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Norwegian Institute for Air Research
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Partnership in the project THAW: "Trends and Hazards in Arctic Warming: Climate change and greenhouse gas emissions from Arctic permafrost regions"

This letter is written in support of our research collaborating in the project THAW coordinated by Norwegian Institute for Air Research. Thank you for the invitation to participate as a partner in the proposed project THAW. I enthusiastically accept this invitation and I am looking forward to our collaboration.

As a Principal Scientist at NASA's Jet Propulsion Laboratory, I am Principal and Co-Investigator of several NASA Earth science projects that are directly relevant to our collaboration on the THAW project. My research at has included major components on remote sensing of boreal and Arctic terrestrial ecosystems, including microwave remote sensing-based retrieval of land surface freeze/thaw condition and surface moisture as well as characterization of other parameters related to permafrost soils and the cycling of carbon and water in these ecosystems. My current projects support assembly global-scale multi-year Earth System Data Records (ESDRs) of land surface freeze/thaw state and wetlands ecosystems. Both ESDRs are derived from multiple sources of remote sensing data acquired from satellite-borne instruments. I am also co-investigator on a NASA VENTURE-class mission, Carbon in Arctic Reservoirs Vulnerability Experiment (CARVE), the goal of which is to characterize land-atmosphere CO₂ and CH₄ fluxes in regions of continuous, discontinuous and sporadic permafrost, and to assess immediate and long-term vulnerability of these regions with respect to the status of the permafrost. I am also a member of the Science Definition Team for NASA's Soil Moisture Active-Passive (SMAP) mission. My efforts as a SMAP team member support development of the SMAP surface freeze/thaw and carbon products. As Principal and Co-Investigator on these NASA projects, I am enthusiastic about collaborating with you on the THAW project. I am happy to collaborate as a member of the THAW project team, contributing relevant outcomes of my research team's efforts. I confirm that I will participate as a partner in the THAW project without being a contractor.

Please do not hesitate to contact me if you have any questions about our research on boreal/Arctic ecosystems.

Yours sincerely,

A handwritten signature in black ink, reading 'Kyle C. McDonald'.

Kyle C. McDonald, Ph.D.
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