

Anthony J Masys CD, PhD
Associate Professor
College of Public Health, University of South Florida

tmasy@usf.edu

<https://www.linkedin.com/in/anthony-j-masys-phd-cd-26b53911/>

a. Education

University of Leicester, UK	Ph.D., 2010
Royal Military College of Canada	MSc, 2001
Royal Military College of Canada	BSc, 1997

b. Selected Publications

Books and Book Chapters

Farhadi, A. and Masys, AJ (ed) (2023) The Great Power Competition Volume 4: Lessons Learned in Afghanistan. Springer Publishing.

Masys, AJ (2023) Fratricide: Lessons Learned in Afghanistan. In Farhadi, A. and Masys, AJ (ed) (2023) The Great Power Competition Volume 4: Lessons Learned in Afghanistan. Springer Publishing.

Masys, AJ (ed) (2023) Safety and Security Science and Technology: Perspectives from Practice. Springer Publishing.

Vallerand, A. and Masys, AJ (2023) Science Technology and Innovation: Transforming the Complex Safety and Security Multi-level Landscape. In Masys, AJ (ed) (2023) Safety and Security Science and Technology: Perspectives from Practice. Springer Publishing.

Masys, AJ, Vivekanandarajah, V., Chiasson, L. (2023) Design Thinking for Safety and Security: Support to Vancouver 2010 Olympics. In Masys, AJ (ed) (2023) Safety and Security Science and Technology: Perspectives from Practice. Springer Publishing.

Adlakha Hutcheon, G. and Masys, AJ (2022) Understanding the landscape of disruption, ideation and innovation. In G Adlakha Hutcheon and AJ Masys (ed) Disruption, Ideation and Innovation for Defence and Security. Springer Publishing.

Vallerand, A. and Masys, AJ (2022) Shocks and Disruptions in Defence and Security: How to lead by Inspiring Innovation and Ideation. In G Adlakha Hutcheon and AJ Masys (ed) Disruption, Ideation and Innovation for Defence and Security. Springer Publishing.

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Masys, AJ (2022) Non-Traditional Security: A Risk Centric View. In Masys, A.J. (ed) (2022 in press) Handbook of Security Science. Springer Publishing.

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Masys, A.J. (ed) (2021) Sensemaking in Security. Springer Publishing.

Masys, AJ (2021) The Security Landscape- **systemic risks** shaping non-traditional security. In Masys, A.J. (ed) (2021) Sensemaking in Security. Springer Publishing.

Masys, AJ (2021) **Exploring Sensemaking: A view through the COVID-19 pandemic.** In Masys, A.J. (ed) (2021) Sensemaking in Security. Springer Publishing.

Spowart, S. and Masys, AJ (2021) Global Health and pandemics- beyond direct effects of COVID 19 outbreak. In Masys, A.J. (ed) (2021) Sensemaking in Security. Springer Publishing.

Hutchison,D. Parikh,J., Masys, AJ (2021) **Sensemaking and Disaster Forensics: an examination of Cholera epidemics.** In Masys, A.J. (ed) (2021) Sensemaking in Security. Springer Publishing.

Masys, AJ., Reiner, CC., Ramirez, N., and Okuda, H. (2021) **Exploring the Opioid Crisis through systems thinking and participative model building: An experiential learning event.** In Masys, A.J. (ed) (2021) Sensemaking in Security. Springer Publishing.

Scott, B., and Masys, AJ (2021) **Vulnerability analysis to support disaster resilience.** In Masys, A.J. (ed) (2021) Sensemaking in Security. Springer Publishing.

Taylor, I., and Masys, AJ (2021) **A System Dynamics Model of COVID-19 in Canada: A Case Study in Sensemaking.** In Masys, A.J. (ed) (2021) Sensemaking in Security. Springer Publishing.

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Fox, B., Reid, D., and Masys, A.J. (Ed) (2020) **Science Informed Policing**. Springer Publishing.

Masys, A.J., Izurieta, R., and Reina, M. (ed) (2019) Global Health Security: Recognizing vulnerabilities, creating opportunities. Springer Publishing.

Marshall,J., Wiltshire,J., Delva,J., Bello,T., & Masys, A.J. (2019) **Natural and Manmade Disasters: Vulnerable Populations**. In Anthony J Masys; Ricardo Izurieta; Miguel Reina (eds), Global Health Security: Recognizing vulnerabilities, creating opportunities. Springer Publishing.

Bell, C. and Masys, A.J. (2019) **Climate Change, Extreme Weather Events and Global Health Security-A lens into vulnerabilities**. In Anthony J Masys; Ricardo Izurieta; Miguel Reina (eds), Global Health Security: Recognizing vulnerabilities, creating opportunities. Springer Publishing.

