

# Stanford

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## Paul Auerbach

Redlich Family Professor, Emeritus  
Emergency Medicine

### CLINICAL OFFICES

- **Stanford Dept of Emergency Medicine**

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### ACADEMIC CONTACT INFORMATION

- **Alternate Contact**

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### Bio

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#### CLINICAL FOCUS

- Emergency Medicine

#### ACADEMIC APPOINTMENTS

- Emeritus (Active) Professor, Emergency Medicine

#### ADMINISTRATIVE APPOINTMENTS

- Chief, Division of Emergency Medicine, Department of Surgery, (1991-1995)
- Adjunct Professor of Military/Emergency Medicine, Uniformed Services University of the Health Sciences, (2016- present)
- Visiting Scholar, National Center for Disaster Medicine and Public Health, (2018- present)

#### HONORS AND AWARDS

- Illustrated Medical Textbook of the Year, for Wilderness Medicine 7th edition, British Medical Association (2017)
- DAN/Rolex Diver of the Year, Divers Alert Network (2009)
- Diver of the Year, Beneath the Sea (2008)
- Hero of Emergency Medicine, American College of Emergency Physicians (2008)
- New Orleans Grand Isle (NOGI) Award for Science, The Academy of Underwater Arts and Sciences (2006)
- Founders Award, Wilderness Medical Society (2000)
- Outstanding Contribution in Education Award, American College of Emergency Physicians (1999)
- DAN America Award, Divers Alert Network (1998)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Council on Foreign Relations (2010 - present)
- Board of Trustees, Emergency Medicine Foundation, American College of Emergency Physicians (2015 - present)
- Development Committee, Society for Academic Emergency Medicine Foundation (2016 - 2017)

- High Threat Emergency Casualty Care Task Force, American College of Emergency Physicians (2016 - 2018)
- Faculty Fellow, Center for Innovation in Global Health, Stanford University School of Medicine (2017 - present)
- Sports Head Injury Prevention Task Force, American College of Emergency Physicians (2017 - present)

## PROFESSIONAL EDUCATION

- Residency: UCLA Emergency Medicine Residency (1980)
- MS, Stanford Graduate School of Business , Management (1989)
- Board Certification: Emergency Medicine, American Board of Emergency Medicine (1981)
- Internship: Dartmouth Hitchcock Medical Center (1978) NH
- Medical Education: Duke University School of Medicine (1977) NC

## COMMUNITY AND INTERNATIONAL WORK

- Volunteer physician, Haiti
- Volunteer physician, Kathmandu, Nepal
- Hospitalito Atitlan, Santiago, Atitlan, Guatemala

## PATENTS

- Paul Auerbach, Joshua Carter, Lauren Fuller, Daniel Haylett, Aaron Knoll, John Reitenberg, Andrew Smith, Eric Thorsell. "United States Patent 8,061,293 Avalanche rescue device", Nov 22, 2011
- Paul Auerbach. "United States Patent 4,801,777 A device for microwave rewarming of blood products", Jan 31, 1989

## LINKS

- Dr. Auerbach Elsevier Author's Bio Page: <http://elsevierauthors.com/paulauerbach/>
- Enviromedics: The Impact of Climate Change on Human Health: <https://www.enviromedics.org/>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

concussion in sports; wilderness medicine education

### CLINICAL TRIALS

- Effective Treatments for Jellyfish Stings, Not Recruiting

## Teaching

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### COURSES

2019-20

- The Impact of Climate Change on Human Health: EMED 134, EMED 234 (Win)

## Publications

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### PUBLICATIONS

- **Recommendations for the Emergency Department Prevention of Sport-Related Concussion.** *Annals of emergency medicine*  
Bazarian, J. J., Raukar, N., Devera, G., Ellis, J., Feden, J., Gemme, S. R., Hafner, J., Mannix, R., Papa, L., Wright, D. W., Auerbach, P., American College of Emergency Physicians Sport-Related Head Injury Prevention Task Force  
2019
- **Dermatological Progression of a Probable Box Jellyfish Sting.** *Wilderness & environmental medicine*

