Dr. Robert J Cloutier

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Dr. Cloutier is a Professor, Systems Engineering Program Chair, and Director of Graduate Studies in the College of Engineering at the University of South Alabama (USA). He holds a concurrent appointment at University of South-Eastern Norway at the Kongsberg Campus. His research interests include system architecting, concept of operations, model-based systems engineering, and complex patterns for systems engineering. His record of scholarship includes 22 peer reviewed journal articles and a monograph: "Systems Engineering Simplified" with CRC Press, Taylor & Francis Group. He is editor in chief for the Systems Engineering Body of Knowledge (https://www.sebokwiki.org) which receives >25k unique visitors and >68k page views per month. Before joining USA, Dr. Cloutier was an Associate Professor and Deputy Director, Systems and Software Division and Director of Systems Engineering Programs at Stevens Institute of Technology in Hoboken NJ. At Stevens he executed over $4.0M in research grants, and has supervised/awarded 9 Systems Engineering doctoral degrees (Ph.D. & D.Sc.). Prior to Stevens, he spent over 20 years at Lockheed Martin and The Boeing Company (where he was an Associate Technical Fellow). Professional roles included system architect, enterprise architect, and principal systems engineer. Dr. Cloutier served eight years in the U.S. Navy & Navy Reserve. He received his BS from the US Naval Academy, his MBA from Eastern University, and his Ph.D. from Stevens Institute of Technology.

SCHOLARSHIP and RESEARCH

- 22 journal publications
- Number 1 downloaded article for 2010 in Systems Engineering journal with > 1350 downloads (Title: The Concept of Reference Architectures)
- Number 2 downloaded article for 2012 in Systems Engineering journal with > 1100 downloads (Title: Developing a stakeholder-assisted agile CONOPS development process)
- Over $4.0M grants/funded research (PI, Co-PI, and Sr. Researcher)

SERVICE

- P&T Chair, College of Engineering, USA
- Graduate Director, College of Engineering, USA
- President, Blues INCOSE Chapter
- NSF Compact and Efficient Fluid Power (CCEFP) Engineering Research Center (ERC) Science Advisory Board
- Associate Editor, Journal of Enterprise Transformation
- Senior Associate Editor, North America, International Journal of Information Technology and Systems Approach

ADVISING & ACADEMIC AWARDS by STUDENTS

- Graduated 9 Doctoral degrees and 3 Thesis based Master's degrees
- One doctoral student received 2013 SSE Best Dissertation Award
- One master's student received 2011 SSE Excellence in Research Award
- One master's student received 2011 SSE Excellence in Research Award; one awarded an Innovation and Entrepreneurship Graduate Fellowship (2 yrs.)
- Two undergraduate students awarded an Innovation and Entrepreneurship Summer Scholarship

PROFESSIONAL AWARDS

- Stevens 2009-2010 Alexander Crombie Humphreys Distinguished Associate Professor Teaching Award at Stevens
- Stevens 2010-2011 Provost Outstanding Research and Scholarship Award

TEACHING

- Average instructor rating of 3.8 (4.0 scale)
- Teach Systems Fundamentals, Systems Architecture, & Systems Thinking

EDUCATION

Ph.D. Systems Engineering, (2006) Stevens Institute of Technology, Hoboken, NJ,
Thesis: "Applicability of Patterns to Architecting Complex Systems"
Advisor: Dr. Dinesh Verma

M.B.A. Leadership, (1999) Eastern College, St. Davids, PA

B.S. Physical Science, (1978) United States Naval Academy, Annapolis, MD

TEACHING AND ADVISING

CURRENT APPOINTMENT

Professor & Systems Engineering Program Director, Graduate Director for the College of Engineering, University of South Alabama, Mobile, AL: January 2016 – Present

CONCURRENT APPOINTMENTS

Adjunct Instructor, University of Central Florida, Orlando, FL: 2018 – Present

Visiting Professor of Research, Stevens Institute of Technology School of Systems and Enterprises, Hoboken: NJ: 2017-Present

Professor II of Systems Engineering, University of South-Eastern Norway, Kongsberg, Norway: 2009 – Present

PAST APPOINTMENTS

Associate Professor (with Tenure), Systems Engineering, Stevens Institute of Technology, Hoboken, NJ: 2007 – 2015

Graduate Faculty Scholar, University of Central Florida, Engineering Leadership & Innovation Institute, Orlando, FL: 2011

GRADUATE COURSES TAUGHT

Systems Architecture and Modeling (SE 606/SYS650/SEAD6102/IND4060)
University of South Alabama, 2016 – Present
Stevens Institute of Technology, 2006 – 2018
University of South-Eastern Norway, 2009- Present

Fundamentals of Systems Engineering (SE601/SYS625/SEF)
University of South Alabama, 2016 – Present

Stevens Institute of Technology, 2006 – 2015
University of South-Eastern Norway, 2009- Present

Software Systems Engineering (SE604)
University of South Alabama, 2019

Systems Thinking (SE610)
University of South Alabama, 2017 - Present

Advanced System and Software Architecture Modeling and Assessment (SYS750)
Stevens Institute of Technology, 2010 – 2015, 2018

Systems Engineering Fundamentals (EIN6551C)
University of Central Florida, 2011

Systems Engineering Architecture (ESI6552)
University of Central Florida, 2019

Research Design (MNGT520)
Eastern University, 2000 – 2006

Quantitative Decision Making (MNGT650)
Eastern University, 2000-2006

UNDERGRADUATE COURSES TAUGHT

Engineering Design VI (EM322)
Stevens Institute of Technology, 2012 – 2015

Project Management (EM275)
Stevens Institute of Technology, 2014

Technical Application to Business (OMIS200)
Eastern University, 2000-2006

Managing IS/IT Organizations (OMIS450)
Eastern University, 2000-2006

TEACHING ACTIVITIES IN SPECIAL PROGRAMS OR GUEST LECTURE

[1]   Invited Lecturer on Systems Engineering, 2nd International Spring School on
      Systems Engineering. This annual event is organized by the Technische University

Munich and Fraunhofer Institute for Production Technology IPT - Project Group Mechatronic Systems Design. Munich, Germany, 12-16 May 2014

[2]   Invited Lecturer on Systems Engineering, 1st International Spring School on Systems Engineering. This annual event is organized by the Technische University Munich and Fraunhofer Institute for Production Technology IPT - Project Group Mechatronic Systems Design. Paderborn, Germany, 8-12 April 2013

[3]   Introduction to Systems Engineering. Part of the Systems Engineering Doctoral Lecture Series at Villanova University Doctoral Program. Guest Lecturer, March 2008

SCHOLARSHIP AND RESEARCH

PUBLICATIONS

BOOKS

[1]   Cloutier, R., Baldwin, C., and Bone, M. (2015). Systems Engineering Simplified. CRC Press, Taylor & Francis, ISBN 9781498706681

[2]   Wade, J. and Cloutier, R. (2015) Proceedings, 2015 Conference on Systems Engineering Research. Procedia Computer Science. Volume 44, Pages 1-718. Ed. By Jon Wade and Robert Cloutier

[3]   Cloutier, R. (2008). Applicability of Patterns to Architecting Complex Systems. Germany: VDM

BOOK CHAPTERS

[1]   Cloutier, R., & Bone, M. (2016). Systems Engineering. J. Farr, J. S. Gandhi, and D. Merino (Eds.), ASEM Handbook on Engineering Management: American Society of Engineering Management, Chapter 17 Systems Engineering. 2nd Edition

[2]   Cloutier, R., & Bone, M. (2010). Systems Engineering. In D. Merino & J. Farr (Eds.), ASEM Handbook on Engineering Management: American Society of Engineering Management, Chapter 12 Systems Engineering

