Functional Bureau Strategy

Office of the Science and Technology Adviser to the Secretary of State (E/STAS)

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1. Executive Statement

The Office of the Science and Technology Adviser to the Secretary of State (STAS) enhances the capacity of the Department to respond to the evolving role of science, technology, and innovation (STI) intersecting with U.S. foreign policy interests, by linking Department leadership with the vast U.S. STI community, by increasing the numbers of technically trained personnel in the Department through a series of fellowships, and by anticipating emerging technologies that will impact foreign policy.

The Science and Technology Adviser ensures that senior leadership has the reliable information and thoughtful advice they need to understand developments in STI and how those developments impact foreign policy. The office monitors an array of emerging technologies – including genetic engineering, quantum computing, and blockchain – and works across bureaus and offices as well as within the interagency to develop policy positions. The STAS office's deep and wide-ranging relationships with the external STI community are critical for this technological foresight. For instance, as synthetic biology emerged on the international scene as potentially problematic for existing international agreements and frameworks, STAS recognized the looming challenge and played a critical role in developing appropriate policy responses that took into account the perspectives of an exceptionally wide range of stakeholders (resulting in the development of the Department's first international policies on synthetic biology). Similar examples can be found in STAS' contributions to knowledge dissemination and portfolio creation for artificial intelligence (AI) and computational propaganda within the Department.

In recent years, STAS has supported multilateral policy priorities as well, such as increasing science advising capacity in foreign ministries; working through the UN Commission on Science and Technology for Development (CSTD) to elevate the role of STI for development in a multilateral decision-making context; and successfully advocating for a central role for STI for achieving Agenda 2030 for Sustainable Development and the Sustainable Development Goals (SDGs) by serving as co-chair at both the 1st and 2nd Annual Multi-stakeholder Forums on Science, Technology and Innovation for the SDGs (STI Forum). STAS has worked in recent years toward coordinated outcomes in both the CSTD and STI Forum, consistent with our foreign policy objectives.

STAS was created in 2000 by then Secretary of State Madeline Albright in response to the 1999 study by the U.S. National Academy of Sciences. The position of Science and Technology Adviser to the Secretary was authorized by Congress through Senate Act 886, which amended the State Department Basic Authorities Act of 1956 (22 USC 2651a) to create such a position. The legislation creating the Adviser indicates that he or she would report to the Secretary through the appropriate Under Secretary. STAS currently reports directly to the Under Secretary for Economic Growth, Energy, and the Environment (E), servicing the broad equities that fall within this wide-ranging portfolio, while also fulfilling its mandate of supporting the entire

Department. STAS has a limited core budget that has been flat for over a decade. The sixth Adviser resigned in July 2017 and the position remains vacant. The Office currently has four positions filled: an Acting Deputy STAS, two Fellows (on temporary appointments), and a Y-tour Foreign Service Officer. The STAS Office is normally staffed by the STAS (who serves for a two-year term, with a third year option to renew), two senior officials on temporary schedule B FTEs, the Deputy STAS, and a staff assistant, who all occupy permanent FTEs. In addition, the office regularly hosts two temporary schedule A science Fellows and often hosts additional experts through internships, details, and other programs.

With a small team of technical experts, the ability to reach outside the Department to tap the U.S. STI enterprise, and the nimbleness to work with a gamut of both regional and technical offices, the Office contributes to a number of Department-wide responsibilities that advance core interests of the Department and the NSS, including advancing American prosperity and promoting U.S. values, both of which have strong STI underpinnings. However, owing to staffing shortfalls, STAS has a severely limited capacity in serving as a resource to the Secretary and Department leadership, which is a risk to achieving our objectives in the coming years.

The STAS Mission:

- **Anticipate** the foreign policy impacts of scientific research, development, discoveries, and innovations emerging from the high-tech and private sectors;
- **Engage** the U.S. science, engineering, and technology enterprise, as well as foreign STI leaders and organizations, to connect emerging STI to foreign policy and to promote Department priorities;
- **Build** STI capacity within the Department.

Building on 18 years of activity, STAS remains a vibrant and unique resource to Department leadership and bureaus and offices across the Department. The Office provides an entry point for STI as a key component of U.S. foreign policy, while at the same time facilitating important connections between the Department and the vast STI communities in the United States and abroad. However, as the STI landscape continues to evolve, STAS will face ever-increasing demands from State bureaus for STI talent and advice. Events around the world will continue to shape and prompt reassessments of priorities for STI engagement. New avenues for STI cooperation will continue to open up with new players in the next four years, and in turn windows could close with traditional partners. In all of these scenarios, our relationships with the U.S. STI community will be important. At a risk to its operations, STAS assumes it will need to operate for some additional time under constrained resources that permit limited Department-funded travel and hiring of STI experts. Hence, the Office will continue to leverage invitational travel and make use of STI experts who come through as fellows. STAS has a vast network of non-government partners in academia, the private sector, and non-profit organizations that have been instrumental in allowing STAS to provide the most current,

complete, and rich STI advice and solutions for the Department's needs. STAS will deepen and sustain these networks as we recognize that our success in part depends on the trust and willingness of the scientific community to work with the Department through STAS.

