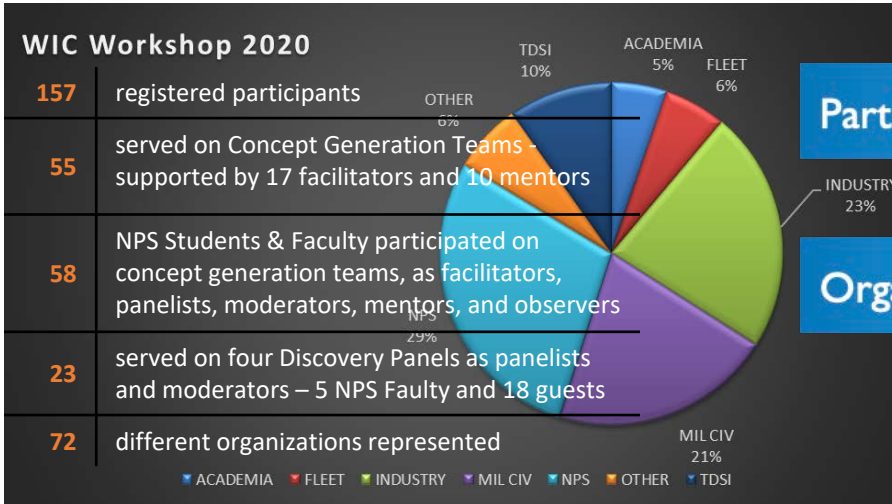


# RESURRECTING WAR PLAN BLUE!

LEVERAGING ROBOTICS AND AUTONOMY IN FUTURE CONFLICT



## September 2020 Workshop Summary



Participants	2019	2020
	130	157 +21%

Organizations	2019	2020
	45	72 +60%

## 2020 Challenge

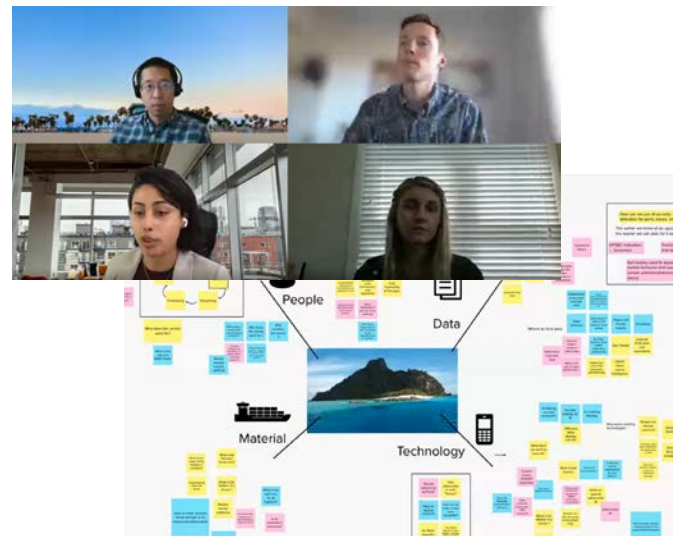
*How might emerging technologies; concepts; joint, combined and coalition forces contribute to enhancing the resiliency of naval forces, logistics, and support facilities in an extended campaign against a peer adversary?*

**How do we best prepare for war in the era of competition and robotics warfare?**

**WIC 2020 Scenario: Preparing for War 2035 – Resurrecting War Plan Blue**

## Event Description

The Naval Postgraduate School's annual Warfare Innovation Continuum (WIC) Workshop acts as an innovation engine, leveraging our operationally-focused students and defense-oriented faculty to address complex fleet issues, from technical to ethical and from concept-generation to experimentation. Diverse teams of early career professionals from the fleet, Navy labs, industry, and academia spend three and a half days rapidly generating concepts of employment and risk within a future conflict scenario. Public, private, and academic executives vet their ideas before disseminating results throughout the U.S. Navy.



