Ioulia Rytikova, PhD
Curriculum vitae

Email: irytikov@gmu.edu
Web: http://mason.gmu.edu/~irytikov/

5400 Nguyen Engineering Building, MS: 1G8
George Mason University, Fairfax, VA 22030

Education

National University of Science and Technology, Moscow, Russia
Ph.D. in Automated Control Systems

National University of Science and Technology, Moscow, Russia
B.S./M.S. in Automated Control Systems Engineering and Information Processing
Diploma with honors

Professional Employment

Department of Information Sciences and Technology, George Mason University, Fairfax, VA
Associate Chair for Graduate Studies   2016 – present
Associate Professor   2012 – present
Assistant Professor   2007 – 2012

Personalized Learning in Applied IT Laboratory, George Mason University, Fairfax, VA
Founding Co-Director   2013 – present

Department of Applied Information Technology and Department of Applied and Engineering Statistics, George Mason University, Fairfax, VA
Assistant Professor (joint appointment)   2003 – 2007
Instructional Faculty (joint appointment)   Spring 2003
Adjunct Professor   Fall 2002

School of Business and Economics, Lynchburg College, Lynchburg, VA
Instructional Faculty   2001 – 2002

Awards and Recognitions

GMU Teaching Excellence Award   2020
    Category: *Mason Teachers of Distinction*

GMU Presidential Award for Faculty Excellence   2017
    Category *Excellence in Teaching* (nominated)

VCU School of Nursing Recognition Award, Doris. B. Yingling Lectureship   2016
    Presentation on "Big Data Educational Ecosystem"

GMU Center for Teaching and Faculty Excellence   2014
    First School of Engineering faculty member selected to teach in ALT classrooms

GMU Distance Education Award   2012
    Semifinalist

GMU Volgenau School of Engineering Outstanding Teaching Award   2008

Best PhD Dissertation Award (1 per year)

BS/MS Diploma with honors (1 per graduation year)

Sponsored Projects

Department of Defense Cyber Scholarship Program
    Participants: Massimiliano Albanese (PI), Sushil Jajodia (co-PI), Ioulia Rytikova (co-PI), Khondkar Islam (Co-PI). Project budget: $63,000. Performance period: 09/15/2020 - 09/15/2021

Department of Defense Cyber Scholarship Program
    Participants: Massimiliano Albanese (PI), Sushil Jajodia (co-PI), Ioulia Rytikova (co-PI), Khondkar Islam (Co-PI). Project budget: $152,995. Performance period: 09/15/2019 - 09/15/2020

Department of Defense Cyber Scholarship Program
    Participants: Sushil Jajodia (PI), Massimiliano Albanese (Co-PI), Ioulia Rytikova (Co-PI), Khondkar Islam (Co-PI). Project budget: $159,612. Performance period: 09/15/2018 - 09/15/2019

Department of Defense Cyber Scholarship Program
    Participants: Sushil Jajodia (PI), Massimiliano Albanese (Co-PI), Ioulia Rytikova (Co-PI). Project budget: $63,112. Performance period: 09/14/2017 - 09/13/2018

OSCAR, GMU: Incorporating Research into Undergraduate IT Curriculum
    Participants: Ioulia Rytikova (Project Leader), Mihai Boicu, Setareh Rafatirad. Project budget: $32,800. Performance period: Summer, 2016 – Summer, 2018

Curriculum Development

Summary
    Developed/Substantially redesigned programs: **10**
    Developed/Substantially redesigned courses: **15** (**6** graduate; **9** undergraduate)
    Developed online courses: **9** (**3** graduate; **6** undergraduate)

Developed/Substantially Redesigned Programs

MS in AIT: Substantially redesigned (project leader)   2016 – 2017

PhD in IT, Information Sciences and Technology concentration: 2016 – 2017
Substantially redesigned (project leader)

MS in Data Analytics Engineering, Applied Analytics concentration: 2016 – 2017
Substantially redesigned (project leader)

Accelerated MS in AIT: Substantially re-designed (project leader)   2016 – 2017

Online MS AIT, Data Analytics and Intelligence concentration: 2015 – 2016

Contributed to the development (designer and developer)

