

Weekly Media Report - May 4-10, 2021

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RESEARCH:

1. Annual NRWG Connects NPS Researchers to Fleet Sponsors, Warfighter Challenges

(Navy.mil 3 May 21) ... Mass Communication Specialist 2nd Class Tom Tonthat (NPS.edu 3 May 21) ... Mass Communication Specialist 2nd Class Tom Tonthat

The Naval Research Program (NRP) at the Naval Postgraduate School (NPS) held its annual Naval Research Working Group (NRWG) event virtually, April 20-22, providing a forum for Department of Defense (DOD) organizations to be research topic sponsors, communicating their operational challenges and recommending research topics to NPS faculty and students.

2. NPS Student Invents, Patents Durable Uniform Nametags

(Navy.mil 3 May 21) ... Javier Chagoya (NPS.edu 3 May 21) ... Javier Chagoya (Ethical Editor 5 May 21) ... Javier Chagoya (EurekAlert! 6 May 21) ... Javier Chagoya (Techxplore 6 May 21) ... Javier Chagoya

Using his own time and resources, Naval Postgraduate School (NPS) Space Systems Engineering student Lt. Mitchell Kempisty ventured into unchartered waters to bring an invention of his making through the patent process, an invention which he hopes will improve Navy uniform fabric nametag durability.

3. NPS, NASA Team Up on "Astrobatics" Project to Advance Spacecraft Robotics

(Navy.mil 4 May 21) ... Mass Communication Specialist 3rd Class Leonard Weston (NPS.edu 4 May 21) ... Mass Communication Specialist 3rd Class Leonard Weston (EurekAlert! 5 May 21) ... Mass Communication Specialist 3rd Class Leonard Weston

On March 17, Naval Postgraduate School (NPS) students and researchers in the NPS Spacecraft Robotics Laboratory, working with NASA and the International Space Station research team, including astronauts Dr. Shannon Walker and U.S. Navy Cmdr. Victor Glover, an NPS alumnus, conducted the first of five experiments in the NPS "Astrobatics" project.

4. Global Underwater Autonomous Vehicle (AUV) Market Size by Production, Top Countries Import-Export and Consumption Forecast & Regional Analysis by 2027

(Jumbo News 6 May 21) ... Sambit (Internet Shots 8 May 21)

Underwater autonomous underwater vehicle is a kind of underwater unmanned vehicle. As the function of underwater autonomous underwater vehicle is further strengthened, its corresponding application is also popularized from the original military field to the civilian field. According to the survey, the global market size of autonomous underwater vehicle (uuv) increased by 11% year-on-year in 2018. Production reached 149 units, up 4% year on year. The research on intelligent underwater robots, which is expected to reach the compound growth rate of China in the next five years, started late but developed rapidly. In recent years, some companies have launched small models and put them into use. For example Deep in far and so on. More than 250 autonomous underwater vehicles are expected













to enter service over the next five years. In autonomous underwater robot technology research, the United States, Canada, the United Kingdom, France, Germany, Italy, Russia, Japan and other countries in the leading position. Among them, the most famous research institutes are Sea Grant's AUV Laboratory of Massachusetts institute of technology (MIT), intelligent Underwater vehicle research center of **Naval Postgraduate School** (us), and Underwater Robotics Application Laboratory (URA) of university of Tokyo (Japan).

5. Reducing Response Time

(Security Today 10 May 21) ... Christian Conners

Some of the greatest challenges to campus security include the monitoring of multiple buildings and gathering areas, coupled with tracking the frequent comings and goings of students, staff and visitors through many open access points throughout the campus. When you add an active shooter incident into the mix, knowing exactly where the incident is happening in real time is critical, so first responders can rapidly mitigate the threat and building occupants can quickly get to safety... With these systems in place, where does this leave 911? One of the earliest and most comprehensive studies on active shooter incidents was a 2012 **Naval Postgraduate School** study which found that relying on 911 notification is an inadequate strategy to reduce response time in an active shooting incident, and that instead, a "Victim Initiated Mitigation System" is the most effective means of reducing casualties.

6. Confirmation week for three Pentagon picks

(Politico 10 May 21) ... Bryan Bender

QUICK FIX

- A trio of Pentagon nominees face senators this week.
- More blood is shed in Afghanistan as the Taliban makes gains and foreign troops head for the exits.
- A new think tank report says the aerospace industry is "falling short" in designing defense systems to withstand cyber attacks... And the **Naval Postgraduate School** kicks off its virtual three-day Acquisition Research Symposium, featuring the acting assistant secretary of the Navy and director of the Missile Defense Agency.

FACULTY:

7. People of ACM - Michael Zyda

(ACM 4 May 21)

Why is this an exciting time to be in the computer science games field?

Progress in computing technology in several key areas is pushing games to be the supreme form of modern entertainment, surpassing revenues of the legacy film industry by a factor of 5. Computer graphics lighting and shading, animations generated by machine learning systems creating deep fakes of entertainment stars, and the reinvention of our processor hardware are all leading the games industry toward a bright games future. All of this technology comes from computer scientists and computer engineers... In 1984 when I arrived at the **Naval Postgraduate School**, most of the computer graphics world of SIGGRAPH seemed to be working on photorealistic rendering, with a few groups working on computer graphics hardware. The photorealistic rendering people were quoting something like seven days to compute one frame of film. I am not that patient. I felt that my focus ought to be on what could be done in real-time 3D graphics instead, so I purchased a Silicon Graphics IRIS-1400 workstation, which could draw some 500 triangles per frame without a z-buffer for hidden surface elimination. My students and I started experimenting with the SGI machine and its later models, and we started building what we called "3D visual simulation" at the time.

8. Turkish state-mafia allegations revive memories of Susurluk scandal

(Ahval News 10 May 21)

A series of tell-all videos by a convicted Turkish mob boss has sparked rumours that Turkey's government may be collaborating with the mafia more closely than previously known... **Dr. Ryan Gingeras, an expert on Turkish organised crime at the Naval Postgraduate School** (NPS) in Monterrey, California, cautions that Peker's claims should be taken with "more than a pinch of salt". Instead, he suggests Peker, who claims to have abandoned organised crime and is today a legitimate businessman, may be trying to distract attention away from his own activities.













9. How Iranian deep state failed President Hassan Rouhani

(Global Village Space 10 May 21) ... Ali Naqvi

With the 2021 elections nearing, the deep state in Iran is increasing its dominance in politics. Its goal is to protect Iran's Shia identity by influencing foreign policies. However, President Rouhani, since coming to office in 2013, has tried to curtail the influence of the deep state... According to historian **Ryan Gingeras, professor at Naval Postgraduate School** and Ottoman historian, the deep state is "a kind of shadow or parallel system of government in which unofficial or publicly unacknowledged individuals play important role in defining and implementing state policy."

ALUMNI:

10. NASA's SpaceX Crew-1 Astronauts to Answer Questions after Return to Earth (NASA 3 May 21)

NASA's SpaceX Crew-1 astronauts will answer questions at 3:45 p.m. EDT Thursday, May 6, about their historic mission on the International Space Station and return to Earth. The news conference will air live on NASA Television, the NASA app, and the agency's website... Victor Glover was the pilot of the Crew Dragon spacecraft and second-in-command for the mission. Glover was responsible for spacecraft systems and performance. Selected as an astronaut in 2013, this was his first spaceflight, during which he conducted four spacewalks totaling 26 hours, 7 minutes. The California native holds a Bachelor of Science degree in general engineering from California Polytechnic State University, a Master of Science degree in flight test engineering and a master's degree in military operational art and science from Air University, as well as a **Master of Science degree in systems engineering from the Naval Postgraduate School**. Glover is a naval aviator and was a test pilot in the F/A-18 Hornet, Super Hornet, and EA-18G Growler aircraft.

11. "I Felt Really Heavy!" – NASA's SpaceX Crew-1 Astronauts Discuss Their Historic Mission and Return to Earth

(SciTechDaily 7 May 21)

NASA astronauts Michael Hopkins, Victor Glover, and Shannon Walker, along with Japan Aerospace Exploration Agency (JAXA) astronaut Soichi Noguchi, participated in the first media event following their mission and splashdown, where they answered questions about their historic mission on the International Space Station and return to Earth... Victor Glover was the pilot of the Crew Dragon spacecraft and second-in-command for the mission. Glover was responsible for spacecraft systems and performance. Selected as an astronaut in 2013, this was his first spaceflight, during which he conducted four spacewalks totaling 26 hours, 7 minutes. The California native holds a Bachelor of Science degree in general engineering from California Polytechnic State University, a Master of Science degree in flight test engineering and a master's degree in military operational art and science from Air University, as well as a **Master of Science degree in systems engineering from the Naval Postgraduate School**. Glover is a naval aviator and was a test pilot in the F/A-18 Hornet, Super Hornet, and EA-18G Growler aircraft.

