

Gary Anthony Ackerman, Ph.D.

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Education

King's College London United Kingdom

Doctor of Philosophy Degree in War Studies, May 2014

Dissertation: *"More Bang for the Buck" – Examining the Determinants of Terrorist Adoption of New Weapons Technologies.*

Yale University New Haven, Connecticut

Master of Arts Degree in International Relations, May 2000

Concentration in Strategic Studies (Terrorism), award for top student in International Relations program.

University of the Witwatersrand Johannesburg, South Africa

Honors Degree in International Relations 1996, attained degree with distinction

Thesis: *The Changing Face of Terrorism*

Bachelor of Arts Degree, 1995, attained degree with distinction

Majors: Mathematics, Law and International Relations.

Additional Training:

Among 30 selected participants in the inaugural **Summer Workshop on Teaching about Terrorism (SWOTT)**, College of William & Mary, Williamsburg, Virginia, July 12 – 20, 2005

Certificate of Training in **The Impact of Middle East Terrorism on Law Enforcement**, San Jose Police Department, Special Investigations & Intelligence Unit, San Jose, California, November 2003

Certificate of Training in **Law Enforcement Response to WMD Incidents**, sponsored by the Department of Justice and the Louisiana State University Academy of Counter-Terrorist Education, August 2001

Certificate of Training in **Biological Warfare and Terrorism: Medical Issues and Responses**, Satellite Broadcast Course sponsored by the U.S. Army Medical Research Institute of Infectious Diseases, September 2000

Certificate of Training in **Medical Response to Chemical Warfare and Terrorism**, Satellite Broadcast Course sponsored by the U.S. Army Medical Research Institute of Chemical Defense, September 2000

Educational Achievements

Include: Award for Best Student in Yale International Relations, Class of 2000; Elected to and served on the Graduate Student Assembly at Yale Graduate School; Jan Smuts Prize Awarded to Best Student in International Relations (Honors) Faculty of Arts, University of the Witwatersrand; Silver *Proxime Accessit* Medal for Outstanding Meritorious Achievement in BA, University of the Witwatersrand; East Asia Project Book Prize for Final Long Paper on Japanese Foreign Policy, University of the Witwatersrand.

Professional Experience

January 2018
–Present

University at Albany, State University of New York Albany, New York

Full Professor, Department of Emergency Management and Homeland Security (September 2024)

Associate Professor, College of Emergency Preparedness, Homeland Security and Cybersecurity (CEHC)

Associate Dean, Research (August 2019 – December 2024)

Founding Director, Center for Advanced Red Teaming ([CART](#)) (November 2019 – May 2023); **Senior Investigator** (June 2023 – present)

Engages in **research, teaching and service** as a senior member of the faculty of the first university-level college dedicated to the broad area of homeland security, cybersecurity and emergency preparedness. Teaches introductory classes, threat assessment and research methods and mentors the Capstone course for advanced undergraduate majors. Has served as Chair of the Faculty (2018-2019) and was elected to and served on the University Senate from 2018 to 2022. Was appointed by the CEHC Dean to **lead strategic research development** efforts for the College and coordinate the establishment of several research laboratories. Founded and serves as **director of a research center** devoted to improving the art and science of red teaming and serving as a clearinghouse of best practices.

Primary person responsible for **raising over \$1.4 million** in funding and played key role in raising another **\$1 million** during tenure with Albany.

March 2024
–Present

Transformative Futures Institute Wichita, Kansas

Board Member

Serves on the board of a nonprofit research organization focused on utilizing foresight to mitigate societal-scale risks from advanced artificial intelligence (AI) and other potential global catastrophic risks.

March 2023
–Present

Nemesys Insights, LLC Albany, New York

Chief Executive Officer and Co-Founder

Manages a commercial company that utilizes novel technological and system-based red teaming approaches to analyze adversarial and competitive behavior.

August 2019
–Present

The Prosecution Project (tPP), Miami University of Ohio Oxford, Ohio

Advisory Board Member

Advises project members and staff regarding **theoretical and methodological questions** on collection and analysis of terrorism data.

January 2018
–Present

Global Catastrophic Risk Institute New York, New York

Senior Advisor

Advises Institute leadership on a broad variety of topics, from **strategic development to project management**. Contributes to Institute intellectual products.

June 2006
–December 2017

University of Maryland College Park, Maryland

Director, Unconventional Weapons and Technology Research Division, National Consortium for the Study of Terrorism and Responses to Terrorism (START) (September 2014 – December 2017)

Responsible for **standing up** and developing a **unique research center** under the START brand. Conceived of and led large research projects related to chemical, biological, radiological and nuclear (CBRN) terrorism and emerging technologies. Facilitated the development of **innovative analytical tools** with commercial potential. **Managed a staff** of 19 full-time and part-time employees. Served as **Principal or Co-Principal Investigator** on multiple high-profile research projects simultaneously. **Developed affiliations** with research and policy institutes, as well as government agencies worldwide. **Successfully pursued funding** proposals and multi-institution collaborative projects with other institutions. Spearheaded the **acquisition of several million dollars' worth of funded research** for the new entity within its first year.

Director, Special Projects Division, National Consortium for the Study of Terrorism and Responses to Terrorism (START) (September 2011 – August 2014)

Directed a division that was responsible for **innovation and integration** across research areas in START, which is a national Homeland Security Center of Excellence, based at the University of Maryland and funded by the Department of Homeland Security to study the **behavioral and social aspects of terrorism and society's response to terrorism**. Responsible for **strategically incubating** four research centers under the START brand.

Acting Director, National Consortium for the Study of Terrorism and Responses to Terrorism (START) (January 2013 – July 2013)

Assumed **all directorship duties** for the entire START consortium while existing Director was on sabbatical. This included overseeing START's **strategic development, solving high-level problems**, and being responsible for over 40 full-time staff. Interacted with parties across the consortium as well as senior government officials.

Research Director, National Consortium for the Study of Terrorism and the Responses to Terrorism (START) (June 2006 – September 2011)

Directed the research activities of START. Responsible for **coordinating, integrating and managing** the research of over 50 research projects spread over six primary and a dozen additional partner academic institutions. Since June 2008, performed additional functions of maintaining relationships with, and **disseminating research findings** to, officials in a variety of government agencies relevant to national security. Also responsible for directing the **production of START's flagship research product**. **Taught** semester-long courses on terrorism and related subjects.

Primary person responsible for **raising over \$11 million** in funding and played key role in raising another **\$39 million** during tenure with START.

January 2009 **International Centre for the Study of Radicalisation** London, United Kingdom
–December 2016

Associate Fellow

Advised Center leadership on **strategic direction and opportunities**.

December 2002 **The Akribis Group** San Jose, California
–May 2008

Director, Center for Terrorism and Intelligence Studies (2005-2008)

Senior Consultant, Special Research Division (2002-2005)

Directed all activities of Center. **Supervised** nine staff members and independent contractors in three offices worldwide. **Secured funding** for Center research projects. **Maintained relationships with senior officials** in the Departments of Homeland Security and Defense, as well as various intelligence agencies. **Conducted innovative counterterrorism research** and **threat assessments** for government and corporate clients. **Built strategic partnerships**. Reported to the Board of Directors of the Akribis Group.

September 2000 **Monterey Institute of International Studies** Monterey, California
–May 2006

Co-director and Research Director, Monterey Terrorism Research and Education Program (January-May, 2006)

Director, Weapons of Mass Destruction Terrorism Research Program, Center for Nonproliferation Studies (CNS) (2004-2006)

Deputy Director, Chemical and Biological Weapons Nonproliferation Program, CNS (2003-2004)

Directly responsible for **creation** of the Weapons of Mass Destruction Terrorism Research Program and its subsequent expansion into the Monterey Terrorism Research and Education Program. **Supervised** seven staff researchers and more than a dozen graduate students. Researched various areas of terrorism including: **threat assessment**; terrorist **technologies** and **motivations**; terrorism involving **CBRN weapons**; **empirical analysis** of trends in WMD terrorism; **government response** and prevention programs; **terrorist financing**; environmental extremism. Managed unique **database** of criminal and terrorist incidents involving CBRN materials. Prepared in-depth terrorist **group profiles**. Gained experience in leading large **funding** efforts and simultaneously **managing** multiple complex projects. Leader of project teams investigating the computational modeling of terrorist behavior and terrorist target selection. Delivered numerous **presentations** before a variety of audiences. Created **educational products** for the Center. Conducted well over one hundred **media interviews**, including national television and radio. Prepared **congressional testimony**. Arranged several **high-profile conferences** and workshops for various government agencies.

August 2002 **Los Alamos National Laboratory** Los Alamos, New Mexico
–January 2004

Consultant on Macroeconomic Model of Terrorism

Advised core modeling team at Theoretical Division, T-13, Complex Systems Group, Los Alamos National Laboratory on model development of agent-based model. Assisted with **data acquisition**. **Verified** modeling approaches.

September 2002 **MOVES Institute, Naval Postgraduate School** Monterey, California
–January 2003

Consultant on Project IAGO

Worked as a **consultant** to the United States Navy for the MOVES (Modeling, Virtual Environments and Simulation) Institute. Part of the **design team of Project IAGO** (Intelligent Asymmetric Goal Orientation), a cognitive model of terrorist behavior. Member of **conceptual planning group**. Conducted **extensive research** on terrorist model subject.

January 1998 **Workpad Technology** Auckland, New Zealand

–July 1998

Manager: International Markets

Initiated and developed **foreign market opportunities** for the company. This included public relations, involvement in **long-term strategic planning** and the conducting of **market research**. Heavily involved in the **development and production of new telecommunications products**.

January 1996 **African-Asian Society** Johannesburg, South Africa

–December 1997

Chief of Operations; Reported to Board of Directors

Planned and managed the activities of ten staff members responsible for day to day management of Society. Served as a member of the Working Committee. Contributed to **policy decisions** and the implementation of matters pertaining to **strategic direction, marketing, human resources, finances and proposed new projects**. Maintained ongoing contact with the South African Departments of Foreign Affairs and Trade & Industry at director and deputy director level. Supervised the Society's marketing initiative, as well as **financial and administration functions**. During this time was extensively involved in establishing valuable **international relationships** in the business, academic, cultural and diplomatic communities in Asia.

Publications

Refereed Journals

Gary Ackerman, Thomas Guarrieri, Justin V. Hastings and Steven Hoodjer, “Criminal Organizations and Nuclear Threats in Southeast Asia,” *International Journal of Nuclear Security*, Volume 9, Number 1 (2025).

Annie E. Sundelson, Gigi Kwik Gronvall, Gary Ackerman, Rupali Limaye, Crystal Watson, and Tara Kirk Sell, “Diplomacy disrupted: A mixed-methods analysis of Russian disinformation at the Ninth Review Conference of the Biological and Toxin Weapons Convention,” *Politics and the Life Sciences*, Volume 44, Number 1 (2025) [doi:10.1017/pls.2025.3].

Gary Ackerman, Annie Sundelson and Anna Wetzel, “‘No-one Likes a Cry-Baby’: The Effectiveness of Victimization Narratives in External Information Operations,” *Journal of Information Warfare*, Volume 23, Number 1 (2024).

Gary A. Ackerman, Brandon Behlendorf, Hayley Peterson, Jenna Latourette, Anna Wetzel, and Douglas Clifford, “The Strategic Implications of COVID-19 for Biological Weapons Pursuit: An Expert Simulation,” *Health Security* (2024).

Zachary Kallenborn, Gary Ackerman and Herbert Tinsley, “The Logic of Rampage Terrorism,” *Studies in Conflict & Terrorism* (2024), 1-30.

Zachary Kallenborn and Gary A. Ackerman, “Existential Terrorism: Can Terrorists Destroy Humanity?” *European Journal of Risk Regulation*, Volume 14, Number 4 (2023).

Brandon P. Behlendorf and Gary A. Ackerman, “DESSRT: A Novel Framework for Empirical Red Teaming at Scale,” *Simulation & Gaming* [published online in November 2022].