Online BS IT, Database Technologies and Programming concentration and   2013 – 2015
    Health Information Technology concentration: (designer and developer)

BS IT: Health Information Technologies concentration   2013 – 2014
    Created new (designer and developer)

Intelligence Community Program: 2010 – 2011
    Contributed to the development (developer)

School of Engineering Interdisciplinary Certificate "E-manufacturing":   2009 – 2010
    Contributed to the development (designer and developer)

BS IT: Database Technologies and Programming concentration (DB part)   2005 – 2009
    Created new (designer and developer)

Developed/Substantially Redesigned Courses

Graduate Courses

Course	Year
AIT 614: Big Data Essentials (**new**)	2016
AIT 524: Database Management Essentials (**new**)	2016
AIT 690: Advanced Topics in AIT/Data Engineering Emerging Technologies (**new**)	2014
ECE 590: Database Structures for Industrial Manufacturing (**new**)	2009
IT 508: Programming Languages for Manufacturing (**new**)	2009
STAT 530: Mathematical Methods for Statistics and Engineering	2003

Undergraduate Courses

Course	Year
IT 194: Review of Database Fundamentals (**new**)	2015
IT 324: Health Information Technology Fundamentals (**new**)	2014
IT 322: Health Data Challenges (**new**)	2013
IT 344: Information Storage and Management Technologies (**new**)	2010
IT 314: Database Programming **(new)**	2006
IT 414: Database Administration	2005
IT 214: Database Fundamentals	2005
STAT/IT 250: Introduction to Statistics I	2005
STAT 344: Probability and Statistics for Engineers and Scientists I	2003

Distance Education Development

Graduate Courses

Course	Year
AIT 614: Big Data Essentials	2016
AIT 524: Database Management Essentials	2016
AIT 690: Advanced Topics in AIT/Data Engineering Emerging Technologies	2014

Undergraduate Courses

Course	Year
IT 194: Review of Database Fundamentals	2015
IT 324: Health Information Technology Fundamentals	2014
IT 322: Health Data Challenges	2014
IT 314: Database Programming	2013
IT 214: Database Fundamentals	2013
IT 344: Information Storage and Management Technologies	2010

Teaching

Most courses consistently receive top student ratings of instruction (on average 4.8/5.0 or above).

Graduate Courses

AIT 524: Database Management Essentials (30 students)	2016 – present
AIT 796: Directed Reading and Research	Fall 2018
AIT 690: Advanced Topics in AIT/Data Engineering Emerging Technologies (25 students)	2015 – 2016
AIT 699: Research Capstone (1 student)	Spring 2016
ECE 590: Database Structures for Industrial Manufacturing (20 students)	Spring 2008
IT 508: Programming Languages for Manufacturing (15 students)	Summer 2008
STAT 530: Mathematical Methods for Statistics and Engineering (20 students)	Fall 2003

Undergraduate Courses

IT 214: Database Fundamentals (40 students)	2005 – 2018
IT 194: Review of Database Fundamentals (25 students)	2014 – 2017
IT 103: Introduction to Computing (60 students)	2012 – 2016
IT 322: Health Data Challenges (10 students)	Spring 2014
IT 314: Database Programing (30 students)	2006 – 2013
IT 414: Advanced Database Management (20 students)	2005 – 2006
STAT 344: Probability and Statistics for Engineers and Scientists I (80 students)	2003 – 2006
STAT/IT 250: Introduction to Statistics I (120 students)	2002 – 2007
DESC 210: Statistical Analysis for Management (80 students)	Fall 2002
BUAD 301/302: Integrated Business Principles (50 students)	2001 – 2002
BUAD 241: Business Statistics (40 students)	2001 – 2002

Adjunct Faculty Mentoring

Over twenty-five adjunct faculty (since 2005)

Advising

Current PhD Students
Stephanie Olson (PhD, Information Technology; Co-advisor: Mihai Boicu)
Alyahya Bedor (PhD, Information Technology; Co-advisor: Alexander Brodsky)

