

August 10, 2020

John L. Koprowski
Director, School of Natural Resources and the Environment
University of Arizona, ENR2 – Room N333
1064 E, Lowell Street
Tucson, AZ, 85721

RE: Desert Ecosystem Cooperative Ecosystem Studies Unit New Member Request

Dear Members of the Desert Southwest Cooperative Ecosystem Studies Unit,

Western New Mexico University is seeking membership in the Desert Southwest Cooperative Ecosystem Studies Unit (DECESU) as a new Partner Institution. The 2019-2024 CESU Agreement outlines the mission and goals of the Cooperative Ecosystem Studies Unit as well as the roles and responsibilities of a nonfederal partner. As a nonfederal partner, [Western New Mexico University](#) agrees to fulfill and support the goals and mission of the DECESU, taking full advantage of existing university resources to benefit faculty and students, encouraging professional development of current and future scientists, resource managers, and public land stewards. As a member of the Desert Southwest Cooperative Ecosystem Studies Unit, Western New Mexico University agrees to manage, create, and maintain partnerships among federal agencies, other universities and cooperative partners to share resources and expertise to provide usable knowledge for informed decision making.

Western New Mexico University was established in 1893 as a State Normal School and today is an open-access, [Hispanic-Serving](#) (Figure 1), Applied Liberal Arts Institution serving approximately 3500 students through (39) undergraduate degrees, (16) undergraduate minors, (11) associate degrees, (12) undergraduate certificates, (10) graduate degrees, and (11) graduate certificates. The [university mission](#) “combines a foundation of liberal arts education with quality professional programs and career and technical preparation in a diverse, inclusive, creative, and caring community of learners empowered with the essential skills and knowledge for lifelong success in work and life.”

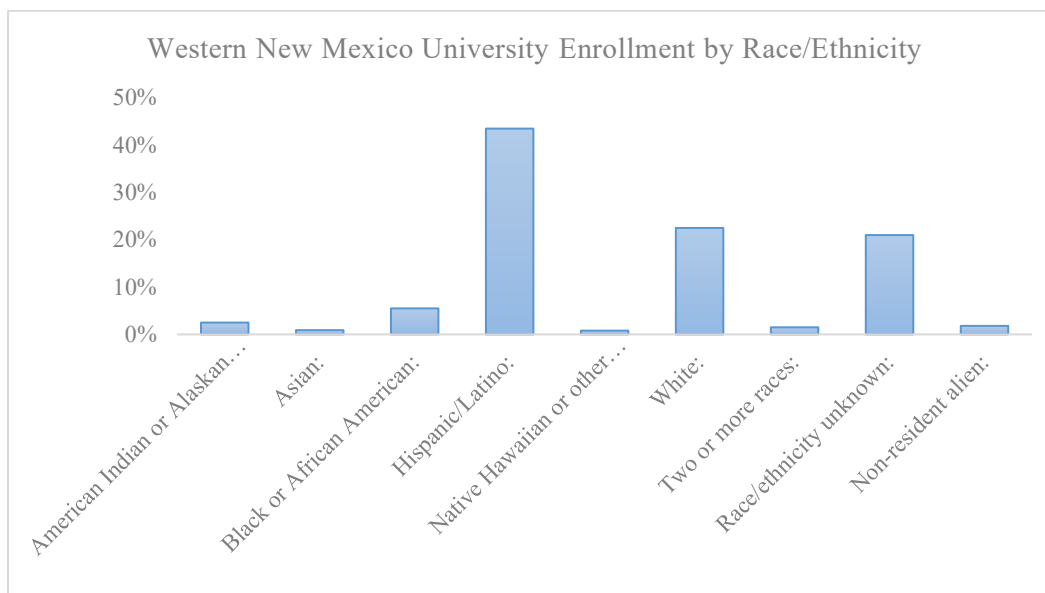


Figure 1. *Western New Mexico University, demographics. Enrollment by race and ethnicity.* (Source: National Center for Education Statistics, <https://nces.ed.gov>)

The Western New Mexico University main campus is in Silver City, the first Gateway Community to the Continental Divide National Scenic Trail (Figure 2). The University is less than 100 miles from the international border and just two miles south of the 3.3 million-acre [Gila National Forest \(GNF\)](#) boundary on the eastern edge of the Mogollon Plateau. It is important to note that the western border of the Gila National Forest joins Arizona's Apache-Sitgreaves National Forest and contributes to a contiguous area of public land spanning almost 9 million acres. The region represents a biological hot-spot with outdoor recreation increasingly important to local economies.

