Catalin Zara

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Curriculum Vitae

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Contact Information:

University of Massachusetts Boston
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Research Interests:

- Differential Geometry and Discrete Mathematics.
  - Hamiltonian group actions. Combinatorial aspects of equivariant cohomology.
  - Enumerative and algebraic combinatorics. Distances on finite spaces.

Education:

- Massachusetts Institute of Technology, Cambridge, MA.
  Ph.D., Mathematics — June 2000
- University of Bucharest, Romania.
  M.S., Mathematics — June 1995
  B.S., Mathematics — June 1994

Employment:

- UMass Boston, Boston, MA, Department of Mathematics
  Professor (tenured) — 2017 -
  Associate Dean, College of Science and Mathematics — 2018-2022
  Associate Professor (tenured) — 2011-2017
  Assistant Professor (tenure-track) — 2006-2011
  Visiting Assistant Professor — 2005-2006
- Penn State Altoona, Altoona, PA, Department of Mathematics
  Assistant Professor (tenure-track), on leave 2005-2006 — 2003-2006
- Yale University, New Haven, CT, Department of Mathematics
  J.W. Gibbs Instructor — 2000-2003
- MIT, Cambridge, MA, Department of Mathematics
  Teaching Assistant — 1996-1999
- University of Bucharest, Romania, Department of Mathematics
  Assistant — 1995-1996

Awards:

- Goodwin Medal, MIT — 2000
  MIT's highest graduate student teaching award, given annually in recognition of "*conspicuously effective teaching over and above ordinary excellence.*"
- Housman Graduate Student Teaching Award, MIT — 2000
  MIT Department of Mathematics award, given to graduate students in mathematics for "*skill and dedication in undergraduate teaching.*"
- Charles W. and Jennifer C. Johnson Prize, MIT — 1999
  MIT Department of Mathematics award, given to a graduate student for "*an outstanding research paper accepted for publication in a major journal.*"
- Alfred P. Sloan Foundation Doctoral Dissertation Fellowship — 1999-2000
- American Mathematical Society Project NExT Fellowship — 2003-2004

Research

Publications
(Authors listed in alphabetical order)

Books:

(1) Nicolescu, Liviu, Gabriel Pripoae, and Catalin Zara.
Teoreme si probleme de grupuri Lie [*Theorems and Problems on Lie Groups*].
Editura Universitatii Bucuresti, Romania (1996). 188 pages.

(2) Nicolescu, Liviu, Alexandru Bumbacea, Alin Catana, Paul Horja, Gheorghe G. Niculescu, Nicolae Oprea, and Catalin Zara.
Metode de Rezolvare a Problemelor de Geometrie [*Methods for Solving Geometry Problems*]. Editura Universitatii Bucuresti, Romania (1992). 2nd printing (1998). 374 pages.

Articles in Refereed Journals and Proceedings:

(1) Ethan Bolker, Samuel Feuer, and Catalin Zara.
"Balance Weighing - Variations on a Theme."
Mathematics Magazine, 94, Issue 5 (2021)

(2) Victor Guillemin, Susan Tolman, and Catalin Zara.
"Beyond Cohomological Assignments."
Advances in Mathematics, 363 (2020) 106976, 21 pages.

(3) Dan Simovici and Catalin Zara.
"Tolerance Distances on Minimal Coverings." Proceedings of the IEEE 46th International Symposium on Multiple-Valued Logic. ISMVL 2016, May 18-20, 2016, Sapporo, Japan, pp. 125 – 130.

(4) Ethan Bolker, Carl Offner, Robert Richman, and Catalin Zara.
"The Prouhet-Tarry-Escott Problem and Generalized Thue-Morse Sequences."
J. of Combinatorics. 7 (2016) no. 1, pp. 117 – 133.

(5) Victor Guillemin, Silvia Sabatini, and Catalin Zara.
"Polynomial Assignments."
Indag. Math, 25 (2014), no. 5, pp. 992–1018.

(6) Victor Guillemin, Silvia Sabatini, and Catalin Zara.
"Balanced Bundles and GKM Theory."
International Mathematical Research Notices, 17 (2013), pp. 3886–3910.

(7) Victor Guillemin, Silvia Sabatini, and Catalin Zara.
"Equivariant K-theory of GKM Bundles."
Annals of Global Analysis and Geometry 43 (2013), pp. 31–45.

(8) Victor Guillemin, Silvia Sabatini, and Catalin Zara.
"Cohomology of GKM Fiber Bundles."
Journal of Algebraic Combinatorics 35 (2012), pp. 19–59.

(9) Saaid Baraty, Dan Simovici, and Catalin Zara.
"The Impact of Triangular Inequality Violations on Medoid-Based Clustering."
Proceedings of ISMIS 2011, Warsaw, Poland. *Lecture Notes in Artificial Inteligence*, LNAI 6804, pp. 280–289.