Dissertation Committee

Sarah F. Kabli (Electrical & Computer Engineering; Advisor: Jim Jones)	2015 – 2018
Ehab Abozinadah (Electrical & Computer Engineering; Advisor: Jim Jones)	2015 – 2018
Ling Dang (Computer Science; Advisor: Jeff Offutt)	2015 – 2017

Student Advising
PhD, MS AIT, MS DAEN, and BS IT students
(one of the most often requested advisors at IST)

Service

Departmental Level
Member, Department of IST Chair Search Committee (2019-2020)
Chair, IST Graduate Studies Committee (2016 – present)

Member, Department of IST Tenure-track/Tenured Faculty Search Committee (2018)
Chair, Department of IST Tenure-track/Tenured Faculty Search Committee (2017)
Chair, Department of IST Tenure-track/Tenured Faculty Search Committee (2016)
Member, Department of IST Term Faculty Search Committee (2016)
OSCAR Representative for IST (2015 – present)
IST Library Liaison (2015 – present)
Coordinator, Department of IST ABET Committee (2008 – present)
Co-Chair, Department of AIT Adjunct Search Committee (2014)
Member, Department of AIT Distance Education Committee (2013 – 2014)
Member, NVCC Articulation Committee (2008 – present)
Member, Department of AIT Tenured Faculty Search Committee (2013)
Member, Department of AIT Term Faculty Search Committee (2012)
Member, Department of Statistics: Developing QR Assessment Testing (2008)
Member, Department of Statistics Faculty Search Position (2006, 2008)

School Level
Chair, Office of Graduate Academic Affairs Senior Director Search Committee (2019-2020)
Member, Department of SEOR Term Faculty Search Committee (2019-2020)
Member, VSE Computing Resources Linux and Database Administrator Search Committee (2017)
Member, VSE Graduate Studies Committee (2016 – present)
Panel Member, GMU-Oracle Big Data Symposium (2016)
Member, MS Data Analytics Engineering Program Steering Committee (2016 – present)
Member, Department of Bioengineering Faculty Search Committee (2010)

University Level
Co-Chair, American Council on Education's Internationalization Laboratory Steering Committee –
Curriculum Development (2019 – 2021)
Member, Computing Graduate Education Working Group (2019-2020)
Co-coordinator, Faculty Learning Community on Teaching and Learning Databases (2019 – 2020)
Member, GMU Center of Teaching and Faculty Excellence, Active Learning Technology Group (2013 –
present)
Member, GMU Distance Education Council (2015 – 2018)
Member, Teaching Inquiry Group (2015 – present)
Member, Learning Analytics Focus Group (2015 – 2016)
Member, Center for Global Studies, Global Collaborative Classroom Initiative Committee (2015)
Member, Distance Education (DE) Advisory Group (2012 – 2013)
Member, GMU Cross-Disciplinary Committee (2008)

Professional
Member, Council on Undergraduate Research (CUR)
Member, The Virginia Society for Technology in Education (VSTE)
Member, Special Interest Group for Information Technology Education (ACM/SIGITE)

Publications

Journal Articles

Rytikova, I. (2002). Classification of the Decision-Making Methodologies and Their Applications in
Metallurgical Industry, *Journal of Science and Technology "Electrometallurgy"*, March issue, Russia

Rytikova, I. (2002). Knowledge Integration and Its Representation in Operations Management Software
Training Systems, *Integral – Journal of Science and Practice*, January issue, Russia

Book Chapters

Prokopchuk, Y., & Rytikova, I. (1999). Introduction to Graph Theory. *Discrete Mathematics*. Technological University Press, Russia

Prokopchuk, Y., & Rytikova, I. (1999). Types of Graphs. *Discrete Mathematics*. Technological University Press, Russia

Komissar, E., Prokopchuk, Y. & Rytikova, I. (1999). Graph Properties. *Discrete Mathematics*. Technological University Press, Russia

Bulhov, N., Prokopchuk, Y., & Rytikova, I. (1999). Types of Matrices Associated with a Graph. *Discrete Mathematics*. Technological University Press, Russia

