Wilderness Medicine LETTER

THE OFFICIAL NEWSLETTER OF THE WILDERNESS MEDICAL SOCIETY

An international nonprofit professional association serving the medical interests of the outdoor and wilderness community.

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Seasickness

MICHAEL JACOBS, MD

Seasickness is probably the most frequent medical problem responsible for maritime search and rescue operations around the world. During stormy weather, mariners frequently consider seasickness a medical emergency and justification for medical evacuation. Each year dozens of seaworthy yachts are abandoned because their exhausted and despondent crew has lost their collective will to persevere. "They are wet, seasick, scared and want to go home," observed a merchant marine captain. At the very least, seasickness (mal de mer) is moderately disabling. It can lead to rapid mental and physical deterioration marked by progressive dehydration, loss of

WMS CALENDAR

Medical Student Elective Course Applications Accepted From . . . . . 06/01-02 – 08/01/02
Summer Conference and Annual Meeting, Snowmass, CO . . . . 08/11/02 – 08/16/02
Abstracts Due for Winter Wilderness Medicine Conference 11/01/02
Southeastern Wilderness Medicine Conference, Chattanooga, TN . . 10/26/02 – 10/30/02
Medical Student Elective Course, Townsend, TN . . . . 02/02/03 – 02/28/03
Winter Wilderness Medicine Conference, Jackson Hole, WY. . . . . . . 02/13/-03 – 02/17/03
4th World Congress on Wilderness Medicine, Whistler, BC . . . . 08/09/03 – 08/13/03

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The goals for the *Wilderness Medicine Letter* are to:
1. Provide timely information regarding WMS news and activities;
2. Provide a forum for the exchange of ideas and knowledge regarding wilderness medicine, and regarding WMS; and
3. Promote active membership involvement through solicitation and publication of members' articles and photographs.

manual dexterity, ataxia, loss of judgment, and loss of the will to survive. Fatalities from seasickness have occurred because of impaired seamanship and complications arising during hazardous emergency evacuations.

The underlying mechanism in seasickness involves a conflict of sensory input processed by the brain to orient the body's position. Place someone in the cabin of a heeling or rolling boat and you immediately invite mal de mer. Below decks, the eyes oriented to the cabin floor and ceiling detect no tilt from vertical, while fluid in the inner ears' vestibular organs constantly shifts. Position sensors in the neck, muscles, and joints send additional signals depending on how the person moves and secures himself from falling. This mix of sensory data from the eyes, inner ears, and position sensors creates a neural mismatch that activates responses and stimulates the vomiting center within the reticular formation of the brainstem. More specifically, in response to the sensory conflict, increased levels of dopamine stimulate the medulla oblongata's chemoreceptor trigger zone that activates the vomiting center. The sensory conflict theory also postulates that the individual's expectations derived from previous motion experience is compared to the visual and vestibular sensations and can amplify the intensity of conflicting input.

The balance center has the ability to adapt to the sensory conflict of the new environment; this is called "getting your sea legs," and it can take 36 to 72 hours. Medication is more effective in preventing symptoms than reversing them. Administer antimotion sickness medication early, before leaving port.

Boaters should begin trips well-hydrated and should avoid alcohol and eat lightly in the hours before departure. Anecdotal reports favor eating carbohydrates rather than dairy and protein. Ginger root is often recommended as an herbal anti-emetic. It is available in 500 mg capsules; the suggested dose is 1000 mg every 6 hours. The capsules can be supplemented with ginger cookies, ginger drinks, and candied ginger. *The Encyclopedia of Natural Healing* cites many other herbal remedies for motion sickness. They are unproven, but worth a try.

Experiments have documented the efficacy of acupressure as a nonpharmacologic means of preventing seasickness. One small trial at sea showed that acustimulation worked in suppressing the symptoms. In a laboratory study of visually induced motion sickness produced by a rotating optokinetic drum, acupressure reduced nausea as well as the associated abnormal (inhibited) gastric myoelectric activity. Pressure should be applied at the Neiguan P6 acupuncture point of the forearm. This is located two finger breadths proximal to the crease of the wrist between the prominent palmaris longus and flexor carpi radialis tendons. Commercially available elastic wrist straps with pressure buttons, called seasickness bands, may be effective. The ReliefBand

Early signs and symptoms of seasickness are yawning, sighing, dry mouth or salivating, drowsiness, headache, dizziness, and lethargy.

(Woodside Biomedical, Inc., Carlsbad, California), a watch-like device worn over the P6 area on the ventral side of the wrist, delivers transcutaneous electrical stimulation to the median nerve. It can be used either before or after the start of symptoms, and offers a promising alternative to people sensitive to the side effects of medication. Preliminary reports suggest this modality may be as effective as commonly used drugs.

To prevent seasickness, limit the amount of time below decks while underway. Provision for quick and easy meals, and prepare some meals ahead of time. Keep personal items easily accessible.

After departure, stay on deck and amidships (center) or aft (toward the stern) where pitching and rolling is less severe. Look out and obtain a broad view of the horizon using peripheral vision. This provides a stable and level point of reference. Avoid close focused visual tasks such as reading, writing, and navigation. Avoid areas with fumes and odors that can stimulate nausea. Take medication at regular intervals and taper the dose after the first day.

Early signs and symptoms of seasickness are yawning, sighing, dry mouth or salivating, drowsiness, headache, dizziness, and lethargy. When fully developed, pallor, cold sweats, belching, flatulence, nausea, dry heaves, and vomiting occur. A syndrome lacking the gastrointestinal complaints is characterized by headache, apathy, and depression. A window of opportunity for early intervention is often lost because early signs are not recognized or the symptoms are denied.

At the first sign of seasickness, a good treatment tactic is to steer the boat. Use waves, clouds, horizon and distant marks as visual reference points. Chuck Omen, an authority on motion sickness, advises: "Don't sit or lie inert in the cockpit, passively letting the motion toss you around. Postural anticipation of the boat's motion is the natural cure for seasickness. Use a method called wave riding: sit upright, let your trunk and neck muscles keep your head and upper body balanced over your hips as the boat moves."

If symptoms progress, lie down in a secure, well-ventilated bunk, face up, head still, then close your eyes and try to sleep (many pray!). An anti-emetic, such as a 25 mg promethazine suppository, can prevent vomiting.

Take small amounts of water, crackers, and hard candy. Debilitated seasick persons can easily fall or tumble overboard. A safety harness should be worn at all times. In storm conditions, the safest place is to be secured below.

To determine which drug has the fewest side effects, try the medication(s) on the suggested schedule (below) while on land. Time-release forms and long acting drugs may be preferable on an extended trip and when storms are expected to last a few days.

The transdermal scopolamine adhesive patch is placed behind the ear several hours prior to departure. Scopolamine is delivered into the bloodstream at a constant rate to provide a therapeutic blood concentration for up to three days. The most

MEDICATION	DOSE	INTERVAL
Dimenhydrinate (Dramamine)	50 mg liquid, capsules, chewable tablets	4-6 hr
Meclizine HCl (Antivert)	12.5/25 mg tablet	4-6 hr
(Bonine)	25 mg chewable tablet	4-6 hr
Cyclizine (Marezine)	50 mg tablet	4-6 hr
Cinnarizine (Sturgeron)	15 mg tablet	6-12 hr
Scopolamine (Transderm-Scop)	1.5 mg skin patch	72 hr
Promethazine (Phenergan)	12.5/25/50 mg tablet, suppository, injection	6-12 hr
Phenergan + Ephedrine	25 mg tablets	6-12 hr

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common adverse effects, as with all anticholineric drugs, are dry mouth (66%) and drowsiness (17%). Follow the instructions carefully to avoid finger (and then eye) contamination. Withdrawal symptoms, including nausea, headache, dizziness, and ataxia, may follow discontinuation of the patch after long term use. The patch is contraindicated for children, persons with narrow-angle glaucoma, and men with prostate hypertrophy. Antihistamines have similar contraindications and adverse effects, including drowsiness, dry mouth, blurred vision, irritability, urinary retention, dizziness, and headache. Antihistamines cause thickened bronchial secretions and should be used with caution in people with asthma and COPD. Cyclizine causes less drowsiness than other antihistamines, as does cinnarizine, which is popular and available in Bermuda and abroad.