Gary A. Ackerman, Zachary Kallenborn and Philipp C. Bleek, “Going Viral? Implications of COVID-19 for Bioterrorism,” *CTC Sentinel*, Volume 15, Issue 5 (2022), 1-12. Available at: <https://ctc.westpoint.edu/going-viral-implications-of-covid-19-for-bioterrorism/>.

Zachary Kallenborn, Gary A. Ackerman and Philipp C. Bleek, “A Plague of Locusts? A Preliminary Assessment of the Threat of Multi-Drone Terrorism,” *Terrorism and Political Violence* (2022) [published online in 2022].

- Victor Asal, Nazli Avdan and Gary A. Ackerman, "Breaking Taboos: Why Insurgents Pursue and Use CBRN Weapons," *Journal of Peace Research* (2022) [published online in 2022].
- Gary Ackerman and Michael Burnham, "Towards a Definition of Terrorist Ideology," *Terrorism and Political Violence*, Volume 33, Issue 6 (2021), 1160-1190 [published online in April 2019]
- Markus K. Binder and Gary A. Ackerman, "Pick Your POICN: Introducing the Profiles of Incidents Involving CBRN and Non-state Actors (POICN) Database," *Studies in Conflict and Terrorism*, Volume 44, Issue 9 (2021), 730-754 [published online in March 2019]
- Crystal Watson, Matthew Watson, Gary Ackerman and Gigi Gronvall, "Expert Views on Biological Threat Characterization for the U.S. Government: A Delphi Study," *Risk Analysis*, Volume 37, Issue 12 (2017), 2389-2404.
- Irina A. Iles, Michael Egnoto, Brooke Fisher Liu, Gary Ackerman, Holly Roberts and Daniel Smith, "Understanding the Adoption Process of National Security Technology: An Integration of Diffusion of Innovations and Volitional Behavior Theories," *Risk Analysis*, Volume 37, Issue 11 (2017), 2246-2259.
- Michael Egnoto, Gary Ackerman, Irina Iles, Holly A. Roberts, Brooke Liu, Daniel Smith and Brandon Behlendorf, "What Motivates the Blue Line for Technology Adoption? Insights from a Police Expert Panel and Survey," *Policing: An International Journal of Police Strategies and Management*, Volume 40, Issue 2 (2017), 306-320.
- Gary A. Ackerman, Jun Zhuang and Sitara Weerasuriya, "Cross-Milieu Terrorist Collaboration: Using Game Theory to Assess the Risk of a Novel Threat," *Risk Analysis*, Volume 37, Issue 2 (February 2017), 342-371.
- Gary A. Ackerman and Lauren Pinson, "Speaking Truth to Sources: Introducing a Method for the Quantitative Evaluation of Open Sources in Event Data," *Studies in Conflict and Terrorism*, Volume 39, Issue 8 (2016), 617-640.
- Gary A. Ackerman (ed.), *Designing Danger: Complex Engineering by Violent Non-State Actors: Special Issue of the Journal of Strategic Security*, Volume 9, Issue 1 (Spring 2016), i-133.
- Gary A. Ackerman, "Introduction to the Special Issue," *Journal of Strategic Security*, Volume 9, Issue 1 (Spring 2016), 1-11.
- Gary A. Ackerman, "The Provisional Irish Republican Army and the Development of Mortars," *Journal of Strategic Security*, Volume 9, Issue 1 (Spring 2016), 12-34.
- Gary A. Ackerman, "Comparative Analysis of VNSA Complex Engineering Efforts," *Journal of Strategic Security*, Volume 9, Issue 1 (Spring 2016), 119-133.
- Brooke Fisher Liu, Holly Roberts, Elizabeth L. Petrun Sayers, Gary Ackerman, Daniel Smith and Irina Iles, "Preparing for the Worst: Public Perceptions of Risk Management Innovations," *Journal of Risk Research* (2016), 1-24.
- Victor Asal, Hyun Hee Park, R. Karl Rethemeyer and Gary Ackerman, "With Friends Like These...: Why Terrorist Organizations Ally," *International Public Management Journal*, Volume 19, Issue 1 (2015), 1-30.
- Crystal Boddie, Matthew Watson, Gary Ackerman, and Gigi Kwik Gronvall, "Assessing the Bioweapons Threat," *SCIENCE*, Volume 349, Issue 6250 (August 21, 2015), 792-793 (Supplementary materials: 1-16).
- Elizabeth L. Petrun, Irina Iles, Holly Roberts, Brooke Fisher Liu and Gary Ackerman, "Diffusing Controversial Technology: Barriers, Incentives, and Lessons Learned," *Review of Communication*, Volume 15, Issue 2 (2015), 140-160.
- Gary A. Ackerman and Lauren E. Pinson, "An Army of One: Assessing CBRN Pursuit and Use by Lone Wolves and Autonomous Cells," *Terrorism and Political Violence*, Volume 26, Number 1 (2014), 226-245.

Gary Ackerman and Jeffrey M. Bale, "The Potential for Collaboration Between Islamists and Western Left-Wing Extremists: A Theoretical and Empirical Introduction," *Dynamics of Asymmetric Conflict*, Volume 5, Number 3 (2012), 151-171.

Victor H. Asal, Gary A. Ackerman and R. Karl Rethemeyer, "Connections Can Be Toxic: Terrorist Organizational Factors and the Pursuit of CBRN Weapons," *Studies in Conflict & Terrorism*, Volume 35, Number 3 (2012), 229-254 [*Routledge Politics: Highly Cited Articles Collection 2012-2013*].

Ronald L. Breiger, Gary A. Ackerman, Victor Asal, David Melamed, H. Brinton Milward, R. Karl Rethemeyer, Eric Schoon, "Application of a Profile Similarity Methodology for Identifying Terrorist Groups That Use or Pursue CBRN Weapons," *Lecture Notes in Computer Science*, Volume 6589 (2011), 26-33.

Gary Lafree and Gary Ackerman, "The Empirical Study of Terrorism: Social and Legal Research," *Annual Review of Law and Social Science*, Volume 5 (2009), 347-374.

Gary Ackerman, Casey Getz and Molly James, "Reinventing Castor and Pollux: The Application of Social Bookmarking Technology to the National Intelligence Domain," *International Journal of Intelligence and Counterintelligence*, Volume 20, Number 4 (2007), 678-698.

Gary Ackerman, "It is Hard to Predict the Future: Evolving Nature of Threats and Vulnerabilities," in Martin Hugh-Jones (ed.), *Preparedness of Veterinary and Public Health Services in Responding to Accidental and Provoked Biological Disasters*, *OIE Scientific and Technical Review*, Volume 25, Number 1 (2006), 353-360.

Gary Ackerman and Jennifer Giroux, "The History of Biological Disasters with Animal Origins in North America," in Martin Hugh-Jones (ed.), *Preparedness of Veterinary and Public Health Services in Responding to Accidental and Provoked Biological Disasters*, *OIE Scientific and Technical Review*, Volume 25, Number 1 (2006), 83-92.

Gary Ackerman, "WMD Terrorism Research: Whereto from Here?," *International Studies Review*, Volume 7, Number 1 (March 2005), 140-143.

Gary Ackerman, "Beyond Arson? A Threat Assessment of the Earth Liberation Front," *Terrorism and Political Violence*, Volume 15, Number 4 (Winter 2004), 143-170.

Books and Book Editorship

Gary Ackerman and Jeremy Tamssett (eds.), *Jihadists and Weapons of Mass Destruction*, Boca Raton, Florida: CRC Press (2009), 494 pages.

Series Editor (along with Laura Dugan and Anthony Lemieux) of the book series *Causes, Conduct, and Consequences of Terrorism*, Oxford University Press.

Book Chapters

[Peer-reviewed chapters denoted by *; remainder editor-reviewed]

Gary A. Ackerman and Bryan Early, "State Sponsorship of Nuclear Terrorism," in Sarah Tzinieres and Christopher Hobbes (eds.), *Oxford Handbook on Nuclear Security*, Oxford: Oxford University Press (2023).

Markus Binder and Gary A. Ackerman, "CBRN Terrorism," in Victor Asal, et. al. (eds.), *The Oxford Research Encyclopedia of International Studies*, Oxford: Oxford University Press (2023).*

Gary Ackerman, "The Emerging Terrorist Technological Landscape," in Nicolas Stockhammer (ed.), *Routledge Handbook of Transnational Terrorism*, London: Routledge (2023).

Stephen Johnson and Gary A. Ackerman, "Terrorism Databases: Problems and Solutions," in Lara A. Frumkin, John F. Morrison and Andrew Silke (eds.), *A Research Agenda for Terrorism Studies*, Cheltenham, United Kingdom: Edward Elgar Publishing (forthcoming).

Gary A. Ackerman and Douglas Clifford, "Red Teaming and Crisis Preparedness," in Eric Stern, *The Oxford Encyclopedia of Crisis Analysis*, Oxford: Oxford University Press [published online August 31, 2021 at <https://doi.org/10.1093/acrefore/9780190228637.013.1969>]*

Seth D. Baum, Robert de Neufville, Anthony M. Barrett, and Gary A. Ackerman, "Lessons for Artificial Intelligence from Other Global Risks," in Maurizio Tinnirello (ed.), *The Global Politics of Artificial Intelligence*, Boca Raton, Florida: CRC Press (2020).*

Gary Ackerman and Anastasia Kouloganes, "Single-Issue Terrorism," in Andreas Gofas, Richard English, Stathis N. Kalyvas, and Erica Chenoweth (eds.), *The Oxford Handbook of Terrorism*, Oxford: Oxford University Press (2019), www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780198732914.001.0001/oxfordhb-9780198732914-e-18.

Gary Ackerman, "CBRN Terrorism," in Andrew Silke (ed.), *Routledge Handbook of Terrorism and Counter-Terrorism*, New York: Routledge (2019).

Gary Ackerman and James Halverson, "Attacking Nuclear Facilities: Hype or Genuine Threat?," in Brecht Volders and Tom Sauer (eds.), *Nuclear Terrorism: Countering the Threat*, New York: Routledge (2016), 111-141.

Brooke M. Fowler, Irina Illes, Brooke Fisher Liu, Holly A Roberts, Elizabeth L Petrun, and Gary A Ackerman, "Diffusing Portable Radiation Detectors Among First Responders," in Updesh Kumar (ed.), *Routledge International Handbook of Psychosocial Resilience*, New York: Routledge (2016), 424-435.

Gary Ackerman, "The Theoretical Underpinnings of Terrorist Innovation Decisions," in Magnus Ranstorp and Magnus Normark (eds.), *Understanding Terrorism Innovation and Learning: Al-Qaeda and Beyond*, New York: Routledge (2015), 19-52.

Eric Croddy and Gary Ackerman, "Biological and Chemical Terrorism: A Unique Threat," in Tener Goodwin Veenema (ed.), *Disaster Nursing and Emergency Preparedness for Chemical, Biological, and Radiological Terrorism* (3rd edition), New York: Springer (2012), 363-380.

Jeffrey M. Bale and Gary A. Ackerman, "Profiling the WMD Terrorist Threat," in Stephen M. Maurer (ed.), *WMD Terrorism: Science and Policy Choices*, Cambridge, MA: MIT Press (2009), 11-46.

Gary Ackerman, "Defining Knowledge Gaps Within CBRN Terrorism Research," in *Unconventional Weapons and International Terrorism: Threat Convergence in the Twenty-First Century*, Magnus Ranstorp and Magnus Normark (eds.), New York: Routledge (2009), 13-26.

Gary Ackerman and Jeremy Tamsett, "Introduction," in Gary Ackerman and Jeremy Tamsett (eds.), *Jihadists and Weapons of Mass Destruction*, Boca Raton, Florida: CRC Press (2009), xi-xxxiii.

Gary Ackerman, "The Future of Jihadists and WMD: Trends and Emerging Threats," in Gary Ackerman and Jeremy Tamsett (eds.), *Jihadists and Weapons of Mass Destruction*, Boca Raton, Florida: CRC Press (2009), 359-400.

Jeremy Tamsett and Gary Ackerman, "Conclusion," in Gary Ackerman and Jeremy Tamsett (eds.), *Jihadists and Weapons of Mass Destruction*, Boca Raton, Florida: CRC Press (2009), 401-418.

