THE CENTER FOR ADVANCED RED TEAMING

UNIVERSITY AT ALBANY
State University of New York

NEWSLETTER

THE RED SIREN

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PREPARED BY
THE CENTER FOR ADVANCED RED TEAMING

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MESSAGE FROM THE DIRECTOR

Dr. Gary Ackerman - (Former) Director, CART. *May 2023.*

It has admittedly been some time since we have published our Red Siren newsletter. While we are genuinely sorry that we were not able to communicate more regularly with the Red Teaming community, it was at least for a positive reason – the CART Team has had its hands full working on a variety of efforts. A brief run-down of these will hopefully explain (but not excuse) our lack of outreach.

Starting with our project work, we have been working with the Department of Homeland Security on a number of fronts, including applying Red Teaming to new operational problems for border security, assessing the future of risk research to support the Homeland Security Enterprise, and developing a new tool for anticipating terrorist adoption of emerging technologies. We have also been conducting a lot of international activities, including continuing to develop our Countering International Proliferation Red Teaming Kit (CIPKit) and deploying it in several countries; work to Red Team the illicit transfer of intangible technology from foreign partners; simulating the crisis response and attribution following WMD assassinations in the context of state disinformation attacks; and Red Teaming international legal structures to prevent bioweapons proliferation. Plus, as a follow-on to our 2020 "Infectious Incentives" large-scale asynchronous strategic dynamics Red Team on COVID-related biowarfare developments, we are gearing up for a similar simulation of chemical weapons developments titled "Toxic Temptations".

On the workforce development side, from May to August 2022 CART developed and delivered a threat assessment and Red Teaming training curriculum (with associated tools) for the Diplomatic Security Service of the State Department. We are also in the process of building a new Red Teaming concentration for the University at Albany's Master's Degree in Emergency Management and Homeland Security. This innovative new program (which will likely be accompanied by stand-alone micro-credentials covering various aspects of Red Teaming) will consist of several courses to provide academically accredited training and education in the major theories and tools of Red Teaming. We anticipate these offering to be available starting in early 2024.

On the research front, CART staff have continued to produce reports and publications, including a journal article describing our **Distributed Empirical Systematic, and Scalable Red Teaming (DESSRT)** framework, and two additional articles under review on red-teaming in biosecurity and testing visual deterrence using a nationwide red-teaming exercise (more info on both of those in the next newsletter).

One of the most exciting developments in the past year has grown out of CART's successful research and development (R&D) efforts. We are constantly asked whether methodologies developed by CART can be applied to new domains and industries, transitioning our Red Teaming research into new applications. Several opportunities have presented themselves for implementing CART's methods beyond the R&D phase and at scale. With the encouragement and assistance of the University, several existing CART staff have therefore set up a new company, Nemesys Insights, LLC, to commercialize CART's current and future technologies. This creates an ideal pipeline connecting research into practice, providing a commercial capability to continuously support novel capabilities developed by CART and transition them into new industries and clients.

To lead this effort, I am stepping into the role of CEO of Nemesys Insights, where I will provide day-to-day leadership for the commercial venture. To serve this new role effectively, and ensure we minimize any conflicts of interest, I will be transitioning from CART Director to CART Senior Investigator at the end of May. This does not mean that anything is changing at CART, which will continue to conduct research on, education in, and act as a clearinghouse for, Red Teaming theory and practice. I will still be working as a key part of the CART team on a range of projects, and still contributing to the research and educational mission of the center.

The good news is that we have a terrific replacement ready to go. **Dr. Brandon Behlendorf, CART's current Deputy Director, begins his tenure as Director on June 1st.** I have known Brandon for many years and he is one of the smartest, most strategically savvy, hard-working and innovative people I have ever had the pleasure of working with. The plan was always for Brandon to succeed me as Director, and being intimately familiar with all CART's operations, he will be able to slot smoothly into the Director's role.

