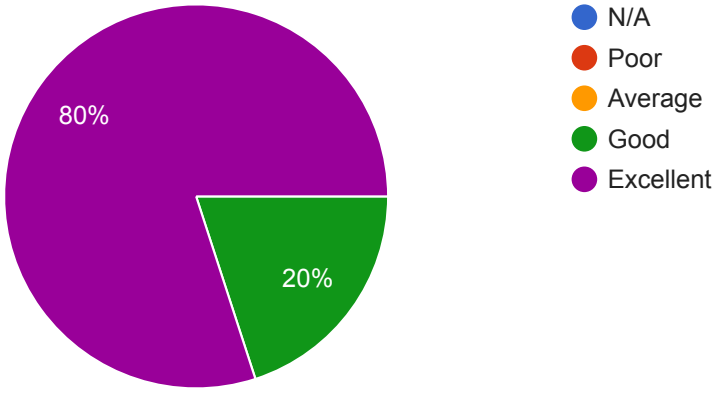
Nelson Sepulveda Presentation

5 responses



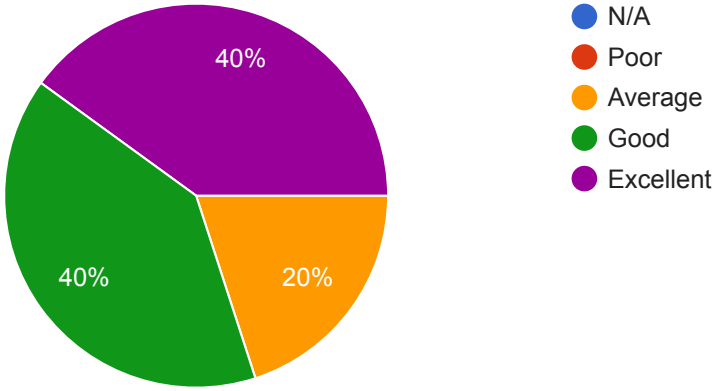
Judi Brown-Clark Presentation

5 responses



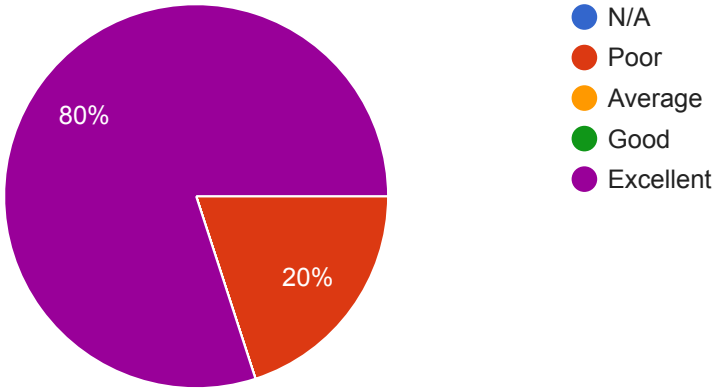
Terri Poxon Pearson Presentation

5 responses



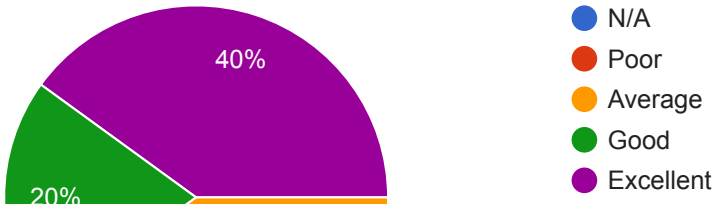
Individual Meetings (morning and afternoon)

5 responses



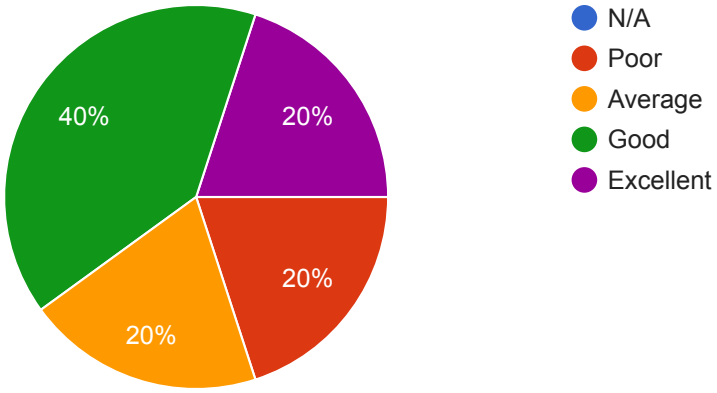
Physics Lunch with WaMPS Graduate Students

