NPS Welcomes New Chief of Staff

by Kenneth A. Stewart

NPS welcomed incoming Chief of Staff, Capt. Anthony Parisi, July 17. Parisi brings a wealth of experience at sea, as well as graduate education at both NPS and the Naval War College to his new position at the university.

“I have to admit that when I was here as a student, I thought this was the most wonderful place in the world,” said Parisi. “I had just come off four and a half years of arduous sea duty and they told me that my job here was to learn, just to learn.”

Throughout his naval career, Parisi has spent a lot of time at sea. He completed several deployments to the Mediterranean, Black, Adriatic and North Red Seas. He also participated in several shorter deployments to Northern Europe, the Eastern Pacific, Arabian Gulf and South America. But he is perhaps most proud of the time he spent commanding Afloat Training Group Mayport, the USS Sullivans (DDG 68) and the USS Zephyr (PC 8). But it was his numerous trips ashore as a “quasi-diplomat” that inspired him to pursue an interest that coincided directly with his NPS education in national security affairs.

“We have to make the education here the best that it can be, so that people can carry the torch down the road.”

— Chief of Staff Capt. Anthony Parisi

“I decided to go into the defense attaché business, which brought me to Rome, Italy where I was the senior defense official and naval attaché for three years,” said Parisi. “It was an incredibly eye-opening job where I can say that I directly used my NPS education and put it to practical use in the field.”

Parisi claims that he never stopped applying the lessons he learned as a young officer at NPS. He is excited to be back on campus, and to have the opportunity to be intellectually challenged once again.

“When you are working with hundreds of people who have PhDs, some of whom are literally rocket scientists and physicists, you are going to grow. You are going to be challenged. I wouldn’t be happy if I wasn’t being challenged every day,” said Parisi. “I never stopped doing the research I started as a student here in the Department of National Security Affairs ... We have to make the education here the best that it can be, so that people can carry the torch down the road.”
McChrystal Shares Legacy During Unique SGL

By Kenneth A. Stewart

Since retiring from the military retired Army Gen. Stanley A. McChrystal has been writing books, teaching leadership at Yale University, and calling for greater citizen engagement through the Franklin Project. He recently shared lessons learned from his storied military career with NPS students, faculty and staff during a scheduled Secretary of the Navy Guest Lecture in King Auditorium, July 14.

McChrystal learned early on in his career to think independently, and throughout his career, the advantages of doing so were re-enforced. In Western Iraq, McChrystal was charged with defeating Sadaam Hussein’s SCUD missiles.

“We studied the system and tried to go after the SCUDs. We weren’t hugely successful, we suppressed more than we destroyed, but it was very instructional for me,” McChrystal explained.

The SCUD operation would lead McChrystal to adopt a systems approach to military tactics that would surface again at later dates in both Afghanistan and Iraq.

“I was put in command of Joint Special Operations Command (JSOC) in October of 2003 and went over to Iraq. [But] there was a group of people who said the war is over, JSOC should come home,” McChrystal said, but he disagreed with that sentiment.

“I toured all of the bases and was literally floored … We were just not organized to accomplish the scope of what we were trying to do,” he said. “We were not focused. We were doing these short tours with good people and good intentions, but not the right people, at the right time, with the right level of seriousness.

“I said, ‘this is going to get ugly and it’s going to be a long fight.’ I felt that I could see where this was going … I came to the conclusion that we were going to have to take a very different approach,” he continued.

McChrystal again found himself following a systemic approach to strategy.

“We were doing the best we could, going out at night and hitting targets, but the war kept getting worse,” he said. “The first thing that we had to do to was to create a consensus amongst the leaders to change and to galvanize ourselves to understand that we as a group had to figure out what we were going to do.”

Change would come … He and members of his leadership team were able to get units, operating largely independently due to technological shortcomings and isolation, to come together forming a single network that could face an enemy as a unified force.

McChrystal eventually came to the conclusion that he was not fighting a hierarchy, but rather a largely flat network that shared information, propaganda and other sources of information immediately over commercial networks. He witnessed this agile enemy react to what their peers were doing on an immediate scale, leveraging the expertise of others outside Iraq.

Once that realization was made, McChrystal said, he and his forces were able to counter it, and he would later draw upon those lessons learned while leading a 45-nation coalition in Afghanistan.

In Afghanistan, as in Iraq, McChrystal faced a local population that was frustrated and had lost confidence in both the coalition and in its own government. To complicate matters further, coalition allies became restless upon realizing that they had committed to something far more volatile than peacekeeping.

“We had a crisis in confidence … When people are unconfident they hedge their bets,” he said.

McChrystal discusses many of his ideas in his latest book, “Team of Teams: New Rules of Engagement for a Complex World” in which he calls for a radical re-design of organizations.

