SYLLABUS

SCIENCE DIPLOMACY:

Environmental Security and Law in the Arctic Ocean

Spring 2018

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Diplomacy, History and Politics (DHP-P259)

Time: Thursday 08:30-11:00 EST Boston (16:30-18:00 Moscow)
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- Daylight Savings time changes in the United States on 11 March 2018

Location: Isobe (Mugar 251f)

Materials: Online materials will be available via Tufts' Canvas site (https://canvas.tufts.edu), with all students provided access using their email addresses

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Course Abstract

This course will address "science diplomacy" as an emerging interdisciplinary field with global relevance to promote cooperation and prevent conflict among nations. The first formal dialogue between NATO and Russia about security issues in the Arctic Ocean will be used as a case study, team-taught by the two co-directors of the *NATO Advanced Research Workshop on Environmental Security in the Arctic Ocean* at the University of Cambridge in 2010. The resulting book – which has over 50,000 downloads – will serve as the key text to address the applications of science diplomacy for informed decision-making from local to global scales:

1. Studying change (time-space);
2. Earth system assessment;
3. Early warning systems;
4. Public-policy agendas;
5. Legal institutions;
6. Invention and commercialization;
7. Continuity across generations;
8. Inclusive dialogues.

This course is designed as a weekly seminar for 2.5 hours on Thursday (morning United States and afternoon Russian Federation) and will be co-taught via videoconference by Professor Paul Berkman at The Fletcher School of Law and Diplomacy at Tufts University in Boston and by Professor Alexander Vylegzhanin at MGIMO University in Moscow, involving approximately fifteen students on each side. United States and Russian students will learn together in the shared classroom environment and collaborate on projects throughout the semester, leading to a Mock Arctic Council Ministerial Meeting and joint production of a mock ministerial declaration adopted by consensus.

Utilizing **international law applicable to the Arctic Ocean** as a case-study, the first objective of this course is to consider applications of **science diplomacy as an *holistic (international, interdisciplinary and inclusive) process involving evidence integration to balance national interests and common interests for the benefit of all on Earth*.** These interests extend to economic prosperity, environmental protection and societal well-being – as encapsulated by the United Nations Sustainable Development Goals – operating over security to sustainability time scales across generations. The second objective of this course is to provide students with a broad knowledge of the current international legal regime of economic and environmental activities of states and residents in the Arctic region, especially within, across and beyond sovereign jurisdictions in the sea.

Overall goal of this course is to consider scientific contributions to sustainable, stable and peaceful development in our world – bridging science, technology and innovation for the lasting benefit of our globally-interconnected civilization. In this sense, **science is defined inclusively as the 'study of change'** to integrate results from the natural and social sciences as well as indigenous knowledge into evidence and options, contributing to informed decision-making in our globally-interconnected civilization for the benefit of all on Earth.

Two-Part Course Syllabus

This is an integrated two-part course that was first taught via video-conferencing by Prof. Paul Berkman (Fletcher School of Law and Diplomacy at Tufts University in Boston, United States) and Prof. Alexander Vylegzhanin (MGIMO University in Moscow, Russian Federation) in Spring 2017. This syllabus has been updated for Spring 2018 to integrate fully with the required "Arctic Law" educational programme at MGIMO University, assessing science-diplomacy with global relevance, with particular focus on cooperation between the United States and Russian Federation in the Arctic.

The first part of the course will involve lectures, materials and discussions within modules that relate to the core elements of science diplomacy and Arctic law. To facilitate 'active learning,' the second part of the course will involve a Mock Arctic Council Ministerial Meeting where student-ministers negotiate a consensus declaration to agree upon.

- How does science diplomacy promote cooperation and prevent conflict among nations?
- How does environmental security elevate the urgency of sustainable development?
- How does science, including law, provide a tool to build common interests among nations?
- What global lessons are emerging from international engagement in the Arctic Ocean, in view of the legal positions expressed by Arctic and non-Arctic states as well as indigenous peoples?

The Arctic Ocean will be used as a case-study where science diplomacy is balancing national interests and common interests with regard to sustainable development, recognizing that decision-making for sustainability involves the combination of:

1. Fixed, mobile and other built assets (including communications, research, observing and information systems); and
2. Regulatory, policy and other governance mechanisms (including insurance).

Lessons of science diplomacy in the Arctic Ocean will be illustrated further in the context of **environmental security, requiring *an integrated approach for assessing and responding to the risks as well as the opportunities generated by an environmental state-change.***

Core references will come from the Arctic Council, which was established in 1996 by the eight Arctic states (Canada, Denmark, Finland, Iceland, Norway, Sweden, Russian Federation and United States) with sovereign jurisdictions north of the Arctic Circle (66.5°N) and six indigenous peoples organizations (Aleut International Association, Arctic Athabaskan Council, Gwich'in Council International, Inuit Circumpolar Council, Russian Association of Indigenous Peoples of the North, and Saami Council). References will include products from the six scientific working groups of the Arctic Council that relate to emergency preparedness, sustainability, monitoring and assessment, marine ecosystem protection, contaminant action and species conservation. One article among the required and supplementary readings will serve as the focus for initial discussion each week. MGIMO-Fletcher reading groups will be developed with students from both institutions and it is anticipated this course will involve guest contributions.

Law of the sea will be addressed throughout this course as the international legal framework for the Arctic Ocean, as agreed by the eight Arctic states. Materials also will be included from other relevant institutions and stakeholders to more-fully reveal international, interdisciplinary and inclusive perspectives about the Arctic Ocean. In addition, information-technology approaches will be used to facilitate discovery of content-in-context among selected course materials.

The course will introduce the decision-support process of science diplomacy, starting with questions that enable allies and adversaries alike to build common interests at a stage with minimal investment. The next level of complexity involves methodologies to generate data with subsequent assessments to answer the questions. By defining science inclusively as 'the study of change' – there is alignment of natural and social sciences as well as indigenous knowledge, which then can be integrated into evidence for decisions that reflect the need for action. Subsequent **options (without advocacy), which can be used or ignored explicitly, underscore the diplomacy necessary for informed decision-making across our globally-interconnected civilization.** The interests in science extend to economic prosperity, environmental protection and societal well-being – as encapsulated by the United Nations Sustainable Development Goals – with the challenge of contributing to informed decision-making over security to sustainability time scales across generations.

Course Format and Pedagogy

This team-taught course will be divided into interconnected modules to consider the elements of science diplomacy and international law, with the Arctic as a case study. Profs. Berkman and Vylegzhanin will alternate responsibilities for each weekly session. The modules will build toward the Mock Arctic Council Ministerial Meeting (described separately in detailed instructions below). Each module will involve various readings that will be elaborated in the lectures and class discussions. Through a process of open-ended inquiry to balance diverse interests – this course is designed to facilitate holistic thinking about transboundary issues, impacts, regions and resources that require international, interdisciplinary and inclusive solutions. As a central organizing principle in our globally-interconnected civilization, this course also is designed to facilitate general theoretical and practical understanding about the relevant issues of international law.

Weekly Schedule

8 February 2018	Module 1 (Fletcher / MGIMO)
15 February 2018	Module 2 (Fletcher / MGIMO)
22 February 2018	(Fletcher No Classes / MGIMO)
1 March 2018	Module 3 (Fletcher / MGIMO)
8 March 2018	Module 4 (Fletcher / MGIMO)
15 March 2018	Module 5 (Fletcher / MGIMO)

22 March 2018	(Fletcher No Classes / MGIMO)
29 March 2018	Module 6 (Fletcher / MGIMO)
5 April 2018	Module 7 (Fletcher / MGIMO)
12 April 2018	Module 8 (Fletcher / MGIMO)
19 April 2018*	Mock Arctic Council Ministerial Meeting (Fletcher / MGIMO)
26 April 2018*	Mock Arctic Council Ministerial Meeting (Fletcher / MGIMO)
3 May 2018*	Mock Arctic Council Ministerial Meeting (Fletcher / MGIMO)

* Fletcher / MGIMO students agree to the schedule for the Mock Arctic Council Ministerial Meeting (any adjustments to be made by 15 February 2018) with mandatory attendance.

