

Journal of Arctic and Climate Security Studies, Special STEM Edition 2025 Call for Papers



The Ted Stevens Center for Arctic Security Studies announces an article submission deadline of **30 April 2025** for contributions to JACSS Vol. 5, a special STEM edition for release in fall 2025.

Increasing focus on meeting the strategic, operational, and tactical challenges of the Arctic operating environment has led to new and promising research. Foundational scientific research improves understanding of the remote and rapidly changing region while development and testing of emerging technologies promises to provide near term solutions. Researchers are invited to submit papers on Science, Technology, Engineering, and Math (STEM) solutions to Arctic challenges:

1. **Climate Change and its Impacts:** We welcome submissions that explore the accelerated impacts of climate change in the Arctic and their implications for national security. This includes, but is not limited to, studies on permafrost thaw, sea ice dynamics, and their global climatic effects. Papers may also cover advancements in climate modeling and the application of satellite data to Arctic environmental studies, highlighting their relevance to security strategies and policies.
2. **Arctic Engineering:** Submissions should focus on innovative engineering solutions tailored to the Arctic's extreme conditions with implications for national security. Topics of interest include the development of cold-resistant materials, ice-resistant structures, and the adaptation of infrastructure to the changing Arctic environment, which are critical for ensuring the safety and operational capabilities of national assets in the region.
3. **Renewable Energy and Sustainability:** This section seeks papers on the adaptation and implementation of renewable energy technologies in the Arctic, underscoring their strategic importance for energy security. Research on improving the efficiency, sustainability, and reliability of renewable sources such as wind, solar, and tidal energy in cold climates is particularly encouraged, with a focus on their role in reducing dependencies and enhancing the resilience of both military and civilian operations.
4. **Marine Biology and Ecosystems:** We invite research that addresses the shifting marine ecosystems within the Arctic Circle and their implications for national security. Studies may focus on changes in biodiversity, the effects of environmental stressors on marine organisms, and conservation strategies to protect Arctic marine life, considering their significance for sustaining fish stocks and maintaining ecological balance in strategic waters.
5. **Telecommunications and Technology Development:** We invite contributions that focus on enhancing communication technologies in the Arctic, emphasizing their strategic importance for national security. Papers may include the development of robust infrastructure, innovations in data transmission methods, and solutions for improving digital connectivity in remote and extreme environments, essential for secure and reliable communications for defense and emergency response.
6. **Below Zero Medicine- Medical Research and Health Care in the Arctic:** This section calls for papers on medical research, health care practices, and emergency response strategies specifically tailored to the harsh Arctic environment. Submissions should explore the unique medical challenges faced by inhabitants and transient populations in this region, such as issues related to hypothermia, frostbite, and vitamin D deficiencies. Papers could also discuss the development and adaptation of medical technologies and telemedicine solutions designed for remote and isolated communities, emphasizing their implications for national security by ensuring the health and readiness of military personnel and civilian populations in strategic Arctic areas.

Submissions of 4,000 – 6,500 words in APA Style with author's curriculum vitae will be accepted by the editorial staff at TSC-JACSS@groups.af.mil.

JACSS is a peer-reviewed academic publication. Articles are unclassified, and readers can access articles from all over the world. Submissions will be accepted in English language, clearly written for an informed audience of defense and security affairs professionals and academics.

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