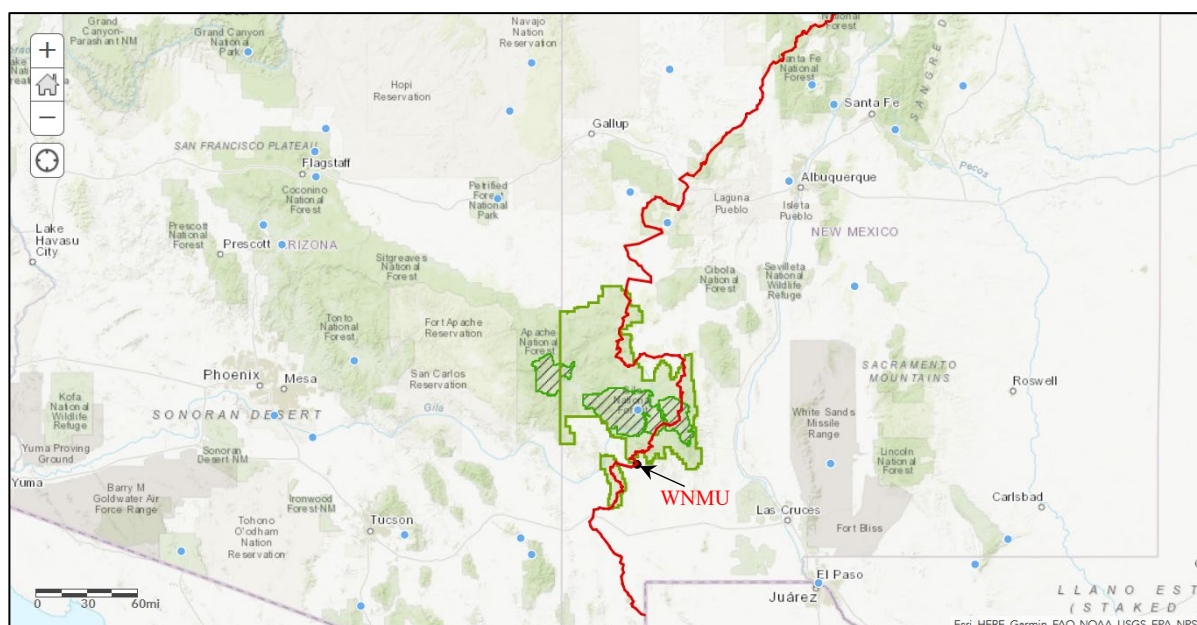


Figure 2. *Western New Mexico University is in Silver City, the first Gateway Community to the Continental Divide National Scenic Trail (red line.) The University is situated less than two miles south of the 3.3 million-acre Gila National Forest, less than 100 miles from the international border, and within a 6-hour drive of more than 30 National Parks, Trails, and Monuments (blue dots.) The western border of the Gila National Forest joins Arizona's Apache-Sitgreaves and contributes to a contiguous area of public land spanning almost 9 million acres. The region represents a biological hot-spot; outdoor recreation is important to the local economy.*

The [Department of Natural Sciences](#) will be the principal department engaged in CESU activities and is regionally recognized for its robust field-based curriculum. The Department currently offers 10 baccalaureate programs ([Botany](#), [Biology](#), [Cell and Molecular Biology](#), [Chemistry](#), [Sustainable Development \(interdisciplinary\)](#), [Forest-Wildlife and Forest-Wildlife Law Enforcement](#), [Medical Technology](#), [General Science](#), [Zoology](#).) and nine program minors (Botany, Biology, Cell and Molecular Biology, Chemistry, Sustainable Development, Zoology, [Geographic Information Systems and Science](#), [Geology](#), and [Outdoor Leadership Studies](#).) The Department's [Gila Center for Natural History](#) maintains extensive biodiversity collections including more than 10,000 animal specimens - searchable through the [New Mexico Biodiversity Collections Consortium](#), and the Dale A. Zimmerman Herbarium which includes ca. 30,000 plant specimens, most of which represent flora of the Gila Region in southwestern New Mexico (see [Vascular plants of the Gila Wilderness](#)). The university [Outdoor Program](#) is housed in the Department and promotes environmental education, curricular course work in outdoor leadership, co-curricular adventure-based outdoor experiences, and an [outdoor gear rental facility](#) open to the public.