Stikeleather,J., and Masys, A.J. (2019) Global Health Innovation. In Anthony J Masys; Ricardo Izurieta; Miguel Reina (eds), Global Health Security: Recognizing vulnerabilities, creating opportunities. Springer Publishing.

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Keating, B. and Masys, A.J. (2018) Innovations in Active Shooting Emergency Medical Response and Triage. In A.J. Masys (ed) (2018) Security by Design. Springer Publishing.

Kaundert, M. and Masys, A.J. (2018) Mass Migration, Humanitarian Assistance and Crisis Management: Embracing Social Innovation and Organizational Learning. In A.J. Masys (ed) (2018) Security by Design. Springer Publishing.

Taylor, I., and Masys, A.J. (2018) Complexity and Unintended Consequences in a Human Security Crisis: A System Dynamic Model of the Refugee Migration to Europe. In A.J. Masys (ed) (2018) Security by Design. Springer Publishing.

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Masys, A.J. and Lin, L. (ed) (2017) *Asia/Pacific Security Challenges-Managing Black Swans and Persistent Threats*. Springer Publishing.

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Wattie, J., and Masys, A.J. (2014) Enabling Resilience: an examination of high reliability organizations and safety culture through the lens of appreciative inquiry. In A.J. Masys (ed) Disaster Management-enabling resilience. Springer Publishing.

Ray-Bennett, N., Masys, A.J., Shiroshita, H and Jackson, P. (2015) Reactive to Pro-active to Reflective Disaster Responses: Introducing Critical Reflective Practices in Disaster Risk Reduction (DRR). In Andrew E. Collins, Samantha Jones, Bernard S. Manyena, Janaka Jayawickrama (eds) Natural Hazards, Risks, and Disasters in Society: A Cross-Disciplinary Overview. Elsevier Inc.

Masys, A.J. (2012) 'The emergent nature of risk as a product of 'heterogeneous engineering- A relational analysis of the Oil and Gas Industry safety culture' in S. Bennett (Ed) *Innovative thinking in risk, crisis and disaster management*, UK: Gower Publishing.

Masys, A.J. (2011) 'Systems Thinking and Fratricide: Operationalizing Knowledge Management and Organizational Learning' in Jon Westover (Ed) *Organizational Culture, Learning and Knowledge Management*.

Masys, A.J. (2011) 'Teamwork and Trust- A socio-technical perspective' in N.A. Stanton (Ed), *Trust in Military Teams*, England, Ashgate Publishing.

Masys, A.J. (2010) *Opening the Black Box of human error: Revealing the Complex Aetiology of Fratricide*, VDM Publishing.

Dissertation/Thesis

Masys, A.J. (2010) Fratricide in Air Operations: Opening the black box- revealing the social. PhD Dissertation, June 2010, University of Leicester, UK.

Masys, A.J. (2001) Characterization of the Non-linear Properties of Piezoelectric Materials. MSc Thesis, April 2001, Royal Military College of Canada.

UNDRR, NATO, Government of Canada and TTCP Documents

Masys, AJ (2022) Transforming Future Defence Capabilities through Anticipatory Innovation. NATO Symposium STO-MP-MSG-197.

UNDRR & UNU-EHS (2022). **Understanding and managing cascading and systemic risks: lessons from COVID-19**. Geneva, UNDRR; Bonn, UNU-EHS

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Masys, A.J. (2014) Security planning, intelligence, counter-terrorism, CIP Workshop. Invited Facilitator/Presenter in Table Top Exercise. Invited presentation: ASEAN Security Workshop, Manila, The Philippines, 27-29 Aug 2014.

Masys, A.J. (2014) Scenario planning-vulnerability and risk analysis to support security awareness and design. Invited presentation: 2014 International Conference on Homeland Security, Taipei, Taiwan, 28-29 July 2014.

Masys, A.J. (2014) From Crisis Management to Complexity Management: HA/DR by Design. 12th Japan-Canada Security Symposium for Peace and Security Cooperation. Tokyo, Japan, 9-10 June 2014.

Masys, A.J. and Vallerand, A. (2012) Efficient and effective mobilization of unique Federal S&T in support of All Hazards Operations: A pilot on mobilization of Modelling and Simulation.

Masys, A.J. and Vallerand, A. (2011) Modelling, Simulation and Analysis (MS&A): Potent enabling tools for planning and executing complex major national events. DRDC CSS TM 2011-20

Masys, A.J., Roza, M., Giannoulis, C., Jacquart, R. (2008) Verification, Validation and Accreditation (VV&A): The GM-VV Contribution and Roadmap. Published in the proceedings of NMSG 60 Symposium: 'How is Modeling and Simulation Meeting the Defence Challenges out to 2015?'. Vancouver, BC. 7-8 October 2008.

Final Report for NATO MSG-019 Verification, Validation and Accreditation (VV&A) of Federations.