[3]   Cloutier, R., DiMario, M., & Polzer, H. (2009). Net Centricity and System of Systems. In M. Jamshidi (Ed.), System of Systems Engineering: Innovations for the 21st Century (pp. 191-217). Hoboken, NJ: Wiley

BOOKS & CHAPTERS IN PROCESS

[1]   Cloutier, R. (Expected 2019). Evolving Toolbox for Complex Project Management, Chapter on: Project Management Patterns. Taylor & Francis Group, LLC. Editor: A. Gorod

[2]   Cloutier, R., Baldwin, C., and Bone, M. (TBD). Systems Engineering Simplified, Second Edition. CRC Press, Taylor & Francis

REFEREED JOURNALS

[1]   Glover, T., Cloutier, R., Gill, T. (2018). Development of a Systems Engineering Undergraduate Elective for Chemical Engineering Students. Chemical Engineering Education, Chemical Engineering Division, American Society for Engineering Education, Vol. 52, No. 4, Fall 2018

[2]   Cilli, M., Parnell, G., Cloutier, R., Zigh, T. (2017). Measuring Perceived Risks of Pitfalls Associated with Systems Engineering Tradeoff Analyses. Engineering Management Research, 6(1), 68-83. ISSN 1927-7318. E-ISSN 1927-7326. DOI:10.5539/emr.v6n1p68. Published by Canadian Center of Science and Education.

[3]   Oster, C., Kaiser, M., Kruse, J., Wade, J., Cloutier, R. (2016). Applying Composable Architectures to the Design and Development of a Product Line of Complex Systems. Systems Engineering, 19(6), 522-534. DOI: 10.1002/sys.21373

[4]   Cilli, M., Parnell, G., Cloutier, R., Zigh, T. (2016). A Systems Engineering Perspective on the Revised Defense Acquisition System. Systems Engineering, 18(6), 584-603. DOI: 10.1002/sys.21329

[5]   Korfiatis, P., Cloutier, R., Zigh, T. (2015). Model-Based Concept of Operations Development Using Gaming Simulation: Preliminary Findings. Simulation & Gaming: An Interdisciplinary Journal of Theory, Practice and Research. Sage Publications, Thousand Oaks, CA 1-18 DOI: 10.1177/1046878115571290

[6]   Farr, John V., Cloutier, Robert, and Saltysiak, Thomas I. (2015). An Architectural Framework for Nation States in Support of Peace Building Operations. Journal for Enterprise Transformation. 5(1), 52-70 DOI: 10.1080/19488289.2014.977408

[7]   Cloutier, R., Sauser, B., Bone, M., Taylor, A. (2015). Transitioning Systems Thinking to Model Based Systems Engineering: Systemigrams to SysML Models. IEEE Transactions on Systems, Man, and Cybernetics: Systems 45(1), 662-674. DOI: 10.1109/TSMC.2014.2379657

[8]   Cowling, J., Morgan, C., and Cloutier, R. (2014). An Open Systems Development Conceptual Framework. International Journal of Information and Systems Approach, 7(1), 41-54, January-June 2014, DOI: 10.4018/ijitsa.2014010103

[9]   Sols, A., Romero, J., & Cloutier, R. (2012). Performance-Based Logistics and Technology Refreshment Programs: Bridging the Operational-Life Performance Capability Gap in the Spanish F-100 Frigates. Systems Engineering, 15(4), 422-432. DOI: 10.1002/sys.21207

[10]   Mostashari, A., McComb, S. A., Kennedy, D. M., Cloutier, R., & Korfiatis, P. (2012). Developing a stakeholder-assisted agile CONOPS development process. Systems Engineering, 15(1), 1-13. DOI: 10.1002/sys.20190

[11] Moore, D., Crowe, P., & Cloutier, R. (2011). Driving Major Change – The Balance between Methods and People. Crosstalk. The Journal of Defense Software Engineering, 24(3), 11-14

[12] Squires, A., & Cloutier, R. (2010). Evolving the INCOSE reference curriculum for a graduate program in systems engineering. Systems Engineering, 13(4), 381-388. DOI: 10.1002/sys.20157

[13] Bone, M., & Cloutier, R. (2010). État de l'ingénierie de systèmes dirigée par les modèles Résultats d'une enquête de l'OMG™ sur SysML. Génie Logiciel, n° 95(December), 34-38

[14] Cloutier, R., Muller, G., Verma, D., Nilchiani, R., Hole, E., & Bone, M. (2010). The Concept of Reference Architectures. Systems Engineering, 13(1), 14-27

[15] Sommer, K., & Cloutier, R. (2009). Clockspeeds in Architecture Evolution, Dead-Ends, and Discontinuities. Systems Research Forum, 3(1), 51-79

[16] Crowe, P., & Cloutier, R. (2009). Evolutionary Capabilities Developed and Fielded in Nine Months. Crosstalk, The Journal of Defense Software Engineering, 22(4), 15-17

[17] Linebarger, J., De Spain, M., McDonald, M., Spencer, F., & Cloutier, R. (2009). The Design for Tractable Analysis (DTA) Framework: A Methodology for the Analysis and Simulation of Complex Systems. International Journal of Decision Support System Technology, 1(2), 23. DOI:10.4018/jdsst.2009040105

[18] Herald, T., Verma, D., Lubert, C., & Cloutier, R. (2009). An obsolescence management framework for system baseline evolution - Perspectives through the system life cycle. Systems Engineering, 12(1), 1-20

[19] DiMario, M., Cloutier, R., and Verma, D. (2008). Applying Frameworks to Manage SoS Architecture. Engineering Management Journal, 20(4)

[20] Jain, R., Chandrasekaran, A., Elias, G., & Cloutier, R. (2008). Exploring the Impact of Systems Architecture and Systems Requirements on Systems Integration Complexity. Systems Journal, IEEE, 2(2), 209-223. DOI: 10.1109/JSYST.2008.924130

[21] Cloutier, R., & Verma, D. (2007). Applying the concept of patterns to systems architecture. Systems Engineering, 10(2), 138-154

[22] Cloutier, R., & Verma, D. (2006). Applying Pattern Concepts to Enterprise Architecture. Journal of Enterprise Architecture, 2(2), 1-17

REFEREED JOURNAL ARTICLES ACCEPTED FOR PUBLICATION

[1]   None

REFEREED JOURNAL ARTICLES SUBMITTED AND UNDER REVIEW

[1]   None

OTHER REFEREED PUBLICATIONS AND PROCEEDINGS

[1]   Pennison, G., Cloutier, R., Webb, B. (2018). Local Coastal Roads–Next Generation. 2018 IISE Annual Conference, Orlando, FL, May 19-20, 2018

[2]   K. Goevert, K., Cloutier, R., Roth, M., Lindemann, U. (2016). Concept of System Architecture Database Analysis. Bali, Indonesia. 2016 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM). Pages: 410 - 414, DOI: 10.1109/IEEM.2016.7797907. 4-7 Dec. 2016.

