

Testimony Notes HF950 from Dr. Angela Osuji.

Good afternoon, Madam Chair and Members of the Committee.

My name is Angela Osuji. My voice is here today as the President, of the Minnesota Science Teachers Association (MnSTA). I am a licensed science teacher with the Minneapolis Public Schools. I am also a member of the 2019 Science Standards Review Committee.

The Minnesota Science Teachers Association (MnSTA), fully supports the clarification of the graduation requirements in science. The amendment of this statute will clarify and agree with Minnesota Statute 120B.021- Required Academic Standards and 120B.02- Educational Expectations and Graduation Requirements for Minnesota's Students.

The 2019 draft of the K-12 Minnesota Science Standards clearly reflects the need for one credit each in life science, physical science, and earth and space sciences. These standards are based on the most current best practice research in science content and pedagogy. Also, the Science Standards Review Committee intentionally aligned Minnesota's new science standards with the Framework for K12 Science Education that proposes a new approach to K-12 science for all Minnesota students while recognizing Minnesota's unique needs. **All standards in physical, life and earth sciences are required.**

Minnesota's economy, industries, land use, water quality, soil, recreational and conservation activities are all deeply rooted in earth science. Local and global businesses, societies, and economies are critically dependent on real-time data about the earth. A citizenry with working knowledge of the earth sciences is essential to existence of our state and the globe. Earth and Space Science is a data driven; quantitative science discipline required for all students.

In a time of global crisis, people are keenly aware of how interconnected we all are on planet Earth. Our satellites in space, gathering data and images of our home planet unite us in ways that are more important now than ever. From space, we see Earth as one comprehensive system with complex interactions among land, ocean, ice, and atmosphere. It is a living planet without borders. Even with all the scientific and technological advances in earth satellite observation, we are only just beginning to understand fully the way our planet works.

Therefore, we must increase the pool of highly qualified, licensed earth and space science teachers. MnSTA, supports the development and implementation of professional development programs to make this a reality. We are working with the Minnesota Earth Science Teachers Association (MESTA) to offer current licensed science teachers' professional development in the content, practices and pedagogy of earth and space science.

Science teachers have extensive background, knowledge and understanding of not only their content specifically, but the inherent practices and methods of scientific investigation and critical thinking and questioning, as well as data analysis that come from a deep and thorough preparation program. Furthermore, science education is unique in that teachers do not just teach their content, they teach through their content, the practices and cross cutting concepts applicable

to all science disciplines. Students benefit greatly from a well prepared and practiced science teacher who can convey more than just words on a page.

While we advocate for wider access to CTE and Agriculture Education courses, these are often limited in the science content of their course offerings. For example, astronomy may not be addressed in a Soils CTE/Ag course, and thus the students in that course would not have access to those standards. *This results in significant gaps in their science knowledge and skill development.* **This has direct equity of access to all the standards implications, as well as access to a highly qualified science teacher.**

In a dedicated earth science class, for example, all the required standards would be taught utilizing current promising knowledge because the Earth science teacher has extensive knowledge and training in earth and space science and has earned licensure via specific teacher preparation programs that are reviewed and accepted by the state licensing board, professional organizations at the state and federal levels. It is inequitable for students to be forced to accept the delivery of a portion of the science standards in disjointed pieces taught by educators with limited content and pedagogical knowledge when there are qualified science teachers willing and able to perform the task, and are willing to do the work to earn additional licensure. The implications of this would be felt in our state for a long time.

The proposed credit equivalency amendment will not do justice to the quality teaching, and by extension, the learning of the standards. The best qualified teachers of the sciences are science teachers.

ALL students deserve the best education from the most prepared and qualified educators. These proposed changes would only dilute teacher quality and widen the educational inequity for our students and our educators.

Thank you.
Angela Osuji