12. <u>Clarksville-Montgomery County Economic Development Council names Buck</u> <u>Dellinger Chief Executive Officer</u>

(Clarksville Online 10 May 21)

The Clarksville-Montgomery County, Tennessee Economic Development Council (EDC) Executive Committee is pleased to announce they have received a commitment from David "Buck" Dellinger, to fill the position of Chief Executive Officer (CEO)... Prior to his work with the MDHA, Buck served our country in the United States Army from 1988 to 2017 in multiple roles to include Chief of Staff in the 101st Airborne Division at Fort Campbell, KY and Iraq from 2015 to 2017, he was the Garrison Commander for the City of Fort Campbell, KY from 2012 to 2015, he served as the Director of Strategic Plans – Special Ops Command Europe in Stuttgart, Germany from 2010 to 2012, he was a Senior Fellow at the **Naval Postgraduate School** in Monterey, CA from 2009 to 2010, and he served as a Commander (Exec Administrator) in the 101st Division Special Troops Battalion from 2006 to 2009.

13. <u>Understanding The Hold Of Islam On Maldivian Society And Politics – Analysis</u> (EurasiaReview 10 May 21) ... P.K. Balachandran

The three arrests made thus far in the case relating to the bid on the life of the Maldivian Parliament Speaker and former President Mohamed Nasheed in Male on May 6, show that Islamic radicalism is alive, kicking and deeprooted in the Maldives. According to the Commissioner of Police, Mohamed Hameed, the three suspects arrested,













Adhuham Ahmed Rasheed (25), Mujaaz Ahmed (21) and Thahumeen Ahmed (32), belong to a "dangerous extremist ideology". Hameed stopped short of identifying their ideology, but it is generally accepted that they owe allegiance to a radical Islamic group.

Though there are various causes for the resurgence of radical Islam from time to time, the basic fact is that Islam has been part and parcel and a determining factor in the Maldives from the 12 th.Century onwards. According to Hassan Amir (Islamism and Radicalism in the Maldives: **Naval Postgraduate School**, California, 2011) the conversion might have been fuelled by a desire to minimize threats from the Buddhist and Hindu rulers of Sri Lanka and India.

14. <u>Alumnus Will Werner hired to lead UMSL's National Security and Community Policy</u> Collaborative

(UMSL Daily 10 May 21) ... Steve Walentik

The University of Missouri–St. Louis' National Security and Community Policy Collaborative has a new leader... All of these issues have implications for national security – something Werner learned to define more broadly over the past two years while working on a second master's degree in security studies at the **Naval Postgraduate School** Center for Homeland Defense and Security. He completed his degree in December.

UPCOMING NEWS & EVENTS:

May 11–13: 18th Annual Acquisition Research Symposium

May 14: NPS Students' Big Idea Exchange 2021 (BIX21)

May 24-28: Joint Interagency Field Experimentation (JIFX 21-3)

May 25-28: 14th International Mine Technology Symposium (NWSI Event)













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Approximately 300 people from throughout the DOD, Navy and Marine Corps, as well as the NPS community, participated in NRWG to connect with each other for researching and developing solutions to current warfighter challenges.

"[NRWG] is about the ability to bring to the force and the fleet a remarkable aggregation of intellectual and experiential knowledge," said NPS President retired Vice Adm. Ann E. Rondeau during her keynote address. "Our research needs to be different. It needs to have that competitive edge, but also must have a collaborative core to it because we need to do these things together, not for redundancy, but for integration and the sharing of knowledge. That's what this particular NRP does, it's different than so many other research endeavors in the country. It requires and mandates collaboration with the purpose in mind of application."

NPS Senior Marine Corps Representative Col. Randy Pugh believes the NRP is tremendously important for three big reasons. The first being its ability to answer a multitude of difficult questions and provide insight about topics that the Navy and Marine Corps value over others, supporting 80 to 85 different projects per year. Next, it connects the Naval Education Enterprise (NEE), the Naval Research and Development Establishment (NRDE), the service headquarters, and brings this to the Fleet and Fleet Marine Force as a coherent team working collaboratively and collectively towards finding solutions for these challenges. Third, and most importantly to Pugh, the NPR provides NPS faculty and students with critical projects to focus on.

"[The NRP] will provide them ideas about what the problems are and how to get after the solutions," said Pugh. "This will prepare them moving forward as they go back to the Fleet and Fleet Marine Force, integrating the solutions into operations."

As representatives from DOD organizations shared research topic briefs to potentially make connections through shared research interests or goals, NPS faculty and students highlighted their capabilities through poster sessions, panels, pre-recorded lab tours, and presentations during NRWG.

For example, faculty from NPS' newly-established Climate and Security Network talked about their current projects. NPS Energy Academic Group (EAG) Research Associate Kristen Fletcher talked about the EAG's interdisciplinary effort to develop an environmental portfolio focused on climate, energy and security. During the presentation, the U.S. Coast Guard Research & Development Center (RDC) expressed interest in working with the Climate and Security Network to develop scenarios for a climate and technology focused evergreen event with the Coast Guard Headquarters.

Recently, RDC renewed a Memorandum of Understanding with NPS to conduct joint research projects and exchanges that directly support defense priorities, and Coast Guard statutory missions within the Tri-Service Maritime Strategy. According to RDC Commanding Officer Capt. Dan Keane, the Coast Guard is eager to help researchers get onboard a Coast Guard vessel or aircraft to conduct research.

"Perhaps one of our strongest and most impactful partnerships is with the Naval Postgraduate School," noted Keane. "Since an MOU was signed three years ago, the RDC has become a topic sponsor, we have proposed questions related to our portfolio that have turned into academic products, NPS researchers have worked with our researchers on summer studies and we have provided platforms for NPS experimentation. We believe that we have just scratched the surface and the future is incredibly bright. We are excited about the next five years."

Since the start of NRWG in 2013, more than 2,500 topics have been submitted through the Navy Research Program. This year's NRWG covered nearly 350 research topics.













"[NRWG] exposes our faculty and our students to real-world problems," said Deputy Program Director for the NRP U.S. Marine Corps Lt. Col. David Forbell. "It allows them to work on solving these problems, which I think enhances their education. It allows the faculty to provide a much more enriching experience in their classes when they're using real world problems.

"There are few organizations or institutions in academia that are as purely defense-focused as NPS is," continued Forbell. "When you combine our defense-focused curricula with our primarily active duty officers and enlisted students who have the requisite experience coming from operational tours, it's a powerful combination not largely replicated anywhere else."

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NPS Student Invents, Patents Durable Uniform Nametags

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Using his own time and resources, Naval Postgraduate School (NPS) Space Systems Engineering student Lt. Mitchell Kempisty ventured into unchartered waters to bring an invention of his making through the patent process, an invention which he hopes will improve Navy uniform fabric nametag durability.

Kempisty is something of an overachiever. As an NPS student, he is fully engaged in his thesis, titled "Attitude Optimization of NASA's Lunar Reconnaissance Orbiter in Sun-safe Mode in Order to Minimize Star-Tracker Obstructions from Local Orbiting Bodies."

But that's not enough for the Naval Surface Forces' 2020 Shiphandler of the Year, who says he saw an opportunity for improvement while serving on two ships where he noticed a lot of wear and tear with the name tag patches on shipboard working uniforms, especially those that use hook and loop to stick to coveralls and work shirts. Coincidentally, Kempisty's former ships were both used as Navy testbeds for the newest of flame-retardant shipboard clothing in 2019, the two-piece Type III NWU (Navy Working Uniform).

"An issue that all Navy Sailors deal with are their nametags on their coveralls, and now on the new NWU, quickly becoming disheveled and unprofessional looking," noted Kempisty. "I came up with a patentable idea that provides industrial reinforcement of the hook and loop on the patches to protect it and keep it looking professional."

The patent title is "Industrial Reinforcement for a Wearable Identification," said Kempisty, but he calls his patch backing invention uGuard.

Kempisty says his research in uniform patches follows accepted standards for creating flame retardant materials and meets or exceeds Navy requirements for accessories that attach to shipboard clothing.

The backing material for the patches are a fire-retardant carbon fiber and nylon blend with appropriate flexural rigidity that offers both wearable comfort and resilience. The backing Kempisty invented protects the soft wearable patch during extensive manual labor.

