Proposal for Review of Wilderness Medicine Fellowships

SAEM Fellowship Review Committee (Current as of May 2018)

Introduction:

Wilderness Medicine (WM) is the practice of resource-limited medicine in austere environments. The skills taught by WM fellowships have broad and unique application in wilderness areas, pre-hospital care, disaster medicine, international and developing-world projects, climate change and human health, and advancing environmental/medical policy.

WM fellowships exist as an academic sub-specialty of Emergency Medicine (EM). WM fellowships are widely dispersed across the county. The first WM Fellowship program was established in 2003. There are now 16 established WM Fellowships. There are thriving WM Sections and Interest Groups contributing to the academic missions of multiple national medical organizations including the Society for Academic Emergency Medicine (SAEM), American College of Emergency Medicine (ACEP), Emergency Medicine Resident's Association (EMRA), and the Wilderness Medical Society (WMS).

Purpose:

WM is an increasingly mature area of academic and clinical expertise. Just as EM encouraged peer-review of its new training programs to earn its rightful place as a ABMS-recognized medical specialty, WM fellowship training is sufficiently widespread and mature that peer-review of our WM fellowships is an important next step to advance our sub-specialty. External review of WM fellowships will help ensure that fellows have a voice and that all fellowships have access to best WM teaching, curriculum, research, and other resources. It will provide EM Chairs and administration evidence of our excellence which will be useful to individual programs.

More than five years ago, SAEM recognized there are many valuable non-ACGME-approved post-graduate training opportunities for EM residency graduates (e.g., admin, global health, geriatrics, etc.). As sub-specialties of Emergency Medicine, SAEM is uniquely suited (by expertise and authority) to review these EM academic programs. To meet this need, SAEM

created an active and efficient Fellowship Review Committee to provide peer-review of EM fellowships and help ensure best practices are available to all. The goal of this review is aspirational – the chance for programs to demonstrate a level of excellence as defined by our peers (in our case WM Fellowship Directors) and to earn endorsement as an SAEM-approved fellowship.

Since all WM Fellowships are based in EM programs, as a national EM body already charged with external fellowship review, SAEM seems best positioned to succeed in WM Fellowship Review. The review process is transparent and with limited administrative burden.

In 2014, a group of experts in WM education developed a consensus statement published in *Academic Emergency Medicine* which outlined the core content of WM fellowship training (see below). **This consensus document created by WM Fellowship leaders is the basis of SAEM's fellowship review.**

Process:

1. Submit the application as a single .pdf file to grants@saem.org prior to the application deadline (or next business day if the deadline falls on a weekend).

2. The application fee is $400 for first-time applicants and $500 for renewals. Applications will not enter the review process until the fee is received. The fee must be received on or before the submission deadline. No exceptions will be made. The full application will be reviewed by the SAEM Fellowship Approval Committee (2 months).

3. After approval, the fellowship program will receive the designation of "SAEM Approved/ Endorsed" on the SAEM Fellowship Directory list. Fellows that complete an SAEM-approved WM fellowship are also considered by SAEM to have earned the standard qualifications and skills of an emergency medicine fellow in this specialized area of medical expertise. Fellows must enroll in the

SAEM program and meet the stated requirements in order to be considered approved. Fellows will receive a certificate of approval upon completion.

4. Approval of a Wilderness Medicine Fellowship program is contingent on a review of the fellowship criteria detailed below.

5. A site visit and/or interview may be requested at the discretion of the committee members. After the initial approval is granted for a period of 3 academic years (July 1 – June 30), programs with demonstrated success can be reapproved for a five-year period. On an annual basis, approved programs must communicate to the committee any changes in research fellowship program personnel. In the event of the departure or replacement of the program director (unless simple succession of Assistant WM Fellowship Director to WM Fellowship Director), a secondary review will be required.

Criteria:

Institution Application:

SAEM endorsement of a WM fellowship is contingent upon a review of the following (consistent with other areas of current EM sub-specialty fellowship training reviewed by SAEM and with the previously mentioned WM expert consensus document published in *AEM*):

1) Institutional environment

2) success of prior program graduates (if applicable)

3) current members of the faculty fellowship team and

4) the proposed curriculum for future fellows.

All approved institutions must have an ACGME-approved emergency medicine residency and support for WM programs in place. They must demonstrate strong collaboration with WM clinicians, educators, and researchers as well as with other clinical and expert services that supervise relevant clinical, technical outdoor/ rescue skills, and research experience.

Wilderness Medicine Fellowship Criteria:

Fellowship Eligibility

- Fellow must have graduated from an EM residency; American Board of Emergency Medicine (ABEM) or American Osteopathic Board of Emergency Medicine (AOBEM) eligibility or certification; or other specific arrangement with the fellowship program.

Duration of WM Fellowship Training

- 12 to 24 months.

Site Requirements

- Sponsored by an Accreditation Council for Graduate Medical Education (ACGME)-accredited EM residency program with expertise in wilderness medicine clinical practice, education, and research.
- Dedicated wilderness medicine fellowship faculty.
- Financial support for the fellowship and fellow.
- Resources sufficient to enable the fellow to achieve the fellowship's stated educational and other goals.
- Active involvement in providing online and offline medical direction for at least one wilderness medicine system whose patient population meets the fellowship's educational goals.
- Active participation in supervised care delivery in a wilderness setting.
- Active involvement in wilderness medicine scholarly activity, defined as original research and /or writing project for the peer-reviewed literature or other formal publication.