Conference Proceedings

Rytikova, I., Vasilyeva, I., & Boicu, M. (2018). Introducing Research to Students Through Ready-to-Use Bb Modules. In *Proceedings of the 2018 Innovations in Teaching & Learning (ITL) conference*, George Mason University, Fairfax, Virginia, September 14, 2018

Olimpiew, E., Rytikova, I., & Boicu, M. (2018). Emotions Impact on Learning. In *Proceedings of the 2018 Innovations in Teaching & Learning (ITL) conference*, George Mason University, Fairfax, Virginia, September 14, 2018 (poster session)

Pelluru[1], P., Olson[1], S., Rytikova, I., & Boicu, M. (2018). Involving Undergraduate Students in Curriculum Development. In *Proceedings of the 2018 Innovations in Teaching & Learning (ITL) conference*, George Mason University, Fairfax, Virginia, September 14, 2018 (poster session)

Boicu, M., Rytikova, I., Poms, L., Nelson, J., Peixoto, N., Sherry, L., & Tecuci, G. (2016). Teaching Strategies for Nourishing Creativity and Innovation. In *Proceedings of the 2016 Innovations in Teaching & Learning (ITL) conference, "The Science of Learning: Using Research to Improve Teaching"*, George Mason University, Fairfax, Virginia, September 16, 2016

Holland, C., Pallay, K., Rosecrans, J.E., & Rytikova, I. (2016). The Freedom to Teach: Using Open Educational Resources in Your Courses. In *Proceedings of the 2016 Innovations in Teaching & Learning (ITL) conference, "The Science of Learning: Using Research to Improve Teaching"*, George Mason University, Fairfax, Virginia, September 16, 2016

Olson[1], S., Rytikova, I., Winston, T., & Boicu, M. (2016). Creating the Research and Innovation Ecosystem. In *Proceedings of the 2016 Innovations in Teaching & Learning (ITL) conference, "The Science of Learning: Using Research to Improve Teaching"*, George Mason University, Fairfax, Virginia, September 16, 2016 (poster session)

Nord, J., Samaras, A., Ericson, R., Ikonomidou, V., Rytikova, I., Sachs, R., Schwebach, J., Nelson, J., & Gerasimova[1], D. (2016). Teaching as a Creative and Learning Process. In *Proceedings of the 2016*

---

[1] An author is a student who worked on research projects in my lab or through collaboration with other research groups.

Innovations in Teaching & Learning (ITL) conference, "*The Science of Learning: Using Research to Improve Teaching*", George Mason University, Fairfax, Virginia, September 16, 2016 (poster session)

Rytikova, I., & Boicu, M. (2015). Learning Is Fun! Wait … STEM Learning? In *Proceedings of the 2015 Innovations in Teaching & Learning (ITL) conference,* "*The Science of Learning: Using Research to Improve Teaching*", George Mason University, Fairfax, Virginia, September 18, 2015

Rytikova, I., & Boicu, M. (2014). A Methodology for Personalized Competency-based Learning in Undergraduate Courses. In *Proceedings of the 15th Annual Conference on Information Technology Education and the 3rd Annual Conference on Research in Information Technology,* pp. 81-86, Atlanta, Georgia, October 15 – 18, 2014

Rytikova, I. (2002). Intelligent Expert Training Systems in Education. In *Proceedings of the IX International Conference "Mathematics. Computer. Education."* Dubna, Russia, January 28 — February 2, 2002

Fomin, S., & Rytikova, I. (2002). Mathematical Modeling of the Decision-making Process in Dynamic Performance Management Systems in Metallurgy. In *Proceedings of the IX International Conference "Mathematics. Computer. Education."* Dubna, Russia, January 28 — February 2, 2002

Rytikova, I., & Emeliyanov, N. (2002). Decision-making Process Based on a Fuzzy Model in a Complex Industrial System. In *Proceedings of Institute for Systems Analysis of Russian Academy of Sciences (ISA RAS),* July 21, 2002, Russia

Rytikova, I., & Fomin, S. (1999). Defining a Model of an Integrated Computer System for Operations Management of a Large Industrial Complex. In *Information Technology in Metallurgy and Economics*, 4th vol., Russia, 1999