NASA astronauts use promethazine, a potent antidopaminergic agent, and ephedrine to counter sedative effects. Sympathomimetic drugs also suppress motion sickness. A non-prescription substitute for ephedrine is the decongestant pseudoephedrine. Promethazine also has antihistamine and anticholinergic properties.

Michael is in private practice in internal medicine and gastroenterology in a sailor's paradise, Martha's Vineyard, Massachusetts. He is a United States Coast Guard licensed captain and a professional sailor.

Life Rafts and Survival

CHUCK HAWLEY

A life raft is designed to keep the crew of a boat alive until it can be rescued. Life rafts provide minimal environmental protection and create a larger target for rescuers. They are inflated by compressed gas, usually nitrogen and CO2, and stored in a high-pressure cylinder. When the inflation lanyard is pulled, a valve releases the gas into the inflatable chamber(s). The resulting inflated shape may be square, pentagonal, hexagonal, or octagonal, for example.

Most life rafts have a protective canopy, supported by one or more inflatable tubes. Some rafts use a self-supporting inflated canopy. Doors or openings allow occupants to board and to alter the amount of ventilation and storm protection according to the conditions. The floor of the raft may be a single layer of fabric, a double layer inflated with air to provide insulation, a three-tiered laminate or a separate inflatable floor tied in place. Insulated floors greatly reduce heat loss and hypothermia, making the "raft experience" a little less grim.

RAFT TYPES

There is little standardization of terminology among manufacturers. Make sure you look at the selection criteria presented here when comparing rafts of the same type. You

will find some excellent information in the May 1, June 1, and July 1, 2000 issues of Practical Sailor *and* Powerboat Reports*. While we don't agree with all of their findings, we do appreciate the immense amount of work that it takes to properly test life rafts.*

Inflatable Dinghy: While not legitimate life rafts, inflatable dinghies can be pressed into service in an emergency. For coastal boating to nearby islands, or trips along the coast, a readily available dinghy is preferable to treading water while hypothermia takes its toll. The dinghy must be kept inflated and in a location where it can be launched quickly. The addition of a 3-foot sea anchor for stability, a waterproof VHF radio, and 5 gallons of water will greatly improve the survival chances of the crew.

In all respects (except affordability), a dinghy is worse than the least expensive life rafts, and should be considered only in coastal areas, and under the best possible conditions (which, incidentally, are not very common when you need a raft).

Rescue Platform or Similar Inflatable Buoyant Apparatus: These are flat, unballasted disks that can keep a large number of persons only modestly drier than if they were treading water. The key is that occupants are not immersed in the water, greatly reducing their heat loss to the environment. One good application is for an inland power or sailboat in the unlikely event that they catch fire.

Switlik's Rescue Pod: The rescue pod provides a cocoon of inhabitable space for two to four individuals, with minimal equipment, ballast, and personal space. Intended for the coastal boater and the fisherman who ventures offshore on day runs. Tight, but high quality and lightweight.

Coastal Life Raft: Coastal rafts have the greatest range of properties, from really marginal to "I'd cross an ocean in that!" Most rafts have a single buoyancy tube and either a manually or automatically erected canopy. Ballast systems vary, ranging from a single ballast bag about the size of a loaf of bread to the Switlik's four large bags on their excellent Coastal model.

The West Marine Coastal Raft is built with two identical flotation chambers that provide greater buoyancy and freeboard than single tube rafts. It is ideal for smaller power and sailboats that need a light, compact raft, but its equipment must be augmented with a "grab bag." *

> Coastal sea conditions are frequently worse than those offshore, especially near points of land.

Offshore Life Raft: Two independent, stacked tubes provide redundant flotation should one chamber become damaged. The stacked tube design also provides more freeboard. Many have two entrances, and all have self-erecting canopies. Most will have deep triangular or rectangular ballast bags and a large drogue (sea anchor) for stability.

Safety of Life at Sea (SOLAS) and United States Coast Guard (USCG) Approved Life Rafts: These rafts are generally improved-specification offshore rafts that include a great deal more equipment so they meet specific regulations. Their tendency to be expensive and heavy makes them more appropriate for commercial vessels than yachts.

WHO NEEDS A LIFE RAFT?

There is little need for a life raft where rescue would be quickly forthcoming due to boating traffic and/or rescue agencies in your boating vicinity. Warm water extends survival time and reduces the need to get out of the water quickly to protect against hypothermia.

Inland, warm waters: You probably don't need a raft, but you might consider having an inflatable or rigid dinghy available for rapid deployment. A rescue platform is another option.

Inland, cold waters: Strongly consider carrying a rescue platform, coastal life raft or large inflatable dinghy to keep you and your crew out of the water when operating in cold water. Hypothermia can kill anyone immersed in 50° F (10° C) water in just two hours.

**Ed.: A "grab bag" or "ditch bag" is prepacked with "worst-case scenario" supplies. Containers used for this purpose are waterproof duffles, backpacks, or hard plastic canisters. Some prefer the hard plastic grab bag so it can be tied to the raft and floated alongside, others prefer backpacks or duffles that can be worn or slung over the shoulder. A typical grab bag contains items such as a VHF radio (with spare batteries), parachute rockets, hand flares, and a desalinator, rudimentary medical kit, high-protein/high-carb food, water, multi-tool knife, can opener, fishing tackle, duct tape, passports, cash, and credit card.*

Coastal cruising/racing: One of the myths about boating is that coastal waters are somehow less threatening and require less rigorous safety gear than offshore (ie, the open ocean). While it is true that your proximity to the coast may allow you to get to shelter before a storm or to get assistance more quickly than if you were further offshore, coastal sea conditions are frequently worse than those offshore, especially near points of land. Chances are you'll spend less time in a raft when close to shore because you'll wash ashore or be found sooner. Rafts used for coastal boating need to be seaworthy, but can include less gear for long term survival than offshore rafts. Therefore, we recommend either premium coastal rafts or offshore rafts.

Offshore cruising/racing: Far from land, rescue agencies and safe harbors, you must have a raft in which you can survive for a week or more. Rafts for offshore use should be more commodious, and should have greater stability to survive storms at sea. Offshore and SOLAS rafts are recommended.

WHAT TO LOOK FOR

Insulated floors are desirable in all rafts, even in warm water, due to the discomfort that comes from sitting on sub-body temperature surfaces. Although many record-breaking life raft survival episodes have occurred in single floor rafts, all survivors wished they had an insulated raft floor. If you use your boat in waters less than 65–70° F (18 - 21° C), we strongly recommend this option.

Valise or Canister Storage. If you are going to store your raft on deck, you must use a canister version. We recommend that you also use a hydrostatic release that will allow your raft to float to the surface if you can't get to it before the boat sinks. If you store the raft below deck, make sure you get a valise raft that can be launched in 15 seconds or less. It will be lighter and somewhat cheaper, but much less waterproof than the canister model.