While Kempisty is a master's candidate in aeronautical engineering, he realized the best way to prototype his invention was to dive into the field of additive manufacturing. He purchased an inexpensive 3D printer and learned to use it.

"Once comfortable with 3D printer operation, I then modified almost all the components to fit my exact needs," said Kempisty. "I also learned Computer Assisted Design (CAD), using my own AutoCAD













license. Once exact specifications were determined and designed from CAD and 3D printing, I created my first set of real-life products."

Now that he had a product in hand, his next step to getting into the hands of the warfighter was a patent. For this, Kempisty turned to an attorney friend in San Francisco, who worked out a meeting with his firm's patent lawyers, who saw promise in the product and helped draft his patent application for the U.S. Patent and Trademark Office (USPTO). The move proved fortuitous for Kempisty, saving him time and money in what could have been a lengthy and expensive process to receive a patent.

With a patent number for his product in hand, Kempisty pushed ahead into another unfamiliar realm of the process: mass production and manufacturing. Luckily, Kempisty not only found a manufacturer for his durable and fire-retardant patches, he found one willing to guide him through the mass production process.

"The president of the company was very understanding of the fact that I have never done anything like this before and guided me in the negotiation and setup of producing a full manufacturing line for the product," said Kempisty. "I am also proud to say that this product is fully designed and manufactured in the USA.

"My ultimate goal right now is to gain an audience with the Navy Exchange Command to get the [name tags] stocked in the uniform store," he continued.

If things go well, Kempisty wants to look into expanding the product line to include protection of circular patches for pilots.

"Doing everything by myself at my home computer has forced me to learn quite a few skills and have taken up a lot of my free time, but if I can get to the finish line, it will all be worth it. It also opens the door for many more opportunities to come," added Kempisty.

As a budding entrepreneur, he started the project knowing little about additive manufacturing, the patent process, and mass production and distribution. Yet, he figured it out in his spare time as a student in the Space Systems Engineering program. In case you are wondering what Kempisty is doing during his working hours, he's fully engaged on his thesis titled "Attitude Optimization of NASA's Lunar Reconnaissance Orbiter in Sun-safe Mode in Order to Minimize Star-Tracker Obstructions from Local Orbiting Bodies."

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NPS Student Invents, Patents Durable Uniform Nametags - Naval Postgraduate School

NPS student invents, patents durable uniform nametags | EurekAlert! Science News

NPS Student Invents, Patents Durable Uniform Nametags | Ethical Editor

NPS student invents, patents durable uniform nametags (techxplore.com)

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The Astrobatics project, led by Dr. Marcello Romano, aims at developing and testing new dynamic models, and guidance and control techniques for the maneuvering of autonomous robotic spacecraft. The project utilizes the NASA "Astrobee" free-flying robotic vehicle, inside the International Space Station.

For more than a decade, robotic assistants called SPHERES (Synchronized Position Hold, Engage, Reorient, Experimental Satellites) have helped astronauts conduct experiments in areas of formation flight, docking and autonomy.











NASA's Astrobees free-flyer, designed by NASA Ames and lifted up to the ISS in 2020, brings a new iteration to these astronaut assistants. They are small, one-foot cube autonomous spacecraft that come with many improvements, including auto-docking capability, artificial vision navigation, and an on-board robotic arm.

The NPS Astrobatics project is currently supported by the NPS Alumni Association and Foundation with a seedling-level gift fund with Romano as principal investigator, and involves critical technical collaboration by NASA Ames Research Center Intelligent Robotics Group, as well as operational collaboration by the Department of Defense Space Test Program.

According to NPS Astrobatics Engineering and Operations Team Lead, Dr. Jennifer Hudson, the team is possibly the first to demonstrate how an autonomous vehicle can use a robotic arm to maneuver an orbiting space vehicle from the surface of another spacecraft. This opens the door for new orbital robotics applications.

"I think projects like ours that are helping to advance robotic capabilities in space are really contributing to this revolution in the technology that's going to enable more and more complex operations in space over the next decade – things that aren't even possible now," said Hudson. "I think we're the first ones who have demonstrated use of a robotic arm to propel a vehicle from one location to another on a spacecraft."

To conduct the first experiment, NPS researchers worked with NASA Ames to upload flight software developed by NPS students. In turn, the flight software took control of the Astrobee spacecraft, and successfully flew it performing "hopping" maneuvers by using the small robotic arm as a jumping "spring."

With the first experiment complete, the Astrobatics team has had some time to analyze the data collected, and are determining what series of experiments will be needed for their next iteration.

Dr. Stephen Kwok-Choon, NPS' Astrobatics deputy team lead, notes the experiment involved eight different self-toss maneuvers that encompassed 18 different runs. Each self-toss maneuver started with the Astrobee grasping on a handrail, then the Astrobee robotic arm was commanded to move to a final flight state, followed by releasing the arm's grip. This allowed the Astrobee to perform a launch from a handrail projecting itself into motion, explained Kwok-Choon.

"I am grateful and excited to report that overall, the experiment session was a resounding success," said Kwok-Choon." "Our experiment highlighted that both the Astrobee vehicles can be successfully utilized for different payload developers onboard the ISS. This will lead to greater flexibility and coordination for future experiments."

With the collaboration with NASA's Ames Research Center of Mountain View, California, NPS students, faculty and staff get a unique experience to work on research with space and robotics technology that astronauts on the ISS can test.

"This is special because nothing has been done like this before," said NPS student U.S. Navy Lt. James "Dillon" Summerlin. "Having a free environment using a toss maneuver to move could allow drones to reach spaces that they have never been to before."

Students not only get the chance to work with the NASA team but get to use cutting-edge technology to explore theories.

"Being able to work on these experiments in collaboration with NASA provides an excellent opportunity to expand my experience outside of my military sphere," said NPS student U.S. Navy Lt. Dan T. Watanabe. "To work with actual astronauts on the ISS is not an opportunity that comes around every day."

Hudson said one of the most exciting aspects of this project is the students' opportunity to work closely with NASA Ames on the development and utilization of the Astrobee, and on the future of spacecraft robotics.

"It's a great educational opportunity for the students in astronautical engineering," said Hudson. "This is a very nice, accessible hands-on project where the students can work on projects in the lab and then see them implemented in space in a very short time frame. We certainly look to continuing that relationship and working on other Astrobee projects in the future."













The NPS Astrobatics Team stressed that the effort would not have been possible without great support from the NASA Ames Intelligent Robotics Group, Romano noted, whose assistance has been invaluable throughout this endeavor. He added a special recognition for the "excellent work" of current and previous Astrobatics team members who have contributed to the project, and in particular to Dr. Josep Virgili-Llop, Romano added, who left the project in 2019 to become a senior flight engineer in the SpaceX Crew Dragon team.

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NPS, NASA team up on "astrobatics" project to advance spacecraft robotics | EurekAlert! Science News

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Global Underwater Autonomous Vehicle (AUV) Market Size by Production, Top Countries Import-Export and Consumption Forecast & Regional Analysis by 2027

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Market Analysis and Insights: Global Underwater Autonomous Vehicle (AUV) Market The global Underwater Autonomous Vehicle (AUV) market was valued at USD 50 million in 2019 and it is expected to reach USD 183.4 million by the end of 2026, growing at a CAGR of 20.4% during 2021-2026.

Global Underwater Autonomous Vehicle (AUV) Market: Drivers and Restrains

The research report has incorporated the analysis of different factors that augment the market's growth. It constitutes trends, restraints, and drivers that transform the market in either a positive or negative manner. This section also provides the scope of different segments and applications that can potentially influence the market in the future. The detailed information is based on current trends and historic milestones. This section also provides an analysis of the volume of production about the global market and about each type from 2016 to 2027. This section mentions the volume of production by region from 2016 to 2027. Pricing analysis is included in the report according to each type from the year 2016 to 2027, manufacturer from 2016 to 2021, region from 2016 to 2021, and global price from 2016 to 2027. A thorough evaluation of the restrains included in the report portrays the contrast to drivers and gives room for strategic planning. Factors that overshadow the market growth are pivotal as they can be understood to devise different bends for getting hold of the lucrative opportunities that are present in the ever-growing market. Additionally, insights into market expert's opinions have been taken to understand the market better.

Global Underwater Autonomous Vehicle (AUV) Market: Segment Analysis

The research report includes specific segments by region (country), by manufacturers, by Type and by Application. Each type provides information about the production during the forecast period of 2016 to 2027. by Application segment also provides consumption during the forecast period of 2016 to 2027. Understanding the segments helps in identifying the importance of different factors that aid the market growth.