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## Selected Concepts

Six **Concept Generation Teams** were facilitated through a seven-hour rapid concept generation process. From the concepts they presented the following were selected as concepts of interest:

### CONCEPTS OF INTEREST – 2020

**Distributed Autonomous Logistics:** repurpose existing commercial systems during wartime

**AI for Port Operations:** integrate AI into forward port operations

**Project Shellgame:** dynamic seabases to keep adversaries guessing at location and function of forward bases

**Resilient Infrastructure:** high speed internet utility, "ruggedize" utilities for resilience, agile manufacturing, spare production capacity, re-shore with automation

**(Camo) Green New Deal:** whole-of-society approach to leverage elements of social investment programs and repurpose them in the event of war

**Robotics and Autonomy for MILDEC:** (details restricted)

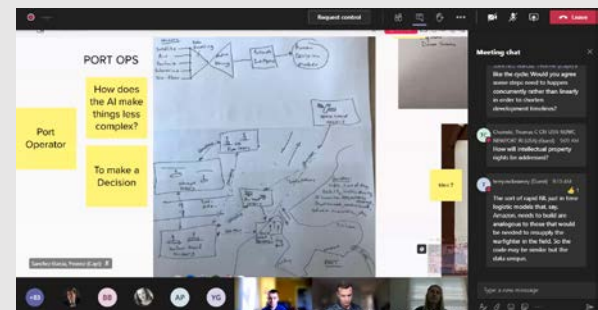
**Sensor Network System of Systems:** full overarching concept of wide area autonomous sense, track, and interdiction platforms

**Networked Citizenry:** incentivize skill generation and usage of networked citizenry and general population

**Tailored Industry Liaison Teams (TILTs):** groups to support rapid mobilization through quick reorganization of private assets

**Key takeaways** centered around allied nation forward-base defense, port break-out systems, industry robustness, artificial intelligence applications and mobilization. Process insights:

- Diverse perspectives on each concept generation team, including sizable Singaporean contingent and a U.S.-only classified effort resulted in a wide scope of solutions
- Panel format allowed for inputs from a wide variety of experts in a very short time
- Inaugural 100% virtual workshop eliminated travel costs and reduced many barriers to participation





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## Next Steps

Six concept generation teams presented nearly 30 concepts generated over three and a half days for “Resurrecting War Plan Blue” – the 13th NPS NWSI Warfare Innovation Continuum Workshop co-sponsored by CRUSER and CISER. In this first ever virtual workshop, we had 157 registered participants from NPS, industry, OPNAV, civilian academia, the Fleet, systems commands, NWC, MCU, Singapore, Romania, Israel, and Columbia. Concept generation teams composed of NPS students, civilian engineers, and researchers with diverse perspectives addressed issues related to forward base defense with partnered nations, port break out systems, industry robustness, applications of artificial intelligence, and mobilization. We also had a resident U.S. only team working at the secret level on information warfare technologies.

Four Discovery Panels and special presentations included speakers like Dr. Elisabeth Pate-Cornell (Stanford), Dr. Peter Singer (New America), and Ms. Rana Foroohar (Financial Times), and all focused on topics related to National resilience and new technologies in the areas of ISR, industry and supply chain, IAS, and biologics. We hope these presentations and the conversations they inspired will carry on at the national level. In the final concept presentations, the teams shared ideas ranging from ways to obtain industrial flexibility to redesigning the concept of national mobilization in a network connected world. Integrating AI into port and base defense systems was a major theme.

Our next step will be to synthesize all the concepts provided by the teams into a final report for distribution to our own researchers and NWSI stakeholders. This report will influence NPS capstone classes, research topics, experimentation, the SEA project, wargaming, prototyping and theses over the remaining nine months of the Warfare Innovation Continuum “Resurrecting War Plan Blue”.

**Work Force: 17 to 75**

- Educate
- Expand
- Extend
- Experiential

**OLD SCHOOL vs NEW SCHOOL**

OLD SCHOOL: TEACHER-CENTRIC, LECTURE, PAPER, PENCIL, BOOKS, PHYSICAL REALITY, TRADITIONAL, YOUTUBE, SMARTPHONE, TABLET, SOCIAL MEDIA, DIGITAL REALITY, INTERACTIVE, COLLABORATIVE, CREATIVITY, PROBLEM-SOLVING, CRITICAL THINKING, COMMUNICATION, TEAMWORK, LEADERSHIP, INDEPENDENT THINKING, ADAPTABILITY, RESILIENCE, GROWTH MINDSET, LIFELONG LEARNING, INNOVATION, DISRUPTION, CUSTOMER-CENTRIC, DATA-DRIVEN, PERSONALIZED, FLEXIBLE, AGILE, TRANSFORMATIVE, FUTURE-READY.