Masys, A.J., Van Emmerik, M.L., Bouc, O. (2006) Verification, Validation and Accreditation: Leveraging International Initiatives. Published in the proceedings of the NATO Research and Technology Organization (RTO) Symposium: Transforming Training and Experimentation through Modelling and Simulation. Rome, Italy 5-6 Oct 2006.

Journal Papers

Horan, KA, Scott, B, Farzan, A, Ortíz-Aponte, ML, Rivera-García, A, Marshall, J, Masys, AJ, Shoss, M, Campos, A, and Orta-Anés, L. (2021) Understanding recovery and resilience from natural disasters in hospitality organizations. *Journal of Emergency Management* Vol. 19, No. 8 109-121

Masys, A.J., Ray-Bennett, N., Shiroshita, H and Jackson, P. (2014) High Impact/ Low Frequency extreme events: Enabling Reflection and Resilience in a Hyper-connected World. 4th International Conference on Building Resilience, 8-11 September 2014, Salford Quays, United Kingdom. *Procedia Economics and Finance* 18 (2014) 772 – 779.

Masys, A.J. (2014) Radicalization and Recruitment: A systems approach to understanding violent extremism. *International Journal for Systems & Society*.

Masys, A.J. and Vallerand, A. (2014) Major Event Security Planning: Secure by Design- Through the Strategic use of Integrated Modeling and Simulation. *M&S Journal*.

Masys, A.J. (2013) Book Review: The human factors of fratricide, *Ergonomics*, DOI: 10.1080/00140139.2013.841413

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Sherrit, S., Masys, A.J. Wiederick, H.D. and Mukherjee, B. (2011) ‘Determination of the reduced matrix of the piezoelectric, dielectric and elastic material constants for a piezoelectric material with c_{∞} symmetry’ IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, vol. 58, no. 9:1714-1720.

Masys, A.J. (2012) Black Swans to Grey Swans- Revealing the Uncertainty. International Journal of Disaster Prevention and Management, Vol. 21 No. 3: 320-335.

Masys, A.J. (2009) Systems Thinking and Fratricide: Operationalizing Knowledge Management and Organizational Learning. International Journal of Knowledge, Culture and Change Management, Volume 9, Issue 11, 95-108.

Masys, A.J. (2008) Pilot Error: Dispelling the hegemony of blamism. A case of de-centered causality and hardwired politics. International Journal of Disaster Prevention and Management, Vol. 17 No. 2, 2008, pp. 221-231.

Masys, A.J. (2005) A Systemic Perspective of Situation Awareness: An analysis of the 2002 Mid-Air Collision over Uberlingen, Germany. International Journal of Disaster Prevention and Management. Volume 14 (4), pp. 548-557. 2005.

Masys, A.J. (2004) Aviation Accident Aetiology: A Catastrophe Theory Perspective. International Journal of Disaster Prevention and Management, Volume 13 (1), pp. 33-38.

Masys, A.J. (2004) Syndromic Surveillance and Bioterrorism: Embracing the Network Centric Warfare Paradigm. International Journal of Disaster Prevention and Management. Volume 15 (5), pp. 351-355.

W. Ren, A.J. Masys, G. Yang and B.K. Mukherjee, (2001) “The Field and Frequency Dependence of the Strain and Polarisation in Piezoelectric and Electrostrictive Ceramics”, Ferroelectrics, Vol. 261, pp. 27-32.

W. Ren, A.J. Masys, G. Yang and B.K. Mukherjee,(2002) “Domain Related Non-linear Effects in Piezoelectric Materials”, Ferroelectrics, Vol. 268, pp. 83-88.

W. Ren, A.J. Masys, G. Yang and B.K. Mukherjee, (2002) “Nonlinear strain and DC bias induced piezoelectric behaviour of electrostrictive lead magnesium niobate-lead titanate ceramics under high electric fields”, J. Phys. D: Appl. Phys. 35 , pp.1550-1554.

A. J. Masys, W. Ren, G. Yang, and B. K. Mukherjee, (2003) “Piezoelectric strain in lead zirconate titanate ceramics as a function of electric field, frequency, and dc bias
Journal of Applied Physics, Volume 94 (2), 15 July 2003, pp. 1155-1162.

Conference Proceedings

Masys, A.J., and Vallerand, A. (2011) Modelling, Simulation and Analysis (MS&A): potent enabling tools for planning and executing complex major national events. Presented at the CRHNet Symposium 19-21 Oct 2011, Ottawa.

Masys, A.J. (2011) Safety Culture- Revealing the Complexity. Presented at the 9th International Conference on Complex Systems, 26 June-1 July 2011, Boston, MA.

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Masys, A.J. (2008) Root (Rhizomal) Cause Analysis Extreme. Accepted for presentation and publishing at the 26th International System Safety Conference, Vancouver, Canada. 25-29 August 2008.

