

Convocation Address
Oklahoma School of Science and Mathematics
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To the students of the class of 2026, I welcome you to the Oklahoma School of Science and Mathematics, a place I once called home. I congratulate each of you on earning your place at this unique institution. During my convocation, we were told that OSSM had received over 1100 applications for the 76 places in our class. I know all too well the hours you have spent distinguishing yourselves in school, music, sports, academic competitions, and much more. You are all unique, extraordinary individuals from all across our beautiful state. Though your paths to this school are different, one thing unites you; Each of you has had at least one person in your life who deeply believes in your potential. This person has been with you lock step and in a myriad of ways they have been your greatest champion. For all that these individuals have done, please join me in giving them a round of applause of appreciation.

Today is an inflection point. Up to now, you have succeeded in the context of your hometown safety net of familiar friends and familiar places. But in just an hour or so, you will shut the gate on that old chapter, and you will begin to build your own independent life. Although you cannot see it yet, you are embarking on a new adventure. And I could not be more excited to be here to offer you some encouragement.

There are so many things that I wish I had time to share. However, this is not a podcast series and you are busy people. Thus, I have limited myself to the following four points:

- (1) This school is hard, it's supposed to be hard, the hard is what will make you great.**
- (2) This school makes you decide if you will forge the resolve to achieve your dreams.**
- (3) You will never again have faculty members who are more invested in your success than those gathered here today.**
- (4) Lean in to subjects that challenge you, especially writing.**

And now a little about me. I reported to campus in August 2003 as a member of the 14th class from the sprawling metropolis of Fairview, America; population 2900. At that time, the campus was only 5 years old, and all but three of the original faculty members were still here. That original faculty lived and breathed the dream of what this school is: a home for extraordinary students to explore topics to the limits of their understanding and then to learn that they can grow beyond those limitations. We could feel, more than we consciously understood, that this was a special place.

However, we also lived under the constant reminder that many people in Oklahoma felt that this school should not exist. Because of this ever present scrutiny, the OSSM leadership kept the academics, daily schedule, and discipline at a constant, almost unbearably high level. One of

my upper classmen once told me, “The only difference between the Naval Academy and OSSM is the proximity to water.”

1. First, and most importantly, this school is hard, it’s supposed to be hard, the hard is what will make you great.

This school is designed to take you extraordinary students and reveal to you the true depths of your potential. How does OSSM do this? It does this by constantly presenting you with challenges that, in the beginning, seem impossible. Everytime you start a new phase of your career, for example a PhD program or a new job, there is always a gap between where you are and where you need to be. For me that gap was never bigger than at OSSM.

What the institution wants you to learn is that you have almost unlimited potential and that by pursuing seemingly impossible performance expectations you can expand your capacities as a student until you grow beyond that initial challenge. Then, because the reward for hard work is...more hard work, you will be given another series of seemingly impossible tasks. Slowly but surely week by week you will develop confidence in your ability to look at a problem that you cannot solve today and know deep down inside, “I can figure this out.” Of course, you gain not just the confidence but also the skills to do so.

There are two facts to keep in mind throughout this process. First, you have been thoroughly evaluated, and the faculty knows that you all can successfully graduate. Second, that OSSM is difficult does not make it a great school. The toughness of the experience makes you great. You all are like swords being forged; it is the heat and pressure that will turn you into a fine blade.

2. This school makes you decide if you can summon the resolve to make the seemingly impossible possible?

As an institution, OSSM wants to test your resolve, or as my father said to me, “They want the quitters to quit.” I don’t think Prof. Cornforth would agree with that phrasing, but the fact of the matter is you all have big dreams, big aspirations. To achieve big dreams requires hard work, perseverance, sacrifice, and creativity. Most importantly, your dreams can never be more important to someone else than they are to you.

Let me tell you a story. When I arrived on campus, I was completely unprepared mentally for the OSSM experience. From that first day getting my big box of books and that LONG assignment sheet, I felt like I was drowning. Every day I was one step behind, just a little too slow to catch-on in lecture.