The focus of CESU activities will be primarily supported by a small cohort of Department of Natural Sciences faculty (Table 2) and include ecological, evolutionary, and environmental research (i.e. *Landscape and Restoration Ecology; Wildlife Conservation and Management – Including Endangered Species; Museum Science, Archival Science & Conservation; Mapping, Monitoring & Analysis of Ecosystems and Disturbance; Human Dimensions & Visitor Use in Public Lands Management; Public Outreach & Education; Historic Preservation, Planning & Technical Preservation Services*). The Department of Natural Sciences supports cradle to career curriculum and programs that foster public land management and stewardship.

One of the benefits of the university is its small size, community involvement, and interdisciplinary collaboration (Table 1). For example, the Department of Natural Sciences (Table 2) houses the Geographic Information Systems Science (GISS) program while Applied Technologies offers workforce training in Unmanned Aerial Systems (UAVS, or drones.); the Department of Natural Sciences/Outdoor Program collaborates with the [Aldo Leopold Charter School](#) which is located on Western New Mexico University's main campus. The Charter School receives [Youth Conservation Corps](#) funding and promotes work-based learning opportunities focused on community engagement and public land stewardship. The [Western Institute for Lifelong Learning](#) (WILL), which is also located on the WNMU campus, offers lifelong learning and volunteer opportunities. Many WILL members are active retirees engaged on campus (some as adjunct faculty), as members of conservation groups (i.e. [Southwestern New Mexico Audubon Society](#); [Gila Native Plant Society](#)), and as volunteers in the local community.

Importantly, since 2010, the Western New Mexico University Department of Natural Sciences, the Gila National Forest, the Western Institute of Lifelong Learning, the Bureau of Land Management, the Native Plant Society of New Mexico, the Southwestern New Mexico Audubon Society, and New Mexico State University have co-convened the biennial [Natural History of the Gila Symposium](#). The event provides a venue for researchers, land managers, conservationists, and educators to meet and share information and ideas gathered from the Gila Region including watersheds and neighboring areas extending into southwestern New Mexico, southeastern Arizona and Mexico. Published proceedings can be found [here](#).

Finally, Western New Mexico University is a member of the recently formed Southwest New Mexico Collaborative which is comprised of local, state, and federal agencies (i.e. Forest Service, National Park Service, New Mexico State Forestry, New Mexico State Parks, Grant County, Southwest New Mexico Council of Governments, The Nature Conservancy, public schools, towns, villages, and others). The Collaborative convened in November 2018 to share concerns and opportunities to create a path forward for working together on regional outdoor recreation, tourism, restoration and other public land issues. Almost 40 participants from 21 agencies identified five emerging action areas for the region: 1) outdoor recreation, 2) education/youth engagement, 3) restoration, 4) working lands, and 5) economic development (Table 3).

Table 1. Western New Mexico University programs, departments, and divisions of relevance to CESU activities. (Natural Science Department not included.)

DIVISION	DEPARTMENT OR COLLEGE	RELEVANT SCHOOLS OR PROGRAMS
<u>Division of External Affairs</u>		
	Applied Technologies	Unmanned Aerial Systems (UAVS, i.e. drones); Electrical Technology, Welding Technology, Construction Technology; Small Business Development; Community Workforce Development
	Western Institute for Lifelong Learning (WILL)	
<u>Division of Academic Affairs</u>		
	College of Professional Studies	School of Business ; School of Behavioral Sciences
	College of Arts and Sciences	Department of Expressive Arts ; Department of Natural Sciences ; Department of Social Sciences and Cultural Studies ; Department of Mathematics and Computer Science
	Grants Office; Sponsored Projects and Research	List of Regional and International Articulation Agreements and International Partnerships
<u>Division of Business Affairs</u>		
	Business Affairs ; Human Resources	Accounts Receivable; Budget and Accounting; Fiscal Services; Material & Resource Management
<u>University Museum</u>		
		Advances understanding of the diverse cultural and artistic heritages of Southwest New Mexico through research, collection, exhibition, and interpretation; Maintains the world's largest collection of Mimbrenño pottery

Table 2. Department of Natural Science faculty with expertise in disciplines and subject areas of relevance to federal land management, environmental, and research agencies. *An asterisk indicates primary faculty members involved in CESU related projects/research.

