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Review of NAPA’s Findings Regarding Scientific Integrity

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NAPA’s analysis is based on the premise that either the President’s tweet or WFO tweet was right and the statement was choosing between the two. It did not. The statement, if read objectively, approaches it from the perspective that both are accurate and reconciles the two approaches – risk and probability – to conveying information. The NAPA interview summary provides: “Dr. Jacobs also offered his perspective on the correctness of the September 1 tweet from the Birmingham WFO by explaining that in a technical sense, while relatively small, the probability of Hurricane Dorian impacting a portion of southeast Alabama existed. However, in terms of communicating the risk to the people of Alabama, the Birmingham WFO was correct, according to Dr. Jacobs.” NAPA never questions or refutes the scientific veracity of the actual statement.

Applicability of the policy to the tweet and statement

NAPA did not apply the definitions of scientific assessment and scientific activity to include the tweet and statement within the scientific integrity policy. NAPA never explains how the tweet or the statement meet these definitions. Instead, they simply recite the relevant definitions and summarily conclude that “individuals engaged in activities that can be considered scientific activities” and “deduced that the [tweet] and [statement] are examples of scientific product.” The summary conclusions quoted contain the full content. NAPA conducted no analysis of the tweet or statement nor an explanation of how the statements meet these definitions. In fact, the only supporting explanation is based on interviews of NOAA and GAO personnel and creates a *new* standard for a scientific product to be a communication: i) based on scientific analysis and ii) related to the core mission of the agency. Rather than evaluate and apply the actual definitions in the NOAA Scientific Integrity Policy (NAO 202-735D), NAPA created their own definition based on “[i]nterviews with NOAA and GAO personnel” to analyze and apply to determine that the tweet and statement are scientific products subject to the NOAA Scientific Integrity Policy.

As I explained in the interview, they are not the types of science and research to which the policy applies. It is clear that the development of a forecast is a scientific assessment and scientific activity. While the tweet is intended to convey the risks to Alabama residents based on the scientific assessments used to produce the storm forecast, it is far removed from the research and underlying science for which the definitions, policy on integrity of scientific activity, and codes of scientific conduct and ethics for scientific supervision and management are predicated. The September 6 statement is even further removed from science and research. It is a brief comment collecting past factual information and a reconciliation of two concepts contained in tweets in a short statement. NAPA later contradicts their finding, based on their own definition of a scientific product, by concluding that “the development of the statement was not based on science, but appears to be largely driven by external influences from senior Commerce officials who drafted the September 6 Statement.”

The NAPA interview summary provides: “In regard to the September 6 Statement complying with the NOAA Scientific Integrity Policy, Dr. Jacobs expressed that the September 6 Statement did not necessarily meet the standards of the Scientific Integrity Policy. Additionally, Dr. Jacobs explained that his understanding is that the Scientific Integrity Policy was written for science and

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research and not necessarily press releases. Dr. Jacobs often reviews communications originally written by non-scientists, including people from Commerce and other parts of NOAA, when the science is incorrect. The correction process typically requires scientists to check the validity of the communication and ensure that in a technical sense, the communication is accurate before it is published.” With a Ph.D. in numerical weather prediction, I am eminently qualified, as a scientist, to review scientific research in this field.

Scope of the NOAA Scientific Integrity Policy and NAPA findings

The NOAA Scientific Integrity Policy sets out the elements for what constitutes scientific and research misconduct. The standard for a finding of misconduct is:

1) Scientific and Research Misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing scientific and research activities, or in the products or reporting of these activities. Scientific and Research Misconduct specifically includes: i) intentional circumvention of the integrity of the science and research process by violation of NOAA's Code of Ethics for Science Supervision and Management; and ii) actions that compromise the scientific process by violating NOAA's Code of Scientific Conduct. Scientific and Research Misconduct does not include honest error or differences of opinion.

2) Procedures for lodging and responding to allegations of misconduct are provided in the Procedural Handbook to this Order.

This is not the standard that NAPA applied. NAPA substituted Criteria for Determining Scientific Misconduct in the procedural handbook combined with five criteria that NAPA developed and identified to guide their assessment of the allegations. After creating their own five criteria, NAPA acknowledges the standard for Scientific and Research Misconduct, but then substitutes different and in critical areas conflicting adjudication standards contained in the Procedural Handbook. Under the Scientific Integrity Policy, the elements of Scientific Research Misconduct are clear: A violation of NOAA’s Code of Ethics for Science Supervision and Management must involve the *intentional* circumvention of the *integrity of the science and research process*. A violation of NOAA’s Code of Scientific Conduct must involve *actions that compromise the scientific process* (emphasis added).

Allegation II is based on a violation of the Code of Ethics for Science Supervision and Management. The Scientific Integrity Policy standard for a violation related to the Code of Ethics for Science Supervision and Management requires an intentional circumvention of the integrity of the science and research process. The adjudication standards in the handbook completely disregard the *mens rea* standard and substitute a new, lower standard of intentionally, knowingly or reckless disregard of the Code of Ethics.

In addition, it eliminates the element that any violation of the Code of Ethics for Science Supervision and Management must circumvent the integrity of the science and research process. That critical element is not contained in the adjudication standard nor in the NAPA analysis or their findings. Instead of applying the standard in the policy, NAPA used the criteria they established, applied the lesser standard from the handbook, and completely ignored the requirement that the violation circumvent the integrity of the science and research process.