Rytikova, I., & Fomin, S. (1999). Optimizing a Decision-making Methodology in Operations Management for Large Industrial Complexes. In *Periodic series of the Research Institute of the University of Education*, 2nd vol., Russia 1999

Rytikova, I., & Fomin, S. (1999). Decision-making Under Uncertainty in Operations Management. In *Proceeding of the Sixth Symposium "Advances in the System of Education in Russia"*, June 15, 1999

Presentations

Foxwell, H., Baldo, J, & Rytikova, I. (2019). Big Data Analytics Curriculum Design, Development, and Delivery. Presented at the *7th Big Data and Analytics EdCon*, College Park Marriott, Adelphi, Maryland, June 3 - 4, 2019

Rytikova, I. (2019). Scientific Writing in Information Technology. Presented at the Writing Center and Writing Across the Curriculum, George Mason University, Fairfax, Virginia, March 21, 2019

Rytikova, I. (2017). Re-Engaging/Re-Energizing Your Students. Presented at the seminar series "*Faculty Conversations about Teaching*", Office of Distance Education and Center for Teaching & Faculty Excellence, George Mason University, Fairfax, Virginia, March 9, 2017

Rytikova, I. (2016). Personalizing Students' Learning Experience Through Open Educational Resources. Presented at the *1st Open VA webinar*, Tidewater Community College, Chesapeake, Virginia, April 15, 2016

Olson[1], S., Ha[1], T., Rytikova, I., & Boicu, M. (2016). Investigating Space Testing Effectiveness in Undergraduate Database Courses. Presented at the *2016 Lilly International Conference "Evidence-Based Teaching & Learning"*, Bethesda, Virginia, June 4, 2016 (interactive session)

Rytikova, I. (2016). Big Data in Healthcare: Challenges and Opportunities. Presented at the *2016 Oracle GMU Big Data Symposium "Breakthroughs in Big Data Analytics in the Public Sector"*, George Mason University, Fairfax, Virginia, January 7, 2016

Olson[1], S., Ha[1], T., Rytikova, I., & Boicu, M. (2016). Big Ideas from Big Data: Data-Driven Educational Ecosystem. Presented at the *2016 Oracle GMU Big Data Symposium "Breakthroughs in Big Data Analytics in the Public Sector"*, George Mason University, Fairfax, Virginia, January 7, 2016 (poster)

Rytikova, I. (2015). Making It All Work. Presented at the *National Forum on Active Learning Classrooms*, Minneapolis, Minnesota, August 5 – 7, 2015

Rytikova, I. (2015). Classroom Management in Active Learning Classrooms. Presented at the workshop "*Making the Most of Your Active Learning Classroom*", Center for Teaching & Faculty Excellence, George Mason University, Fairfax, Virginia, June 3, 2015

Rytikova, I. (2015). Is It All Just About Feedback? Presented at the seminar series "*Faculty Development Lunch and Learn: Knowing what your students are learning*", Office of Distance Education, Center for Teaching & Faculty Excellence, and Learning Support Services, George Mason University, Fairfax, Virginia, April 8, 2015

Rytikova, I., & Boicu, M. (2014). Designing Active Learning Experience for Undergraduate Students. Presented at the seminar series "*Discipline Based Education Research (DBER)*", STEM Accelerated program, George Mason University, Fairfax, Virginia, September 30, 2014

Rytikova, I. (2013). Competency-based Modular Approach in AIT database courses. Presented at the workshop "*Mason Life-long Learning*" at George Mason University, Fairfax, Virginia, November 1, 2013

Rytikova, I. (2000). Review and Analysis of the Modern Software Solutions for Quality Control Management in Metallurgical Industry. Presented at the *National Forum on Cross-Industrial Economic Cooperation*, Russia, Moscow, July 01, 2000

Rytikova, I. (2000). Quality Control Optimization: Theory, Strategies, and Implementation. *Industrial Economics Symposium*, Russia, Moscow, August 25, 2000

Rytikova, I. (1999). Training session: An Integrated Computer System for Operations Management Optimization of a Large Industrial Complex. *Research Institute of Higher Education*, Russia, Moscow, January, 1999