Schedule of Assignments

(include your name and number each page for all assignments)

Three Words Assignment **(Due: 15 February 2018)**

- Select any three words (e.g., activity, location, impact) that relate to elements that you would like to include in your information paper for the Mock Arctic Council Ministerial Meeting that will generate your Ministerial Declaration (please see below)
- We will explore the content-in-context occurrences of your word(s) among the Arctic Council Ministerial Declarations that have been approved through 2015, including the 1996 *Ottawa Declaration* that established the Arctic Council:
    - See the *Arctic Council Knowledge Portal* – http://arcticcouncil.knohow.co.

Concept Map Assignment **(Due: 1 March 2018)**

- Map relationships between your three words and the words that were introduced in the class discussion on 15 February 2017

Concept Map Assignment – Sustainability Considerations **(Due: 8 March 2018)**

- Revise your concept maps with consideration of environmental, economic and societal themes or threads among the elements you have identified, taking into account the international Agreements already signed by the Arctic states within the framework of the Arctic Council in 2011, 2013 and 2017.

Concept Map Assignment – Sustainability Considerations – Prioritized **(Due: 15 March 2018)**

- Revise your concept maps by prioritizing all elements as you see fit
- Describe in 2 pages or less (12 pt font, 1.5 spacing, 1" margins) your prioritized relationships and rationale in terms of framing your negotiation strategy

Information Paper Outline **(Due: 29 March 2018)**

- Scope of the Information Paper relates to your integrated assessment of actual Arctic Council Ministerial Declarations through 2017, including the *1996 Ottawa Declaration* (see Arctic Council Knowledge Portal – http://arcticcouncil.knohow.co) as well as the Agreements signed

by all Arctic States in 2011, 2013 and 2017.

- Building on your prioritized concept map and 2-page description, develop an outline of your Information Paper that will be circulated to the other "Student Foreign Ministers"
- The Information Paper Outline should be 5 pages or less (12 pt font, 1.5 spacing, 1" margins) in outline form and have the following elements:
    - Abstract (100 words or less)
    - Background
    - Priorities
    - References:
        - At least 5 primary legal sources (i.e., original international or national policies, such as the: 2008 *Ilulissat Declaration*; 2008 *Basics of the State Policy of the Russian Federation in the Arctic for the Period until 2020 and for a Further Perspective*; or 2009 *United States National Security Presidential Directive 66: Arctic Region Policy*)
        - At least 5 secondary legal resources (i.e., interpretations of policies)
        - At least 5 other publications
    - Your concept map plus at least 1 other figure
    - 1 table (i.e., rows and columns) of information that you have synthesized

Faculty Review Session **(Due: During week following 29 March 2018)**

- 1-1 discussions with Professors Berkman / Vylegzhanin for 30 minutes
- Purpose is to discuss you *Information Paper Outline*

Take-Home Essay **(Due: 12 April 2018)**

- Question(s) and guidelines will be provided in class on 5 April 2018

Final Information Paper (Due: 19 April 2018)

- The Final Information Paper should be 10-15 pages maximum (12 pt font, 1.5 spacing, 1" margins) and have the following elements (building on the Information Paper Outline):
    - Abstract (100 words or less)
    - Background with sub-sections, as appropriate
    - Priorities with sub-sections, as appropriate
    - References:
        - At least 10 primary legal sources
        - At least 10 secondary legal resources
        - At least 10 other publications
    - Your concept map plus at least 2 other figures
    - At least 1 table (i.e., rows and columns) of information that you have synthesized

Mock Arctic Council Ministerial Meeting (Due: 19 April 2018)

- Develop and vote on meeting agenda
- Define consensus approval

- Begin negotiations
- Outline and begin drafting Mock Arctic Council Ministerial Declaration

Mock Arctic Council Ministerial Meeting (Due: 3 May 2018)

- Finalize and Approve Mock Arctic Council Ministerial Declaration

Course Textbooks

Students should purchase

- Berkman, P.A. and Vylegzhanin, A.N. (eds.). 2012. *Environmental Security in the Arctic Ocean.* Springer, Dordrecht. 459 p. [hereinafter *Environmental Security*– access via bookstore or http://www.springer.com/us/book/9789400747128].

Students should download:

- Berkman, P.A. 2002. *Science into Policy: Global Lessons from Antarctica*. Academic Press, New York. 252 p. [hereinafter *Science into Policy* – access via: https://canvas.tufts.edu].
- Berkman, P.A., Lang, M.A., Walton, D.W.H. and Young, O.R. (eds.). 2011. *Science Diplomacy: Antarctica, Science and the Governance of International Spaces.* Smithsonian Institution Scholarly Press, Washington, D.C. 357 p. [hereinafter *Science Diplomacy* – access via https://repository.si.edu/handle/10088/16154].

Other Course Readings

All other required and supplementary readings as well as course projects and assignments will be available on the Tufts' Canvas site (https://canvas.tufts.edu) with relevant sub-folders to facilitate easy access from any computer with an internet browser. These materials will be available as portable document format (.pdf) files that you can print as hard copies will unavailable. During the first couple weeks of class, students can access the materials on Canvas as a "guest"; however, only students formally enrolled in the course through The Fletcher School or MGIMO University will have access to course materials after this period. You will need to use a Tufts ID number to access the course materials on Canvas. (**Note:** MGIMO and cross-registered students can obtain their Tufts ID from The Fletcher School Registrar's office: http://fletcher.tufts.edu/FletcherConnect/Registrar).

A 'knowledge portal' with the Ministerial Declarations adopted by the Arctic Council (http://arcticcouncil.knohow.co) has been constructed, enabling students to integrate these original policies based on their selection of search queries in preparation for the Mock Arctic Council Ministerial Meeting (see Assignments above).

Course Evaluation:

Fletcher students will be evaluated on the basis of:

- *Class participation* (total 25%):
  - *Contributions* throughout the course (10%);
  - *Interaction* during the Mock Arctic Council Ministerial Meeting (15%).
- *Take-home essay* (total 25%);
- *Course synthesis* (total 50%):
  - *Outline* of key issues (10%);
  - *Information Paper Outlin*e for the Mock Arctic Council Ministerial Meeting (15%); and
  - *Final Information Paper* for the Mock Arctic Council Ministerial Meeting (25%).

MGIMO students will be evaluated on the basis of:

- *Class participation* (total 15%)
- *Take-home essay (*total 25%*)*
- *Course synthesis* (total 20%):
  - *Quiz* (5%);
  - *Information Paper Outlin*e for the Mock Arctic Council Ministerial Meeting (5%); and
  - *Final Information Paper* for the Mock Arctic Council Ministerial Meeting (10%).
- *Final test* (total 40%)

COURSE AGENDA

MODULE 1: INTRODUCTION: OBJECTIVES, QUESTIONS, DEFINITIONS AND CONCEPTS

This module will work from first principles to introduce theory-into-practice methodologies of science diplomacy and international law with the Arctic Ocean as a case study. Course objectives will be introduced to provide a reference for formative and summative assessments by all involved, applying definitions to guide dialogues in the class as well as **among allies and adversaries alike**. For the case study, international legal framework of the law of the sea and its historical development, especially regarding the Arctic Ocean, will be introduced in view of customary international law and the 1982 *United Nations Convention on the Law of the Sea* (UNCLOS) as well as applicable regional and bilateral international agreements to which both the United States and Russian Federation are parties. The role of the eight states north of the Arctic Circle (66.5° North latitude) in establishing legal norms for this region will be discussed further in view of 'Arctic law' and its implementation to achieve *"sustainable development and environmental protection,"* which are the *"common Arctic issues"* established by the 1996 *Ottawa Declaration* for the Arctic Council. Inquiry strategies will be discussed to stimulate curiosity and address questions in an holistic (international, interdisciplinary and inclusive) manner with the apex goal of contributing to **informed decision-making** across our globally-interconnected civilization.

Required Reading:

Environmental Security. 2012. (Preface; Chapter 1-3).

