

Orbiter

The Official Newsletter of the Aerospace Medicine
Student and Resident Organization



FALL ISSUE OF THE ORBITER

Dear AMSRO members,
Welcome back to another issue of *The Orbiter*. I hope everyone had an exciting and enriching summer. Send me your thoughts, experiences and highlights of your summer internships, electives, research or fellowship experiences. If you also have any other experiences you would like to share or any news of members, send your articles my way. All of this may be sent to: laura.drudi@mail.mcgill.ca. Enjoy the issue and I look forward to your feedback and your articles!

Laura Marie Drudi

ORBITER 2011 Issue 4

In this issue:

- STS-135: End of an Era
- MJM: Aerospace Medicine
- USAF Aerospace Medicine
- Upcoming Opportunities

STS-135: END OF AN ERA

*By Natacha Chough M.D
Emergency Medicine Resident
Stanford University*

“Boom-boom...”

The shuttle going subsonic jolted me from my suspended state of reflection. Through the generosity of a media friend from Collectspace.com, I found myself sitting in the press stands at SLF midpoint in the early dawn of July 21, 2011, witnessing the end of a mission, an era, a generational icon. Atlantis was bringing her crew home...for the last time.

As so many have stated in articles, blogs and other posts around the country, it was difficult for me to believe the shuttle program was ending. Not only had it been discussed for years since George W. Bush's initial announcement, but its formidable three-decade lifespan had created entire careers for so many people with a passion for human spaceflight. Here and there during STS-135 ops, certain comments or gestures in MCC would signify that this mission carried more weight than others. Seeing most of the mission on television instead of in person, I felt as though I were watching some show that wasn't real. Even upon arrival to KSC the night before landing, I continued to feel numb and detached from reality.

It wasn't until I began to update friends and family from KSC that I was forced to externalize what the shuttle meant to *me* and only then did the end of the program begin to feel real. In comparing notes with others from my generation, and in reading through some of my own post-STS-107 writings, repeated themes arose: the shuttle era spanned our entire childhoods - we have never lived in a time or known space without it. Shuttle stood for possibility, discovery and the ability to dream. Shuttle represented ingenuity and perseverance in the face of adversity and tragedy. Perhaps most importantly, for those of us bitten early by the “space bug,” it was how we had fantasized about getting to space—she was to be *our* ride. Simply put, the shuttle was one of—if not the—most significant icon of my life, and it was ending.

Orbiter

The Official Newsletter of the Aerospace Medicine
Student and Resident Organization



Inside her final hour of flight, when I saw the xenon lights illuminate the SLF and heard NASA PAO on the loudspeakers, elements of reality began to validate and solidify what was about to occur: my mom called; I started receiving texts from friends in MCC. An unprecedented number of media correspondents overwhelmed the KSC press busses. Growing crowds outside JSC were shown on TV. Eventually, the sonic booms startled me out of my reverie, heralding Atlantis' arrival. Soon, she was gliding down runway 15, heat streaming from her wings, streaking past us in the final minutes of the night's darkness.

In the aftermath, we saw her roll down the tow-way, joined the enormous workforce celebration near OPF-2 as American flags, mission decals, hot dogs and ice cream were doled out, and had our pictures taken with this amazing flying machine. Despite the oppressive Florida summer heat, it was her day to be celebrated. But now, it is time to think about next steps. What are we doing? Where are we going? Given how strongly our generation identified with Shuttle, we now have the primary responsibility of contributing to and carrying forward with new, more inspiring ideas for NASA's next direction. All of us must lead by example in this front. I hope none of us forget the lessons we have learned from Shuttle, nor the questions we still have unanswered after only beginning to skim the surface of discoveries to be made in human spaceflight and space medicine.

Many said they felt like their childhood ended the day Atlantis landed. In a way, this is true: low-Earth orbit has become a comfort zone, our home away from home. On the space medicine front, we still have challenges to overcome and are still figuring out what to pack, but it's time to truly prepare for bigger adventures, longer expeditions, and show the world what we're capable of when we dare to start our next era of space exploration.



