

CALL SIGNS



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About the USN ★ AEP Society

As military transformation continues to affect today's and tomorrow's Department of Defense and the Navy Medical Service Corps, the need to promote the role of Aerospace Experimental Psychologists as leaders and innovators in aerospace psychology continues.

Naval Aerospace Experimental Psychologists offer a unique combination of education, knowledge, skills, and experiences to address current and emerging challenges in Navy, joint, and coalition environments.

The U.S. Naval Aerospace Experimental Psychology Society (USNAEPS) is an organization intent on:

- Integrating science and practice to advance the operational effectiveness and safety of Naval aviation fleet operators, maintainers, and programs
- Fostering the professional development of its members and enhancing the practice of Aerospace Experimental Psychology in the Navy
- Strengthening professional relationships within the community



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Message From The President

Summer is here! For many, it is an opportunity to slow down, recharge, and enjoy barbeques, baseball, and family vacations. It is also the “halfway” point - an opportunity to take a step back and reflect on what we have accomplished since the beginning of 2011. This issue of Call Signs, the first of our new summer supplemental series, focuses on our community of AEPs, past and present, and their accomplishments over the past several months. As you will see in this issue, true to tradition, AEPs remain engaged in a diverse range of endeavors, from exploring alternative energy sources, to conducting research on “Mars,” to discussing important military health system issues with senior leaders across the services.

In this issue, we also highlight some of the tremendous work being done to ensure the strength and viability of our community well into the future, to include another successful AEP meeting held in March in Arlington, Virginia. The AEP community’s most valuable resource is its people, and the annual AEP meetings not only provide members with mentorship and networking opportunities, but enable those external to the community to better un-

derstand the value we bring to the Medical Service Corps and the Navy as a whole.

Lastly, I would like to take the opportunity to welcome three new members to the USNAEPS Executive Committee. LT Rolanda Findlay will be joining the team as our new Membership and Outreach Coordinator. Her unbridled enthusiasm will be key to helping the society achieve its membership goals moving forward. We are also excited - no one more so than our newsletter editor, LCDR Olson - to welcome LT Brennan Cox and LT Stephen Eggan as newsletter co-editors. I have no doubt this newsletter team will continue to build upon the standard of excellence established by outgoing editor, LT Pete Walker. Welcome aboard!

As a final note, I would like to thank all USNAEPS members for their continued support. You are truly the “heart” of the organization, and I wish you a safe and enjoyable summer!

CDR Joseph Cohn, USNAEPS President



Highlights from the 2011 AEP Meeting

BY LCDR HENRY PHILLIPS



The annual AEP community meeting was held from March 28-30 in Arlington, Virginia. The meeting was well-attended, with over 21 AEPs (68% of the community) in attendance for all or part of the sessions. The meeting also featured several outside speakers, including Deputy MSC Director CAPT Denise Weber, MSC Career Planner CAPT Clarence Thomas, MSC Detailer CDR Raymond Stiff, Assistant Chief of Naval Research CAPT Douglas Marble, MSC Manpower and Personnel Analyst LT Neil Cascardo, and Ms. Laura Worcester of ONR.

Highlights of the meeting included the presentation of AEP Coin #142 to LT Brennan Cox in recognition of his winging in February 2011, followed by the commissioning of SNAEP LT David Combs (see article on p. 12). Formal presentations included:

- Transitioning from bench research to program management
- The mechanics of research funding at ONR
- Working with and managing civilians
- An overview of current concerns for the MSC

The meeting also featured remote briefings by several AEPs unable to attend in person, including CAPT Schmidt, CDR Reddix, CDR Lowe, and LCDR Alton.

A new element introduced at this meeting was a flag-briefing exercise in which the Captains in attendance were asked to play the role of a flag audience and provide specific feedback to the three officers brave enough to volunteer as briefers - LCDR Grubb, LT Walker, and LT Gibson. The exercise proved to be a critically valuable training experi-

ence for the briefers as well as the “flags.” A post-meeting survey indicated that all attendees felt it added a great deal to the meeting; the exercise will be expanded for the next AEP community meeting.

The final day of the meeting included a series of briefs on AEP roles in the lifecycle of Unmanned Aerial Systems (UASs), including an overview of systems in use and development, UAS design issues, UAS training issues, considerations relevant to UAS safety, and UAS personnel selection. Given the looming changes in the way manned and unmanned aircraft are used to accomplish Naval Aviation Enterprise strategic objectives, these presentations were both timely and well-received. Their purpose was to get the members of the AEP community thinking about how we need to position ourselves today to ensure our relevance tomorrow, and

continue to make meaningful contributions to naval aviation.

The meeting concluded with an overview of the work accomplished by the AEP Billet Requirements Working Group given by LCDR Foster (see article on p. 4). In a short period of time, this working group has done a phenomenal job of documenting the relevance of, and skill requirements for, current AEP billets, and defining appropriate prerequisite and follow-on billets for each as an aid to career planning. AEP Specialty Leader CAPT Dylan Schmorow has challenged his cadre of LCDRs to build an even better agenda for next year’s community meeting, likely to be a difficult feat given the incredible success of this one!



CAPT Dylan Schmorow presents MSC Detailer CDR Ray Stiff with a plaque naming him an honorary AEP.

It’s a Miracle!

MSC Health Care Sciences Detailer, CDR Raymond Stiff, was named an honorary Aerospace Experimental Psychologist by our community and presented with a plaque conferring upon him the call sign “Miracle,” in recognition of his ability to accomplish the impossible in service to the communities for which he is responsible. His value as an informational resource, his ability to work

within and across constituencies at PERS and in Navy Medicine, his willingness to suggest innovative strategies for community management, and his ability to make things happen without losing track of a single detail all make him worthy of this call sign. We are indeed lucky to have him as our detailer, and wish him continued success in his career!