Faculty/Staff	Expertise
Dr. Zenaido 'Tres' Camacho (Professor)	Cell and molecular biology
Eric Casler (Assistant Professor)	Botany, ecology; wildlife conservation and management; public lands management; public outreach and education
Dr. Randy Jennings (Emeritus Professor)	Zoology; herpetology; museum science; ecosystem monitoring; data analysis; wildlife conservation and management
Dr. Manda Jost (Professor)	Biology; zoology; museum science; ecosystem monitoring and data analysis; public outreach and education
Dr. Lynn Haugen (Professor)	Biology; zoology; herpetology; museum science; data analysis; wildlife conservation and management
Dr. Jeffrey Hill (Professor)	Microbiology; biology; wildlife conservation and management
Dr. Russ Kleinman (Adjunct)	Botany; museum science; ecosystem monitoring
Dr. Shiva Kyasa (Associate Professor)	Chemistry
Dr. Illya Medina (Assistant Professor)	Chemistry; biogeochemistry; data analysis
Dr. Corrie Neighbors* (Associate Professor)	Earth science; biogeochemistry; geographic information systems science (mapping and analysis); data analysis; public outreach and education
Dr. William 'Bill' Norris* (Professor)	Botany; ecology; biology; public land management; museum science; wildlife conservation and management; ecosystem monitoring, and data analysis; public outreach and education
Dr. Kathy Whiteman* (Associate Professor)	Outdoor leadership, environmental education, experiential education, public land management; ecology, biology; botany; wildlife conservation and management; geographic information systems science (mapping and analysis); ecosystem monitoring and data analysis; public outreach and education

List of facilities, equipment, centers, or institutes that will provide support to the research, technical assistance, or educational activities of relevance to federal land management, environmental and research agencies that will be engaged in CPCEU activities.

- [Gila Center for Natural History](#) (zoological collections)
- [Dale A. Zimmerman Herbarium](#) (botanical collections)
- ArcGIS software (mapping)
- AgiSoft software (3-d mapping; terrain analysis)
- Computer labs
- Drones
- High capacity printers
- Plotter (large-scale printers)
- Field-survey equipment
- 4-high-clearance 4WD vans
- United States Forest Service, [Gila National Forest](#)
- Southwest New Mexico Collaborative
- [Southwest Council of Governments](#)
- National Park Service (e.g. [Gila Cliff Dwellings National Monument](#))
- [New Mexico Outdoor Recreation Division](#)
- [New Mexico State Parks \(e.g., City of Rocks State Park\)](#)
- [Western Institute for Lifelong Learning](#)
- [Aldo Leopold Charter Schools](#)
- [Silver Consolidated Schools](#)
- [Cobre Consolidated Schools](#)
- [New Mexico Youth Conservation Corps](#)

List of relevant ***past*** research, technical assistance, and educational services supported through federal financial assistance awards. (***Post 2000***)

Funding Agency/Institute	Award Number/Description	Project Title or Description	Award Period	Amount
National Science Foundation	1540554	Robert Noyce Teacher Scholarship Program; Capacity building grant to strengthen STEM teacher preparation	2016-2019	\$74,997.00
National Science Foundation	1457248	Parsing the Effects of Host Specificity and Geography on Plant-Fungal Symbioses under Climate Change	2016-2019	\$232,562.00
National Science Foundation	1541428	CC*DNI Campus Design: Western New Mexico University's Small Campus Cyberinfrastructure Grant	2016-2019	\$349,751.00
National Science Foundation	1303433	SFS CB: Establishing the New Mexico Digital Forensics Academy	2013-2016	\$ 142,621.00
National Science Foundation	1146875	RUI: Exploring Unknown Diversity of Short Peptide Neurotoxins and Prey Targets of Provisioning Spider Wasps (Pompillidae) of New Mexico	2012-2018	\$ 272,777.00
National Park Service	Native American Grave Protection and Repatriation Act	NAN Ranch: Mimbrenño Collections	2015-2018	\$90,000.00

Description or list of ***current*** formal agreements and informal relationships with federal agencies that are of relevance to federal land management, environmental, and research agencies that will be engaged in CESU activities.