Canopy Design. We strongly believe that self-inflating and self-erecting canopies are a necessity, not an option. This requires that some of the inflation gas be directed through a one-way valve to the arch tube(s). This is more expensive and more complicated than some of the other (bogus!) ways of doing it, like using two paddles end to end as a tent pole, or using the heads of the occupants as the support.

Ballast Bags. Ballast bags keep the raft from blowing over before you board it, and keep the raft from being capsized by unruly waves. More ballast (more water volume) is generally better, especially when it is located along the perimeter of the buoyancy tubes. Switlik SAR and Coastal rafts are very good in this respect, with large bags at the "edges" of the raft. Interestingly, the drogue (anchor) included with most rafts is critical in keeping the windward edge of the raft down on the water so that wind cannot get under the raft and blow it over. All drogues should be attached with a large line, and should have a swivel.

Ease of Boarding. Rafts are devilishly hard to board from the water, especially when cold and wearing soaked clothing. Most rafts have either one or two webbing ladders that are a pain to climb. Other products may have a stirrup, while the best will have a boarding ramp. Ask yourself whether you could pull yourself up out of the cold water and into the relative security of the raft using the boarding methods provided.

Emergency Equipment. Rafts do not come with lots of survival gear for economic and volumetric reasons. It is up to you to supply an Emergency Position Indicating Radio Beacon (EPIRB), markers, extra flares, prescription medicine, radar reflectors, handheld VHF radios, etc. Raft manufacturers work at keeping the purchase price of rafts low, but they also realize that you will want to augment basic inventories with your own gear. An "abandon ship bag" or grab bag is vital to your survival. Standard raft equipment inventories generally include only those products that pertain to repairing the raft. Offshore Racing Council (ORC) specification rafts may contain those items required for sailboat ocean racing like flares, paddles, bailers, and a flashlight. Regardless of the make or model, you will need to augment the standard inventory with your own gear.

REPACKING YOUR RAFT

Generally, life rafts must be repacked each year to keep your

warranty in effect. This is done for three reasons:

- To replace dated items like flares, food, and water
- To inspect for water damage and to make sure the cylinder is full
- To fold the raft differently so it doesn't wear through in folded areas

Life raft repackers should be licensed or approved by the raft manufacturer. Just because a guy hangs out a shingle that says Life Raft Repacking, don't assume he is qualified for your Switlik, Avon, West Marine, Zodiac, or whatever raft you have. Authorized repackers have the correct parts and have been trained to repair and repack your specific brand of raft.

Some rafts, especially those packed in a vacuum inner-pack, can extend their first repack date for several years. Inside every West Marine raft, for example, is a piece of water-sensitive paper that shows through the inner vinyl bag. If this paper shows that no moisture is present, the repacker can seal the raft back up for the first and second scheduled repacks. This can save $300 in the first three years of ownership.

RENTING A LIFE RAFT

The Safety at Sea world is divided on this question, but we'll give you our advice. On something as expensive as a life raft that may be used infrequently, we think that it may make sense to rent rather than buy. This is especially true for racers who don't need a raft for 90% of their racing, but participate in occasional offshore events. Here are our strongly recommended caveats:

- Be sure the raft was repacked by an approved repacker just prior to your accepting delivery. This will ensure you don't inherit a raft with incomplete inventory or damage inflicted by previous users.
- Encourage the owner to have the raft packed again when you return so that it is ready to go, and to absolve you of damaging the raft in any way.
- Don't be tempted to bring the raft back home on an airplane. See the movie *Six Days, Seven Nights* for more information on this topic.

HOW BIG A RAFT SHOULD YOU BUY?

Our general recommendation is to buy a raft that is two persons larger than your expected crew. On a two-cabin boat which normally has one or two couples, we'd have a six person. On a pocket cruiser, power or sail, we might go with a four person, but there won't be any room for a fifth or sixth person. The reason not to go larger is that a half empty raft will be more subject to capsize, and it will be harder for fewer bodies to warm up the interior.

NOTES FROM THE SYDNEY-HOBART RACE

Due to the number of racers who were forced to abandon their vessels in the 1998 Sydney-Hobart Yacht Race (or who elected to do so), we have found out much more on what makes a good life raft. One of the key issues was that rafts were frequently inverted in the huge waves and high winds, and that rafts with predominantly black bottoms were hard to see in the churning water. One recommendation was to require that rafts have a brilliant bottom color (orange or yellow) to assist rescuers.

Another lesson from that yacht race was that crews needed more familiarization with safety gear. One raft was inflated before it had been placed on deck. Many crews did not know what was contained within the raft, and they (like many others before them) were astonished to find that the raft's inventory was meager compared to what they might have wanted. Life rafts were not the only types of equipment that proved challenging to the crews. Many experienced problems firing flares, operating pumps and using other safety equipment. For an excellent account of this watershed race, read Rob Mundle's book *Fatal Storm.*

PRELIMINARY NOTICE OF MARINE CONFERENCE!

Learn from the experts about marine and dive medicine, seamanship, and safety at sea. Join us in January 2003, and sail with a flotilla of crewed catamarans in the legendary British Virgin Islands for an exciting CME conference, jointly sponsored by the Wilderness Medical Society, Blue Water Sailing, and West Marine.

Contact saildoc@vineyard.net

Emergency Flares and Signaling for Boaters

CHUCK HAWLEY

Visual Distress Signals are designed to do two things: alert people so they know you're in trouble and provide a location signal so rescuers can "home-in" on you. Two standards organizations regulate flare design: the United States Coast Guard (USCG) and Safety of Life at Sea (SOLAS), a subdivision of the International Maritime Organization. SOLAS-grade flares are designed for commercial vessels, but they are also excellent for recreational boaters and they meet all USCG requirements. The performance of SOLAS-grade flares is far superior to conventional flares and we recommend them for all uses. In the descriptions that follow, SOLAS measurements are shown in parentheses for comparison.

FLARE TYPES

Hand flares are long-duration, low-altitude signals. They burn for 120 seconds (60), at 500 candela (15,000). They allow rescue vessels and aircraft to locate your position. Smoke flares are approved for use during the day only since their orange smoke is invisible at night. They last for 50 seconds (180). SOLAS versions—which won't ignite oil or fuel—are tossed onto the water, while non-SOLAS flares are handheld.

Meteor flares are short-duration, medium-altitude signals that rise from 250 feet to 400 feet in the air, and last up to 8 seconds. They are available in 10,000 candela to 35,000 candela intensities. They fall quickly so rescuers must be looking in your general direction. They are often launched in pairs: the first flare attracts attention, and the second confirms the first.

Rocket meteor flares are a new category that use a powerful rocket motor to launch a meteor to 1,000 feet where it is allowed to free fall to the ground. These flares fall between the short duration, low altitude meteors and the more expensive but longer duration parachutes.

Parachute flares are medium-duration, high-altitude signals that reach to 1,000 feet in altitude. They are the best for attracting attention, since they can be seen at great distances, and they stay in the air for a long time. They burn for at least 29 seconds (40) with brightness of at least 10,000 candela (30,000). Non-SOLAS parachute flares require a launcher. SOLAS flares have self-contained launchers.

> *Visual Distress Signals are designed to do two things*
>
> *1. Alert others that you're in trouble*
>
> *2. Provide a location signal so that rescuers can "home-in" on you.*

Distress flags and SOS lights are non-pyrotechnic options that we think are much less effective. We prefer the use of pyrotechnic devices whenever possible. However, for a compact, waterproof daytime signal, a small signal mirror is a good companion to flares.