Espenant, M., Masys, A.J. (2008) Applying a FEDEP VV&A Overlay to the MALO Project using the REVVA VV&A Process. Accepted for presentation and publishing at the Euro Simulation Interoperability Workshop (SIW) Edinburgh, Scotland. 16-19 June 2008.

Elliott, D.R., Brown, R.G., Masys, A.J., Dillman, B.M. Striving for Interoperability: Synthetic Environment Core (*SECore*). Presented and published in the proceedings of the Spring Simulation Multiconference (SpringSim 08), Ottawa, Canada. 14-17 April 2008.

Masys, A.J. Complexity in the Social Sciences: Insights from Complementary Theoretical Perspectives. Presented and published in the proceeding of the International Conference on Complex Systems 2007, Boston, MA, USA. 28 Oct- 2 Nov 2007

Masys, A.J. (2007) System Safety Requirements: Verification, Validation and Accreditation (VV&A) for Modelling and Simulation. Recent Developments. Accepted for publishing and presentation at the 25th International System Safety Conference, Baltimore, USA. August 2007.

Masys, A.J. (2007) Hardwired Politics, Illusions of Certainty. Exploring Aviation Accident Aetiology. Accepted for publishing and presentation at the 25th International System Safety Conference, Baltimore, USA. August 2007.

Masys, A.J. (2006) Understanding Fratricide: Insights from Actor Network Theory and Complexity Theory. Published in the proceedings of the ISSC Conference, New Mexico, USA. 31 Jul- 4 Aug 2006.

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Masys, A.J. (2006) Understanding Climate Change through Modelling and Simulation: A Case for Verification, Validation and Accreditation. Published in the proceedings of the Climate Change Technology Conference, Ottawa, Canada. 9-12 May 2006.

D.S. Wakefield, D.R. Elliott, J.P.R. Gauvin, A.J. Masys. (2006) Managing Modelling and Simulation in Canada's Department of National Defence. Published in the proceedings of SimTec 2006. Melbourne, Australia. 29 May-1 June 2006.

Masys, A.J. (2006) Modelling and Simulation: Canadian Defence Initiatives. Published in the Proceedings of the SMI Conference: Training Simulations and Synthetic Environments London, UK 8-9 Feb 2006.

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Binu Mukherjee, Wei Ren, Guomao Yang, Shi-Fang Liu and Anthony J Masys. Non-linear Effects in Piezoelectric Ceramics: Dependence of Properties on Applied Field and Stress, Proc of the 8th International Congress on Sound and Vibration, ICSV-8, 2685-2692, Hong King, China 2-6 July 2001.

Mukherjee, B.K., Ren, W., Liu, S-F, Masys, A.J. and Yang, G., "Non-Linear Properties of Piezoelectric Ceramics", Active Materials: Behaviour and Mechanics, SPIE Proceedings, Volume 4333, pp. 41-54, SPIE, Bellingham, WA 98227, USA, 2001. **(INVITED)**

B.K. Mukherjee, W. Ren, G. Yang, and A.J. Masys, "Non-Linear Effects in Piezoelectric Ceramics: Dependence of Properties on Applied Field and Stress", Published in the Proc. of the Canada-US CanSmart Workshop Smart Materials and Structures, pp. 169- 177, St. Hubert, Quebec, October, 2001.

Other Publications

1. IEEE 1516.4 Verification, Validation and Accreditation (VV&A) of Federations. Drafting group team member.

NON-REFEREED PUBLICATIONS AND PRESENTATIONS

Journal and Magazine Articles

Masys, A.J., Sones, J., Elliott, D.R. (2008) DND's Modeling and Simulation Training. Frontline Magazine. Vol 5:2 2008. pg. 58-59.

Masys, A.J. (2006) DND/CF Modelling and Simulation: An Organizational View. Frontline Magazine. Vol 3:6 2006. pg. 21-26.

Conference/Meeting Presentations

Masys, A.J. (2013) 'Lack of Imagination' - Scenario thinking and visualization: Dealing with complexity and uncertainty in Dark Networks. Presented at the Data Visualization and Analysis Symposium, Waterloo Institute for Complexity and Innovation: 21-22 Nov 2013.

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Masys, A.J. and Andrews, M. (2012) Dynamic Risk based planning: Supporting major events and disaster operations. Presented at the Canadian Risk Hazard Network Symposium, Vancouver, BC 24-26 Oct 2012.

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Masys, A.J. (2011) Integrated Evaluation Strategy for Major Events. Presented at the United Nations Interregional Crime Research institute, Bogota, Colombia, 5-7 May 2011**(INVITED)**

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Vallerand, A. and Masys, A.J. (2010) 'M&S & Analysis: Crucial enabler for Safety & Security In Difficult Homeland Security Environments and for Support to Vancouver 2010 Olympics' Presented at ITEC London May 2010

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