Next Generation Connecticut
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Dear Finance Committee,

I am Fabiana Cardetti, Associate Professor of Mathematics at the University of Connecticut. My area of expertise is mathematics education and the preparation of future educators and professionals at the K-12 level.

It is well known that mathematics constitutes the backbone for the advanced study of any STEM-related discipline; therefore a **solid mathematics background** of students and faculty involved in this project is of paramount importance for success. What seems to be lesser known are the broad applications of mathematical advancements in modern investment strategies. In particular as it applies to our interests today, **mathematics is a fundamental instrument** in informing challenging budgets decisions in sensitive areas such as **social welfare, health, and education**. Mathematics has powerful tools to solve problems of optimal allocation of resources to be able to attend to social problems of the modern society and **dramatically improve public spending**.

The benefits of the power of complex mathematical models are beginning to be recognized by private businesses, as well as public and private institutions that need to efficiently address productivity as well as innovation. A few examples: Mathematics is used in the social sciences (e.g.: sociology, psychology, anthropology) in the study **social behavior, consumer behavior and trends, and cultural and diversity movements** to validate speculations and be able to transform them into scientific principles that provide rigorous justifications to proposed strategies and, therefore, guide a more **efficient management of resources**. Another example is the influence that mathematics has on health economics and health services research. For example, mathematics has become essential in the advancement of **stem cell research** and its implications for understanding and treating developmental disorders and other diseases. Mathematics plays a key role in improving many other health treatments that, in turn, have significant effects in lowering the costs associated with health care (e.g.: *preventative medicine)*. None of these -and many other- advancements would be possible without quality **mathematics education**. Quality education is the engine that drives economic growth. To thrive and rise above in the current global economy **investments need to be focused in quality education**. A solid mathematics education is fundamental in the preparation of our future teachers (K-12), as well as the preparation of the 21st century workforce through highly qualified mathematicians who know and understand the current state and future demands of education.

To summarize, mathematics is a fundamental discipline with the potential to enable advancement of innovations and economic prosperity in Connecticut if **its value is recognized and its growth is supported**.

Sincerely,

Fabiana Cardetti
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