**The Partnerships Solution 2:**

**Interoperable space and cyber defense architecture**

1. Leverage on US' capability and capacity in space and cyber realm, U.S. commercial industry
2. Maintain cyber commons, standardization with partners to improve interoperability
3. Conduct cyber exchanges, personnel from reserve/active duty visit and work with partners virtually or in person to strengthen networks
4. US facilitates space access to smaller partners (MAXAR/STARLINK)
5. US acts as key enabler for 5G technology, autonomous platforms, high speed network, data commons
6. Conduct Joint cyber "Multi-lateral" exercises within allies of Cyber Realm (CoP)
7. Establish framework to help govern Rules of Engagement in space/cyber (UNCLoS)
8. LEO satellites (better resolution/detection, shorter transmission delays, low-powered, easier and cheaper to launch, easier to replenish and update a constellation of satellites as technology changes)



**A full final report will be available by November 2020. Please email [laengleh@nps.edu](mailto:laengleh@nps.edu) for distribution.**

# RESURRECTING WAR PLAN BLUE!

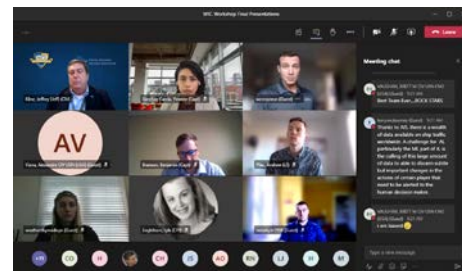
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## Schedule

### MON – 21 September

		<b><u>NPS Teams MAIN ROOM (virtual)</u></b>
0830	Welcome	VADM Ann Rondeau USN (ret), NPS President
0845	NPS NWSI, Warfare Innovation Continuum & Scenario	CAPT Jeff Kline USN (ret), NPS NWSI Director
0930	Process & Resource Review	Ms. Lyla Englehorn, NPS NWSI Associate
1000	<b>BREAK</b>	
1030	<b>Discovery Panel I</b>	<b>Intelligence, Surveillance, Reconnaissance (ISR) &amp; Defense Technology</b>
	<b>SPIDERS3D Visualization Tool</b>	Dr. Don Brutzman, NPS Information Sciences
	<b>The Promises of Technology and the Realities of War</b>	LtCol Dakota L. Wood USMC (Ret), Senior Research Fellow, Defense Programs, The Heritage Foundation
	<b>A Few Thoughts on UxS</b>	Mr. Jason Boxerman, NSWC Panama City
	<b>Future Naval UUV Applications</b>	Mr. Jeff Smith, BAE Systems - Riptide
	<b>Mobile Microgrid Capabilities</b>	Mr. Michael Gonzalez & Mr. Noel Pleta, U.S. Army Combat Capabilities Development Command (DEVCOM)
	<b>MODERATOR</b>	Dr. Dan Boger, NPS GSOIS Acting Dean
1200	<b>BREAK</b>	
1230	<b>Discovery Panel II</b>	<b>Industrial Resilience &amp; Supply Chain Vulnerability</b>
	<b>Critical Minerals and Strategic Materials</b>	Dr. Shannon Brown, NPS CHDS
	<b>Semiconductor Manufacturing Trends and Risks</b>	Mr. Ajit Manocha, SEMI President & CEO
	<b>Asymmetric Industrial Warfare</b>	Mr. David Newborn, NSWC Carderock
	<b>System Analysis &amp; Risk Assessment</b>	Dr. Elisabeth Paté-Cornell, Stanford University School of Engineering
	<b>The Dangers of Financialization</b>	Ms. Rana Foroohar, Financial Times
	<b>MODERATOR</b>	Dr. Sheila Vaidya, Headquarters Marine Corps
1400	Tasking	CAPT Jeff Kline USN (ret), NPS NWSI Director
1415	Initial Team Meetings	<b>Virtual BREAKOUT ROOMS</b>
1500	<b>“After Hours” Talk – Useful Fiction: How A Story Well Told Can Allow Us to Understand the Future</b>	Dr. P.W. Singer, New America





