

Feedback from recipients of \$2000 scholarships in the Arizona High Quality Teacher Professional Development Pilot Program (SB 1038, passed in 2017).

These teachers' scholarships were to prepare to become certified in physics, or to work toward becoming credentialed to teach dual enrollment physics or chemistry, which requires 18 graduate credits in physics or chemistry, respectively.

Background: alarmed by the fact that in 2016 only 159 physics-certified teachers were actually teaching physics in Arizona, a group of Phoenix physics teachers asked the Arizona legislature to help. New college graduates are not a solution, for they are scarce: Arizona's three universities produce only a half-dozen new physics teachers yearly (but 60 to 70 new biology teachers). Already-certified teachers in other subjects are a promising solution, so the Arizona Senate developed a bill, SB 1038, for teachers to add a credential or certification in a STEM subject. Details and resources are at [http://modeling.asu.edu/AZ/\\$2000scholarships-retrainSTEM.htm](http://modeling.asu.edu/AZ/$2000scholarships-retrainSTEM.htm) .

Jan. 15, 2019

From Eileen Gratkins, a 25-year veteran middle school teacher in Mesa Public Schools. She minored in physics in college, so when the physics teacher at Red Mountain High School retired three years ago, she began teaching physics there. Her \$2000 scholarship is to work toward being credentialed to teach dual enrollment (DE) physics.

The \$2000 scholarship "allowed me to earn 3 graduate credit hours in physics, putting me that much closer to the 18 graduate credits needed for full dual enrollment certification. I'm presently certified under the 24-credit hour rule (combined undergraduate and graduate hours) but that rule expires in 2020. I still have two graduate classes to go, which I'll do in summer 2019 and 2020 respectively. I wish there was more scholarship money available. At Red Mountain we teach all of our physics as DE and even though I'm highly qualified in physics, we would have students missing out on the opportunity to earn college credit without my being DE certified. We need more money!"

Jan. 16, 2019

From Charles Martel, a 10-year biology and chemistry teacher at Tolleson Union High School District, a high-poverty district. His degree is in microbiology. His physics teacher will retire soon, and Charles wants to take his place.

The \$2000 scholarship "helped me find a passion for physics I didn't know was there. It allowed me to take an ASU workshop on Modeling Instruction that opened up my eyes to a new way of teaching. It has inspired me to pursue an advanced degree in science to give myself a stronger background in physics and chemistry. It has inspired me to a journey of awareness and active engagement of realizing the issues with science education in our state. I have met a lot of great people and am personally trying to persuade as many colleagues as I can to take a look at this amazing way of teaching science." [*the interdisciplinary ASU Master of Natural Science degree in physics]*

Jan. 16, 2019

From Jesse Ruiz, a recent graduate of ASU. He has taught physics for three years at a Title I (high poverty) high school in Mesa Public Schools. He is paying off huge student loans. His

\$2000 scholarship enabled him to become credentialed to teach dual enrollment physics by earning 18 graduate credits in physics, in the interdisciplinary ASU Master of Natural Science degree in physics.

*“As a high school instructor wanting more opportunities to grow and enrich our practice, we have to take more classes and further our own education. Since money isn't the reason we get into the field, it is a huge help for us to receive financial aid when it comes to advancing fields by taking more classes and possibly working towards another degree. **Having the scholarships that help support us mean the world to us as instructors.** Having the support from anywhere we can get it is always very appreciated. Thank you for whatever help and assistance you can do to help support local public school educators.”*

Jan. 16, 2019

From Debbie Nipar, a long-time chemistry teacher in Chandler USD. She is an Arizona finalist for the Presidential Award for Excellence in Math and Science Teaching. She was awarded the \$2000 scholarship to qualify to teach dual enrollment chemistry. This semester, in addition to teaching dual enrollment chemistry at her high school, she is also teaching chemistry in the evening as adjunct faculty for MCCD. Thus her \$2000 scholarship has a double effect -- preparing even MORE Arizonans to be in the future STEM workforce!

“The \$2000 scholarship allowed me to take a thermodynamics [Modeling Instruction] class at ASU that I would otherwise not have been able to afford. The material was presented at very high level and greatly improved my knowledge of chemistry, which will in turn help me improve my students' understanding of chemistry.”

Jan. 17, 2019

From Jennifer Manlick, a biology teacher (and recently environmental science also) at Phoenix Union High School District. She was a pre-dental major in college, years ago.

The \$2000 scholarship *“has allowed me to prepare to become certified in Physics and to begin teaching Physics (one section or prep) this school year (2018-2019). I plan to take the certification exam this summer (2019) to teach more sections of Physics.*

Through the stipend, I've also taken Physics 1 and 2 at Rio Salado last school year 2017-2018 to refresh and review my Physics knowledge to better teach Physics this school year and prepare for the certification exam. Lastly, the stipend has also allowed me to take the summer mechanics modeling course at ASU to learn the methodologies of teaching physics using modeling, and I plan to take a few more.”

Jan. 18, 2019

From Celeste Lucier, a long-time middle school teacher at the charter school in Kingman: Kingman Academy.

“Had I not received this \$2000 scholarship, I would not be taking any of these classes. ... I am in my 19th year of teaching with a Masters degree in Elementary Education, and I am still paying off my student loans. I know I would not have made the move from teaching middle school science to high school science without this. Thanks to the scholarship, the classes I have been taking, specifically the ASU Modeling Instruction classes, have given me the content knowledge, the tools and confidence to teach physics.”

Jan. 22, 2019

From Garald DeGrow, an experienced physical science teacher in Chandler USD. His \$2000 scholarship is helping him prepare to become certified in physics, and his bigger credential goal is to earn 18 graduate credits in physics needed to qualify him to teach dual enrollment physics.

“The \$2000 scholarship allowed me to continue to hone my skills as an educator so that I may better teach my students, and thus, the future. This money is an investment in me, and for that, I thank you. It is, however, an investment in my students as well. See, the more I get help in improving my knowledge base, the more I can use the most current and effective strategies in my class. I only wish that I could continue to receive the money so that I can guarantee that I am able to finish the master’s degree I am pursuing and begin teaching dual enrollment classes and helping those students as well. In short, thank you for helping me to become the best professional I can be.”* [*the interdisciplinary ASU Master of Natural Science degree in physics]