**Adopt a Physicist and Guest Speaker in October, 2018:**

**This year we combined the Adopt a Physicist Program with career exploration in our physics classes. Each student was able to choose one of five physicists in to follow for a three-week period to learn about the education, job, work duties, career path, job pluses and minuses, etc. They could choose from a medical engineer, an astronomer, as medical x-ray technologist, a computer/network designer, and a particle physicist. The students did blogs with the physicist 3 times per week with another student that choose the same person. At the end of 3 weeks, the students did a whiteboard presentation sharing what they had learned about their physicist.**

 **We then brought in a guest speaker from UW-Stout to share possible career choices in the UW system related to physics. Many careers were shared along with the educational path to do that job.**

 **The students really enjoyed learning about the various career options, interacting with the physicists, and the overall project.**

**Below is my welcome email with class expectations, student interaction samples, and the follow up email.**

**From:** Lange, Christine
**Sent:** Friday, October 5, 2018 11:57 AM
**To:** 'barblilieholm@gmail.com' <barblilieholm@gmail.com>; 'boj@fnal.gov' <boj@fnal.gov>; 'Dennis.Abramsohn@HP.com' <Dennis.Abramsohn@HP.com>; 'irenez618@gmail.com' <irenez618@gmail.com>; 'lurban@ifa.hawaii.edu' <lurban@ifa.hawaii.edu>
**Subject:** Adopt-a-Physicist 2018

Dear Adopted Physicists,

Thank you so much for taking the time to teach my physics students about possible STEM career choices, post-secondary options, and pathways to get to their dream job.

My name is Christine Lange and I am a physics and chemistry teacher in Eau Claire, Wisconsin.   This my colleague Joel Robaidek, who is a physics and AP physics C teacher, and I make up the physics department.  We both find this program very valuable for our students.

Eau Claire is located in West Central Wisconsin, about 90 mile east of the Twin Cities in Minnesota.  Memorial is one of two high schools and we have about 1739 students attending.  We are a fairly low minority school-only 14%.  We have about 30% of our students on free or reduced lunch.  Our school is focused on encouraging students to take advantage of post-secondary opportunities and have a large number of Advance Placement, Project Lead the Way, and transcripted courses through our local technical college.  Most students graduate with post-secondary credits in hand.

The class you will be working with is my seventh hour physics class.  I have 20 students-7 girls and 13 boys.  They are a junior and senior level mix.  This is an elective class.

The reason that I want to be a part of this program is what happens after students graduate.  Many go off the post-secondary and “life” happens.  Their chosen career path doesn’t work out, money gets tight, a class or two sets them back, and they flounder.  **About ½ of our students will start in one program and when it doesn’t go smoothly-stop going school.**  **Hearing about how majors changed, jobs changed, roles changed, life events occurred and you have succeeded to forge ahead is important.  Hearing how physics and science helps you help others is important.**

**Expectations** My students will be grouped and email you in teams.  This will happen a minimum of two times per week.  I will make sure they read the threads to avoid repetitive questions.  At the end of the three weeks each group will have to do a presentation on their adopted scientist to the rest of the class.

Thank you for doing this program,

Christine Lange

Eau Claire Memorial High School

**STUDENT SAMPLES**

Forum: Adopt-a-Physicist Fall 2018 Forum

Thread: Laurie Chu

Title: Re: Introduction

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Hi Ava and Josh!

Nice to meet you, I look forward to answering some of your questions and getting to know you as well!

I had a few things that got me interested in astronomy and physics. First was my older sister, when I was in the second grade, she was learning about astronomy in her class and she shared with me about black holes. I thought it was the coolest thing and that's when my interest in astronomy began as I checked out all sorts of books from the library on astronomy. She really helped me find my interest.