5 responses



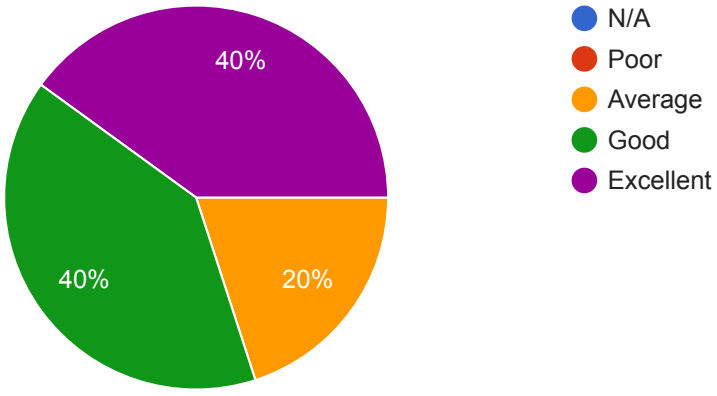
NSCL Tour

5 responses



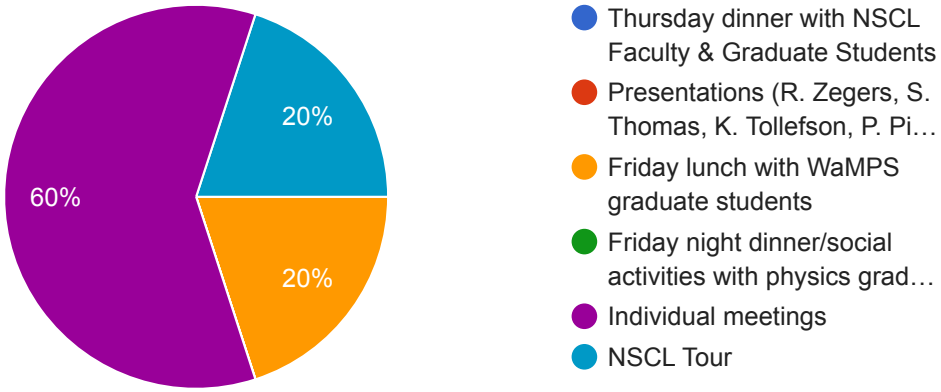
Friday night Dinner/Social Activities with Graduate Students

5 responses



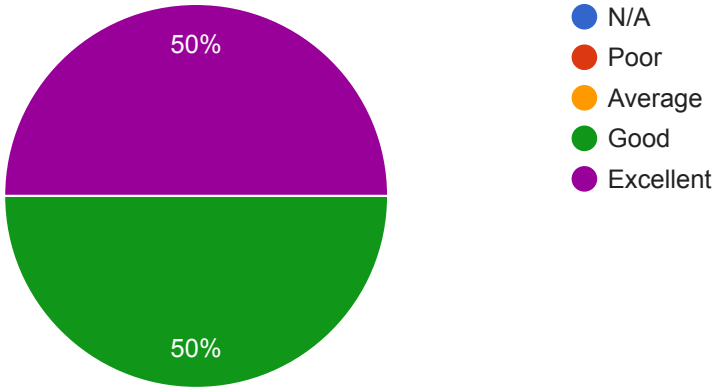
Best Agenda Item

5 responses



Please indicate how globally (below) and how each of the following (next questions, short answers) added to your experience

4 responses



Artemis Spyrou

Artemis Spyrou

5 responses

Ms. Spyrou did an amazing job working with Ms. Pinckney to organize the event. She was also an excellent resource for questions and concerns.

Dr. Spyroh was very open and helpful. I loved how she encouraged me.to ask questions.