Orbiter

The Official Newsletter of the Aerospace Medicine
Student and Resident Organization



BACK FROM SPACE

By Laura Drudi
McGill University
Medical Student



Laura Drudi on a weekend trip with Team Voyager to Slovenia

I am writing 20,000 feet somewhere in the air. I am returning from the International Space University (ISU) 9-week Space Studies Program (SSP) in Graz, Austria and it has truly been the best summer I have ever had learning about space and working closely with 120 participants from 31 nations. Reminiscing on these past weeks, I couldn't help feeling alone heading back to Canada.

My adventure began July 9th, 2011 as I embarked to the ISU with a Canadian delegation sponsored by the Canadian Federation of the International Space University (CFISU). We were all passionate about space and enthusiastic to begin this journey together. We all had different stories to tell about where our dreams for space began and the challenges we overcame pursuing studies and careers in the space industry.

The ISU mandate consists of the three I's: International, Intercultural, and Interdisciplinary. ISU achieves its mission through core lectures, department activities, and team projects. Core lectures are given by experts in the fields of space physical science, life science, engineering, policy and law, and business and management representing space agencies from around the world. The department activities consist of lectures, excursions and social events concluding with final reports and presentations. Finally, the Team Projects of 40 students consist of addressing a space-related topic through a 100-page report presented to the ISU, the International Astronautical Congress (IAC), the United Nations, and the global community. This year, my Team Project consisted of using space-based technology to address the global water crisis, in which I have the privilege of presenting in Cape Town, South Africa at the 2011 IAC.

Amidst the educational curriculum, there were many social events bringing the SSP participants closer together including: receptions, birthdays, culture nights, wine tours, robotic and rocket competitions, and numerous traveling teams. Being in the heart of Europe, many participants had the occasion to travel around Austria, Germany, Hungary, Italy, and Slovenia. I was a member of *Team Voyager* traveling to numerous destinations with any break in the SSP schedule. My senses were overwhelmed as my eyes befell the rolling hills of different shades of green with the lone homes buried within the hills. I felt like I was experiencing paradise on Earth. This is what embarking on expeditions was all about, be it right here on Earth or expeditions to all that lies beyond the reaches of our planet.

The ISU is truly about bringing the future space leaders together and inspiring each other to pursue our wildest dreams. Everything we can imagine is possible, and I truly believe our generation will bring change and the future of space exploration. Without our dreams and passions, humanity would have never left Earth, and in order to maintain these dreams for the 21st century, we must maintain our rigor, realism and idealism. This entire experience has been intellectually empowering and culturally enriching. I have learned the most by having discussions with my fellow colleagues from different countries, professions, cultures, and walks of life. I have been empowered by their passions and enthusiasms, and my only hope is that the family ties that we have established here in the SSP resonates and strengthens throughout the years wherever our dreams, goals and careers lead us.



USAF AEROSPACE MEDICINE PRIMARY COURSE

*By Jennifer Law, MD, MPH & Charles Mathers, MD, MPH
UTMB/NASA Aerospace Medicine Residency*

One of the perks of the UTMB/NASA Aerospace Medicine program is the opportunity to attend the U.S. Air Force Aerospace Medicine Primary (AMP) course or the Army Flight Surgeon course. These are the courses that Air Force and Army physicians take to become flight surgeons, so it is quite an honor for civilians to participate. It was also neat to live and breathe military for six weeks! (No, we didn't have to do group PT...though the gym on base was great.)

The two of us did the AMP course at Wright Patterson AFB. The course was divided into three two-week sections. AMP 101 provided an overview of aerospace physiology, hyperbaric medicine, human factors, operational medicine, and aviation medicine. We were introduced to the Cirrus SR22 as our training aircraft and logged our first hour in it. A teaser, to be sure!

AMP 201 was all about clinical aerospace medicine. We learned about aeromedical standards, waivers, clinical specialties such as ophthalmology and neuropsychiatry, Team Aerospace, and occupational medicine. These two weeks were definitely the most classroom-intensive, but necessary as we were learning the "bread and butter" of flight medicine.

AMP 202 was arguably the best part of the training. The majority of the two weeks was spent at a local general aviation airport, where we had more didactics but then lots of flying! The idea was to give us a taste of what pilots go through in Undergraduate Pilot Training. After passing our emergency procedures test, which required us to memorize "boldface" items literally word for word, we flew five sorties, totaling 9 hours by the time we finished the whole AMP sequence. The highlights were formation flying, aerobatics, and low-level flying/cross-country with a nice dinner at a winery. The last sortie also included flying back to base at night on instruments only. All in all, the SR22 was a great plane to train in, and many of us walked away from the experience with a new (or renewed) interest in flying!