Global Underwater Autonomous Vehicle (AUV) Market Size by Production, Top Countries Import-Export and Consumption Forecast & Regional Analysis by 2027 – Jumbo News

20.4% CAGR to take Global Underwater Autonomous Vehicle (AUV) Industry to Reach US\$ 183.4 million by 2026 - Internet Shots

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Reducing Response Time

(Security Today 10 May 21) ... Christian Conners

Some of the greatest challenges to campus security include the monitoring of multiple buildings and gathering areas, coupled with tracking the frequent comings and goings of students, staff and visitors through many open access points throughout the campus. When you add an active shooter incident into the mix, knowing exactly where the incident is happening in real time is critical, so first responders can rapidly mitigate the threat and building occupants can quickly get to safety.

Putting it into Practice

While this concept is well understood, putting it into practice is another story. If you are a member of campus police or a student on campus and you are in Building C and an active shooter starts firing in Building A, how do you know? When do you know? Who notifies 911 and how long does it take? How does that information get to you? Just as important, is it accurate?

In reaction to the Virginia Tech shooting in 2007, where an active shooter managed to go undetected for two and a half hours after his first two shots were fired in a dormitory and later shot 47 people he locked inside an academic hall (Panel, 2007), colleges and universities began implementing more robust mass notification systems.













Emergency kiosks, panic buttons, and "blue light boxes" became more widely deployed. These types of systems have greatly improved emergency communications on campuses, however they still require some form of human element to set them off, such as a student who presses the panic button or a security dispatcher who must compose and send the mass notification message.

With these systems in place, where does this leave 911? One of the earliest and most comprehensive studies on active shooter incidents was a 2012 **Naval Postgraduate School** study which found that relying on 911 notification is an inadequate strategy to reduce response time in an active shooting incident, and that instead, a "Victim Initiated Mitigation System" is the most effective means of reducing casualties.

Reducing Response Time -- Security Today

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Confirmation week for three Pentagon picks

(Politico 10 May 21) ... Bryan Bender

QUICK FIX

- A trio of Pentagon nominees face senators this week.
- More blood is shed in Afghanistan as the Taliban makes gains and foreign troops head for the exits.
- A new think tank report says the aerospace industry is "falling short" in designing defense systems to withstand cyber attacks.

HAPPY MONDAY AND WELCOME BACK TO MORNING DEFENSE, where we bid farewell to Sam Greenberg, 93, former national commander of the Jewish War Veterans of America, who served as a combat medic on Guadalcanal for 14 months in World War II. He was a fixture in our community for what seemed like forever — leading Boy Scout troops, teaching the neighborhood kids to ride a bike, or raising money for his fellow veterans — and a mentor we'll always be grateful for. He was also pretty cool: He drove a green Porsche 914. We're always on the lookout for tips, pitches and feedback. Email us at bbender@politico.com, and follow on Twitter @bryandbender, @morningdefense and @politicopro.

ON THE HILL

'THIS IS VERY IMPORTANT': Congress is getting more impatient with the pace at which the Air Force and the new Space Force are tackling the primary mission of the new branch in the first place: speeding up acquisition.

The latest sign was on display Friday, when Rep. Betty McCollum, chair of the Defense Appropriations Subcommittee, complained the Pentagon has still not nominated an assistant secretary of the Air Force for space for acquisition and integration, a position established in 2019, our colleague Connor O'Brien reports for Pros.

"We're only a few months into the new administration, but this is very important. ... This individual is going to be responsible for making acquisition decisions," McCollum said. "So when can we expect to see this position filled?"

Acting Air Force Secretary John Roth conceded the post has been left open for too long and should be filled "as soon as possible," but offered no timeline. "I share your concern," he said. "The position ought to be filled, probably should've been filled last year as well, but for reasons beyond our control they were not filled at the time."

The post is being filled on an acting basis by Shawn Barnes.

CONFIRMATION HEARINGS: The Senate Armed Service Committee has a pair of Pentagon confirmation hearings scheduled this week.

On Tuesday it will hear testimony from Michael McCord to be Pentagon budget chief and Ronald Moultrie to be undersecretary of defense for intelligence at 9:30 a.m.













On Thursday the panel will hold a hearing for Christine Wormuth to be secretary of the Army at 9:30 a.m.

OTHER HEARINGS: Also on the congressional calendar is a series of oversight hearings on Afghanistan, the nuclear budget and cybersecurity.

On Wednesday, the House Armed Services Committee will get an update on the war in Afghanistan from David Helvey, acting assistant secretary of defense for Indo-Pacific Affairs, and Brig. Gen. Matthew Trollinger, deputy director for politico-military affairs on the Joint Staff at 11 a.m.

The SASC will also hold a hearing on military and civilian personnel programs at 2:30 p.m. and a separate hearing on the nuclear weapons budget at 4:30 p.m.

On Thursday, the House Appropriations Committee's panel on military construction, veterans affairs and related agencies holds a hearing on "Navy and Marine Corps Quality of Life and Installations" at 10 a.m.

On Friday, the HASC Subcommittee on Cyber, Innovative Technologies, and Information Systems holds a hearing on building cyber capabilities with the head of U.S. Cyber Command at 11 a.m.

Related: Exclusive — Head of Pentagon's 'SWAT team of nerds' stepping down, via POLITICO Pro.

Plus: "DOD Needs to Establish Oversight Expectations and to Develop Tools That Enhance Accountability," via The Government Accountability Office.

HAPPENING TODAY

The Arms Control Association holds a webinar on "Reinforcing the Norm Against Chemical Weapons" at 10 a.m.

The Atlantic Council hosts a discussion with acting Army Secretary John Whitley and Chief of Staff Gen. James McConville on future warfighting priorities at 1 p.m.

And the Center for Strategic and International Studies and Johns Hopkins School of Advanced International Studies kick off their three-day forum on "The Future of National Security and Technology."

HAPPENING THIS WEEK

On Tuesday, the Ronald Reagan Foundation and Institute hosts a discussion on defense priorities with SASC Chair Sen. Jack Reed at 4 p.m.

And the **Naval Postgraduate School** kicks off its virtual three-day Acquisition Research Symposium, featuring the acting assistant secretary of the Navy and director of the Missile Defense Agency.

On Wednesday, McAleese and Associates kicks off its two-day Defense Programs Conference featuring a who's who of military and civilian leaders and members of Congress.

Check out the full agenda.

On Thursday, the Mitre Corp. holds a discussion on science and technology featuring former Defense Secretary Ash Carter at 4 p.m.

On Friday, John Hopkins holds a discussion on the future of Afghanistan with former Ambassador Doug Lute at 9 a.m.

Confirmation week for three Pentagon picks - POLITICO













FACULTY:

People of ACM - Michael Zyda

(ACM 4 May 21)

Why is this an exciting time to be in the computer science games field?

Progress in computing technology in several key areas is pushing games to be the supreme form of modern entertainment, surpassing revenues of the legacy film industry by a factor of 5. Computer graphics lighting and shading, animations generated by machine learning systems creating deep fakes of entertainment stars, and the reinvention of our processor hardware are all leading the games industry toward a bright games future. All of this technology comes from computer scientists and computer engineers.

Will you tell us a little about your virtual reality projects with NPS? What is the most surprising way this field has developed in the last few decades?

In 1984 when I arrived at the **Naval Postgraduate School**, most of the computer graphics world of SIGGRAPH seemed to be working on photorealistic rendering, with a few groups working on computer graphics hardware. The photorealistic rendering people were quoting something like seven days to compute one frame of film. I am not that patient. I felt that my focus ought to be on what could be done in real-time 3D graphics instead, so I purchased a Silicon Graphics IRIS-1400 workstation, which could draw some 500 triangles per frame without a z-buffer for hidden surface elimination. My students and I started experimenting with the SGI machine and its later models, and we started building what we called "3D visual simulation" at the time.

By 1991, we had developed the first version of NPSNET, which became our virtual environment technical ideas testbed. On December 24, 1993, we held a phone meeting with DARPA and the US Army asking if we could work with the University of Pennsylvania and Sarcos Engineering to produce a demo of a soldier in a fully instrumented bodysuit as he walked/fought inside of our networked virtual environment NPSNET by February 14, 1994. We produced a great demo of the first networked virtual environment with fully instrumented bodysuits that played across the internet.

Our work on NPSNET and a report titled "Modeling and Simulation: Linking Entertainment and Defense" led to a request by the Chief Scientist of the Army asking me if I could design a research and operating plan for the USC Institute for Creative Technology as a place where researchers could work directly on virtual environment technologies and applications of interest to the Army. That plan was developed and USC ICT has been a success since its formation in 1999.

