



MEDICINE IN THE WILD

APRIL 9 - MAY 4, 2023

*Offered by NOLS Wilderness Medicine in partnership with the
Harvard Affiliated Emergency Medicine Residency*

FEATURES OF THIS COURSE

- Course length: 26 Days
- Minimum age: 23
- Average group size: 15 students/3 faculty
- Average pack weight: 45-60 lbs.
- Hiking Route: 65-80 miles
- Elevations of 6,500-11,000 feet
- On and off-trail hiking
- Travel near or above tree-line
- Wilderness Upgrade for Medical Professionals course
- Guest lectures from a wilderness medicine physician
- Continuing Medical Education and FAWM credit available

**Backcountry location may change due to COVID-19*

COURSE OVERVIEW & LOCATION

Medicine in the Wild (MED) is the ultimate combination of wilderness medicine, expedition skills, leadership, and medical education in a remote environment. Ideal for the third- or fourth-year medical student looking for a challenging experience in a backcountry setting, this is an unparalleled opportunity to gain proficiency in wilderness medicine, leadership, wilderness travel, teaching techniques, and environmental health policy. No other medical school elective offers this breadth of curriculum on a true extended wilderness expedition.

Medicine in the Wild consists of both classroom and wilderness sections. The course begins with an orientation day at our NOLS Southwest location where you will prepare equipment and food for your course. You'll then begin a five-day Wilderness Upgrade for Medical Professionals (WUMP) course. You will stay in tents near the teaching facility and you will eat catered meals. Course days will be spent in and out of the classroom, learning and practicing the skills and decision-making that set wilderness medicine apart from its urban counterpart.

After completing the WUMP, you'll participate in an environmental studies and natural history training day. Afterwards, you'll spend one final night at

“The Medicine in the Wild course was the most formative and beneficial class that I took during my medical education... This course gave me the knowledge, confidence, and a systematic approach to be able to feel competent... Not only that, but I became proficient in map reading, GPS, and compass navigation as well as a myriad of other outdoor living skills such as backcountry hygiene, cooking, and LNT. The leadership skills that I gained will translate perfectly to residency, and were unique to anything else I had learned from medical school.”

—Afton Chavez MED Graduate

NOLS Southwest to complete preparations for the backcountry.

The three-week backcountry section will take place in New Mexico's Gila Wilderness. Ranging in elevation from 6,500 to 11,000 feet, the Gila Range is home to black bear, elk, white-tailed deer, and an amazing variety of bird life. You'll hike from pinyon, juniper, and Arizona sycamore up into aspen groves and stands of fir and spruce trees. You'll camp in steep-sided rocky canyons, wander through park-like ponderosa pine forests, and sleep under the stars in open alpine meadows. The Gila can undergo extremes in temperatures and weather. Though warm, mild weather is possible, you should expect anything from monsoon rains and extreme heat to snow and subfreezing temperatures. It is likely that you will experience a variety of weather, camping, and hiking conditions. Physical challenges on the course will include backpacking three to nine miles daily, both on- and off-trail, in steep, rugged terrain, and numerous river crossings done by wading through ankle- to waist-deep moving water. You will carry a backpack weighing between 45 and 60 pounds.

Your course will conclude with classes from a Harvard Affiliated Emergency Medicine Residency faculty member with experience as a wilderness medicine physician.

COURSE OBJECTIVES

The Medicine in the Wild course has five primary objectives:

1. Proficiency in wilderness medicine
2. Understanding peer leadership and teamwork skills
3. Competency in wilderness travel and living skills
4. Knowledge of medical education techniques
5. Ability to influence environmental policies that impact human health

The quest for proficiency in wilderness medicine begins with the classroom section. This portion builds upon the skills you have learned as a medical student and challenges you to apply them to medical and evacuation decisions in remote environments. The foundational skills you learn in the classroom portion of the training will be used during the field section to problem-solve increasingly complex scenarios. Specific topics to be covered include wilderness patient assessment, remote CPR, spinal management, litter packaging and long-term patient care, trauma in the wilderness, improvised splinting and dislocation reduction, North American snakebites and insect stings, environmental emergencies, abdominal complaints, medical patient assessment, medical-legal issues, and backcountry medical and drug kits.

During the classroom portion you will begin developing communication and teamwork skills. You will work with other students in teams of two to six or more in order to care for simulated patients in scenarios ranging from the straightforward to the complex multiple casualty incident. When the course shifts into the backcountry, you will apply these communication and leadership skills to the rigors of expeditioning.

The nearly three-week wilderness section provides an opportunity for you to learn the NOLS core curriculum for backcountry travel. You'll study risk management and judgment, leadership and teamwork, outdoor skills, and environmental ethics. Prior wilderness travel experience is not necessary, and even students familiar with backcountry travel will find themselves challenged on this expedition. Once you've become comfortable with the daily tasks of



Students hiking in the Gila Wilderness.

