COLUMBIA UNIVERSITY MEDICAL CENTER

NewYork-Presbyterian
The University Hospital of Columbia and Cornell

HERBERT IRVING COMPREHENSIVE CANCER CENTER
A NATIONAL CANCER INSTITUTE COMPREHENSIVE CANCER CENTER

To the kind attention of all Members:
New York State Senate
New York State Assembly

February 25th, 2021

Re: Written testimony in support of the New York State Stem Cell Science (NYSTEM) program;

Dear Senators and Assembly Members,

I am an assistant professor at Columbia University's *Herbert Irving Comprehensive Cancer Center* (HICCC), where I direct a research laboratory whose main scientific interest is to develop new treatments against **colon cancer**, a neoplastic disease that is **rapidly increasing in frequency among young adults**. At the foundation of my work stands the discovery that colon cancer, like many other malignancies, originates as a result of genetic mutations that accumulate in **intestinal stem cell populations.** By studying the molecular properties of intestinal stem cells, my laboratory recently identified **a biomarker that can help clinicians in deciding who**, among colon cancer patients undergoing surgery, is most likely **benefit from supplementary treatment with chemotherapy** (Dalerba et al., NEJM, 374:211-222, 2016).

Before I was recruited to join the research faculty at *Columbia University*, and become a resident *of New York City*, I worked for many years at *Stanford University* (California) and was supported in my studies by the *California Institute for Regenerative Medicine* (CIRM), a research program funded by the *State of California*, and analogous in mission to the *New York State Stem Cell Science* (NYSTEM) program. Among the reasons that drove me to accept the challenge of moving to *Columbia University*, and thus elect to set-up a new research team in *New York State*, was the very existence of the NYSTEM program, which, over the years, acted as a catalyst for strategic projects in stem cell biology, and progressively contributed to elevate *New York State*, not only as a national leader in the field of regenerative medicine, but also as an attractive environment for the creation of *"start-up"* biotechnology companies, able to stand side-by-side with established players in this competitive field (California, Massachusetts, Texas).

And, indeed, **the NYSTEM program played a critical role in ensuring the success of my research team.** The stipend of one of the most talented post-doctoral fellows working in my laboratory was supported through the ***Empire State Institutional Training Program*** (grant: DOH01-C30291GG-3450000). Although the support lasted for only one year, it was absolutely crucial to enable her to complete a set of strategic experiments, which led to some of the most important discoveries made in recent years by my laboratory. Among the most important data generated with the support of NYSTEM was a high-throughput analysis of the gene-expression profile of cell populations enriched in intestinal stem cells, which led to the discovery of microRNAs (miRNAs) that regulate the proliferation of colon cancer cells, and opened our eyes to new ways that can be leveraged to prevent tumor growth in cancer patients (Mukohyama *et al.*, *Cancer Research*, 79:5151-5158, 2019).

I was, therefore, deeply concerned by the proposal to terminate the NYSTEM program, contained in this year's executive budget. I advocate for you to **save the NYSTEM program** from premature termination. **The horrible tide of the COVID-19 epidemic shall pass**. A new renaissance will follow. **In the first lights of the new dawn,** as we will survey the damage caused by this tragic tsunami, **we will desperately need institutions like NYSTEM** to provide us with the tools and framework to start building back (and become even stronger).

With great gratitude for your attention,

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