

# Stanton Nuclear Security Fellows Seminar

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## PANEL 3: Alliances and Weapons Selections

### 1. Miriam Barnum, CISAC

#### *Regime Security Threats and Chemical, Biological and Nuclear Weapon Proliferation Choices*

In constructing nonproliferation and national security policy, decision makers often invoke the category of “weapons of mass destruction,” grouping chemical, biological, radiological, and nuclear weapons together — perhaps arbitrarily — and pursuing similar policy strategies to stem the spread and use of these different types of weapons. Since the end of the Cold War, there has been much speculation about the increasing relevance of chemical and biological weapons, and the potentially declining relevance of nuclear. However, relatively little empirical research has been done to examine whether this categorization makes sense as an analytical construct, and whether nonproliferation lessons learned in the nuclear domain can be transferred to the domains of chemical and biological weapons (CBW) without unintended consequences.

In this project, I ask why states make certain choices about which weapons of mass destruction to pursue. In particular, why forgo the greater strategic utility of nuclear weapons to pursue chemical or biological weapons? I theorize several pathways through which security threats influence chemical and biological weapons proliferation. A key factor — *internal* security threats faced by a state’s governing regime — can both motivate chemical or biological weapons pursuit in states with little or no interest in nuclear weapons pursuit, and incentivize substitution or diversification of weapons programs in states that *are* interested in nuclear weapons. Internal security threats can motivate CBW pursuit because these weapons’ relative lack of destructiveness—the very feature that makes them poor strategic weapons—make them an attractive option for responding to domestic threats. Furthermore, internal security concerns can make managing an effective nuclear weapons program more difficult — chemical and biological weapons offer options for weapons that lend themselves to highly centralized control, while still being (relatively) easy to acquire. These types of security threats are not widely incorporated into theories of arming, and highlight the unique role that chemical and biological weapons can play in regimes’ security strategies.

In order to evaluate this argument, I employ a mixed methods approach. For the quantitative event history analysis, I developed two new datasets: one on states’ exploration and pursuit of chemical and biological weapons, and another on states’ histories of WMD use. Existing

datasets covering chemical and biological weapons proliferation tend to cast a wide net, employing a relatively broad concept of weapons pursuit, resulting in the inclusion of some observations of CBW pursuit or acquisition that are not conceptually appropriate to test a theory of leaders' motivations for initiating chemical weapons pursuit. I reevaluate these codings to produce a more limited dataset that is more directly focused on the pursuit and acquisition of deliverable chemical and biological weapons, suitable to use in combat, and operationally controlled by the government of the state in question. I then use this data in combination with existing data to distinguish between correlates of CBW *exploration* and correlates of CBW *pursuit* — a distinction which has been prevalent in the literature on nuclear proliferation, but, to date, has not been applied in quantitative studies of CBW pursuit.

These data reveal that internal threats may play a significant role in arming choices. In particular, governing regimes facing increases in the risk of a coup are more likely to initiate chemical and biological weapons programs. Furthermore, regimes experiencing violent domestic unrest, and concerned about the risk of civil war, may be more likely to pursue chemical weapons. This analysis also provides evidence for CBW pursuit as a substitute for nuclear weapons pursuit. States are more likely to initiate chemical and/or biological weapons pursuit after a rival acquires nuclear weapons. Additionally, holding threat levels constant, states facing negative shocks to industrial and economic resources may be more likely to pursue CBW — perceived as “cheaper” and easier to acquire — as a substitute for other proliferation options.

Notably, while they are still relevant to internal security, biological weapons may be perceived by potential proliferators as more similar to traditional “strategic weapons” than chemical weapons. States appear to balance other state rivals' bioweapons acquisition by pursuing their own chemical and bioweapons capabilities, and domestic threats from the general public do not appear to motivate bioweapons pursuit.

While this quantitative analysis provides evidence of broad patterns in CBW pursuit choices, it cannot confirm that leaders choosing to pursue these weapons actually perceive particular types of security threats, or that a belief that chemical or biological weapons could be useful for countering such threats is actually driving pursuit choices. Thus, for evidence of these mechanisms, I turn to in-depth case studies of changes in chemical and biological weapons proliferation behavior within individual countries over time. Because the goal of the case study analysis is to shed light on the pathways through which security threats influence proliferation behavior, I select “typical” cases that feature the expected relationship between internal security threats and CBW pursuit.

