



NEW JERSEY CENTER
FOR TEACHING & LEARNING

NJCTL and Bayer USA Foundation Success Stories

A sample of notes, photos and letters from teachers receiving professional development from NJCTL through the generosity of the Bayer USA Foundation.

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PSI-PMI

Closing the Achievement Gap in Math and Science

The background image shows a person's back as they look at a chalkboard covered in mathematical equations and diagrams. The equations include trigonometric identities like $\sin(\frac{\alpha}{2}) = \pm \frac{1 - \cos \alpha}{2}$, $\sin(-\alpha) = -\sin \alpha$, $\cos(-\alpha) = \cos \alpha$, and $\tan \frac{\alpha}{2} = \pm \frac{1 - \cos \alpha}{1 + \cos \alpha} = \frac{\sin \alpha}{1 + \cos \alpha}$. There are also binomial expansions and geometric formulas like $V = Lwh$ and $S.A. = 2Lh$.

2017 and 2018 Scholarship Recipients

Say Thank You to Bayer USA Foundation

Background: NJCTL was granted \$150,000 over two years, 2017 and 2018, to expand its very successful work in improving student outcomes in science and mathematics; by providing matching funds to NJ urban districts, building on current and prior efforts funded by Bayer, NJEA, NEA and private foundations, to help underrepresented minorities and students in poverty.

Based on the success of a 2017 scholarship program, NJCTL used the \$75,000 from the Bayer USA Foundation for 2018 to offer 15 partial scholarships to current NJ teachers to enroll in NJCTL's physics or chemistry endorsement programs. By offering partial scholarships from Bayer, and other foundations, NJCTL's endorsement program has seen dramatic growth in the number of teachers seeking a physics or chemistry endorsement. This year, more than 100 NJ teachers have enrolled to earn an additional endorsement in physics, chemistry or mathematics, nearly triple our best year's enrollment. This new cohort of teachers are more female (69% vs. 48%) and Black or Hispanic (17% vs. 7%) than current NJ teachers of these subjects. These teachers are also more likely to teach in districts with larger population percentages of Black and Hispanic students (61% versus 43%).

Below are some letters received at NJCTL from scholarship recipient who wanted to convey their experience, and their thanks, to Bayer USA.

Alyssa Beres – Chemistry Endorsement

Dear Bayer USA Foundation,

My name is Alyssa Beres. I was one of the recipients of the scholarship for the PSI Chemistry Endorsement program. This program has helped me in so many ways. I love teaching chemistry. I have the opportunity to teach kids a subject that I thoroughly enjoy while pushing them to become better students with the PSI Chemistry Program.

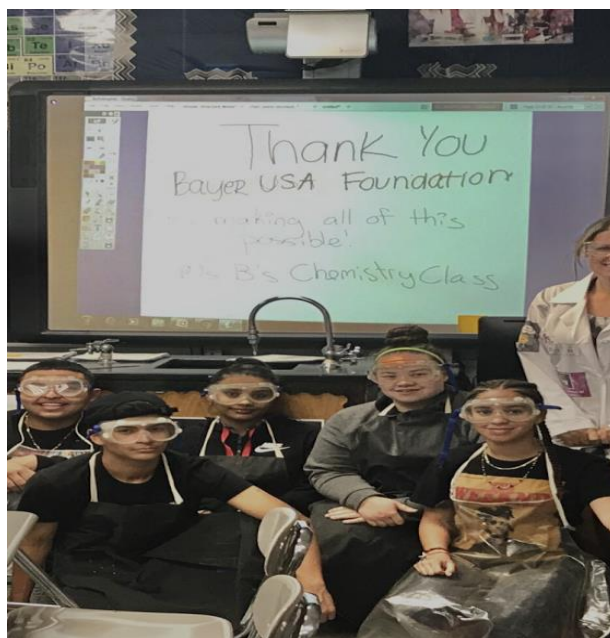
I majored in Biology in college, and although I had a small background in chemistry, it would have been financially impossible to go back to school to get my chemistry degree for my endorsement. I also run a horse boarding and training program on top of teaching, so going back to school at night would not be a possible option. One of the things that pushed me to want the chemistry endorsement is that most science teachers are biology certified. This makes me "common" credential wise. With budget cuts, it is much easier to find a new biology teacher later on than a chemistry teacher. This program has also allowed me to become more marketable to my school.