Gary Ackerman and Victor Asal, "A Historical Overview of Biological Weapons Identification, Characterization and Attribution," in *Terrorism, War or Disease? Unraveling the Use of Biological Weapons*, Anne Clunan, Peter Lavoy and Susan Martin (eds.), Palo Alto, California: Stanford University Press (2008), 186-215.

William Potter and Gary Ackerman, "Catastrophic Nuclear Terrorism: A Preventable Peril," in *Global Catastrophic Risks*, Nick Bostrom and Milan M. Circkovic (eds.), Oxford: Oxford University Press (2008), 402-449.

Gary Ackerman and Sundara Vadlamudi, "The Case of Ramzi Youssef," in James Forest (ed.), *Countering Terrorism and Insurgency in the 21st Century: International Perspectives, Volume 3: Lessons from the Fight Against Terrorism*, Westport, Connecticut: Praeger Security International (2007), 128-144.

Gary A. Ackerman, Jeffrey M. Bale and Kevin S. Moran, "Assessing the Threat to Critical Infrastructure," in James Forest (ed.), *Homeland Security: Protecting America's Targets, Volume III: Critical Infrastructure*, Westport, Connecticut: Praeger Publishers (2006), 33-60.

Gary Ackerman, "Financing Terrorism: Money for the Cause," in Nancy Matuszak (ed.), *History Behind the Headlines: Terrorism*, Farmington: Gale (2002), 91-103.

Gary Ackerman, "Chemical Terrorism Threats," in Nancy Matuszak (ed.), *History Behind the Headlines: Terrorism*, Farmington: Gale (2002), 27-40.

Encyclopedia Contributions

Gary Ackerman, "The Psychological and Social Sequelae of Bioterrorism," in *Encyclopedia of Bioterrorism Defense*, Raymond A. Zilinskas and Rebecca Katz (eds.), New York: Wiley (2011), 518-524. Revised chapter for 2011 edition of original 2005 publication.

Gary Ackerman, "The 1993 World Trade Center Attack," in Jeff Larsen, James Wirtz, and Eric Croddy (eds.), *Weapons of Mass Destruction: An Encyclopedia of Worldwide Policy, Technology, and History*, ABC-CLIO (2004), 325-326.

Gary Ackerman, "Gruinard Island," in Jeff Larsen, James Wirtz, and Eric Croddy (eds.), *Weapons of Mass Destruction: An Encyclopedia of Worldwide Policy, Technology, and History*, ABC-CLIO (2004), 144-146.

Gary Ackerman, "Richard Reid," in Frank G. Shanty and Raymond Picquet (eds.), *Encyclopedia of World Terrorism*, New York: M.E. Sharpe (2003), 206-207.

Gary Ackerman, "Mohammed Atef," in Frank G. Shanty and Raymond Picquet (eds.), *Encyclopedia of World Terrorism*, New York: M.E. Sharpe (2003), 169-170.

Non-Refereed Articles

Brian Nussbaum, Unal Tatar, Benjamin Yankson, Gary Ackerman and Brandon Behlendorf, "The Internet of Very Cold Things," *Lawfare* (October 10, 2021), <https://www.lawfareblog.com/internet-very-cold-things>.

Gary A. Ackerman, "The Emerging Terrorist Technological Landscape," in Nicolas Stockhammer (ed.), *EICTP Vienna Research Papers on Transnational Terrorism and Counter-Terrorism*, Vienna: European Institute for Counter Terrorism and Conflict Prevention, Volume 3, 55-66 (2021). Available at: <https://www.eictp.eu/en/eictp-vienna-research-papers-on-transnational-terrorism-and-counter-terrorism-trends-and-scenarios-of-transnational-terrorism/>.

Gary Ackerman and Hayley Peterson, "Terrorism and COVID-19: Actual and Potential Impacts," *Perspectives on Terrorism*, Volume 14, Issue 3 (2020), 59-73.

Gary A. Ackerman, "The Non-State Dimension of Nuclear Command, Control and Communications," *NAPSNet Special Reports* (August 29, 2019).

Rebecca Earnhardt and Gary Ackerman, "Modelling Terrorist Technology Transfer," in Georgia Harrigan (ed.), *On the Horizon: Security Challenges at the Nexus of State and Non-State Actors and Emerging/Disruptive Technologies*, DOD Strategic Multi-layer Assessment Periodic Publication (March 2019), 34-39.

Gary Ackerman, "Bioweapons in Russia today: a Book Review of *Biosecurity in Putin's Russia* by Raymond Zilinskas and Philippe Mauger," *Nature*, Volume 555 (March 8, 2018), 162-163.

Gary Ackerman and Michelle Jacome, "WMD Terrorism: The Once and Future Threat," *PRISM: The Journal of Complex Operations*, Volume 7, Number 3 (2018).

Ronald Breiger, Lauren Pinson and Gary Ackerman, "From Factors to Actors: Enhancing the Reliability of CBRN Analysis," *CBRNe World* (April 2016), 30-37.

Gary Ackerman and James Halverson, "Not Secure Enough: The Threat of Terrorists Acquiring Nuclear Materials is Still Serious," *War on the Rocks* (April 6, 2016), <http://warontherocks.com/2016/04/not-secure-enough-the-threat-of-terrorists-acquiring-nuclear-materials-is-still-serious/>.

Gary A. Ackerman and Ryan Pereira, "Jihadists and WMD: a Re-evaluation of the Future Threat," *CBRNe World* (October 2014), 27-34.

Gary Ackerman, Markus Binder and Emily Iarocci, "A Global Picture of Non-State Actors and CBRN," *War on the Rocks* (August 13, 2014), <http://warontherocks.com/2014/08/a-global-picture-of-non-state-actors-and-cbrn/>.

Peter S. Henne, Jonathan Kennedy, John P. Sawyer and Gary A. Ackerman, "Leveraging Advances in Qualitative Methodology to Analyze Radicalization," in Hriar Cabayan, Valerie Sitterle and Matt Yandura (eds.), *Looking Back, Looking Forward: Perspectives on Terrorism and Responses to It*, DOD Strategic Multi-layer Assessment Occasional White Paper (September 2013), 104-113.

Gary Ackerman and Lauren Pinson, "CBRN: Gauging The Threat," *Defence Procurement International* (Summer 2013), 52-57.

Hriar Cabayan, Charles Ehlschlaeger, Anne McGee and Gary Ackerman (eds.), *Humans in the Loop: Validation and Validity Concepts in the Social Sciences in the Context of Applied and Operational Settings*, DOD Strategic Multi-layer Assessment Occasional White Paper (August 2013), 32 pages.

Gary Ackerman and Anne McGee, "What Does Validation Mean? Scientific Validation in Social Science," in Hriar Cabayan, Charles Ehlschlaeger, Anne McGee and Gary Ackerman (eds.), *Humans in the Loop: Validation and Validity Concepts in the Social Sciences in the Context of Applied and Operational Settings*, DOD Strategic Multi-layer Assessment Occasional White Paper (August 2013), 14-16.

Gary Ackerman, "Understanding Terrorist Innovation Through the Broader Innovation Context," in Maria J. Rasmussen and Mohamed Hafez (eds.), *Terrorist Innovations in Weapons of Mass Effect: Preconditions, Causes, and Predictive Indicators*, The Defense Threat Reduction Agency, Advanced Systems and Concepts Office, Report Number ASCO 2010-019 (October 2010), 51-85.

Gary Ackerman, "Review of 'World at Risk: The Report of the Commission on the Prevention of WMD Proliferation and Terrorism,' by Bob Graham, et. al.," *Journal of Homeland Security and Emergency Management*, Volume 6, Number 1 (2009) [published online].

Gary Ackerman, "WMD Terrorism and the Perils of Prediction," in Nancy Chesser (ed.), *Anticipating Rare Events: Can Acts of Terror, Use of Weapons of Mass Destruction or Other High Profile Acts Be Anticipated? A Scientific Perspective on Problems, Pitfalls and Prospective Solutions*, Topical Strategic Multi-Layer Assessment (SMA) Multi-Agency/Multi-Disciplinary White Papers in Support of Counter-Terrorism and Counter WMD (November 2008), 11-16.

Gary Ackerman, "Motivations for Engaging in Nuclear Terrorism," *FfP Threat Convergence Expert Series*, Fund for Peace (FfP) (January 25, 2008), 1-11.

Gary A. Ackerman and Kevin S. Moran, *Bioterrorism and Threat Assessment*, Paper #22 commissioned by the Weapons of Mass Destruction Commission (The "Blix" Commission), Stockholm (2005), 1-18.

Gary Ackerman, "Lessons Regarding Bioterrorism," in *The Threat of WMD and the Security of the Korean Peninsula*, Proceedings of the 12th Hwarangdae International Symposium, Korea Military Academy (October 2003), 211-240 in *English and Korean*.

Gary Ackerman and Laura Snyder, "Would They If They Could? WMD Terrorism in the Middle East," *Bulletin of the Atomic Scientists* (May/June 2002), 41-47.

Gary Ackerman, "Facing the Unimaginable: A Review of The New Face of Terrorism by Gurr and Cole," *Global Dialogue*, Volume 3, Number 4 (Autumn 2001), 144-148.

Other Publications

Gary Ackerman, Brandon Behlendorf, Seth Baum, Hayley Peterson, Anna Wetzel, and John Halstead. *The Origin and Implications of the COVID-19 Pandemic: An Expert Survey*. Global Catastrophic Risk Institute Technical Report Volume 24, Number 1 (February 2024). Available online at: https://gcrinstitute.org/papers/069_covid-origin.pdf.

Gary A. Ackerman, Brandon Behlendorf, Douglas Clifford, Hayley Peterson, Jenna LaTourette and Anna Wetzel, *Russian State Sponsorship and Far Right Extremism Relevant Attack Summaries*, Report Prepared for Multinational Corporation Industry Client (identity withheld by request) (Center for Advanced Red Teaming: Albany, New York, 2022).

Gary A. Ackerman, Brandon Behlendorf, Douglas Clifford, Hayley Peterson, Jenna LaTourette and Anna Wetzel, *Background Report on Russian State Sponsorship and Far Right Extremism*, Report Prepared for Multinational Corporation Industry Client (identity withheld by request) (Center for Advanced Red Teaming: Albany, New York, 2022).

Gary A. Ackerman, Brandon Behlendorf, Douglas Clifford, Hayley Peterson, Jenna LaTourette and Anna Wetzel, *Russian State Sponsorship and Far Right Extremism Simulated Attack Scenarios*, Report Prepared for Multinational Industry Client (identity withheld by request) (Center for Advanced Red Teaming: Albany, New York, 2022).

Gary A. Ackerman, Brandon Behlendorf, Douglas Clifford, Hayley Peterson, Jenna LaTourette and Anna Wetzel, *Red Teaming the Post-COVID-19 Biological Weapons Threat Landscape, Final Project Report to the Defense Threat Reduction Agency* (Center for Advanced Red Teaming: Albany, New York, 2021).

Gary A. Ackerman, Douglas Clifford, Anna Wetzel, Jenna LaTourette and Hayley Peterson, *Experimental Red Teaming to Support Integration of Information in Joint Operations*, Report Prepared for the Strategic Multilayer Assessment, Office of the Secretary of Defense Joint Staff J-39 (University at Albany, SUNY: Albany, NY, 2021).

Gary A. Ackerman, Brandon Behlendorf, Jun Zhuang, Kyle Hunt, Douglas Clifford, Anna Wetzel, Hayley Peterson and Jenna LaTourette, *Validating Adaptive Behavior Models of Adversaries for Risk Assessment (VABMARA) Framework*, Prepared for the Center for Accelerating Operational Efficiency, a Department of Homeland Security Center of Excellence (University at Albany, SUNY: Albany, NY, 2021).

Gary A. Ackerman, Anna Wetzel, Douglas Clifford, Hayley Peterson, and Jenna Latourette, *Red Teaming Great Power Competition in the CENTCOM AOR*, Final Report to the Department of Defense Strategic Multilayer Assessment, Office of the Secretary of Defense Joint Staff J-39 (Albany, NY: Center for Advanced Red Teaming, 2020).