Gorbachev, M. 1987. *Speech in Murmansk at the Ceremonial Meeting on the Occasion of the Presentation of the Order of Lenin and the Gold Star to the City of Murmansk, 1 October 1987*. (English translation prepared by the Press Office of the USSR Embassy, Ottawa, 1988).

- For Discussion

Science Diplomacy. 2011. (Preface, Conclusions).

Science into Policy. 2002. (Preface).

Supplementary Reading:

Agreement between the United States of America and the Union of Soviet Socialist Republics of the maritime boundary (1990).

Agreement between the Government of the United States of America and the Government of the Russian Federation on the conservation and management of the Alaska-Chukotka polar bear population (2000).

Agreement between the Government of the United States of America and the Government of the Russian Federation on the conservation and management of the Alaska-Chukotka polar bear population (2000).

Arctic Council. [Explore the website – http://www.arctic-council.org].

Arctic Research and Policy Act of 1984 (amended 1990).

Bloom, E.T. 1999. Establishment of the Arctic Council. *American Journal of international Law* 93 (3):712-732.

EvREsearch. 2018a. *Knowledge Portal of Arctic Council Declarations.* [Integrate dynamically with your selection of search terms – http://arcticcouncil.knohow.co].

Ottawa Declaration*. 1996. Declaration on the Establishment of the Arctic Council*. Signed, 19 September 1996, Ottawa.

Strategy for development of the Arctic zone of the Russian Federation and the national security up to 2020 (2013)

Treaty concerning the Cession of the Russian Possessions in North America by his Majesty the Emperor of all the Russias to the United States of America (Treaty on Cessation of Alaska 1867)

UNCLOS. 1982. *United Nations Convention on the Law of the Sea.* Signed, 10 December 1982, Montego Bay; Entry into Force, 16 November 1994.

US National Strategy for the Arctic Region (2013).

Young, O.R. 1986. The Age of the Arctic. *Foreign Policy* 61: 160-179.

MODULE 2: SCIENCE AS AN ESSENTIAL GAUGE OF CHANGES OVER TIME AND SPACE

In an holistic (international, interdisciplinary and inclusive) context – **science is 'the study of change,'** involving natural and social sciences as well as indigenous knowledge, which will be illustrated with examples from the Arctic. With its different methodologies, science offers a process of discovery, providing a framework to look backward and forward in time to describe the precedents, patterns

and trends that contribute to decision making at local, regional and global scales. Importantly, science reveals interactions between natural and anthropogenic forcing with multiple dimensions across a **'continuum of urgencies,'** operating from security time scales (associated with immediate risks of economic, political, or cultural instabilities) to sustainability time scales (involving balance between economic prosperity, environmental protection and societal well-being across generations). In addition, according to the *Charter of the United Nations*, *"the teachings of the most highly qualified publicists of the various nations"* are subsidiary means for the determination of rules of international law. In the context of human-population growth, as a component of sustainable development, environmental security in the Arctic Ocean will be discussed to illustrate the challenges and opportunities we face on a planetary scale.

Required Reading:

American Museum of Natural History. 2018. Global Population Growth. [watch the video – https://www.youtube.com/watch?v=PUwmA3Q0_OE].

- For discussion.

Environmental Security. 2012. (Chapters 4-6 and 19-20).

Science into Policy. 2002. (Chapters 1 and 2).

Vylegzhanin, A.N. 2009. Developing International Law Teachings for Preventing Inter-State Disaccords in the Arctic Ocean. *Heidelberg Journal of International Law.* 69(/3):669-681.

Supplemental Reading:

Borgerson, S.G. 2008. Arctic Meltdown: The Economic and Security Implications of Global Warming. *Foreign Affairs* March/April 2008.

Global Trends. Office of the Director of National Intelligence. National Intelligence Council. (Explore the website – https://www.dni.gov/index.php/about/organization/national-intelligence-council-global-trends)

Kahneman, T. 2011.*Thinking Fast and Slow.* Farrar, Straus and Giroux. New York.

NASA. 2018. Three-dimensional video of changes in the Greenland Ice Sheet. National Aeronautics and Space Administration (Watch the video – https://www.nasa.gov/content/goddard/nasa-data-peers-into-greenlands-ice-sheet)

Rasmussen, R. (ed.). 2011. *Megatrends*. Nordic Council of Ministers.

Stoltenberg, T. 2009. *Nordic Cooperation on Foreign and Security Policy*. Proposals Presented to the Extraordinary Meeting of Nordic Foreign Ministers. Oslo: 9 February 2009.

Science Diplomacy. 2011. (pp. 51-58 and 281-286).

United Nations. 1945. *Charter of the United Nations. Signed,* 26 June 1945, San Francisco. Entry into Force 24 October 1945.

MODULE 3: SCIENCE AS AN ELEMENT OF INTERNATIONAL LEGAL INSTITUTIONS

Science contributes fundamentally to the implementation of sustainable development strategies, **balancing environmental protection, economic prosperity and social well-being**. On a global scale,

science is built into legal institutions, as heralded in UNCLOS, which includes "scientific" in 51 of 320 Articles among Parts 1-XVII of this global international treaty. Importanlty, the Arctic states *"remain commited"* to the law of the sea as the legal framework for the Arctic Ocean. More than an umbrella legal framework to cover governance gaps, the law of the sea establishes zones within and beyond sovereign jurisdictions, offering a paradigm to **balance national interests and common interests** in the Arctic Ocean and elsewhere on Earth. Recognizing their stewardship responsibilities, the eight Arctic states have adopted the: 2011 *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic;* 2013 *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic;* and 2017 *Agreement on Enhancing International Arctic Scientific Cooperation.* The broader international community also created the *International Code for Ships Operating in Polar Waters (Polar Code)*, which entered into force on 1 January 2017. Interplay of diverse legal institutions will be discussed in relation to their implementation in the Arctic Ocean, integrating governance mechanisms and built infrastructure as an iterative process of decision-making for sustainability that applies generally.

Required Reading:

Berkman, P.A. and Young, O.R. 2009. Governance and Environmental Change in the Arctic Ocean. *Science* 324: 339-340.

- For Discussion

Berkman, P.A., Vylegzhanin, A.N. and Young, O.R. 2017. Application and Interpretation of the Agreement on Enhancing International Arctic Scientific Cooperation. *Moscow Journal of International Law* 3:4-28.

Science into Policy. 2002. (Chapter 12).

UNCLOS. 1982. *United Nations Convention on the Law of the Sea.* Signed, 10 December 1982, Montego Bay. Entry into Force, 16 November 1994. Part XIII. Marine Scientific Research. Articles 235-268.

Supplemental Reading:

Bull, H., Kingsbury, B. and Roberts, A. (eds.). 1990. *Hugo Grotius and International Relations.* Oxford University Press, Oxford.

Environmental Security. 2012. (Chapters 15-16, 22-23, 26 and 30).

Ilulissat Declaration. 2008. *Declaration from the Arctic Ocean Conference.* 28 May 2008, Ilulissat.

IMO. 2017. *International Code for Ships Operating in Polar Waters (Polar Code). Marine Environmental Protection Committee, MEPC 68/21/Add. 1, Annex 10. International Maritime Organization.* Entry into Force, 1 January 2017.

MOPP. 2013. *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic.* Signed 15 May 2013. Kiruna. Entry into force 24 March 2016.

SAR. 2011. *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic.* Signed 12 May 2011. Nuuk. Entry into Force 19 January 2013.

Science Diplomacy. 2011. (pp. 75-88).

Young, O.R. 1998. *Creating Regimes: Arctic Accords and International Governance.* Cornell University Press, Ithaca.

