Curriculum Vitae

NICHOLAS RYAN HASSON

University of Alaska Fairbanks
Fairbanks, Alaska, US Citizen
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RESEARCH AREA:
Geophysics, Permafrost, Carbon Cycle, Methane

EDUCATION

- BA Earth Science, University of Alaska, Fairbanks, 2016-2019
  College of Natural Science and Mathematics
  Concentration: Earth Systems Science
  Minor: Political Science, Philosophy

  Philosophy and Science, Wayne State University, Detroit, 2011-2014
  Concentration: Analytical Philosophy, Philosophy and History of Science

- PhD Candidate, Research Assistant, University of Alaska, Fairbanks, 2020 - current
  College of Natural Science and Mathematics
  Project: NASA Arctic Boreal Vulnerability Experiment/Arctic Observation Network
  Advisor: Dr. Katey Walter Anthony

PROFESSIONAL DEVELOPMENT

- Research Assistant, August 2019 - current
  Water & Environmental Research Center, University of Alaska Fairbanks

- Research Technical Specialist, June 2020 – current
  Geophysical Institute, University of Alaska Fairbanks

- Student Assistant, October 2018 – June 2020
  Geophysical Institute, University of Alaska Fairbanks

CURRENT PROJECTS

- NASA Arctic Boreal Vulnerability Experiment (ABoVE) Methane Imaging
- NSF Arctic Observation Network (AON) Carbon Energy Balance: Alaska + Russia
- NASA ABoVE Airborne Survey 1-2 (AVIRIS-NG)/JPL-Caltech/UAF
  - Supervisors: Dr. Katey Walter Anthony, Dr. Clayton Elder (JPL)
- NSF Navigating the New Arctic: Arctic Urban Risk and Adaptation (NNA AURA)
- NSF Thermal State of Permafrost for North America and Russian Federation
- NASA ABoVE Permafrost & Hydrology
  - Supervisors: Dr. Dmitry Nicolsky, Dr. Vladimir Romanovsky

IT/Programing Tools

Python, MATLAB, GIS

JOURNAL PUBLICATION (IN MANUSCRIPT/SUBMITTED)

[2] Characterizing Extreme Methane Emissions from a Thermokarst Hotspot in Interior Alaska. C.D. Elder1, D.R. Thompson1, A. K Thorpe1, P. Hanke2, **N. Hasson2**, S. James3, B. Minsley4, N. Pastick 5, D. Olefeldt 6, K.W. Anthony2, Charles E. Miller1 et al. *AGU Advances*

[1] Pan-Arctic Thermokarst Lakes Carbon Loss Over Three Years
K.W. Anthony1, E. Euskirchen1, C.E. Miller1, **N. Hasson2**, C. Elder2, C. Edger2, P. Hanke2, B. Minsley3 et al. *Nature Climate Change*

DATA PUBLICATIONS

[8] Nicolsky, D.J., V.E. Romanovsky, A.L. Kholodov, K. Dolgikh, and **N. Hasson**. 2020. ABoVE: Soil Temperature Profiles, USArray Seismic Stations, AK and Canada, 2016-2019. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1767

[7] Network of permafrost temperature observations in Russia, 2018-2019. *NSF Arctic Data*. V.E. Romanovsky, A. Kholodov, D. Nicolsky, T. Wright, and **N. Hasson**. 2020. doi:10.18739/A2VQ2S99T.

[6] NASA ABOVE: Soil Temperature Profiles at USArray Seismic Stations in Alaska, 2016-2018. *Biogeochemical Dynamics ORNL DAAC*. 2019. doi: 10.3334/ORNLDAAC/1680
Nicolsky, D.J., V.E. Romanovsky, A.L. Kholodov, K. Dolgikh, and **N. Hasson**.

[5] Thermal State of Permafrost in North America - Annually Observed Ground Temperatures, 2018. *NSF Arctic Data*. V.E. Romanovsky, A.L Kholodov, K. Dolgikh, **N. Hasson**, T. Lane. 2019. doi:10.18739/A2HX15Q8V

[4] Thermal State of Permafrost in North America - Continuously observed ground temperatures, 2017-2018. *NSF Arctic Data.* V.E. Romanovsky, A.L. Kholodov, K. Dolgikh, **N. Hasson**, and T. Lane. 2019. Arctic Data Center. doi:10.18739/A2D795976

[3] Thermal State of Permafrost in North America - Continuously observed ground temperatures, 2016-2017. *NSF Arctic Data*. doi:10.18739/A24J09X6N.
V.E. Romanovsky, A. L Kholodov, **N. Hasson**, D. Nicolsky, T. Wright. 2019.