Planning for the Next Generation of AEPs

BY LCDR CHRIS FOSTER

Terms like “succession planning,” “talent management,” “succession management,” “strategic workforce planning,” and “career progression planning” continue to be buzzwords in both the public and private sector as organizations seek to chart the course for the next generation of leaders. While each term has a specific meaning, they all relate closely to the central idea of recruiting and developing employees to ensure that key organizational roles can be filled when the current incumbent vacates the position. Historically, succession planning has been limited to key senior leadership positions, and those targeted for these positions have been kept in the dark as to their role in the succession planning process.

Today, succession planning has a much broader application and individual employees are more likely to play an active role in the process.

Effective Succession Planning

For our purposes, succession planning can be defined as a process whereby an organization ensures that employees are recruited and developed to successfully fill each key role within the organization. A review of this definition reveals a few important points that highlight the importance of a coherent succession planning process for the AEP community.

First, effective succession planning is a proactive process. In a community with such a variety in both the educational background and experience of its members and the diversity of its billets, planning ahead is critical to avoiding a mismatch between AEP and billet. The need for this diversity among AEPs is due directly to the varying requirements of our billets.

Second, effective succession planning recognizes the importance of succession planning for not only senior positions, but also to ensure that the right person is in place for every position. In a community as small and targeted as the AEP community, each billet is key and the risk associated with detailing the wrong person to a billet is real, particularly in an environment where it is much easier to disestablish a billet than to establish a billet. Such mismatches risk demotivation of the individual AEP, dissatisfaction of the command, and diminishment of the reputation of the community.

Third, effective succession planning relies on a thorough understanding of the knowledge, skills, abilities, and experiences required to succeed in each key role. A necessary prerequisite to developing a succession plan, therefore, is a job analysis that identifies these requirements.

Fourth, effective succession planning requires active engagement of employees in building career progression plans and targeted development plans. These plans should consider both short and long range career objectives and be used to inform specific developmental objectives.

Fifth, effective succession planning recognizes that there are two sources of candidates for key organizational roles: internal and external. That is, succession planning should not only include a plan for developing current AEPs, but must also include an integrated plan for recruiting future AEPs both from the private sector and other active duty communities. Without such a recruiting plan, we risk bringing in AEPs who are less likely to succeed and more likely to exit our community after their initial service obligation.

Succession Planning for the AEP Community

The AEP community actively manages its billets and works diligently to prepare junior officers for more senior billets. Seeking to update and formalize this process, a task group was formed by the AEP Specialty Leader in advance of the annual AEP Community Meeting in February 2011 to conduct a thorough review of each of our 28 billets and build a succession/career progression plan.

The remainder of this article details the work of this task group, which is broken into three phases: analysis of billet requirements, development of billet descriptions, and creation of career progression models.

PHASE I: ANALYSIS OF BILLET REQUIREMENTS

The first step was to gather existing documentation regarding the requirements of each billet. Initially, a review of existing billet descriptions, organized into documents referred to as tri-charts, was conducted. These tri-charts summarized the mission of the host command, provided a brief billet description, and documented key responsibilities and advantageous training and educational background or experience. This review resulted in the categorization of AEP billets into six primary functional areas: Acquisition & RDTE, S&T Program Management, Human Performance Research Labs, Safety, Selection & Training, and Education. It also revealed that much of the information needed to develop career progression plans was not captured by the tri-charts, to include prerequisite or preparatory billets, lateral or follow-on billets, and key competencies.

To obtain this information, an AEP billet survey was designed and administered to current and recent incumbents of all 28 AEP billets, as well as a number of non-AEP billets currently occupied by AEPs. The response rate for this survey was 100 percent. Data were analyzed using both qualitative and quantitative techniques. The qualitative review allowed the identification of:

- Key prerequisite billets and lateral/follow-on billets
- Key competencies and required/recommended AQDs
- Recommended educational backgrounds
- Key requirements for filling the billet with an AEP on flight status

A network modeling approach was employed to confirm the results of the qualitative analysis by independently identifying interrelations among the 28 AEP billets. This approach allowed us to identify billets that allow lateral movement between them. These billets fell into two categories –functionally similar and functionally dissimilar. Among functionally similar billets, filling any billet within the group was as experientially valuable as filling any or all other billets within the group. Among functionally dissimilar billets, movement from one billet to another allowed the development of unique competencies. From the perspective of career progression, movement between functionally dissimilar billets is in most instances more desirable.

Additionally, we were able to identify billets that serve as good transition billets. These billets can be thought of as “intermediate” in seniority. Incumbents in junior billets can readily access these billets, but access to more senior billets requires that an AEP move through these transition billets.

PHASE II: DEVELOPMENT OF BILLET DESCRIPTIONS

For each of the AEP billets, the data collected in Phase I were used to develop billet descriptions. These documents provide billet identifier information, background information common to all AEP billets, an explanation of the functional area to which the billet belongs, a billet description with emphasis on key responsibilities, and billet justification information highlighting the importance of the billet and its reliance on the unique qualifications and capabilities of AEPs.

PHASE III: CREATION OF CAREER PROGRESSION MODELS

Building upon the results of the AEP billet survey, a draft progression plan for each billet was developed. These documents identified prerequisite and follow-on billets and documented key competencies, AQDs, and educational backgrounds.

Upon completion of the billet plans, a focus group was formed to draft progression plans for each functional area.

The final step in this process was the development of career progression plans for each educational background and career objective. The intent of these progression plans was to ensure that AEPs are being groomed for more senior AEP billets, emphasize the importance of building competency across functional areas to minimize the likelihood of leaving AEPs unprepared for available billets, and identify holes in current billet structure at various seniority levels. These plans were not intended to document every conceivable career path, but instead to identify viable career paths to support various career objectives. Alternative paths are certainly available. For example, the analysis in Phase I identified a number of billets that were to a great extent interchangeable. Such billets can easily be substituted into the career progression plans based on the availability of billets and interest of the specific AEP.