MODULE 4: SCIENCE AS AN INSTRUMENT FOR RECORDING, ASSESSING AND EARLY WARNING

From basic to applied research, science is strongly influenced by discoveries that have practical benefits for society. Such research is commonly seen in terms of monitoring and assessing natural as well as anthropogenic impacts that influence human populations and their associated ecosystems. On a global scale, the 'ozone-hole' at once reveals unequivocal anthropogenic impacts to the Earth system on a global scale, while highlighting the central roles and responsibilities of the international scientific community in providing early warnings about impending threats that can be translated into adaptation or mitigation policies. Representing an holistic process, the six Arctic Council working groups generate assessments that relate to topics that are of common concern to the Arctic states and indigenous peoples as well as observers regarding: contaminant actions; floral and faunal conservation; emergency prevention, preparedness and response; marine environmental protection; and sustainable development with monitoring and assessment throughout. As primary **biophysical and socio-economic drivers of change** in the Arctic Ocean, diminishing sea ice and increasing ship traffic will be considered in relation to decision-making associated with operations and infrastructure development. Methodologies and data to answer questions of common concern will be discussed as foundational features of the science-diplomacy process to balance national interests.

Required Reading:

Hardin, G. 1968. Tragedy of the Commons. *Science* 162:1243-1248.

- For Discussion

Environmental Security. 2012. (Chapters 7- 8 and 21)

Science into Policy. 2002. (Chapter 4).

Vylegzhanin, A.N. and others. 2013. International Cooperation in Environmental Protection, Preservation and Rational Management of Biological Resources in the Arctic Ocean. Russian International Affairs Council. Moscow. pp. 59-69.

Supplemental Reading:

ACIA. 2004. *Arctic Climate Impact Assessment.* Cambridge University Press, Cambridge. (Executive Summary, Findings 1-10).

AEPS. 1991. *Arctic Environmental Protection Strategy*. Rovaniemi, 14 June 1991.

AHDR. 2004. Arctic Human Development Report. Sustainable Development Working Group, Arctic Council. pp. 1-25. (skim chapters and consider relevant data).

AHDR. 2014. *Arctic Human Development Report II.* Regional Processes and Global Linkages. Nordic Council of Ministers, Copenhagen. pp. 21-50. (skim chapters and consider relevant data versus AHDR 2004).

AMSA. 2009. *Arctic Marine Shipping Assessment (AMSA).* Protecting the Arctic Marine Environment Working Group of the Arctic Council, Akureyri.

Eguíluz, V.M., Fernández-Gracia, J., Irigoien, X. and Duarte, C.M. 2016. A quantitative assessment of Arctic shipping in 2010–2014. *Nature* (DOI: 10.1038/srep30682). Pp. 1-6.

NSIDC. 2018. *Arctic Sea Ice News & Analysis.* National Snow and Ice Data Center, Boulder. [Explore the website – http://nsidc.org/arcticseaicenews/].

Science Diplomacy. 2011. (pp. 123-132, 189-196).

Vylegzhanin A.N. 2011. The Contemporary Legal Framework of the Arctic Ocean: are there impacts of Diminishing Sea Ice? *Rivista di Studi Politici Internazionali*. 78(3):379-391.

MODULE 5: SCIENCE AS A DETERMINANT OF PUBLIC-POLICY AGENDAS

Scientific advances often give rise to policy issues where they did not exist before. For example, evidence and options introduced about risks from increasing commercial activities in the Arctic Ocean were necessary and sufficient for foreign ministers of the eight Arctic states to adopt agreements the 2011 and 2013 agreements (see Module 3). Similarly, insights about diminishing sea ice in the Arctic Ocean, have exposed risks of unregulated fisheries in the Arctic High Seas, leading to a draft *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean* among Arctic and non-Arctic states in November 2017 with **'precautionary principles,'** anticipating rather than responding to commercial impacts. In some cases, the policy process itself exposes solutions or challenges that can be generalized with scientific contribution, as with the 'ecosystem approach' in the *Convention on the Conservation of Antarctic Marine Living Resources* that integrates the management of *"harvested, dependent and related populations."* In May 2017, Foreign Ministers of the eight Arctic states as well as Greenland and Faroe Islands signed the *Agreement on Enhancing International Arctic Scientific Cooperation,* which will be discussed in view of implementation **strategies that bridge scientific and diplomatic communities.**

Required Reading:

Berkman, P.A., Kullerud, L., Pope, A., Vylegzhanin, A.N. and Young, O.R. 2017. The Arctic Science Agreement Propels Science Diplomacy. *Science* 358:596-598.

- For Discussion

Environmental Security. 2012. (Chapters 10 and 14).

Science Diplomacy. 2011. (pp. 103-122).

Science into Policy. 2002. (Chapter 10).

Supplemental Reading:

Arctic Science Agreement. 2017. *Agreement on Enhancing International Arctic Scientific Cooperation*. Signed, 11 May 2017, Fairbanks.

Arctic High Seas Fisheries Agreement. 2017. *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean.* Text for Signature, 30 November 2017.

International Arctic Science Committee website. [Explore the website – https://iasc.info/].

University of the Arctic. [Explore the website – https://www.uarctic.org/].

International Arctic Social Science Association [Explore the website – https://iassa.org/].

MODULE 6: SCIENCE AS A SOURCE OF INVENTION AND COMMERCIAL ENTERPRISE

In addition to identifying potential resources, science plays a role in developing the technologies needed to exploit these resources as well as invent new market opportunities. For example, as revealed by satellites, there already is open water during the summer and first-year sea ice during the winter from the Bering Strait to the Barents Sea, creating potential year-round opportunities for ice-strengthened vessels to transit with icebreaker escorts across the Northern Sea Route, with global implications if/when transit ship traffic turns on between the Atlantic and Pacific oceans. Similarly, seismic surveys reveal vast potential energy reserves in the Arctic Ocean, accounting for up to 30% of global gas and 13% of global oil. Science, Technology and Innovation (STI) is emerging in the high-north, as illustrated by progress of the Arctic Economic Council and consideration of $1T in investment of the next couple decades. In the Arctic Ocean, **interplay of international legal institutions in the Barents Sea** – largely because it historically has open-water throughout the year, in contrast to sea-ice covered marine areas elsewhere north of the Arctic Circle – offers governance lessons with pan-Arctic relevance regarding economic activities, **originating with the 1920 *Spitsbergen Treaty***. Issues, impacts and resources associated with economic activities in the Arctic will be discussed in relation to pan-Arctic phases of development to achieve Arctic sustainability across the 21st century.

Required Reading:

Roston, E. 2017. How a melting Arctic changes everything. Part III. The Economic Arctic. *Bloomberg*, 29 December 2017.

- For Discussion

Treaty Concerning the Archipelago of Spitsbergen, and Protocol. Signed: Paris, 9 February 1920. Entry Into Force: 14 August 1925.

Vylegzhanin, A.N. 2017. Interdisciplinary Research of the Status of the Bering Strait Region. IN: Vyelgzhanin, A.N. (ed.). *Political and Legal Junction of the Arctic and Pacific Oceans*. MGIMO, Moscow. Pp. 10 -50. (In Russian – for MGIMO students).

Vylegzhanin, A.N, Young, O.R. and Berkman, P.A. 2018. Governing Shared Marine Resources in the Barents Sea: Current Status, Emerging Issues and Future Options. *Ocean Development and International Law* 49(1):52-78.

Supplemental Reading:

Arctic Economic Council. 2017 [Explore the website - https://arcticeconomiccouncil.com/].

Berkman, P.A., Vylegzhanin, A.N. and Young, O.R. 2016. Governing the Bering Strait Region: Current Status, Emerging Issues and Future Options. *Ocean Development and International Law* 47(2):186-217.

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Gautier D.L., Bird K.J., Charpentier R.R., Grantz A., Houseknecht D.W., Klett T.R., Moore T.E., Pitman J.K., Schenk C.J., Schuenemeyer J.H., Sørensen K., Tennyson M.E., Valin Z.C., Wandrey C.J. 2009. Assessment of undiscovered oil and gas in the Arctic. *Science* 324:1175–1179

OGA. 2007. *Oil and Gas Assessment (OGA)*. Arctic Monitoring and Assessment Programme (AMAP) working Group of the Arctic Council, Oslo.

Science Diplomacy. 2011. (pp. 223-229).