In 1994, a head-mounted display (HMD) was about \$6,000+ for a low-resolution headset; now it's a few hundred dollars for something much higher in quality. That is the most surprising thing that has happened in the virtual environment field. Hardware technology has zoomed ahead and continues to develop. Additionally, much of the software, graphics and networking we worked on in virtual reality has become bedrock tech for the games industry.

Some have argued that, despite a great deal of media attention, corporate investments, and hopeful predictions, virtual reality hasn't really taken off. Do you agree with this assessment? What will it take for virtual reality to become fully integrated into daily life?

This most recent wave of virtual reality had lots of funding for people to produce head-mounted displays. When I was in Nanjing in December 2018, I visited a VR porting company and they had a wall of 75 different HMDs they had to support. One of the things that did not happen with this wave of VR is that there was next-to-no funding for content development, games/apps, and really no focus of making a standard for user interaction.













The lack of a VR user interaction standard made it so that almost every VR app you tried had a completely different and confusing interface. So consumers have paused on wanting to acquire VR for the home, and just the tech geeks have purchased it. Additionally, people don't want to play games where they cannot see their friends who are in the same room. An HMD is not the way to go. There are several companies that are experimenting with ways to provide a VR experience without an HMD that look interesting. One, Athanos, has been putting together an iPad-like tablet that is tracked along with a lightweight headband for head tracking that gives an experience like looking through a window into a virtual world, as Ivan Sutherland indicated in 1965. I am an advisor to Athanos.

Young people, especially teenagers, are some of the biggest consumers of computer games. How can computer games be a gateway to attract young people to the wider world of computer science?

Computer game development is a gateway for young people to enter the field of computer science. When I arrived at USC in 2005 and started designing the Computer Science Games Program, I was concerned that parents of potential applicants to our program might not want to send their children to get an education on how to build games. That thought turned out to be backward. When I met with the first groups of parents, many of them would take me aside and say, "This is a computer science games program, right? We don't want our child in a general computer science program as there are no jobs in that direction." The parents were remembering the internet crash of some five years in the past, and I had to reassure them that it was most definitely a computer science games program. Since our program has been a huge success, we don't have a problem with worrying about whether students will come.

What is an area in your field that hasn't gotten enough attention, but is poised to have a big impact in the coming years?

The usage of biosensors to determine the physical and emotional state of the human would enable us to build machine learning-based AI characters that can interact with humans on an emotional and physical understanding level. Recently, Stanford University founded the Human Perception Laboratory to begin development in this area with a direct pipeline to productization (game development). I am a Distinguished Collaborator with that laboratory.

People of ACM - Michael Zyda

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Turkish state-mafia allegations revive memories of Susurluk scandal

(Ahval News 10 May 21)

A series of tell-all videos by a convicted Turkish mob boss has sparked rumours that Turkey's government may be collaborating with the mafia more closely than previously known.

The latest set of rumours were aroused from allegations made by a high-ranking Turkish mafia boss Sedat Peker. In a video posted to his Youtube channel on Sunday, Peker made a litany of explosive allegations that included having his men physically assault a politician critical of President Recep Tayyip Erdogan and his family.

Peker also alleged that he helped cover up a murder committed by a current member of the Justice and Development Party (AKP), Tolga Ağar, on behalf of his father, Mehmet Ağar, who previously served as Turkey's interior minister.

Known as a mobster who earned his reputation during the 1990s, Peker has been on the run from Turkish authorities. He claims to currently reside in Dubai, and in a previous video said the Turkish government had sent operatives to abduct him.













All of these claims are not immediately verifiable, but they do stir memories of the last major episode that revealed a web of connections between Turkey's government and the mafia; the 1996 Susurluk incident. Following a road collision that killed a mix of government and organized crime characters, it became known that the state was actively working together with mobsters as part of their campaign against the Kurdistan Workers' Party (PKK).

The scandal caused embarrassment for the then-ruling government of Necmettin Erbakan and resulted in the resignation of none other than Interior Minister Mehmet Ağar.

Dr. Ryan Gingeras, an expert on Turkish organized crime at the Naval Postgraduate School (NPS) in Monterrey, California, cautions that Peker's claims should be taken with "more than a pinch of salt". Instead, he suggests Peker, who claims to have abandoned organised crime and is today a legitimate businessman, may be trying to distract attention away from his own activities.

"I think his M.O is to speak to the media, to stir up a lot of attention away from himself and towards others, particularly in political circles," Gingeras told Ahval News in a recent podcast. "Whether these claims have any validity or not is hard to say.

Peker, Gingeras notes, is not what one would call the most reliable storyteller when it comes to speaking the truth. The mobster is well known for his almost braggadocio tendency to share what he purports to be insider knowledge of the government's machinations, which leads Gingeras to refer to him as a "creature of the media."

In particular, Gingeras points to Peker being the "most vocal" witness during the Ergenekon trials that started in 2008. He adds that some of Peker's claims made during the trials back then were reflected in his more recent accusations against Turkish officials today.

While still difficult to prove or disprove, Peker's remarks did prompt a response from Turkey's interior ministry. In a statement released after Peker released his video series, the ministry dismissed him as a criminal who is working against the state.

"The slander and accusations of the mentioned person in the publications he made on social media from abroad are considered as a new organized crime activity against our security forces and our state," it said.

Peker was sentenced to ten years for his involvement with a purported deep state plot to take down the Erdogan government. However, Peker was acquitted in 2014 like many other suspects who were swept up in what turned out to be a completely fabricated conspiracy.

Dr. Aykan Erdemir, senior director of the Turkey Program at the Foundation for the Defence of Democracies (FDD) in Washington D.C, saw Peker's allegations less as statements of fact but nonetheless as an important reminder of the Turkish state's historical collaboration with organised criminal elements.

Erdemir said that this trend can be traced back to the waning days of the Ottoman Empire when the government led by the Committee for Union and Progress (CUP) utilised criminal gangs to conduct clandestine work on its behalf. One such group was the so-called "Special Organisation" that played a part in the 1915 Armenian genocide and crimes committed against Anatolia's Greek minorities.

He explained that many of Peker's allegations resonate with what he says is a subset of rumours that the current Turkish state has connections with the mafia. In terms of its relation to Susurluk, Erdemir said that the characteristics of these claims are almost parallel to the suspicions validated by the 1996 incident.

"One key mesasge is that not much has changed," Erdemir said to Ahval News. "What we see today is pretty much the standard way in which politics has always functioned in Turkey."

Turkish state-mafia allegations revive memories of Susurluk scandal | Ahval (ahvalnews.com)













How Iranian deep state failed President Hassan Rouhani

(Global Village Space 10 May 21) ... Ali Naqvi

With the 2021 elections nearing, the deep state in Iran is increasing its dominance in politics. Its goal is to protect Iran's Shia identity by influencing foreign policies. However, President Rouhani, since coming to office in 2013, has tried to curtail the influence of the deep state.

The history of the revolution shows us that anyone that wanted to transform the establishment and halt the revolution has withered. These are the words of former IRGC commander Major General Muhammad Ali Jaffari, echoing the role of a deep state in Iran's internal politics.

The history of the Middle East is much aware of the presence of a deep state in the region. Considered as the birthplace of the term deep state, the region has a strong presence of it with distinct features.

The region's most modern history is full of authoritarian rule and the deep state is a strong enigma with roots in powerful regional states. It takes time, energy, and sharp observation to explore whether it's a myth or a deepening reality.

The expression "Deep State" has its origin in the Turkish phrase 'derin devlet.' Similarly, the modern concept of a deep state has also been associated with Turkey. It was a secret Turkish network of armed forces officers and some civilians designed to protect the secular Turkish republic formed on the ideas of Kamal Atta Turk.

The term deep state is a negative connotation that has no agreed scholarly definition. Many refer to it as "state within a state" as it operates against the modern concept of state. Most scholars concede that a deep state is a shadowy kitchen network that operates covertly without a dictated mandate.

According to historian **Ryan Gingeras, professor at Naval Postgraduate School** and Ottoman historian, the deep state is "a kind of shadow or parallel system of government in which unofficial or publicly unacknowledged individuals play important role in defining and implementing state policy."

Deep state in the Middle East

With the region's history full of strong authoritative rule where political power rests in hands of few unelected authorities, the deep state is the first to be born.

Since its first presence in Turkey, a successor of the Ottoman empire, the deep state has evolved and grown into other regional countries later. A network of a secret alliance born out of the efforts of Kamal Atta Turk to keep Turkish secularism alive.

According to Economist magazine, the Turkish deep state is a "network of individuals in different branches of government, linked to retired generals and organized crime that exited without the knowledge of high-ranking military officers and politicians."