I now can teach chemistry and biology, putting me in high demand of the school district. I never would have been able to afford this program without the generous scholarship given by Bayer. I am so beyond thankful for the opportunity you have given me. I love the subject and I am so lucky I am able to bring that same love and excitement to my students every day. My students enjoy the challenging problems from the program and they love being able to work together to achieve the correct answers. Attached to this email are a few thank you notes that my student wrote, as well as a picture of my chemistry class around the smart board.

Thank you again,

Sincerely,

Alyssa Beres



Class of Alyssa Beres

Megan Petrillo – Physics Endorsement

Dear Bayer USA Foundation,

My name is Megan Petrillo and I was one of the recipients of the scholarship for the PSI Physics Endorsement program. This program has challenged me, encouraged me, and overall made me a better educator. I truly enjoy teaching physics and love being able to challenge my students and help them realize their full potential through this program.

I graduated college with a Bachelor's degree in Biology. When I first became a teacher, I taught middle school science and then made the transition to high school. After three years of teaching high school biology, I was asked to also teach a STEM course. Not having a strong background in STEM, I was able to further my education through the PSI Physics program to help accommodate the STEM curriculum and revamp the current Physics curriculum. Furthermore, I am able to provide a high-quality physics education to students in a low income district. Overall, this program has made me well rounded as a science teacher and given me the opportunity of a lifetime. I have some physics credits from college, but I would need a minimum of twenty-two more through an accredited university to be eligible to teach Physics. Through PSI I am able to become certified at a discounted rate and at my own pace. This program has allowed me to work from home to learn the material, while still being able to teach and coach full time.

After completing this program, I will be able to teach Biology, Physics, and STEM, putting me in a great position in my district. It is because of your foundation that I was even able to fathom the idea of going back to school and getting certified in physics. This experience has been extremely rewarding to myself and my district. I am able to watch students grow as learners, self-motivators, independent critical thinkers and become more dynamic in their education. I have been able to revamp the physics curriculum in the district to help our school compete with surrounding schools and allow students to be more competitive within school, when applying to colleges, and eventually in the work force. I want to express my sincere gratitude. What you do and have done for teachers like me does not go unnoticed. My students and I are extremely grateful for this opportunity, and we cannot wait to give back.

Attached is a picture of my students working hard on their Dynamics Unit. As you can see the students are following the PSI guidelines, working in groups, and using technology to give genuine feedback of their understanding of the content. The students love being able to help each other out, and I am able to facilitate their learning and understanding throughout class because of the PSI model.

Sincerely,
Megan Petrillo



Christina Guido – Physics Endorsement

I would just like to take a moment to give a heartfelt thank you to both the Bayer Foundation and to NJCTL for giving me the opportunity to participate in the Physics Endorsement program. I must admit I was a little nervous doing physics online, but NJCTL is always available for support and help when I needed it. The program not only is a great chance for my students to advance both scientifically and mathematically, but for me also. I feel like I have learned a lot and am looking forward to this fall when I can share this with my students. I hope that the Bayer Foundation and NJCTL continue to work together in the future to be able to offer this great program to more teachers.

Christina Guido
Mathematics Teacher
Grace A. Dunn Middle School

Tenzin Jigmey - Physics

I would like to thank you for awarding me the Bayer USA Foundation scholarship to attend this amazing NJCTL Physic program. Thank you is not enough, so maybe explaining some of my experience would show how much I have to be thankful for. The NJCTL Physic program itself offered great learning experiences especially broadened my horizons and gave me a number of very useful ideas for my teaching practice as well as research ideas one of which may be a joint work with the science teacher from our districts. I also was very impressed by the organization that went into preparing Physic method so thoroughly. I have been supported by Physic team since I joint the program.