“The Medicine in the Wild course was truly a transformational experience. Now that I have started intern year, I am beginning to gain a deeper understanding of the stark contrast of that medical world to the medical system that we are entrenched in on a daily basis.”

—Jared Beller MD MED Graduate



**STEP FORWARD
IN AN EMERGENCY**

camping, your group will again explore the ramifications of dealing with medical challenges in a remote location.

Throughout the month, you will work toward becoming a sound medical educator. Learning theory and teaching styles will be explored, and you will be called upon to present topics throughout the program. Emphasis will be placed on effective educational models that can be readily transferred from the wilderness into the medical world.

Prior to going into the field, you will choose a book from a list of literary texts which examine the role of humans within the natural world and prepare a short, written response. You will contribute your knowledge of this book and your personal experience to lead an active discussion of the role of the physician in advocating for individual and global health.

Expeditions, unlike traditional classrooms, are influenced by weather, terrain, and the characteristics of the individuals involved. Accordingly, our courses are not fully scripted. Working with these variables, it is our intent each student accomplish the following outcomes.

WILDERNESS MEDICINE

- Perform a patient assessment, manage life threats and scene safety, describe wilderness specific CPR considerations
- Manage shock, head, chest, spine, and musculoskeletal injury with minimal equipment
- Demonstrate effective treatment for wilderness wounds, burns, and infection
- Manage emergencies due to heat, cold, altitude, submersion, and lightning
- Describe appropriate management for envenomation
- Assess and treat a medical patient in the wilderness
- Discuss relevant mental health issues
- Understand decision-making complexity with regards to wilderness evacuation
- Describe the medical-legal implications of wilderness medicine
- Understand the utility and limits of ALS in the wilderness

SEARCH AND RESCUE

- Demonstrate proficiency with basic search and rescue principles
- Prepare a reasonable pack with essential medical and personal gear for wilderness medical or disaster response
- Organize, lead, and participate in a simulated wilderness litter evacuation

OUTDOOR SKILLS

- Dress appropriately for the weather encountered on this expedition
- Cook nutritious meals using a camp stove and field rations
- Purify water using multiple methods
- Demonstrate campsite selection and shelter use skills
- Navigate in mountain terrain with map, compass, and GPS
- Travel off-trail in mountain terrain



Students gain familiarity with a portable ultrasound during their elective in the Gila Wilderness.

“The experience and skills I learned while completing my NOLS course will not only make me a more effective and thoughtful physician, but also, a better person. The course was a rare opportunity for a medical student like myself to learn and grow outside of a hospital or classroom setting, and I cannot express how grateful I am for the opportunity.”

—Jeremy Durling MED Graduate

HUMAN AND ENVIRONMENTAL HEALTH ISSUES AND ETHICS FOR THE PHYSICIAN

- Read and respond to a text (chosen from an extensive list of fiction/ essays/ poetry/ non-fiction) that examines human responses to their environment
- Apply this knowledge in a discussion about ethics and consideration of human-induced environmental change on long-term human health
- Teach tools by which healthcare providers can advocate for local and global environmental policies that protect human health

ENVIRONMENTAL STUDIES

- Consistently perform sound leave-no-trace skills
- Show an understanding, appreciation, and respect for the natural world; know characteristic flora and fauna of the area
- Demonstrate basic knowledge and respect for ancient southwest cultures

RISK MANAGEMENT AND JUDGMENT

- Demonstrate sound judgment and decision-making
- Demonstrate basic ability to manage risks including: rock fall, steep terrain, stream crossing, bear avoidance, lightning, and adverse weather
- Recognize, anticipate, and assess objective and subjective hazards

LEADERSHIP

- Demonstrate sound expedition behavior including modeling teamwork, support of group decision-making, and a positive attitude during adversity
- Show leadership with peers using styles appropriate to the situation
- Display a work ethic that contributes to group goals
- State personal opinions and expectations with clarity and timeliness
- Give timely, growth-oriented, specific, behavior descriptive feedback
- Treat everyone with dignity and respect
- Seek feedback and learn from experience

TEACHING

- Build lesson plans and deliver classes to address multiple learning preferences
- Lead an active discussion of the role of the physician in advocating for individual and global health
- Provide verbal coaching and feedback to peers
- Demonstrate the ability to synthesize information into salient teaching points

COURSE FACULTY

NOLS Wilderness Medicine and the Harvard Affiliated Emergency Medicine Residency (HAEMR) partner to provide the Medicine in the Wild program. A team of experienced NOLS Wilderness Medicine educators and a senior



Students practice with a portable hyperbaric chamber.

“Because the course included students who represented the entire spectrum of personalities in medicine, its greatest value lay in the formal opportunities to lead them, work with them, and follow them ... For having practiced all of those skills with an intensity that’s almost impossible to match elsewhere, I feel better equipped to begin my internship.”