Gary Ackerman, "Defining What Drives A Terrorist," *Academic Minute* (January 6, 2020), available at: <https://www.insidehighered.com/audio/2020/01/06/defining-what-drives-terrorist>.

Gary Ackerman, *Terrorist Tactical and Technological Innovation: What We Need to Know for the Next Decade*, Report commissioned by the National Intelligence Council (August 2019).

Gary Ackerman, *Out of the Frying Pan and Into the Fire? Violent Non-state Actors' External Response to Battlefield Losses*, Report prepared for the RAND Insurgency Board Panel of Experts (May 2019).

Gary Ackerman, et. al., *Gaming Armageddon: A Compendium of Red-Team Scenarios Simulating Radiological and Nuclear Non-State Threats* (College Park, MD: START, 2015)

Gary Ackerman, "Rage, Rage Against the Dying of the Slight," *START Newsletter* (March 30, 2015), <http://www.start.umd.edu/news/rage-rage-against-dying-slight>.

Gary Ackerman, Markus Binder and Robert Denaburg, "Are U.S. chemical facilities still open to terrorist attacks?," *START Newsletter* (August 28, 2014), <http://www.start.umd.edu/news/are-us-chemical-facilities-still-open-terrorist-attacks>.

Gary Ackerman and Markus Binder, "Anatomizing Chemical and Biological Non-State Adversaries," *START Research Brief* (April 2014), https://www.start.umd.edu/pubs/STARTResearchBrief_Anatomizing.pdf.

Mila Johns, McKenzie O'Brien and Gary Ackerman, *Zachary Chesser's Radical Affiliations*, National Consortium for the Study of Terrorism and Responses to Terrorism (START): College Park, MD (2011). Incorporated into *Zachary Chesser: A Case Study in Online Islamist Radicalization and Its Meaning for the Threat of Homegrown Terrorism*, A Report by the Staff of the Senate Committee on Homeland Security and Governmental Affairs (February 2012).

Gary Ackerman and Matthew Rhodes (eds.), *START Research Review 2009*, College Park, Maryland: National Consortium for the Study of Terrorism and Responses to Terrorism (2009).

Jeffrey Bale and Gary Ackerman, "Al-Qaida and Weapons of Mass Destruction," *San Jose Mercury News* (Sunday, December 22, 2002).

Gary Ackerman and Cheryl Loeb, "Much Ado Over Anthrax," *San Diego Union Tribune* (October 21, 2001).

Gary Ackerman and Cheryl Loeb, "Watch Out for America's Own Extremists," *Christian Science Monitor* (October 19, 2001).

Gary Ackerman and Jeffrey Allan, "Will We Be Ready?," *Globe and Mail* (February 8, 2001).

Gary Ackerman, "Attack on Cole Exposes Our Vulnerability to Terrorism," *Los Angeles Times* (October 15, 2000).

Publications in Progress and Under Review

Gary A. Ackerman and Hayley Peterson, "The Coming Plague: Terrorism and Pandemics," in Jeffrey Kaplan (ed.), *The Changing Face of Terrorism in the 21st Century*, New York: Routledge (*forthcoming*).*

Gary Ackerman, Brandon Behlendorf and Philipp Bleek, "Infectious Incentives: Revisiting Why States Pursue Biological Weapons" (submitted).

Victor Asal, Amira Jadoon, Gary A. Ackerman, and Bircu Pinar Alakoc, "Organizational Dynamics of Terrorism" in Brian J. Phillips (ed.), *What Do We Know About Terrorism*. London: Bloomsbury (in preparation).

Zachary Kallenborn, John Fogle, Kyle Killian, Gary A. Ackerman, and Seth Baum, "The Complex Relationship Between Militaries and Global Catastrophic Risk" (in preparation).

Gary A. Ackerman, Ori Swed and Kerry Chavez, "A Computational Threat Assessment Model of Terrorist Drone Attacks on the United States Homeland" (in preparation).

Gary Ackerman and Annabella Bogart, "Characteristics of State Bioweapons Programs: A Counterfactual Simulation Analysis" (in preparation).

Gary Ackerman and Anna Wetzel, "Validating a New Validation Approach: Comparing Risk Models, Human Simulation, and Ground Truth in Adversary Tactical Choice" (in preparation).

Gary Ackerman and Nakissa Jahanbani, "Out of the Frying Pan and Into the Fire? Violent Non-state Actors' External Response to Battlefield Losses" (in preparation).

Gary A. Ackerman, Markus K. Binder & Crystal Watson, "Chemical and Biological Threats: The Emerging Strategic Landscape" (in preparation).

James Halverson and Gary A. Ackerman, “Explaining the Non-use of Nuclear and Radiological Terrorism” (in preparation).

Michael Burnham, Herbert Tinsley and Gary Ackerman, “Conceptualizing a Terrorist Ideology” (in preparation).

Current Research

“Radiological and Nuclear Landscape Horizon Scan”

Principal Investigator

Research project conducted through Pacific Northwest National Laboratory on behalf of the National Nuclear Security Administration, Department of Energy, to conduct a horizon scan of emerging technological, geopolitical, strategic and economic developments with relevance to global material security [Amount: \$146,054].

“Anticipating Terrorist Technology Adoption to Secure the Homeland (ATTASH)”

Principal Investigator

Research project conducted through the National Counterterrorism Innovation, Technology, and Education Center (NCITE), a Department of Homeland Security Center of Excellence, in partnership with DHS Science and Technology Directorate, to conduct a horizon scan of emerging terrorist threat technologies and to develop a validated threat assessment tool for use by various DHS components [Amount: \$311,857].

Unfunded Research

“Risk Assessment of Terrorist Drone Attacks on the US Homeland”

Together with colleagues at Texas Tech University, building a Monte Carlo-based risk model assessing the likelihood of terrorists successfully launching a drone attack on the US homeland. The model considers a variety of terrorist actors. A draft model is currently being constructed.

“Conceptualizing Terrorist Ideology”

Working with collaborators to extend our previous work from defining terrorist ideology to characterizing terrorist ideology by creating a typology of the phenomena and epiphenomena associated with the concept.

Selected Past Project Experience

“Validating Adaptive Behavior Models of Adversaries for Risk Assessment (VABMARA) Framework”

Principal Investigator (2019-2021); *Co-Principal Investigator* (2021- present)

Research project conducted through the Center for Accelerating Operational Efficiency, a Department of Homeland Security Center of Excellence, in partnership with DHS Science and Technology Directorate and the Transportation Security Administration, to develop a viable, low-cost validation framework for tactical- and operational-level adaptive adversary behavior models [Yr1 Amount: \$245,769; Yr2 (Renewed) Amount: \$198,307; Yr3 (Renewed) Amount: \$245,210; Yr4 (Renewed) Amount: \$246,823].

“Red Teaming the Chemical Weapons Threat Landscape”

Principal Investigator

Research project conducted on behalf of the Defense Threat Reduction Agency and the Department of Homeland Security to assess the strategic implications of recent chemical weapons uses on international chemical weapons strategy using a large expert simulation [Amount: \$135,000].

“Employing Red Teaming for Countering Iranian Proliferation”

Co-Principal Investigator

Research project sponsored by the U.S. Department of State to develop a kit whereby partner nations can gain the capability to conduct red teaming in order to improve their ability to counter Iranian proliferation attempts [Amount: \$492,524].

“Simulation-Driven Engagement for Preventing Intangible Technology Transfer”

Co-Principal Investigator

Research project sponsored by U.S. Department of State to utilize red teaming simulations to assist foreign partners in preventing the illicit transfer of dangerous intangible technologies [Amount: \$245,012].

“CART Support to the Office of Mobile Security Deployments”

Principal Investigator

Designed and delivered capacity development activities in order to improve the threat analysis capabilities of the U.S. Department of State Bureau of Diplomatic Security (completed August 2022) [Amount: \$75,774].

“The Future of the Risk Sciences in Homeland Security Workshop”

Principal Investigator

Designing, convening, implementing and analyzing an interdisciplinary workshop sponsored by the Center for Accelerating Operational Efficiency, whereby academic, government and industry stakeholders work to jointly develop a research agenda for the risk sciences that will serve the needs of the Homeland Security Enterprise (completed January 2023) [Amount: \$75,718].

“Red Teaming the Post-COVID-19 Biological Weapons Threat Landscape”

Principal Investigator

Research project conducted on behalf of the Defense Threat Reduction Agency and the Department of Homeland Security to assess the strategic implications of the COVID-19 pandemic on international biological weapons strategy (completed August 2021) [Amount: \$138,459].

“Research Support on Emerging Threats”

Principal Investigator

Research project conducted on behalf of a multinational corporation (identity withheld at sponsor request) to provide scenario-based threat assessments (completed April 2022) [Amount: \$54,127].

“Deploying Transportation Security Practices in State DOTs”

University Principal Investigator

Research project conducted on behalf of the National Academies Transportation Research Board to develop security assessment tools and improve security awareness among state Departments of Transportation (completed January 2022) [Amount: \$49,342].

“Integration of Information in Joint Operations”

University Principal Investigator

Research project conducted on behalf of the Joint Staff through the Strategic Multilayer Assessment Program, involving conducting large-scale experiments on the impact and countering of great power competitor disinformation (completed July 2021) [Amount: \$120,372].

“Integrated Discovery of Emerging and Novel Technologies (IDENT)”

Principal and Co-Principal Investigator

Research project conducted on behalf of the Defense Threat Reduction Agency to build a repeatable, scalable process for the discovery of emerging or disruptive technologies that may impact the counter-WMD mission space (completed 2020) [Amount: \$1,000,136].

“Red Teaming Great Power Competition in the CENTCOM AOR”

Principal Investigator

Research project conducted on behalf of U.S. Central Command through the Strategic Multilayer Assessment Program, using Strategic Dynamics Red Teaming to explore how Great Power Competition and regional dynamics might change following the targeted killing of Qassem Soleimani (completed March 2020) [Unfunded].

“Insider Threat to Cargo Aviation”

Principal Investigator

Developing a tool for the Department of Homeland Security to detect and manage insider threats in global cargo aviation (completed December 2018) [Amount: \$996,000].

“Study of Criminal History as an Indicator of Risk to Transportation Security or Insider Threat”

Co-Principal Investigator

Research project conducted on behalf of the Transportation Security Administration to empirically determine which types of criminal history are most indicative/diagnostic for future problematic behavior relevant to the Transportation Security Administration (completed June 2018) [Amount: \$175,000].

“Assessing Future Radiological and Nuclear Threats and Approaches to Addressing Them”

Principal Investigator

Research project conducted for the National Nuclear Security Administration employing a horizon scanning methodology to identify and characterize strategic threats and opportunities, in both the geopolitical and technological domains, with the potential to impact radiological and nuclear security within the next ten years (completed in March 2018) [Amount: \$110,000].

“Profiling the CB Adversary: Motivation, Psychology and Decision”

Principal Investigator

Research project to characterize the psychology of non-state chemical and biological adversaries and to provide strategic guidance to the Department of Homeland Security on incorporating these aspects into its risk reduction efforts (completed in June 2017) [Amount: \$200,000].

“Counterterrorism Net Assessment: Reframing the Struggle Against the Global Salafi Jihadi Movement”

Co-Principal Investigator

Conducted a major strategic review, including horizon scanning and analysis, of counterterrorism strategy in order to inform the next U.S. Administration (completed in June 2017) [Amount: \$80,000].

“Terrorist Ideologies Project”

Principal Investigator

Research project funded by the Department of Homeland Security to analyze the link between ideology and terrorist behavior using a unique quantitative coding of terrorist organization ideological elements over time (completed in June 2017) [Amount: ~\$100,000].

“Threat Study for Nuclear Smuggling Detection and Deterrence”

Principal Investigator

Research project assessing threat and deterrence for the National Nuclear Security Administration (completed in April 2017) [Amount: \$300,000].

“Terrorist Technology Transfer”

Principal Investigator

Collaborative project with Swedish researchers, funded by the Department of Homeland Security, to assess the pathways by which new technologies are transferred to, from and across terrorist organizations (completed in May 2017) [Amount: \$20,000].

“Mobile Radiation Detection Device Acceptance”

Principal Investigator

Overall lead on a multidisciplinary study for the Defense Advanced Research Projects Agency investigating the adoption by the public of large distributed networks of radiation detectors (completed in May 2017) [Amount: \$700,000].

