

# SOUTH MOUNTAIN PARTNERSHIP RESEARCH CORPS GRANTS



FUNDING FOR STUDENT RESEARCH

DEADLINE:  
DEC 15, 2023

The South Mountain Research Corps (SMRC) is seeking opportunities to support academic and student-focused research in environmental sciences, forestry, agriculture, cultural and historic resources, geology, geography, and land use planning. Listed below are potential inventory, research, and monitoring priorities that could be conducted on public or private lands within the South Mountain landscape. The documents are organized by general program area. The potential projects listed are the result of priorities expressed by researchers and agencies, as well as community feedback over the last six months. More detailed problem statements for each potential project are available upon request, and there is a contact name and email attached to each one.

This year the SMRC will accept applications for research projects that help address our research priorities within the range of \$1,000 to \$5,000. Previous projects have averaged around \$3,000.

***Priority will be given to proposals that address the research priorities, to proposals that are multidisciplinary in scope, and to proposals that help students develop the skills and expertise necessary for successful careers in land and resource management.***

Some important details to include regarding the proposals and grants:

- **The grants require a 1 to 1 cash or in-kind match.**
- **A succinct project proposal** that addresses the chosen problem statement, includes who will conduct the research and who will supervise it, and states **specifically** what will be delivered to address the problem statement (e.g. a technical report, a journal article, a video, etc.)
- **A proposed budget (one page), and timetable/project schedule**, the budget should note if your match is cash or in-kind and the source of the match.
- **Eligible costs include; research costs, travel, student stipends or compensation [hourly wage or honorarium].**
- Eligible match can include cash costs as well as in-kind university match such as staff time.
- **Curriculum Vitae of the supervising faculty member(s) and student(s) working on the project**

For questions about this program, please contact Julia Chain at [jchain@appalachiantrail.org](mailto:jchain@appalachiantrail.org)

### **2024 Research Problem Statement: Environmental Sciences, Forestry, and/or Agriculture**

The South Mountain Research Corps will support academic and student -focused research in environmental sciences, forestry, agriculture and related life-science disciplines in the South Mountain region of south-central Pennsylvania in Adams, Cumberland, Franklin, and York counties.

The topography, climate, soils, geology, and society and culture of the South Mountain region supports a unique confluence of forests, plant communities, wildlife, and agricultural landscapes and practices. The region's wild, managed, and agricultural lands are also challenged by residential and commercial development, expanding energy and transportation infrastructure, climate change, and intensive recreational and extractive uses.

Within these disciplines, the following is a list of potential research and monitoring priorities provided by local partners that could be conducted on public or private lands within the South Mountain region.

### **Invasive Species, Native Species, Ecological Communities and Wildlands Management**

<b>Research Question</b>	<b>For More Information Contact:</b>
Management Issues at Mount Holly Preserve Natural Resources	Stephanie Williams at the Cumberland County Planning Office sjwilliams@ccpa.net
Timber rattlesnakes in Michaux State Forest	Aura Stauffer (astauffer@pa.gov)
Vernal pools within the South Mountain landscape	Aura Stauffer (astauffer@pa.gov) or Larry Klotz ( <a href="mailto:lhklot@retiree.ship.edu">lhklot@retiree.ship.edu</a> )
Declining early successional habitat (ESH) game species (ruffed grouse, woodcock, wild turkey).	DCNR biologists Emily Domoto (edomoto@pa.gov) or PGC turkey biologist Mary Jo Casalena (mcasalena@pa.gov)
Coldwater fisheries and species like the brook trout	Bryan Chikotas ( <a href="mailto:bchikotas@pa.gov">bchikotas@pa.gov</a> )
Watershed-level water quality assessments, monitoring, and best practices	Julie Vastine (vastine@dickinson.edu)
Understanding and controlling invasive plant species in the South Mountain landscape	DCNR botanist Kelly Sitch (kesitch@pa.gov)
Survey and monitoring of several state-listed plant species.	DCNR botanist Kelly Sitch (kesitch@pa.gov) or Larry Klotz ( <a href="mailto:lhklot@retiree.ship.edu">lhklot@retiree.ship.edu</a> )
Synthetic research and monitoring within the South Mountain Important Bird Area (IBA).	Aura Stauffer (astauffer@pa.gov)