- 
- Auerbach, P. S., Gupta, D., Van Hoesen, K., Zavala, A.  
2019
- **Wilderness Medicine, 7th edition (textbook)**  
edited by Auerbach, P. S., Cushing, T. A., Harris, N. S.  
Elsevier.2017
  - **Enviromedics: The Impact of Climate Change on Human Health**  
Lemery, J., Auerbach, P.  
Rowman & Littlefield.2017
  - **The last gasp. *Lancet***  
Auerbach, P. S.  
2016; 388 (10057): 2322-?
  - **It's Time to Change the Rules. *JAMA***  
Auerbach, P. S., Waggoner, W. H.  
2016; 316 (12): 1260-1261
  - **Detection of concussion using cranial accelerometry. *Clinical journal of sport medicine***  
Auerbach, P. S., Baine, J. G., Schott, M. L., Greenhaw, A., Acharya, M. G., Smith, W. S.  
2015; 25 (2): 126-132
  - **Poly-l-Arginine Topical Lotion Tested in a Mouse Model for Frostbite Injury. *Wilderness & environmental medicine***  
Auerbach, L. J., DeClerk, B. K., Garrison Fathman, C., Gurtner, G. C., Auerbach, P. S.  
2014; 25 (2): 160-165
  - **A novel mouse model for frostbite injury. *Wilderness & environmental medicine***  
Auerbach, L. J., Galvez, M. G., De Clerck, B. K., Glotzbach, J., Wehner, M. R., Chang, E. I., Gurtner, G. C., Auerbach, P. S.  
2013; 24 (2): 94-104
  - **Civil-Military Collaboration in the Initial Medical Response to the Earthquake in Haiti *NEW ENGLAND JOURNAL OF MEDICINE***  
Auerbach, P. S., Norris, R. L., Menon, A. S., Brown, I. P., Kuah, S., Schwieger, J., Kinyon, J., Helderma, T. N., Lawry, L.  
2010; 362 (10)
  - **Physicians and the environment *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION***  
Auerbach, P. S.  
2008; 299 (8): 956-958
  - **Wilderness Medical Society Practice Guidelines for the Prevention and Treatment of Frostbite: 2019 Update. *Wilderness & environmental medicine***  
McIntosh, S. E., Freer, L., Grissom, C. K., Auerbach, P. S., Rodway, G. W., Cochran, A., Giesbrecht, G. G., McDevitt, M., Inray, C. H., Johnson, E. L., Pandey, P.,  
Dow, J., Hackett, et al  
2019
  - **Change Is What You Make It. *AEM education and training***  
Auerbach, P. S.  
2019; 3 (3): 299–300
  - **Impact of a Half Dome Cable Permitting Process on Search and Rescue Activity, Hiker Mortality Rates, and Operational Costs Above Little Yosemite Valley**  
Spano, S. J., Seymer, J. A., Crane, D. H., Auerbach, P. S.  
ELSEVIER SCIENCE INC.2019: 113–20
  - **Impact of a Half Dome Cable Permitting Process on Search and Rescue Activity, Hiker Mortality Rates, and Operational Costs Above Little Yosemite Valley. *Wilderness & environmental medicine***  
Spano, S. J., Seymer, J. A., Crane, D. H., Auerbach, P. S.  
2019
  - **Wilderness Medical Society Practice Guidelines for the Prevention and Treatment of Acute Altitude Illness: 2019 Update. *Wilderness & environmental medicine***  
Luks, A. M., Auerbach, P. S., Freer, L., Grissom, C. K., Keyes, L. E., McIntosh, S. E., Rodway, G. W., Schoene, R. B., Zafren, K., Hackett, P. H.