“Assessing Future Chemical and Biological Threats and Approaches to Addressing Them”

Principal Investigator

Research project conducted for the Department of Homeland Security to engage in a high-level assessment of the strategic environment and U.S. Government policy in the area of chemical and biological threats in order to inform the strategic direction of the next Administration (completed in November 2016) [Amount: \$298,000; University of Maryland received \$73,000].

“Countering the Radicalization of Bioscientists in the Middle East and North Africa”

Co-Principal Investigator

Research and implementation project conducted for the Department of State (completed in December 2016) [Amount: \$450,000].

“Risk Assessment Support to the Transportation Security Administration”

Principal Investigator

Research project providing assessments of relative risk between insider and outsider attack, relative risk between traditional and homemade explosives and red teaming to investigate new threat pathways (completed in November 2016) [Amount: \$42,000].

“CAPERS/CAPARS: Criminal Activities to Penetrate European / African Radiological Security”

Principal Investigator

Research Project for a government agency investigating the tactics, techniques and procedures employed by criminals, traffickers and terrorists in Europe/Africa, as these are relevant for the security of nuclear and radiological materials (completed in April 2016) [Amount: \$157,000].

“New Analytic Methods for the Exploration of Open-Source Structured Databases to Enhance Situational Awareness for Effective Counter-WMD Strategies”

Co-Principal Investigator and Lead: Data Collection and Management

Research project under the Defense Threat Reduction Agency (completed in April 2016) [Amount: \$340,000].

“Integration of International Architecture Analyses”

Principal Investigator

Overall lead for research project conducted for the Domestic Nuclear Detection Office of the Department of Homeland Security. Project consisted of four separate sub-projects (completed in September 2015) [Amount: \$931,000].

“Complex Engineering by Terrorists”

Principal Investigator

Research project conducted for a government agency (completed in March 2015) [Amount: \$110,000].

“Consensus Framework for Informing Decision-making in the Biological Threat Characterization Program”

Co-Principle Investigator

Research project conducted for the Department of Homeland Security (completed November 2014) [Amount: \$416,000; University of Maryland received \$64,600].

“Anatomizing Non-State Chemical and Biological Adversaries”

Principal Investigator

Research project conducted for the Defense Threat Reduction Agency through the Naval Postgraduate School (completed in January 2014) [Amount: \$642,000].

“Characterizing the Global Nuclear Detection Architecture in Europe”

Co-Principal Investigator

Research project conducted for the Domestic Nuclear Detection Office of the Department of Homeland Security (completed in September 2013) [Amount: \$600,000].

“Global Futures: Radiological and Nuclear Terrorism”

Co-Principal Investigator

Research project conducted for Sandia National Laboratories (completed in August 2013) [Amount: \$200,000].

Joint Intelligence Preparation of the Intelligence Environment (JIPOE)

Subject Matter Consultant, Co-Principal Investigator on Violent Extremist Organization Legitimacy in South Asia Project

Part of strategic multilayer assessment (SMA) team convened by the Department of Defense and comprising all relevant government intelligence agencies. Assisted in the development of indicators for both nuclear smuggling and bioterrorism, as well as a knowledge framework for assessing the effectiveness of efforts to influence violent extremist organizations (2008–2013) [Amount: \$60,000].

“Transnational Criminal Organizations, Terrorists and Radiological/Nuclear (RN) Materials: Exploring a Potential Central American Nexus”

Co-Principal Investigator

Research project conducted for the Domestic Nuclear Detection Office of the Department of Homeland Security (completed in September 2012) [Amount: \$749,000].

“Radiological and Nuclear Adversary Behavior Profiles”

Principal Investigator

Research project conducted for the Domestic Nuclear Detection Office of the Department of Homeland Security (completed in July 2012) [Amount: \$149,000].

“Technologies of Lethality”

Principal Investigator

Research project conducted for the Domestic Nuclear Detection Office of the Department of Homeland Security (completed in July 2012) [Amount: \$344,000].

“Nuclear Command and Control Structures of Non-State Adversaries”

Co-Principal Investigator

Research project conducted for the Domestic Nuclear Detection Office of the Department of Homeland Security (completed in July 2012) [Amount: \$415,000; University of Maryland received \$202,000].

“Understanding and Combating Mass Casualty Terrorism”

Co-Principal Investigator

Research project under the Department of Homeland Security Center of Excellence grant to the National Center for the Study of Terrorism and Responses to Terrorism (START) (completed in May 2012) [Amount: \$175,000].

“Where the Extremes Touch: Investigating Collaboration Between Islamist Terrorists and Left- and Right-Wing Extremists”

Co-Principal Investigator

Research project under the Department of Homeland Security Center of Excellence grant to the National Center for the Study of Terrorism and Responses to Terrorism (START) (completed in January 2012) [Amount: \$37,000].

“Influencing Violent Extremist Organizations: An Empirical Assessment”

Principal Investigator

Research project involving more than twenty personnel conducted for the Office of the Secretary of Defense, Assistant Secretary of Defense for Research and Engineering (completed in December 2011) [Amount: \$115,000].

“Examining the Effect of Technological Change on Terrorist Use of Weapons of Mass Destruction”

Principal Investigator

Research project under the Department of Homeland Security Center of Excellence grant to the National Center for the Study of Terrorism and Responses to Terrorism (START) (completed in December 2011) [Amount: \$72,000].

“Islamic Radicalization in Europe and North America: Parallels and Divergence”

Co-Principal Investigator

Member of multinational research team on research project funded by the International Programs Office of the Department of Homeland Security (completed in August 2011) [Amount: \$114,000].

“Anatomizing Radiological and Nuclear Non-State Adversaries”

Principal Investigator

Research project conducted for the Domestic Nuclear Detection Office of the Department of Homeland Security (completed in March 2010) [Amount: \$250,000].

“Human and Social Forces in the Spread of the IED Threat: Innovation, Diffusion and Adaptation”

Workshop Chair

Conceived of, arranged and facilitated academic workshop exploring the human elements of the threat of terrorist use of improvised explosive devices (IEDs), November 20, 2008 (co-wrote final report, delivered in May 2009).

“New Horizons in Bioterrorism”

Workshop Chair

Arranged and facilitated high-level workshop and expert elicitation on future bioterrorist threats for the Department of Defense, August 11-12, 2008 (co-wrote final report, delivered in September 2008).

Global Terrorism Database

Senior Investigator

Instrumental in design and management of the Global Terrorism Database (GTD), funded by the Department of Homeland Security. Responsible for synthesis of two large data sets to constitute the combined GTD (synthesized version of GTD released in June 2009; available at: <http://www.start.umd.edu/gtd/>).

“Collaboration Tools for the Intelligence Community”

Consultant

Experimental support to General Dynamics Advanced Information Systems for research on collaboration within the Intelligence Community as part of the CASE program. Designed and managed several large experiments to test the tag|Connect and Catalyst collaboration software tools (2005-2008) [Amount: ~\$75,000].

“Al-Qa`ida and Critical Infrastructure”

Co-Principal Investigator

Research project sponsored by Lawrence Livermore National Laboratory for the Department of Homeland Security (completed in June 2006; available at: <https://e-reports-ext.llnl.gov/pdf/337776.pdf>) [Amount: \$68,000].

“Critical Infrastructure Terrorist Attack Database”

Co-Principal Investigator

Database development sponsored by Lawrence Livermore National Laboratory for the Department of Homeland Security (completed in June 2006) [Amount: \$60,000].

“Logic Evolved Decision-Making – an Application to Terrorist Attack Decisions”

Co-Principal Investigator

Research project evaluating analysis tools developed at Los Alamos National Laboratory, sponsored by the National Aeronautics and Space Administration (completed in January 2006).

“Decision Support Systems for Chemical and Biological Weapons Defense”

Investigator

Member of team building a decision support system for the Defense Threat Reduction Agency (2004-2005).

“Recommendations on the Development of Methodologies and Attributes for Assessing Terrorist Threats of WMD Terrorism”

Co-Principal Investigator

Research project sponsored by Los Alamos National Laboratory (completed in September 2004).

“Assessing Terrorist Motivations for Attacking Critical Infrastructure”

Principal Investigator

Research project sponsored by Lawrence Livermore National Laboratory for the Department of Homeland Security (completed in August 2004; available at <https://e-reports-ext.llnl.gov/pdf/341566.pdf>).

“Manned Gaming and Simulation Relating to Terrorism and Weapons of Mass Destruction: A Review”

Co-Principal Investigator

Research project sponsored by the Defense Threat Reduction Agency (completed in April 2004).

“Comprehensive Review of Existing Research and Published Material on the Computational Modelling of Terrorist Behavior”

Principal Investigator

Research project sponsored by the Defense Threat Reduction Agency (completed in August 2002).

Instruction Taught a variety of college-level courses (both graduate and undergraduate; both in-person and distance learning). Particular expertise in professional-level education and training of intelligence and law-enforcement communities.

Selected Academic Courses Taught

“Fundamentals of Homeland Security,” University at Albany (Graduate).

“Introduction to Emergency Preparedness, Homeland Security and Cybersecurity,” University at Albany (Undergraduate).

“Getting Ahead of the Bad Guys (or Gals): Anticipating Threats and Terrorism,” University at Albany (Undergraduate; First Year Experience course).

“Research Seminar in Emergency Preparedness, Homeland Security & Cybersecurity,” University at Albany (Undergraduate).

“Capstone Course in Emergency Preparedness, Homeland Security & Cybersecurity,” University at Albany (Undergraduate).

“Twisted Science: Understanding the Principles and Perils of CBRN Weapons,” University of Maryland (Undergraduate, co-taught).

“Terrorist Motivations and Behaviors,” University of Maryland (Undergraduate).

“Chemical, Biological, Radiological and Nuclear Weapons,” California University of Protection and Intelligence Management (now Henley-Putnam University) San Jose, California (Graduate and Undergraduate; online course).

“Critical Infrastructure Protection,” Monterey Institute of International Studies (Graduate; co-taught).

“Tools and Techniques of Threat Assessment,” Monterey Institute of International Studies (Graduate).

“Terrorism Involving Weapons of Mass Destruction,” Monterey Institute of International Studies (Graduate).

Also served on the University Development Committee of Henley-Putnam University. Engaged in curriculum and faculty development for the University’s Intelligence and Terrorism & Counterterrorism Degree Programs.

Selected Training Courses Delivered

“Strategic WMD Emerging Threat Red Teaming Exercise,” delivered to students at the National Defense University (2020 and 2022).

“CT Net Assessments: Anticipating the Next Terrorist Threat,” course delivered through the National Counterterrorism Center.

“Chasing Shadows: Anticipating Adversary Behavior,” course delivered to the Maryland Coordination and Analysis Center.

“Terrorist Strategy and Tactics,” George Mason University Summer Course on Terrorism in the 21st Century.

“Technology and Terrorism,” George Mason University Summer Course on Terrorism in the 21st Century.

“Enter the Terrorist,” analyst training for the Transportation Security Administration.

“Approaches to Anticipating Terrorist Threats and Behavior,” course delivered to Booz Allen Hamilton analysts.

“Jihadists and CB Weapons: A Brief Overview,” Center for Nonproliferation Studies Short Course on Chemical and Biological Weapons Issues.

Awards

CEHC Undergraduate Teaching Award, Spring 2020.

Other Activities and Service

Broader Field

Invited subject matter expert to provide insights for the Department of Defense Biodefense Posture Review (April 8, 2022).

Designed and conducted a simulation on cognitive warfare for NATO (March 2022).

Invited expert commentator on the White House Counter-UAS National Action Plan (April 2022).

Appointed to the National Academies of Sciences, Engineering and Medicine Committee on Assessing and Improving Strategies for Preventing, Countering, and Responding to Weapons of Mass Destruction Terrorism: Chemical Threats, fulfilling a Congressional directive (2022 – 2024).

Member of the Capital Area Weapons of Mass Destruction Working Group (January 2020 – present).

Served as a reviewer for a grant proposal titled “Terrorist Adoption of Emerging Technologies: How Criminals Drive Innovation among Terrorists” to NWO (Dutch Research Council) (November 18, 2021 – December 12, 2021).