Next Steps

As discussed previously, succession planning, when done right, is a dynamic process. The work in this area is not complete. In order for succession planning to be successfully utilized by the AEP community into the future, the following need to be accomplished:

Validate and finalize the career progression plans. This work is in progress and is expected to be complete by the end of Summer 2011.

Formalize the use of career progression planning in the AEP community by ensuring active AEP ownership of the succession planning process and educating AEPs early about career progression

planning and how to use it to support their long-term career objectives.

Conduct follow-on analyses of the data collected to determine the optimal mix of educational backgrounds for junior, mid-grade, and senior officers. The variety of educational backgrounds of AEPs differentially prepares them for the AEP billets in different functional areas, and there are a finite number of billets that can effectively support transitioning AEPs from one functional area to another. Over-recruiting from any single educational background over a short period of time risks disadvantaging those AEPs when it is time for them to transition to other functional areas.

Develop a tracking system to document education, AQDs, and subspecialty codes. This information can be used to identify AEPs prepared for specific billets and can be used as necessary to provide career counseling and mentoring to junior AEPs.

This project promises to provide benefits for both the individual AEP and the AEP community as a whole. As discussed above, the results of this assessment enable AEPs to play a more active role in developing and managing their career plans. Over the long-term, this work will help senior leadership shape and sustain a more balanced, agile, and effective AEP community through more informed recruiting and placement decisions. It is our hope that this career and community management tool can inform career development work in other communities as well.

Note. This article is written with special thanks to the members of the working group who put in a lot of “overtime” during the course of this project: LCDR Jeff Grubb, LCDR Brent Olde, LCDR Tatana Olson, and LT Pete Walker.

Transforming Yourself from an Excellent Scientist into an Excellent Leader: Balancing the Tortoise and the Hare

BY CDR JOSEPH COHN AND CAPT DYLAN SCHMORROW

For most of us, our graduate school, and, in some cases, our post-doctoral training has prepared us for one thing - excelling as scientists and researchers. While this is an excellent goal for those pursuing an academic career, it falls short for those pursuing a Navy career as uniformed healthcare scientists. As an active component of today's Navy, we must strive to be brilliant both as scientists as well as leaders. The challenge we often face is determining how to best develop in both of these areas and how to mold our career paths to optimize the learning and experiences that our career opportunities provide us.

Over decades of AEP history, senior leaders have wrestled with how best to guide our community's junior officers in developing and expanding their skill sets to embrace both scientific and leadership excellence. Pulling from a range of texts, including biographies of leaders like former New York Mayor Rudy Giuliani; former General Electric CEO Jack Welch, and others, below is a discussion of a number of personal tools that may help those seeking to make the transition from being an excellent scientist to being an excellent science leader.

Making the Transition: Scientist to Science Leader

- (En)visioning
- Management
- Communication
- Embracing Change
- Taking Risks

ENVISIONING

The goal of envisioning is to create a vision of the future that others can buy into – in other words, generating buy-in. The first step in envisioning is determining what action you want your audience to take. This can be as simple as writing a technical report or as complex as developing a new program. Regardless, generating this buy-in requires that you develop a story that details the benefits of achieving this future; that you ensure this story addresses your audiences' interests and agenda(s); and that you very clearly highlight to your audience the initial commitment they can make to be a part of this future. For more on envisioning, please see Watson, M. (2006). *Generating Buy-In*.

MANAGEMENT

Management encompasses the administrivia and logistical details of leadership. Management includes (1) providing for your team those materials they need to succeed – from training and education opportunities, to the right access, to new technologies, and everything in between; (2) ensuring team members are properly tasked and have ways of comparing their progress to your expectations; and (3) providing opportunities for career advancement even if that means they may be promoted out of your team.

COMMUNICATION

The goal of communication is to speak at a level appropriate to your audience. As scientists, we must always be able to speak at the level of data and experiments, statistics, and hypotheses. As leaders, we must always be able to speak to the range of

capabilities we may have in our team – from undergraduate interns to senior scientists, and even more importantly, to non-scientists. As leaders, we must also understand how to speak to our immediate supervisors to ensure they understand our teams' needs. Finally, we must understand how to speak to our supervisors' leaders to help make our supervisors' lives easier, which in turn, makes our lives and those of our team members' easier as well. When all is said and done, proper communication requires a significant investment in learning quite a few 'languages' and 'dialects'. The words you use are important, but so is how and why you use them. Being a leader means that you know how to tailor your message for your audience and your goals. For more on communication, please see Giuliani, R. (2002). *Leadership*.

EMBRACING CHANGE & TAKING RISKS

These two aspects of leadership focus on self-development, which will enable you and your team to excel. Taking risks means working outside your comfort zone. By showing a willingness to challenge yourself – even if it means moving into a different research field - and be uncomfortable, a leader shows his team that it is just fine to push ahead into the unknown – so long as it is done with some forethought. Embracing change means realizing that we live and work in a dynamic world. Learning to be comfortable with chaos and trying to anticipate changes are especially important skills for uniformed scientists, who must be as current on the dynamic world of science as they are with the dynamic and chaotic world of global events that shapes our Navy's missions.

CONCLUSION

Within our community, one often encounters hard-charging junior officers who want to make the leap into leadership starting with their first tour. While this energy should be applauded, one should also recognize that developing the skills necessary to be an effective leader (and effectively “telling” the story over time) – one who can cross the worlds of science and research and military service – requires time and experience. Successful leaders seem to always consider new ways to improve their team; ensure their team lives, breathes, eats, and sleeps your vision for the future; continually develop trust by being candid and transparent in their actions and intention; assign credit where credit is due; inspire the willingness to take risks by setting the example; push their teams; and make the unpopular decisions with the same conviction they make the popular ones. Successful leaders also seem to know their team in terms of their strengths, weaknesses, interests, and drives, and celebrate the successes. Brilliance in these skills requires time, experience, and yes, taking risks and learning from your mistakes. Transforming yourself from an excellent scientist into an excellent leader requires that you balance your desire for rapid advancement with a measured attention to the details. For more on leadership, please see Welch, J. & Welch, S. (2005). *Winning*.