RECOMMENDATIONS

USCG minimum equipment requirements specify that all recreational vessels over 16 feet long must carry at least three day-use and three night-use signals, or three day/night combination signals. Like all Coast Guard minimum requirements, this amount is really minimal. Three six-second meteors meet the requirement, but only provide 18 total seconds of signaling power, which doesn't amount to much during a 12-hour (43,200-second!) night. If you find yourself in distress, you'll want all the signaling power you can get, so we recommend that all boaters carry more than just the "minimums."

RECOMMENDED INLAND, COASTAL, AND OFFSHORE INVENTORIES

Consult the chart below for recommended inventories. Note that the type of device that you select, as well as the quantity, affects your ultimate safety.

WHEN ARE SOLAS FLARES REQUIRED?

In some instances, SOLAS flares must be carried instead of conventional Coast Guard-approved flares. For instance, sailboats participating in races organized under the Offshore Racing Council must carry them and commercial fishing boats that

Assortment	Inland Waters	Coastal Cruising	Offshore Cruising
Minimum Assortment	3 HH or 3 Meteor	3 HH and 3 Meteor	3 HH, 3 Meteor and 1 Smoke
Recommended Assortment	3 HH and 3 Meteor	6 HH and 6 Parachute	6 HH, 6 Parachute and 2 Smoke

venture more than 50 miles offshore must carry a modest inventory of SOLAS flares, including 3 parachute flares, 6 handheld red flares and 3 smoke flares. Vessels operating from 3 to 50 miles offshore aren't required to have SOLAS-grade flares, but we sure think it's a good idea.

Racing sailboats in sanctioned events need a modest inventory, too, as seen in the chart below. For Category 4 races (day sails in protected waters), you are required to have 4 red handheld flares, 4 white handheld flares, and 2 orange smoke flares. For Category 2 and 3 races (races of extended duration along or not far removed from shorelines where a high degree of self-sufficiency is required), you must add 4 red parachute flares to the above assortment. For Category 0 and 1 racers (up to and including Round the World racing), the requirements are 12 red parachute flares, 4 red handheld flares, 4 white handheld flares, and 2 orange smoke flares. The racing rules require that you store the flares in a waterproof container.

Note: *White flares are intended for non-emergency signaling, like crossing a finish line, for example, and are not actually distress signals. If you are in danger of being run down by a freighter, use whatever works to get its attention, including white flares, red flares, or spotlights.*

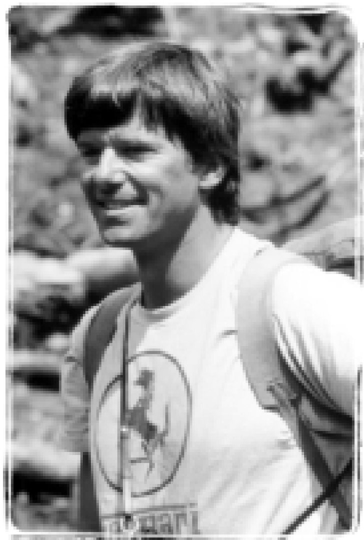
Category	HH Red	HH White	Orange Smoke	Red Parachute
0,1	4	4	2	12
2,3	4	4	2	4
4	4	4	2	0

Offshore Racing Council regulations allow you to use SOLAS-grade flares for up to six years, but you still need to meet the applicable USCG requirements of 42 months from the date of manufacture. Therefore, always have at least three flares that are less than 42 months old whether you race or not.

USEFUL LIFE OF FLARES

By law, flares expire 42 months after the date of manufacture, which is printed on the outside of the flare. Flare inventory must be current to pass a USCG inspection. It's a great idea to keep out-of-date flares on board as spares, as many still work quite well after their expiration dates.

Chuck is Vice President, Product Development, West Marine, Santa Cruz, California. West Marine is the largest boating and marine supply store on the web at www.westmarine.com/.



Robert "Brownie" Schoene, MD

PRESIDENT'S REPORT

ROBERT "BROWNIE" SCHOENE, MD

Success in an organization requires bright and committed individuals with a vision. For the past two decades, the Wilderness Medical Society has survived—and mostly thrived—on an exciting vision spawned by a few founders and carried on by a succession of enthusiastic and talented members. But as any society or relationship ages, there comes a time when the passion must be nurtured into the future by reassessing and updating goals into a realistic timeframe. It is now time for the WMS to reassess and update our goals.

As we go to press, the Board of Directors, along with other members who have been involved in various WMS activities, are scheduled to meet in Seattle for a Strategic Planning Meeting the weekend of June 29th.

It will be the first such gathering in the history of the Society. From the meeting will emerge a strategic plan that will be reviewed and, hopefully, ratified by the Board of Directors during the August Annual Meeting in Snowmass. The plan will be presented to the membership in the fall. Our new executive director, David Just, believes that to move the Society forward, he must have a "climbing guide." Without such a "guide," we may find ourselves ascending a steeper and steeper cliff with thinner and thinner holds and an unanticipated rockfall near an ever-disappearing summit. As your president at a crucial time in the lifecycle of WMS, I believe this meeting is essential, and I am confident and very optimistic about its outcome and the future of the Society.

At this time, we are faced with stiff competition in the field of continuing medical education, a waning dollar, and disappearing free-time for the practitioner to travel to and participate in meetings. The purpose of the Strategic Planning Meeting will be to address these issues, and set to set goals for our mission of education and research. To achieve these goals, a well-thought out plan on how to remain financially solvent is critical. Such a plan sets the stage for new programs that attend to the needs of our members, fundraising, creating a research endowment, expanding into the international arena, and setting the stage for new programs.

I would like to extend my sincere gratitude ahead of time to those of you who have responded positively to coming to the meeting at such short notice and my sincere understanding to those who could not make it but whose input before and after the meeting will be faithfully integrated into the plan. I also want to thank all of you, the WMS members, for your support, interest, and enthusiasm. I can assure you that we are embarking on an exciting adventure of which you all will be a part.

David Just, Executive Director

EXECUTIVE DIRECTOR'S REPORT

DAVID JUST

I have been on board as your executive director for a mere five weeks and what an introduction! I have already had the pleasure of meeting many WMS members, having attended the winter conference in Big Sky, Montana and the spring conference in Santa Fe, New Mexico. What I observed at both conferences and what has impressed me the most was the sincerity and eagerness of members who are willing to share their ideas and experiences. The interest in wilderness medicine topics was apparent, and the diversity and range of knowledge of the faculty were equally impressive.

WMS is a very exciting place to be right now. Our leadership reads like "Who's Who in Wilderness Medicine"—if one of the Board members has not written a book or a chapter on a wilderness topic, they are, at the very least, regarded as a top researcher or leading expert in a related field. The membership represents men and women whose experiences and interests range from underwater exploration, high-altitude base camp medical support, hypothermia survival techniques, and tropical medicine, to name a few. I cannot think of another organization that fosters such passion for adventure, yet provides learning opportunities for the medical professional, for one's personal outdoor activities, or for the benefit of one's patients.

My goal as your executive director is to meet your needs as a member of the WMS. I am also planning programs to raise funds for our organization in order to provide enhanced services and research. You can help by maintaining your membership, recruiting other colleagues to join us, attending conferences sponsored by the WMS,

volunteering to serve on committees, and including the Society in your charitable plans.

The WMS staff is eager to assist you, and I encourage you to contact me to discuss any of your concerns or suggestions. WMS is a preeminent organization with great potential to make unique contributions to the scientific community, the environment, and the public. I cannot begin to describe how excited I am to be part of this organization. I look forward to hearing from you and sharing ideas about how we can nurture our current members, grow our membership, and plant the seeds for our future.