Tenzin Jigmey
Ferris high school
Jersey City

Charisse Miglis – Physics Endorsement

Dear Bayer Foundation of USA,

I am writing to thank you for your very generous scholarship to New Jersey Center for Teaching and Learning to pursue the program courses for an endorsement in Physics. By awarding me the Bayer grant scholarship at NJCTL and completing the program opens another opportunity to teach a different avenue of science other than Biology. I love all the professional community of people at NJCTL. NJCTL is one of the best online educational learning I have ever encounter! I have learned so much more than the subject of Physics as well as teaching methods and build on my teaching skills. Both the Administrative Staff and Team of Professional Instructors are very supportive and encouraging throughout the process. I am looking forward to teaching Physics with mathematics, algebra coupled with Steam Lab experiences to eight-graders in September at Kilmer Middle School from the Trenton School district

Once again, thank you for this amazing opportunity, the Bayer Foundation Scholarship made a difference in my life but **together** we will make a significant difference that will impact the future generations.

The gift that will keep on giving,

Charisse Miglis



Class of Charisse Miglis

Meredith Pressler – Chemistry

Dear Bayer Scholarship Fund,

THANK YOU!!! There's no other way to say it better! THANK YOU FOR THE FINANCIAL SUPPORT FOR MY ENDORSEMENT IN CHEMISTRY!! What a difference it will make in the lives of my high school students in Newark!

I work teaching special education, pull out science. I have been grandfathered into this subject area. Currently, I am the only special education science teacher in our district. However, I do not have any type of degree in science. I have a master's degree in special education and I've been teaching science at a high school in Newark, to students with dyslexia, dysgraphia, dyscalculia, autism, pervasive personality disorders, ADD and ADHD. It is for my students that I wanted to do this endorsement.

My students deserve to have a teacher who is strong in the foundation in which she is teaching. Financially speaking, going back to school was going to be a very slow and challenging process for me as I am a single mom of two children. When this opportunity presented itself, I crossed my fingers, wrote on behalf of my students and how it would impact their lives and I have been so grateful for this opportunity ever since.

I have learned many things already in my teaching methods course that I actively use in my classroom. I often suggest and pass along info I have learned to my colleagues. For example, I no longer grade homework. Homework is for practice! Which has really changed how my students look at what they do at home. They need to practice at home to achieve in the classroom. They have seen how if they do not practice their work at home, how it affects their performance on tests or performance assessments. The teaching methods course taught me how to best use formative assessments and how it will change and guide my instruction in the classroom moment to moment. I've also introduced social construct in my room-- more specifically the strategy of "ASK THREE BEFORE YOU ASK ME!" works brilliantly! Students have to ask 3 other students in the room to help or answer a question for them before they can approach me.

The teachers and program supervisors at NJCTL have been amazing and supportive. The modules are laid out and are easy to follow and understand and submitting work for grading has been a breeze. I feel so lucky and grateful for this opportunity to work at my own pace in a program that I have already learned so much from. This program is a career changer for me. It will set me apart from all of the other chemistry teachers (and other teachers!) in my district.

Thank you again!

Meredith Pressler

Teacher of Special Education Bio, Chem and Phys.

Essex County Schools of Technology

Payne Tech Campus, Newark NJ

Samuel Lebreault – Physics Endorsement

Dear *Bayer* USA Foundation,

I am writing to thank you for your generous \$5000.00 *Bayer* USA Foundation Scholarship. I am very happy and deeply appreciative of your support.

I have almost completed the two initial courses required to begin teaching physics, the first on teaching methods and the second on algebra-based physics. This year will be very challenging as I will be teaching three levels of physics and one biology class. Through the help of the staff and instructors at NJCTL, I am sure I will have all the support I need to be an effective teacher of physics.