Note. The authors would like to thank CAPT Sean Biggerstaff for his feedback and insights, which were invaluable to the writing of this article.



So, What's it Like on Mars?

BY CDR (RET) JOHN DEATON

Yes, it's true. I admit it. I have always dreamed of being an astronaut, and I got close some years ago when I applied to the astronaut training program while an active duty AEP. I even made it to the semi-finals before feeling the bitter sting of rejection. So, when the opportunity came about to spend two weeks on Mars (simulated, of course) I grabbed the opportunity, not really knowing what I was getting into. I asked a colleague of mine, Tony Gannon at Space Florida, to put in a good word for me to Dr. Zubrin, the President of the Mars Society and sponsor of the simulation experience. Within a few weeks, I received the good news - I was selected to be part of Crew 102 and ordered to report to the Mars Desert Research Station (MDRS) in southern Utah on March 26, 2011. I would be part of an international crew of six getting a taste of what it would be like to actually live on the red planet.



Dr. John Deaton in his simulated flight suit brings "peace" to the Mars Desert Research Station.

The MDRS, run by the nonprofit Mars Society, is a small two-story building in a remote area of Utah, about four hours from Denver. The habitat, or "hab," was created to simulate the environment of the red planet and serve as a test bed for scientists from all disciplines. This 26-foot diameter building was my home for two weeks. I shared it with five other scientists from Italy, Greece, Cana-

da, and, of course, the U.S. Our goal was to study what it would be like to live on the planet Mars. My specific objective, being an experimental psychologist, was to collect data focusing on human factors issues and group dynamics, including how well people perform in stressful environments like this one. I collected data on a number of different measures, to include:

- Automated Neuropsychological Assessment Metrics test system (ANAM) - I collected data on sleepiness, mood, math processing, logical reasoning, and matching to sample (the latter three tests focus primarily on cognitive performance)
- Collaborative Team Leader Survey - assesses team effectiveness and leadership
- Perceived Stress Questionnaire - assesses stress in extreme environments
- Positive and Negative Affect Scale (PANAS)
- Post Expedition Growth Scale - an adaptation of the Post Traumatic Growth Scales used to assess how experience has or has not changed personal growth



View of the terrain around the Mars Desert Research Station in southern Utah.

My co-investigators (Dr. Peter Hancock at the University of Central Florida and Dr. Peter Suedfeld at the University of British Columbia) and I

are currently analyzing the data and should have the results available soon (I've been promised space in a future issue!).

My other, less scientific goal, was to see if I could do it! Do I have the "right stuff" to be able to go two weeks in close quarters with strangers, getting little sleep, eating what is loosely defined as "food" (freeze dried), and living in relative isolation without much outside contact? Most importantly, how would I survive without the use of my iPhone?

So, what was it like on Mars, you ask? Just a few short months ago, I would have jumped at the chance to travel to Mars. But, that was before I spent two weeks at the MDRS. For the first couple of days, I questioned why I was doing this. I wasn't sleeping well. I was either too hot or too cold. I didn't eat well (I lost eight pounds; someone told me I should write a book and call it "The Mars Diet"). We had no fresh food for the two weeks (I actually couldn't wait to have a salad when I got home). Sleeping quarters were smaller than a prison cell. As if that wasn't enough, I developed bacterial conjunctivitis ("pink eye"). This necessitated breaking character for a few hours to go to a clinic about two hours away to get the anti-bacterial drops, which drove home an important point: The crew that goes to Mars will have medical issues. They're not going to be able to get in the car and drive to Walgreens. Thus, a mini-pharmacy is going to have to be brought aboard the spacecraft to serve the crew. Not only that, but one of the crew will need to be experienced in surgery. What if a crew member gets appendicitis? A relatively simple operation, IF you know what you're doing and

IF you have a sterile environment, and IF you have the proper equipment. Leaving the hab to go on specific EVAs required that we wear a spacesuit. The bulky attire, complete with helmet, boots, and gloves took considerable time to put on and was very hot.

Conservation was important, as it would be on Mars. Water left over from washing dishes was used to flush the toilet (we abided by those well-known toilet rules - "If it's yellow, let it mellow; if it's brown, flush it down). Showers were only permitted every four days and consisted of about a 1.5 minute "Navy shower" (water on, water off, soap on, water on, soap off, etc.). My biggest surprise was how well everyone got along. We had a good leader, and he knew when to make the difficult decisions and when to go along with the crew consensus. We got to know each other quite well and have kept in close contact. One crew member has already visited me in Orlando and most of the others are planning to come here to watch the last shuttle launch.

So, what did I learn? First, personnel selection is important. I don't think I'm the right guy to go to Mars. Who is? I suspect the best candidates will be young, single, no children, and highly educated (some with medical backgrounds and certainly engineering expertise), but this is certainly an important area for future research. The real challenge in going to Mars will not be getting there (we have the technology to do that today), but how the crew members interact, deal with medical issues, and cope with the isolation. I'll admit I'm too comfortable with life on earth...now where did I put that salad dressing?



Dr. John Deaton with scientific equipment in front of the "habitat."

AEPs and the Fuel of the Future

Joint Navy-NASA Venture Seeks to Generate Alternative Energy through Ocean-Borne Algae Farms

The Spring 2011 issue of *Currents: The Navy's Energy and Environmental Magazine* features an article about a joint NASA-Navy venture to generate viable alternative energy through the cultivation of ocean-borne algae.