In AMP 202, we also learned about mishap investigation and disaster preparation and response. We spent an afternoon in the field investigating a simulated crash where we examined the wreckage and body and interviewed witnesses. As flight surgeons, we hope we will never have to investigate a mishap, but if we get called, we will be prepared.

Graduation was held on the last day of the course. We watched our classmates receive their Flight Surgeon wings before getting our own! It was very cool to wear our honorary wings and sign the flight surgeon logbook, a tradition that was resurrected recently after the USAF School of Aerospace Medicine moved from Brooks AFB to Wright Patterson AFB.

All in all, AMP was an incredible experience. We learned a lot about aerospace medicine, operations, and the Air Force in general, and made lifelong friends with whom we share some great memories. With aerospace medicine being such a small field, we will likely cross paths again with many of our AMP classmates, whether at AsMA or out on the flight line somewhere!



Dr. Law and Dr. Mathers with their Flight Surgeon wings

Orbiter

The Official Newsletter of the Aerospace Medicine
Student and Resident Organization



LAUNCHING MJM AEROSPACE MEDICINE ISSUE

*By Laura Drudi
McGill University
Medical Student*

The McGill Journal of Medicine (MJM) Issue 13 Volume 2 is now published with its focus being aerospace medicine. The executive committee has been hard at work and they are glad to include:

- The Final Frontier: A medical student's mission to boldly dream where no dream has gone before – Ms. Laura Drudi
- Canadian Space Agency Space Learning Grants – Mr. Jason Clement
- Medical Education for Exploration Class Missions: NASA Aerospace Medicine Elective at the Kennedy Space Centre – Dr. Greg Stewart and Ms. Laura Drudi
- Ultrasound in Space – Dr. Jennifer Law and Dr. Paul McBeth
- Medical Care in the Arctic and on Orbit – Dr. David Saint-Jacques
- Physicians as Astronauts – Dr. Robert Thirsk
- Human Space Exploration: The Next Fifty Years – Mr. Matthew Turnock and Dr. Dave Williams
- Exploring the Possibility for a Common System for Joint Aeromedical Standards – Dr. Justin Woodson, Dr. Walter M Dalitsch, Dr. James L Persson, Dr. Charles Ciccone, and Dr. Brian Parsa

The issue may be accessed online at this link: <http://www.mjm.mcgill.ca/mjm1302.pdf>

Also, if anyone would like a hard copy of the journal, please email Laura Drudi at: laura.drudi@mail.mcgill.ca

UPCOMING OPPORTUNITIES

2011 INTERNATIONAL ASTRONAUTICAL CONGRESS

All eyes will be on Cape Town, South Africa for the annual meeting of the International Astronautical Congress (IAC). 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. Upcoming conferences will be held in Naples, Italy in 2012 and Beijing, China in 2013. More information can be found at the following site: <http://iafastro.org>

NAAA ANNUAL EVENT AND SPACE VISION 2011

The NASA Academy Alumni annual event will be held at the University of Colorado at Boulder from October 27-30, 2011 in collaboration with the Students for the Exploration and Development of Space (SEDS) hosting the 2011 SpaceVision Conference. More information on the annual event will be distributed to all NAAA alumni by the NAAA Executive Committee, and information about SpaceVision 2011 can be accessed at the following website: <http://spacevision2011.com/>

INTERNATIONAL SPACE UNIVERSITY (ISU)

ISU will be hosting its Southern Hemisphere Space Studies Program (SHS-SP) January-February 2012 at the University of Adelaide in Adelaide, Australia. The 2012 Space Studies Program (SSP) will be held at Florida's Institute of Technology and Kennedy Space Center from June to August 2012. A variety of scholarships are available through the International Space University, Canadian Federation of ISU, and National Space Society. The 2013 Summer Studies Program will be taking place in Brazil. More information on ISU's programs and scholarship opportunities can be found here: <http://www.isunet.edu/>

CONTACT INFORMATION

To all AMSRO members who would like to share an interesting academic, extracurricular, and summer opportunities with the Orbiter, please send your articles to: laura.drudi@mail.mcgill.ca