

### Testimony of Warren H Ziegler, Ph.D. in favor of LD 1458

Thank you for this opportunity to speak in favor of LD 1458, A bill to increase funding for the Maine School of Science and Mathematics. My name is Warren Ziegler, I am a researcher and Space Technologist at the University of Southern Maine. Our group at USM working in conjunction with the University of Maine has built the first ever satellite from the State of Maine MESAT-1, which will be launched into orbit later this summer.

I have come to give my personal perspective on the value proposition of a STEM high school education. Supporting MSSM is an investment in the future that will pay tenfold to one-hundred-fold dividends. I am a graduate of a STEM high school, Brooklyn Technical High School. Brooklyn Tech is a STEM magnet school, the students must take a standardized test to get in, only about 8% of the students who apply are accepted. Tech graduates include Noble laureates, astronauts, CEOs, authors, Olympic and professional athletes, politicians, doctors, lawyers, ministers etc. The first concrete proof of the Big Bang theory, the cosmic background radiation was discovered by Tech graduate Arno Penzias who was awarded the Nobel prize in Physics. If you have ever used a GPS, you can thank Richard Schwartz, a Tech graduate. Tech was not a finishing school for the children of wealthy parents, Tech students are all from the working class, sons and daughters of day laborers, waitresses, firemen, police etc. My father's education only went as far as the eighth grade, and he worked on the Staten Island Ferry; my mom worked part time cleaning a dentist's office after hours to help support the family. Attending Brooklyn Tech was a turning point in my life, I eventually earned a PH.D. in a branch of mathematical physics that allowed me to work for NASA on the first mars lander and for Lockheed on the aerodynamics of the early stealth fighter planes.

Three weeks ago, I attended an open house and reunion at Tech. I was stunned by the quantity and quality of their labs and facilities. The labs and facilities were world-class, such that any university or fortune 500 company would be glad to have. At the reception after the open house, I sat down with the Principal, David Newman and asked him how he was able to equip the school with these advanced facilities. David told me that it was all due to alumni contributions, that over the years Tech alumni have contributed tens of millions of dollars to the school that allowed them to provide the students with the best possible laboratories and equipment. The teacher's salaries, building maintenance etc. are paid for with public money but the rest is all due to the generosity of Tech's many successful alumni. Through my eyes MSSM looks like a fledgling Brooklyn Tech. If we nurture MSSM now we will reap dividends in the future.

What we are asking for is what the venture capitalists would call seed money, I believe that by investing in and growing MSSM now we will be creating the highly educated leaders of tomorrow. I work with several Maine based high tech companies and start-ups, there is a critical need for good graduates in the STEM fields. As a State we can encourage young people to stay in Maine if we can provide a pipeline from high school to university to the work.

I encouraged my daughter to go to MSSM because I saw it is a unique opportunity for her to learn from the best students and teachers. From personal experience, I can say that you will not find harder working teachers, staff, or students than those at MSSM. For example, I know of one extremely dedicated teacher who despite severe health and housing challenges has persisted in giving her all. My daughter admits that though this teacher is strict and uncompromising, she has never learned more. There are many competing and worthy demands for public money, but I can guarantee that MSSM will not waste a penny. I believe that requiring the parents to pay \$10,000/ year for room and board is an

obstacle for many families. One wonders what might have happened if Brooklyn Tech had to charge a fee, perhaps there would be no GPS or it might have been developed later in Russia or China.

Thank you for your time and consideration of LD 1458.