External Reviewer and Reference for peer admission into the Royal Society of Canada (November 13, 2021 – November 25, 2021).

External Reviewer for Tenure and Promotion Case, University of Kansas. Volunteer (August 15, 2021 – September 12, 2021).

Associate of the Global Catastrophic Risk Institute (2015 – 2018).

Served on the Editorial Board of the *Journal of Strategic Security* (2015 – 2019).

Associate Fellow of the Project for Human Flourishing (formerly the X-Risks Institute) (2018 – 2020).

Served as a reviewer for grant proposals submitted to the Defense Threat Reduction Agency (2015 – present).

Served as a reviewer for submissions to Annual Meetings of the AAAS (2017 – Present)

Served as an independent peer reviewer for the products of the Adaptive Adversary Modeling (AAM) Phase 1 Performers for the DHS/S&T Chemical and Biological Division.

Served as a reviewer for the National Academies Framework for Identifying and Addressing Biodefense Vulnerabilities Posed by Synthetic Biology (2017).

Invited participant in online discussions: “How do countering bioterrorism and the BWC relate to each other?,” as part of civil society preparations for the 7th BWC Review Conference (2011) (available at: <http://www.bwpp.org/revcon-bioterrorism.html>).

Member of the Global Terrorism Database Advisory Board (2006 – 2011).

Member of the WMD Expert Advisory Group of the Information Sharing Environment initiative, Office of the Director for National Intelligence (2007 – 2008).

Consult periodically for the US Government [details not disclosable].

Acted as peer reviewer for the following journals and presses: Oxford University Press, *Civil Wars*, *Policy Sciences*, *Small Wars and Insurgencies*, *Behavioral Sciences of Terrorism and Political Aggression*, *Journal of Threat Assessment and Management*, *International Security*, *International Studies Review*, *Studies in Conflict and Terrorism*, *Terrorism and Political Violence*, *Political Science Quarterly*, *Public Management Review*, *Journal of Peace Research*, *Health Security*, *PS: Political Science and Politics*, *Research in Social*

Movements, Conflicts and Change, Journal of Policing, Intelligence and Counter Terrorism, Journal of Quantitative Criminology, Journal of Strategic Security, Nonproliferation Review, British Journal of Political Science, International Studies Quarterly, Texas National Security Review and Journal of Conflict Resolution.

University

Appointed as the Co-Chair to the Division for Research and Economic Development Task Force on Research Processes, University at Albany (October 2022 – present).

Appointed to the Institutes, Centers and Laboratories Action Plan Working Group University at Albany (September 2022 – present).

Appointed to the Provost's Council, University at Albany (September 2021 – present).

Appointed to the University Budget Advisory Committee, University at Albany (November 11, 2021 – present).

Appointed to Research Data Governance Council, University at Albany (November 2021 – Present).

Appointed to the Review Committee for Seed Funding Signature Teams, University at Albany (November 22, 2021 – December 5, 2021).

Co-lead, Compliant Computing Environment Pilot Team, University at Albany (July 2021 – April 2022).

Elected to and served on the University at Albany Senate (2019 – 2022).

Committee Member, University Life Council, University at Albany (August 2018 – May 2022).

Task Force Member, Covid-19 Research/Scholarship Continuity Taskforce, University at Albany (May 2020 – November 2020).

College

Committee Chair, Ad-hoc Committee on the Promotion and Tenure of Professor Brandon Behlendorf (October 2022 – April 2023).

Committee Chair, Search Committee, Cybersecurity Department Chair and Senior Faculty (December 2022 – March 2023).

Committee Chair, Ad-hoc Committee on the Promotion and Tenure of Professor Brian Nussbaum (January 1, 2021 – December 5, 2021).

Committee Member, CEHC Grievance Committee (2021).

Committee Chair, Ad-hoc Committee on the Promotion and Tenure of Professor Alex Greer (May 24, 2019 – January 10, 2020).

Committee Member, Ad-hoc Committee on the Promotion and Tenure of Professor DeeDee Bennett (April 1, 2019 – September 9, 2019).

Faculty Chair, College (2018 – 2019).

Committee Chair, Search Committee, Homeland Security Faculty (2019).

Committee Member, Search Committee, Cybersecurity Faculty (2019).

Committee Member, CEHC Graduate Committee (2018 – 2019).

Data

Instrumental in the creation and expansion of several major research datasets, including: the *Monterey Weapons of Mass Destruction Terrorism Database (WMD-T)*, the *Critical Infrastructure Terrorist Attack (CrITerA) Database*, the *Global Terrorism Database (GTD)*, the *Radiological and Nuclear Non-State Adversaries Database (RANNSAD)*, the *Chemical and Biological Non-State Adversaries Database (CABNSAD)*, the *Profiles of Incidents Involving CBRN and Non-state actors (POICN) Database*, the *Materials Out of Regulatory Control (MORC) Database*, the *Terrorist Ideology Database (TID)*, and the *Nuclear Facilities Attack Database (NuFAD)*.

Selected Presentations

“Global Material Security: Over the Horizon,” *2025 National Nuclear Security Administration GMS Program Review*, Washington D.C. (January 28, 2025).

“Red Teaming the Strategic Chemical Weapons Threat Landscape,” *Society for Risk Analysis 2024 Annual Meeting*, Austin, Texas (December 2024), with Brandon Behlendorf.

“Biothreat Benchmark Generation Framework for Evaluating Frontier AI Models,” *Society for Risk Analysis 2024 Annual Meeting*, Austin, Texas (December 2024).

“Predicting What They Use: The Anticipating Terrorist Technology Adoption to Secure the Homeland (ATTASH) Project,” *ENVISION 24*, National Counterterrorism Innovation, Technology, and Education Center, Omaha, Nebraska. (June 26, 2024).

“Advanced Red Teaming to Evaluate and Enhance ITM Processes,” *2nd International Symposium on Insider Threat Mitigation*, Brussels, Belgium (March 5, 2024).

“Unravelling the Decision to Pursue Biological Weapons,” *States, Societies, and Security in the 21st Century*, United States Military Academy, West Point, New York (February 7, 2024), with Brandon Behlendorf and Philipp Bleek.

“The opportunities and challenges brought about by globalisation and technology,” *Chemical and Biological Futures 2040: Exploring the defence and security considerations of future developments in chemical and biological weapons*, Wilton Park, Steyning, West Sussex, United Kingdom (January 10, 2024)

“State of the Global Terrorism Threat,” *Catastrophic Risk Management 2023: From Ideas to Actions*, Reinsurance Association of America, Orlando, Florida (February 28, 2023).

“The Use of Drones, Autonomy, Swarming by Non-state Actors,” *Drones and Swarming – the Impact of Artificial Intelligence on Future Conflicts*, Partnership for Peace Consortium, Washington, D.C. (August 29, 2022).

“The Future of Risk Research for Homeland Security,” *Society for Risk Analysis Annual Meeting*, Tampa, Florida (December 6, 2022) [panel convener and chair].

“Anticipating Terrorist Technology Adoption for Securing the Homeland,” *ENVISION 22*, National Counterterrorism Innovation, Technology, and Education Center, Omaha, Nebraska (October 27, 2022).

“Current & Emerging Terrorism Threat Landscapes,” *Catastrophic Risk Management 2022*, Reinsurance Association of America, Virtual (May 25, 2022).

“The Center for Advanced Red Teaming (CART) and Red Teaming Research,” *NDU Red Team Week*, National Defense University, Virtual (April 18, 2022).

“Beyond Pen-Testing: Tips for Red Teaming the Cyber-Physical Adversary,” *Center for Cyber Strategy and Policy (CCSP) Cyber Salon Series*, University of Cincinnati, Virtual (February 18, 2022).

“WMD & CBRN Terrorism: Threats, Challenges & Responses,” *International Counter Terrorism Conclave 2022*, Global Counter Terrorism Council, India, Virtual (January 19, 2022).

“Operational Implications: Modeling, Validation and Red Teaming,” *Society for Risk Analysis 2021 Annual Meeting*, Virtual (December 7, 2021), with Jun Zhuang.

“Validating a New Validation Approach: Comparing Risk Models, Human Simulation, and Ground Truth in Adversary Tactical Choice,” *Society for Risk Analysis 2021 Annual Meeting*, Virtual (December 7, 2021), with Anna Wetzel.

“Operationalizing TW/HS to Support Decision-Making,” *Technology Watch/Horizon Scan Community of Practice Meeting*, Defense Threat Reduction Agency, Virtual (November 18, 2021).

“Anticipating Future Nuclear Security Issues,” *2021 Nuclear Security Summit*, Georgetown University, Virtual. (November 17, 2021).

Consultant for the U.S. Department of State on Global Terrorism (November 2021) [details not disclosable].

“Validating Adaptive Behavior Models of Adversaries for Risk Assessment (VABMARA) Framework,” *Center for Accelerating Operational Efficiency Biennial Review*, Department of Homeland Security Science and Technology Directorate, Virtual (October 20, 2021), with Brandon Behlendorf.

“Red Teaming the Post-COVID-19 Biological Weapons Threat Landscape,” *Spotlight Webinar*, Center for the Study of Weapons of Mass Destruction, National Defense University, Virtual (August 26, 2021), with Ted Plasse.

“IIJO Red Teaming Simulation,” *Integrating Information in Joint Operations (IIJO) Strategic Multilayer Assessment Strategic Review Group Meeting*, Department of Defense, Virtual (July 7, 2021).

“Red Teaming the Post-COVID-19 Biological Weapons Threat Landscape,” *DTRA Strategic Forum Briefing* to the Defense Threat Reduction Agency, Virtual (June 23, 2021), with Brandon Behlendorf.

“Introduction to Course of Action Red Teaming,” *Department of Homeland Security Center of Excellence Summit 2021*, Virtual (May 19, 2021).

“Terror, Counterterrorism and Technology,” *Past, Present, and Future: Perspectives on Near-Term Terrorism and Counterterrorism Issues Conference* organized by the Combating Terrorism Center at West Point, Virtual. (March 5, 2021).

“Security Implications of COVID-19,” *Post COVID-19 Security Implications Workshop*, International Biosecurity and Prevention Forum, Virtual (January 27, 2021).

“An Empirical Foundation for Quantifying Threats to Nuclear Facilities,” *INMM Risk Quantification Workshop*, Institute for Nuclear Materials Management, Virtual (November 9, 2020).

“Validating Adaptive Behavior Models of Adversaries for Risk Assessment (VABMARA) Framework,” *Center for Accelerating Operational Efficiency Annual Meeting* on behalf of the Department of Homeland Security, Virtual (October 22, 2020), with Brandon Behlendorf and Jun Zhuang.

“Conducting After Action Reports,” *Overseas Security Advisory Council International Development Sector Committee event on Crisis Management*, Virtual (October 15, 2020).

“‘The Storm After the Flood’: A Virtual Wargame,” *Mad Scientist Weaponized Information Virtual Conference*, convened by the U.S. Army Training and Doctrine Command and Georgetown University, Online (July 21, 2020), with Douglas Clifford.

“How Could Terrorists Exploit COVID-19?” *Briefing* to analysts and personnel of the Transportation Security Administration, Virtual (May 20, 2020).

“How might Great Power Competition and regional dynamics change following the targeted killing of Qassem Soleimani?,” *Strategic Multilayer Assessment Black Swan Panel Discussion*, Department of Defense, Virtual (March 27, 2020), with Douglas Clifford.

“Integrated System for Discovery of Emerging Technologies in Countering Weapons of Mass Destruction,” *Society for Risk Analysis 2019 Annual Meeting*, Arlington, Virginia (December 11, 2019), with Steve Sin, Anthony Barrett and Michael Maxwell.

“Risk-Based Prioritization of Technologies in Countering Weapons of Mass Destruction,” *Society for Risk Analysis 2019 Annual Meeting*, Arlington, Virginia (December 11, 2019), with Anthony Barrett.

“Elicitation of Expert Judgment for Technology Identification and Characterization,” *Society for Risk Analysis 2019 Annual Meeting*, Arlington, Virginia (December 11, 2019), with Anthony Barrett.