It has already been shown that making functional fuel for petroleum-driven engines out of biologically derived oil (vegetable based) is possible. One of the biggest questions for alternative energy advocates has been how these sources could be produced in sufficient volumes to meet market demand for fuel, without competing with agriculture for production space.

A promising solution to this problem may come from bio-oil produced from microalgae. Microal-



CDR Mike Lowe and Director of the San Francisco Water Treatment Plant touring the PhotoBioReactors filled with wastewater and freshwater algae, floating in tanks filled with seawater.

gae produces more oil per unit than other biological oil sources and can grow in seawater, which also means it does not compete with agriculture for farmland. Until now, microalgae production has been possible only in expensive enclosures called photobioreactors. This limitation may be overcome by a new effort underway by the Navy in coopera-

tion with NASA. This effort will produce algae in large quantities using Offshore Membrane Enclosures for Growing Algae (OMEGA), which use existing wastewater fed into plastic membranes in which algae is grown. The byproduct from this algae can then be used to produce biofuel in scalable quantities. These organizations are currently evaluating the optimal structure and environments for OMEGA deployment.

The architect of this plan is Dr. Jonathan Trent, a microbiologist, at NASA Ames Research Center. He is being assisted with the management and deployment planning for this project by a team that includes AEP CDR Michael Lowe. Drawing upon his extensive acquisition and contract management background, CDR Lowe is assisting with requirements specification, contracts management, and cost controls. He reports that the project is making good progress and is proud to be part of a team pursuing such an important goal. "The OMEGA project has the potential to change the way we generate energy domestically. Its implications are enormous. On the one hand, you are producing an alternative energy source and on the other, the algae is "cleaning" waste water, to a certain extent. It's a very exciting time to be at NASA Ames."

It is a stated goal of Navy Secretary Ray Mabus to move the Navy forward in establishing viable alternative energy sources to fossil fuels. Because the military consumes more energy than any other organization or institution in the United States, its position at the forefront of the search for viable alternative energy sources has the potential to make a big impact on the pace at which America transitions away from fossil fuel energy.



Welcome our Newest Student AEP

Our newest Student AEP, LT David Combs, was commissioned on 29 March 2011 at the 2011 AEP Community meeting in Arlington, Virginia. This marks the first time in recent memory that an AEP officer has been commissioned at a community meeting. He was accompanied by his wife, Lyla, to the ceremony.

LT Combs was awarded his doctorate in Experimental Social Psychology from the University of Kentucky in 2010, and recently completed a Post-Doctoral Fellowship at the Pew Research Center. He comes to our community with an impressive

record of publications and a strong background in quantitative methods. He graduated from ODS in Newport, Rhode Island on 13 May 2011 and is currently assigned to NAMI aboard NAS Pensacola, awaiting the start of Aeromedical Officer Class 2012-01. He is expected to earn his wings in February 2012.

We congratulate him on his commissioning, and wish him a long and successful career in the Navy's Medical Service Corps and the AEP community!

Lead, Follow, or Get Out of the Way...

A Week with the U.S. Army

BY LT BRIAN JOHNSON

In April, I had the opportunity to attend the U.S. Army's Medical Service Corps (MSC) Junior Officer Week in Crystal City, Virginia, an event dedicated to recognizing Army MSC Officers for their outstanding performance and providing them with the opportunity to discuss military health system issues with senior leaders. Although the conference is Army centric, attendees from the Navy, Air Force, and Public Health Service were invited.

A major theme of the conference was the concept of a Joint/Unified Medical Command. Although the Army has been a strong supporter of the concept, support from the Navy and Air Force has been inconsistent. One of the challenges faced is how to preserve unique aspects of service cultures while at the same time, fostering a joint organizational culture. Additionally, there are differences in the way the MSC is structured across the services. For example, the Navy MSC is similar to the Army MSC in that they both consist of multiple specialties, or as the Army calls them, areas of responsibility (AORs), while the Air Force MSC is comprised of health care administrators only. Their scientists are in the Biomedical Sciences Corps.

Highlights of the conference were presentations given by Rear Admiral Valentin, Brigadier General Miller, and Major General Rubenstein, the MSC Chiefs for the Navy, Air Force, and Army, respectively. Rear Admiral Valentin discussed the myriad opportunities available for professional education, to include e-mentoring, the Navy MSC toolkit, and certification programs, and emphasized the importance of maintaining a healthy life-work balance. Brigadier General Miller described the vision of the Air Force MSC as "light, lean, and mobile" with a focus on well-defined metrics to assess progress. Major General Rubenstein concluded the corps chief presentations by providing some "words of wisdom" for all MSC officers, regardless of service:

- Know your service
- Maintain an ethical foundation – you cannot explain your way out of a situation you behaved your way into
- Take care of your people
- Take care of your equipment
- Pay attention to details
- Have fun!

At the Award of Excellence dinner, I had the opportunity to personally introduce myself to Rear Admiral Valentin. I asked Rear Admiral Valentin what she most wanted to see from her junior MSC officers. Without hesitation, she succinctly replied, "Joint education." There are many different opportunities for joint education and this conference was one such opportunity – I was able to network with fellow MSC officers and leaders in the other services, experience differing perspectives across a range of issues relevant to the military medical community, and share "best practices." It was a truly valuable experience.



LT Brian Johnson (center) received a U.S. Army MSC Company Grade Leader Development Course Certificate from Major General Rubenstein (right) and Rear Admiral Valentin (left).