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World Economic Forum. 2016. *Arctic Investment Protocol. Guidelines for Responsible Investment in the Arctic.* Global Agenda Council on the Arctic, World Economic Forum.

MODULE 7: SCIENCE AS AN ELEMENT OF CONTINUITY OF LAW AND ORDER IN OUR GLOBAL SOCIETY

Science is an element of continuity of law and order in our world, from the past into the future, based on an evolving foundation of prior knowledge. Science (including law) is an open-ended, iterative and responsive process to changing circumstances, recognizing the **'Rule of Law'** is an urgent necessity of nations always, but also globally, that the Earth system and our associated communities are inherently dynamic. In this sense, spatial planning for the high north is like the early twentieth century when nations recognized that they would need to accommodate automobile traffic across continents; projecting vast grids of paved roads and highways that would take the next fifty years to construct within and between nations. With this **generational perspective** in the Arctic, recognizing that children born today will be alive in the 22nd century, there is urgency for sustained advances with coordination among Arctic coastal and non-coastal states, indigenous peoples and other residents as well as non-Arctic states and global civil society. Framed by *Transforming Our World: The 2030 Agenda for Sustainable Development,* the seventeen ***United Nations Sustainable Development Goals* (SDG)** will be discussed as a timeless gift to humanity.

Required Reading:

Arctic Council Secretariat. 2013. *Vision for the Arctic*. Kiruna, Sweden. 15 May 2013.

Environmental Security. 2012. (Chapters 20, 26 and 28).

United Nations. 2018. Sustainable Development Knowledge Platform [Explore the website – https://sustainabledevelopment.un.org/].

- For Discussion

Vylegzhanin, A. 2013. Legal Status of the Arctic region in documents. Arctic Region. *Issues of International Cooperation* 3:11-44. (In Russian – for MGIMO students).

Supplemental Reading:

AMSP. 2004. *Arctic Marine Strategic Plan*. [Updated 2015-2025]. Protection of the Arctic Marine Environment (PAME) Working Group of the Arctic Council, Akureyri.

National Research Council. 1999. *Our Common Journey: A Transition Toward Sustainability*. National Academy Press, Washington, DC.

Norway. 2011. Meld. St. 7 (2011–2012) Report to the Storting (white paper). T*he High North Visions and Strategies.* Oslo: Norwegian Ministry of Foreign Affairs.

United Nations. 2007. *United Nations Declaration on the Rights of Indigenous Peoples.* Adopted 13 September 2007.

WCED. 1987. Report of the World Commission on Environment and Development: Our Common Future [aka 'Brundtland Report']. Oxford University Press, Oxford.

MODULE 8: SCIENCE AS A TOOL OF DIPLOMACY

Following the devastation of World War II, it was vital to promote cooperation and prevent such conflict from ever happening again on a global scale, especially with the development of ballistic missiles capable of carrying nuclear weapons over intercontinental distances. Perhaps the most far-reaching example of science as a tool of diplomacy comes from the International Geophysical Year of 1957-1958, which inspired the United States and Soviet Union to cooperate in establishing the *Antarctic Treaty* as the first nuclear arms agreement, despite their inability to negotiate on this issue elsewhere. The *Antarctic Treaty* similarly stimulated peaceful collaboration between the United States and Japan on an equal footing when such interactions were barely imaginable so soon after World War II. In the north polar region, *"the Arctic Ocean is a unique ecosystem, which the five coastal states have a stewardship role in protecting"* by virtue of their *"sovereignty, sovereign rights and jurisdiction."* At the heart of stewardship are common interests, providing guiding principles for all involved to avoid *"tragedy of the commons"* where actors pursue their own interests to the detriment of the community. On a global scale, common interests represent an evolving body of international law across a broad suite of institutions that have come into force since World War II.

Required Reading:

Berkman, P.A. 2009. International Spaces Promote Peace. *Nature* 462:412-413.

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Berkman, P.A. 2014. Stability and Peace in the Arctic Ocean through Science Diplomacy. *Science & Diplomacy.* June 2014: 26-35.

Environmental Security. 2012. (Chapters 27, 29 and 31-32).

Science Diplomacy. 2011. (pp. 17-28).

Supplemental Reading:

Berkman, P.A. 'Common Interests' as an Evolving Body of International Law: Applications for Arctic Ocean Stewardship. In: Wolfrum, R. (ed). *Arctic Marine Science, International Law and Climate Protection. Legal Aspects of Future Marine Science in the Arctic Ocean*. Springer, Heidelberg. pp. 155-174.

MOCK ARCTIC COUNCIL MINISTERIAL MEETING

Description:

A Mock Arctic Council Ministerial Declaration will be crafted in a phased manner by the student-ministers during the course. In this activity, the student-ministers will consider economic, political, environmental and social perspectives with regard to issues, impacts and resources in the Arctic Ocean. Their mock declarations will address sustainable development in the Arctic Ocean, requiring international cooperation, coordination and consistent responses among Arctic as well as non-Arctic states (see above definitions). Moreover, for the purposes of this activity, sustainability will be considered in terms of balancing:

- Environmental protection, economic prosperity, social equity;
- 'Continuum of urgencies' across security to sustainability time scales; and
- National interests and common interests.

The student Information Papers will serve as the basis for negotiating the Mock Arctic Council Ministerial Declaration, which will be designed and debated in a Mock Arctic Council Ministerial Meeting that will involve several sessions. As a final product, the student-ministers are expected to agree by consensus on the framework, concepts and specific language of their composite declaration, which will correspond to applicable international law and comparable to the ministerial declarations that emerge from each chairmanship of the Arctic Council.

Reading:

EvREsearch. 2018a. *Knowledge Portal of Arctic Council Declarations.* [Apply the website – http://arcticcouncil.knohow.co].

FOLLOWING IS THE

MEDFORD DECLARATION

On the occasion of the Twentieth Anniversary of the Ottawa Declaration and the Establishment of the Arctic Council

ADOPTED BY CONSENSUS AMONG THE STUDENT AMBASSADORS IN THE *MOCK ARCTIC COUNCIL MINISTERIAL MEETING*

FLETCHER SCHOOL OF LAW AND DIPLOMACY,
TUFTS UNIVRESITY
MEDFORD, UNITED STATES

12 MAY 2016

THE MEDFORD DECLARATION 2016
Medford, Massachusetts
May 12, 2016

On the occasion of the Twentieth Anniversary of the Ottawa Declaration and the Establishment of the Arctic Council

1. We, select members of the Fletcher Arctic Initiative, have gathered in Medford, Massachusetts under the theme of Sustainable Development to celebrate the achievements of the Arctic Council over the past 20 years and to advance options for an improved approach to Sustainable Development in the Arctic,

2. **Recognizing** that Article 1 of the Ottawa Declaration draws on principles enshrined in the Charter of the United Nations, the Universal Declaration of Human Rights, and international human rights law,

3. **Celebrating** cooperation within the Arctic region since the formation of the Arctic Council in 1996 and its success in maintaining the Arctic as a zone of peace and cooperation, **recognizing** that previous Arctic Council declarations have not addressed security as a broad theme, **emphasizing** the Arctic Council's mission to promote a peaceful and stable Arctic in order to ensure human and environmental security in the future,

4. **Celebrating** that indigenous organizations have held Permanent Participant status within the framework of the Arctic Council since its inception, **expressing** concern that various member states have inconsistently supported indigenous communities' identity and rights as a peoples under international law, and **reaffirming** that such rights and responsibilities allow full and active partnership,

5. **Noting** with concern that the five Arctic coastal states make important decisions outside the framework of the Arctic Council's inclusive mandate, and **expressing** with particular concern that these meetings are not inclusive of the Permanent Participants,

6. **Noting** with concern the threat climate change poses to humans and the environment, and **calling** upon the global community to support resilient strategies to ensure human and environmental security in the Arctic,

7. **Celebrating** the creation of the six Working Groups, their Experts Groups, and Task Forces, **noting** the production of their framework documents and assessment reports, and **recognizing** the utility of these groups and documents as an initial framework to guide future research and development, further **celebrating** the two binding agreements signed by the members of the Arctic Council,