“You cannot just empower people to go down and execute unless you empower them with an unprecedented level of information, what we call ‘shared consciousness.’ It’s transparency at a level that gives people a contextual understanding,” explained McChrystal.

Before answering questions directly from the NPS student audience, McChrystal touched on the importance of human capital and empathy, arguing that it is critically important to know people and to understand the background and information that they are relying upon to make decisions.

“The moment you think ‘they just don’t get it,’ you are in trouble,” he said.
Portal Provides Tools, Promises Rest

By Kenneth A. Stewart

Associate Professor Nita Shattuck’s long struggle to improve the amount and quality of Sailor rest at sea has led to the creation of a new online portal.

Focused on “Crew Endurance,” the website offers Navy leaders a variety of tools that Shattuck hopes will be used to improve the sleep and operational effectiveness of deployed Sailors, and others, around the world.

The portal features everything from empirical data touting the importance of crew rest, to sample watch schedules and instructions on how to implement them. It even offers online assessment tools designed to help individual Sailors to gauge their level of fatigue.

“Our goal is to expand the website to be able to create schedules based upon individual requirements at different organizations.

“There is not one watchbill that fits all, the watch schedule must be adapted to individual crew needs,” explained Shattuck.

“The website is a one-stop resource for personnel to receive tools and information on how to implement feasible watch standing schedules,” added long-time Shattuck team member Jane Barreto.

For more than 15 years, Shattuck and an ever-growing team of current and former NPS students have worked to counter a pervasive culture that champions hard work but tends to view sleep as a luxury.

Shattuck and her students’ work is based on the notion that adequate sleep is essential for peak performance.

“When you take people to the ragged edge of fatigue, you have health and emotional consequences,” said Shattuck.

Shattuck also noted that sleep deprivation can lead to a multitude of other problems that may include increased risk taking, poor communication skills, and even impairments in moral judgment.

“We want to help decision-makers balance cost, performance and risk. They need to understand the implications of how their decisions affect the warfighters,” she stressed.

USS Nimitz (CVN68) Commanding Officer (CO) Capt. John Ring is one of the first COs to implement Shattuck’s watchbills.

“We discovered we had a problem with Sailors getting insufficient sleep, so we holistically looked at all aspects of a Sailor’s day. My predecessor had worked with Dr. Shattuck in the past. Bringing her on was part of our initial holistic self-assessment. It wasn’t a hard sell to try her approach,” said Ring.

That was due in part to Ring’s ability to show the benefits of change without simply ordering his subordinates to comply. It was important to him to ensure that his Sailors understood that what was being done was for their benefit, and that changes to the watchbill were not merely a ‘command decision.’

Sailors, like these at the helm of the USS Nimitz (CVN68), may benefit from an online portal that seeks to improve the quality of Sailor rest. (Courtesy photo)

“This was an opportunity to improve both quality of life for the crew, and productivity on the ship,” said Ring. “It was really a no-brainer in the end. The challenge going forward is to prove we can sustain this watchbill in a more dynamic environment.

“We have data from response studies that show scientifically that the crew was more alert and responsive. I spoke to Sailors after we implemented the 3/9 [watch-bill schedule] who said they would ‘aggressively pursue’ their work lists with a three-hour watch. These same folks admitted that they would sometimes put off work on a longer watch, believing they would have time to get to it later, but in the end did not accomplish that work,” Ring continued.

Shattuck will be introducing her portal at an upcoming “Restrictive Effects of Sleep” workshop sponsored by the Office of Naval Research and the office of the Assistant Secretary of Defense for Research and Engineering. Participants will be looking specifically at the level of fatigue that service members are being exposed to and the overall affects of sleep deprivation on Sailor productivity and mission efficiency.

Have a story to share? Public Affairs is constantly seeking interesting news and stories for Update NPS. Send your tips to pao@nps.edu.
NPS Professors Awarded Satellite Tech Patents
By Kenneth A. Stewart

Professor Mike Ross and Research Associate Professor Mark Karpenko, both with NPS’ Department of Mechanical and Aerospace Engineering, together with post-doctoral researcher Donghun Lee, recently received a patent for their invention, “Method and Apparatus for Contingency Guidance of a CMG-actuated Spacecraft.”

Control Momentum Gyroscopes (CMGs) are used to maneuver satellites through space. Karpenko, Ross and Lee’s invention provides a new approach for attitude control of CMG-equipped spacecraft.

“Although this patent only bears the names of a few of us, because of the rules of patent ownership, it is part of a culmination of ideas that we initiated over a decade ago. Associate Professor Fariba Fahroo and Professor Wei Kang from the Department of Applied Mathematics both contributed to the mathematical development of our pseudospectral optimal control theory [which the patent utilizes] as did many students from the space systems engineering curriculum,” said Ross.