Inventory and evaluation of prescribed burns.	Suzanne Hartley (suzannehartley@pa.gov)
Best practices research and inventory work to address the problem of habitat and population isolation and connectivity	Aura Stauffer (astauffer@pa.gov)
Inventory and research efforts to gather and analyze data on the effects of intensifying recreational use on public land:	Aura Stauffer (astauffer@pa.gov)

### **Agriculture and Forestry**

<b>Research Question</b>	<b>For More Information Contact:</b>
Anticipated changes to forest communities from climate change	Michael Wright (michawrigh@pa.gov ) or Michelle Blevins (mblevins@pa.gov )
Evaluating hunter satisfaction and Willingness to harvest antlerless deer	Suzanne Hartley (suzannehartley@pa.gov)
Regenerative agricultural practices.	Katie Hess (khess@appalachiantrail.org)
Maintaining a diverse and vibrant agricultural landscape/economy while adapting to climate change, invasive pest species (e.g. Spotted Lantern Fly), evolving market/labor conditions, and aging of farmers.	Katie Hess (hess@appalachiantrail.org)

### **Hydrology and Stormwater**

<b>Research Question</b>	<b>For More Information Contact:</b>
Stormwater management	Julie Vastine (vastine@dickinson.edu)
The study and management of flooding and floodplains	Julie Vastine (vastine@dickinson.edu)
Subterranean movement and chemistry of water within the karst topography of the Cumberland Valley	Joe Baker [ <a href="mailto:joebear81@comcast.net">joebear81@comcast.net</a> ]
Determining a baseline for water quality where gaps exist & furthermore, agricultural and “natural” BMP effectiveness on that water quality.	Julie Vastine (vastine@dickinson.edu)

## 2024 Research Priorities: Cultural and Historic Resources

The South Mountain Landscape has a record of human land use that stretches to the Pleistocene. It is a record often but not exclusively focused on resource procurement and exploitation that begins with Native American tool stone quarrying, and continued through the 18<sup>th</sup>, 19<sup>th</sup> and 20<sup>th</sup> centuries with the timber and iron industries and their related practices. It also has a completely unique and idiosyncratic agricultural legacy as one of the most important fruit-producing regions in North America. Ethnic and cultural diversity have been an earmark of this heritage as Native American, Scots-Irish, African American, German, and Latinx people have all left an enduring mark on the region's historic record. All of these cultures have living descendant communities in and near the South Mountain Landscape to whom this heritage belongs. Rapid growth in the partnership counties and high visitation and use of public lands are challenges to the preservation, study, and interpretation of the region's heritage. The South Mountain Research Corps will support research, inventory, and modeling of issues in cultural and historic resource management including but not limited to the following topics. This list is based on priorities expressed by researchers and agencies, as well as community feedback. More detailed problem statements for each project can be made available upon request.

The following is a list of potential research and monitoring priorities provided by local partners that could be conducted on public or private lands within the South Mountain region.

Research Question	For more information contact:
Farm Labor Oral History	Maria Bruno at brunom@dickinson.edu
History and Evolution of Regional Agriculture	Maria Bruno at brunom@dickinson.edu
Native American Interactions with Forest Communities and Ecosystems	Maria Bruno at brunom@dickinson.edu
Legacy of charcoal production and the iron industries of the South Mountain	Maria Bruno at brunom@dickinson.edu
Early European settlement history and landscape evolution at Camp Michaux	Maria Bruno at brunom@dickinson.edu
Continuing Investigations Native American Metarhyolite Quarries	Maria Bruno at brunom@dickinson.edu
Historic Context Development outlined in the Cultural Landscape Assessment	Katie Hess at khess@appalachiantrail.org
Effects of historic mill dams on legacy sediment and erosion of sediment in South Mountain Landscape.	Julia Chain at jchain@appalachiantrail.org