So far, I have focused on Libya and Rhodesia, two countries that faced unusually high levels of both internal and external threat, in order to illuminate which factors play a larger role, and the potential interactions between internal and external security factors. These case studies illustrate how different types of regime security threats shape chemical and biological weapons pursuit choices. In Libya, Qaddafi's fear of being overthrown by opposing elements within the

governing elite led him to dismantle much of the existing state bureaucracy. This “coup-proofed” state struggled to effectively monitor and manage a large, complex nuclear weapons program, making a smaller-scale chemical weapons program a desirable option to counter a range of security threats. In Rhodesia, an increasingly desperate struggle against a numerically asymmetrical insurgency prompted chemical and biological weapons pursuit, in the hopes of inciting fear amongst the insurgents and the civilian population and generating casualties covertly and with relatively little manpower. Potential additional cases could include Iraq, Syria, and North Korea.

In addition to presenting new data on CBW pursuit, exploration, and use, this project contributes to our understanding of WMD proliferation in several areas.

First, it provides a systematic test of regime security theory across all countries in the post-World War II time period. While Koblenz (2013) argues that regime security can motivate CBW programs, and finds evidence that domestic threats motivated CBW pursuit and use in South Africa and Iraq, there has been no more systematic investigation of the theory across a larger sample of countries, or effort to assess the significance of the role played by regime security concerns relative to other factors. While some recent large-*n* work has considered the effects of regime insecurity on nuclear weapons proliferation, these studies tend to approach regime insecurity through the lens of fears of externally imposed regime change. Furthermore, they do not assess how regime security shapes the relative desirability of different weapons options.

Additionally, the theoretical framework presented here adds nuance to existing cross-national studies of chemical and biological weapons proliferation (e.g., Horowitz and Narang 2014) by identifying specific types of regime security and national security threats that the unique features of CBW are suited to address, and examines the evidence that security threats are motivating CBW pursuit via these distinct pathways. In doing so, it illuminates potential interactions between regime security and national security motivations for weapons proliferation. In particular, it suggests that observed dynamics of “substitution” between nuclear weapons and chemical or biological weapons may be partly driven by the effects of domestic security concerns on the costs and feasibility of nuclear weapons pursuit.

My findings point to the potential for unintended spillover effects of some nuclear nonproliferation efforts. For instance, given the important role that internal security threats can play in driving decision to initiate CBW pursuit, powerful states seeking to undermine hostile regimes domestically may inadvertently spur CBW pursuit by adversaries — a caution to those who pin their counterproliferation hopes on the pursuit of regime change in rogue states. At the same time, effective chemical and biological counterproliferation strategies may depend on the ability to provide potential proliferators with assistance or assurances against internal threats as well as external threats.

Given the intense secrecy surrounding nuclear weapons programs, data availability presents a significant challenge for much research on nuclear security issues. The problem is even more

severe when it comes to information on chemical and biological weapons programs, which are often smaller-scale or shorter lived than nuclear programs, resulting in more limited documentation by both the proliferator government and the intelligence services of other states which may be investigating potential proliferators. Thus, qualitative case selections is constrained by the availability of sufficient information on each country's weapons programs, and the quantitative dataset may be systematically more likely to miss instances of weapons pursuit by states that were more sophisticated in their concealment efforts, or of less interest to Western intelligence services. I would appreciate feedback on both the selection of additional cases for in-depth case studies, and on how to responsibly draw conclusions from my data given these limitations.

## **References**

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Koblentz, Gregory D. "Regime security: A new theory for understanding the proliferation of chemical and biological weapons." *Contemporary Security Policy* 34, no. 3 (2013): 501-525.

## 2. J. Andres Gannon, CFR

### *Forging Conventional Shields with Nuclear Swords: How Nuclear Allies Shape Conventional Armament Decisions*

An ally's credible commitment of nuclear protection is supposed to reduce a state's incentive to indigenously develop nuclear weapons. But how does that promise of nuclear protection influence the conventional military capabilities a state deploys? This project will investigate the role that extended nuclear deterrence plays in influencing the composition of a protege's conventional military capabilities.