8. **Acknowledging** the importance that the Arctic Council gave to scientific research and observations of the Arctic, and **celebrating** the role of the Arctic Council in fostering scientific collaboration and data-sharing (Sustaining Arctic Observing Networks - SAON) even among non-Arctic states, especially around the International Polar Year 2006-2007,

9. **Acknowledging** that the Arctic Council has done much to support research into indigenous and local populations' adaptation strategies to the rapidly changing Arctic natural environment and economic conditions, and that Arctic indigenous and local populations can collectively integrate these strategies into approaches to future sustainable development efforts,

Hereby:

FOSTERING INCLUSIVE COLLABORATION FOR SUSTAINABLE DEVELOPMENT

10. **Acknowledge** the need to undergo a rigorous process of reflection aimed at constructing a more comprehensive and precise definition of what exactly characterizes a sustainable development process, including scientific research and infrastructure development,

11. **Recognize** that global cooperation secures both common and national interests and that impeding global cooperation will fundamentally undermine national interests rather than promote them,

12. **Welcome** close cooperation from the local to global levels to further enhance approaches to common issues between Arctic and non-Arctic parties who strive to protect and develop a prosperous Arctic,

BUILDING INFRASTRUCTURE AND PROMOTING ECONOMIC DEVELOPMENT

13. **Underscore** the urgent need for a comprehensive approach to sustainable infrastructure development that conceptualizes infrastructure as an ecosystem of institutions, systems, and built elements,

14. **Recognize** the need for infrastructure to match rapidly growing economic interests with respect to Institutions, including platforms for connection between government and business interests, such as the Arctic Economic Council; systems, including Arctic insurance, Public Private Partnerships (PPPen), best practices repositories, and emergency preparedness response; and built structures, including transportation facilities, physical emergency preparedness assets, and renewable energy supply and broadband connectivity for rural settlements,

15. **Note** that duplicative action has hampered progress and significant gaps still exist, and **call** for improved inter-governmental and inter-organizational coordination and longer-term planning and investment horizons to ensure a sustainable strategic vision for development of pan-Arctic infrastructure,

16. **Call** for a partnership between the Arctic Council Sustainable Development Working Group, the Arctic Economic Council, and leading academic institutions dedicated to facilitating effective sustainable development predicated on coordination and collaboration,

17. **Recognize** work to date on the Arctic Investment Protocol and Arctic Permanent Investment Vehicle, and **call** for further development of protocols and financial vehicles, including a pollution response fund, a future generations fund, and a holistic approach to streamlined commercial licensing and approvals,

18. **Note** the Arctic Council's recognition of the link between oil resources and economic development, **encourage** the development of a comprehensive energy strategy in the Arctic and increased attention to regulation and enforcement, **encourage** dialogue on issues such as energy access for all, a transition to a clean energy future in line with the 2015 UNFCCC Paris Agreement, and increased knowledge sharing to achieve energy goals for sustainable development, **call for** continued capacity building opportunities for indigenous and local residents in the energy sector to allow them to participate in the economic activities of oil production, exporting, and the future of energy,

INCREASING THE ROLE OF SCIENTIFIC RESEARCH IN POLICY-MAKING

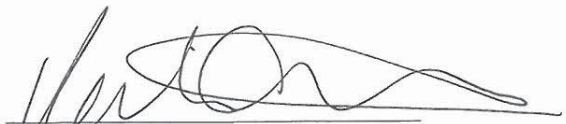
19. **Recognize** the momentum generated by the recent international agreements on climate change and that scientific research and technology can be used for adaptation, but **note with concern** the current lack of sufficient research data to inform sound policies and governance decisions in the Arctic Circle, especially regarding fish stocks and migration patterns as well as overall biodiversity,

20. **Note** that scientific and local knowledge provide useful data for solutions and that indigenous peoples in the Arctic are taking a leading role to use best available traditional and scientific knowledge to help understand and adapt to challenges related to climate change and other challenges in their societies, and **welcome** initiatives to build the capacity of local and indigenous populations with respect to knowledge transfer, education, and economic participation, in order to be an effective member of any Arctic sustainable development strategy,

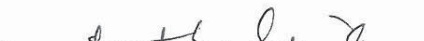
21. **Recognize** the utility of the current Working Groups and documents as an initial framework to guide future research and development, and **acknowledge** the further need to strengthen this framework as a priority area,

22. **Recognize** that Non-Arctic states are already investing in Arctic research and could participate further in future developments to these frameworks,

23. **Call** for the creation of the Arctic Scientific Research Initiative as an umbrella group of all the science research working groups and **call** all stakeholders (public and private) to join, contribute and fund the new scientific research initiative.

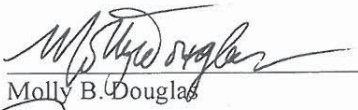


Rabia Altaf

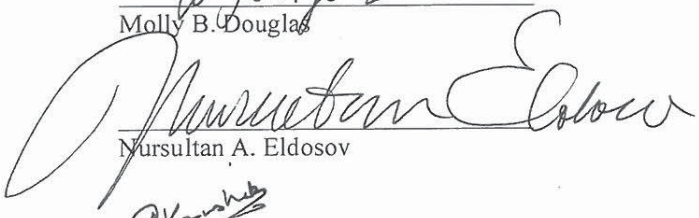


Natalie M. Balents

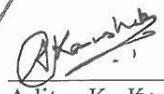
Nadim Choucair



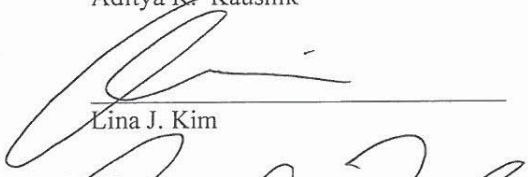
Molly B. Douglas



Nursultan A. Eldosov

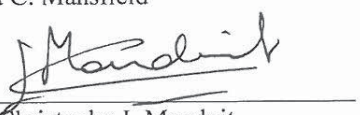


Aditya K. Kaushik

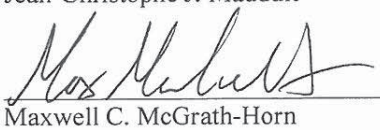


Lina J. Kim

Laura C. Mansfield

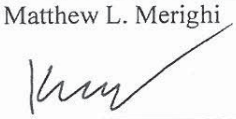


Jean-Christophe J. Mauduit

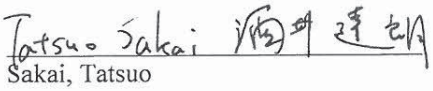


Maxwell C. McGrath-Horn

Matthew L. Merighi



Kailash K. Prasad



Sakai, Tatsuo

FOLLOWING IS THE

MOSCOW-MEDFORD DECLARATION

ADOPTED BY CONSENSUS AMONG THE STUDENT AMBASSADORS IN THE *MOCK ARCTIC COUNCIL MINISTERIAL MEETING*

JOINTLY AND SIMULTANEOUSLY

FLETCHER SCHOOL OF LAW AND DIPLOMACY
TUFTS UNIVRESITY
MEDFORD, UNITED STATES

AND

MGIMO UNIVERSITY
MOSCOW, RUSSIAN FEDERATION

27 APRIL 2017

MOSCOW-MEDFORD DECLARATION

On the occasion of the Twenty-First Anniversary of the Ottawa Declaration and the Establishment of the Arctic Council

ADOPTED BY CONSENSUS AMONG THE STUDENT AMBASSADORS IN THE
2017 MOCK ARCTIC COUNCIL MINISTERIAL MEETING

CONVENED AS PART OF THE VIDEO-CONFERENCING COURSE
SCIENCE DIPLOMACY: ENVIRONMENTAL SECURITY IN THE ARCTIC OCEAN

BETWEEN THE

FLETCHER SCHOOL OF LAW AND DIPLOMACY, TUFTS UNIVERSITY
(UNITED STATES)

