**Application for  
CMDA Undergraduate Research Grant**

**Student Information:**

Name: Daniel PALAMARCHUK

Current Primary Major: CMDA

Secondary Major (if applicable): (Minor) PSCI

VT Email address: [d4n1elp@vt.edu](mailto:d4n1elp@vt.edu)

Title of Project: Building Visual and Numerical Summaries from Legislative Data on Energy and Climate Bills in the VA Legislature, 2015-2022

Student Signature: 

**Faculty Member Information:**

Name: (Chief Investigator) Christian LUCERO

Department / College: STATS/????

VT Email address: [chlucero@vt.edu](mailto:chlucero@vt.edu)

Statement on how the scholarship funds will be used to support the student’s research: Wages paid to Palamarchuk at the rate of $18.75/hour, 8 hours/week (i.e., one day/week), over 10 weeks of Spring 2022 (18.75x8x10=1500)

Faculty Member Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: (Co-Chief Investigator) Andy SCERRI

Department / College: PSCI/CLAHS

VT Email address: [ajscerri@vt.edu](mailto:ajscerri@vt.edu)

Statement on how the scholarship funds will be used to support the student’s research: See above

Faculty Member Signature: ****

**Statement on how the scholarship funds will be used to support the student’s research**:

Funds ($1500) will be used to fund wages paid to the student (Mr. Daniel Palamarchuk: CMDA Major/PSCI Minor) at the rate of $18.75/hour, 8 hours/week (i.e., one day/week), over 10 weeks of Spring 2022 (18.75x8x10=1500).   
Mr. Palamarchuk currently works as an (not yet directly funded) Undergraduate Research Assistant with PSCI Associate Professor Andy Scerri. This project will advance this work by supporting Daniel financially and providing him with Credit for his CMDA/STAT-4994 class, taken with Collegiate Assistant Professor Christian Lucero.

Scerri’s project is a mixed-methods, comparative case study designed to map influence on legislators by lobbyists in six states (NC, KY, MD, TN, WV, and VA) between 2015 and 2022. The project design partly replicates two published single case studies of lobbying, specifically by fossil fuel companies, utilities, and environmentalist organizations, on energy and climate bills tabled in state legislatures in MA and CT between 2015 and 2021. The work is part of a team effort in cooperation with the US State Politics Working Group of the Climate Social Science Network at Brown University.

To date, Palamarchuk has undertaken exploratory analysis using data scraped by another of Scerri’s Research Assistants from the VA Legislative Information Service, the Virginia Public Access Project, and Legiscan.org for bills in VA only in the year 2017. Palamarchuk has used this data as the basis for coding in the R application Plotly of a proof-of-concept Sankey Diagram (SD) and Alluvial Flow Chart (AFC). These represent the passage (SD) and volume (AFC) of energy and climate bills from tabling by legislators, through various House and Senate Committees, to the Governor’s desk, and into law, as well as showing at which point(s) in the legislative process bills were ‘killed’.

For this CMDA URG, Palamarchuk will be tasked with developing his skills in this area toward formulation of SDs and AFCs which combine multiple years (2015-2022) and for each state. Palamarchuk already has a strong background in R programming and will use his existing skills to further develop visual and numerical summaries that can be used for this data. One possible area of improvement is to develop a dashboard that consists of multiple visual tools that can be used to answer questions of interest by investigators. Palamarchuk will also consider the use of machine learning techniques to help investigate patterns that are not commonly detected by traditional methods.