[3]   Willett, K., Dove, R., Cloutier, R., and Blackburn, M. (2016). On System Dynamics Modeling of Human-Intensive Workflow Improvement – Case Study in Cybersecurity Adaptive Knowledge Encoding. INCOSE International Symposium, Edinburgh, Scotland, 18-21 Jul

[4]   Cloutier, R. (2015). Current Modeling Trends in Systems Engineering. INCOSE Insight, 18(2)

[5]   Cloutier, R., Jones, R., and Lester, H. (2015). Large Scale Interactive Modeling and Visualization of Cities: Can it be done? Industrial and Systems Engineering Research Conference, Proceedings of the IIE Annual Conference and Expo 2015. Nashville, TN, May 30-June 2, 2015

[6]   Cloutier, R. and Bone, M. (2015). The Ongoing Adoption of Model Based Systems Engineering. Industrial and Systems Engineering Research Conference, Proceedings of the IIE Annual Conference and Expo 2015. Nashville, TN, May 30-June 2, 2015

[7]   Wing, A., & Cloutier, R. (2015). Ramp Area Support System Limitations of Modeling Approach to an Airport Apron Area. Procedia Computer Science. 2015 Conference on Systems Engineering Research. Volume 44, Pages 354-362, Hoboken, NJ, March 17-19, 2015

[8]   See Tao, H., Bahabry, A., & Cloutier, R. (2015). Customer Centricity in the Smart Grid Model. (2015). Procedia Computer Science. 2015 Conference on Systems Engineering Research. Volume 44, Pages 115-124, Hoboken, NJ, March 17-19, 2015

[9]   Pyster, A., Adcock, R., Ardis, M., Cloutier, R., Henry, D., Laird, L., Lawson, H., Pennotti, M., Sullivan, K., Wade, J. (2015) Exploring the Relationship between Systems Engineering and Software Engineering. Procedia Computer Science. 2015 Conference on Systems Engineering Research. Volume 44, Pages 708-717, Hoboken, NJ, March 17-19, 2015

[10]   Baldwin, W., Sauser, B., & Cloutier, R. (2015) Simulation Approaches for System of Systems: Events-based versus Agent Based Modeling. Procedia Computer Science. 2015 Conference on Systems Engineering Research. Volume 44, Pages 363-372, Hoboken, NJ, March 17-19, 2015

[11]   Wing, A., Cloutier, R., & Felder, W. (2014). Airport Ramp Area Support System. 4th International Engineering Systems Symposium, CESUN 2014, Hoboken, NJ, June 8-11

[12]   Floyd, D., Cloutier, R., Zigh, T. (2013). Nonlinear dimensionality reduction for structural discovery in image processing. Applied Imagery Pattern Recognition

Workshop: Sensing for Control and Augmentation, 2013 IEEE (AIPR, vol., no., pp.1,6, 23-25 Oct. 2013
DOI: 10.1109/AIPR.2013.6749319

[13] Gandhi, S.J., Perez, S., Rushton, D., Cloutier, R., Bozkurt, I., & Pinto, C.A. (2012). Identification and Implementation of Patterns towards a Model of Environmental Sustainability. 2012 IAC of the American Society for Engineering Management, Virginia Beach, VA, October 17-20

[14] Cowling, J., & Cloutier, R. (2012). Open Governance in the Learning Organization. Third International Engineering Systems Symposium, CESUN 2012, Delft University of Technology, The Netherlands, June 18-20

[15] Gandhi, S.J., Perez, S., Rushton, D., Cloutier, R., Bozkurt, I., & Pinto, C.A. (2012). Identification and Implementation of Patterns towards a Model of Environmental Sustainability. 2012 IAC of the American Society for Engineering Management, Virginia Beach, VA, October 17-20

[16] Korfiatis, P., Cloutier, R., Zigh, T. (2012). Graphical CONOPS Development to Enhance Model Based Systems Engineering, Third International Engineering Systems Symposium, CESUN 2012, Delft University of Technology, The Netherlands, 18-20 June 2012

[17] Bone, M., Cloutier, R., and Korfiatis, P., (2012). Reference Architecture, Industrial and Systems Engineering Research Conference (ISERC), Orlando, FL, May 19-23

[18] Squires, A., Cloutier, R. (2011). Applying the Plan-Do-Check-Act Cycle to Develop Best Practices in Remote Online Systems Engineering Education, Proceedings of the 21st Annual International Symposium of INCOSE. Denver, Colorado. June 20-23. ISBN 978-1-937076-00-9

[19] Bone, Mary, and Robert Cloutier. (2011). Applying Systems Engineering Modeling Language (SysML) to System Effort Estimation Utilizing Use Case Points, Proceedings of the 21st Annual International Symposium of INCOSE, Denver, Colorado. June 20-23. ISBN 978-1-937076-00-9

[20] Squires, A., Cloutier, R. (2011). Comparing Perceptions of Competency Knowledge Development in Systems Engineering Curriculum: A Case Study, Proceedings from the 118th American Society for Engineering Education (ASEE) Annual Conference, Vancouver, BC, Canada, June 26-29

[21] Ph.D. Systems Engineering "Systems Engineering Process Tailoring Patterns", May 2011Bone, M., Cloutier, R., Korfiatis, P., and Carrigy, A. (2010). System Architecture: Complexities Role in Architecture Entropy, IEEE System of Systems Engineering Conference, June 2010, Loughborough, UK

[22] Squires, A. and Cloutier, R. (2010). Evaluating the Effectiveness of Classroom Discussion Approaches Used in the Remote Delivery of Systems Engineering Education, Proceedings from the American Society for Engineering Education (ASEE) 2010 Annual Conference, Louisville, Kentucky, June 20-23

[23] Bone, M. and Cloutier, R. (2010). The Current State of Model Based Systems Engineering: Survey Results from the OMG SysML Request for Information 2009, 8th Conference on Systems Engineering Research (CSER), Hoboken, NJ March 17-19

[24] Squires, A., Cloutier, R. (2010). Developing a Strategy to Measure Systems Engineering Competency Knowledge Demonstrated in the Remote Asynchronous Online Classroom, 8th Conference on Systems Engineering Research (CSER), Hoboken, NJ, March 17-19

[25] Cloutier, R., DeSpain, M., Linebarger, J. and Spencer, F. (2009). Agile Development of Tractable Analyses and Simulations of Complex Systems, International Council of Systems Engineers (INCOSE), 19th International Symposium of INCOSE, 3rd Asia-Pacific Conference on Systems Engineering, Singapore, July 20-23

[26] Cloutier, R., Bone, M., and Verma, D. (2009). Architecture Entropy, International Council of Systems Engineers (INCOSE), 19th International Symposium of INCOSE, 3rd Asia-Pacific Conference on Systems Engineering, Singapore, July 20-23

[27] Crowe, P., Mostashari, A., Mansouri, M., Cloutier, R. (2009). Reference Framework and Model for Integration of Risk Management in Agile Systems Engineering Lifecycle of the Defence Acquisition Management Framework, International Council of Systems Engineers (INCOSE), 19th International Symposium of INCOSE, 3rd Asia-Pacific Conference on Systems Engineering, Singapore, July 20-23

[28] Cloutier, R., E. Gill, D. Verma, and M. Bone. (2009). A Case Study: Application of the Systems Modeling Language (SysML) in the early phases of a Complex Space System Project, Conference on Systems Engineering Research (CSER), Loughborough, UK, April 20-23

[29] Cowling, J., and Cloutier, R. (2009). A System of Systems perspective on Open Source Software Projects, Conference on Systems Engineering Research (CSER), Loughborough, UK, April 20-23

[30] DeSpain, M. Darby, M., and Cloutier, R. (2008). Security in the 21st Century, INCOSE International Symposium, Utrecht, The Netherlands, June 2008

[31] Cloutier, R., and Griego, R. (2008). Applying Object Oriented Systems Engineering to Complex Systems. 2nd Annual IEEE Systems Conference, Montreal, Canada, April 4-7

[32] Zdanis, L. and Cloutier, R. (2007). The Use of Behavioral Diagrams in SysML, 5th Conference on Systems Engineering Research, Hoboken, NJ, March 14-16