AND

MOSCOW STATE INSTITUTE OF INTERNATIONAL RELATIONS, MGIMO UNIVERSITY
(RUSSIAN FEDERATION)

27 APRIL 2017

1. We, members of the Fletcher/MGIMO Science Diplomacy Initiative, have gathered virtually in Medford, Massachusetts and Moscow, Russia, to celebrate the achievements of the Arctic Council over the past 21 years, advance options for the sustainable development and environmental protection of the Arctic region, and reaffirm our shared commitment to maintain peace, stability, and constructive cooperation in the Arctic

1.1. **Noting** the substantial progress the Council has made to strengthen circumpolar cooperation, confirming the commitment of the Arctic states and permanent participants to respond jointly to new opportunities and challenges in the Arctic and affirming the important leadership role of the Council in taking concrete action through enhanced results-oriented cooperation;

1.2. **Recognizing** the thematic working groups with the goal of representing specific interests and ensuring their inclusion in the discussion along with recommendations;

1.3. **Endorsing** the elaboration of international framework based on all the existing documents adopted by the Arctic Council in 1996-2015;

1.4. **Renewing** our mandate in a way the concept of security is understood to include dimensions of economic and environmental security in line with new challenges and opportunities in the Arctic Ocean, are appropriately added into the original mandate agreed in the Ottawa Declaration, in particular, the issues of sustainable development and environmental protection;

1.5. **Noting** the strengthened role of the Arctic Council as an international voice for the Arctic region, reflecting the dialogue involving national Governments, indigenous peoples, regional authorities, scientific experts, and civil society;

1.6. **Recognizing** the rights of indigenous peoples in the Arctic, emphasizing their role and increased participation and engagement of indigenous peoples as being fundamental to addressing circumpolar challenges and opportunities, noting the need for radical action in the wake of global warming, and affirming that development in the Arctic should always be either led by indigenous institutions or in partnership with them;

1.7. **Recognizing** that reduction of sea ice coverage and thickness enhances marine access to the Arctic and increases opportunities for outside investment, while affecting and restricting indigenous livelihood activities;

1.8. **Recognizing** that the changing climate has increased the challenges facing the Arctic, and affected the traditional livelihoods and food security of Arctic Indigenous Peoples;

1.9. **Noting** the impacts of climate change, including erosion and flooding, on Arctic indigenous communities, and emphasizing the importance of assessing options for adaptation and addressing displacement;

1.10. **Affirming** that the Arctic fragile environment needs to be preserved from global pollution and other environmental threats, while providing opportunities for international cooperation to ensure protection of the Arctic ecosystems;

1.11. **Acknowledging** parallel challenges between the Arctic nations and vulnerable countries across the globe, particularly small island developing states (SIDS) and coastal nations, with the goal of promoting knowledge and understanding through science to find collaborative solutions to today's economic, social and environmental challenges while ensuring global sustainable development;

1.12. **Attaching** importance to developing complementary and resilient infrastructures, which would lead to the sustainable use of resources, taking into account the participation of local communities in their development;

1.13. **Acknowledging** the need for a framework for sustainable investment in the Arctic based on the principle of equity and building and enhancing economic security through strengthening and operationalizing of existing platforms;

1.14. **Noting** the threat of organized crime, piracy, and terrorism in the Arctic and recognizing the need to address these issues;

1.15. **Recognizing** the valuable contribution of actors such as civil society, private sector, academic community, young people, and philanthropy organizations, to enhance coordination, monitoring, and evaluation for the sustainable development activities in the Arctic;

1.16. **Emphasizing** our commitment to addressing global concerns effectively, while protecting local interests;

1.17. **Recognizing** the need to identify factors that could limit the success of this declaration and be an inhibitor to future success of multilateral endeavors in the Arctic;

1.18. **Reaffirming** the necessity for interagency exchange and streamlined knowledge sharing by all stakeholders;

1.19. **Reaffirming** our commitment to sustainable development in the Arctic region;

1.20. **Taking** into account the positive contributions of Observers doing the work of the Council and take into account contributions to date and opportunities for further collaboration;

HEREBY:

2. FOSTERING INVOLVEMENT OF INDIGENOUS PEOPLES IN SUSTAINABLE DEVELOPMENT AND INCREASING KNOWLEDGE RELATED TO CLIMATE CHANGE ADAPTATION

2.1. **Acknowledge** the importance of economic development in the Arctic, highlight the existence of the Arctic Economic Council and carefully explore pathways for sustainable community development driven by Arctic communities;

2.2. **Acknowledge** the value of the traditional knowledge held by indigenous peoples in the Arctic and further incorporate indigenous perspectives in the work of the Arctic Council;

2.3. **Support** the inclusion of projects initiated by Arctic residents, the effective involvement of Arctic indigenous peoples in different activities and recognize that their traditional and indigenous knowledge is an invaluable component of Arctic related research;

2.4. **Recognize** that climate change and indigenous rights are intrinsically linked;

2.5. **Acknowledge** the contributions of the Arctic Adaptation Exchange Portal and consider ways to increase the utility of this tool for Arctic indigenous communities and others, recognize the efforts within the project Adaptation Actions for a Changing Arctic to integrate climate projections with knowledge about other drivers of change in order to inform decisions and develop adaptation strategies, and consider expanding this project beyond the pilot locations;

2.6. **Note** the serious emerging issue of indigenous community displacement due to climate change and call for the creation of an Arctic Council Task Force on Indigenous Displacement to work with indigenous groups to assess current displacement vulnerability of communities and explore possible responses;

3. PROTECTING THE ENVIRONMENT IN THE FACE OF FUTURE DEVELOPMENTS AND THEIR EFFECT ON THE ARCTIC

3.1. **Recognize** that climate change causes significant changes in water, snow, ice, and permafrost conditions, negatively impacting biodiversity, ecosystems, and human living conditions in the Arctic with repercussions around the world. Substantial cuts in emissions of carbon dioxide, black carbon, and other long-lived greenhouse gases are necessary for any meaningful global climate change mitigation efforts, and commit to strengthen our efforts to find solutions;

3.2. **Note** that extractive industrial activity is bound to intensify in the Arctic, **adopt** framework to limit the environmental impact of future investments, and **encourage** member states to implement a carbon credit strategy;

3.3. **Reaffirm** the value of sustaining Arctic ecosystems and biodiversity recognized in Kiruna Declaration and that all members need to protect the Arctic environment as a basis for sustainable development, prosperity, lifestyles and human well-being;

3.4. **Consider** options for the sharing benefits gained from marine genetic resources in the Arctic, which have been newly recognized due to climate change, collaborating with expertise and stakeholders, including a mechanism to utilize their economic benefit for measures to adapt climate change, taking into account ongoing discussions in other international forums to ensure the legal consistency;

3.5. **Recognize** that climate change is a threat to the Arctic Ocean, in that the current increase of temperature in the Arctic is almost double that of the average global temperature rise;

3.6. **Commit** to ratifying and implementing the Paris Agreement, which instructs members to abide its regulations and actively prevent further damage through carbon-based materials, and encourage members to adhere to the timeline by which to achieve individually set targets that each member submitted to the UNFCCC;

3.7. **Design** a task force to monitor the yield rates of resources which are harvested from the Arctic. Regulate these resources to allow long term sustainability of that resource. Encourage the growth of habitats through appropriate management of ecosystems;

3.8. **Encouraging** member states to implement existing standards like the Polar Code for ships traversing the Arctic region and consider options for environmental regulations when installing future infrastructure that incorporate waste management and pollution prevention measures;

3.9. **Provide** assistance to communities which are disconnected from others or face concerns over coastal erosion. Instill a sense of awareness within communities of the threats of harsh storms and rising waters;

3.10. **Acknowledge** the indigenous peoples' ways of life are based around the environment-- to continue their lifestyle, environmental aspects must be maintained to allow for sustainable maintenance of economic well-being, culture, and health-- and ensure any regulations on the environment take these into account so that their ways of life may continue;