[2] Thermal State of Permafrost in North America - annually observed ground temperatures, 2017. *NSF Arctic Data*. doi:10.18739/A20R9M42C.
V.E. Romanovsky, A.L. Kholodov, T. Wright, and **N. Hasson**. 2019.

[1] Thermal state of permafrost in North America - annually observed ground temperatures, 2016. *NSF Arctic Data.* doi:10.18739/A2W08WG7P.
V.E. Romanovsky, A.L. Kholodov, T. Wright, and **N. Hasson**. 2019.

PUBLISHED ABSTRACTS

[3] Characterizing extreme thermokarst methane emissions from the air and the ground in interior Alaska with implications for large-scale source attribution.
Clayton D. Elder1, David R. Thompson1, Andrew K. Thorpe 1, Philip J. Hanke 2, **Nicholas R. Hasson** 2, David Olefedt3, Katey M. Walter Anthony2, Claudia I. Czimczik4, Xiaomei Xu 4, Charles E. Miller1, AGU 2020

[2] Investigating Elevated Methane Emissions in Goldstream Valley Thermokarst Lakes Using Magnetic Susceptibility Signatures to Determine Presence of Iron (III) Oxides, **N. Hasson1**, J.Guerard2, G. Kletetschka2. American Chemical Society Symposium, International Arctic Research Center, Fairbanks. 2019

[1] Permafrost Destruction Due to Airburst in Terrestrial Environment over Tunguska Russia.
G. Kletetschka, **N. Hasson**, et al. 11th Planetary Crater Consortium Meeting. 2020. (submitted)

PUBLISHED POSTER

[1] Remote Sensing Links Methane Emission Hotspots to Thawing Permafrost, With Implications for Emission Source Attribution. C.D. Elder, D.R. Thomson, P. Hanke, **N. Hasson**, S. James, B. Minsley, N. Pastick, D. Olefeldt, K.M. Walter Anthony, C.E Miller. AGU-NASA STM 6 2020.

EDUCATION ABROAD/EXPEDITIONS

- China, Harbin Institute of Technology, Polar Institute, Arctic Ecosystems Workshop (2020)
- Russian Federation, Research Expedition, Tunguska Impact Zone, Krasnoyarsk, Siberia (2019)
- Russian Federation, Volcanology and Geophysics Field School, Kamchatka (2018)
- Russian Federation, Russian Language Institute, Arkhangelsk, Arctic Federal University (2018)
- Russian Federation, Alpine Ecology Field School, Altai Republic, National Tomsk State University (Attended 2017 [student] and 2018 [research])
- Arctic Norway, City Camp Guides, Tromso, Finnmark (6-months, 2016)
- Russian Federation, International Permafrost Geohazards Field School, Yakutsk, Sakha (2016)
- Arctic Norway, Permafrost Geohazards Field School, University Centre at Svalbard (2015)

AUTHORED STUDENT RESEARCH

***wrote/awarded grants**

- Undergraduate Research Student Activity (URSA)*****
  Department of Chemistry, University of Alaska,
  - Magnetic susceptibility and biogeochemistry of Goldstream thermokarst lakes with elevated signatures of methane.
  - Supervisor: Dr. Jennifer Guerard (UAF)

- Research Experience Undergraduate (REU)*****
  Biomedical and Student Research Learning,
  - Project: Trace metal investigations of soil sediments and lithology of thermokarst lakes near Fairbanks Alaska
  - Supervisor: Dr. Jennifer Guerard (UAF), Dr. Gunther Kletetschka (Charles University Prague)
  - This publication was supported by the National Institute of Health award number RL5GM118990.

- Student Lab Member - Atmosphere and Climate Group
  Department of Chemistry and Biochemistry,
  - Project: NASA Goddard Pandora and ESA Pandonia UV Spectrometer Instrument Research
  - Attended workshop seminars at the Earth Systems Science Group at NASA Goddard Space Flight Center
  - Supervisor: Dr. Jinqui Mao (UAF)

- Research Experience Undergraduate (REU)*****
  College of Natural Science and Mathematics EPSCOR,
  - Project: Gas Hydrate Geohazards and Theoretical Pathway Emissions on Alaskan North Slope
  - Supervisor: Dr. Anupma Prakash (UAF)

PUBLIC SPEAKING/PRESENTATIONS

- Guest speaker - UAF "Research Methods for Geoscientist" NRM/GEOS 406, Dr. Maio (2019)
- Guest speaker - Czech Highschool on climate change/permafrost ecosystems, Prague (2019)

- Guest speaker - Charles University geophysics department colloquium, Prague (2019)
- Guest speaker - Institute of Biomedical Space Problems, RAS, Moscow (2018)
- Guest speaker – UAF Geoscience Seminar Series: New Frontiers in Permafrost (2017)
- Guest speaker – Seminar at Center for Global Climate Change, Beijing China (2017)

