

ORBITER NEWSLETTER

AEROSPACE MEDICAL STUDENT AND RESIDENT
ORGANIZATION



A WORD FROM THE PRESIDENT OF THE AMSRO.....	Page 1
AVIATION SAFETY: WHO'S PAYING ATTENTION.....	Page 2
REACHING FOR THE STARS: MY PURSUITS IN AEROSPACE MEDICINE.....	Page 4
UPCOMING OPPORTUNITIES.....	Page 5



A WORD FROM THE PRESIDENT OF THE AEROSPACE STUDENT AND RESIDENT ORGANIZATION

Anita Mantri

Dear returning and new AMSRO Members,

Welcome to an amazing year for AMSRO! As we celebrate the 20th anniversary of this organization, I am excited to see what the coming months have in store.

To introduce myself, I am currently an MD/PhD student at Texas A&M University and have been a member of AMSRO for 7 years. For the past 3 years, I have served as treasurer and membership coordinator. As president, I hope to expand on AMSRO's potential.

During the 2013 AsMA conference in Chicago, AMSRO attendees were inspired by the Red Bull Stratos Project panels and talks from Charles Bolden, Jim Lovell, and Chiaki Mukai. As with each year, AMSRO gains a tremendous amount of momentum during the AsMA conference with several excellent ideas that may prove beneficial to our organization. As we come upon a milestone year, the AMSRO Executive Council would like to see these ideas come to fruition before the 2014 AsMA conference in San Diego.

We aim to make strides in our efforts to improve connections with AMSRO members throughout the year by improving our website and increasing our visibility through social media. In addition, we encourage you to contribute to our newsletter, the Orbiter, to provide your insight within the field of space and aviation medicine. Furthermore, we hope to have a few events celebrating the 20th year of AMSRO at the upcoming 2014 AsMA conference.

If at any time during the year, you have an idea, a comment, or a question for any of the AMSRO officers, please do not hesitate to contact us!

I look forward to seeing you in San Diego!

Sincerely,

-Anita Mantri



AVIATION SAFETY: Who's paying attention?

Sarah-Blythe Ballard, MD, MPH

In November of 2010, I was sitting at my desk in the Camp Bastion Flight Line Aid Station in Afghanistan when I received an email from Sue Baker at the Hopkins Center for Injury Research and Policy in Baltimore. She had just completed an analysis of oil and gas operations-related helicopter crashes in the Gulf of Mexico and was reviewing the scores of dour narratives that described the crashes, along with the resultant injuries and deaths. "How I wish you were here right now to help me in my current project," she wrote, "The biggest problem by far has been mechanical failures (in that ghastly environment!), and I wish someone.... [was] paying attention!"

As she tends to be, Sue was ahead of her time. Two years after her email to me, the CDC's Morbidity and Mortality Weekly Report spelled out the magnitude of the problem she had identified (1). It reported that transportation events contributed to the majority of fatalities in oil and gas operations (1). Of those, two thirds were associated with aircraft, specifically helicopters (1). Surprisingly, the catastrophic events that attracted intense media scrutiny, such as the Deepwater Horizon explosion, did not account for the majority of occupational fatalities in Gulf offshore operations (1). But Sue is well aware of the different amounts of attention paid to catastrophic events compared to the thousands of "unnoticed" injury-related deaths that occur in the U.S. each year. In fact, deaths from all unintentional injuries increased from 98,000 to 121,000 between 1999 and 2010 (2). "What would happen if a new disease started killing Americans at the rate of 121,000 people a year? The government would instantly mobilize, and we'd do whatever it took to conquer the disease" (2). Over the past 40 years, she has put the discipline of injury prevention on the map, particularly as it relates to aviation. In doing so, she has succeeded in impacting aviation safety, and the way we "do business," on a daily basis.

Sue Baker and her protégés serve as a testament to the countless opportunities we have to improve aviation safety, often times simply by **paying attention**. For example, as Sue's student, Wren Haaland, began investigating the increasing frequency of air tour crashes in Hawaii, she



Sue Baker's field researchers, Dr. Sarah-Blythe Ballard and Leland Beaty, investigate fatal commercial air tour crash risk factors in Kauai, Hawaii.

**AVIATION SAFETY: Who's paying attention? (CONTINUED)****Sarah-Blythe Ballard, MD, MPH**

noticed that one pilot had crashed during his eighth flight of the day (3). Searching for an explanation for this unusually long crew day, Wren came across a news article alleging that air tour companies frequently denied pilots lunch breaks or bathroom breaks in order to make as many possible flights—and dollars—each day (3). Conducting flights under time pressures can also result in allocating less time toward critical safety evolutions, such as passenger briefs (3). Indeed, some of the air tour passengers who survived air tour crashes into the ocean reported that they had not been briefed on the location of the water survival equipment (4). In our own nationwide study of commercial air tour crashes, Sue and I found significantly higher crash rates in air tours conducted under an exception for general aviation operators (5). Addressing these issues will be critical to improving the safety of air tour operations.

As aerospace medicine professionals, we can save hundreds, even thousands, of lives by tackling the day-to-day aviation safety issues in our own atmosphere. Whether it's noticing unusual operating practices, identifying human factors in aircrew, or recognizing the need for updated regulations, each of us has the opportunity to positively impact aviation safety.