4. DEVELOPING A FRAMEWORK FOR SUSTAINABLE AND RESPONSIBLE INVESTMENT IN THE ARCTIC

4.1. **Agree** to promote partnerships among state entities, the private sector, indigenous and local communities for responsible economic development in the Arctic;

4.2. **Reaffirm** the role of the Arctic Economic Council in providing a meaningful business perspective to the Arctic Council and other organizations through peaceful collaboration, partnership and innovation;

4.3. **Design** this platform to be multifaceted, including environmental, economic, and social risk assessments of investment projects in the Arctic and promote the development of specialized approaches in Arctic related to borrowing and insurance;

4.4. **Recognize** the urgency to agree towards operationalising the *Arctic Investment Protocol,* a charter of principles for responsible economic development in the Arctic, serving as a code of conduct for businesses to promote transparency and accountability, integration of science and traditional knowledge, identification of best practices;

4.5. **Decide** to conduct an infrastructure needs assessment/study for individual sectors like fisheries, shipping, ports, airports, energy, digitalisation, tourism and add to the inventory proposed. **Decide** to set up an expert group to develop such circumpolar infrastructure assessment as a first step in exploring ways to improve infrastructure development in the Arctic, and report to Ministers in 2019;

4.6. **Agree** to collaborate for the creation of an inventory which will serve as a shared database of infrastructure needs in the Arctic and pools of investment, facilitating matching of investments to projects that need to be built for the region thus promoting sustainable development. Identifying local priorities through participation of indigenous and local stakeholders;

4.7. **Resolve** to explore the feasibility of establishing an Arctic fund in the nature of Contingency Plus to be used firstly for the creation of contingency infrastructure like emergency preparedness and response, scientific research, navigation course chartering, navigation channel management and expanded in the second stage for the creation of sector specific infrastructure. The fund will be managed by a Fund Director, appointed by Arctic nations from a pool of qualified individuals on a nationality rotational basis;

4.8. **Decide** to study the format and viability of imposing fees on economic activity in the Arctic region where such funds will be utilised towards creating contingency infrastructure;

4.9. **Recognize** that complementarity and synergies among physical infrastructures, such as ports, airports, communications systems, will ensure effective utilization of resource and promote operational efficiency and agree to pursue this aim by developing a comprehensive plan of action to link and enhance coordination between;

4.10. **Recognize** that these steps are aligned with the UN Sustainable Development Goals and are important to achieve a better standard of living and resilient societies in the Arctic;

5. INCREASING SCIENCE AND TECHNOLOGY COLLABORATION BETWEEN THE ARCTIC NATIONS AND GLOBALLY

5.1. **Establish** a permanent headquarters based upon the work and structure of the International Arctic Science Committee (an existing collaborative network of scientists engaged in Arctic science and technology endeavours) located in the Arctic with the goal of improving current global understanding of the role of the Arctic in global climate change with particular emphasis on informing sustainable development and investment across the region;

5.2. **Encourage** the newly established institution to work closely with other existing global institutions with similar missions, particularly the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and Sustainable Development Knowledge Platform with the goal of forming partnerships on data collection, analysis, convening, and other joint activities to promote low-carbon, climate-resilient development;

5.3. **Confirm** the need to cooperate on advancing communication and monitoring capacity by improving satellite and earth-based systems and internet connectivity that will facilitate extraction activities. search-and-rescue operations, food security, remote sensing and navigation as well as increase capabilities to monitor oil spills and other contaminants;

5.4. **Reaffirm** the necessity for streamlining interagency collaboration on Arctic data collection and defining tools for effective knowledge sharing, including but not limited to Information and Communication Technologies (ICTs), Earth Observation Systems (EOS), and Animal Telemetry devices;

5.5. **Seek** to leverage global climate financing funds, with particular emphasis on encouraging the creation of legal and regulatory green finance requirements for private sector investments and activities;

6. COLLABORATING ON SECURITY AND PROMOTING PEACE IN THE ARCTIC

6.1. **Acknowledge** that common use of resources (e.g., common border patrols and exercises) in order to provide peace and security is a method to build trust and reduce operative costs and recognize that those involved should have common actions in the Arctic regarding security issues and a sharing mechanism for resources that can provide peace and security;

6.2. **Recognize** that greater cooperation boosts confidence and transparency between allies and potential adversaries and can improve capability development and operations; and therefore, promote cooperation between law enforcement agencies, including tackling issues at source before they become crises and helping to build resilience in unstable areas;

6.3. **Encourage** coordination among the Arctic Coast Guard Forum members for Arctic security and safety while maintaining peace in the area and strengthening collaboration in the Arctic that allows for swift and responsive action in emergency situations;

7. FUTURE DIRECTIONS

7.1. **Acknowledge** with appreciation the role of the United States in chairing the Arctic Council during the period of 2015-17, and accept with appreciation the offer of Finland to chair the Arctic Council during the period 2017-19 and to host the eleventh Ministerial meeting in 2019; and

7.2. **Strengthen** the cooperative relationship between the Arctic Council, the Arctic Economic Council and the Arctic Coast Guard Forum.

Nikita Istomin

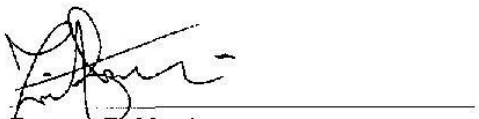
Cristian-Dan Tataru

Igor Budnik

Valeria Ruzakova

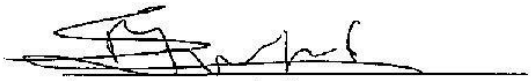
Ksenia Krymskaya

Renata Muratova



Zareena Bukhari

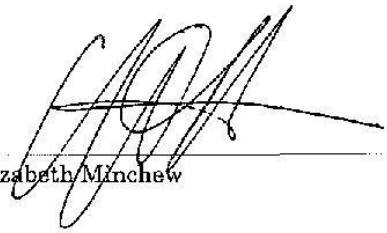
Nathan Cohen-Fournier



Sebastian Hurtado Cano

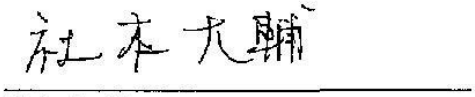
Jonathan A. Keenan

Angga Dwi Martha

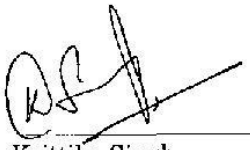


Elizabeth Minchew

Kara Runsten

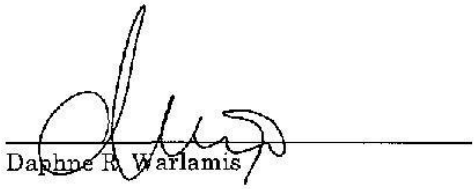


Daisuke Shamoto

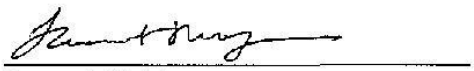


Krittika Singh

Masahiko Uchino



Daphne R. Warlamis



Korawat Wuttiwong

Member Details:

MGIMO

- Igor, Ambassador from Newland (environment, climate change, marine biodiversity)
- Renata, Ambassador from Icecastle (create special investment fund, make contributions to find against transboundary pollution and provide economic welfare to indigenous people)
- Cristian, Ambassador from Somalila (organized crime, resource extraction, terrorism, piracy)
- Ksenia, Ambassador from Aquitania (transboundary deposits of hydrocarbons)
- Valeriya, Senior Arctic Official, Russia
- Nikita, Ambassador of Peace (contribution for peace)

Fletcher

- Sebastian, Ambassador from Sebastian
- Nathan, Ambassador from Canada
- Masahiko, Ambassador from Masahiko
- Zareera, Ambassador of Dem. Rep. of Zareera, specific to business interests
- Daphne, Interagency Oversight Committee
- Kara, Ambassador from Kara
- Elizabeth, Assistant Director General for Natural Sciences, UNESCO
- Krittika, Finnish representative to Arctic Economic Council
- Angga, Ambassador from Sweden
- Jonathan, Ambassador from USA
- Korawat, PM Representative from K-Land
- Daisuke, Ambassador from Daisuke