INVITED CONFERENCES

- NASA Arctic Boreal Vulnerability Experiment 6th Science Team Meeting (May 2020)
- Arctic Ecosystems and Polar Forum, Harbin Institute of Technology, China 2020
- One Health Circumpolar North Conference, University of Alaska Fairbanks, USA 2019
- 10th Biennial Workshop JRA Subduction Processes, Kamchatka, Russian Federation, 2018
- 20th International Planetary Conference on Mars, Mars Society, UC-Irvine, USA 2017

MEDIA/NEWS

- NASA Earth Expeditions Blog – Interview: https://blogs.nasa.gov/earthexpeditions/
- National Geographic 'Scientist Around the World'[48:25-59:00] – Live Interview https://www.instagram.com/p/CBlWoDgjrHq/?fbclid=IwAR1iwm2PmPqyVRmTcqV_lFXR200t6m2GB0deacBAFUPwhASejqqlENXLEf8
- Russia-1 State Media 'The Miracle of Tunguska' expedition – Interview [15:30-17:30] https://www.youtube.com/watch?v=5RbYPXPWOGc&t=55s&fbclid=IwAR35OZ1yXPFIIQ5laHrmQi4qB2iMbTahoNsS5BS4iDM7u84cg65Vor4GLt0
- HBO Documentary "Ice on Fire" by Leonardo DiCaprio – Field Assistant https://www.hbo.com/documentaries/ice-on-fire
- BBC/Skating with the two Olympian Ice Skaters on Thermokarst lakes – Interview
- UAF Cornerstone "UAF Students attend First Chinese Polar Science Workshop" - Interview

AWARDS

- Distinguished Polar Student Award (presentation), Harbin Institute of Technology, China (2020)
- UAF Nanook Resilience Scholarship (2020)
- UAF URSA Travel Award: Harbin Institute of Technology-China (2020)
- UAF URSA Project Award: US Army Permafrost Tunnel Astrobiology Investigation (2020)
- Geophysical Society of Alaska Scholarship (2019)
- UAF URSA Project Summer Research Award (2019)
- National Institute of Health Alaska Biomedical and Student Research Learning Award (2019)
- NSF Alaska EPSCOR College of Natural Science and Mathematics Funding (2018)
- UAF Travel Award: NASA Goddard, Earth Systems Science Group Training on Pandora-UV Instrument (2018)
- UAF Travel Award: Kamchatka Volcanology and Seismology Field Camp (2018)
- Mars Society Best Essay Award: Early Career Employment Workshop at NASA/JPL-Caltech, Pasadena, CA (2017)

Total Award: $20,100

*IN/Drafts: NSF Graduate Research Fellowship Program (GFRP), NASA Graduate Fellowship

MEMBERSHIP

- Alaska Geological Society (AGS)
- Permafrost Young Researchers Network (PYRN)
    - National Representative of North America
- United States Permafrost Association (USPA)
- American Geophysical Union (AGU)
- Interagency Arctic Research Policy Committee Student Member (ARPC)
- Mars Society

CERTIFICATIONS

- Russian Scientific Visa INTERACT 3 years, National Tomsk State University
- Russian Language Institute A1-200 Hours: Arkhangelsk, Northern Arctic Federal University
- Arctic Survival/Zodiac/Weapons Training: University Center at Svalbard, Spitsbergen, Norway
- NIH REU/Biomedical Lab and Research Ethics: University of Alaska System
- UAF Heavy Equipment (i.e. snow machines, trailer operation, etc.)
- Alaska State Driver's License

RESEARCH VOLUNTEER

- Field assistant - Dr. Gunther Kletetschka in Czech Republic, Russia, and Alaska
- Field assistant - Dr. Stephanie James USGS APEX Bonanza Creek LTER site
- Field assistant - Dr. Shannon Ruppert, Mars Desert Research Station, Hanksville Utah (MDRS)

REFERENCES (use web-homepage referenced emails)
***Supervisors**

1. Dr. Katey Walter Anthony (research advisor/employment) *
   International Arctic Research Center/INE-WERC, University of Alaska Fairbanks

2. Dr. Dmitry Nicolsky (employment/research advisor) *
   Geophysical Institute, University of Alaska Fairbanks

3. Dr. Gunther Kletetschka
   Geophysical Institute/Czech Academy of Science/Charles University

4. Dr. Clayton Elder (research advisor)
   Jet Propulsion Laboratory, California Institute of Technology

5. Dr. Jochen Mezner (academic advisor or transcript contact)
   University of Alaska Fairbanks, Department of Geosciences