News, Announcements & Updates

WMS RESEARCH GRANTS

Colin K. Grissom, MD

One of the unique aspects of the Wilderness Medical Society (WMS) is support for research in wilderness medicine. The WMS Research Committee reviews grant applications annually in several categories: the Houston Award for medical students, the Research Training Award for physicians in training or doctoral candidates, and the Hultgren Award open to all WMS members.

The Houston Award was the first WMS research grant and was presented in 1988. It is given annually on a competitive basis for a medical student research proposal. This award was named after Charles S. Houston, a founding member of the WMS and an American pioneer in the field of high altitude research. The Houston Award started at $1,000 in 1988 and now provides up to $5,000 in grant support to one or two medical students annually. A total of 16 Houston Awards have been given since its inception.

The Research Training Award was started in 1990 and is awarded annually to a physician or doctoral candidate in training. The Research Training Award currently provides up to $5,000 (to $8,000 in past years) to one or two candidates annually. A total of 14 Research Training Awards have been given.

The WMS Member Award began in 1993 and is open to any member of the WMS. The Member Award was renamed the Hultgren Award in 1999 in honor of the late Herbert N. Hultgren, WMS member, and pioneer in research on high altitude pulmonary edema. The Hultgren Award currently provides up to $5,000 to one candidate (to $10,000 in past years). A total of 10 Hultgren Awards have been given since its inception.

WMS research grants have resulted in numerous peer-reviewed publications in the medical literature and have helped to support young investigators interested in pursuing research in wilderness medicine. These grants have helped spawn a number of academic careers. Below is a list of peer-reviewed publications supported by WMS research grants, listed by award and year. These publications are a testament to the impact of the WMS research grants on furthering knowledge in wilderness medicine. The number of abstracts, in addition to peer-reviewed publications, is too numerous to list here. Some of the more recent award winners have manuscripts that are not listed below because they are undergoing review or revision at journals. I compiled this list of publications by contacting previous award winners and searching the medical literature. I am sure that the list is incomplete. I encourage previous award winners not included in this list to contact me with any additions at LDCGRISS@ihc.com.

This program is not possible without support of donations from members. We especially need help at this time, and I encourage all of you to make a donation to the WMS research grants program to help ensure funding of future awards. All WMS members should be proud of the unique legacy of our Society in supporting research in wilderness medicine.

1989 Houston Award

Colin K. Grissom, MD. Acetazolamide in the Treatment of Acute Mountain Sickness: Clinical Efficacy and Effect on Gas Exchange.

Grissom CK, Roach RC, Sarnquist FH, Hackett PH. Acetazolamide in the treatment of acute mountain sickness: clinical efficacy and effect on gas exchange. *Ann Int Med* 1992;116:461-465.

1990 Research Training Award

Craig J. Lambrecht, MD, MS, MPH. Hunting and Related Illnesses and Injuries.

Lambrecht CJ, Hargarten SW. Hunting-related injuries and deaths in Montana: the scope of the problem and a framework for prevention. *Wilderness Medicine* 1993;4:175-182.

1991 Houston Award

Kevin T. Kogut, MD. Emergency Preparedness of Wilderness Hikers: A Field Survey of Needs, Knowledge, Equipment and Injuries.

Kogut KT, Rodewald LE. A field survey of the emergency preparedness of wilderness hikers. *Wilderness Med* 1994;5:171-178.

1994 Hultgren Award

Jonathan L. Temte, MD, PhD. Hematocrit and Serum cholesterol at High Altitude.

Temte JL. Elevation of serum cholesterol at high altitude and its relationship to hematocrit. *Wilderness Environ Med* 1996;3:216-224.

Temte JL, Duesterbeck K. Relationship between serum cholesterol and hematocrit. *Wisconsin Medical Journal* 1995;94:673.

1994 Research Training Award

Colin K. Grissom, MD. P-Selectin in Plasma From Patients with High Altitude Pulmonary Edema.

Grissom CK, Whatley RE, Zimmerman GA. Endothelial selectins in acute mountain sickness and high altitude pulmonary edema. *Chest* 1997;112:1572-1578.

1996 Member Award

Colin K. Grissom, MD. Pulmonary Vascular Injury and Inflammation in HAPE.

Grissom CK, Albertine KH, Elstad MR. Alveolar hemorrhage in a case of high altitude pulmonary edema. *Thorax* 2000;55:167-169.

1997 Research Training Award

Nathalie Garcia-Russell, PhD. Intermittent Hypoxia as a Way to Induce Ventilatory and Hematological Acclimatization to High Altitude.

Garcia N, Hopkins SR, Elliott AR, Aaron EA, Weinger MB, Powell FL. Ventilatory response to 2-h sustained hypoxia in humans. *Respir Physiol* 2000;124:11-22.

Garcia N, Hopkins SR, Powell FL. Intermittent vs continuous hypoxia: effects on ventilation and erythropoiesis in humans. *Wilderness Environ Med* 2000;11:172-179.

Garcia N, Hopkins SR, Powell FL. Effects of intermittent hypoxia on the isocapnic hypoxic ventilatory response and erythropoiesis in humans. *Respir Physiol* 2000;123:39-49.

1998 Houston Award

Michele K. McElroy. The Effect of Room Oxygen Enrichment on Sleep, Arterial Oxygen Saturation and Control of Ventilation After Rapid Ascent to High Altitude.

McElroy MK, Gerard A, Powell FL, Prisk GK, Sentse N, Holverda S, West JB. Nocturnal O_2 enrichment of room air at high altitude increases daytime O_2 saturation without changing control of ventilation. *High Alt Med Biol*;2000:197-206.

1998 Houston Award

Andre B. Gerard, MD. The Effect of Room Oxygen Enrichment on Neuropsychologic Performance Following Rapid Ascent to High Altitude.

Gerard AB, McElroy MK, Taylor MJ, Grant I, Powell FL, Hoverda S, Sentse N, West JB. Six percent oxygen enrichment of room air at simulated 5000 m altitude improves neuropsychological function. *High Alt Med Biol*;2000:51-61.

1998 Member Award

Gordon Giesbrecht, PhD. Rewarming of Hypothermic Patients by Dilation of Arteriovenous Anastomoses Through Thermal or Mechanical Stimuli.

Vanggaard L, Eyolfson D, Xu X, Weseen G, Giesbrecht GG. Immersion of distal arms and legs in warm water (AVA rewarming) effectively rewarms mildly hypothermic humans. *Aviat Space Environ Med* 1999;70:1081-1088.

1999 Houston Award

Ilona A. Barash. The Effects of Oxygen Enrichment on Objective Measurement of Sleep Quality After Rapid Ascent to High Altitude.

Barash IA, Beatty C, Powell FL, Prisk GK, West JB. Nocturnal oxygen enrichment of room air at 3800 meter altitude improves sleep architecture. *High Alt Med Biol* 2001;2:525-533.

1999 Research Training Award

Kevin G. Hegewald MD and Sean P. Bush, MD. Effects of Negative Pressure Venom Extraction Device on Local Tissue Injury After Artificial Rattlesnake Envenomation in a Porcine Model.

Bush SP, Hegewald KG, Green SM, Cardwell MD, Hayes WK. Effects of a negative pressure venom extraction device (Extractor) on local tissue injury after artificial rattlesnake envenomation in a porcine model. *Wilderness Environ Med* 2000;11:180-188.

1999 Hultgren Award

Michael Yaron, MD. Kids Acute Mountain Sickness-Boreas Pass Project.

Yaron M, Neirmeyer S, Lindgren K, Honigman B. Evaluation of diagnostic criteria and incidence of acute mountain sickness in preverbal children. *Wilderness Environ Med* 2002;13:21-26.