Most existing work on extended nuclear deterrence and allied proliferation looks at the relationship between credible security assurances and a protege's acquisition of nuclear capabilities. Yet few partners of nuclear-armed states have had the capacity for nuclear armaments, and even in the nuclear age a majority of states provide for their security using conventional military capabilities as opposed to nuclear ones. So what types of conventional capabilities do state's deploy when they feel their survival is no longer at stake due to the presence of a nuclear-armed ally, and how do those conventional capabilities shift if doubts about their nuclear protector emerge?

To answer this question, I will look at variation in the distribution of conventional military capabilities among states that have alliances with a nuclear-armed state. I define the distribution of conventional military capabilities as the conventional weapons platforms available to a state in a given year. Counts of this data have been previously produced by the author at <https://www.militarycapabilities.com/> and can be used to identify cases where a state increase or decreases its relative share of a particular weapons system. To avoid selecting on the dependent variable, I will include all states in my sample. But since I am interested in the credibility of security assurances from a nuclear power rather than the presence of one, I am most interested in how a state's conventional military capabilities change when (1) they enter/exit an alliance with a nuclear power that provides a security guarantee and (2) the perceived credibility of that security guarantee changes. A host of factors could alter the credibility of an extended deterrence commitment including declaratory policy, the location and/or type of nuclear weapons, and preferences of domestic actors within the host state. These will constitute observable indicators for which there are testable hypotheses. To better examine the causal logic that could drive policymakers to make these decisions about the trade-off between conventional arms and nuclear allies, I also plan to do qualitative work looking at US alliances in East Asia. There is variation both within and across countries

concerning the credibility of the US nuclear umbrella with states like Japan, South Korea, and Taiwan that could also be compared to East Asian states that have to provide for their conventional defense without the benefit of a nuclear-backed ally like Singapore, Indonesia, Vietnam, and the Philippines.

As the research is in its early stages, my argument is exploratory and hypotheses tentative. Existing research on allied proliferation and on extended deterrence more generally nonetheless provide useful starting points. Conventional wisdom suggests that because an alliance with a nuclear-armed state provides assurances that improve a state's security, they will be less inclined to pursue the development of their own nuclear capabilities. An important component of this argument is the assumption that states believe nuclear weapons – whether through domestic acquisition or external reliance – provide security against threats. Yet the nature of those threats varies in important ways. Nuclear weapons may protect a state from invasion or conquest because the defending state could credibly threaten to respond to a threat to its survival with nuclear weapons. But other international security threats a state faces like terrorism, drug trafficking, or gray zone conflicts may not be threats where the threat of nuclear response is credible, or even strategically helpful. I thus hypothesize that when a protege feels confident in the protection provided by its nuclear-armed ally, it will shift its conventional military capabilities towards those designed to deal with non-conventional threats and away from threats of conquest or invasion by a great power. Conversely, if confidence in the nuclear security guarantee wanes, the protege will be more inclined to seek the domestic acquisition of conventional military capabilities that provide a substitute for the survival-guarantee their ally's nuclear weapons are supposed to provide. This could include conventional military capabilities like missile defense, ballistic missiles, and survival platforms like submarines.

My work contributes to existing policy debates about the nature of burden-sharing. Much of the recent debate over NATO burden-sharing concerned the amount of military spending by US allies. But of greater importance than the amount of a partner's military spending is the composition of that spending. All capabilities are not created equal, nor are they all useful protection against the same threats to security and survival. By identifying ways that the promise of protection under the US security umbrella alters the type of defense capabilities allies undertake, we can better understand whether the nuclear security guarantee problematically produces redundancy and encourages adventurism or whether it advantageously promotes an efficient division of labor and restraint.

At this stage, there are a few portions of my project where I would most appreciate feedback. First is how to think about the type of conventional military capabilities that are substitutes for a nuclear ally. What capabilities might a state need more of domestically if they feel their nuclear ally might renege on their promise to issue credible nuclear threats? Second, how can the credibility of the US nuclear security guarantee be observed? Are material indicators like the type of nuclear platforms the US possesses and/or their geographic deployment better or worse indicators of credibility than verbal statements like alliance treaty texts and broader declaratory policy? Third, and lastly, should the empirical scope of my project be limited to one nuclear-armed state and its allies, like the United States, or a region like East Asia? There are multiple different ideas embedded in this project so I hope to narrow the scope to a single publishable academic paper soon.