Funding Agency/Institute	Award Number/other	Project Title or Description	Award Period	Amount
United States Department of Agriculture; National Institute of Food and Agriculture	2020-70001-31287	Building a Research Program in Nano-enabled Agriculture at a Rural HSI	2020 (ongoing)	\$142,110.00
National Park Service/ Rivers, Trails, Conservation Technical Assistance Award		Southwest New Mexico Interagency Internship Collaborative	2019 (ongoing)	N/A
Subawards/ Federal Pass-through Support				
National Institute of Health (subaward from New Mexico State University)		New Mexico INBRE	2015-ongoing	\$56,482
National Science Foundation (subaward from New Mexico State University)		New Mexico Alliance for Minority Participation	2014 - ongoing	\$4,000

Other Relevant Awards, Contracts, Collaborations, and Projects				
Agency/Organization	Type of Project	Description	Award Period	Amount, if applicable
United States Department of Agriculture/Forest Service; New Mexico Department of Game and Fish; The Nature Conservancy and others	Contracted services	Various contracts and awards for biological and botanical research	ongoing	varies
United States Department of Agriculture Gila National Forest	Contracted services	Youth Outreach; Forest Planning	2015-2020	\$7000
Southwest New Mexico Collaborative	Collaborative Working Group	comprised of local, state, and federal agencies (i.e. United States Department of Agriculture/Forest Service, National Park Service, New Mexico State Forestry, New Mexico State Parks, Grant County, Southwest New Mexico Council of Governments, The Nature Conservancy, Western New Mexico University, public schools, the Town of Silver City, the Town of Bayard, Village of Hurley, and others)	2018 (ongoing)	N/A
National Park Service and Western New Mexico University	Floristic research	Floristic Inventory of the Gila Cliff Dwellings National Monument	ongoing	
Western New Mexico University, Gila National Forest, Western Institute of Lifelong Learning, Bureau of Land Management, Native Plant Society of New Mexico, Audubon Society, New Mexico State University.	Collaborative working group	Biennial Natural History of the Gila Symposium . <i>Provides a venue for researchers, land managers, conservationists, and educators to meet and share information and ideas gathered from the Gila Region including watersheds and neighboring areas extending into southwestern New Mexico, southeastern Arizona and Mexico.</i>	2010-present	

Confirmation of the institution's/organization's willingness to accept a limited overhead rate of 17.5%, applicable for activities conducted through the CESU, including research, technical assistance, and educational services

See attached.

Designation of a technical representative (with full contact information – name, title, full address, phone, fax, email) to serve on the CESU steering committee, participate in CESU annual/semi-annual partner meetings, and facilitate internal and external communication, promotion, and response to CESU correspondence and administrative actions (e.g., announcements, new member applications, processing agreements/amendments, five-year reviews).

Kathy Whiteman, Ph.D.
Director, Center for a Sustainable Future and Outdoor Programs
Chair, Department of Natural Sciences
Western New Mexico University
PO Box 680, 1000 W. College Avenue
Silver City, NM 88061
Phone: 575-538-6253
Email: whitemank@wnmu.edu

In signing this application, Western New Mexico University agrees to relay agency-specific research, technical assistance, educational needs and associated funding opportunities to other institutional/organizational members (e.g., faculty, students) and commit institutional resources in a binding multi-year federal cooperative and joint venture agreement.

Dr. W. J. Crocker, VPAA

Date 8/12/2020

Dr. William Crocker
Provost and Vice President of Academic Affairs
Western New Mexico University

Cc:

Limited Overhead Acceptance Memo
Letters of Support, National Park Service, USDA Forest Service



WESTERN
NEW MEXICO UNIVERSITY
Office of the President

MEMORANDUM

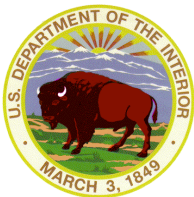
TO: Southwest New Mexico Interagency Internship Collaborative Partners

FROM: Dr. Joseph Shepard, President, WNMU
Dr. William Crocker, Provost/Academic Affairs Vice-President, WNMU

DATE: September 30, 2019

RE: Southwest New Mexico Interagency Internship Collaborative overhead cap of 17.5%

Whereas, the Southwest New Mexico Interagency Internship Collaborative (SWNMIIC) aims to provide Western New Mexico University students with opportunities to develop a working knowledge of natural and cultural resources while exploring a variety of careers in federal, state and local public lands management through paid internships, Western New Mexico University is willing to accept a limited overhead rate of 17.5% to which the rate is applicable for all internship-related activities. The university understands that this overhead rate applies to the entire institution.