[33] Cloutier, R., Verma, D., and Boardman, J. (2006). Application of Patterns to Systems Engineering and Architecting, Proceedings of the 16th Annual International Symposium of INCOSE, July 9-13

[34] Cloutier, R. (2005). Toward the Application of Patterns to Systems Engineering, Conference on Systems Engineering Research (CSER), Hoboken, NJ. March 23-25

[35] Cloutier, R. (2004). Migrating from a Waterfall Systems Engineering Approach to an Object-Oriented Approach – Lessons Learned, Joint INCOSE/ICSE Region II Conference, Las Vegas, NV, September 15-18

[36] Cloutier, R., Fickle, C., Watson, J., and Winkler, A. (2003). Modeling a System of Systems Using UML, Conference on Systems Engineering Research (CSER), Stevens Institute of Technology, Hoboken, NJ

REFEREED CONFERENCE PAPERS ACCEPTED FOR PUBLICATION

[1] None

JOURNAL ARTICLES IN PROCESS

[1] Colomb, M., Cloutier, R., Palanki, S., Sylvester, N. (TBD) Spiral Development Model for Development of and Industrial Implementation of the Hydrochlorination Reaction

[2] Bone, M. & Cloutier, R. (TBD). Architecture Structural Complexity Index for Engineered Systems. Systems, Man, and Cybernetics: Systems, IEEE Transactions on

PUBLISHED REPORTS

[1] Blackburn, M. (PI), et al. Transforming Systems Engineering through Model Centric Engineering. A013 Interim Technical Report SERC-2017-TR-111. August 8, 2018

[2] Blackburn, M. (PI), Cloutier, R., Witus, G., Hole, E., Bone, M. Transforming System Engineering through Model-Centric Engineering. Final Technical Report (SERC-2014-TR-044-2. January 13, 2015

[3] Cloutier, R. (PI), Hamilton, D., Zigh, T., Korfiatis, P., Esfahbod, B., Zhang, P., Pape, P., O'Brian, J., & Weeks, S. Graphical CONOPS prototype to demonstrate emerging methods, processes, and tools at ARDEC. Final Technical Report (SERC-2011-TR-031-2) Systems Engineering Research Center

[4] Cloutier, R. (PI), Hamilton, D., Zigh, T., Korfiatis, P., Esfahbod, B., Zhang, P., Pape, P., O'Brian, J., & Weeks, S. Prototype of a Graphical CONOPS (Concept of Operations) Development Environment for Agile Systems Engineering. Final Technical Report (SERC-2013-TR-030-2) Systems Engineering Research Center

[5] Cloutier, R. (PI), McComb, S., Deshmukh, A., Zigh, T., Korfiatis, P., Esfahbod, B., Zhang, P., & Hall, K. (2012). Prototype of a Graphical CONOPS (Concept of Operations) Development Environment for Agile Systems Engineering, Final Technical Report (SERC-2011-TR-030). Systems Engineering Research Center

[6] Robert Cloutier (PI), Teresa Zigh, Peter Korfiatis, Behnam Esfahbod, Peizhu Zhang, and John Santanello, Graphical CONOPS prototype to demonstrate emerging methods, processes, and tools at ARDEC, Final Technical Report SERC-2011-TR-031, Systems Engineering Research Center, March 2012

[7] Robert Cloutier (PI), Peter Korfiatis, Kyle Thompson-Bass, Communications Effects Server (CES) Model for Systems Engineering Research, Final Technical Report SERC-2011-TR-023, Systems Engineering Research Center, January 2012

[8] Robert Cloutier and Mary Bone. (2010). Compilation of SysML RFI- Final Report, Systems Modeling Language (SysML) Request for Information OMG Document: syseng/2009-06-01. February 20, 2010

[9] Robert Cloutier, Ali Mostashari, Sara McComb, Abhijit Deshmukh, Deanna Kennedy, Peter Korfiatis, and Anne Carrigy, Investigation of a Graphical CONOPS Development Environment for Agile Systems Engineering, Final Technical Report SERC-2010-TR-007, May 31, 2010

[10] Robert Cloutier, Robert, Ali Mostashari, Sara McComb, Abhijit Deshmukh, Jon Wade, Deanna Kennedy, and Peter Korfiatis, Investigation of a Graphical CONOPS (Concept of Operations) Development for Agile Systems Engineering, Technical Report SERC-2009-TR-003, October 31, 2009

[11] Linebarger, John M., Mark De Spain, Robert Cloutier, Floyd Spencer, and Michael McDonald, The Design for Tractable Analysis (DTA) Framework: A Methodology for the Analysis and Simulation of Complex Systems, SAND2008-6030, Sandia National Laboratories, Albuquerque, New Mexico 87185 and Livermore, California 94550, Printed September 2008

[12] Cloutier, Robert, Applicability of Patterns to Architecting Complex Systems, Doctoral Dissertation, Stevens Institute of Technology, Hoboken, NJ June 2006

OTHER PUBLISHED WORKS

[1] Cloutier, R. (2011). Introduction to JET Special Issue of Journal of Enterprise Transformation: Enterprise Modeling. Journal of Enterprise Transformation, 1(03), pp. 175 - 178. DOI: 10.1080/19488289.2011.606015

[2] Cloutier, R. (2009) Model Based Systems Engineering: The New Paradigm. Introduction to this Special Edition on Model-based Systems Engineering (MBSE), INSIGHT - Publication of the International Council on Systems Engineering, 12 (4)

[3] Crowe, P., & Cloutier, R. (2009). Case History: The U.S. Army updates its readiness reporting systems using Agile approach in a challenging environment. PDMA VISIONS: Insights into Innovation, XXXIII (3), 13-15. Product Development and Management Association

INVITED SEMINARS AND LECTURES

[1] Invited Talk: Heinz Nixdorf Institute forum on Systems Engineering. "Can Patterns be Applied when Architecting Complex Systems?" Presented 9 April 2013. https://www.youtube.com/watch?v=IoYIwIfPgEE

[2] Invited Professor: The International Spring School on Systems Engineering (IS3E) 2012. IS3E is organized jointly by the Technical University of Munich (Institute of Product Development) and Fraunhofer Institute for Production Technology IPT – Project Group Mechatronic Systems Design supported by University of Paderborn (Heinz Nixdorf Institute), the Stevens Institute of Technology (Hoboken, NJ), École Centrale Paris and the INCOSE (German Chapter). It is intended for internationally diverse PhD students whose research interest is focused on Systems Engineering. http://www.is3e.eu/

[3]   Invited Talk: Cloutier, R. (2012, October 17). Using Patterns in Systems Engineering. The Southern Jersey Professional Societies (AIAA, IEE, ITEA). Mays Landing, NJ.