### 3. Nicole Grajewski, Belfer

#### *Russia, Iran, and the Global Nuclear Order*

This project examines Russian foreign policy towards the Iranian nuclear program as a case for understanding Russian and Iranian approaches to the global nuclear order. By doing so, it contextualizes Moscow and Tehran's foreign policy debates about the institutions that sustain the global nuclear order, encompassing their ideas about deterrence, arms control, non-proliferation, and disarmament. Both Russia and Iran are central to nuclear security. Russia remains a leading actor in shaping the norms and practices of the global nuclear order due to the unspoken reliance on nuclear deterrence, and a promise, albeit weakly implemented, of nuclear disarmament by the nuclear weapons states in the NPT. For Russia, the possession of nuclear weapons and its position in the global nuclear order has been inextricably tied to its perception of its 'great power-ness' (*derzhavnost'*). Within the global nuclear order, non-nuclear weapon states like Iran possess the ability to shape this order. Iran not only poses an immediate concern for regional proliferation crises but also demonstrates efforts by states to challenge the legitimacy of the global nuclear order. This study rectifies a crucial gap in the study of Russia and the Iranian nuclear program by incorporating both Russian and Persian sources, better informing us on the factors shaping Russia-Iran relations within the context of the global nuclear order.

*What do Russian foreign policy ideas and debates on the Iranian nuclear program reveal about Russian international nuclear practices and its approaches to the global nuclear order more broadly?* Examining Russian foreign policy towards the Iranian nuclear program elucidates how Russia's attitudes towards and position in the global nuclear order have evolved over time. This project scrutinizes whether Russian policies towards the Iranian nuclear program have contributed to the institutions, frameworks, and norms that underpin the global nuclear order. Understanding Russia's approach to the Iranian nuclear program also provides insight into the domestic and international basis of Russian foreign policy ideas concerning export-control, missile defense, the peaceful use of nuclear energy, IAEA safeguards, and the role of great powers in the nuclear non-proliferation regime.

*How have Russian and Iranian understandings of the global nuclear order evolved, conflicted, and converged; and to what extent, have these understandings influenced the pursuit and implementation of nuclear policies?* Apart from examining Russian policy towards Iran's nuclear program specifically, my research looks at both Moscow and Tehran's broader approaches to the global nuclear order. Therefore, a secondary goal of this project is to examine the convergences and divergences between Moscow and Tehran's approaches to the global nuclear order. Both Russia and Iran possess distinct understandings of the institutions, norms,



and practices which maintain the global nuclear order. Attention to Russian and Iranian foreign policy ideas allows this study to elaborate on the meanings both attach to the foundations and frameworks of the global nuclear order while revealing the deeper conceptual basis of their respective worldviews.

My research develops the conceptual tools to interpret Russian and Iranian foreign policy ideas through a variety of Russian and Persian language sources including official government statements, diplomatic opinions, academic literature, primary sources, archival documents, and elite interviews. Relying on qualitative methods, I offer a framework that appreciates the *sui generis* nature of Russian and Iranian ideas about the global nuclear order without neglecting their wider application and theoretical basis. My work includes original archival material obtained from fieldwork in the Russian Academy of Sciences Archive, Russian State Archive of Contemporary History, Boris Yeltsin Archives, and Bill Clinton Presidential Archives. These sources are triangulated with Russian and Iranian elite interviews including former presidential advisors, former diplomats, ambassadors, deputy Foreign Ministers, experts, and academics. I take a historical-chronological approach that broadly focuses on four themes tied to the global nuclear order: 1) non-nuclear weapons states, civilian nuclear energy, export-controls, and nuclear latency; 2) rogue states, safeguards violations, and black-market nuclear technology transfers; 3) nuclear proliferation, punitive sanctions, diplomacy, and the role of great powers; and 4) the future of deterrence, arms control, and strategic stability in an eroding nuclear order.