2019

- **Hydration Status as a Predictor of High-altitude Mountaineering Performance (vol 8, e918, 2016)** *CUREUS*  
Ladd, E., Shea, K. M., Bagley, P., Auerbach, P. S., Pirrotta, E. A., Wang, E., Lipman, G.  
2017; 9 (9): c10
- **Marine Envenomation** *EMERGENCY MEDICINE CLINICS OF NORTH AMERICA*  
Hornbeak, K. B., Auerbach, P. S.  
2017; 35 (2): 321-?
- **Correction: Hydration Status as a Predictor of High-altitude Mountaineering Performance.** *Cureus*  
Ladd, E., Shea, K. M., Bagley, P., Rundell, S., Auerbach, P. S., Pirrotta, E. A., Wang, E., Lipman, G. S.  
2017; 9 (2): c7
- **Hydration Status as a Predictor of High-altitude Mountaineering Performance** *CUREUS*  
Ladd, E., Shea, K. M., Bagley, P., Auerbach, P. S., Pirrotta, E. A., Wang, E., Lipman, G. S.  
2016; 8 (12)
- **Wilderness Medical Society Practice Guidelines for the Prevention and Treatment of Drowning** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Schmidt, A. C., Sempsrott, J. R., Hawkins, S. C., Arastu, A. S., Cushing, T. A., Auerbach, P. S.  
2016; 27 (2): 236-251
- **The 6-Minute Walk Test as a Predictor of Summit Success on Denali** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Shea, K. M., Ladd, E. R., Lipman, G. S., Bagley, P., Pirrotta, E. A., Vongsachang, H., Wang, N. E., Auerbach, P. S.  
2016; 27 (1): 19-24
- **Efficacy of Topical Treatments for *Chrysaora chinensis* Species: A Human Model in Comparison with an In Vitro Model** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Declerck, M. P., Bailey, Y., Craig, D., Lin, M., Auerbach, L. J., Linney, O., Morrison, D. E., Patry, W., Auerbach, P. S.  
2016; 27 (1): 25-38
- **Failure of Real-time Passive Notification about Radiation Exposure to Influence Physician Ordering Behavior.** *Cureus*  
Polen, L. A., Rossi, J. K., Berg, C. K., Balise, R. R., Herfkens, R. J., Auerbach, P. S.  
2016; 8 (7)
- **Hydration Status as a Predictor of High-altitude Mountaineering Performance.** *Cureus*  
Ladd, E., Shea, K. M., Bagley, P., Rundell, S., Auerbach, P. S., Pirrotta, E. A., Wang, E., Lipman, G. S.  
2016; 8 (12)
- **Extreme, expedition, and wilderness medicine** *LANCET*  
Imray, C. H., Grocott, M. P., Wilson, M. H., Hughes, A., Auerbach, P. S.  
2015; 386 (10012): 2520-2525
- **Hypothermia Evidence, Afterdrop, and Guidelines** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Zafren, K., Giesbrecht, G. G., Danzl, D. F., Bragger, H., Sagalyn, E. B., Walpoth, B., Weiss, E. A., Auerbach, P. S., McIntosh, S. E., Nemethy, M., McDevitt, M., Dow, J., Schoene, et al  
2015; 26 (3): 439-41
- **Preparedness explains some differences between Haiti and Nepal's response to earthquake** *BMJ-BRITISH MEDICAL JOURNAL*  
Auerbach, P. S.  
2015; 350: h3059
- **Extreme, expedition, and wilderness medicine.** *Lancet (London, England)*  
Imray, C. H., Grocott, M. P., Wilson, M. H., Hughes, A., Auerbach, P. S.  
2015; 386 (10012): 2520-25
- **The 6-Minute Walk Test as a Predictor of Summit Success on Denali.** *Wilderness & environmental medicine*  
Shea, K. M., Ladd, E. R., Lipman, G. S., Bagley, P., Pirrotta, E. A., Vongsachang, H., Wang, N. E., Auerbach, P. S.  
2015

