



Proof

**CONTROL ID:** 1206171**TITLE:** COLLABORATION IN EDUCATION: INTERNATIONAL FIELD CLASS ON PERMAFROST**PRESENTATION TYPE:** Assigned by Committee (Oral or Poster)**CURRENT SECTION/FOCUS GROUP:** Global Environmental Change (GC)**CURRENT SESSION:** GC16. Regional Climate Impacts 7. Environmental, Socio-economic and Climatic Changes in Northern Eurasia and their Feedbacks to the Global Earth System: The Role of Remote Sensing and Integrative Studies**AUTHORS (FIRST NAME, LAST NAME):** Dmitry A Streletskiy<sup>1</sup>, Nikolay I Shiklomanov<sup>1</sup>, Valery I Grebenets<sup>2</sup>**INSTITUTIONS (ALL):** 1. Geography, George Washington University, Washington, DC, United States.  
2. Geography, Moscow State University, Moscow, Russian Federation.**Title of Team:****SPONSOR NAME:** Dmitry Streletskiy

**ABSTRACT BODY:** Field work is a dominant research component in the earth sciences. Understanding and proper use of field methods can enhance the quality of research, while lack of understanding in acquiring data can lead to misleading interpretation of results. Early involvement in field work helps students to bridge the gap between theoretical knowledge and practical applications and to be better prepared for future jobs. However, many University curriculums lack adequate, required field methods courses. Presented are results of collaboration between the George Washington and Moscow State Universities in organization of field courses on Arctic physical and social environments. The latest field course took place in summer 2011 in the Central Siberian region and is a part of the International Permafrost Association education and outreach effort initiated during International Polar Year. The 25 day course involved fifteen Russian and US students who traveled from Moscow to Krasnoyarsk, and then along Yenisey river to Norilsk. This route was chosen as having diversity of natural conditions and variety of economic, engineering, and demographic problems associated with development. The main goal of the class was to investigate permafrost conditions of Central Siberia; dynamics of upper permafrost due to changing climate and under anthropogenic influence; and to understand factors responsible for the diversity of permafrost conditions in the region. The students and instructors were required to make presentations on a variety of topics focusing on the region or research methods, such as climate, vegetation, hydrology, history of development, economics, remote sensing, etc. The emphasis in the field was made on understanding permafrost in relation to other components of the natural system. For example, landscape conditions (including microclimatic, biogeographic and pedologic conditions) were described at every site located in natural settings. Sites located in settlements were evaluated from the position of technogenic impact which required knowledge of historical, political and socio-economic aspects of development. Students learned how to conduct meteorological observations; describe vegetation, soil and permafrost conditions, and cryogenic processes, such as ice-wedges, solifluction, pingoes, thermokarst etc; and use temperature logging and core drilling devices. In urbanized areas, students learned how to apply different construction methods and foundation designs in permafrost regions; use techniques of permafrost temperature monitoring under building and structures; and apply mitigation strategies to prevent permafrost from warming under different types of technogenic pressure. The experience gained by students in the field cannot be adequately replaced by any classroom demonstrations, which is why it is critically important to conduct such classes in the future. We thank administration of Igarka, Igarka Geocryological Station, Norilsk Nickel, Norilsk Geology, and Funamentproekt Norilsk for help in the organization of this class.

(No Image Selected)

(No Table Selected)

**INDEX TERMS:** [0702] CRYOSPHERE / Permafrost, [0800] EDUCATION, [0760] CRYOSPHERE / Engineering.

---

ScholarOne Abstracts® (patent #7,257,767 and #7,263,655). © [ScholarOne](#), Inc., 2011. All Rights Reserved.  
ScholarOne Abstracts and ScholarOne are registered trademarks of ScholarOne, Inc.  
[Terms and Conditions of Use](#)