The first case I examine is Russian ‘techno-diplomacy’ with Iran through the construction of the Bushehr Nuclear Power Plant (NPP) which reveals Moscow’s view of the key themes of civilian nuclear energy, safeguards, and export-control. It looks at U.S. pressure on Russia to forgo cooperation with Iran during the Gore-Chernomyrdin commission as Washington sought to condition Moscow’s access to the establishment of the post-COCOM system of export control with the termination of civilian nuclear cooperation between Russia and Iran. The case examines Iran’s decision to acquire nuclear technology and the domestic factors which motivated Russian involvement. Whereas Moscow abandoned its commitment to construct a gas centrifuge, Russia remained adamant about the construction of a light-water reactor at Bushehr which solidified the country’s role in Iran’s domestic energy sector. Bushehr illuminates the challenges associated with Russia’s domestic legislation on export-control and illicit technology transfers in the 1990s while demonstrating the facilitators in Russia’s techno-diplomacy with Iran.

The second case concerns Iran’s proliferation policies and Russian responses to Iran’s clandestine proliferation efforts. With the revelations of Iran’s clandestine nuclear program, Russian diplomatic efforts sought to support E3 diplomacy and elicit Iranian acceptance of the NPT’s additional protocol. Although Russia had been ambiguous about clandestine Iranian

behavior in the nuclear field in the 1990s, the revelations of Iran's covert nuclear program including uranium enrichment facilities in Natanz and weapon-grade plutonium production facilities in Arak in August 2002 strengthened Moscow's resolve to support international efforts for a diplomatic solution. Russia concurrently considered the U.S. denial of Iran's right to civilian nuclear energy as enabling black-market transfers of material that ultimately undermined the stability of IAEA safeguards. It demonstrates the tension between Russia's aversion to the notion of 'rogue states' (*gosudarstva-izgoi*) with Iran's involvement in black-market nuclear technology transfers, clandestine activity, and safeguards violations. Despite evidence of Iranian violations of its obligations under the NPT, the Russian government argued that Iran had the right to use civilian nuclear energy- contingent on IAEA oversight. Iran's rejection of the 2006 Russian-brokered fuel swap proposal provoked a shift in Russian elite thinking that culminated in Moscow's support for the IAEA Board of Governors decision to refer the Iranian nuclear file to the U.N. Security Council.

The third case examines multilateral diplomacy on the Iranian nuclear program, including Russia and Iran's respective policies. Starting in 2006, Russian diplomacy supported a two-track approach to the nuclear program characterized by providing Tehran with incentives to negotiate while using multilateral sanctions to increase pressure on the Iranian leadership. Russian diplomacy on the Iranian nuclear file shed light on Russian views on counterproliferation, the use of sanctions, and punitive measures. Within the U.N. Security Council, Moscow often articulated its long-standing normative view of the distinction between the legitimacy of multilateral versus unilateral sanctions. After the revelations of Fordow in September 2009, Moscow used Iran as a 'bargaining chip' with the U.S. to elicit reciprocity for WTO accession, U.S. missile defense plans in Europe, the removal of sanctions on Rosoboroneksport, and the ratification of the 1-2-3 Nuclear Cooperation Agreement. The case concludes with the P5+1 negotiations on the Iranian nuclear program. Despite the progressive downturn in U.S.-Russia relations, Moscow introduced numerous diplomatic and technical proposals such as the conversion of Fordow, the timing and sequencing of the agreement, and the 'snap-back' mechanism that culminated in the JCPOA.

The final case examines the U.S. withdrawal from JCPOA within the context of the erosion of the global nuclear order. The JCPOA points to the larger question of whether international order can be sustained amid eroding nuclear order. It addresses Russian and Iranian views of the future of regional deterrence, strategic stability, and the durability of the global nuclear order. I plan to incorporate Russia's policies toward nuclear safety during the war in Ukraine as an intra-case comparison to its policies on the Iran nuclear program.