Navy Medicine Magazine Highlights the Navy & Marine Corps School of Aviation Safety (SAS)

BY LT STEPHEN EGGAN

In the spring 2011 edition of Navy Medicine Magazine, readers are enlightened to the work of Navy medical personnel in the domain of aviation safety and mishap prevention. As summarized below, the article “Keeping Aviators Healthy and Flying” describes the background and goals of SAS, outlines the curricula taught at the school, and details the role of the medical staff at SAS, which includes Command Flight Surgeon, CDR Walter Dalitsch, Aerospace Physiologist, CDR (ret.) Bill Little, and Aerospace Experimental Psychologist (AEP), LT Pete Walker.



in fiscal year 2009. According to the Naval Safety Center, 80-90% of aviation mishaps are due to human factors. A primary goal of SAS is to educate aviators at all levels to identify potential human factors issues and manage risks appropriately in order to prevent aviation mishaps. The Navy Medicine article highlights some of the critical contributions AEPs are making towards this goal.

During his tour at SAS, LT Walker spearheaded two research projects – the first focused on the validation of the Human Factors Analysis and Classification System (HFACS), which was highlighted in the Spring 2011 edition of Call Signs, and the second involved obtaining personality trait data from aviators. In addition to teaching and research, LT Walker is responsible for standardizing human factor reporting, providing consultative and analytic services to operational commands, serving as a scientific advisor for aeromedical safety and human factors issues, conducting safety stand-downs, and teaching HFACS to aeromedical classes at the Naval Aerospace Medical Institute (NAMI). In LT Walker’s own words, “AEPs contribute a unique perspective to the study of aviation safety. The flight training we go through helps us to better understand the stresses of the aviation environment and speak the “language” of the aviation community that depends on us. We continue to build on this common foundation throughout our careers, leveraging both our expertise as scientists and our experience as “wing wearers” to integrate science, policy, and practice in support of the warfighter. This is a very powerful combination.”

In the 1950’s, the aviation mishap rate was nearly one in 1,000 flight hours (776 aircraft were lost in 1954 alone), which gave the Navy impetus to create a source of safety education for aviation safety officers. Since the establishment of SAS, the naval aviation mishap rate has fallen to a record low in 2010 of about one in 100,000 flight hours. Despite this nearly hundred-fold reduction, aviation mishaps cost the Navy approximately \$291 million



LT Lee Sciarini Volunteers at Workforce Central Florida's STEM Day

BY LT BRENNAN COX

In July, AEP and Junior Achievement volunteer, LT Lee Sciarini, participated in Workforce Central Florida's STEM Day, a summer camp program designed to educate students about careers in Science, Technology, Engineering, and Math. Representatives from a variety of local organizations, including the Naval Air Warfare Center Training Systems Division (NAWC-TSD), worked with 150 underprivileged Orange County middle school students to cultivate interest and enthusiasm in STEM education.



Junior Achievement volunteer, LT Lee Sciarini, works with a group of middle school students on a group project demonstrating engineering principles during Workforce Central Florida's STEM Day at the Florida Citrus Sports Summer Camp.

LT Sciarini provided attendees a “fun” engineering brief focused on how to solve problems using the systems engineering process (SEP; e.g., defining requirements, project planning, system modeling, mission analysis, risk control, implementation, and validation). He then challenged teams of students to apply the SEP by designing a “house of cards” pedestal capable of supporting their mascot, “Poindexter,” a stuffed bear wearing a mortar board, thick-rimmed glasses, and a pocket

protector. Throughout this process, LT Sciarini assisted students in recalling the SEP as they came up with an initial design, divided labor, collaborated, and developed their final product. “We were able to inspire a handful of kids to pursue interests in STEM areas,” says Sciarini, “I feel like we made an impactful contribution to the community.”

The final portion of the event was an “operational test” in which each team's pedestal was measured and tested to see if it achieved a height requirement and could support Poindexter. The team that was closest to meeting requirements was declared the winner, but they were then confronted with a requirement change: could their structure support a die-cast F-18 model? When commenting on his role in the event, LT Sciarini claimed, “I believe I showed the flag positively. In addition to the STEM message, several children were interested in talking about military careers and what it was like to be in the Navy.”

For Sciarini, STEM Day served as a fitting venue to introduce the next generation of America's workforce to what has quickly become an underappreciated field of study. Although 33% of middle school students are interested in pursuing STEM majors, only 6% of college graduates earn STEM-related degrees; currently, the U.S. ranks 27th (out of 29) in the number of STEM bachelor's degrees awarded in developed countries (Organization for Economic Cooperation and Development, 2009). These data indicate that future demand for STEM graduates will far exceed the supply, presenting a critical need for STEM education and outreach targeting America's youth.

The Department of the Navy has historically promoted STEM education and related efforts. In 2009, the DoN launched www.STEM2Stern.org, an online resource center containing information on naval STEM programs and how to get involved.

According to Chief of Naval Research Rear Admiral Nevin Carr, “Our overarching STEM objective is simple. Increase, inspire, and support the talent pool from which the future’s great Sailors, naval engineers, and scientists will come.” Over the next 10 years, more than 30% of current Department of Defense Science and Technology professionals are expected to retire (Seng, Institute for Defense Analysis, 2000). Failure to develop a replacement workforce of STEM experts would threaten America’s future economic security and ability to provide advanced technologies that give warfighters the edge (Navy Office of Information, 2011).

Workforce Central Florida has hosted STEM Day for over 15 years, but STEM education opportunities take place nationwide (see www.stemed-coalition.org for details). Volunteer organizations

like Junior Achievement also provide an excellent opportunity to educate America’s youth about workforce readiness and other important ventures (see www.ja.org for more information). As LT Sciarini reports, “Community outreach is good for the soul. Aside from that, I believe that with our advanced degrees, careers as scientists, and the profession of service that we have chosen, we have a responsibility to mentor and excite young people about their own potential regardless of their current conditions.” As for his participation in STEM Day, LT Sciarini was rewarded when one student promised to use the SEP at her next science fair. LT Sciarini’s contributions were also featured in local print and online news sources, providing visibility and honor to the AEP community.

Bravo Zulu!