“What everyone does when trying to get somewhere quickly is to make a straight line to where they want to go. We figured out that using the physics of the satellite we may be able to maneuver more quickly by following a different curved path,” Karpenko explained. “We have developed algorithms that help us enhance the performance of critical systems leading to more efficient mission fulfillment.”

The team’s latest patent builds upon previous work, which led to a 2014 patent for Karpenko and Ross. That patent was for the invention of a process used to implement the fast attitude maneuvers for spacecraft using CMGs. Together, the two patents are designed to efficiently maneuver satellites even if one of a satellite’s four CMGs fails, while avoiding potential “singularities.”

“A singularity occurs when you have two equal but opposite torques being applied to the spacecraft at the same time. The net result is you get zero motion of the satellite,” explained Karpenko. “If one CMG fails, you still have three, the minimum needed for the satellite to maneuver. But without the full contingent of four CMGs, you increase the possibility of encountering a singularity.”

When a CMG failure occurs the typical recourse is to modify the spacecraft’s control system or in-flight software to avoid the singularity problem. This can be both costly and time consuming.

“But the patent allows us to operate the failed satellite without rewriting software. Instead of following the A to B straight-line path, we write a new route, off of the straight-line course, that allows us to get where we need to be while avoiding singularities.

“Because we are simply changing the path, we are able to use the new contingent maneuvers without having to conduct a software rewrite … We effectively establish a set of way-points that the satellite can follow using its existing control logic … We can save money on the software update, but also in instances where software update is not possible, it may allow us to continue to use the satellite,” said Karpenko.

Leadership Gets to Know NPS’ Summer STEM Interns
By MC1 Lewis Hunsaker

There are nearly 100 Science, Technology, Engineering and Mathematics (STEM) interns on campus this summer, and NPS President retired Vice Adm. Ronald A. Route and Provost Dr. Douglas A. Hensler recently held an informal gathering to get to know some of the budding scientists.

“It’s clear to me that this is a special program,” said Route. “These are exceptional opportunities, and we are very pleased to be able to offer them to these exceptional young men and women.”

During the meeting, Route and Hensler talked about their varied career paths in the military and civilian sectors, leading them to their current roles at the university. They emphasized the importance of building personal and professional networks, maintaining a priority on community service, and facing challenges head on.

“When I went back to get my MBA, the courses that challenged me were the softer, non-scientific courses,” said Hensler. “The science courses were easy, but that was because of the engineering training and background that I had.”

Hensler also noted that students with educational backgrounds focused in the STEM disciplines are more likely to enjoy future job security. Previous studies at NPS have shown a direct link between the early introduction of STEM subjects and future job success among at risk local youth.
Heisman Winner Talks Mental Illness

By MC2 Shawn J. Stewart

Retired National Football League (NFL) player and Heisman Trophy Winner Herschel Walker addressed service members from throughout the Monterey Peninsula at the General Stilwell Community Center, July 15. Walker spoke about his struggles with dissociative identity disorder and encouraged service members struggling with mental illness to get the help they deserve.

“There is no shame in our service members asking for help [due to mental illness], because above all, they are warriors who put this country first and they are afforded the right to get better,” said Walker.

Walker also spoke at length about the courage it took to seek treatment for his mental illness. “When I got out of this hospital, some of my closest friends thought I was a vampire … It was scary to them that I went to a mental health hospital. They thought I had a disease. But I didn’t care, because I’d seen the light and now I feel better,” said Walker.

Walker nearly joined the military prior to playing professional football. Unable to decide between the Marine Corps and the NFL, he relegated his decision to a coin toss. The NFL won, but Walker remains a staunch supporter of the military.

“You give me the privilege to do what I do,” said Walker. “A lot of people in the civilian world don’t realize that the reason this country is where it is … is because we have the best military the world has ever known.”

“Heisman Trophy Winner Herschel Walker speaks to service members at the General Stilwell Community Center, July 15. (U.S. Navy photo by MC2 Shawn J. Stewart)
By MC2 Shawn J. Stewart


“I was inspired by the Berlin Airlift of 1948. It was an all-volunteer team comprised of military personnel who just wanted to help. They airdropped tons of food and medicines to those in need,” said Jacobsen.

Jacobsen traveled to South West Turkey in March of 2014 on a research trip. There, he came face-to-face with the human side of the ongoing Syrian conflict.

“I kept hearing people ask why aren’t the Americans helping us,” he said. “I decided to do something about it.”

According to Jacobsen, the Syrian government’s Integrated Air Defense System (IADS) precludes manned flights into the area. But he and several colleagues discovered a novel way to get aid into the hands of the needy.

“My team and I decided to launch a pilot program researching the use of UAVs to deliver water, medicine and other supplies into war torn areas of Syria and disaster areas of the world,” said Jacobsen.