The deep state was further detected in Egypt as the democratic government of Muhammad Morsi came in aftermath of the Arab Spring. The Egyptian deep state composed of old bureaucracy, military, and secret services undermined the elected government of Muslim brotherhood.

The goal was to return to a military-dominated system which was achieved when the army chief and the then defense minister Abdel Fattah al Sisi took over the country in the 2013 coup.

Similarly, the deep state in Iraq under Saddam, and Libya under Qaddafi remained active during authoritarian rule because the Iraqi deep state was a system of patronage and network to keep the state intact.

The Libyan deep state had mostly the secret duties to carry out. To keep control of the disobedient population, power-sharing amongst the elite and crushing the opposition were few of the assigned activities.

Although, both states were so weakened that their state structure fell to the point where its deep state failed to bring it back. Iraq is weakened by ISIS and sectarian conflicts Meanwhile, Libya is in its 10th year of civil war, with no end in sight.













IRGC's growing influence

The Iranian deep state is composed of "security services, revolutionary powers, economic structures" whose single goal is to preserve the 1979 Islamic revolution and security of the Islamic Republic of Iran.

Many of the analysts believe that the Iranian deep state consists of Islamic Revolutionary Guard Corps (IRGC). However, it must be kept in mind that there are other important players in this deep game. The office of the Supreme Leader, Iran's religious clergy, and the judiciary are the power brokers in Islamic Iran.

It is also evident from the fact that IRGC's influence is growing deep within Iranian politics, economy, and society. IRGC since the 1979 revolution has evolved into a strong institution with direct links to the Supreme Leader's office.

The story of the Iranian deep state is a competition between elected bodies such as the executive and legislative branches especially the Islamic Consultative Assembly and the unelected bodies camouflaged as the deep state.

The survival of the Islamic Revolutionary system is the paramount objective of the deep state. To keep this system safe from internal and external threats, the deep state has a stronghold on Iran's key policy decisions.

This is embodied in Iran's political system, the rule of Vilayat-e-Faqi, regional proxy influence, and anti-American & Anti-Israeli posture. The deep state has succeeded so far to achieve its goal by maintaining dominance in Iran's economic and security structure.

Rouhani's government in conflict

With the deep state's continued control of state policies and the future trajectory of the Islamic Republic, there remained strong friction. President Rouhani, since coming to office in 2013, has tried to curtail the influence of the deep state.

Albeit unsuccessful, his government stuck to its manifesto of reforms. In the 2017 reelection campaign, President Rouhani accused the deep state and associated entities of spreading wide corruption, mismanagement, and interference to block his efforts to reform.

Moreover, Former President Trump's withdrawal from the 2016 JCPOA and the administration's maximum pressure campaign have devastated the Iranian economy. The deep state has accused President Rouhani and his reformist of the country's economic woes.

Equally important is the recently leaked audiotape of Iran's top diplomat Javed Zarif. The tape exposed the internal struggle and effort to control the country's foreign policy and Mr. Zarif's comments that Iran's military (IRGC) has got hold over the country's foreign policy.

In the leaked audio, the Iranian foreign minister was critical of former IRGC commander Qoseim Suleimani, assassinated by the US in 2020. He reveals that the slain commander tried to sabotage Iran's nuclear deal (JCPOA).

He also opened a new debate around Iranian presence in Syria and Iraq. According to Mr. Zarif, Suleimani moved military equipment and armed personnel into Syria without the knowledge of the elected government of President Rouhani.

With such power in hand and the coming election in June 2021, a new opportunity for the deep state is created. As reformist Presiden Rouhani's performance has been hindered by harsh US sanctions, the hardliners are coming forward aggressively to play their role to lead a country.

The former IRGC commanders have jumped into the political field and are running for president. It's still early to predict the future. However, if such hardliners come to the president's office, the Iranian deep state will benefit more.

It is clear that Iranian leadership is divided and when it comes to diplomacy, the diplomats take a backseat and the military comes forward. Under this situation, what defines Iran's relations with the west depends on how much the country's deep state is satisfied.

How Iranian deep state failed President Hassan Rouhani - Global Village Space













ALUMNI:

NASA's SpaceX Crew-1 Astronauts to Answer Questions after Return to Earth (NASA 3 May 21)

NASA's SpaceX Crew-1 astronauts will answer questions at 3:45 p.m. EDT Thursday, May 6, about their historic mission on the International Space Station and return to Earth. The news conference will air live on NASA Television, the NASA app, and the agency's website.

NASA astronauts Michael Hopkins, Victor Glover, and Shannon Walker, along with Japan Aerospace Exploration Agency (JAXA) astronaut Soichi Noguchi, will participate in the first media event following their mission and splashdown.

This will be a virtual event with no media present, due to the safety restrictions related to the ongoing coronavirus (COVID-19) pandemic. Reporters who wish to participate by telephone must call the newsroom at NASA's Johnson Space Center in Houston at 281-483-5111 to RSVP no later than 5 p.m. Wednesday, May 5. Those following the briefing on social media may ask questions using the hashtag #AskNASA.

SpaceX's Crew Dragon, named Resilience, carrying Hopkins, Glover, Walker, and Noguchi, splashed down at 2:56 a.m. May 2 under parachutes in the Gulf of Mexico, off the coast of Panama City, Florida, and was successfully recovered by SpaceX. After returning to shore, the astronauts immediately flew back to Houston, where they were greeted by their families and colleagues.

The successful launch of the agency's SpaceX Crew-1 in November 2020 was the first flight of a NASA-certified commercial human spacecraft system in history. Crew-1 is the first of six crewed missions NASA and SpaceX will fly as part of the agency's Commercial Crew Program, which worked with the U.S. aerospace industry to return launches with astronauts on American rockets and spacecraft from American soil.

Crew-1 astronauts worked on a number of experiments as part of Expedition 64 and Expedition 65 to the International Space Station, including tissue chips that mimic the structure and function of human organs to understand the role of microgravity on human health and diseases, and translate those findings to improve human health on Earth. Astronauts also grew radishes in different types of light and soils as part of ongoing efforts to produce food in space, and tested a new system to remove heat from spacesuits.

Michael Hopkins was commander of the Crew Dragon spacecraft and the Crew-1 mission. He was responsible for all phases of flight, from launch to re-entry. Selected as a NASA astronaut in 2009, Hopkins now has spent a total of 335 days in space during two spaceflights. He conducted three spacewalks during this mission for a total of five in his career totaling 32 hours and 1 minute. Born in Lebanon, Missouri, Hopkins grew up on a farm outside Richland, Missouri. He has a bachelor's degree in aerospace engineering from the University of Illinois, and a master's degree in aerospace engineering from Stanford University. Before joining NASA, Hopkins was a flight test engineer with the U.S. Air Force.

Victor Glover was the pilot of the Crew Dragon spacecraft and second-in-command for the mission. Glover was responsible for spacecraft systems and performance. Selected as an astronaut in 2013, this was his first spaceflight, during which he conducted four spacewalks totaling 26 hours, 7 minutes. The California native holds a Bachelor of Science degree in general engineering from California Polytechnic State University, a Master of Science degree in flight test engineering and a master's degree in military operational art and science from Air University, as well as a **Master of Science degree in systems engineering from the Naval Postgraduate School**. Glover is a naval aviator and was a test pilot in the F/A-18 Hornet, Super Hornet, and EA-18G Growler aircraft.













Shannon Walker was a mission specialist for Crew-1. As a mission specialist, she worked closely with the commander and pilot to monitor the spacecraft during the dynamic launch and re-entry phases of flight. She also was responsible for monitoring timelines, telemetry, and consumables during the mission. Selected as a NASA astronaut in 2004, this was her second spaceflight, bringing her total time in space to 331 days. Walker first launched to the International Space Station aboard the Russian Soyuz TMA-19 spacecraft as the co-pilot, and spent 161 days aboard the orbiting laboratory. A Houston native, Walker received a Bachelor of Arts degree in physics from Rice University, as well as a Master of Science degree and a doctorate in space physics, both from Rice University, in 1992 and 1993, respectively.

Soichi Noguchi also was a mission specialist for Crew-1, working with the commander and pilot to monitor the spacecraft during the dynamic launch and re-entry phases of flight, and keeping watch on timelines, telemetry, and consumables. Noguchi was selected as an astronaut candidate by the National Space Development Agency of Japan (NASDA, currently the JAXA) in May 1996. Noguchi is now a veteran of three spaceflights and has spent a total of 345 days in space. During STS-114 in 2005, he became the first Japanese astronaut to perform a spacewalk outside the space station. He has performed a total of four spacewalks, accumulating 27 hours and 1 minute of spacewalking time. Noguchi launched aboard a Soyuz spacecraft in 2009, to return to the station as a long-duration crew member. The Crew Dragon is the third spacecraft Noguchi has flown to the orbiting laboratory.