—Neil Rosenberg MED Graduate

resident from HAEMR will lead each expedition.

NOLS Wilderness Medicine instructors are selected for their background in wilderness leadership, urban and wilderness pre-hospital care, and education. They are considered to be the best wilderness medicine educators in the country. The HAEMR faculty selects an exceptional senior emergency medicine resident to contribute knowledge of hospital-based emergency medicine and to provide mentorship for Medicine in the Wild students, who will soon be entering residency or other professional careers.

Additionally, your elective will conclude with classes from a HAEMR faculty member with extensive experience as a wilderness medicine physician and researcher.

COURSE SYLLABUS

4/8: COURSE CHECK-IN

Shuttle from Tucson, Arizona airport to NOLS Southwest. The course begins with dinner.

4/9: ISSUE EQUIPMENT AND RATION FOOD AT NOLS SOUTHWEST

After breakfast and a course orientation you'll spend your day issuing gear and packing rations necessary for the wilderness expedition. Fundamental wilderness travel and living classes will begin.

4/10–4/14: WILDERNESS UPGRADE FOR MEDICAL PROFESSIONALS (WUMP)

You'll learn to respond to medical emergencies in remote settings through the WUMP course. Course days run from 8:00 a.m. to 5:00 p.m. with two evening sessions. Classroom lectures (50%) are integrated with practical skills sessions, case studies, and scenarios (50%). The scenarios and practice sessions take place both inside and outside and include an evening mock rescue. Following successful completion of this section, you will earn a Wilderness First Responder certification. For this section, please bring comfortable, casual clothes appropriate for indoor and outdoor learning.

4/15: ENVIRONMENTAL STUDIES DAY

After breakfast, you will participate in an environmental studies and natural history training day. In the evening, you will complete preparations for the backcountry.

4/16: TRAVEL TO GILA WILDERNESS

You will travel from NOLS Southwest to the Gila Wilderness (near Silver City, New Mexico) to begin the expedition in this historic wilderness area.

4/17–4/23: FIRST RATION PERIOD, WILDERNESS EXPEDITION

During the first ration period the expedition will focus on camping and travel skills in a backcountry setting. Once these skills have been mastered, the staff will integrate wilderness medicine curriculum into the continued exploration of the Gila through scenarios, clinics, and case study reviews. The HAEMR resident will lead discussions and offer wilderness medicine modules in addition to mentoring students. You will be introduced to the NOLS communication and leadership curriculum as it applies to working within teams in stressful situations.

“Medical students need to get outside of our traditional paradigm of education. This is the perfect opportunity for self-reflection and hands-on practical experience while challenging us in a variety of ways.”

–Student Group MED



The Gila provides opportunities for technical terrain travel.

4/24: RE-SUPPLY

On approximately this day, your course will receive a re-supply of food and equipment for the final section of the backcountry expedition.

4/25-5/1: SECOND RATION PERIOD, WILDERNESS EXPEDITION

The final section in the Gila Wilderness will combine technical skills with a continued emphasis on care of medical patients in remote environments. Evening discussions will focus on topics relevant both to upcoming residency and the opportunities available to practicing physicians within the field of wilderness and expeditionary medicine. You will be expected to present short topics to your peers as a part of the focus on providing effective medical education.

5/2-5/3: VISIT WITH HAEMR PHYSICIAN

Your course will rendezvous with the visiting faculty member from the HAEMR program. In addition to more wilderness medicine classes and open forums, you will present the results of your environmental and global health project. You will explore the prehistoric Gila Cliff Dwellings. This will be the opportunity for course faculty to complete your medical school evaluations.

5/4: RETURN TO NOLS SOUTHWEST

After an early morning shuttle back to NOLS Southwest you will de-issue course equipment, shower, and celebrate with a barbeque before a shuttle takes you to an airport hotel in Tucson. Official course end is at 6:00 p.m.

CERTIFICATIONS AND CONTINUING EDUCATION CREDITS

- Successful completion of the course provides certification as a NOLS Wilderness First Responder.
- This course has been approved for Fellowship of the Academy of Wilderness Medicine (FAWM) credits through the Wilderness Medical Society. Actual credits awarded depend on personal credit needs and history.
- Through joint providership with WMS, physicians may earn 43 hours of Category 1 CMEs for participation in the Medicine in the Wild course.

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Wilderness Medical Society and NOLS Wilderness Medicine. The Wilderness Medical Society is accredited by the ACCME to provide continuing medical education for physicians. The Wilderness Medical Society designates this educational activity for a maximum of 43 hours of AMA PRA Category 1 Credits™. Each physician, physician assistant or nurse should only claim credit commensurate with the extent of their participation in the activity.