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NAPA ostensibly found a violation of the Code Ethics for Science Supervision and Management by not engaging the Birmingham WFO in the development of the September 6 statement and that the failure was done intentionally, knowingly, or in reckless disregard of the Code of Ethics for Science Supervision and Management. There is no finding – as required by the NOAA Policy – that there was an “intentional circumvention of the integrity of the science and research process.” Therefore, there was no scientific and research misconduct.

Allegation III, while styled as external political pressure, is also based on an alleged violation of the Code of Ethics for Science Supervision and Management. The NAPA report focuses primarily on the view that the second paragraph of the statement is a criticism of the Birmingham WFO tweet. While that is a commonly held view, the statement was not intended to imply Birmingham did anything wrong. As stated above, the intent was to reconcile the forecaster’s duty to convey information to the public with probabilistic numerical model guidance that was still showing a small, but non-zero, chance of impacts.

NAPA analyzed the statement as a violation of Section 7.02. Here, NAPA fails to apply the appropriate criteria. NAPA sets out the standard as “suppressing or altering scientific findings.” That is not the standard. Under the Scientific Integrity Policy, the standard is: “Suppress, alter or otherwise impede the timely release of scientific or technological findings or conclusions.” Even assuming the September 6 statement is viewed as improper criticism, it in no way could have “suppressed, altered, or otherwise impede the timely release of scientific or technological findings or conclusion” that were contained in a tweet on September 1.

NAPA recognizes this fundamental flaw and in fact concludes that “there was no direct suppression or alteration of scientific findings.” Instead, NAPA attempts to pivot to speculate that “the September 6 statement might suppress the willingness and ability of NOAA scientific staff to express their scientific opinions without reservation in the future.” The policy does not in any way address a speculative, future possibility¹ nor is there any finding that any NOAA scientific staff was suppressed or unable to express scientific opinions or findings. While it is fair to criticize whether issuing such a statement was a wise decision, there was no violation of the Code of Ethics for Science Supervision and Management.

Furthermore, even if there was, the findings in allegation III also fall short. NAPA again applied the wrong standard and there is no finding – as required by the NOAA Policy – that there was an “intentional circumvention of the integrity of the science and research process.” Therefore, there was no scientific and research misconduct.

NAPA found that there was no "direct suppression or alteration of scientific findings." That alone should have ended the analysis for a violation based on “Suppress, alter or otherwise impede the timely release of scientific or technological findings or conclusions.” Instead, NAPA based a finding of misconduct by intentionally, knowingly, or in reckless disregard of the Code of Ethics for Science Supervision and Management issue a statement that "is viewed by many NOAA/NWS scientists as an inappropriate criticism of the Birmingham office." However, the report also finds that I objected, but was overridden. It cannot be both. NAPA attempts to reconcile this by characterizing it as "contextual." It is more than context; the factual determination of objecting and being overridden is not consistent with a finding of acting with intent, knowing, or reckless disregard of the Code of Ethics for Science Supervision and Management

¹ The policy does provide that individuals covered by the policy must not “intimidate or coerce employees, contractors, recipients of financial assistance awards, or others to alter or coerce scientific findings” and no one suggests that this was intended nor does NAPA evaluate the actions as such.

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Practical limitations using NAPA's interpretation

For reference, the full text of relevant portion of the policy about affording scientists the opportunity to review is: "Appropriate rules and procedures are in place and implemented to preserve the integrity of the scientific process and the dissemination of its scientific products and information, including providing scientists the right to review and correct any official document (such as a press release or report) that cites or references their scientific work, to ensure that accuracy has been maintained after the clearance and editing process."

NAPA takes an overbroad approach to the policy provisions that provides scientists the right to review and correct any official document that cites or references their report. Such a broad interpretation is not practical or workable. For example, if we accept the NAPA interpretation, any scientific work created by NOAA scientists that cites work performed by another NOAA scientist (for example, a biological opinion referencing other NOAA science) would have to have that work reviewed for accuracy by the scientist who completed the study referenced.

Using NAPA's interpretation, all social media posts, including tweets, that referenced any NOAA employee's work would have to be reviewed by the scientist who completed the initial or previous work. Using NAPA's own interpretation, forecasters at the Birmingham WFO would have had to clear the tweet with the NHC before issuing their own interpretation of the official NHC guidance. That certainly cannot be what was intended under the Scientific Integrity Policy, as this would create an untenable policy where thousands of NOAA employees would be forced to sign off on each use or reference to their work. The Scientific Integrity Policy was put in place to ensure that scientific research was conducted objectively using the scientific method and peer-review process. Perhaps the Scientific Integrity Policy should be updated to include these cases, but applying an overly-broad interpretation, as NAPA did, is neither logical or practical.

Such a broad reading also ignores the stated purpose of this provision, which is "to ensure the accuracy has been maintained after the clearance and editing process." This implies that it is the editing and review of the specific report and any accompanying press release or specific characterization of that report. This purpose makes clear that the requirement is for the release of the work itself and accompanying materials, *not* a subsequent citation to the work or later comment on it.

If we consider the peer-review process, NAPA's interpretation would prohibit a NOAA scientist from writing a later scientific analysis critical of the prior work without getting the approval of the original authors to publish. This is fundamentally at odds with the scientific process because no one could ever publish a critique or dissent of any existing science if the scientists of the original work objected.

Conclusion

As a scientist, I appreciate the importance of scientific integrity and fully support the NOAA policy. I do believe it needs to be updated to address issues surrounding handling of social media and non-research-related and publication-bound work. I fully complied with and cooperated with the scientific integrity investigation. I encourage a thorough and thoughtful review and can accept the critique and criticism contained in the report. It is part of the scientific process and how we improve both our policies and the processes. Any findings of misconduct, however, must be based on an objective application of the standards contained in the actual policy.