[4]   Invited Talk: Cloutier, R. (2012, September). What are the Obstacles to MBSA/MBSE: Perspectives on moving to an MBSA/MBSE Environment? INCOSE Liberty Chapter Meeting. Clifton, NJ

[5]   Invited Talk: Cloutier, R. (2011, October 5-6). 3rd Annual Systems Research Review (ASRR). Early Systems Engineering: Rapid and Graphical Concepts of Operation. University of Maryland. College Park, MD

[6]   Invited Contributor: Cloutier, R. (2011, August 22-24). Lockheed Martin Digital Tapestry Strategy Workshop. State of Model Based Systems Engineering. Lockheed Martin's Center for Leadership Excellence. Bethesda, MD

[7]   Invited Panelist: Cloutier, R. (2011, April 6.) NCOIC Panel Discussion on Patterns. Denver, CO

[8]   Invited Talk: Cloutier, R. (2010, August). Potential of Modeling and Simulation to support Architecting. Nokia Research Center. Helsinki, Finland

[9]   Keynote Speaker: Cloutier, R. (2010, April). SSCI System & Software Technology Conference (SSTC). Salt Lake City, UT

[10]   Invited Talk: Cloutier, R. (2010, February). Patterns and Systems Architecture. Hogskolen i Buskerud University College. Kongsberg, Norway

[11]   Invited Talk: Cloutier, R. (2009, February). Patterns in Systems Architecting. INCOSE Orlando Chapter. Orlando, FL

[12]   Invited Talk: Cloutier, R. (2008, October). Patterns in Systems Architecting. INCOSE Sweden Chapter. Stockholm, Sweden

[13]   Invited Panelist: Cloutier, R. (2008, June). High-tech Systems embedded in their environment. INCOSE IS Panel. Utrecht, The Netherlands

[14]   Invited Talk: Cloutier, R. (2008, May). Service Oriented Architectures for Systems Engineers. FAA Technical Center. Atlantic City, NJ

[15]   Invited Talk: Cloutier, R. (2008, May). Patterns in Systems Architecting. INCOSE New Mexico Chapter. Albuquerque, NM

[16]   Invited Talk: Cloutier, R. (2008, April). Is There a Role for Patterns in Enterprise Architecture? Architecture & Process Transformation Conference. Washington, DC

[17]   Keynote Panelist: Cloutier, R. (2008, April). Complexity has become a "tipping point." SSCI System & Software Technology Conference (SSTC). Las Vegas, NV

[18]   Invited Talk: Cloutier, R. (2008, February). Patterns for NCOIC. Network Centric Operations Interoperability Consortium Plenary. Denver, CO

[19]   Invited Talk: Cloutier, R. (2008, February). Patterns for Systems Engineering. IBM Watson Research Center. New York City, NY

[20]   Invited Talk: Cloutier, R. (2007, December). Model Driven Architecture for Systems Engineering. Object Management Group, Systems Engineering Working Group. Washington, DC

[21]   Invited Talk: Cloutier, R. (2007, July). Applying Patterns to Systems Architecting. NASA Guest Speaker Series. Johnson Space Center. Houston, TX

[22] Invited Talk: Cloutier, R. (2007, March). Introduction to Systems Engineering, Villanova University Doctoral Program Invited Speaker series. Villanova, PA

[23] Invited Talk: Cloutier, R. (2006, April). Patterns for Systems Engineering. Embedded Systems Institute. Eindhoven, Netherlands

[24] Invited Talk: Cloutier, R. (2007, October). Service Oriented Architecture for Systems Engineering. Federal Aviation Administration Tech Center. Atlantic City, NJ

CONFERENCE PRESENTATIONS AND SPECIAL SEMINARS

[1] Conference Presentation: Salter, R., Cloutier, R. (2018). "Towards Early Lifecycle Prediction of System Reliability". Military Operations Research Society Emerging Techniques Forum 2018.

[2] Conference Presentation: Cilli, M. & Cloutier, R. (2016). A Systems Engineering Perspective on the Revised Defense Acquisition System. 84th Military Operations Research Society Symposium. Quantico VA, 20-23 June 2016

[3] Poster Session: Bone, M. and Cloutier, R. (2014). System Architecture Index. 4th Annual Council of Engineering Systems Universities (CESUN), Stevens Institute of Technology, Hoboken, NJ, June 9th, 2014

[4] Poster Session: Sonani, V. and Cloutier, R. (2014). Graphical CONOPS for the Delivery of Healthcare. 4th Annual Council of Engineering Systems Universities (CESUN), Stevens Institute of Technology, Hoboken, NJ, June 9th, 2014

[5] Invited Judge: General Donald R. Keith Memorial Capstone Conference, May 1, 2014. United States Military Academy, West Point, NY

[6] Invited Judge: 2013 ESE Senior Design Demo Day, April 18, 2013. University of Pennsylvania, Philadelphia, PA

[7] Poster Session: Sols, A. and Cloutier, R. (2012). Designing for technological refreshability over the system operational life. Complex Systems Design & Management (CSD&M). Cité Internationale Universitaire de Paris, Paris, December 12-14, 2012

[8] Conference Presentation: Cloutier, R. (2012, June 14-15). Graphical CONOPS – A Strategy to Improve Stakeholder/Designer Shared Understanding. Kongsberg Systems Engineering Event. Kongsberg, Norway

[9] Studio Recording: zur Muehlen, M. and Cloutier, R. (2010, December). Introduction to Enterprise Architecture Parts 1 and 2. Lockheed Martin Corporation Studio Produced Lectures (1 hour each)

[10] Conference Presentation: Cloutier, R. (2008, April). Is There a Role for Patterns in Enterprise Architecture? AP Transformation. Washington, DC

[11] Conference Presentation: Cloutier, R. (2007, January). Some thoughts on System Architectures. BODERC Symposium, Keynote Presentation. Eindhoven, Netherlands

DOCTORATE, MASTERS, UNDERGRADUATE STUDENTS DIRECTED

CURRENT DOCTORAL STUDENTS

Robert Delles, University of South Alabama
Ifezue Obiako, University of South Alabama

DOCTORAL GRADUATES

[1] **Salter, Cody**, D.Sc. Systems Engineering, Summer 2018, "Improving Systems Reliability". **University of South Alabama**, Mobile, AL

[2] **Kari Lippert**, D.Sc. Systems Engineering, "Toward the Evolution of Information Digital Ecosystems", May 2018. **University of South Alabama**, Mobile, AL

[3] **Barbara Turrens**, D.Sc. Systems Engineering, "Toward Systems Complexity in Modern Shipbuilding", May 2018. University of South Alabama, Mobile, AL

[4] **Matthew V. Cilli**, Ph.D. Systems Engineering, "Improving Defense Acquisition Outcomes Using an Integrated Systems Engineering Decision Management (ISEDM) Approach", December 2015. **Stevens Institute of Technology**, Hoboken, NJ

[5] **Mary Bone**, Ph.D. Systems Engineering, "Architecture Structural Complexity Index for Engineered Systems", May 2015. **Stevens Institute of Technology**, Hoboken, NJ

[6] **Portia Crowe**, Ph.D. Systems Engineering, " Toward an Agile Systems Engineering Decision Making Process Model with Key Principles", May 2014. **Stevens Institute of Technology**, Hoboken, NJ

[7] **Peter Korfiatis**, Ph.D. Systems Engineering, "Development of a Virtual Concept Engineering Process to Extend Model-Based Systems Engineering, May 2013. **Stevens Institute of Technology**, Hoboken, NJ

[8] **Larry Earnest**, Ph.D. Systems Engineering, "Systems Engineering Process Tailoring Patterns", May 2011. **Stevens Institute of Technology**, Hoboken, NJ

[9] **Alice Squires**, Ph.D. Systems Engineering, "Measuring the Value of Remote Online Systems Engineering Education", May 2011. **Stevens Institute of Technology**, Hoboken, NJ

MASTERS OF PHILOSOPY COMMITTEE INVOLVEMENT – GRADUATED

[1] Chris Oster, Masters of Philosophy (M.Phil.) - Systems Engineering, "Centaur Optimization for Composable Product Line Architectures: Managing and Leveraging Mathematically Constrained Product Lines for Efficient Human-machine Collaborative Optimization", 2018. Stevens Institute of Technology, Hoboken, NJ

DOCTORAL COMMITTEE MEMBERSHIP – GRADUATED

[1] Scott Warren, Doctor of Philosophy (Ph.D.) – Business. "A multi-methodology study of the historic impact of soft systems methodology and its associated data visualization approach in the context of operations and business strategy", 2018. University of North Texas, Denton, TX