LCDR Olson Receives Joint Service Commendation Medal

LCDR Tatana Olson was recently presented with the Joint Service Commendation Medal by VADM Mark Ferguson, Chief of Naval Personnel for former Secretary of Defense, Robert Gates. LCDR Olson received the award for her outstanding work on the Comprehensive Review Working Group (CRWG) tasked with conducting an assessment of the implications of repeal of 10 U.S.C. 654, more commonly known as “Don’t Ask, Don’t Tell,” and providing a support plan for implementation addressing any potential impacts on the Department of Defense. As the Medical Advisor to the CRWG, LCDR Olson conducted an assessment of the impacts of repeal on medical readiness, integrating research from the Centers for Disease Control and the Department of Health and Human Services, and working closely with the Services Surgeons General, the Office of the Assistant Secretary of Defense for Health Affairs, and numerous military and civilian medical providers and researchers. Her articulate and balanced report was widely regarded as the “gold standard” for all CRWG efforts.

Drawing upon her expertise as an Industrial/Organizational Psychologist, LCDR Olson played a

critical role in the development of a comprehensive data analysis plan to analyze, interpret, and report the results of the Working Group’s engagement of the force, to include over 200 focus groups and information exchange forums with Service members and their families. Additionally, LCDR Olson led the development of the methodology used by the CRWG to integrate data from multiple sources to assess the impacts of repeal on military effectiveness, military readiness, unit cohesion, recruiting, retention, and family readiness and develop appropriate mitigation strategies. She also served as a contributing author and editor on the final report to the Secretary of Defense.

“Being a part of the Comprehensive Review Working Group was an incredible experience,” said Olson. “We were tasked with a challenging and emotionally-charged mission. It was extremely fulfilling to help our Department of Defense leadership, Service members, and their families work through some very complex issues to develop a clear way forward. I am extremely proud of the work we accomplished.”

IN MEMORIAM

A Final Farewell to our Shipmates

Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar,
When I put out to sea,

But such a tide as moving seems asleep,
Too full for sound and foam,
When that which drew from out the bound-
less deepturns again home.

Twilight and evening bell,
And after that the dark!
And may there be no sadness of farewell,
When I embark;

For tho' from out our bourne of time and place
The flood may bear me far,
I hope to see my Pilot face to face
When I have crost the bar.

Alfred Lord Tennyson

CDR (ret) Norman Lane, AEP #19 written by shipmate LCDR (ret) Jim Johnson, AEP #9. In 1963, Norman “Norm” E. Lane reported as a new ensign to the psychology lab in the new U.S. Naval School of Aviation Medicine (SCHAVMED) building in Pensacola, Florida. Norm was a native Floridian who had recently received a master’s degree in experimental psychology from the University of Florida under the tutelage of a former AEP, Marshall Bush Jones, who, coincidentally, had also been stationed at SCHAVMED as a Lieutenant Junior Grade in the early 1950s. Norm selected The Ohio State University to pursue a Ph.D. in experimental psychology and statistics working with the esteemed statistician, Dr. Robert J. Wherry, Sr. Interestingly, several other AEPs also gravitated to OSU in the 1960s - Robert J. Wherry, Jr., Charles W. Hutchins, John C. Ferguson (and his wife Joann), and James H. Ashburn. Norm formed strong and lasting friendships with his OSU colleagues.

Rachel Gadolin in Pensacola had the foresight and fortitude to produce an AEP Library file before she retired from civil service (thanks for sharing Rae). A search of that file revealed that while Norm was in the Navy, he published over 60 papers before he was transferred to research administration and contract management billets. Most of his early publications focused on statistical analysis,

prediction of flight performance, and safety. After retiring from the Navy, Norm worked for the Essex Corporation for about 15 years. Among his unrivaled accomplishments were papers on “Human Performance Assessment” and “Evaluation of Military Training Systems.” He also did a large sample (N=1600) factor analysis of simulator sickness symptoms still in use (thanks to Robert S. Kennedy, AEP #10 for this information).

While Norm was having his open-heart bypass surgery at the National Naval Medical Center in Bethesda, his wife Cora stayed with us, so we got to know Norm even better. For example, we learned that Norm trained the cardiology staff on how to calculate the probabilities of his survival in terms of which arteries were blocked. The odds were in his favor – the surgery was successful and Norm was medically retired from the Navy as a Commander.

When one thinks of Norm, Cora immediately springs to mind because they went together like hand and glove. When I heard of Norm’s passing, my immediate reaction was “what a tragedy for the family and extended family, following so closely on Cora’s untimely passing.” Although we knew Norm had been in poor health for some time, my wife Lala’s reaction was “Norm died of a broken heart.” Norm and Cora are together again, and we will truly miss them both.

CDR (ret) Michael Pianka, AEP #62 written by shipmate CAPT (ret) Dennis McBride, AEP #72. “In the swirling mists of the early gray light of the pre-dawn, the band lay concealed in the tall grasses wet with the morning dew, waiting for the day to be kissed by the warmth and light of the rising sun. Patiently they held their positions, soundless... As the slowly reddening sky cut through the gloom of the gray morning, their objective loomed... paces in front of them.” Iron Mike Pianka wrote this in March of 1999 to introduce an article on human exploitation of physical acceleration in warfare. His scenario unintentionally described one that he encountered in March of 1982 at a professional conference in Pensacola. There, the warriors were his audience - professionals, soundless, but in position and eager to be heard. They were ready for his lecture on the mathematics of human factors and aviation system safety. But this was not his day. Michael uncharacteristically got lost. Dr. Pianka searched for his words, but they didn’t come. Soundless for minutes, the workup to nothing began to feel like an hour. Armed with a clear opening, the warriors, led by AEPs and civilian reinforcements pounced. The great lecturer had been knocked out without issuing a word.