Rytikova, I. (1999). Pros and Cons of Artificial Intelligence Components in Software Solutions in the Metallurgical Industry. Presented at the *1st Artificial Intelligence Workshop*, *Technological University*, May 01, 1999

Rytikova, I. (1999). Real-time Data Processing in Operations Management Expert Systems. Presented at the *Moscow Power Engineering Institute*, Russia, Moscow, November 12, 1999

Invited Talks

Rytikova, I. (2020). Innovation in Higher Education in the United States. American Councils for International Education, Higher Education Programs, Washington, DC, January 10, 2020

Rytikova, I. (2017). Advances in the Cognitive and Learning Sciences and Digital Learning. Presented at a two-week professional development program "*Life-Long Learning in the Digital University of the 21st Century*", American Councils for International Education, Higher Education Programs, Washington, DC, November 25, 2017

Rytikova, I. (2016). Big Data Educational Ecosystem. Presented at the *Doris. B. Yingling Lectureship* series, VCU School of Nursing, Virginia Commonwealth University, Richmond, Virginia, May 19, 2016

Rytikova, I. (2014). Big Data in Higher Education: Developing a Student Profile. Presented at the workshop "*Advancing Engineering Education"*, National University of Science and Technology, Moscow, Russia, January 12, 2014

Research Conferences, Labs, and Workshops Organized

Rytikova, I., Baldo, J., Foxwell, H. (2020). *9th Big Data and Analytics Education Conference*, George Mason University, Fairfax, Virginia, October 1 – 2, 2021

Rytikova, I., Vasilyeva, I., & Boicu, M. (2018). Workshop: Introducing Research to Students Through Ready-to-Use Bb Modules. *2018 Innovations in Teaching & Learning (ITL) conference*, George Mason University, Fairfax, Virginia, September 14, 2018

Rytikova, I. (2017). Workshop: Advances in the Cognitive and Learning Sciences and Digital Learning. Two-week professional development program "*Life-Long Learning in the Digital University of the 21st Century*", American Councils for International Education, Higher Education Programs, Washington, DC, November 25 - December 8, 2017

Rytikova, I., & Boicu, M. (2014). Customizing Higher Education: Competency-based Personalized Learning. *Workshop series "Mason Life-long Learning"*, George Mason University, Fairfax, Virginia, September 30, 2014

Rytikova, I. (2014). Workshop: Advancing Engineering Education. National University of Science and Technology, Russia, January 12, 2014

Rytikova, I., & Boicu, M. (2013). Research Lab: *Personalized Learning in Applied Information Technology*. George Mason University, Fairfax, Virginia, 2013

Book Reviews

Database Systems by P. Rob, 9th edition, Course Technology Cengage Learning, 2009

Introduction to Statistics Course and Textbook Review, McGraw-Hill Higher Education, 2009

Modern Database Management by J. Hoofer, M. Prescott, H. Topi, 9th edition, Pearson Prentice Hall, 2008

Database Processing by D. Kroenke, 11th edition, Pearson Prentice Hall, 2008

Professional Collaboration

American Councils for International Education, Higher Education Programs, Washington, DC	20017 – present
Micron, Manassas, VA	2009 – 2011
INOVA, Fairfax, VA	2009 – 2010
Vision **Networks Inc.,** Fairfax, VA	2009 – 2010
Artefact, LLC, Herndon, VA	2005 – 2009

Professional Education

Mason Leadership Legacy Program	2020-2021
IBM Applied Analytics Certificate (MOOC)	2019
GMU Faculty Learning Community on Teaching and Learning Databases	2019
Azure Machine Leanring (MOOC)	2018
Writing in the Sciences, Stanford (MOOC)	2018
GMU Social Media Management and Information Visualization Tools	2016
GMU OSCAR Curriculum Development Scholarship Development Grant Workshop	2016, 2017
GMU Active Learning Classroom Workshop	2015, 2016
GMU Writing Across the Curriculum Faculty Retreat	2015
Sloan-C Workshop: Using Online Learning Strategically to Improve Educational Quality	2013
EMC Educational services: Information Storage and Management Optimization	2010

Community Connections

Mentor, Oakton High School Multi-year Capstone Project (1 team)	2014