2000 Hultgren Award

Robert W. Derlet, MD. Human Pathogens Found in Horse/Mule Manure Along the John Muir Trail in Kings Canyon and Sequoia National Park.

Derlet RW, Carlson JR. An analysis of human pathogens found in horse/mule manure along the John Muir trail in Kings Canyon and Sequoia and Yosemite National Parks. *Wilderness Environ Med* 2002 (in press).

PASSAGES

Philip Behrend, MD, of Mill Valley, California, passed away on April 17, 2002. A Celebration of Life was held on April 27, 2002 at Saint Hilary's Church in Tiburon, California. Dr. Behrend's family suggests memorial contributions to World Wildlife Fund, 1250 24th Street NW, Washington, DC 20037, or Greenpeace, PO Box 90316, Fredericksburg, VA 22404.

WMS-USUHS MEDICAL STUDENT-ELECTIVE UPDATE

Jim Liffrig, MD

Preparation for the February 2003 Medical Student Elective in Wilderness and Environmental Medicine is progressing. The training location selected at Townsend, Tennessee, near the Great Smoky Mountain National Park, promises to challenge and inspire our participants.

A comprehensive 4-week curriculum is set and a terrific team of WMS volunteer faculty has been selected. The Elective Planning Committee and the WMS would like to thank the more than 50 WMS members who responded to our requests for volunteer faculty support of this project. Eleven members were selected for 2003. They represent the membership's broad base of wilderness and teaching experience. A database now exists for volunteer faculty with which the WMS can develop additional courses as this project grows.

The planning committee has finalized the administrative details regarding the application process and administration of the course. Information and any changes will be posted on the official website at http://www.wms.org/studentgroups/electives/wms_electives.htm.

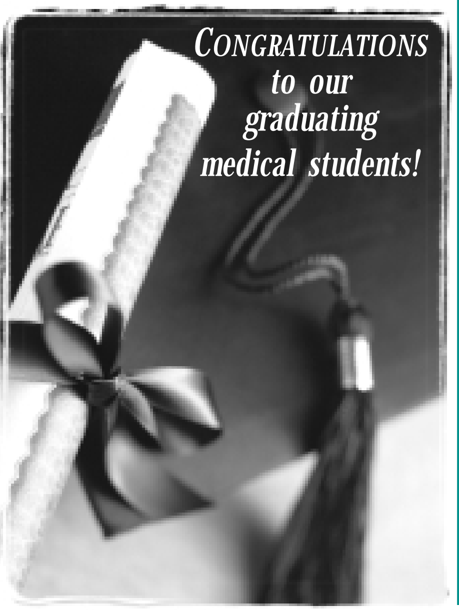
Interested students should review the website and watch for pamphlets and flyers that will be provided to medical schools and WMS Student Interest Groups (SIGs). As expected, there have been small adjustments to deposit, tuition, and administrative details previously announced. Scholarships may become available to assist students with tuition.

We anticipate a robust response to the application process. Applications will not be considered if postmarked after 1 August 2002.

Editor's Note: WMS members interested in assisting as faculty with this important work and students with questions not addressed on the website should contact Jim Liffrig at jliffrig1@aol.com.

Important dates for students are as follows:

- Applications accepted June 1 through August 1, 2002
- Notification of primary and alternate participants on or about September 1, 2002
- Balance of tuition due for primary participants by November 1, 2002
- Course begins February 2, 2003
- Course ends February 28, 2003



DISPATCHES

BEN ROSNER, PHD

WHEN THE ROADS COME: PERSONS OF FORESIGHT AND TWO COMMUNITIES ON THE BRINK OF CHANGE - Part 2

I climb to the top of the overlook to gaze upon the mercurial Gulfo de los Mosquitos, whose waters this morning had churned our dugout canoe like a toy. A dark thundercloud to the east rumbles with a low warning, like an empty belly waiting to be fed. I turn towards the south, straining to see where the Rio Calovébora disappears up into the rainforest-clad mountains of Panama's Cordillera Central. The river had been the only way into this region, a place where no road has ever penetrated, and where Mother Nature has never faced the scars or onslaught of human encroachment. Since the time Columbus first visited these shores in 1502, and attempted to create the first colony on the mainland of the western hemisphere, and ultimately lost ten men and one ship, the raw intensity of the environment here has kept the region in isolated obscurity and largely unchanged.

Tomorrow, I leave northern Veraguas Province, returning upriver by dugout canoe to the small interior community of Rio Luís. Rio Luís has long been the spot where one of the few roads in Panama that actually cross the continental divide, peters-out at the edge of the rainforest. The mud road leading to Rio Luís from the "civilization" of Santa Fé across the mountains is passable by only a few high-clearance, winch-equipped

vehicles. I ponder the next river basin to the east, Rio Guázaro, where I had visited an indigenous community, living in relative isolation. This river, even in its isolation, was not immune to rainforest destruction.

Pondering the past and future of this beautiful, isolated place, my moment of reflection is broken by a train of three men bearing machetes hurrying by me. Following them into the rainforest, I arrive 75 minutes later to a spot where the canopy thins and opens up onto an encampment. Gruff workers are lounging, holding machetes and knives the size of swords. I learn that the men are felling trees for a road that will connect Calovébora to Rio Luís and all points inland. Starting from a spot that I had not originally seen in Río Luís, they had been toiling for months, and tell me that they will arrive at the coast within another week. Beyond them, the sunlight is streaming in, shining onto a wide path of stumps. When the machetes begin to swing again tomorrow, the trees surrounding me will be the next to fall.

A gentleman I had met weeks before in Santa Fé (and the town's former mayor) is on hand. His name is Arquimedes, and he is coordinating the efforts to clear the road.

Arquimedes, former mayor of Santa Fé, is coordinating the efforts to clear the road and recognizes the principle that all things are related.

"The completion of this road to the coast," he says, "will allow better access to supplies and medicine not only for the residents of Calovébora, but for those in the scattered villages in the interior." This I could not argue. In 2000, one adult and three children died in Calovébora from an unknown respiratory illness. Two others became sick but survived. In a community estimated by Arquimedes to be only 150 people, six illnesses such as these represent an epidemic.

I try to imagine myself a resident of Calovébora. With battery-powered radios, evidence of the world outside provides ample suggestion of what a road might bring, including not only medicines, but packaged food, means of transportation, and ready access to the jobs and supplies of the developed towns across the Cordillera. If I were one of the residents here, I am sure I would see the road as a sign of progress; but instead, I have seen what often happens to communities as soon as they emerge from isolation. I am concerned not only for Calovébora, but for the health of the rainforest and the wilderness at its doorsteps. Despite my concern that my questions challenging the construction of the road will not only make no sense, but worse yet, offend Arquimedes, I can no longer avoid their incessant nag. When a road comes, people begin settling adjacent to it, and the wilderness suffers another blow in its slow but steady demise.

To my surprise, Arquimedes recognizes the principle that "all things are related." He recognizes the threat to the adjacent wilderness that the construction of the road will bring, and the need for conservation. Although he has seen the illegal cattle ranching along the Guázaro River, he says that that region is too isolated for the laws to be enforced. Along the road, however, he feels certain that further destruction can be prevented. The

road is to be a corridor, and nothing more. I find his words progressive, and I am hopeful that they can be carried out under his guidance. It will not be easy to instill this same sense of environmental import upon all the people that the road may carry. Even though the isolated indigenous communities here are no longer purely traditional, they do guard vestiges of cultural diversity, as the wilderness around them guards vestiges of biological diversity. Somehow, both represent links in a web that must not be lost.