The immediate, unscheduled break gave LCDR Pianka time to regroup. The jubilant warriors reconstituted and prepared for more. But an hour later, the war paint was off. The audience had been lectured by a master teacher. Iron Mike made an incredible comeback. His brilliant lecture turned a band of 38 self-absorbed turncoats into a classroom of one. It was the kind of rally that we came to expect from this mentor.

Michael Pianka earned his Navy wings of gold at NAS Kingsville, Texas, via the NavCad program in 1962. Assigned to the jet pipeline, Mike flew the FJ and F8, fighters that many still consider “real CV fighters.” Tours at VF 124 Miramar, NAS Glynco, and VC 1 at Barber’s Point followed. But the aircraft types that Mike flew were already transitional as were his squadrons. VF 124 was the training unit for fighters, but it was also the transition team for newer “Mach eaters” like the Tomcat. VC 1,

a composite squadron, provided Mike with an incomparable opportunity to learn and help develop Naval tactics. It also convinced Mike that too often, the limiting factors in Naval chains of physics were clearly the human organism. For his insatiably curious mind, the problem was not merely acceleration forces as they impinged on hemo columns of heart to head; it was the saturation of data that wound up not being information.

So, LT Pianka set off to Arizona to pursue his Ph.D. in psychology. He learned and contributed vastly to our growing body of academic knowledge within the area of human factors. He had learned of a program in the Navy called Aerospace Experimental Psychology and by 1977, he and Dianne were off to active duty and matriculation in Pensacola. He earned his second set of Navy gold wings - ours. Mike admired and humbly respected the biological nature of the human, especially the human who struggles with managing not only his aircraft, but the vital components of any complex, ever adapting, and often adversarial system. To Iron Mike, the biology was not only a potential limit. Understanding it and exploiting it could actually work to our advantage. If we could just conquer the biology, it wouldn’t conquer us.

Michael gave us tours at the Naval Safety Center, Naval Air Test Center, the Naval Aerospace Medical Institute, and the evolving Naval Air Development Center. His strategy as a professional AEP was arguably the “epitome” of our strategy - that of aggressively but stealthily rotating the swivel chair from aviator to scientist and back. The contributions he made were clear and many. Iron Mike brought customer-focused discipline and academic rigor to every assignment he was hand-picked to lead. Actually, Mike never managed projects or programs. He was not a manager; he was a leader. Mike led the transformation of safety, from a tour available in the life of an AEP to a frontier opportunity for our community. He helped transform systems engineering at the Naval Air Test Center to a human-centered systems engineering of flight test and led the restoration of scholarly confidence in aviation selection instruments during a

time when leadership in this controversial field was itself instrumental. Pushing back the sentiments of well-conceived BRAC formulae, Iron Mike stealthily managed more than his part in the transformation of the aviation warfare complex, including the legacy of the world's most capable man-rated centrifuge, into a Pax-logical whole for our community. Through it all, our player-coach had plenty of opportunity to make professional enemies, and no doubt he did. But honestly, we seem to find only his friends, students, and admirers. He picked his fights, and we won.

It is hard not to remember the more human sides of Iron. A couple of examples are worth mentioning, primarily because these would get under his skin. For example, as the target of high-risk, elevation-managed espionage from curious AEPs, Mike provided lasting pictures of himself that a few of us might rather forget - like images he leaves... behind...of his bubble bath in Monterey, or in pajamas on the hotel lawn at 0300 during that awful fire drill in Rochester, or the peer over the seemingly premature reading glasses in Pensacola, that, as he assured us, were unpretentiously appropriate for a 50-year old - even though in those days, 50 was the new 30.

It's funny how call signs go. There are doubtless many Iron Mikes. Most were grenade heroes and doubtless each is worthy of the nickname. But our Iron Mike was all about the calculating, nauti-

cal one - the seagoing, gyrocompass - original Iron Mike. Our fighter pilot became an AEP navigator. CDR Pianka was deeply concerned about the Navy, Naval aviation science, and in particular, about the directions that our corps was taking...or not. From his keyboard and from Thomas Hobbes: "All men (are) equals because no one (is) so superior in strength or intelligence that he could not be overcome by stealth, or the conspiracy of others." Mike whispered to us as a corps, "go pick your fights," but he screamed, "fight dammit!" We'd better be true ears for Iron Mike was true north.

Senior officer, aviator, scientist, friend, teammate. There is no love like that of a father for his daughter, but Laura's daddy loved his extended family too, and he loved being a mentor in so many ways for so many of us. In another plane, from another altitude, Michael admired Darwin's view of grandeur: 'that whilst the planet goes on according to the fixed law of gravity, there is war in nature.' Talking with Mike, as this past winter turned to spring, it was clear that the Iron was still in the Mike, and that medicine knew true north. There was a path ahead for another Pianka comeback, a last passionate rally, against a deadly but indifferent disease of nature. This was a foe that lay concealed in the tall grasses, and Mike lay waiting for the warmth and light of the rising sun. If we could just conquer the biology, it wouldn't conquer us.





Calendar: Mark These Dates Down!

August 4-7, 2011

119th Annual Meeting of the American Psychological Association in Washington DC

September 19-23, 2011

55th Annual Meeting of the Human Factors and Ergonomics Society Annual Meeting at the Red Rock Hotel and Resort in Las Vegas, NV

October 25-28, 2011

64th Bi-annual Meeting of the Department of Defense Human Factors Engineering Technical Advisory Group in San Jose, CA.

November 3-6, 2011

53rd Annual Meeting of the Psychonomic Society in Seattle, WA.

November 6-9, 2011

117th Annual Meeting of the Association of Military Surgeons (AMSUS) in San Antonio, TX.

Congratulations!

The USN AEP Society would like to extend its congratulations to LCDR Will Wells on the successful defense of his dissertation. LCDR Wells will soon be reporting to NAMRU - Dayton to practice his newly acquired skills. Bravo zulu Dr. Wells!

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