

Category

TE Technology, Engineering

Session Number

TE-2

Session Title

Advancing Polar Engineering and Sustainable Infrastructure Development

Session Description

Technological insights that not only improve polar research but also better the lives of polar communities in a sustainable manner are of great importance and are in high demand. Unique engineering and policy approaches are required in these arenas, and this session therefore seeks a broad spectrum of submissions.

On the technical side, submissions addressing the design, testing, and utilization of polar field techniques, equipment, facilities, vehicles, and instruments for research and use by polar communities are invited. Themes to be investigated include: cold regions construction engineering; low-temperature materials development; alternative energy systems; innovations in ice coring and drilling technology in cold regions; ice and permafrost engineering; and polar transport.

Yet technological advances and inflow cannot generate sustainable development nor facilitate research unless it is accompanied by prudent policy and enhanced local capabilities. Submissions are therefore also invited that explore the following: deficiencies in polar communities in terms of specific technologies, infrastructure, and complementary human capital (e.g., in the areas of healthcare, education, transportation, energy, sewage treatment, Internet connectivity); successful and unsuccessful introductions of technology and infrastructure in polar communities; proposals for meeting the technological and infrastructural needs of polar communities in a sustainable fashion.

Keywords:**Lead Convener:** Pavel Talalay

Email: ptalalay@yahoo.com

Affiliation lead-convener: Jilin University, China

Co-convener 1: Mary Albert

Email: Mary.R.Albert@dartmouth.edu

Affiliation: Thayer School of Engineering, USA

Co-convener 2: Heather Exner-Pirot

Email: heather.exnerpirot@usask.ca

Affiliation: University of Saskatchewan, Canada

Co-convener 3: Andreas Kuersten

Email: andreas.kuersten@gmail.com

Affiliation: University of Pennsylvania Law School