References

1. Stock RW. Safety lessons from the morgue. *The New York Times Magazine*. 2012 Oct 26; Retrieved from <http://www.nytimes.com/2012/10/28/magazine/safety-lessons-from-the-morgue.html?pagewanted=all&r=0>
2. Gunter MM, Hill R, O'Conner MB, Retzer KD, Lincoln JM. Fatal injuries in offshore oil and gas operations—United States, 2003-2010. *Morbidity and Mortality Weekly Report*, 62(16);301-304.
3. Baker SP. The stories behind the statistics. 2013 National Meeting of the Safe States Alliance and the Society for Advancement of Violence and Injury Research. June 2013.
4. Haaland WL, Shanahan DF, Baker SP. Crashes of sightseeing helicopter tours in Hawaii. *Aviat Space Environ Med* 2009;80(7):637-42.
5. Ballard SB, Beaty LP, Baker SP. US Commercial air tour crashes, 2000-2011: Burden, fatal risk factors, and FIA Score validation. *A*

Author Information:

Sarah-Blythe Ballard, MD, MPH

LCDR MC(FS/FMF) USN

Preventive Medicine Resident/Aerospace Medicine Practice Pathway

Johns Hopkins Bloomberg School of Public Health

sballard@jhsph.edu

**REACHING FOR THE STARS: My pursuits in aerospace medicine****Anita Mantri****MD/PHD Candidate, Texas A&M**

People often ask me how I got the idea to pursue a career in space medicine. The truth is, I have always felt that the space sciences and medicine were inextricably linked. It just made sense to me that astronauts needed doctors too.

I knew that I wanted to become a flight surgeon when I was 12 years old. Growing up in Houston, I often attended summer camps at the Museum of Health and Johnson Space Center. They always left me inspired and wanting to combine these passions for both space and medicine. For several years, I didn't think it was actually possible for me to simultaneously pursue both interests. Yet, at the same time, the thought of choosing between them was agonizing: choosing between participating in a research internship or volunteering at a hospital, deciding between an engineering-based or a biology-based major, picking the most appropriate MD/PhD programs on my application...the battle was never-ending! I always felt that by actively delving into one, I was leaving behind a missed opportunity.

During my interviews for medical school, I was constantly told that I was "the first person they had interviewed who was interested in space medicine" and subsequently questioned about what space medicine would entail, who my patients would be, and what skills I hoped to acquire. Yet, when I interviewed at Texas A&M Health Science Center, their response to the idea of space medicine was very different. It was there that I was introduced to NSBRI's Space Life Science (SLS) Graduate Fellowship program.

Ladies and gentlemen, cue the music! I felt like I had just struck gold. FINALLY! Finally, there was an arena where my interests would be understood. The SLS Fellowship beautifully combines coursework, seminars, apprenticeships, and research efforts in space physiology, space radiation, space nutrition, and space education outreach. On several occasions, I've had the honor of meeting and getting to know Dr. Joseph Kerwin, NASA's first astronaut doctor. Throughout the program, I have had the opportunity to learn about the types of discoveries that I had always read about in books as a child and heard from science camp counselors. In essence, this program truly has become my playground of science, exploration, and discovery.

Combined with the amazing experiences that I have had with AsMA and AMSRO, the NSBRI SLS Fellowship program has given me the platform I have always wanted to reach for the stars, in the most literal sense. I know that others in AMSRO have probably had similar experiences and struggled to find just the right opportunities for them to pursue space medicine. I think that struggle is what truly bonds us. As a group, I hope that we all continue to "spread the word" about our field. Although it may not seem like it, we are having an impact on students, young professionals, and long-time veterans. It's exciting to recognize that we are the future of aerospace medicine. Therefore, we have a responsibility to inspire those who will follow in our footsteps and continue to push the boundaries of exploration. To me, that is a beautiful thing.



UPCOMING OPPORTUNITIES

INTERNATIONAL SPACE UNIVERSITY (ISU)

ISU is hosting its 2013 Summer Studies Program in Strasbourg France. A variety of scholarships are available through the Canadian Federation of ISU, the National Space Society, and the International Space University. The 2014 Summer Studies Program will convene in Montreal, Canada and applications are accepted on a rolling basis.

INTERNATIONAL ASTRONAUTICAL CONGRESS (IAC)

All eyes will be on Beijing, China for the annual meeting of the International Astronautical Congress (IAC) in 2013. Students and young professionals can be sponsored through their national space agency through International Space Education Board (ISEB). NASA, CSA, ESA, and JAXA offer a variety of scholarships; as well there are youth grants that are given on a competitive basis through the International Astronautical Federation committee.

2014 AEROSPACE MEDICAL ASSOCIATION ANNUAL MEETING

The Aerospace Medical Association's 2014 Annual Scientific Meeting will be held in San Diego, California. This year's theme is "Exploring the Frontiers of Aerospace Medicine and Human Performance." Abstracts are now being accepted with the deadline for submission being October 31, 2013.

CURRENT AMSRO OFFICERS:

President	Anita Mantri: amsro.president@gmail.com
Vice President	Craig Kutz: amsro.vp@gmail.com
Secretary	Rahul Suresh: amsro.secretary@gmail.com
Treasurer	Dana Levin: amsro.treasurer@gmail.com
Parliamentarian	Joe Butterfield: amsro.parliamentarian@gmail.com
Chief Editor	Laura Drudi: amsro.orbiter@gmail.com
Website Coordinator	Angela Maria Ospina Obando: amsro.webmaster@gmail.com