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## Schedule

### TUES – 22 September

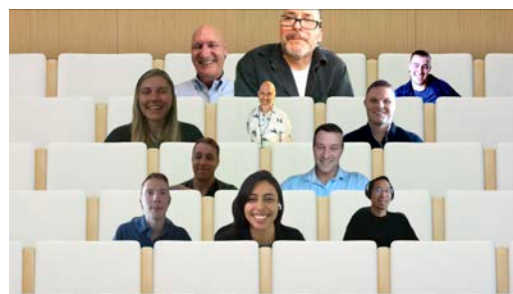
0830	Welcome NPS CRUSER	<a href="#">NPS Teams MAIN ROOM</a>	Dr. Brian Bingham, NPS CRUSER Director
0845	<b>Discovery Panel III</b>	<b>Intelligent Autonomous Systems (IAS) &amp; Biologics</b>	
	<b>Enhanced Warfighters</b>		Dr. Raymond Buettner, NPS Information Sciences
	<b>Making a New War Plan Blue Work: Leveraging Unmanned Maritime Systems Persistence in the Pacific</b>		CAPT George Galdorisi USN (ret), NIWC PAC
	<b>Worse than Death: the Terrible Threat of Artificial Superintelligence</b>		Mr. JD Work, MCU Bren Chair of Cyber Conflict & Security
	<b>Rethinking Space Systems Architecting from an AI Perspective</b>		Mr. Jonathan Cefalu, CEO & Founder NeuroBinder
	<b>MODERATOR</b>		Mr. Zigmond Leszczynski, The Aerospace Corporation
	<b>MODERATOR</b>		Dr. Raymond Buettner, NPS Information Sciences
1015	<b>BREAK</b>		
1100	Concept Generation – <b>Divergent</b>	<a href="#">Virtual BREAKOUT ROOMS</a>	
1100	Mentor Tasking	<a href="#">NPS Teams MAIN ROOM</a>	
1300	Concept Generation – <b>Divergent to Convergent</b>	<a href="#">Virtual BREAKOUT ROOMS</a>	

### WED – 23 September

0830	Welcome & Admin Notes	<a href="#">NPS Teams MAIN ROOM</a>	Dr. Carl Oros, NPS CRUSER Associate Director
0845	<b>Discovery Panel IV</b>	<b>Innovation</b>	
	<b>Complexity</b>		Mr. Garth Jensen, NSWC Carderock
	<b>Wargaming to Approach Military Challenges</b>		Dr. Don Thieme, NWC Wargaming
	<b>Approaching Gnarly Military Challenges Through Design</b>		Mr. Dave Nobles, JHU/APL TANG
	<b>The Military v. Corporate Innovation Divide</b>		Mr. John Hawley, JWH Enterprise LLC
	<b>MODERATOR</b>		Col Todd Lyons USMC (ret) NPS Innovation Facilitator
0930	<b>BREAK</b>		
1000	Concept Generation – <b>Convergent</b>	<a href="#">Virtual BREAKOUT ROOMS</a>	
1100	Directors & Chairs Rotation	<a href="#">Virtual BREAKOUT ROOMS</a>	
1300	Concept Development – <b>Final Push</b>	<a href="#">Virtual BREAKOUT ROOMS</a>	

### THUR – 24 September

0800	Team Photos & Evaluation	<a href="#">NPS Teams MAIN ROOM</a>
0830	Final Briefs	
1200	<b>ADJOURN</b>	



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## About Us



NAVAL WARFARE  
STUDIES INSTITUTE

**NWSI** accelerates & enhances warfare concept & capability development via interdisciplinary research & education.



**W I C** Warfare Innovation Continuum

*An Interdisciplinary Exploration Into Future Conflict Solutions*

**WIC** uses classroom projects, theses, and research to advance naval concepts, assess technologies and develop tactics while enhancing our students' educational, research, and combat skills.



**CRUSER**  
Consortium for Robotics and Unmanned  
Systems Education and Research

**CRUSER** aligns academic coursework, military research and institutional focus around robotics and unmanned systems through operational experimentation, educational ventures, technical symposia and concept-generation workshops.



**Consortium for Intelligent Systems  
Education and Research**

**CISER** fuses artificial intelligence, operations research, data science, modeling, simulation & analytics through education, research, and innovation adoption to prepare for multi-domain operations dominated by intelligent systems.



NAVAL  
POSTGRADUATE  
SCHOOL

**NPS** increases officer combat effectiveness via compelling, relevant, & sustainable higher education & research.