In sum, STAS intends to implement its objectives through continued recruitment of STI fellows, engagement with the external U.S. and international STI communities, and participation in many STI discussions around the world – all of which allows the Office to stay current and forward-looking at the intersection of science and foreign policy. STAS conducts an annual exercise to review its strategic plan. At this exercise, STAS reviews progress and evalauates any needed changes to sub-objectives, indicators, and milestones, updating or editing them as necessary.

2. Bureau Strategic Framework

Strategy Outline

Goal 1	Advance foreign policy objectives through increased use of science, technology, and innovation (STI) tools.
Objective 1.1	Increase the use of STI tools, such as science advising, capacity-building, and public diplomacy programs, to advance the Department's foreign policy objectives.
Goal 2	Increase scientific and technological capacity at the State Department by leveraging the scientific community and through internal capacity-building.
Objective 2.1	Increase the Department's access to external technical expertise through fellowships, workshops, convenings, and seminars.

3. Goals and Objectives

Bureau Goal 1 Advance Foreign Policy Objectives through Increased Use of Science, Technology, and Innovation (STI) Tools.

a. Description and Linkages

STI advances have led to new sources of renewable energy, greater food security, novel disease prevention and treatments, and increased human lifespans. At the same time, these advances can create new challenges for national security, economic stability, and the environment. Thus, the Department should represent STI in its foreign policy objectives in a way that maximizes benefits, minimizes risk, and facilitates U.S. STI leadership and competitiveness. We will achieve Bureau Goal 1 by deepening the Department's connections to the U.S. STI community to assist in addressing complex global challenges, especially in situations where STI can be a tool for building confidence in regions and countries where other mechanisms are viewed as too political, and by making connections between our scientific discoveries and technological innovation to the most pressing needs and challenges the Department is facing.

Goal 1 aligns across a number of priorities expressed in the NSS and JSP. For example, this goal supports Strategic Goals 1, 2 (Obj. 2.1 and 2.2), and 3 (Obj. 3.2 and 3.3) of the 2018-2022 JSP, as well as National Security Strategy Pillars 1, 2, and 4. For NSS Pillar 2, most notably the goal of [Leading] in Research, Technology, and Innovation (understand worldwide STI). This Bureau Goal also addresses recommendations made by the National Research Council in its 2015 report *Diplomacy for the 21st Century: Embedding a Culture of Science and Technology Throughout the Department of State.* The report recommends specific steps the Department should take to enhance its STI capabilities and better incorporate understanding of STI developments into the nation's foreign policy.

Goal 1 further aligns with the STAS mission statement, by building the Department's ability to **engage** domestic and international communities using STI tools.

Key Partners and Stakeholders

Toward Goal 1, the STAS office works with several key partners and stakeholders inside and outside of the USG. Internally, regional and international bureaus are our primary "clients," and constitute the parts of the Department that we need the most buy-in from as we establish high-level engagement with foreign ministry STI advisers, provide expertise

for confronting regional challenges, and use science diplomacy as a tool for building stronger relationships with priority regions and countries. STAS also engages with advisory offices for the Secretary that continue to be instrumental to advancing STEM-relevant policies: S/P, S/GP, and S/GWI. As we look to better integrate STI into public diplomacy efforts, the R family of bureaus will be critical partners. Finally, we have developed many of the U.S. government's positions on STI for multilateral fora in close collaboration with IO, USUN, USOAS, and USOECD. Within the interagency, we collaborate with a broad array of U.S. departments and agencies on science diplomacy activities. Our multilateral representation of STI issues involves close coordination with the White House OSTP in addition to the technical agencies.

The STAS office has strong connections with the U.S. STI community as well as with foreign researchers and academies of science. These communities seek to elevate evidence-based decision-making and bring to bear the expertise of scientists to the challenges faced by policy-makers. Universities, scientific professional societies, foundations, and think-tanks, both domestic and foreign, are essential partners as we work to achieve our goals.

Bureau Objective Increase the use of STI tools internationally, such as science advising, capacity-building, and public diplomacy programs, to advance the Department's foreign policy objectives

a. Justification

(U) There is widespread recognition of the vital role that science, technology, and innovation play in foreign policy, not only because STI serves as a common "currency" by which countries and economies interact, but also because science, technology, and innovation impact all aspects of foreign policy decision-making. All countries – regardless of politics, culture, and worldview – want to engage with American scientists and engineers. Today, science diplomacy is crucial as we strive to promote American prosperity, build strong partnerships and relationships with our allies, and simultaneously protect our natural resources, respond to natural disasters, and develop sustainable and robust societies. STAS will ensure that all STI tools at the Department's disposal are deployed to advance our foreign policy objectives.