## **2024 Research Problems in Geology, Geography and Geosciences**

The South Mountain Research Corps will support academic and student-focused research in Geology, Geography, Geosciences and related disciplines in the South Mountain region of south central Pennsylvania in Adams, Cumberland, Franklin, and York counties. The geological and geographical contexts of the South Mountain landscape include large areas of Karst topography in the Cumberland Valley, the metamorphic and igneous geology of the South Mountain itself, and areas of Triassic geology on the east side of the South Mountain. The following is a list of potential research and monitoring priorities provided by local partners that could be conducted on public or private lands within the South Mountain region.

<b>Research Questions</b>	<b>For More Information Contact:</b>
The study of the subterranean movement and chemistry of water within the karst topography of the Cumberland Valley.	Joe Baker [joebear81@comcast.net ]
Additional research and public education efforts focused on the South Mountain metarhyolite quarries on and near the Michaux State Forest	Joe Baker [joebear81@comcast.net ]
The development of Middle School and High School geography curriculum focused on the South Mountain Landscape	Joe Baker [joebear81@comcast.net ]
The study of the effects/influence of karst topography & spring-fed streams on South Mountain's groundwater and its reintroduction to surface water. (i.e. effects of infiltration (in karst/spring landscape) on water quality in streams & effectiveness of land BMPs on water quality)	Joe Baker [joebear81@comcast.net ]

## **2024 Research Problems in Land Use Planning**

The South Mountain Research Corps will support academic and student-focused research in the South Mountain region of south central Pennsylvania in Adams, Cumberland, Franklin, and York counties. The topography, climate, soils, geology, and society and culture of the South Mountain region supports a unique confluence of forests, plant communities, wildlife, and agricultural landscapes and practices. The South Mountain Landscape is one of the fastest growing regions in the Commonwealth, and new land use patterns and practices are evolving that are profoundly affecting traditional practices, regional infrastructure, water and air quality, public lands, recreation, quality of life, and other critical resources. Rapid land conversion from forestland or agriculture to developed buildings and infrastructure, and high visitation and use of public lands are challenges to the preservation and promotion of the region's economy, resident health, and overall quality of life. The following is a list of potential research and monitoring priorities provided by local partners that could be conducted on public or private lands within the South Mountain region.

<b>Research Questions</b>	<b>For more information contact:</b>
Synthetic research and compilation of successful and innovative municipal sample ordinances and zoning regulations	Katie Hess at khess@appalachiantrail.org
The gathering, compilation and analysis of public input on comprehensive land use planning at the county and municipal level.	Katie Hess at khess@appalachiantrail.org
Data gathering, modeling and analysis of the effects of warehousing, logistics and distribution networks on regional, county and municipal transportation infrastructure, air and water quality, traditional land uses, open space preservation, and economies	Katie Hess at khess@appalachiantrail.org
Identifying BMP's and models for residential development.	Katie Hess at khess@appalachiantrail.org
Data gathering, modeling and analysis of the effects of large scale solar farms on water quality, traditional land uses, open space preservation, and economies	Katie Hess at khess@appalachiantrail.org
Research and design of stormwater BMPs that are effective in poorly drained soils in the region, and summary and distribution of these BMPs to county and municipal planners.	Katie Hess at khess@appalachiantrail.org
Impact of surrounding land on Michaux State Forest: Quantifying and mapping the impact of these issues.	Suzanne Hartley suzannehartley@pa.gov
Transportation use on Michaux State Forest Roads: Establishing a sampling and monitoring protocol for the volume of vehicles on State Forest Roads	Suzanne Hartley suzannehartley@pa.gov