- **Wilderness Medical Society practice guidelines for the out-of-hospital evaluation and treatment of accidental hypothermia: 2014 update.** *Wilderness & environmental medicine*  
Zafren, K., Giesbrecht, G. G., Danzl, D. F., Brugger, H., Sagalyn, E. B., Walpoth, B., Weiss, E. A., Auerbach, P. S., McIntosh, S. E., Némethy, M., McDevitt, M., Dow, J., Schoene, et al  
2014; 25 (4): S66-85
- **Wilderness medical society practice guidelines for the prevention and treatment of acute altitude illness: 2014 update.** *Wilderness & environmental medicine*  
Luks, A. M., McIntosh, S. E., Grissom, C. K., Auerbach, P. S., Rodway, G. W., Schoene, R. B., Zafren, K., Hackett, P. H.  
2014; 25 (4): S4-S14
- **Wilderness Medical Society Practice Guidelines for the Out-of-Hospital Evaluation and Treatment of Accidental Hypothermia: 2014 Update.** *Wilderness & environmental medicine*  
Zafren, K., Giesbrecht, G. G., Danzl, D. F., Brugger, H., Sagalyn, E. B., Walpoth, B., Weiss, E. A., Auerbach, P. S., McIntosh, S. E., Némethy, M., McDevitt, M., Dow, J., Schoene, et al  
2014; 25 (4): S66-85
- **Wilderness Medical Society practice guidelines for the prevention and treatment of acute altitude illness: 2014 update.** *Wilderness & environmental medicine*  
Luks, A. M., McIntosh, S. E., Grissom, C. K., Auerbach, P. S., Rodway, G. W., Schoene, R. B., Zafren, K., Hackett, P. H.  
2014; 25 (4): S4-14
- **Wilderness medical society practice guidelines for the prevention and treatment of frostbite: 2014 update.** *Wilderness & environmental medicine*  
McIntosh, S. E., Opacic, M., Freer, L., Grissom, C. K., Auerbach, P. S., Rodway, G. W., Cochran, A., Giesbrecht, G. G., McDevitt, M., Imray, C. H., Johnson, E. L., Dow, J., Hackett, et al  
2014; 25 (4): S43-54
- **Implementing an emergency medical services system in kathmandu, Nepal: a model for "white coat diplomacy".** *Wilderness & environmental medicine*  
Walker, R., Auerbach, P. S., Kelley, B. V., Gongal, R., Amsalem, D., Mahadevan, S.  
2014; 25 (3): 311-318
- **Migraine headache confounding the diagnosis of acute mountain sickness.** *Wilderness & environmental medicine*  
Karle, F. J., Auerbach, P. S.  
2014; 25 (1): 60-68
- **Core Content for Wilderness Medicine Fellowship Training of Emergency Medicine Graduates** *ACADEMIC EMERGENCY MEDICINE*  
Lipman, G. S., Weichenthal, L., Harris, N. S., McIntosh, S. E., Cushing, T., Caudell, M. J., Macias, D. J., Weiss, E. A., Lemery, J., Ellis, M. A., Spano, S., McDevitt, M., Tedeschi, et al  
2014; 21 (2): 204-207
- **Wilderness Medical Society Practice Guidelines for the Out-of-Hospital Evaluation and Treatment of Accidental Hypothermia** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Zafren, K., Giesbrecht, G. G., Danzl, D. F., Brugger, H., Sagalyn, E. B., Walpoth, B., Weiss, E. A., Auerbach, P. S., McIntosh, S. E., Némethy, M., McDevitt, M., Dow, J., Schoene, et al  
2014; 25 (4): 425-445
- **Embracing the wild Conceptualizing wilderness medicine in Canada** *CANADIAN FAMILY PHYSICIAN*  
Curran-Sills, G., McDonald, N., Auerbach, P. S., Crutcher, R.  
2013; 59 (5): 581-84
- **In Reply to Evidence-Based Treatment of Jellyfish Stings in North America and Hawaii** *ANNALS OF EMERGENCY MEDICINE*  
Auerbach, P. S.  
2013; 61 (2): 253-254
- **Getting the evidence. The challenge of implementing evidence-based medicine in tough global environments.** *Health management technology*  
Auerbach, P. S.  
2012; 33 (12): 18-20
- **In Tribute to James A. Wilkerson III, MD** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
McIntosh, S. E., Gravatt, A. R., Giesbrecht, G., Auerbach, P. S., Erb, B. D., Forgey, W. W., Schoene, R. B., Grissom, C. K.  
2012; 23 (3): 199-202