- This CE activity is accredited for 48 EMT Continuing Education Hours by NOLS Wilderness Medicine, an organization accredited by the Commission on Accreditation for Pre-hospital Continuing Education (CAPCE).

“Medicine in the Wild offers an unparalleled experience in learning diagnostic and therapeutic skills in a true wilderness setting through the use of small groups, well-crafted simulations, and moulage. While living and traveling in a wilderness area, students learn the intangibles of good clinical and wilderness judgment from expert instructors. Beyond tangible clinical skills, NOLS students develop leadership experience that will be of great importance in their future careers as medical leaders. I have routinely found my NOLS leadership experience to be invaluable in my daily work as the attending physician commanding a busy, urban Level I trauma center and emergency department.”

– N. Stuart Harris MD MFA
Director of Wilderness Medicine,
Department of Emergency
Medicine, Massachusetts
General Hospital

STUDENT INDEPENDENCE

On all NOLS courses students will be independent (that is unaccompanied by instructors) at various times. This will include time in and around camp such as while cooking or performing camp chores. Instructors may allow students to travel away from camp. In town, students have some independent unstructured time, before and after their course starts.

COVID-19

In traveling to or during your NOLS course, you could be exposed to the novel coronavirus. To best protect students and staff, NOLS' field practices are based on the assumption that everyone is an asymptomatic carrier when they arrive at NOLS. While in town preparing for your course and while in the field, you will be expected to comply with NOLS' COVID-19 practices.

We recognize that NOLS-specific COVID-19 expectations and practices may look different from or mimic your own. For us the ability to adhere to these expectations is an integral part of our ability to responsibly run courses and create a positive learning environment, ensuring that we invest in one another's health. In essence, it's what we call good expedition behavior, the leadership skill focused on promoting individual and group success.

We continue to adjust our COVID-19 mitigation strategies as the pandemic evolves. Please visit our website for the current NOLS COVID-19 practices: <https://www.nols.edu/en/covid19-practices/>

PERSONAL ELECTRONICS

A key element to a NOLS education is time spent in wilderness. The benefits of this include being closer to nature, time away from society and civilization, and being in an environment where natural forces predominate and students have the opportunity to develop good judgment and practice self-reliance. NOLS does not permit students to use personal cell or satellite phones or other communication devices including personal tracking devices (e.g. SPOT), while in the backcountry. Additionally, students are not permitted to take personal music players (iPods/MP3 players, etc.) or to use tablets (e.g. iPads) as cameras in the backcountry. Instructors will be carrying sufficient communication equipment (usually a satellite phone) to handle emergencies that may arise. Additionally, each daily travel group will be carrying a personal locator beacon on backcountry sections.

“This was by far and away to best experience I could have had to prepare for residency as it helped me in the ways I communicate with family, friends, co-workers, strangers, etc. and how I constantly strive to be intentional in my words and actions.”

—Jacob Jensen MED Graduate



Realistic scenarios help students focus on decision-making skills.

HARVARD AFFILIATED EMERGENCY MEDICINE RESIDENCY PROGRAM



COURSE COST

\$5,500 | Includes lodging April 8 - May 3, 2023; transportation during the course; instruction and materials; wilderness medicine certification, 43 hours of category 1 CMEs or 48 hours of EMT CEUs, and up to 50.5 hours credit toward a Fellowship of the Academy of Wilderness Medicine; visiting faculty; permit fees; field rations and catered meals; group camping gear (shelters, cook stoves). Does not include travel to Tucson, Arizona, lodging in Tucson on May 5, or personal equipment purchase or rental.

TUITION PROTECTION PROGRAM AND TRAVEL INSURANCE

Protect your investment and guard against unforeseen expenses. NOLS recommends that students purchase optional Tuition Protection and Travel Insurance provided by Aon Affinity. Shop policies online at www.mdmgroup.net/nols

NOLS CANCELLATION POLICIES

- If you cancel or leave a course for any reason:
 1. 45 days or greater prior to the course start date, students may cancel the course and will receive a refund minus an administrative fee of \$50.00.
 2. Less than 45 days prior to the course start date, the course is non-refundable.
- Participants will be required to reimburse NOLS for the expenses incurred in evacuating them from the course.
- We strongly urge you to purchase refundable plane tickets and trip insurance or the Tuition Protection Plan.
- Although we rarely need to do so, we reserve the right to cancel a course or change a course duration, tuition or location. NOLS is not responsible for associated costs in these cases.



Camping in the serene ponderosa pine forest.

FOR MORE INFORMATION OR TO APPLY, CONTACT NOLS WILDERNESS MEDICINE

Call us Monday– Friday
8:00 a.m.–5:00 p.m MST at
866.831.9001
or email us at wilderness_medicine@nols.edu

View the course description and apply
online at [https://www.nols.edu/
portal/wmi/courses/18359/](https://www.nols.edu/portal/wmi/courses/18359/)