At the six week mark, we receive our first set of grades. Honestly, I have no recollection of what my grades were, but I acutely remember how I felt. It was like the bottom fell out, and I was completely empty. I thought, “That’s it. It’s all over. I’m this big, dumb fraud. Maybe I can join the French Foreign Legion. Yeah that’s it, they are always looking for people with a checkered past.”

In the midst of my emotional crisis, one of the faculty members saw me, stopped, and asked me how I was doing. Probably because I had the face of someone walking away from a car-crash, this faculty member, after offering some words of encouragement, walked back to their office and called my father.

Thus, the next day after a light Saturday morning of three hours of ACT practice exams, I emerged from the academic building to see my father at the front gate. He swooped me up and took me to a diner where he used to eat breakfast during Law School.

He asks me how I'm doing, and I tell him how I think things are going. He listens patiently. And after I finish he says, "You only think you're doing badly. But you don't understand that this is a game. What they are doing now is shocking the lollygaggers into getting serious and getting the quitters to quit. This is just like Law School. They would not let you into this program if they did not think that you could meet the standard. This part of the experience is designed to make you decide if you really want to be here. You need to look at that school and say, 'My name is Ross Hallren. This is my dream. On day 1, I walked through the front gate a mouth breathing yokel but on the last day I am going to walk out the back gate with a diploma; and there is not a thing you can say about it because YOU CAN'T MAKE ME QUIT!'"

OSSM was the first place where I really faced a crucible event where my determination, itself, would be a deciding factor in my success, but it would not be the last.

3. You will never again in your academic careers have faculty members who are more invested in your success.

I have said a lot of things that may scare you and, more likely, your parents. Rest assured, while OSSM the institution is designed to pressure test you, at the individual level, you will never find a faculty more invested in your success than the professors to my right/left. However, you have to seek them out.

For me, there was always one professor each semester who significantly contributed to my success and left an indelible impression on my professional self. Let me tell you a story. Professor Cornforth's tutoring style really sticks in my mind. He was my Calculus I instructor, and he always tried to convey that math is not an exercise in rote, mechanical problem solving. You need to learn that there are different ways or perspectives to view a problem. Your perspective will drive a particular solution style. And more importantly, when you get to a problem that you cannot solve, you should try to frame the problem in a different way. In many instances a shift in framing alone will reveal a path forward. This is something that I teach the PhD candidates that I advise every semester when they are struggling to prove some mathematical property of their dissertation.

4. Lean in to subjects that challenge you, especially writing.

The road of life is long, the future is hard to predict, and you just never know what knowledge will be useful in your career. Being the kind of person who can master subjects that are difficult for you is a true super power. If you possess that skill, you will have a mind that can unlock any door. At OSSM, writing is the subject that gives most students the greatest trouble. Writing is thinking. Writing is communicating. If you can learn to communicate your thoughts in a way that anyone can understand, you will have immeasurable influence in your field. By contrast, failing to master writing, will likely mean a life where your “genius” goes unappreciated.

5. (Seniors) Post Script - You are not as dumb as you think you are.

If you are like I was at OSSM, constantly living on the line of understanding and not understanding, you may walk away from graduation with the notion that you are not good at science and mathematics. While it is always important to stay humble, I encourage you to give any subject that challenges you a second try. During my PhD program, I encountered for a second time, with great trepidation, all of the subjects that I struggled with here. However the second time, the results were completely different; rather than constantly living in the fog of not quite understand, I had an endless series of “ah ha” moments. This experience crystalized a truth about me that just because I did not understand something the first go around, does not mean that I never understand it. Typically, I just need another pass, another perspective.

Today, I welcome you to the place that helped me define the kind of person that I am. Hopefully, I have shared something that will help you in the struggle, which is real and purposefully created. I have said nothing of the many hours of joy that I shared here with my friends, which may give you the false impression that OSSM is all struggle and no joy. However, I look back on my time here with great fondness, and I encourage each of you to cherish this experience, take it one week at a time, and know that you too will walk out the back gate with a diploma.