A nuclear physicist so for me personally, it wasn't as a valuable as my one on one meetings with the engineering department.

Very informative and welcoming!

She had a unique perspective on the workings of the facilities. I would liked to spend more time listening to her.

Judi Brown-Clark

5 responses

Ms. Brown-Clark was amazing. She inspired us to do more than school work and to reach out to people in our neighborhoods to inspire them to reach for greater heights.

Dr. Brown-Clark was very inspiring

Glad I was able to meet this woman she is a very good motivational speaker and it's good to meet a black woman that's running for mayor.

Very inspirational. Really Made me think about whats important in planning for my future.

She gave the appearance of cultural diversity that appeared to be lacking on site. It was inspiring to see someone with her charisma running for mayor.

MSU Faculty

5 responses

The faculty were very organized and welcoming. Our best interests were their top priority which added to

making our experience a wonderful one.

All the faculty were open and welcoming.

They were all great and helpful and seemed really invested in our visit.

Overall, very informative and open to talking about how their research aligns with my interests in astrophysics.

I felt a subtle vibe from some of the faculty that they didn't want us here or were ill prepared to harbor us.

MSU Graduate Students

5 responses

The graduate students were wonderful. They were very helpful and responded to our qu stains based on their experiences.

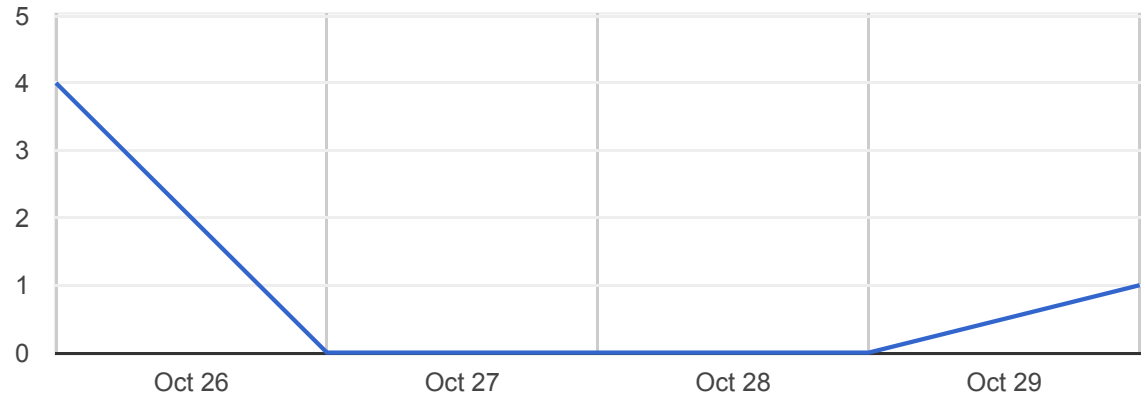
The students provides first hand feedback, which was helpful.

Great, they were really informative and answered every single question I could come up with.

Very honest and real. I liked that we were able to meet with the grad students with out the pressure of faculty members around.

They were friendly, honest, and well-meaning. It seemed lasting relationships could be built in the community.

Number of daily responses



Angel Christopher

FRIB Conference 2017

FRIB Conference 2017

I had the opportunity to attend the FRIB conference from October 19, 2017 to October 21, 2017 at Michigan State University (MSU), East Lansing. The Facility for Rare Isotope Beams (FRIB) conference was a wonderful experience. I had the opportunity to meet new people, learn about new research activities, get information about some of the programs offered at MSU, and take a tour of the school and most of its labs.

The conference was well organized and fruitful. I met with some graduate students and faculty who enlightened me on what to expect from MSU. I got to understand that MSU is an institution that supports diversity and group work where students are encouraged to work together and to have a life apart from school. Doing research can be very demanding but I was assured that the research advisors would be willing to work with the students to ensure that they are not getting overwhelmed from research.

The FRIB conference was organized in such a way that each student was matched with different faculty members based on their aspirations from their resumes. This was very effective as I had the opportunity to ask many questions and get excellent feedback from the faculty. The people I met were experts in various fields such as nuclear theorists, nuclear experimentalists, astrophysicists and many more. I got a lot of information about their research fields and how they are applied to other fields such as medicine. Overall, they were very friendly and welcoming.