[2] Jacob Deal, Doctor of Science (D.Sc.) Systems Engineering, "A Comparative Life Cycle Assessment of Pt-CeOx/Al2O3 Catalysts: The Effect of Production Pathway", 2018. University of South Alabama, Mobile, AL

[3] Meagan Bunge, Doctor of Science (D.Sc.) Systems Engineering, "The Application of Systems Engineering to Functionalize Fabrics at the Nanoscale", 2018. University of South Alabama, Mobile, AL

[4] Sam Mayes, Doctor of Science (D.Sc.) Systems Engineering, "Improving Hyperspectral Imaging Technology Through Systems Engineering", 2018. University of South Alabama, Mobile, AL

[5] Hoong Yan See Tao, Ph.D. Systems Engineering, "Modeling and Visualization of a Sustainable Energy System in a University as a Smart City", 2017. Stevens Institute of Technology, Hoboken, NJ

[6] James R. Armstrong, Ph.D. Systems Engineering, "Development of Systems Engineering Expertise", 2017. Stevens Institute of Technology, Hoboken, NJ

[7] Keith D. Willett, Ph.D. Systems Engineering, Ph.D. Systems Engineering, "Adaptive Knowledge Encoding in Cybersecurity Operations", 2016. Stevens Institute of Technology, Hoboken, NJ

[8] Christina Jauregui, Ph.D. Systems Engineering, "Toward a Renewable Energy Project Decision Making Model", 2016. Stevens Institute of Technology, Hoboken, NJ

[9] John, Lawrence, Ph.D. Systems Engineering, "Self-Organizing Cooperative Dynamics in Government Extended Enterprises", 2016. Stevens Institute of Technology, Hoboken, NJ

[10] George Elias, Ph.D. Systems Engineering, "Towards Establishing a Framework Characterizing Attributes for Architecture Assessment", 2011. Stevens Institute of Technology, Hoboken, NJ

DOCTORAL COMMITTEE INVOLVEMENT – IN PROCESS

[1] Alexander Scruggs, Doctor of Science (D.Sc.) Systems Engineering, Expected TBD
[2] Sheena Neizer, Doctor of Science (D.Sc.) Systems Engineering, Expected 2019
[3] Craig Browning, Doctor of Science (D.Sc.) Systems Engineering, Expected 2020

MASTER'S THESIS

[1] Katrine Gulhav. "Including Mechanical Engineers in System Modeling". June 2019. University of Souteast Norway. Kongsberg, Norway

[2] Gövert, Kristin. "Method to find similarities and differences between architectures to classify archetypes and patterns". Master Thesis No. MA-140. January 2016. Done in partnership with Dipl.-Ing. M.Sc. Michael Roth. Institute of Product Development, Technische Universitat Munchen.

[3] Stites, Matthew. "Quantitative Measurement of System Models Expressed in SysML through the Reuse of UML Model-Based Measures". December 2015. Stevens Institute of Technology, Hoboken, NJ

[4] Wing, Adam. "Taking a systemic Modeling approach to the Apron area at Major metropolitan Airports". May 2015. Stevens Institute of Technology, Hoboken, NJ

[5] Benham Esfahbod. "Toward the application of 3D Graphics to Operational Concepts". May 2013. Stevens Institute of Technology, Hoboken, NJ

[6] Christopher Reilly. "Application of Patterns in the Operational Evaluation of an Air Traffic Control System Display System". March 2009. Stevens Institute of Technology, Hoboken, NJ

UNDERGRADUATE SPECIAL PROJECTS

[1] Lindsay Stone, "Current Literature on Model Based Systems Engineering", April 2014

[2] Ellen Griggs, "Applications of Service Oriented Architecture in Today's Systems", April 2009

GRADUATE SPECIAL PROJECTS

[1] Jorgen Hier, Modeling System Test Cases using SysML, Master's Project, Hogskolen i Buskerud og Vestfold, May 2014

[2] Loscheider, John V., Systems Engineering for Structural Engineers and Undercover Practitioners in Complex Civil Construction Projects, Master's Project, May 2014

[3] Sandra Dawson, Data Analytics for the Defense Industry: A Framework for Application, Master's Project, December 2013

[4] Kevin Lee, US Army, "Common Operating Environment in the Army", April 2012

[5] Ronald Rivera, Booz Allen Hamilton, "Model-Based Approach to Cloud Architecture", May 2012

[6] Joseph Hanosh, Sandia National Laboratories, "System Engineering Architecture Design for a Library System", February 2012

[7] Tamara Gabryluk, Lockheed Martin Corporation, "The Evolution and Assessment of Sonar System Architectures", January 2012

[8] Doug Boggie, Northrup Grumman, Applying Systems Engineering principles and tools to the US Healthcare Delivery Enterprise, October 2011

[9] Ron Denny, Semi-Autonomous Agents in the Modern Battlespace Concept of Operations, Spring 2011

[10] Carol Saab, Sandia National Labs, The Systems Engineering Experience Accelerator, August 2010

[11] Doug Maldanado, Mitre, Various Techniques for Architecture Analysis, Master's Project, May 2010

[12] Georgia Artery, Sandia National Labs, - Using Systems Engineering To Define Enterprise Domain, April 2010

[13] Heather Kramer, Sandia National Labs, "A Justification and Methodology for Collection and Integration of Multiviewpoint Solution Patterns as Elements of Enterprise Solution Architectures at Sandia National Laboratories", April 2010

[14] Mark DeSpain, Sandia National Labs, Toward "free" enterprise, Master's Project, April 2010

[15] Courtney Coulter, US Army, Applying System Engineering Processes to Service Oriented Computing, April 2010

[16] Anthony Sheller, A Systems Engineering Framework for the Analysis of Systems Modeling Language (SYSML) XMI, Master's Project, December 2009

[17] Carol Saab, Sandia National Labs, System of Systems Requirements for an Electric Automobile Enterprise, December 2009

[18] Tri Do, US Army, Systems Engineering in the Future Combat System, Mater's Project, December 2009

[19] Kim Sommer, Case Study: Clockspeeds in Architecture: Evolution, Dead-ends, and Discontinuities – SAF 2009 Journal, Master's Project, May 2009

[20] Ellyn Griggs, Applications of Service Oriented Architecture in Today's Systems, Undergrad Res Project, May 2009

[21] Norm Eng, Applying Object Oriented Modeling to Hardware and Software Architecture on a Satellite Based System via SysML, Master's Project, May 2009

[22] Angshuman Bappa Saha, Introduction to Object-Oriented Systems Design Using SysML, Master's Project, Dec 2008

[23] Mark Wright, Application of Design Patterns to the Joint Tactical Radio System (JTRS), Dec 2007

[24] Larry Zdanis, The Use of Behavioral Diagrams in SysML – CSER2007 Conference, Systems Engineering, Master's Project, May 2007

OTHER SCHOLARLY ACTIVITIES

https://**orcid.org**/0000-0003-2522-7888
Publons: https://publons.com/researcher/1207354/robert-j-cloutier/

JOURNAL REVIEWER

[1]	Systems Engineering Journal	2008 - Present
[2]	IEEE Transactions on Systems, Man, and Cybernetics – Part A: Systems and Humans	2009 - Present

JOURNAL EDITORSHIP

Guest Editor, July 2010
INCOSE Insight – Model Based Systems Engineering

Associate Editor, 2010 - Present
Journal of Enterprise Transformation, Taylor & Francis

Senior Associate Editor, North America, 2009 - Present
International Journal of Information Technology and Systems Approach

OTHER EDITORSHIP

Editor in Chief – Systems Engineering Body of Knowledge (SEBoK), 2018 – Present.
This is a body of knowledge sponsored by INCOSE, IEEE Computer Society, Systems Engineering Research Center (a DoD University Affiliated Research Center), Stevens Institute of Technology, and the Lockheed Martin Corporation. It receives more than 25,000 unique visitors a month. It comes with an editorial stipend.

