Buffalo State College

Academic Convocation Address

September 20, 2007

President Howard, Provost Ponton, faculty members, and distinguished guests:

It is my pleasure to be in your midst today and to be provided with this opportunity to speak about a great mind that shaped our intellectual world. I thank Dr. Ramsey for the invitation and for her insight into providing a vehicle to analyze scholarship and to improve K-graduate communication about teaching and learning. This momentous occasion has been made even more noteworthy for me personally because as I look out into the audience, I can see several of my former professors who influenced my career as an educator.

In preparing my remarks for this presentation, I began with the question: What characteristic, then, does one who has shaped the intellectual world manifest? I believe this great-minded individual's greatest asset was the ability to develop powerful explanatory models of science that enabled others to construct explanations about natural phenomena. In essence, this great mind altered how others saw the universe.

During the Renaissance, this individual prudently abstained from disclosing any views or theories in public, preferring rather to develop ideas quietly, and without an ostentatious flair. A perfectionist, who considered observations to be in need of constant verification and revision, this individual also feared the contempt of the populace and the Church.

Many authors have written about this diffident individual, however, I believe the German poet von Goethe most eloquently describes the contributions of this great mind that shaped our intellectual world when he wrote:

> The world had scarcely become known as round and complete in itself when it was asked to waive the tremendous privilege of being the center of the universe. Never, perhaps, was a greater demand made on mankind—for by this admission so many things vanished in mist and smoke! What became of Eden, our world of innocence, piety and poetry; the testimony of the senses; the conviction of a poetic-religious faith?

No wonder his contemporaries did not wish to let all this go and offered every possible resistance to a doctrine which in its converts authorized and demanded a freedom of view and greatness of thought so far unknown, indeed not even dreamed of. Of all the discoveries and opinions, none may have exerted a greater effect on the human spirit than the doctrine of—Nicolaus Copernicus.

Copernicus' landmark *De Revolutionibus Orbium Coelestium,* published while he was on his deathbed in 1543, marked one of the greatest paradigm shifts from the work of the Greek astronomer Aristarchus in 230 B.C. through the Renaissance. His work cleared the way for modern astronomy and has since had a piquant effect on science, philosophy, and religion.

Nicolaus Copernicus, the Polish mathematician and church administrator, is referred to by many as the founder of modern astronomy. Building upon the work of

Aristotle and Ptolemy, it was Copernicus who first concluded that the planets and Sun did not revolve around the Earth.

Through careful observations, Copernicus became convinced that the apparent perturbations in the motion of the planets were a result of the Earth's own rotation around its axis and its travel in orbit. Further, through his own study of planetary motions, Copernicus concluded that the Earth was merely another planet and the Sun was the center of the universe. He stated, "We revolve around the Sun like any other planet." Copernicus wrote about this heliocentric theory in his 1514 paper titled *Commentary on the Theories of the Motions of Heavenly Objects from Their Arrangements*.

This Copernican revolution was sociological as well as scientific, leading to what was called The Principle of Mediocrity: There is nothing special about us.

We all understand, however, that there in fact is something very special about Earth and humanity. The focused cogitative efforts of Copernicus have caused humanity to look toward the stars, and toward discovery, because we are from the stars. The spirit of space exploration—our shared sense of looking toward the stars—is ingrained in every one of us.

Earlier this month, I had a conversation with Elliot Pulham, president and CEO of the Space Foundation. Elliot reminded me that "looking up" has been a part of us forever. Even 5,000 years ago, when all we had to work with was stones, we dreamed to touch the stars. For at least 5,000 years it has been a journey of eminent significance and importance—one worthy of great effort and great sacrifice. We are part of the universe in ways that can't be rationalized or scientifically explained, and yet we yearn to return.

On January 25, 1984, in his annual State of the Union message, President Ronald Reagan told Congress, “America has always been greatest when we dared to be great. We can reach for greatness again. We can follow our dreams to distant stars, living and working in space for peaceful, economic, and scientific gain.”

My friend and mentor Art Stephenson, former director of the NASA Marshall Space Flight Center, stated to me years ago that space exploration and looking to the stars opens new frontiers. It teaches us how to work together and remain competitive in an increasingly changing world. For example, the International Space Station is a program where 16 nations are working together for the betterment of mankind. It is unique because these efforts have overcome cultural differences and have again focused humanity’s efforts on the stars. These efforts have also transcended national boundaries. At a time in our world when there is so much unrest and divisiveness, space exploration and looking toward the stars continues to bring countries together for research, and in doing so, makes our world a better place.

Recently, I read a quote about excellence: “Excellence is the result of caring more than others think wise, risking more than others think safe, dreaming more than others think is practical, and expecting more than others think is possible.” Clearly, the work of Copernicus has cultivated humanity’s principles of excellence and not principles of mediocrity.

For me personally, as a middle school science teacher and now a Presidential Awardee, looking toward the stars means focusing on excellence; adhering to research-based criteria which embody quality teaching.

Specifically, this means reflection on curriculum, instruction, assessment, professionalism, and leadership. It means creating a plan to assess students' thinking and understanding of the targeted concept at various points in the instructional sequence, and it means describing my appraisal of the students' mastery of the targeted concepts. Also, it means creating lesson plans that make science, discovery, and looking toward the stars "cool" and exciting for my students so they will want to learn more.

I will end with a true story of how my focus on excellence affected a former student.

I was attending a joint Individual Educational Plan meeting for a multiply handicapped student who is non-verbal. It was very hard to appreciate what it was that she actually knows about any one subject since she could not share her thoughts and feelings with us. We had been working on a system of head nods and a communication board that seemed to be the best. We were discussing this implementation at length.

The teacher at Melanie's one school was working on a dictionary project. Melanie was to head nod at the appropriate nouns that she wanted in her book, such as "A is for apple." Melanie became very emphatic with her head nod for "astronaut" for the letter "A." This obviously had come from the impression that was made at her other school, Mill Middle, and astronaut Michael Fincke, who had visited the school earlier that year.

Melanie also completed a project called "People Around the World" and insisted that a rocket had to be in the picture. The teachers were wondering where this new interest was coming from. You might not realize how much of an impression is being made on the little handicapped child in the back of an auditorium or how much they are taking in. Please know the difference you make in lives.

As educators, we direct our students toward the stars and the new frontiers that await them. Like Copernicus, each of us has the potential to cause others to see the universe differently. Many of you will be honored today because of how you have nurtured this in your students. When beginning this academic year with a focus on our own principles of excellence and not on the principle of mediocrity, all of us will continue to make a difference in how our students see the world.