So, while this is not goodbye, it will be my final message as CART Director. CART has flourished beyond our wildest expectations in the brief 3 ½ years of its existence and these changes are merely the next phase in its evolution. I want to thank everyone in the Red Teaming community for your interest in and support for our work up till now and I look forward to continuing to work with all of you in my new role.

With much thanks and humility,

Gary Ackerman

It is my pleasure to be stepping into the role of Director for the Center for Advanced Red Teaming (CART) at the University at Albany! For those of you who may not know me, as a bit of a **background,** I have been working in Red Teaming and adversary decision-making since 2004 (and with Gary since 2007). I am an Assistant Professor at UAlbany, teaching a range of homeland security, data analytics, and organizational theory courses. I am a quantitative criminologist with expertise in non-state adversary decision-making (criminal and terrorist organizations, individual actors, etc.). I have **published** on a wide variety of issues (WMD, big data analysis, international surveys, criminal networks, etc.) and have supported many government agencies (DoD, DHS, NSF, DOJ, DOS, etc.). I work to apply theoretically-informed and empirically-sound research methodologies to address domestic and international security challenges. I am also the father of five amazing and rambunctious children under the age of nine, who are an in-house Red Team for any parenting strategies I try to use.

Working these past three years with Gary on developing the center, securing projects, hiring our amazing staff, and partnering with practitioners and scientists at all levels to employ Red Teaming has been a rewarding experience. I am thrilled at the opportunity to lead CART into the next phase of its development, and in that vein, I want to share with you a couple of key priorities that CART will be focused on in the coming years:

1. ***Developing Red Teaming as an analytic framework:*** One of CART's signature strengths in the first three years of its existence has been integrating analytics as part of our Red Teaming. Whether collecting decision data during an exercise, or leveraging capabilities to record deliberations by teams during an exercise, CART has advanced Red Teaming into our data-infused society. In the coming years, we will continue to develop new avenues to collect, extract, and analyze data, transitioning Red Teaming into a structured process that organizations can use for their own assessments.

2. ***Building Red Teaming as a scientific method***: Central to CART's motto is a focus on the "science of Red Teaming", something that as a university-based research center we take to heart. In the last year, we have submitted a number of articles using Red Teaming and adversary emulation to scientific journals, helping to complement new advances in wargaming and scenario analysis as methods of inquiry. Our vision, though, is to transform Red Teaming into a systematic, repeatable, and transparent research methodology to address an array of scientific questions, especially in data-sparse environments. In the coming years, we are pursuing efforts to integrate best practices from experimental psychology, criminology, data science, network analysis, and organizational theory to create a defensible, validated, and empirically-sound approach for risk assessment, validation, and theory testing. Ultimately, we aim to build a set of open principles, methods, programs, and data for using Red Teaming as an empirical research methodology to address a range of complex problems.

3. ***Leveraging Red Teaming as a tool for process improvement:*** In many cases, Red Teaming is viewed as the use of adversarial perspectives to improve an organization's security posture and address defensive exposures. Yet the process of emulating a potential adversary creates new opportunities for governments and organizations to consider issues or vulnerabilities beyond the security domain. Specifically, the systematic and structured use of Red Teaming can be leveraged to improve training programs, identify concerns with proposed legislation or new policies, and evaluate key gaps before a program is implemented that could be remediated and resolved. In the coming years, CART will focus on new methods and applications for organizations to integrate Red Teaming more broadly as part of their policy development and strategic decision-making processes.

4. ***Expanding the global community of Red Teaming research:*** Finally, CART also exists to build and educate a community engaged in scientifically-informed and practically-relevant Red Teaming. In our first few years, we focused on initial efforts to build a community via this newsletter, the dissemination of best practices, and identification of new research on Red Teaming. In the coming years, we are going to expand those efforts by partnering with other organizations to foster Red Teaming research venues, expand educational offerings on Red Teaming, and mentor the next generation of the Red Teaming community through community-building efforts.