RESEARCH, SCHOLARSHIP, OR DESIGN ACTIVITIES

GOVERNMENT AND FOUNDATIONS

$100,000, Co-PI with Discovery Machine (Williamsport, PA), SBIR/STTR, Missile Defense Agency, Software System for adaptive Needs characterization for M&S Systems Engineering, 2012

$25,000, PI, Sandia National Labs, Multi-Scale Behavioral Analyses of Integrated Surety Designs, 2007. This funding was part of the competitive Sandia Laboratory Directed Research and Development (LDRD) program. The LDRD program invests in

high-risk, potentially high-payoff activities that enable national security missions and advance the frontiers of science and engineering. As Sandia's sole source of discretionary R&D funding, the LDRD program provides the flexibility to anticipate and respond quickly to future mission needs and to explore potentially revolutionary advances in science and technology

$25,000, PI, Sandia National Labs, Architectural and Process Modeling for Sandia National Labs, 2007

FEDERALLY FUNDED RESEARCH CENTERS

$20,000, PI with Dr. B. Sauser (C-PI), DoD (SERC), Transitioning Systems Thinking to Model-Based Systems Engineering, Research Task 128, 2015

$160,000, Co-PI with Dr. B. Sauser, US Army RDECOM (SERC), Systems Engineering Assessment and Workforce Development Plan, Research Task 29, 2012

$433,650, PI, DoD (SERC), Investigation of a Graphical CONOPS (Concept of Operations) Development Environment for Agile Systems Engineering – Research Task 30a, 2012

$125,000, Co-PI with Dr. B. Sauser, US Army RDECOM (SERC), Contingency Basing Projects (Research Task 33), 2011

$145,000, PI, US Army RDECOM (SERC), CONOPS Navigator (Research Task 33), 2011

$295,000, PI, DoD (SERC), Investigation of a Graphical CONOPS (Concept of Operations) Development Environment for Agile Systems Engineering – Research Task 30, Purdue University Co-PI, 2010

$160,000, PI, US Army CERDEC (SERC), Communications Effects Server (CES) Model for Systems Engineering Research (Research Task 23), 2010

$190,000, PI, DoD (SERC), Investigation of a Graphical CONOPS (Concept of Operations) Development Environment for Agile Systems Engineering – Research Task 3 Phase 2, Dr. A. Mostashari and Texas A&M Co-PI, 2009

$173,939, PI, DoD (SERC), Investigation of a Graphical CONOPS (Concept of Operations) Development Environment for Agile Systems Engineering – Research Task 3 Phase 1, Dr. A. Mostashari and Texas A&M Co-PI, 2009

INDUSTRY AND PRIVATE COMPANIES

$25,000, PI, USA Health Systems, Mobile, AL, Investigation into Emergency Room Diversion – Applying Systems Engineering in Health System, 2016

$100,000, PI, Lockheed Martin Corporation, Composable Architecture and Design – Phase 2, 2012

$50,000, PI, Lockheed Martin Corporation, Composable Architecture and Design – Phase 1, 2011

$167,000, PI, Lockheed Martin Corporation, Using Systems Architecture Patterns to Drive Efficiency, 2010

$80,000, PI, BAE Systems, MDA for Systems Engineering, 2007

CONGRESSIONAL APPORTIONMENTS

$95,500, Co-PI with Drs. B. Sauser, D. Verma, and J. Wade, Systems Engineering Research Development and Architecting, Armament Research & Development Center, 2010

$93,500, Co-PI with Drs. B. Sauser, A. Mostashari, D. Verma, and R. Nilchiani, Systems Engineering Research Development and Architecting, Armament Research & Development Center, 2009

$91,500, Co-PI with Drs. B. Sauser, A. Mostashari, D. Verma, and R. Nilchiani, Systems Engineering Research Development and Architecting, Armament Research & Development Center, 2008

HONORS AND AWARDS

PROFESSIONAL HONORS AND AWARDS

[1] Provost Award in Recognition of Outstanding Achievements in Research and Scholarship, 2010-2011
[2] Product Development Management Association, Best of Visions Award, 2010
[3] Alexander Crombie Humphreys Distinguished Teaching Associate Professor Award, September 9th, 2009, Stevens Institute of Technology

AWARDS AND HONORS FOR STUDENTS ADVISED

[1] Kim Sommer, 2009, Excellence in Graduate Research Award (Best Master's Thesis or Master's project)
[2] Product Development Management Association, Best of Visions Award, Portia Crowe, 2010

PROFESSIONAL SOCIETY MEMBERSHIP AND ACTIVITIES

[1] President, Blues Chapter INCOSE, 2019
[2] Vice President, Blues Chapter INCOSE, 2018
[3] President, Delaware Valley Chapter INCOSE, 2014-2016
[4] Member, International Council on Systems Engineering (INCOSE) – 2002-Present
[5] Communications Director, Delaware Valley Chapter – INCOSE, 2007
[6] Member at Large, Delaware Valley Chapter INCOSE, 2008-2009
[7] Member IIE, 2012
[8] Senior Member, IEEE, 2007-Present
[9] Reviewer, IEEE Transactions on Systems, Man, and Cybernetics – Part A: Systems and Humans
[10] Member, ACM 2007
[11] Member, SDPS, 2009
[12] Chairman, Electrical and Computer Engineering Department Industry Advisory Committee, Rowan University, 2005-2006
[13] Lockheed Martin Technical Advisor, Rowan University Grant, Real Time Java Computing, Sept. 2004-May 20

SERVICE

UNIVERSITY OF SOUTH ALABAMA

[1] LMS (Learning Management System) Review Taskforce, Feb 2019-Present
[2] Chair, Electrical and Computer Engineering Department Promotion and Tenure Committee, Aug 2018 - Present
[3] Research Data Security Committee, 2018-Present
[4] Senator for College of Engineering, University of South Alabama Faculty Senate, Newly Elected
[5] University Committee on Teaching and Learning, Aug 2017-Present
[6] Chair, College of Engineering Promotion and Tenure Committee, Jan 2016 – Dec 2018
[7] Director of Graduate Studies and Programs, College of Engineering, University of South Alabama, Sept 2016 - Present
[8] College of Engineering representative to University Graduate Curriculum Committee, Jan 2016 – Present
[9] Steering Committee, EG101 Introduction to Engineering

STEVENS INSTITUTE OF TECHNOLOGY

[1] Senator, Stevens Institute Faculty Senate, 2014 – Dec 2016
[2] Faculty Advisor, Sigma Nu Fraternity, 2013 – Dec 2016
[3] Graduate Curriculum Committee, SSE Representative, 2012 - 2014
[4] SSE Liaison, Veteran Affairs, 2011 – Dec 2016
[5] SSE Director for Systems Programs Search Committee, 2015, 2012-2013
[6] SSE Promotion and Tenure Nominating Committee, 2014, 2015
[7] SSE Promotion and Tenure Committee, 2014, 2015
[8] SSE Excellence in Research Award chair, 2009-2016
[9] SSE Best Student Paper Award, 2009-2016
[10] SSE Best Dissertation selection committee member, 2009-2016
[11] SSE Research Days, Co-Chair, 2009, 2010
[12] SSE Doctoral process, 2009-2010
[13] SSE VMC Strategic Initiative, 2010-2011

PROFESSIONALLY RELATED SERVICE ACTIVITIES

[1] NSF Compact and Efficient Fluid Power (CCEFP) Engineering Research Center (ERC) Science Advisory Board (SAB), 2010 - 2016

