Reporting Your Recommendation Science for Policy Seminar

December 1 and 3, 2014 Columbia University – Applied Physics

Assignment (Part 3 of 3): Due before Finals

- Review and understand status
- Formulate and propose (in writing) policy options
- Discuss and understand each option within your Team
- Submit your Policy Briefing Report (one to three pages)
- Submit your Op-Ed (from 400 to 1,200 words)

Policy Option Briefing Report

- To whom addressed?
- **Context** (one paragraph). Why is (are) your policy option(s) important? Relevant? Timely?
- Key Recommendation(s). One sentence each, with one or two paragraphs detailing recommended action(s).
- Outline of attachments: backup details, analyses, figures, summaries of previous work, ...
- Total: three pages



The New York Times

Op-Ed and You By TRISH HALL

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http://www.nytimes.com/2013/10/14/opinion/op-ed-and-you.html

Red Team

- 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.
- In order to prevent and deter aggression against U.S. space infrastructure from debris threats intentional and otherwise, it is in the best interests of the nation to support international initiatives, thus preventing a "tragedy of the commons" [*define*] in which there are no globally agreed-upon standards for managing debris. Specifically, we recommend
 - Seek initiatives [*examples*] to remove existing debris with new technologies (remediation),
 - Define stronger standards to prevent the future creation of debris (mitigation),
 - Establish international policies reconciling national and commercial interests (for example, with the need to limit debris production and the U.N. Outer Space Treaty of 1967's removal of sovereignty from space), and
 - Develop effective means of international cooperation on debris issues.



- Considering the importance of STEM education to our nation's future, I ask your panel to assess the priorities among the proposed new investments in STEM education and research and recommend policies that would make most effective use of these investments and programs.
- After a rigorous assessment of both the proposed new investments in STEM education and the most recent analyses of existing STEM education investments, the White Team panel recommends:
- Create a special committee show how best to reallocate funds from the NSF's Public Outreach campaign to a national campaign aimed at (i) providing primary school students with the opportunity to discover their interest in STEM fields, and (ii) reducing the investment overlap in the Public Outreach funds of the NSF, DOD, and NASA.
- The first initiative in this campaign should be the establishment of a STEM-oriented after school program that is offered, without any fees for participation, at public primary schools in low-income neighborhoods throughout the country. This program would provide students with the opportunity to engage in a wide variety of hands-on experiments and projects, making it a fun and informal way of exposing students to the entire range of STEM fields.
- As our nation moves closer to turning the stigmatization of STEM innovators into a veneration of their abilities and contributions, we will reap the economic benefits of a STEM-educated workforce and reestablish the United States as a global leader in science and innovation.

[How does this make "most effective use"?]

Blue Team

- Considering the rapid progress of detecting and characterizing exoplanets, I ask your panel to assess the scientific and technical strategies now being followed to find and identify exoplanets with the potential to support human life.
- Considering the rapid progress in detecting and characterizing exoplanets, our panel recommends
 - Commission of a new research operation to plan the actions [*give examples*] taken following the discovery of an inhabitable exoplanet.
 - Create an informed panel to plan missions to explore an inhabitable exoplanet and to transport people [*how*?] and infrastructure to it.
 - Lastly, we would like to see the same panel outline the most appropriate steps [*examples*?] of dealing with a potential encounter with extraterrestrial life indigenous to the discovered exoplanet.

Green Team

- Considering the importance of coal use for U.S. electricity production, I ask your panel to assess the priorities among the potential new technologies that reduce carbon dioxide emissions from coal-fired power plants and to meet the new EPA targets while continuing to benefit from our nation's large coal resources
- After careful consideration of the issues surrounding carbon dioxide sequestration the green team recommends
 - The U.S. should do "everything possible" [*examples?*] to promote carbon sequestration technology, and
 - Continue, without compromise, the development of "truly renewable energy." [*define*]
- Due to our nation's vast coal reserves, we should not abandon domestic coal as source of affordable energy [*provided what happens?*].
- At the same time power plants and companies that do not reduce emissions should be "heavily penalized" in the form of taxes and sanctions. The funds raised from these restrictions should then used to directly fund sources of "green energy." [*define*]

To whom to address...

- One-three page policy recommendation (with supporting references, analyses, and discussions)
- Educated readers... 400-1200 word Op-Ed

Red Team (to whom?)

- NASA Orbital Debris Program Office: Dr. Jer Chyi (J.-C.) Liou (Chief Scientist) and Eugene G. Stansbery (Program Manager)
- National Defense Leaders: Chuck Hagel (Secretary of Defense) and James Clapper (Director of National Intelligence)
- NASA, OSTP, DOC, Congressional Committees, ...

White Team (to whom?)

- NSTC Committee on Science, Technology, Engineering, and Math Education: Dr. John Holdren (OSTP), Dr. Cora Marrett (NSF)
- President Barack Obama
- Congressional committees, ...

Blue Team (to whom?)

- NASA's Exoplanet Exploration Program: Dr. Wes Traub (Program Chief Scientist)
- Planetary Science Subcommittee (PSS) of NASA's Advisory Committee: Dr. Janet Luhmann (chair)
- NASA: Dr. Jim Green, Planetary Science Division Director



Green Team (to whom?)

- DOE/Office of Fossil Energy: Dr. Christopher A. Smith (Principal Deputy Assistant Secretary)
- DOE/NETI Lab: Strategic Center for Coal Dr. Sean Plasynski (Director)
- DOE/NETI Lab: Office of Coal and Power Research and Development Dr. John Wimer (Director)
- Secretary of Energy, Congressional committees, ...

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