After the individual meeting with the faculty, I had an opportunity to tour some of the labs and learn about their history and how they are used. Unfortunately, some of the labs could not be visited because they were active. However, I did have an opportunity to see the ATTP used in research concerning nuclear fission. I also got to see the biophysics lab and learn about their research. I was so excited when in finally got to see the Mona-Lisa. I learned a lot about it and some of its applications. I wanted to see the cyclotron but it was running at the time. I also got to learn about one of MSU's biggest projects which is the FRIB. I was given a tour on some parts of the facility that is expected to commence with full effect in 2022.

Touring the lab and learning about new things in physics was very exciting. When I wasn't doing things Physics related, I was able to learn how to play basketball and bowl for the first time and was lucky to play with one of MSU's upcoming basketball stars. Overall, I learned that MSU goes far beyond just research and focuses also on building relationships and connections that will be useful in the long run.

Kelly Sanderson
Old Dominion University
October 19-21,2017

PEGASUS visit to MSU NSCL:

My trip to visit Michigan State University's National Superconducting Cyclotron Laboratory was very helpful in my decision on what schools to apply to for graduate school. Both the faculty and the graduate students were very welcoming. Originally my interests were in astronomy, specifically cosmology, and did not include nuclear physics. Even though this visit was supposed to be for students interested I the nuclear physics program, the organizers for the visit allowed me to meet with graduate students from the astronomy department and talk with them about their life at MSU. We were also able to sit in on the graduate students' SPS meeting, giving us an idea of what kinds of things the physics/astronomy grad students do. Over the course of my visit I was also able to meet with a number of faculty at NSCL who were happy to talk with me about how their work aligned with my interests. By the end of the day I had decided that I was interested in pursuing a career in nuclear astrophysics.

On a lighter note, I learned that MSU has its own dairy store where they make different flavors of delicious ice cream. The food in their cafeteria was also much better than my home institution. One thing I did not care for was how large the campus was, however, this is an issue that I could easily combat by purchasing a bike or utilizing the public transportation available. Overall the trip was a great networking experience and provided a lot information relevant to the graduate application process. I am definitely considering applying to Michigan State University for grad school.

Physics Pegasus Trip

Wesley A. Red

October, 2017

My visit to Michigan State University was an interesting collection of experiences to say the least. I was granted the chance to travel with Hampton University from my home institution of South Carolina State University to tour the National Superconducting Laboratory (NSCL) and the Facility for Rare Isotope Beams (FRIB), experience college life, and meet with graduate students and professors. My MSU physics graduate student experience began when we arrived on campus. We were told we would be housed on campus, rather than in a hotel because it is their housing and is cheaper. I shower, get changed, and head down to dinner. The cafeteria we went to was leagues superior to my home institution's in terms of their equipment. The staff chefs could have been better trained. Conversation at dinner was nice. We met a few of the professors in the college and also some of the grad students. The professors spoke of their current work and the facilities they operate out of. The college students spoke with us somewhat candidly after the professors began to leave. They talked of their experiences as grad students, which sounded pretty typical. Overall, they were friendly and thoughtful. The next day, we got to listen to a couple talks, meet with the physics staff, and tour the facilities. The talk during the Women And Minorities in the Physical Sciences was particularly interesting, and since it came from a grad student rather than a grizzled veteran of the field, it was relatively easy to follow. Although the organization was noticeably underpopulated in both white women

and minorities, it was nice to see how many people care about the issues we face. There was one professor who seemed enthralled that we came to visit, there was another who was so excited about his work, he gave me a private tour of the lab. There were two others postdocs who gave the impression they had never entertained potential grad students before and were inadequately prepared for the visit. My tour felt empty and rushed, as if it were more of a chore than something the guide was excited about. A common theme amongst grad students, including the ones I met during this trip, is that you want to get along well with the people you'll be spending the next 5-6 years with, and that you want to feel comfortable with the professor who will become your advisor. I'm glad I was able to have the opportunity to visit Michigan State University.