United States Department of the Interior
NATIONAL PARK SERVICE
Interior Regions 5, 6, 7, 8, 9
12795 West Alameda Parkway
Lakewood, CO 80228



August 3, 2020

John L. Koprowski
Director, School of Natural Resources and the Environment
University of Arizona, ENR2 – Room N333
1064 E. Lowell Street, Tucson, AZ 85721

Re: Desert Southwest Ecosystem Studies Unit Membership

Dear Mr. Koprowski,

The National Park Service, Rivers, Trails and Conservation Assistance Program supports Western New Mexico University (WNMU) application for membership in the Desert Southwest Ecosystem Studies Unit (CESU). We are working with the University on several applied projects with national parks and other partners in New Mexico.

The applied projects include: working with WNMU over the next year on a “Cradle to Career Outdoor Education Strategy” for kindergarten through college age youth, a multi-day STEM camp in summer of 2021 that will be supported by interagency partners, and using Geographic Information System (GIS) to conduct analysis and mapping about national park visitation and pre-Covid community economic impacts. The GIS project will use existing National Park Service data and be completed through a collaboration between WNMU and New Mexico Highlands University with funding provided to Highlands University through their association with the Great Plains CESU. These complex projects include coordination with federal, state, tribal, and non-profit partners.

WNMU membership into the CESU will allow the National Park Service to coordinate directly with the University versus collaborating with other universities that are a member of one or more CESU's. WNMU membership to the Desert Southwest CESU will help the University and their partners coordinate research and share the costs and results more broadly through regional and national presentations and publications.

Due to these reasons, I strongly support WNMU CESU membership request. Please don't hesitate to contact me if you have questions regarding this support letter.

Regards,

Ericka Pilcher, Program Leader
Rivers, Trails, and Conservation Assistance Division
National Park Service
Interior Regions 6, 7, 8



United States
Department of
Agriculture

Forest
Service

Gila National Forest
Supervisor's Office

3005 East Camino Del Bosque
Silver City, NM 88061
575-388-8201
TDD: 575-388-8489
FAX: 575-388-8204

File Code: 1500

Date: July 28, 2020

Ashley Stewart, Program Coordinator
Desert Southwest Cooperative Ecosystem Studies Unit
The University of Arizona
ENR2 – Room N327
1064 E. Lowell Street
Tucson, AZ 85721

RE: Cooperative Ecosystem Studies Unit Membership

Dear Program Coordinator Stewart:

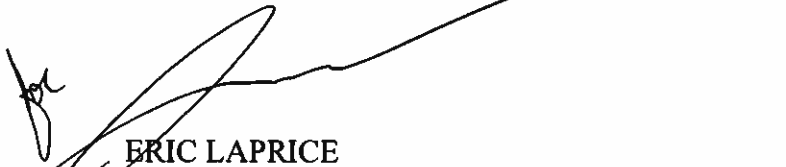

In my capacity as the Acting Forest Supervisor of the United States Department of Agriculture, Gila National Forest, I strongly support Western New Mexico University's application for membership in the Desert Southwest Cooperative Ecosystem Studies Unit.

The Gila National Forest currently works with Western New Mexico University on a number of interdisciplinary and applied projects. For example, the Gila National Forest and Western New Mexico University are both members of the Southwest New Mexico Collaborative. This collaborative involves more than 20 federal, state, and local partners working together to ensure greater and more efficient coordination and alignment towards a shared vision of healthy forests and watersheds, resilient communities, vibrant local economies, and high quality of life for current and future generations in Southwest New Mexico.

Since 2010 we have collaborated with Western New Mexico University to support the biennial Natural History of the Gila Symposium which provides a venue for researchers, land managers, conservationists, and educators to meet and share information and ideas gathered from the Gila Region. The Forest regularly contracts with Western New Mexico University faculty to perform biological and botanical surveys and youth outreach activities. Each summer, the Gila National Forest supports WNMU students in various practicum experiences which provide insight into public land management careers, and recently, we began to develop cradle-to-career fire curriculum working with Western New Mexico University faculty and local high schools.

Cooperative Ecosystem Studies Unit membership for Western New Mexico University will increase opportunities for cost sharing, improve efficiency, and significantly increase collaborative opportunities and projects, and will also allow greater flexibility for the Gila National Forest to engage in research, seek technical assistance, and provide educational outreach aligned with our mission to care for the land while serving people.

Sincerely,

ERIC LAPRICE
Acting Forest Supervisor

