THE GEORGE WASHINGTON UNIVERSITY

WASHINGTON, DC

July 10. 2024

OMB Desk Officer for NIST
Office of Information and Regulatory Affairs
Office of Management and Budget
Washington, DC

RE; Ecosystem Questionnaire for States and Territories to Inform CHIPS R&D Facility Site Selection Process (OMB Control Number 0693-XXXX)

Dear OMB Desk Officer,

I am pleased to submit this letter in response to the National Institute of Standards and Technology's request for comments on its emergency ICR for the Ecosystem Questionnaire for States and Territories to Inform CHIPS R&D Facility Site Selection Process), as invited in the *Federal Register* of July 5, 2024 (89 FR 55586).

As a public policy research professor at George Washington University, I focus on policies that promote U.S. economic competitiveness and write in support of OMB's approval of NIST's emergency ICR. That said, I perceive several shortcomings in the proposed questionnaire that potentially reduce its value for determining the optimal site for the NSTC Prototyping and NAPMP Advanced Packaging Piloting Facility:

- Corporate R&D in the semiconductor ecosystem. While Questions 10 and 11 ask about university and government research, I'm struck by the absence of a question about corporate R&D, an activity that seems quite important to the NSTC-NAPMP enterprise. NSF's National Center for Science and Engineering Statistics (NCSES), working with the Census Bureau, collects corporate R&D data by industry and state through the Business Enterprise Research and Development Survey (BERDS), Yesterday, perhaps serendipitously (and perhaps not), NCSES published Six States Perform Around 90% of Semiconductor Business R&D, Led by California (NSF 24329). From the BERDS source tables, I constructed the attached spreadsheet that provides corporate R&D spending in 2021, by state, for Semiconductors and Other Electronic Components (NAICS 3344, the lowest detail available) and Semiconductor Machinery Manufacturing (NAICS 333242).
- Employment by NAICS code. In Question 8, NIST does not specify the employment data series that states should use. The Bureau of Labor Statistics (BLS) and the Census Bureau each offer a data series that provides the requested data—the Quarterly Census of Employment and Wages (QCEW), for BLS, and the County Business Patterns (CBP), for Census. However, these differ in several ways:
  - First, the QCEW provides data for many more states than does the CBP.
  - Second, while the QCEW provides data through 2023, the CBP does so only through 2022 (and that was released just a few weeks ago).
  - Third, the QCEW and the CBP provide substantially different figures by state for establishments, employment, and wages for NAICS 334413 and 333242, which you

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can see from the attached spreadsheet for 2022 (the latest comparable year). For instance, while Census says that California had 15,967 workers in 334413, BLS says the state had 45,130; for 333242, the California figures are 7,187 and 14,311. For 334413 in Florida, the figures are 1,442 and 9,063. For 333242 in Texas, the numbers run the other way—4,130 jobs per Census and 1,100 per BLS.

- Ecosystems that cross state boundaries. The questionnaire infers that a state's semiconductor ecosystem stops at the state's border, which of course is not the case. At present, the questionnaire doesn't offer the state the opportunity to describe ecosystem relations that cross state boundaries, which I suggest is to the detriment of the state as well as NIST.

In light of the above observations, I offer the following suggestions for OMB's and NIST's consideration:

- Add a question on corporate R&D.
- For question 8, specify the use of the QCEW data series, as it is more recent, provides greater coverage, and (I believe) will be more accurate for NIST's purposes.
- For select questions, add a comments box that invites the state to describe ecosystem components in bordering states.
- As a term of clearance, direct NIST to:
  - Ask BLS and Census to explain why QCEW and CPB data by state differ so much;
  - Ascertain the implications of the answers for data analysis by the CHIPS for America program going forward; and
  - Report back to OMB on its findings in six months.

I appreciate the opportunity to provide these comments. I hope you find them of value and look forward to OMB's decision.

Sincerely,

Andrew Reamer
Research Professor