NASA's SpaceX Crew-1 Astronauts to Answer Questions after Return | NASA

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"I Felt Really Heavy!" – NASA's SpaceX Crew-1 Astronauts Discuss Their Historic Mission and Return to Earth

(SciTechDaily 7 May 21)

NASA astronauts Michael Hopkins, Victor Glover, and Shannon Walker, along with Japan Aerospace Exploration Agency (JAXA) astronaut Soichi Noguchi, participated in the first media event following their mission and splashdown, where they answered questions about their historic mission on the International Space Station and return to Earth.

SpaceX's Crew Dragon, named Resilience, carrying Hopkins, Glover, Walker, and Noguchi, splashed down at 2:56 a.m. May 2 under parachutes in the Gulf of Mexico, off the coast of Panama City, Florida, and was successfully recovered by SpaceX. After returning to shore, the astronauts immediately flew back to Houston, where they were greeted by their families and colleagues.

NASA's SpaceX Crew-1 astronauts answer questions about their historic mission on the International Space Station and their return to Earth. At around 14:15 Victor Glover discusses how it feels to be subjected to 4.5 Gs for over a minute on reentry after experiencing weightlessness for 167 days: "I felt really heavy!"

The successful launch of the agency's SpaceX Crew-1 in November 2020 was the first flight of a NASA-certified commercial human spacecraft system in history. Crew-1 is the first of six crewed missions NASA and SpaceX will fly as part of the agency's Commercial Crew Program, which worked with the U.S. aerospace industry to return launches with astronauts on American rockets and spacecraft from American soil.

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"I Felt Really Heavy!" – NASA's SpaceX Crew-1 Astronauts Discuss Their Historic Mission and Return to Earth (scitechdaily.com)

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Clarksville-Montgomery County Economic Development Council names Buck Dellinger Chief Executive Officer

(Clarksville Online 10 May 21)

The Clarksville-Montgomery County, Tennessee Economic Development Council (EDC) Executive Committee is pleased to announce they have received a commitment from David "Buck" Dellinger, to fill the position of Chief Executive Officer (CEO).

The EDC was established in 1996 and promotes economic growth and development of Clarksville-Montgomery County. The EDC enhances and supports its member entities, the Industrial Development Board (IDB), Convention & Visitors Bureau / Visit Clarksville (CVB), and the Chamber of Commerce. Dellinger was selected from among 74 applicants after a nationwide search.













Dellinger is currently, Chief Development Officer and Chief Operating Officer of the Metropolitan Development and Housing Agency (MDHA) in Nashville, TN where he supervises Urban Development, Community Development, Affordable Housing, Rental Assistance, HR, Construction and the Recapitalization Departments.

Prior to his work with the MDHA, Buck served our country in the United States Army from 1988 to 2017 in multiple roles to include Chief of Staff in the 101st Airborne Division at Fort Campbell, KY and Iraq from 2015 to 2017, he was the Garrison Commander for the City of Fort Campbell, KY from 2012 to 2015, he served as the Director of Strategic Plans – Special Ops Command Europe in Stuttgart, Germany from 2010 to 2012, he was a **Senior Fellow at the Naval Postgraduate School** in Monterey, CA from 2009 to 2010, and he served as a Commander (Exec Administrator) in the 101st Division Special Troops Battalion from 2006 to 2009.

Dellinger has a Master of Arts Degree in Political Science from Rutgers University, and a Bachelor of Science degree in Engineering from the United States Military Academy.

Dellinger's passion for the community and established relationships boosted him to become the prime candidate, and ultimately, offered the position of the Economic Development Council's Chief Executive Officer. As former 101st Airborne Division Chief of Staff at Fort Campbell, he comes with a strong understanding of our community and a compelling sense of leadership. This together with his clear understanding of building local economies through development and re-development efforts as he has accomplished in Nashville, make him an exceptional choice to lead our EDC.

"This is an extremely important position for the EDC and for Clarksville and Montgomery County. I am thrilled and excited that Buck Dellinger will join our organization and am confident his leadership and experience will greatly benefit our community," said Suzanne Langford, EDC Chairperson.

"I am thrilled to rejoin the Clarksville-Montgomery County community. Over the last 4 years, my focus has been on urban and community development, particularly among diverse groups – I look forward to bringing that expertise to the EDC and cultivating economic development and growth to serve every community member," said Buck Dellinger.

In this role, Dellinger will lead the EDC and is responsible for coordinating, promoting and ensuring economic development in Clarksville-Montgomery County. The EDC CEO also serves as the Director of the Aspire Clarksville Foundation, a privately funded, non-profit organization that helps to fund the initiatives of the EDC and its member entities.

To recruit the best candidate and fill the position appropriately an executive search committee was created to streamline the process. Members included Khandra Smalley, Kyle Luther, Matt Cunningham and Ron Bailey. Each of these individuals serves as a representative on the boards of the EDC partner agencies. Dellinger's appointment was voted and approved by the EDC Board of Directors. He will begin his role as CEO on June 1st, 2021.

"I want to personally thank the Executive Search Committee, as well as the Board of Directors for their time, support, and commitment to finding the right candidate," said Langford. "I know Buck will be an excellent leader for the organization and our community."

<u>Clarksville-Montgomery County Economic Development Council names Buck Dellinger Chief</u> Executive Officer - Clarksville, TN Online (clarksvilleonline.com)













Understanding The Hold Of Islam On Maldivian Society And Politics – Analysis (EurasiaReview 10 May 21) ... P.K. Balachandran

The three arrests made thus far in the case relating to the bid on the life of the Maldivian Parliament Speaker and former President Mohamed Nasheed in Male on May 6, show that Islamic radicalism is alive, kicking and deep-rooted in the Maldives. According to the Commissioner of Police, Mohamed Hameed, the three suspects arrested, Adhuham Ahmed Rasheed (25), Mujaaz Ahmed (21) and Thahumeen Ahmed (32), belong to a "dangerous extremist ideology". Hameed stopped short of identifying their ideology, but it is generally accepted that they owe allegiance to a radical Islamic group.

Though there are various causes for the resurgence of radical Islam from time to time, the basic fact is that Islam has been part and parcel and a determining factor in the Maldives from the 12 th.Century onwards. According to **Hassan Amir** (**Islamism and Radicalism in the Maldives: Naval Postgraduate School**, California, 2011) the conversion might have been fuelled by a desire to minimize threats from the Buddhist and Hindu rulers of Sri Lanka and India.

Conversion to Islam is the single most important event in Maldivian history. The period prior to conversion is derisively referred to as jahiliyya (period of ignorance), Amir says. The Sultans made Sharia the basis of the legal system, thus deeply impacting social norms.

Portuguese rule from 1558 to 1573 disrupted this order. After the Portuguese were ousted by a local hero, Mohamed Thakurufaanu, de-Chrisitianization was vigorously pursed. When Sheikh Muhammad Jamaluddin, a learned Islamic scholar from Yemen was made Chief Qadi the Shafi code of Sunni Islam was made the official religion.

In 1952, Maldives became a republic. But the experiment with modern democracy failed because its Westernized leaders introduced laws which were too radical for the general population. Commenting on this Amir said: "It is a common phenomenon in many Islamic societies to turn towards Islam in times of such crises and adopt much more stringent laws and legal codes. This helps coalesce the population and allows people an illusion of control over their external environments."

Fear of the outside world and its alien culture has continued to give rise to call for a return to puritanical Islam right down to this day.

Gayoom's Role

In more contemporary times, radical Islamic ideology developed deep roots in the Maldives from the 1970s. As in the past, this trend has had open or clandestine State support. From the Presidency of Maumoon Abdul Gayoom to that of Abdulla Yameen, governments have used Islamic conservatism to bolster their regimes and serve their partisan ends. This has spurred radicalism. On the downside, radicals set off bombs, killed a liberal blogger and a journalist, went to fight for the ISIS in Iraq and Syria in substantial numbers, and campaigned for Sharia law in the Maldives. Only Mohamed Nasheed has been consistently speaking against Islamic radicalism. He may have been the target for this reason.

Gayoom unabashedly used Islam as an instrument to further his political career. A graduate in Sharia from the Islamic Al-Azhar University in Cairo, Gayoom created in 1980, the Mauhadu-al Dhiraasaathul Islamiyya, an educational institute dedicated solely to Islamic studies, with assistance from Islamic countries. Under Gayoom, Maldives started to play a prominent role in the Organization of the Islamic Countries (OIC).