MSU Trip

Our trip to Michigan State University was an exceptional learning experience. I loved the opportunity I got to interact with the engineering graduate students and also learn about what the physics department was working on as well. I learned a lot about the projects the graduate students were working on, got to tour the labs they were working in, and got to see the passion they had for their work. Being able to speak directly to the graduate students was very inspiring, because despite all of the long and strenuous things I've heard about graduate school, they seemed to be enjoying themselves and making the most of their experience. They shared the importance of looking into which professor suits me best as a student, and the significance of taking time to relax and work on my own mental health with the saying "A happy researcher is a good researcher". I loved the atmosphere at Michigan State, the dorm rooms were spacious, the food options were plentiful and delicious, the city was not too busy and I had great interactions with most people, and everything was within walking distance if I chose to do so.

The only problems I had about the visit would be the confusion about the ride to the airport. This in itself not being too big of a setback, just led to the complications of having to pay a ridiculous fee for parking at the airport terminal. I would have also liked to have all of the information sessions expanded to 2 days instead of one, so that we were not overwhelmed with information and that we could get the opportunity to explore more of the campus after our informational sessions. Overall I think the experience was worthwhile, and it would be a great opportunity for other students.

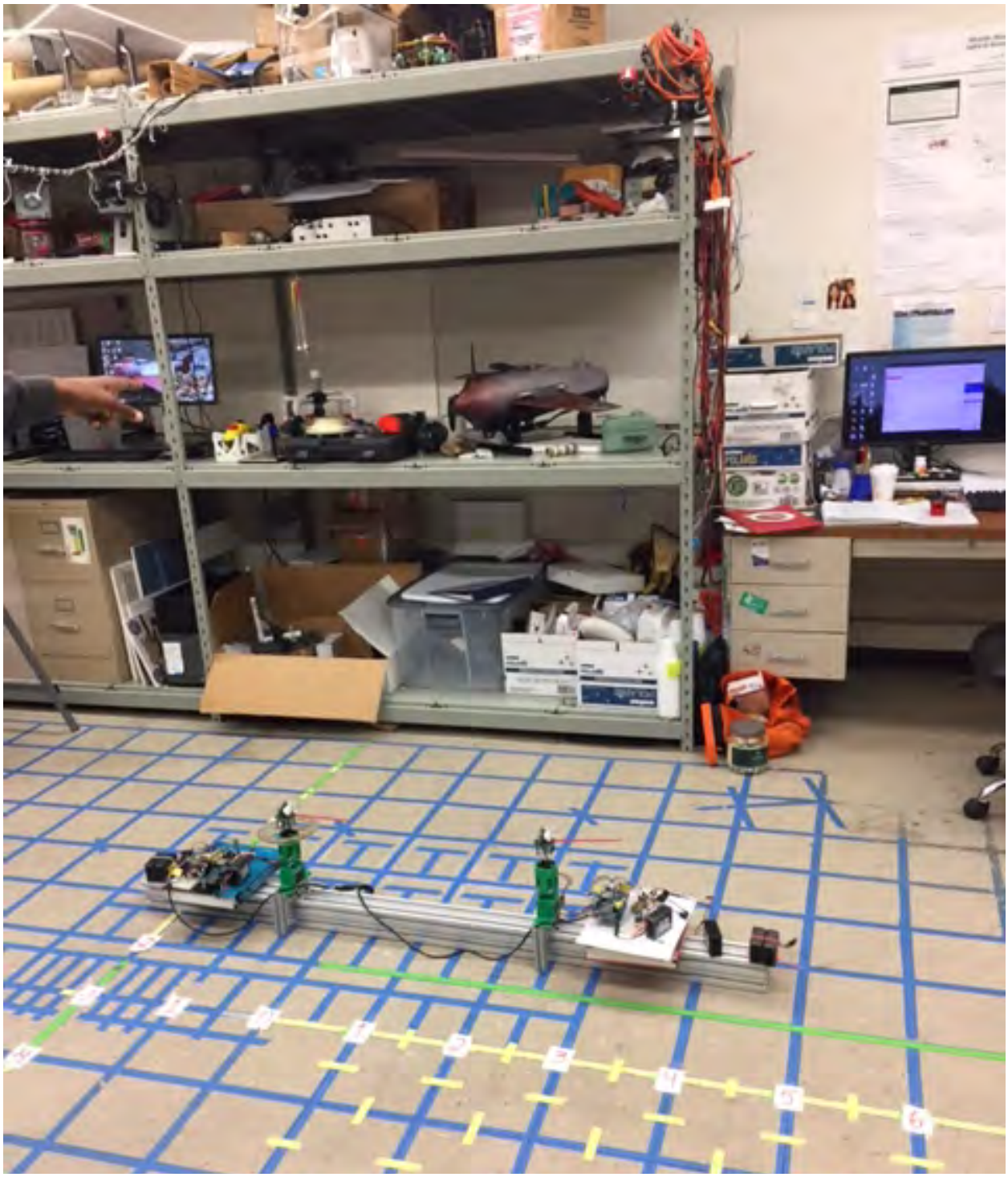
My current financial aid status is that I have a partial merit scholarship, however I still have a remaining balance of about $20,000 per year.