“Biotechnology as an Emerging Global Catastrophic Risk,” *Society for Risk Analysis 2019 Annual Meeting*, Arlington, Virginia (December 9, 2019).

“Terrorists and Emerging Technologies,” *Expanding the Counterterrorism Aperture: New Perspectives for a New Decade*, presented by the National Counterterrorism Center, the National Intelligence Council, and the U.S. Department of State Bureau of Intelligence and Research, Washington, D.C. (October, 17, 2019).

“Terrorism and Emerging CBRN Technology,” *Georgia Tech / Georgia State T2 Conference on Technology and the Future of Terror*, Atlanta, Georgia (April 11, 2019).

“Successful Killing and CBRN: Insurgent Organizations and the Pursuit and Use of CBRN Weapons,” *International Studies Association 2019 Annual Conference*, Toronto, Canada (March 30, 2019), with Victor Asal and Nazli Avdan.

“The Non-State Dimension of Nuclear Command, Control and Communications,” *NC3 Systems and Strategic Stability: A Global Overview Workshop*, Stanford, California (January 23, 2019).

“Terrorist Threats to Nuclear Facilities and Radiological Materials: Trends and Emerging Issues,” *National Academies of Sciences, Engineering, and Medicine U.S.-Russian Workshop on Intersections of Extremism and Radiological Security*, Helsinki, Finland (December 10, 2018).

“Adversaries, Technology Adoption and WMD,” *Emergence & Convergence Technology Adoption Workshop*, National Defense University, Washington, D.C. (October 31, 2018).

“Scanning the Emerging Technology Strategic Landscape,” *2018 Homeland Defense & Security Education Summit*, Albany, NY (October 12, 2018).

“Unpacking a Homeland Security ‘Catastrophe’: The Case of Attacks on Nuclear Facilities,” *2018 Homeland Defense & Security Education Summit*, Albany, NY (October 12, 2018).

“ISIS Employment of Chemical Weapons,” *Center for the Study of Weapons of Mass Destruction 2018 Annual Symposium*, National Defense University, Washington, D.C. (June 20, 2018).

“Chemical Terrorism: What are the Risks and Where are They Coming From?” *Organization for the Prevention of Chemical Weapons Conference on Countering Chemical Terrorism*, The Hague, The Netherlands (June 7, 2018).

“Including Organizational Context in Insider Threat Assessments: The Role of Workplace Catalytic Factors,” *National Insider Threat Task Force Insider Threat Community Forum*, Bethesda, Maryland (May 22, 2018), with William McCracken.

“Profiling the Biological Adversary,” *DoD Strategic Multilayer Assessment Panel Discussion on Biothreats*, College Park, Maryland (February 23, 2018).

“Threats to Surface Transportation,” *5th Public Area Security Summit*, Transportation Security Administration Headquarters, Pentagon City, Virginia (February 7, 2018).

“Dogs that Haven’t Barked,” *Terrorist Innovation and Emerging Technologies Meeting*, Center for Global Security Research, Lawrence Livermore National Laboratory, Livermore, California (December 14, 2017).

“Terrorists and Emerging Technologies,” *Brumley Speaker Series*, Strauss Center for International Security and Law, University of Texas at Austin, Austin, Texas (December 6, 2017).

“Anatomizing Non-State RN Adversaries,” *National Nuclear Security Administration, Global Material Security Office TED Talk*, Washington, D.C. (October 20, 2017).

“Anticipating and Addressing Emerging RN Smuggling Threats,” *National Nuclear Security Administration GMS Innovative Approaches to Nuclear and Radiological Security Workshop*, Crystal City, Virginia (July 27, 2017).

“Making Sense of the Four D’s: Deterrence, Denial, Deflection and Disengagement,” *CREATE-TSA Symposium on Innovations in Transportation Security*, Los Angeles, California (June 28, 2017).

“Emerging Terrorist Attack Modes: Drones, CBRN and More,” *Risk Management Solutions Terrorism Seminar*, New York, New York (May 16, 2017).

“Terrorists and Emerging Technologies,” *Department of Homeland Security Office of Policy Brown Bag*, Washington, D.C. (April 5, 2017).

“Terrorists and Emerging Technologies,” *TRADOC Mad Scientist conference: AI, Robotics & Autonomy in Multi-Domain Battle 2030-2050*, Atlanta, Georgia (March 8, 2017).

“Terrorists and Emerging Technologies,” *Johns Hopkins University Advanced Physics Laboratory Colloquium*, Laurel, Maryland (March 3, 2017).

“Pick Your POICN: Introducing the Profiles of Incidents involving CBRN and Non-state Actors (POICN) Database,” *International Studies Association Annual Conference*, Baltimore, Maryland (February 25, 2017), with Markus Binder.

“Chemical and Biological Threats: The Emerging Strategic Landscape,” *International Studies Association Annual Conference*, Baltimore, Maryland (February 25, 2017), with Markus Binder.

“Chasing Shadows: Models, Data and Understanding the Threat,” *DARPA-ISAT Workshop on The Technology of Mass Empowerment Meets Radicalization: Threats, Mitigations, and Consequences*, Dedham, Massachusetts (February 17, 2017)

“Explosives Adversaries,” *briefing to the Department of Homeland Security Office of Bombing Prevention*, Arlington, Virginia (November 21, 2016).

“Identifying and Evaluating Emerging Threats,” *briefing to the National Intelligence Council*, McLean, Virginia (November 16, 2016).

“Assessing the Evolving CBRN Threat,” *9th Annual CBRNe World Congress and Exhibition*, San Diego, California (November 1, 2016).

“My Career in National Security,” *National Youth Leadership Forum on National Security*, Chevy Chase, Maryland (September 22, 2016).

“Nuclear Terrorism: A Persistent Threat,” *briefing to the Government Accountability Office*, Washington, D.C. (August 22, 2016).

“‘Designing Danger’: Complex Engineering by Violent Non-State Actors,” *Dogs That Haven’t Barked: Towards an Understanding of the Absence of Expected Technological Threats*, Center for Global Security Research Workshop, Lawrence Livermore National Laboratory, Livermore, California (July 7, 2016).

“Non-State CBW Adversaries: Understanding and Addressing the Threat,” *12th International Symposium on Protection Against Chemical and Biological Warfare Agents*, Stockholm, Sweden (June 8, 2016).

“Terrorist Ideologies Project: Conceptualizing Ideology for Practical Research,” *International Studies Association 2016 Annual Conference*, Atlanta, Georgia (March 18, 2016), with Herbert Tinsley and Michael Burnham.

“Chemical Terrorist Adversaries: The Threat Dimension,” *Interagency Chemical Terrorism Risk Assessment Working Group Meeting*, Arlington, Virginia (March 8, 2016).

“A Multi-Method Approach to Assessing Radiological/Nuclear Terrorism Threats: Identifying the Adversary,” *Annual Meeting of the Society for Risk Analysis*, Crystal City, Virginia (December 9, 2015).

“Terrorist Adoption of New Technologies,” *START 2015 Symposium*, Washington, D.C. (October 15, 2015).

“Identifying Dangerous Organizations: The Radiological and Nuclear Smuggling Threat Assessment Tool,” *Containing Threat Convergence, Exploiting Threat Divergence: U.S. Strategy in Dealing with Emerging Threats*, University of Pittsburgh, Pittsburgh, Pennsylvania (September 11, 2015).

“The Terrorist Threat to Nuclear Facilities,” *Evolution of the Terrorist Threat to the Nuclear Industry in Europe*, Swedish Defence University, Stockholm, Sweden (August 20, 2015).

“Chasing Shadows: Anticipating Terrorist CBRN Threats,” *Canadian Network for Research on Terrorism, Security and Society Workshop*, Ottawa, Canada (May 13, 2015).

“Unconventional Methods for Assessing Unconventional Threats,” *George Mason University Biodefense Policy Seminar Series*, Fairfax, Virginia (April 16, 2015).

“Adaptive Analysis for Adaptive Adversaries,” *Border Management Summit*, Washington, D.C. (February 25, 2015) with Brandon Behlendorf.

“More Bang for the Buck? The Effect of Emerging Technology on Terrorist Weapons Adoption,” *International Studies Association 2015 Annual Conference*, New Orleans, Louisiana (February 21, 2015).

“The Use of Expert Opinion in CBRN Adversary Threat Assessments,” *International Studies Association 2015 Annual Conference*, New Orleans, Louisiana (February 18, 2015).

“Threats to Nuclear Facilities: Theory and The Empirical Record,” *Preventing Nuclear Terrorism: The Role of Nuclear Security*, Antwerp, Belgium (September 16, 2014).

“More Bang for the Buck? The Effect of Emerging Technology on Terrorist Weapons Adoption,” *World Summit on Counter-Terrorism: Institute for Counterterrorism’s 14th Annual International Conference*, Herzliya, Israel (September 10, 2014).

“Growing Interaction with Practitioners as Terrorism Research Matures,” *World Summit on Counter-Terrorism: Institute for Counterterrorism’s 14th Annual International Conference*, Herzliya, Israel (September 10, 2014).

“Determining Initiating Events and Attack Frequency,” *Institute for Nuclear Materials Management Risk Informed Security Workshop*, Washington, D.C. (February 11, 2014).

“A Primer on Quantitative and Qualitative Social Science for Operators,” *7th Annual Department of Defense Strategic Multi-Layer Assessment Conference*, Joint Base Andrews, Maryland (November 13, 2013).

“Mapping the CBRN Terrorism Threatscape,” *Briefing to the Defense Threat Reduction Agency*, Fort Belvoir, Virginia (October 30, 2013).

“Deterring Terrorists with WMD,” *6th Annual National Science Foundation-DNDO Academic Research Initiative Grantees Program Review*, Leesburg, Virginia (August 1, 2013).

“Minimizing the Risk of WMD Smuggling into the U.S. through the Border: The TCOTRN Project,” *4th Annual Border Management Southwest Summit*, Tucson, Arizona (May 31, 2013).

“Anatomizing Chemical and Biological Non-State Adversaries,” *Countering Chemical and Biological Threats Conference*, George Washington University, Washington, D.C. (May 3, 2013).

“Meta-Musings on Metaphor,” *Briefing for the Intelligence Advanced Research Projects Activity METAPHOR Program Principal Investigator Meeting*, Washington, D.C. (December 11, 2012).

“Apocalyptic Millenarianism and the Potential Chem-Bio Terrorist Threat,” *“Doomsday” Threats Real and Imagined Conference*, Monterey, California (July 20, 2012).

“The Theoretical Underpinnings of Terrorist Innovation Decisions,” *Swedish National Defence College Seminar on Terrorist Innovation and Learning*, Stockholm, Sweden (June 26, 2012).

“Speaking Truth to Sources: Introducing a Method of the Quantitative Evaluation of Open Sources in Event Data,” *Annual Convention of the International Studies Association*, San Diego, California (April 4, 2012).

“Promethean Journeys: Examining the Mechanisms by Which Terrorists Acquire New Technologies of Lethality,” *Annual Convention of the International Studies Association*, San Diego, California (April 3, 2012), with John Sawyer.

“Deterring Terrorists with Weapons of Mass Destruction,” *Center for the Study of Weapons of Mass Destruction Program for Emerging Leaders Deterring WMD Adversaries Workshop*, National Defense University, Washington, D.C. (March 15, 2012).

“Empirical Overview of the Causes of Terrorism and Potential Solutions,” *George Washington University*, Washington, D.C. (October 19, 2011).

“The Value of Empirical Analysis in the Counterterrorism and Counterintelligence Domains,” *International Counterterrorism Fellows Program*, National Defense University, Washington, D.C. (October 6, 2011).

“Trajectories of Individual Radicalization,” *Briefing for the Defense Science Board Task Force on Predicting Violent Behavior*, Arlington, Virginia (May 24, 2011), with John Sawyer.

“Understanding Terrorist Behavior through Red-Team Analysis,” *Annual Convention of the International Studies Association*, Montreal, Canada (March 18, 2011).

“Trajectories of ‘Homegrown’ Radicalization,” *Annual Convention of the International Studies Association*, Montreal, Canada (March 16, 2011), with John Sawyer.