By using the NJCTL PSI-PMI framework in conjunction with my school's curriculum, my lessons will have a dramatic impact on the students as they will learn physics in a wholistic way. I will be able to obtain data from my students on the fly which will inform my actions. The students will be well prepared for standardized tests such as the advanced placement physics assessments.

Thank you again for your generosity and support. I promise you I will work very hard and eventually give something back to others, both as a teacher and possibly a scholarship to future students like myself.

Sincerely,

Samuel Lebreault

Stacy McCoy – Physics Endorsement

Thank you Bayer USA Foundation for providing funding to pursue the Physics program through NJCTL. Without this funding it would have been very challenging to do so. I am very grateful to be doing the physics program through NJCTL as they use a holistic approach that benefits both teacher and students. The lessons provided as opened my eyes to other methods of teaching and use of more effective strategies to connect with students so they can succeed.

Early in the program, I learned the benefits of allowing students to retake assessments. In so doing, students are given another opportunity to re-learn the material and excel at it. I introduce this concept to my students in the latter part of the school year (2017-2018) and surprisingly they gravitated towards it. Not only students who may have done poorly the first time wanted to do a retake but also students who passed an assignment with a B also wanted to do a retake to attain a better grade. Using this method students were more inclined to do their best work. Another method that was introduced was the use of homework quizzes. After explaining to students the use of homework quizzes to assess what they know and for grouping purposes, I noticed a mark improvement in homework submission. Students were able to self-assess themselves and see what they need to know and how to attain their learning goals. My students welcomed the approach! In addition, I have learned more about creating a socially constructive classroom, which benefits students in developing their critical and problem solving skills through collaboration.

Another benefit is that by completing this program my school will have another certified physics teacher so we can offer AP physics to more students. Above all, the NJCTL faculty is very accessible and supportive of our needs so that we can succeed. They truly model for us what we will do in our classroom.

The NJCTL program is a win-win program for both teacher and students. Thank you Bayer USA for your support to fill a dire need of certified physics teachers in our school communities.

Very grateful candidate

Stacey McKoy

Reflections of 2018 Scholarship Recipients

After Completing the First Course in their Endorsement Program

Christina Guido

Overall, even though none of these concepts is totally new to me, the way that they have been presented and explained throughout this course made me realize what a powerful weapon they can be in my teaching arsenal. And, quite frankly, I am looking forward to incorporating these ideas into my classroom next year when I start my first physics class. To be sure, I am very excited to be working with NJCTL and receiving assistance along the way until I feel more comfortable using these methods on my own.

Heather Suzel

I had never heard of NJCTL before I began this course. I was unfamiliar with the program and had received very little Professional Development or training that conformed with the NJCTL method. From the day I began Module 1, I have become more and more excited about the prospects of teaching Physics using the NJCTL method. The philosophy outlined in that first module matches my personal philosophy of extending opportunities (and deadlines) for students. I have always agreed with "better late than never" in respect to students turning in work. I would rather them do it later than not at all, and subsequently never gain the benefits intended by the assignment. I had always allowed students to retake tests, but their final scores were a composite of the two attempts, and there were never more than two. After reading the rationale for allowing unlimited retakes and only reporting the highest grade, I realized how much sense that makes, and questioned why schools are traditionally opposed to operating that way.

Tenzin Jigme

Thank you very much, Professor Melissa. I can truthfully say that out of all the MET class that I have engaged I learned the most in this one. In the past, it was a matter of just going through the gestures, but the way this course was run and the way the additional materials were provided online and beyond just reading the research articles, made things more transparent and more refreshing for me to understand. I feel like I "know" how to run class better and managed. Thank you again I enjoyed this online class. I thought the number of materials was just right. It provides me with tools that enable you to be objective, considerate, and a careful in your daily classroom activities. It requires you to think through the numbers, see beyond the obvious.