

COLUMBIA UNIVERSITY  
IN THE CITY OF NEW YORK

DEPARTMENT OF APPLIED PHYSICS AND APPLIED MATHEMATICS

October 8, 2014

Mr. Haris Durrani, Chair  
“Red” Panel – Science for Policy Seminar  
Department of Applied Physics and Applied Mathematics  
Columbia University

Dear Mr. Durrani:

First, let me thank you for accepting the task of chairing the “Red” Panel during our Science for Policy Seminar. This is an important time for our nation, and major policy decisions require thoughtful, informed advice regarding the science and technology regarding the future.

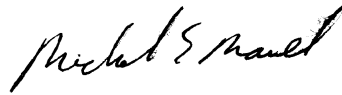
The United States considers space capabilities vital to its national interests and recognizes that space activities have enhanced national security, served as an engine for economic growth, provided global access to weather forecasting, geospatial information, financial operations, global communications, and revolutionized the way we view our place in the world and cosmos. The successful utilization of space and the transformation of our use of space also present new challenges. When the space age began, the opportunities to use space were limited to only a few nations, and there were limited consequences for irresponsible or unintentional behavior. Now, we find ourselves in a world where the benefits of space permeate almost every facet of our lives. The growth and evolution of the global economy has ushered in an ever-increasing number of nations and organizations using space. The now-ubiquitous and interconnected nature of space capabilities and the world’s growing dependence on them mean that irresponsible acts in space can have damaging consequences for all of us.

Considering the importance of space activities to our nation, I ask your panel to assess the scientific and technical strategies now being followed to prevent and deter aggression against U.S. space infrastructure and to respond rapidly to a deliberate or accidental event that may cause damaging debris contamination. Please comment specifically on the research strategies of the NASA’s Orbital Debris Program Office, Office of Space Commercialization of the Department of Commerce, and the *National Security Space Strategy* (2011). Include specific recommendations to improve the response to events like the ill-advised destruction of the Fengyun-1C spacecraft that place all human space flight missions and hundreds of operational spacecraft at risk.

Your panel should make use of prior studies and ongoing programs. In particular, the *U.S. National Space Policy* (2006), *National Space Policy of the United States* (2010), and the *National Security Space Strategy* (2011). Although it is appropriate to review NASA's procedural requirements for limiting orbital debris, the focus of your panel should be on responding to deliberate and accidental debris contamination events that occur regardless of U.S. and international space safety and mission assurances.

Your report and policy recommendation will be immediately useful and required for decisions before the January 2015 deadline. I therefore request that you submit your Panel's report to me by December 1, 2014.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael E. Mauel". The signature is fluid and cursive, with the first name "Michael" and last name "Mauel" clearly distinguishable.

Michael E. Mauel  
Professor of Applied Physics

cc: "Red" Panel Members:  
Thaer Al-Sheikh Theeb  
Minyong Han  
Sean Ballinger  
Omar Mahmood