“Global Governance and the Architecture for Countering the Chemical, Biological, Radiological and Nuclear (CBRN) Terrorism,” *Annual Convention of the International Studies Association*, Montreal, Canada (March 16, 2011) [Panel Chair].

“The Nature of Violent Extremist Organizations: Aggregate Data Analysis and Real World Findings,” *Influencing Violent Extremist Organizations (I-VEO)*, Bethesda, Maryland (February 2, 2011) [Panel Chair].

“The Adoption and Use of Transformative Technologies by Terrorist Organizations,” *Technology, Crime & Terrorism Symposium*, University of Maryland, College Park, Maryland (October 6, 2010).

“Understanding Terrorist Innovation Through the Broader Innovation Context,” *Conference on Innovation in WME Terrorism*, Naval Postgraduate School, Monterey, California (Aug 5, 2010).

“‘Homegrown’ Islamic Radicalization in the West,” *Combating International Crime – The U.S. Approach to Counterterrorism*, Meridian Center Briefing (on behalf of the International Visitor Leadership Program, U.S. Department of State), Washington, D.C. (July 8, 2010).

“Homegrown Radicalization in the West,” *International Centre for the Study of Radicalisation and Political Violence, Peace and Security Summit*, New York, New York (June 30, 2010) [presenter and Working Group Chair].

“The WMD Terrorism Threat: Past, Present and Future,” *New America Foundation Symposium on Homeland Security, Counterterrorism, and Strategic Resilience*, Washington, D.C. (April 14, 2010).

“Anatomizing the Behavior of Radiological and Nuclear-Armed Non-State Adversaries,” *Department of Homeland Security University Summit 2010*, Washington, D.C. (March 11, 2010).

“Understanding Mass Casualty Terrorism,” *Annual Convention of the International Studies Association*, New Orleans, Louisiana (February 21, 2010).

“Profiling the Radical Islamist Threat of CBRN Weapons Use,” *King's College London*, London, United Kingdom (November 4, 2009).

“Assessing Organizational Indicators of Terrorist use of CBRN,” *Department of Homeland Security, Science and Technology Directorate Brown Bag Series*, Washington, D.C. (October 26, 2009), with Victor Asal.

“Anatomizing the Behavior of Non-State Radiological and Nuclear Adversaries,” *WMD Spotlight Seminar, National Defense University*, Washington, D.C. (July 29, 2009), with Charles Blair.

“Predicting WMD Terrorism: An Introduction,” *JASON 2009 Summer Study on Anticipating Rare Events*, San Diego, California (June 22, 2009), with Victor Asal.

“Catastrophic Jihad? Profiling the Radical Islamist Threat of CBRN Weapons Use,” *U.S. State Department, Counterterrorism and Counterproliferation Offices*, Washington, D.C. (June 15, 2009), with Charles Blair.

“Anatomizing Radiological and Nuclear Non-State Adversaries: Identifying the Adversary,” *Strategic Multilayer Assessment Research Teleconference*, College Park, Maryland (May 11, 2009).

“The CBRN Terrorism Threat,” *Foreign Service Institute Combating WMD Terrorism Workshop*, Arlington, Virginia (March 6, 2008 and March 5, 2009).

“Superempowered Individuals,” *Unified Quest 2009 Emerging Technologies Seminar, US Army TRADOC, ARCIC Future Warfare Division*, McLean, Virginia (October 8, 2008).

“Catastrophic Nuclear Terrorism: A Preventable Peril,” *Oxford University Global Catastrophic Risks Conference*, Oxford, United Kingdom (July 19, 2008), with William Potter.

“Nuclear Terrorism: Assessing the Threat to the Homeland,” *Testimony before the United States Senate Committee on Homeland Security and Governmental Affairs*, Washington, D.C. (April 2, 2008).

“Weapons of Mass Destruction Terrorism, Part II: Al Qaeda,” *Henley Putnam University Teleconference Briefing*, San Jose, California (March 20, 2008).

“Weapons of Mass Destruction Terrorism, Part I: The Threat,” *Henley Putnam University Teleconference Briefing*, San Jose, California (February 28, 2008).

“CBRN Terrorism: A Social Science Research Perspective,” *Air Force Research Laboratory City Beat Signatures Workshop*, Rosslyn, Virginia (October 25, 2007).

“Research on Understanding Terrorist Motivations,” *Center for Risk and Economic Analysis of Terrorist Events Executive Program in Counterterrorism*, Los Angeles, California (August 17, 2007).

“Unravelling Terrorism: An Exemplar of Person-vs-Person Conflict,” *Defence Research and Development Canada Science and Technology Symposium*, Ottawa, Canada (April 25, 2007).

“Determining the Terrorist Threat,” *Risk Analysis for Homeland Security and Defense: Theory and*

Application (Los Alamos National Laboratory Risk Symposium 2007), Santa Fe, New Mexico (March 27, 2007).

“Mapping the Threatscape,” *International Risk Assessment and Horizon Scanning Symposium*, Singapore (March 19, 2007).

“CBRN Terrorism: Motives and Malefactors,” *DHS University Network Summit on Research and Education*, Washington, D.C. (March 16, 2007).

“Enabling Environments and Non-State Actors Capable or Motivated to Procure WMD,” *EAPC/PfP Workshop within the Partnership Action Plan Against Terrorism on Threat Convergence*, Zurich, Switzerland (March 5, 2007).

“Chasing Shadows: New Approaches to Anticipating Terrorist Threats and Behavior,” *Global Futures Forum*, Prague, Czech Republic (December 5, 2006).

“Motivations for Engaging in Nuclear Terrorism,” *Threat Convergence: Possible New Pathways to Proliferation? Terrorism, Weapons of Mass Destruction, and Weak and Failing States*, Airlie House, Virginia (November 30, 2006).

“Assessing Cell Formation,” *CentraTechnology Terrorism Cell Modeling Conference*, Arlington, Virginia (October 4, 2006).

“CBRN Terrorism: New Directions in Research and Analysis,” *Office of Weapons of Mass Destruction Terrorism, U.S. Department of State*, Washington, D.C. (August 18, 2006).

“Intent and Capability of Terrorist Threat Groups,” *Defining the Terrorism Threat for Insured Commercial Properties*, FM Global Workshop, Boston, Massachusetts (August 16, 2006).

“Estimating Risk from CBRN Attacks,” *Terrorism Risk Management for 2007 and Beyond*, Risk Management Solutions Workshop, New York, New York (May 31, 2006).

“Terrorist Organizational Factors and the Pursuit and Use of CBRN Terrorism,” *International Studies Association Annual Meeting*, San Diego, California (March 24, 2006), with Victor Asal.

“Post 9/11 Environment Vulnerability Assessment,” *National Facilities Management and Technology Conference*, Baltimore, Maryland (March 7, 2006), with Peter Franklin.

“Analyzing Terrorist Motivations,” *Yale Center for International and Area Studies, Yale University*, New Haven, Connecticut (February 15, 2006).

“How Serious is the ‘WMD Terrorism’ Threat and What Can We Do About It?,” *Royal United Services Institute Transnational Terrorism Project Meeting*, London, United Kingdom (November 14, 2005).

“WMD Terrorism and Critical Infrastructure as a Terrorist Target,” *International Association of Bomb Technicians and Investigators Region I 2005 In-Service Training Conference*, Dublin, California (November 1, 2005).

“Radiological Terrorism,” *Center for Homeland Defense and Security*, Naval Postgraduate School, Monterey, California (October 27, 2005).

“How Serious is the ‘WMD Terrorism’ Threat?: Terrorist Motivations and Capabilities for Using Chemical, Biological, Radiological, and Nuclear Weapons,” Guest lecture given at University of California, Berkeley for course on *Cyber Security and Homeland Security* (with simultaneous transmission to University of Washington, University of California, San Diego, and Microsoft Headquarters), Berkeley, California (September 28, 2005), with Jeffrey Bale.

“The Role of Chemical Weapons in Terrorist Planning for Attacks in the US,” *CentraTechnology Workshop on Chemical Weapons Terrorism, on behalf of the Department of Homeland Security*, Arlington, Virginia (September 20, 2005).

“Chemical and Radiological Terrorism: A Global Perspective,” *Chemical & Radiological Events: Public Health Preparedness and Response*, Asheville and Greenville, North Carolina (August 1 and 4, 2005).

“Chasing Shadows: Approaches to Anticipating Terrorist Behavior,” *JASON 2005 Summer Study*, San Diego, California (June 22, 2005).

“Threat Assessment Techniques for Law Enforcement,” talk presented to representatives from several local offices of the *Federal Bureau of Investigation*, Oakland, California (March 1, 2005).

“WMD Terrorism: Hype and Reality,” *Operation Plotthound Senior Leadership Seminar*, Cary, North Carolina (October 26, 2004).

“New Directions in Understanding the Terrorist Threat,” *Terrorist Threat Integration Center* (now NCTC), Tyson’s Corner, Virginia (October 14, 2004).

“Terrorist Attacks on Government Facilities: From Bombs to Bioterrorism,” *National Legislative Services and Security Association 30th Annual Training Conference*, Sacramento, California (September 21, 2004).

“Direct-Action Activism and Business Continuity,” *Business Recovery Managers Association*, San Francisco, California (June 24, 2004).

“Threat Assessment and WMD Terrorism,” *Center for Homeland Defense and Security*, Naval Postgraduate School, Monterey, California (June 15, 2004).

“WMD Terrorism: Addressing the Threat,” briefing delivered to the *Deputy Directorate for the War on Terrorism, The Joint Staff*, The Pentagon, Crystal City, Virginia (January 30, 2004).

“Eight (Somewhat) Simple Lessons Regarding Bioterrorism,” in *The Threat of WMD and the Security of the Korean Peninsula*, 12th Hwarangdae International Symposium, Korea Military Academy, Seoul, Korea (October 24, 2003).

“Beyond Arson: A Threat Assessment of the Earth Liberation Front,” *Bay Area Terrorism Working Group Meeting*, Oakland, California (August 6, 2003).

“Misperceptions Regarding Weapons of Mass Destruction Terrorism,” *International Workshop on Radiological Sciences and Applications: Issues and Challenges of Weapons of Mass Destruction Proliferation*, Albuquerque, New Mexico (June 16, 2003).

“CBRN Terrorism: Appraising the Chemical and Radiological,” *Council of State and Territorial Epidemiologists Chemical/Radiation Terrorism Assessment Workshop*, San Francisco, California (May 5, 2003).

“Strengths and Weaknesses of Approaches to Modelling Terrorism,” *Santa Fe Institute and Sandia National Laboratories Workshop on How Complex Adaptive Systems Dynamics Are Related to Understanding and Modelling Terrorist Behavior*, Santa Fe, New Mexico (April 10, 2003).

“The Business End of Terrorism,” *Redlands University*, Redlands, California (February 15, 2003).

“WMD Terrorism: Distinguishing Hype From Reality,” *Redlands University*, Redlands, California (February 15, 2003).

“South Africa’s Nuclear and Chemical-Biological Weapons Programs,” *Center for Nonproliferation Studies Visiting Fellows Program*, Monterey, California (four occasions between 2001 and 2002).

“Larry Ford,” *Center for Nonproliferation Studies Workshop for the Advanced Research and Development Agency’s AQUAINT Program*, Monterey, California (October 30, 2002).

Keynote Address “The Threat of Radiological Terrorism,” at Managing Radiological Emergencies: The California Medical and Health Disaster Management Conference, San Rafael, California (October 15, 2002).

“Al-Aqsa Martyr’s Brigade,” *Workshop on Middle Eastern Terrorism for the Los Alamos National Laboratory*, Monterey, California (August 27-28, 2002).

Media	Since 2000, has given over 120 media interviews, including at least 23 radio interviews and seven television appearances.
Associations	Member of the Association of Threat Assessment Professionals (ATAP) (2003-2006). Member of the Bay Area Terrorism Working Group (2000-2006). Member of the Society for Risk Analysis (2019-present).
Languages	English (native), Afrikaans (advanced), Hebrew (moderate), French, Japanese (beginning).
Computer Skills	Competent with a variety of common software packages, including Word; Excel; Access; Powerpoint; SPSS; @Risk.