My work proceeds from the premise that the maintenance of international order remains deeply intertwined with that of the global nuclear order. I argue that like international order

itself, the global nuclear order is contested and conflicted, driven by contending interpretations of norms related to non-proliferation and the institutions which uphold nuclear safety and security. Much of the global nuclear order is regime-based, maintained by the legitimacy of non-proliferation norms, the right to civilian nuclear energy, security assurances, and safeguards. Even prior to Russia's war in Ukraine, the global nuclear order was increasingly characterized by disorder. The erosion of regimes, treaties, and confidence building measures have been compounded by the challenges associated with force modernization, technological advancement, regional proliferation, and contested interpretations of the rules established to maintain order. I define the global nuclear order as *the rules, norms, and principles embedded in and mutually constitutive of the regimes and informal institutions, arising from the ordering imperative to harness the application of nuclear technology*. Such a conceptualization captures the interaction between the global nuclear order's *architecture* - rules, norms, and principles – and its *infrastructure* – formal regime, informal institutions, practices, and patterns of activity. I argue that Russia and Iran provide insight into the plurality of approaches to the global nuclear order, illustrating efforts by states to uphold, contest, and transform aspects of the architecture and infrastructure of the global nuclear order.

The project contributes to extant work on the global nuclear order as well as studies of Russian and Iranian nuclear policies. Realism contends that the global nuclear order merely reflects the distribution of power. Yet, realism offers a limited conception of power that overlooks how the global nuclear order has been shaped by not only multiple manifestations of power - institutional, productive, structural, and compulsory – but also the individual preferences of states which falls victim to empirical impoverishment for sake of parsimony. My work emphasizes both the domestic political factors in both Russia and Iran as well as the international factors that have conditioned Moscow and Tehran's policies towards the global nuclear order. The theoretical and conceptual literature tends to equate the global nuclear order to some combination of deterrence, arms control, non-proliferation, strategic stability, the nuclear taboo, and disarmament. These concepts remain integral to the patterns of activity and institutions of the global nuclear order; however, existing definitions are undertheorized or incomplete. Existing work on the global nuclear order focuses heavily on the NPT, equating it to certain pillars with little regard to 'what holds all of it together.' Similarly, the emphasis on U.S. hegemony or the dichotomy between the 'haves' and 'have-nots' in post-colonial and critical studies of the global nuclear order proceeds from simplistic binaries. The focus on the constraining and enabling conditions of the global nuclear order obscures the relationship with broader international order and domestic state interests.

My research refines existing studies by drawing on theoretical literature on international order and its relationship with regional and functional suborders to offer a workable definition

of the global nuclear order. This helps correct the weakness in existing theoretical accounts while providing a lens to examine Russian and Iranian understandings of the global nuclear order. Moreover, it allows this project to scrutinize the wider theoretical relevance of Russian and Iranian approaches to related literature on deterrence, disarmament, nuclear safety, nuclear latency, technology transfer, arms control, and non-proliferation. Existing studies of the global nuclear order have focused on countries like China, India, Brazil, and Kazakhstan; however, neither Russia nor Iran have been the subject of a comprehensive study that extensively employs Russian or Persian sources. My contribution is both theoretical and empirical – strengthening existing conceptualizations of the global nuclear order, enriched by the empirical evidence of Russia and Iran.

The project bears direct relevance to policy and nuclear security through its comprehensive evaluation of Russia and the Iranian nuclear program that informs policy on Russian and Iranian nuclear decision-making. Despite the complexity and importance of Russia and Iran in the evolving global nuclear order, the lack of theoretically informed and empirically grounded studies remains a significant shortcoming in decision-makers' ability to interpret Russian and Iranian conduct. The project relies on cross-regional expertise to better understand the domestic and international factors involved in shaping Russian and Iranian nuclear policies. Any feasible resolution to the present impasse over the Iranian nuclear program will invariably require Russian cooperation - due to Moscow's relations with Tehran, its involvement in Iran's civilian nuclear energy sector, and its status as a nuclear weapon state. Consequently, my work generates multiple concrete recommendations for policymakers, ranging from the limits of engagement with Russia on the Iran nuclear file to Moscow's broader understanding of nuclear safety. Moreover, the project has wider and more generalizable implications for U.S.-Russia relations, regional proliferation crises, strategic stability, and deterrence.

I have already collected the majority of accessible data for the project – I was initially planning on conducting further fieldwork in Russia, which is no longer feasible due to the war in Ukraine. Given these constraints, I may conduct additional interviews with former U.S. or European policymakers on the cases. I would benefit from feedback on the framing and conceptual aspects of the project which remains a work in progress. Additionally, any feedback on the conceptual focus of each case study would be welcomed.