As Wade Davis, ethnobotanist and Explorer-in-Residence at National Geographic, describes in *Shadows in the Sun*, cultural and biological diversity are much more than the foundation of stability; they are an article of faith, a fundamental truth that indicates the way things are supposed to be. If diversity is a source of wonder, its opposite…is a source of dismay. There is a fire burning over the Earth, taking with it plants and animals, cultures, languages, ancient skills, and visionary wisdom. Quelling this flame and reinventing the poetry of diversity is the most important challenge of our times. I hope that Arquimedes and other people of foresight in northern Veraguas are up to this challenge.

To learn more about the impact of environmental alteration and biodiversity on human health, visit www.wms.org/biod.

Member News

Susan Tripp-Snider, MD

Photo courtesy of Carol Federiuk.

Carol Federiuk is Associate Professor of Emergency Medicine at the Oregon Health and Science University, Oregon's only medical school. During the ski season, she works at a ski area clinic on Mt. Hood. She earned her MD at the University of California, Irvine, and her PhD in biochemistry from the University of Michigan.

Carol is section editor of the Clinical Updates section of the *Wilderness and Environmental Medicine* journal. She has published several studies on telemark skiing and recently completed a study of serious trauma due to snow sports in Oregon. She worked at the Himalayan Rescue Association Clinic in Pheriche, Nepal, in 1997. She has a special interest in sports medicine and has been selected to go to Philadelphia for a sports medicine fellowship at Thomas Jefferson University next year. This is a bit unusual for an emergency physician, and she is pleased to have this opportunity.

Carol enjoys mountaineering and has climbed many of the peaks in the Pacific Northwest including Mounts Hood, Rainier, and Shasta. She is a member of the Mazamas, the local climbing organization, and teaches in their first aid and expedition courses. She likes to run, bike, ski, and swim, and recently ran the "Avenue of the Giants" marathon in Northern California.

Cliff Notes

Tim Burdick, MD
Dartmouth Medical School
WMS Board of Directors, Student Representative

One of my mentors died last week. He was a generation older than any WMS member, but he shared the same spirit. He was a dedicated naturalist, studying forestry in the 1930s, growing beans and strawberries in his garden, and raising poppies and lilies around his house. He switched careers during the Depression and became a physician, first caring for loggers in New Hampshire, then becoming one of the first pathologists to perform needle biopsies. In his retirement, he was a professional rafting guide in Utah. He was equally gifted as an artist, depicting Colorado mountain panoramas in lively pen and ink sketches. This was a man that I emulated in many ways.

The mentor-student relationship is such an interesting dynamic. In my time as an outdoorsman, as a

physician-in-training, and as the student representative to the WMS Board of Directors, I have searched for mentors. Like a good campsite, they appear in the most unlikely places and the most unexpected times. I have sometimes pitched my tent at lunchtime in order to take advantage of a lakeside meadow for the afternoon, even though the mileage tomorrow may be longer.

Finding a mentor may be a challenge, but developing this into a true relationship is also difficult at times. As any 3rd-year medical student knows, there is a forceful imbalance of power—both real and perceived. The mentor may, in fact, have substantial control through formal evaluations or public opinion. It is his or her task to remove this tension by explicitly valuing the input of the student. But equally important, the student must have the courage to be actively engaged in the relationship—much of the tension is simply perception. The last thing that I have noticed is that we all need to be on both sides of the mentor-student relationship at times. A student can mentor other students, and perhaps even teach the humble physician a trick or two.

This is a time of transition for me personally: the passing of my mentor, my graduation from medical school, and the end of my term as WMS Student Representative. I have greatly enjoyed my time serving the WMS, and specifically its students. I have found some wonderful new mentors in the senior members and the in students alike. I hope that I have been a mentor for at least a few of these same friends.

I do have a favor to ask each of you: If you are a teacher, find somebody in your community or your field of research and be their guide. Also, let them lead you. After all, if Paul Auerbach can be a mentor, so can you. If you are a student, have the initiative to find a mentor, have the courage to be an active participant in this relationship, and find another SIG member in your area with whom you can share your knowledge. If Ben Rosner can do it, I know you can, too. The strength of the WMS—perhaps its very existence—is its membership and these partnerships.

See you on the trail!

Editor's Note: Tim can reached at tim.burdick@alum.dartmouth.org.

Erick Hung Selected as New SIG Rep

It is with great pleasure that the WMS announces the selection of Erick Hung (UCSF) as the Student Associate Representative. Erick has been an active WMS member for several years, assisting the UCSF SIG as well as serving as a volunteer at the last two WMS Annual Conferences. He presented his work with the Yosemite SAR team as a poster at the Whistler Conference in 2001. He was also the 1st-place finisher at the WMS "Race for Research" last summer in Whistler. Erick will take over the helm as Student Representative after the Conference in Snowmass this coming August and will serve for one year on the WMS Board of Directors. He can be reached at erickhung@yahoo.com. Please welcome him.There were many great student candidates for this position, and the WMS thanks all the applicants for their dedication to the WMS goals.

4th Annual Student Round Table

Please join medical students from around the world at the Student Round Table in Snowmass, Colorado, August 11 – 16. The WMS will be sponsoring various activities specifically for medical students. These sessions will be led by students and WMS faculty with expertise in the field. Registration forms are available online at www.wms.org/studentgroups/.

Proposed Sessions

Hands-on: Improvisational splinting, litter rescue techniques, GPS navigation skills

Panels: Wilderness first aid kits and medications, becoming an expedition physician

Teaching sessions: airway management tricks, history of wilderness medicine

Group activities: rock-climbing, mountain biking, "dinner with a doc"

There will also be plenty of unscheduled opportunities to relax and discuss SIG activities with students and faculty from other schools.

Registration Discounts and Cash Grants to SIGs

The following registration discounts and travel grants are available to members of active or pending WMS Student Interest Groups:

1. Affordable housing sites will be available. Contact information can be reviewed on the WMS student group web page, www.wms.org/student groups/. A complementary student group

shuttle, within the Snowmass/ Aspen area, will be provided throughout the conference to facilitate the utilization of these affordable housing options.

2. WMS will provide a $125 grant to each active or pending school group sending at least one student as an official representative of the school to the student round table. This grant can be used as deemed appropriate by the student group to support the attendance of a school's representative and students. Grant checks will be distributed to the SIGs at Snowmass.

3. WMS will provide one complementary conference registration for each student group attending and discount the registration to $100 for other students registering from active or pending WMS school groups (a savings of $75 per registration). Student groups may pool this benefit so all students from a school pay an average registration.

To receive the complementary and discounted registration, registrations must be mailed to the WMS office as a group registration.

E-mail questions regarding the Student Round Table to erickhung@yahoo.com. Send general conference questions to Dian@wms.org.

Correction:

The University of Connecticut SIG, featured in the last issue of the WMS Newsletter, is co-led by Kristin Oberg. We regret this omission. Ed.

Be a WMS Bridge Builder

HOW YOU CAN MAKE A DIFFERENCE

WMS is the leading organization of medical professionals dedicated to advancing clinical practice, research, and education in wilderness medicine. And we need your help so we can keep up the good work. By making a charitable gift to your Society, you directly support the WMS mission to continue our research and educational programs, sponsor our Student Interest Groups (and our future leaders), support our Environmental Council, and further our community outreach…in other words, build a bridge to the future.

There are a variety of ways available to make charitable gifts: an outright gift or a planned gift.When it's time to express congratulations, thanks, get-well wishes, or sympathy, a gift to WMS not only honors one, but it also helps the Society bring our mission to many. Planned gifts include making a bequest in your will, gift life insurance, appreciated assets (typically stock and equities), and charitable trusts. You may direct your bequests to the general needs of the Society or to a specific area of interest such as research, education, or the Environmental Council.