Later on, in my senior year of high school I was starting to think about actually pursuing astronomy as a major and knew that it would involve a lot of physics courses. I took AP physics and it was tough at times, I remember getting grades on tests that I wasn't proud of and I started debating whether I should even do physics in college. My high school teacher was this elderly British woman who was so smart and engaging and I remember her telling me that sometimes it will be hard doing physics, and as a woman it will be very easy to doubt yourself and abilities. But she told me not to give in to the doubt and believe in myself. She was right, there were definitely times I thought maybe I wasn't doing the right thing, but I pushed through and thought of her confidence in me and I kept going.

Around the same time I had a subscription to Astronomy magazine, and articles in there were kind of a role model as it showed what actual astronomers a physicists were working on, and that there is still plenty of research to be done. I also thought Stephen Hawking was pretty cool!!

It is very important to have role models, to help inspire you to follow your dreams and show you that you can do great things! Who are some of your role models and why??

~Laurie

Bo Jayatilaka responded to Memorial High School's post ('Logistics') with the following comment on Oct 10, 2018 at 9:08 AM EST

Forum: Adopt-a-Physicist Fall 2018 Forum

Thread: Bo Jayatilaka

Title: Re: Logistics

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Hey Zak, Big Nol', Young Dunc' (y'all could use a good collective name too),

Working at Fermilab, like at most academic research institutions, has quite a bit of flexibility. I tend to spend long hours on many days but entirely because I choose to, while on some days I get to work from home (this confuses my cats because they aren't sure whether they should just sleep like they do when no one is at home or bug me). There's also a fair bit of travel involved, particularly in my case because my scientific research is not at Fermilab, but at CERN which is in Switzerland. I find that I'm away from home for something related to work about once every two months (last week I was in Budapest, Hungary, for a meeting of the collaboration I'm part of).

In terms of projects I've worked on, the most complicated and fascinating is probably the experiment I'm currently part of, CMS, which detects collisions of the Large Hadron Collider (LHC) at CERN. To give a sense of scale, it's the size of a 3 story building and weighs more than the Eiffel tower (over 10,000 tons) and yet is designed to detect the absolute smallest particles we know of in the universe. My particular focus has been trying to detect any trace of particles that might be making up what we refer to as "dark matter," the bulk of matter in the universe that we know nothing about beyond the fact that it exists. Dark matter has always fascinated me because it's something that scientists have known exists (going back to before I was born) but we literally know nothing about what it's made out of.

Forum: Adopt-a-Physicist Fall 2018 Forum

Thread: Irene Zawisza

Title: Re: Education

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Hi Adam,

I was accepted at Georgia Tech for radiological engineering PHD, so I probably would have gone there. If I didn't do that then I would have tried for a medical physics assistant position for a year and then reapplied to residency programs.

When I was in the process of applying for residencies, they opened up a program called the medical physics residency application (MP RAP). In doing this you filled out a generic application and then selected the residency programs you were interested in. If they were interested in you they would have you come for interviews. At the end of this process you rank the residencies in the order which you wanted to attend and they ranked candidates in the order they wanted to have them. The system uses an algorithm to optimally match candidates to programs. If you are matched you have to accept the position, otherwise you forgo being allowed to apply again.

It is a pretty cool system, but kind of scary not knowing whether you will get placed or not. I had several friends whom didn't get placed and they were left to find positions doing things that weren't necessarily part of the plan. Eventually it all works out.

**Final Letter**

Dear Adopted Physicists,

Thank you for taking the time to share information about your backgrounds, education, job responsibilities, insights into potential career paths, PowerPoints, Videos, personal stories, etc.  My students are currently compiling whiteboard presentations  with highlights of what they have learned from you and stories that they want to share.  As I speak with the groups of students, the one facet that they want to convey the most is how approachable, friendly, and extraordinary you all were.  Their perceptions of physicists, the work they do, and how you help mankind/the world/universe has been inspiring. On Friday, we brought in a physicist from the local university to talk about career paths locally in the state of WI. Your influence was obvious with the high level of questioning our guest speaker received.  The global vs local insight, the local college vs out of state undergrad and graduate programs, the insight into internships, coops, on the job training, and the high level data analysis required by all jobs was truly insightful.

Thank you so much for all that you have done,

Christine Lange