- **Prehospital Medical Care and the National Ski Patrol: How Does Outdoor Emergency Care Compare to Traditional EMS Training?** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Constance, B. B., Auerbach, P. S., Johe, D. H.  
2012; 23 (2): 177-189
- **The expanded scope of emergency medical practice necessary for initial disaster response: lessons from Haiti.** *Journal of special operations medicine : a peer reviewed journal for SOF medical professionals*  
Menon, A. S., Norris, R. L., Racciopi, J., Tilson, H., Gardner, J., McAdoo, G., Brown, I. P., Auerbach, P. S.  
2012; 12 (1): 31-36
- **Wilderness Medical Society Practice Guidelines for the Prevention and Treatment of Frostbite** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
McIntosh, S. E., Hamonko, M., Freer, L., Grissom, C. K., Auerbach, P. S., Rodway, G. W., Cochran, A., Giesbrecht, G., McDevitt, M., Imray, C. H., Johnson, E., Dow, J., Hackett, et al  
2011; 22 (2): 156-166
- **Wilderness Medical Society Consensus Guidelines for the Prevention and Treatment of Acute Altitude Illness** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Luks, A. M., McIntosh, S. E., Grissom, C. K., Auerbach, P. S., Rodway, G. W., Schoene, R. B., Zafren, K., Hackett, P. H.  
2010; 21 (2): 146-155
- **In Tribute to Charlie Houston** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Rennie, D., Powers, P., Schoene, R. B., Hackett, P., Auerbach, P. S., Hornbein, T., Roach, R. C.  
2010; 21 (2): 89-97
- **Environmental Education for Providers and Patients-What's a Doctor to Do?** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Auerbach, P. S.  
2009; 20 (3): 197-198
- **Physicians and environmental change - Reply** *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*  
Auerbach, P. S.  
2008; 299 (24): 2856
- **Marine catfish sting causing fatal heart perforation in a fisherman** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Haddad, V., de Souza, R. A., Auerbach, P. S.  
2008; 19 (2): 114-118
- **A Case of Elevated Liver Function Tests After Crown-of-Thorns (Acanthaster planci) Envenomation** *WILDERNESS & ENVIRONMENTAL MEDICINE*  
Lin, B., Norris, R. L., Auerbach, P. S.  
2008; 19 (4): 275-279
- **The relevance and future of wilderness medicine.** *Travel medicine and infectious disease*  
Auerbach, P. S.  
2005; 3 (4): 179-182
- **Efficacy of a jellyfish sting jellyfish stings inhibitor in preventing jellyfish stings in normal volunteers** *61st Meeting of the American-Academy-of-Dermatology*  
Kimball, A. B., Arambula, K. Z., Stauffer, A. R., Levy, V., Davis, V. W., Liu, M., Rehmus, W. E., Lotan, A., Auerbach, P. S.  
ALLIANCE COMMUNICATIONS GROUP DIVISION ALLEN PRESS.2004: 102-8
- **Environmental injuries - Foreword** *DM DISEASE-A-MONTH*  
Leikin, J. B., Aks, S. E., Andrews, S., Auerbach, P. S., Cooper, M. A., Jacobsen, T. D., Krenzelo, E. P., Shicker, L., Wiener, S. L.  
1997; 43 (12): 813-916