"It was at this time that significant numbers of Maldivian youth began attending various Islamic education institutes in places such as Pakistan, Saudi Arabia, Egypt, and India. These youth later became the vanguard of the Islamic revivalist movement in Maldives," Amir recalls.

However, ironically, Gayoom's suppression of the democratic opposition, made people look upon radical Islam as a rallying point against him and also as a panacea for their secular problems. In 2005, when political parties were allowed to operate in the Maldives, parties used Islam to gather support and challenge rivals. An avowedly Islamic party, the Adhalath Party, came into being. These parties branded their rivals as heretics and as agents of Western ideas and agendas, including Christian proselytization. Recently, President Yameen made such accusations against his rivals, Mohamed Nasheed fist and then Ibrahim Solih.











Social Factors

Social conditions have also helped Islam to gain a strong grip over Maldivians. Large extended families tend to live together and act as a security net. Families are connected to one another through intermarriages and kinship ties. Therefore, social pressure to conform is irresistible. Maldivian families use strict adherence to Islam as a shield against cultural encroachment by Western and South Asian non-Islamic countries. With increasing globalization, the urge to preserve its identity has only grown.

Globalization which has entered through tourism, has led to GDP growth, but it has also brought cultural degradation. Drug abuse is one of the most pressing concerns in Maldivian society. Drug abuse and gang violence have often gone hand-in-hand. Given the moral degradation, there is a tendency to see radical Islam as a panacea. This has resulted in "Arabization". Arabization enables Maldivians to more easily receive and internalize radical Islamic thoughts from restive West Asia.

Impact of Tsunami Aid

In her paper dated March 22, 2021 in Global Risk Insights Antonia Gough says that following the 2004 Tsunami, various Saudi Salafist (Wahhabi) NGOs came to the Maldives on the pretext of helping rebuild badly affected areas. "Members of these organizations brainwashed young Maldivian men who were living below the poverty line into believing that the Tsunami was a punishment for failing to follow the true teachings of Islam. Over the next 15 years, radical Islamist ideology infiltrated the social fabric of the islands," Gough observes.

Hassan Amir recalls that one Moosa Inas, a mysterious aid financier, later became one of the perpetrators of the Sultan Park bomb blast in 2007, which injured twelve foreign tourists. Charity fronts such as Idara Khidmat-e-Khalq (IKK) came into being. The IKK is affiliated with Jamaat-u-Dawa (which is engaged in Tabligh, i.e., active proselytizing) and the more sinister Lashkar-e-Taiba (LeT), the Pakistani-based terrorist groups responsible for numerous attacks in India and Pakistan. In an interview to CNN-IBN in 2009, Mohamed Nasheed said that thousands of Maldivian youth were being recruited to join Jihadi operations in Pakistan to fight in Afghanistan and further afield. There have also been Indian intelligence reports linking Maldivians to the 2008 Mumbai terror attacks, Gough adds.

She even charges that "Salafist ideologies have not just infiltrated the young islanders, but also the islands' security forces, who play a part in recruitment of young men to ISIS." A ruling Maldivian Democratic Party activist said last week that he has no hope that the attempt on Nasheed's life on May 6 will be properly investigated as he fears that the security forces have been infiltrated by Islamic radicals.

Gough quotes official figures to say that 173 Maldivians had travelled to Syria to fight and 432 had attempted to go. As of December 2019, there were approximately 1,400 "religious extremists" located on the archipelago. In 2014 an independent journalist, Ahmed Rilwan, was abducted and possibly killed. In 2019. President Yameen was accused of being directly involved in Rilwan's disappearance and his possible death. Blogger Yameen Rasheed, known as a critic of the political establishment, was stabbed to death in his apartment in 2017.

In February 2020, three foreigners were stabbed on one of the islands. Soon after the incident, a Maldivian radical group affiliated with ISIS claimed responsibility via a video message. In this video, three masked men announced: "The portrayal that this [Maldives] is paradise [...] has become a mirage. From now on, the only thing they [foreign travellers] will taste [in the Maldives] is fire"

Understanding The Hold Of Islam On Maldivian Society And Politics – Analysis – Eurasia Review













Alumnus Will Werner hired to lead UMSL's National Security and Community Policy Collaborative

(UMSL Daily 10 May 21) ... Steve Walentik

The University of Missouri-St. Louis' National Security and Community Policy Collaborative has a new leader.

Will Werner, who earned a master's degree in criminology and criminal justice at UMSL in 2011 and spent almost nine years working as a planner with the St. Louis Metropolitan Police Department, has been hired to serve as the director for the center, which launched last year with a goal of facilitating collaboration between the university and St. Louis' growing geospatial technology ecosystem.

Werner, who secured grants totaling more than \$5 million during his time at the police department including for the Gun Crimes Intelligence Center, Intellectual Property Crimes Unit, the Victim Services Unit and other technology innovations, is now looking to develop partnerships and connect UMSL researchers with the National Geospatial-Intelligence Agency and other geographic information system-related companies operating in the region. That sector has been expanding rapidly in recent years with NGA's \$1.7 billion western campus under construction just north of downtown St. Louis and set to open in 2025.

"We are so excited to have Will in this role," said Andrew Kersten, the dean of UMSL's College of Arts and Sciences. "He comes to UMSL with a wealth of experience in data science and analysis and with an expertise in national security, community policy, and geospatial tradecraft. Additionally, he has a tremendous record in getting and implementing grants. His abilities and his professional network are already paying dividends. Finally, Will is UMSL, having graduated with his MA in Criminology and Criminal Justice from the university. He's the right person at the right time to grow our connections with the geospatial community in the St. Louis region."

Werner is trying to build on the foundation laid by Bob Ubbelohde, who established the center in April 2020 after a 32-year career with NGA. It operates out of an office in the Geospatial Innovation Center on the fourth floor of nonprofit innovation and entrepreneur development facility T-REX.

"Bob did a really good job trying to lay the groundwork regionally, letting people know that we started this center, and he focused heavily on the NGA component," Werner said. "It's hard for me to believe that COVID didn't hamper a lot of those conversations when you can't meet in person. I think we're really poised to be in a good position as we come out of COVID with everything that's happening regionally. As NGA builds its footprint, there's a lot of opportunity for our researchers to get involved in some of the projects that they may be working on or to link up with some of the startups at T-REX."

Werner, who last September was named one of the International Chiefs of Police 40 under 40 awardees, understands the value of applying GIS and other data visualizations to policy problems to help decision-makers determine how to deploy resources.

His job as a planner with the police department involved taking raw data or images and maps developed by the department's crime analysts and helping department leaders use it inform policy or operational documents.

"My day-to-day is going to be a lot of helping people understand where the value of that GIS technology is," Werner said, "and being able to help stakeholders apply those GIS techniques and data visualization techniques to practical or policy problems or issues that they're looking to research and investigate."

UMSL researchers continue to be heavily focused on projects that support local communities, promote greater equity and can drive social change.

Geospatial analysis can aid in demonstrating the existence of so-called food deserts – under-resourced communities whose residents have to look elsewhere to purchase affordable and nutritious groceries. It can help show how systemic violence is impacting neighborhoods and inform policies to address it. As the past 16 months have demonstrated, it can also help understand how infectious diseases are being spread and who's left most vulnerable.













All of these issues have implications for national security – something Werner learned to define more broadly over the past two years while working on a second **master's degree in security studies at the Naval Postgraduate School** Center for Homeland Defense and Security. He completed his degree in December.

Werner hopes to be able to bring different groups and individuals to try to solve the challenges that have persisted in a region that often struggles with collaboration.

"One of the things that interested me about this position is simply the fact that no government entity or private entity can really be successful in a vacuum," he said. "I really think that the more people you bring to the table, the more interdisciplinary parts you bring in, the stronger the approach is going to be moving forward."

In addition to helping faculty researchers contribute to those regional conversations, Werner sees the collaborative opening opportunities for students.

"That's a place that I see where we can have a huge impact, developing and creating internship opportunities regionally," Werner said. "There's so many good students that are looking for those skills in the job market right now. If you don't have some experience, it's so hard to get a job straight out of school.

"I see NGA again as a huge partner for us, and my goal is to be able to be a feeder for them and a place where we can help develop students and develop researchers. But locally, we have a lot of really good public organizations and private institutions that deal with not only GIS but intelligence collection and intelligence dissemination with which we can build lasting relationships."

Alumnus Will Werner hired to lead UMSL's National Security and Community Policy Collaborative - UMSL Daily | UMSL Daily