CONFERENCE ACTIVITIES

[1] Conference Chair - Conference on Systems Engineering Research (CSER2015), March 18-19, 2015, Hoboken, NJ
[2] Technical Committee - Systems Engineering and Software Engineering Workshop – A workshop to Explore their Inter-relationship, June 2014, Stevens Institute of Technology, Hoboken, NJ
[3] Master of Ceremonies, INCOSE International Symposium, Philadelphia, PA June 2013
[4] Program Committee/Systems Engineering Co-Track Chair - Industrial and Systems Engineering Research Conference, IIE Annual Conference/Expo May 18-22, 2013 San Juan, Puerto Rico
[5] Technical Chair - Conference on Systems Engineering Research, March 17-19, 2010, Hoboken, NJ
[6] Program Committee - Conference on Systems Engineering Research, March April 20-23, 2009, Loughborough, UK
[7] Session Chair - IEE Industrial and Systems Engineering Research Conference, 2012, Systems Engineering Sessions (3)

INVITED PANELIST

[1] NCOIC Panel Discussion on Patterns. April 6, 2011
[2] Keynote Panel Member, Topic: Complexity has become a "tipping point."
[3] SSCI System & Software Technology Conference (SSTC), Las Vegas, NV, April 2008
[4] Patterns for NCOIC, Network Centric Operations Interoperability Consortium
     Plenary, Denver, CO, February, 2008

CONSULTING ACTIVITIES

Calimar Consulting, LLC (1999-2016)
   Perform general systems engineering consulting services to keep current in systems
   engineering practices and directions.
         Developed 1.5 day Architecture Thinking workshop
         Developed 1.5 day Patterns and Reference Architectures workshop

PAST CUSTOMERS

   Nokia, Helsinki, Finland - Telecommunications
   Baker Hughes, Houston, TX – Oil and Gas Drilling
   General Dynamics, Taunton, MA – C4 Systems
   Harris Corporation, Melbourne, FL – Aviation Ground Systems
   Syndetics, Fairfax, VA – Systems Engineering Consulting

OTHER WORK EXPERIENCE

2000 - 2007. Adjunct Professor, School of Business Administration, Eastern University, St. Davids, PA
Taught graduate and undergraduate level business courses in the FastTrack MBA and the Undergraduate Degree Completion programs. Other activities included course author and manager, Technical Applications to Business and Managing IS/IT Organizations.

   Courses Taught
      Research Design (MNGT520)
      Quantitative Decision Making (MNGT650)
      Technical Application to Business
      Introduction to Computer Science
      Managing IS/IT Organizations
      Systems Analysis and Design

8/2004 - 4/2007. Principal Engineer, Systems Architect, Lockheed Martin, Moorestown NJ
Perform architecture definition, design and modeling (SysML, UML, IDEF0) as chief architect for system and system of systems projects (SoS). Participate in, or lead, the mission analysis and the development of the concept of operations for these projects. Support ongoing proposals and R&D efforts as the chief architect. Lead architect for the development and definition of a systems engineering process for architecting complex systems using industry and defense standards (MDA, UML, SysML, DoDAF, SOA, IDEF0, etc.). Modeling tool experience includes Rational Rose, Telelogic TAU, Sparx Systems Enterprise Architect, and Vitech Core.

4/2001 - 7/2004. Engineering Project Manager, Lockheed Martin, Moorestown NJ
Software project manager, lead software engineer and lead engineering process engineer for a large, object oriented, combat system software development effort (Aegis Open Architecture). Program included internally developed and contractor developed software. Responsibilities spanned the entire software development lifecycle - establishment of key metrics, requirements management, design, development plans, test plans and the delivery of software products using Rational Unified Process (RUP-SE) for development. Required continuous contact with civilian and Navy customers, software subcontractors, developers, systems engineers, and senior Lockheed-Martin management. Co-leader for model based development kaizen. During the project definition phase, participated in development of the initial system architecture. Provided technical support in the area of open architecture to the LCS proposal team. Lead engineer for an engineering grant intended to foster long-term relationships between LM and Rowan University. One of six engineers selected to attain a masters or doctoral degree in systems engineering, in which Lockheed Martin MS2 paid both tuition and labor to attend classes.

5/1999 - 3/2001. Account Manager, Omicron Consulting, Philadelphia, PA
Managed an effort that required interfacing with the President, CFO, CTO, SVP of Sales and Marketing, and the VP of Planning of a 75-year-old company on a daily basis. The task was to develop the definition, necessary strategic plans, and financials (projecting revenue, expenses and cash flows for the next 5 years), for a major new service. The effort also includes strategic vision document, a high-level architecture document, a web site prototype, and an implementation plan.

11/1998 - 4/1999. Product Manager, Omicron Consulting, Philadelphia, PA
Responsibilities included managing the strategic visioning/e-Commerce projects, business development and product development of companies in my portfolio. This involves extensive interface with bricks and mortar, Fortune 1000 corporate executives to assist them in developing strategic directions, prototypes, and business plans for future products that are to be web enabled.

1997 - 1998. Application Process Architect (with distinction as Associate Technical Fellow), Boeing Company, Philadelphia, PA
Directed teams of 10 to 12 people implementing the application architecture and software standardization. Managed an internal application development budget in excess of $3M. Coordinated and scheduled all software developer training. Served on core team for Boeing Defense and Space IT strategic planning. Certified Boeing Process Improvement Specialist and Trainer. Participated in Boeing SEI/CMM Implementation.

1996 - 1997. Computing Infrastructure Architect, Boeing Company, Philadelphia, PA
Planned $10 million deployment of Microsoft NT on 3,000 workstations. Created and managed intranet web pages for internal organizations. Developed $2 million Intranet deployment plan. Devised a plan to place all internal servers (of which there were over 100) under change control, and authored the change control procedures. Implemented this same plan.

1994 – 1996. Project Manager/Business Process Architect, The Boeing Company, Philadelphia, PA
Managed a team of 40 IT professionals in the rescue effort of the failing CATIA upgrade. Project delivered on time and on budget ($13.5 million). Invented configuration management process still benefiting company today. Co-facilitated a cross-divisional team to reengineer IT business processes for Defense and Space Group.

1993 - 1994. Project Manager/Staff Engineer, Network Architecture, The Boeing Company, Philadelphia, PA
Represented Philadelphia organization on Boeing-wide team of 12 to set distributed computing strategies and policies for 130,000 employees. Co-authored the Systems Architecture Principles Handbook. Managed object-oriented development project.

1989 - 1993. Product Manager - DEC All-In-One, The Boeing Company, Philadelphia, PA
Managed $3.5 million annual budget for operations and staff to develop and operate Boeing Philadelphia's office automation system. This user community grew from 200 to 2,000 in 3 years due to creation of seven new applications. Founding member of the Boeing Philadelphia Mentor Steering Committee and named Boeing Computer Services – Philadelphia "Employee of the Year".

1986 - 1989. Lead Systems Engineer, V22 Avionics Design Laboratories, The Boeing Company, Philadelphia, PA
Transitioned three V22 Avionics Design Laboratory lines from their original location in Wichita to Philadelphia. Responsible for the day-to-day operations.

1983 - 1986. Senior Systems Engineer, RCA Missiles and Space, Moorestown, NJ
Aegis system specifications, Anti-submarine Warfare project engineer and Aegis Display System program management office.

1978 - 1986. United States Navy
Reserve Anti-submarine Warfare Officer, USS Clifton Sprague, FFG-16
Anti-submarine Warfare Officer, USS Chandler, DDG-996
Machinery Officer, USS Monticello, LSD-35