Program Requirements

- Wilderness medicine fellowship director who has appropriate authority for conduct of the program, including involvement and demonstrated experience in wilderness medicine clinical practice and education.
- Following July 1, 2021, NEW wilderness medicine fellowship directors must have graduated from an established WM Fellowship.
- Goals and objectives that are designed for the educational outcome for each fellow.
- The establishment and implementation of an educational curriculum.
- Specific criteria for assessment of successful completion of fellowship requirements.
- Faculty and fellow evaluations with appropriate documentation and communication.

Wilderness Medicine Core Content

Academic Skills

Goals. To become familiar with the knowledge and skill sets necessary to pursue a successful academic career in wilderness medicine, to develop knowledge of how to teach wilderness medicine learners, and to contribute to the academic wilderness medicine literature.

- 1.0. Teaching techniques directed to adult learners
  - 1.1. Residents and medical student
    1. Didactic
    2. Bedside
    3. Applied skills
  - 1.2. Wilderness medicine prehospital personnel
    - 1.2.1. Didactic
    - 1.2.2. Applied skills
- 2.0. Quality management
  - 2.1. Wilderness and out-of-hospital treatment protocols
  - 2.2. Data collection, management, and analysis
  - 2.3. Quality improvement programs
  - 2.4. Evidenced-based practice
- 3.0. Research
  - 3.1. How to design a research project
  - 3.2. Fundamental epidemiology and biostatistics
  - 3.3. Completion of a scholarly project
- 4.0. Leadership skills

Wilderness Medicine Knowledge and Skills

Goals. To demonstrate understanding of the physiology, pathophysiology, recognition (diagnosis), treatment, and prevention of each core subject, including related improvisation and application of all knowledge in a wilderness medicine setting. This includes special populations, such as children and individuals with chronic illnesses. All graduates will complete a minimum of 2 weeks in which they are dedicated to taking care of patients in a wilderness environment.

- 1.0. High-altitude illness
  - 1.1. Physiologic response to high altitude and hypobaric hypoxia
  - 1.2. Acclimatization
  - 1.3. Risk factors for developing high-altitude illness
  - 1.4. Types of high-altitude illness
    - 1.4.1. Acute mountain sickness
    - 1.4.2. High-altitude cerebral edema
    - 1.4.3. High-altitude pulmonary edema
  - 1.5. Risk assessment and advising patients traveling to high altitude
- 2.0 Environmental exposure
  - 2.1. Heat illness
    - 2.1.1. Muscle cramps
    - 2.1.2. Heat syncope
    - 2.1.3. Heat exhaustion
    - 2.1.4. Heat stroke
    - 2.1.5. Dehydration
  - 2.2. Hypothermia
  - 2.3. Cold injuries
    - 2.3.1. Nonfreezing cold injury
    - 2.3.2. Freezing cold injury
      - 2.3.2.1. Frostnip
      - 2.3.2.2. Frostbite
- 3.0. Wilderness trauma
  - 3.1. Basic principles
    - 3.1.1. Situational awareness
    - 3.1.2. Stabilization
    - 3.1.3. Packaging
    - 3.1.4. Long-term patient management
  - 3.2. Head trauma
  - 3.3. Spinal trauma
  - 3.4. Chest trauma
  - 3.5. Pelvis trauma
  - 3.6. Penetrating trauma
  - 3.7. Extremity trauma
    - 3.7.1. Fracture and dislocation reduction techniques and splinting

- 3.8. Sprains and strains
- 3.9. Wound management
- 3.10. Foreign body management
- 4.0. Expedition medicine
- 4.1. Pre-travel considerations
- 4.2. Evacuation criteria
- 4.3. Medical kit
- 4.4. Acute and chronic medical conditions
- 4.5. Infectious disease
- 4.6. Infectious diarrhea
- 4.7. Field water disinfection
- 4.8. Nutrition
- 4.9. Medical–legal considerations
- 5.0. Drowning
- 6.0. Dive medicine
- 6.1. Physics and physiology
- 6.2. Barotrauma
- 6.3. Decompression illness
- 6.4. Risk assessment
- 7.0. Aquatic medicine
- 7.1. Injuries from marine animals
- 7.2. Poisonings
- 7.3. Infections
- 8.0. Bites, stings, and zoonoses
- 8.1. Animal attacks
- 8.2. North American snakes
- 8.3. Spider bites
- 8.4. Tick-borne diseases
- 8.5. Hymenoptera stings
- 8.6. Scorpion stings
- 8.7. Mosquito-borne diseases
- 8.8. Rabies
- 9.0. Wildland fires and fire management
- 9.1. Predictable injury and illness patterns
- 9.2. Medical complications
- 10.0. Wilderness medicine emergency medical services (EMS)
- 10.1. Interface with EMS
- 10.2. Air medical transport
- 11.0. Search and rescue
- 11.1. Theory and application
- 11.2. High-angle rescue
- 11.3. Swift-water rescue
- 11.4. Alpine rescue
- 12.0 Wilderness survival

- 12.1. Shelter
- 12.2. Water procurement and disinfection
- 12.3. Fire building
- 12.4. Navigation and signaling
- 13.0 Lightning injuries
- 13.1. Risk assessment
- 13.2. Physiology
- 14.0. Avalanche
- 14.1. Terrain and snowpack assessment
- 14.2. Avalanche victim physiology
- 14.3. Patterns of injury
- 14.4. Rescue equipment
- 15.0. Wilderness toxicology and toxinology
- 15.1. Poisonous plants
- 15.2. Poisonous mushrooms