Bureau Goal 2 Increase Scientific and Technological Capacity at the State Department by Leveraging the Scientific Community and through Internal Capacity-Building

a. Description and Linkages

The great achievements of the U.S. STI enterprise in the postwar era were partially the result of investment over decades in the recruitment and development of a generation of talented scientists and engineers who dedicated their careers to helping the U.S. Government meet its objectives. Over time, however, government has afforded less mobility to scientists and engineers, opportunities in the private high-tech sector have grown, and the connections between STI and policy-making have become less clear, impacting our ability to recruit and retain the best and brightest. The hiring process in the Department for the civil service is focused on candidates with backgrounds in the humanities (rather than STI), and the foreign service does not reward assignments in STI in its promotions board process. The confluence of these circumstances has resulted in reliance on a few fellowship slots and limited special hiring authorities to meet our Department STI needs at a time when our international challenges are increasingly technically complex. We will achieve Bureau Goal 2 through continued recruitment of fellows; through convenings and workshops that bring external expertise to bear on decision-making; and by building a network within the Department that is focused on gathering, analyzing, and disseminating broadly emerging technology information. This Goal aims to boost internal capacity and support decision-makers in predicating and incorporating STI trends into foreign policy.

Goal 2 aligns across a number of priorities expressed in the NSS and JSP. For example, this goal supports Strategic Goals 2 (Obj. 2.1) and 4 (Obj. 4.1-4.3) of the 2018-2022 JSP, as well as Pillars 2 and 3 of the 2017 NSS (most notably, the goal under Pillar 2 to "lead in research, technology, and innovation"). We are re-doubling our efforts at providing timely analysis of scientific discoveries and technology trends that could inform and provide evidence for decisions that impact our bilateral relationships and interactions with international institutions. Our strong ties to the U.S. science community and our stewardship of scientific fellowships allows us to connect the best and brightest minds with the Department.

This Goal also addresses recommendations made by the National Research Council in its report *Diplomacy for the 21st Century: Embedding a Culture of Science and Technology Throughout the Department of State (2015).* The report recommends specific steps the Department should take to enhance its STI capabilities and better incorporate understanding of STI developments into the nation's foreign policy.

Goal 2 also aligns with the STAS mission statement, by increasing the capacity of the Department to **anticipate** STI foreign policy challenges, and by **building** Department knowledge on STI issues.

Key Partners and Stakeholders

While the E family of bureaus receives the highest percentage of STI fellows, they are placed throughout the Deparment and, in this regard, all offices from the seventh floor to the Foreign Service Institute are our partners and stakeholders as we integrate technical expertise into the Department's decision-making and internal STI capacity. A key partner in making these positions available and protecting them as a resource is the Under Secretary for Management and the human resources teams throughout the Department. Regional and functional bureaus will be beneficiaries of workshops, convenings, and seminars that bring external talent to the Department for brefings and consultations. Outside of the USG, the STAS office has strong connections with the U.S. STI communities that provide the talent for our fellowships and the experts for our internal capacity-building. The NAS, as the manager of the Jefferson Science Fellowship, and AAAS, as the partner organization managing the AAAS STI Policy Fellowships, are major external stakeholders in this Goal. Universities and other professional scientific societies will continue to be essential partners as we work to increase STI capacity at the Department.

Bureau Objective Increase the Department's access to technical expertise in STI through fellowships, workshops, convenings, and seminars.

a. Justification

From energy security to refugee crises, each global challenge has a STI solution that demands technical expertise at the decision-making table. Fellowships are a low-cost way of bringing fresh expertise into our ranks for a limited period of time. The U.S. government benefits from the fellows' real-world experience and expertise, and the fellow and their home institution gain valuable insights into the work of diplomacy and science policy-making. STAS manages AAAS Fellows, Jefferson Science Fellows, and professional societies fellows. STAS is also well-placed to build flexible partnership models with universities, professional STI societies, and the private sector that can provide internal traning and enhance the Department's capacities.

4. Cross-cutting Management Objectives

Management Objective Align the Department's emerging technology efforts behind agreed upon, Department-wide emerging technology strategic priorities to enhance the Department's ability to forecast and manage STI impacts on foreign policy.

a. Justification

Currently the Department does not conduct a strategic prioritization of emerging technology issues. This means that STI fellows are not recruited according to the most current needs, new STI portfolios are not consistently strategically identified and developed, and external training and detail opportunities – like the Foreign Service Science, Technology and Foreign Policy (STFP) Fellowship – are not necessarily directed towards emerging STI priorities. As a consequence, the Department cannot maximize valuable personnel investments, and emerging technology portfolios are not systematically managed and evaluated.