At the end of the day, CART is not just a center but also a community, seeking to improve, employ, and advance Red Teaming for a range of problems and possibilities. I share this vision with you to ask that if any of you are interested in partnering with us, please do not hesitate to reach out to myself (**bbehlendorf@albany.edu**) or the Center (**cart@albany.edu**) and we would be happy to follow-up.

Once again, it is a pleasure to lead CART in these exciting times, and I look forward to talking with many of you in the near future about how we can collectively advance the art and science of Red Teaming together!

Sincerely,

Brandon Behlendorf

RED TEAMING DISPATCHES

Research

Davis, Paul. An Analysis-Centric View of Wargaming, Modeling, Simulation, and Analysis, Published in: Simulation and Wargaming. RAND Corporation (January 2022)

Davis, Paul and Paul Bracken. Artificial Intelligence for Wargaming and Modeling, Published in: Journal of Defense Modeling and Simulation: Applications, Methodology, Technology. RAND Corporation (February 2022)

Pettyjohn, Stacie, Becca Wasser, and Chris Dougherty. Dangerous Straits: Wargaming a Future Conflict over Taiwan, Center for a New American Security (June 2022)

Perla, Peter. Wargaming and The Cycle of Research and Learning, Scandanavian Journal of Military Studies (September 2022)

Reddie, Andrew and Bethany Goldblum. Evidence of the Unthinkable: Experimental Wargaming at the Nuclear Threshold, Journal of Peace Research (October 2022)

Nguyen, Chuyen, Caleb Morgan, and Sudip Mittal. Poster CTI4AI: Threat Intelligence Generation and Sharing after Red Teaming AI Models, In Proceedings of the 2022 ACM SIGSAC Conference on Computer and Communications Security (November 2022)

Fayet, Héloïse and Amélie Ferey. Imagining Beyond the Imaginary: The Use of Red Teaming and Serious Games in Anticipation and Foresight, Briefings de l'Ifri (March 2023)

McLaughlin, Kevin Lynn. Offense for Defense: The Art and Science of Cybersecurity Red Teaming, EDPACS (May 2023)

General

The Joint Warfare Centre declares Full Operational Capability for wargame design, NATO Joint Warfare Centre (February 2, 2022)

Wargaming A Long War: Ukraine Fights On, Modern War Institute at West Point (April 4, 2022)

Connections 2022: Wargaming and Experimentation, Connections Wargaming Conference (July 26-29, 2022)

Marine Corps University Launches Resident Wargaming Cloud, U.S. Marine Corps (September 28, 2022)

Wargaming Climate Change: Who Plays for the Red Team? War on the Rocks (November 8, 2022)

Why Red Team Exercises for AI Should be on a CISO's Radar, CSO (March 16, 2023)

Exercises

NTI and Munich Security Conference Convene Global Leaders for Fourth Annual Tabletop Exercise on Reducing High-Consequence Biological Threats, NTI (February 23, 2022)

Media Articles

Red Team: Reserve Marines simulate cyberspace attackers in Exercise Cyber Yankee 22, Today's Military (June 30, 2022)

ChatGPT in Red Teaming, Security Pentester Ninja (December 16, 2022)

SPOTLIGHT CART Project: CIPKit

Over the past two years, CART, in cooperation with the Center for Policy Research at the University at Albany, has developed and piloted the Countering International Proliferation Kit (CIPKit). The CIPKit is a set of tools that enables governments to use Red Team simulations to enhance their ability to prevent illegal proliferation attempts at acquiring dangerous technologies. The CIPKit includes all the necessary guidance, materials, and samples for government agencies to:

1. Improve awareness of the latest proliferation threats;
2. Exercise and validate their proliferation detection and export control measures;
3. Identify gaps and vulnerabilities in their strategic trade management systems; and
4. Boost cooperation with other agencies to stop illicit proliferation.

The program was successfully received in multiple countries across Eurasia. If you would like to learn more about CIPKit, contact us at cart@albany.edu.