My experience at MSU was very informative, prior to this trip I never knew what grad students did exactly, and what requirements needed to be completed in order to get a doctorates degree. I was able to go on a tour of the National Superconducting Cyclotron Laboratory, this was a really valuable experience and one of the coolest things I have seen in my life, I like that grad students are constantly contributing to society, that's one of the most intriguing parts about possibly studying at MSU, when doing research you are able to be a part of discovering new ions that were made from accelerating charged particle, all of which happen daily in this facility.

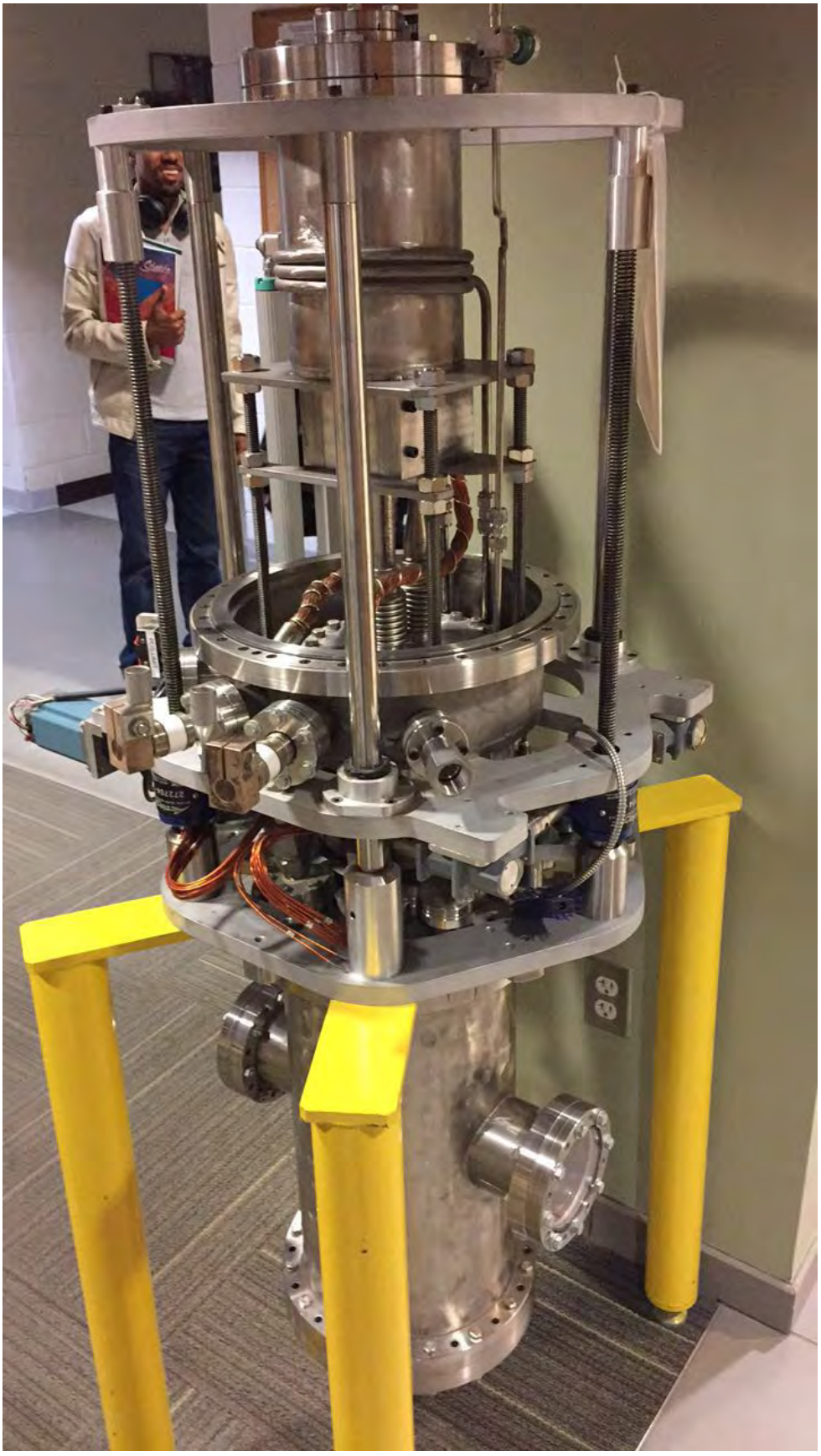
I was able to tour the underwater robotics and optics labs. All the grad students seemed to be satisfied with the research they were doing. I know grad school is rigorous so it was reassuring to see everybody so happy and contempt. Coming from an HBCU I wasn't really sure what to expect, but I would feel really comfortable with my decision if I chose to pursue grad school there. Their PhD Professors are top notch scientist that hold significant weight in the scientific community.