Remember, WMS is a 501(c) 3 charitable foundation. A gift to your Society may have significant tax advantages. Your financial planner, tax professional, or estate lawyer can advise you what kind of impact your gift will have on your personal finances. If you would like to become a Bridge Builder for WMS, please call Executive Director, David Just at 719-572-9255. David will be available to discuss the many options and opportunities you have to make a difference in your Society.

"There followeth after me today a youth, whose feet must pass this way.
This chasm, that has been naught to me, to that fair-haired youth may a pitfall be.
He, too, must cross in the twilight dim; Good friend, I am building the bridge for him."

—from the "Bridge Builder" by W.A. Dromgoole

ELECTIVE IN WILDERNESS AND ENVIRONMENTAL MEDICINE

February 2 – 28, 2003 — Great Smoky Mountains National Park
www.wms.org/studentgroups/electives/wms_electives.htm

A new elective defining the standard for medical education in wilderness and environmental medicine.

Open to 3rd- and 4th-year medical students.

PROGRAM WILL INCLUDE:

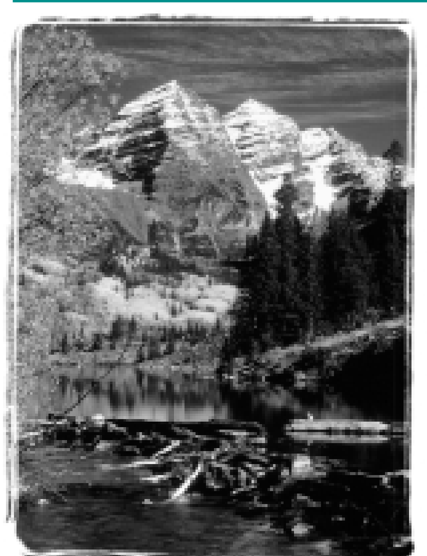
- Cold- and heat-related conditions
- Spine and head injuries
- Orthopedics
- Wound care
- Search and rescue
- Backcountry survival
- Dive and marine medicine
- Altitude physiology
- Bites and envenomations
- Burns and lightning injuries
- International medicine
- Infectious diseases
- 5-day field hike

A significant amount of hands-on techniques will be taught with didactic instruction by nationally renowned wilderness medicine experts.

Speak to your SIG leader for a brochure or visit www.wms.org/studentgroups/electives/wms_electives.htm

Sponsored by the Wilderness Medical Society with academic oversight by the Uniformed Services University of the Health Sciences.

WMS 2002 CONFERENCE CALENDAR FOR CONTINUING MEDICAL EDUCATION



Maroon Bells, Snowmass Wilderness, Colorado. Photo by Charlie Shimanski

Summer Meeting and Annual Conference

August 11 – 16, 2002
Snowmass, Colorado

Please join us for the summer Wilderness Medicine Conference in Snowmass. You'll learn from the experts "What is Wilderness Medicine," how to "Manage Rattlesnake Bites," the "Dynamics of Group Travel," and what makes up an "Expedition Medical Kit." And that's only the beginning. We're covering all the topics that you've asked for: AMS and cold injuries, toxicology, envenomation, traveler's diarrhea and water disinfection, outdoor clothing and equipment, jungle medicine, and pain management are just some of the subjects that you'll learn the latest on. The WMS Annual Meeting portion of the conference will take place on Wednesday, August 14 and will include scientific presentations, a "Hike for Research" fundraiser, business meeting, awards, and presentations. The evening lectures feature Marsha Ivins and her "Life as an Astronaut," as well Howard Donner's experience on "Everest: the Death Zone."

Don't forget to sign up for the optional workshops! We've planned something for people of all ages: choose from 2 days of fly fishing, to 2 days of mountain biking, or 2 days of wilderness photography. Or check-out our wilderness survival workshop for kids. Find out the latest updates on international travel medicine, and map and compass navigation, or participate in hands-on wilderness survival skill building.

Afternoons are free to explore the Colorado Rockies, experience the charm of Aspen just a few short miles away, or take in the hot springs in nearby Glenwood Springs. There's plenty of activities for the whole family—high-speed chairlift rides, golf, hiking, biking, fishing, horseback riding, rafting, kayaking, and 4-wheel drive excursions. For kids ages 3 to 11, try Camp Snowmass for days full of fun, supervised, and planned activities. Snowmass Village offers several free programs for kids, like storytelling around the campfire and a naturalist class for kids 4 to 9. Go to www.snowmassvillage.com to get the whole scoop on the Snowmass Village summer activities.

Snowmass will not disappoint you. She shows off her summer grandeur with crystal-clear blue skies, spectacular vistas, endless hiking and biking trails, and fly-fishing streams forever. It's not too late to make reservations—call toll-free 1-888-229-6263 or visit the www.wms.org and follow the "Conference" links.

Cucumber Gap. Photo by Richard Weissner, richard@smokyphotos.com

WMS/UCSD SOUTHEASTERN WILDERNESS MEDICINE

October 26 – 30, 2002
Chattanooga, Tennessee

WMS/UCSD WINTER WILDERNESS MEDICINE

February 13 – 17, 2003
Snow King Resort
Jackson Hole, Wyoming

4TH WORLD CONGRESS ON WILDERNESS MEDICINE

August 9 – 13, 2003
The Fairmont Chateau Whistler
Whistler, British Columbia, Canada

FOR MORE INFORMATION ON THE WMS/UCSD 2002 MEETINGS OR TO RECEIVE A DETAILED BROCHURE, CONTACT:
UNIVERSITY OF CALIFORNIA, SAN DIEGO OFFICE OF CONTINUING MEDICAL EDUCATION E-MAIL: **ocme@ucsd.edu**
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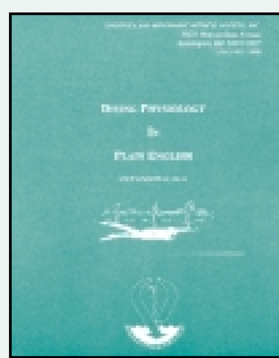

Diving Physiology in Plain English

by Jolie Bookspan

With this book, Dr. Bookspan redefined the art of teaching by using humor as a form of "synaptic glue" seldom used in a serious scientific text. Her wit is fun and richly layered and she has the ability to make science read like a novel. Easy to read and chock full of interesting facts, *Diving Physiology in Plain English* is a must have for every diver's (and soon-to-be diver's) bookcase.

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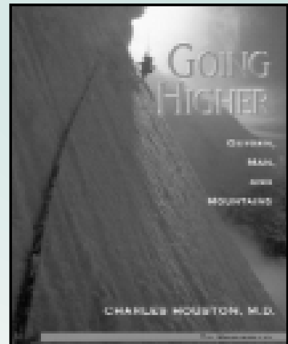

Going Higher: Oxygen, Man and Mountain

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Charles Houston, one of the world's leading authorities on high altitude (with 50+ years experience in the field), has completely revised his classic study of man at high altitude to cover the most important findings of the last 10 years. The text intertwines fascinating research discoveries with dramatic first-person accounts. This is a book you'll refer to again and again.

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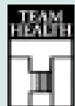

Northwest Emergency Physicians

Richland, Washington — Northwest Emergency Physicians (NEP), a Team Health affiliate, seeks a physician, residency trained and BC in Emergency Medicine, to serve as director at a new, expanded Emergency Department in the Tri-Cities area with an annual volume of 26,000 visits. We are also seeking one full-time staff physician.

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