“An estimated 240,000 people are in need of food and medical attention in Syria, with millions more who are inaccessible due to war conditions.”

CRUSER Director Dr. Ray Buettner thinks that Jacobsen is part of a growing trend that is poised to increase over time.

“Mark and his team represent a growing phenomenon, that of non-profit groups seeking to use small UAS [drones] for humanitarian assistance,” said Buettner. “Naval forces may run into similar groups as they carry out HADR [Humanitarian Assistance and Disaster Relief] operations around the world. It is both relevant and important for the CRUSER community to be aware of these groups, their motivations and their technologies.”

CRUSER’s Colloquium is one of NPS’ primary venues for exploring developments in unmanned systems like Jacobsen’s, and others.

“I think it is important that the naval warrior remain connected to the broader community with regards to the development of technologies and their applications. Both cyberspace and robotics will have a far greater impact on the world than simply what is represented by their military applications.

“If the naval enterprise is to stay at the leading edge, we need to make sure that we stay abreast of the non-military developments and the drivers of those developments,” said Buettner.

Focus On ... Protocol
A Monthly Look at Names and Faces on Campus

Protocol Officer Lt. Kelly Wilson is a new arrival at NPS. She recently returned from back to back sea tours in Norfolk, Virginia on the USS Gonzalez (DDG 66) and USS Laboon (DDG 58).

“My role here is helping our guests see the amazing things NPS has to offer. Done correctly, my job here is transparent. I just help to facilitate our visitors’ experience of the campus, its programs and its unparalleled student diversity,” said Wilson.

Wilson often speaks about the value of diversity and the many other things that make NPS valuable to visiting guests.

“The variety of the places and backgrounds that students come from may not appear to be the primary benefit of NPS,” added Wilson. “But anything you can see and do that is outside your realm of expertise is an opportunity to grow.”

Wilson is eager to return to sea, equipped with everything NPS has to offer, where she is looking forward to being able to help junior officers as they begin to embark upon the start of their careers.

“I’m looking forward to ultimately getting back to sea,” said Wilson. “I started at the bottom. But when I get back, I’ll be a department head.

“I’ll have seen some different perspectives and I’m hoping to give something back to officers that are now where I once was,” she added.
Any Day at NPS...

The President’s Student Council (PSC) has three main pillars: Student Outreach, Community Leadership, and Community Outreach.

Student Outreach takes many forms, one area in particular is quality of life on campus. While each school here at NPS has its own requirements and desires, PSC aims to get involved where there may be a benefit to all students and faculty.

One of the initiatives that the PSC is currently undertaking is an effort to bring water bottle filling stations to multiple locations around campus. We will be offering filtered, rapid fill dispensers like the one found in the gym. There is still work to be done regarding funding and installation, but the PSC will continue to press forward.

During July, Community Leadership was essentially on hold while high school students were on summer break. But, with the local schools coming back into session this month, the PSC is excited to kick off its community engagement programs by leading physical training sessions for Monterey High school JROTC on Fridays and holding open forum leadership discussions during leadership and ethics classes offered at local high schools.

The PSC is also currently supporting the local community via promotion for the Feds Feed Families Food Drive coordinated by Naval Support Activity Monterey Religious Ministries. There are drop off points for non-perishables at multiple locations on campus (library, NEX, Chapel). Please consider donating to support the local community.
The mission of the Naval Postgraduate School is to provide relevant and unique advanced education and research programs to increase the combat effectiveness of commissioned officers of the Naval Service to enhance the security of the United States. In support of the foregoing, and to sustain academic excellence, foster and encourage a program of relevant and meritorious research which both supports the needs of Navy and Department of Defense while building the intellectual capital of Naval Postgraduate School faculty.

**Historical Highlights**

Professor John Arquilla and retired Army Gen. Stanley A. McChrystal adapted the format of the Secretary of the Navy Guest Lecture program last month to provide a lively, insightful conversation before a packed King Hall audience. In his introductory remarks, Arquilla placed McChrystal in the same league as Generals George Patton and Dwight Eisenhower and the interview approach showcased the retired general’s agile, brilliant mind.

This SGL continued a tradition established by the Navy from the very beginning of NPS. Admiral George Melville was the inaugural guest lecturer in 1909, when the early school was in its first year of operations. Melville, a naval hero noted for both his engineering prowess and heroism, had been a staunch, tireless advocate for establishment of the postgraduate education program during his term as chief of the Bureau of Steam Engineering from 1887-1903. He had been awarded a Congressional Gold Medal after surviving the ill-fated 1879 Bering Strait expedition aboard the USS Jeannette. Other early lecturers included noted inventors such as Dr. Rudolf Diesel, who spoke on the development of his diesel engines.

Historical Highlights are provided by the Dudley Knox Library.