The campus is located in East Lansing, it sits on 10,000 acres and has 50,000 students. At a university of such size I was initially worried about being just another number, but the grad students I had the opportunity to talk to, assured me that at this school as a grad student I would be receiving a lot of support and mentorship from the Engineering Department. Other than the city of Lansing (which looked similar to a countryside), I didn't find any thing I didn't like at this school.

Kynton Barnes



Kynton Barnes



Kynton Barnes

Noel A. Jackson

October 25, 2017

Michigan State University Visit Reflection

On October 19th through the 21st of 2017, Dr. Gueye took me and 5 other students to Michigan State University to look at their graduate school programs within the department of physics and astronomy. Being a biology major, I did not know what to expect from this trip. However, in reflecting on my interactions with graduate students and PIs, I can say that this trip has given me great insight into graduate school at MSU and other schools.

After arriving to MSU Thursday, we walked around until 6pm. At that time, we had dinner with some grad students and PIs. Friday, we had speakers in the morning, spent lunch with grad students, had one-on-one conversations with PIs, and were able to bowl with the graduate students. My favorite part of this program was the one-on-one conversations. For 30 minutes, I was able to talk with a scientist to discuss their research, as well as explain my research interest. Focusing mainly on biological research and studies, I am not well-versed in all the physics concepts. However, during these sessions, I was able to ask questions, get clarification and event propose my own ideas.

This trip has further revealed to me the necessity of being an interdisciplinary scientist. There was so much collaboration within the physics graduate program from computer science to engineering to biology. This trip also furthered my interest in Michigan State for graduate school studies. One thing that stood out to me was the happiness of the students and the openness of the professors. Everyone was so helpful, and encouraging. The grad students also have many support groups to help matriculation through grad school more collaborative and feasible.

I love Michigan's campus as well. It was surprisingly warm. The campus was so big, we did not even get to walk across it all. Also, the ice cream was phenomenal. The fact that they make their own dairy products is amazing. It reminds me of Hampton in that they also have traditions that they stick by even today.

Overall, this trip has me looking forward to graduate school and research. The current research and ideas has definitely inspired me to work hard in classes in order to enter grad school successfully after my senior year. Although my interest is not specifically physics, I know that I will be able to apply the principles of physical science to my research in my future studies and career.