(10) Catalin Zara.
"Positivity of Equivariant Schubert Classes through Moment Map Degeneration."
Journal of Symplectic Geometry 8 (2010), no. 4, pp. 1–21.

(11) Catalin Zara.
"Morse Interpolation for Hamiltonian GKM Spaces."
Journal of Differential Geometry 75 (2007), no. 3, 503–523.

(12) Juan Gil, Mike Weiner, and Catalin Zara.
"Complete Padovan Sequences in Finite Fields."
Fibonacci Quarterly 45 (2007), no. 1, 64–75.

(13) Victor Guillemin, Tara Holm, and Catalin Zara.
"A GKM description of the equivariant cohomology ring of a homogeneous space."
Journal of Algebraic Combinatorics 23 (2006), no. 1, 21–41.

(14) Catalin Zara.
"Chains, subwords, and fillings: strong equivalence of three definitions of the Bruhat order."
Electronic Journal of Combinatorics 13 (2006), no. 1, Note 5, 13 pp. (electronic)

(15) Victor Guillemin and Catalin Zara.
"The existence of generating families for the cohomology ring of a graph."
Advances in Mathematics 174 (2003), no. 1, 115–153.

(16) Catalin Zara.
"Parking functions, stack-sortable permutations, and spaces of paths in the Johnson graph."
Electronic Journal of Combinatorics 9 (2002/03), no. 2, Research paper 11, 11 pp. (electronic)

(17) Victor Guillemin and Catalin Zara.
"Combinatorial Formulas for Products of Thom Classes."
Geometry, Mechanics, and Dynamics: Volume in Honor of the 60th Birthday of J. E. Marsden, pages 363-405. Edited by Paul Newton, Phil Holmes, and Alan Weinstein. New York: Springer-Verlag, 2002.

(18) Victor Guillemin and Catalin Zara.
"G-actions on graphs."
International Mathematics Research Notices 2001, no. 10, 519–542.

(19) Victor Guillemin and Catalin Zara.
"1-skeleta, Betti numbers, and equivariant cohomology."
Duke Mathematical Journal 107 (2001), no. 2, 283–349.

(20) Victor Guillemin and Catalin Zara.
"Equivariant de Rham theory and graphs."
Asian Journal of Mathematics 3 (1999), no. 1, 49–76. Republished in Surveys in Differential Geometry, VII, 221–257, Int. Press, Somerville, MA, 2000.

(21) Catalin Zara.
"A characterization of bi-invariant Riemannian metrics on Lie groups."
Studii si Cercetari Matematice (Math Reports) 50 (1998), no. 1-2, 111–115.

(22) Catalin Zara.
"On a theorem of D. Müller." (Romanian).
Studii si Cercetari Matematice (Math Reports) 47 (1995), no. 3-4, 359–363.

Other Articles

- Gouri Shankar Seal and Catalin Zara.
"Polynomial Assignments for Bott-Samelson Manifolds." arXiv:1603.00103. (2016)

- Ethan Bolker, Jeremy Hatch, and Catalin Zara.
  "Modeling bird passage through a windfarm."
  Mathematical model and VBA macro implementing the model. arXiv:1408.1580. (2014)
- Liviu P. Dinu and Catalin Zara.
  "Cardinality of ℓ_1-Spheres in Permutation Spaces." arXiv:1303.0016. (2013)
- Catalin Zara.
  "Cardinality of ℓ_1-Segments and Genocchi Numbers." arXiv:1304.5798. (2013)

Presentations at Conferences and Workshops

Jan 2023 American Mathematical Society Joint Meetings,
AMS Special Session on "Integrable Systems and Symplectic Group Actions"
Boston, MA.
"*Beyond cohomological assignments*"

Sep 2022 University of Cologne, Germany,
Workshop on "Perspectives in equivariant topology,"
Cologne, Germany
"*Polynomial Assignments*"

Jul 2015 The Eight Congress of Romanian Mathematicians,
Section: "Theoretical Computer Science" Iasi, Romania.
"*Tolerance Distances on Minimal Coverings*"

Jun 2012 Canadian Mathematical Society Summer Meeting,
Special Session on "Geometry and Topology of Lie Transformation Groups,"
Regina, SK.
"*Balanced Bundles and GKM Theory*"

Jul 2011 The Seventh Congress of Romanian Mathematicians,
Section: "Theoretical Computer Science" Brasov, Romania.
"*Spearman footrule and rank distance: combinatorial and computational aspects*"

Apr 2009 American Mathematical Society Eastern Section Meeting,
Special Session on "Symplectic and Contact Topology," WPI, Worcester, MA.
"*GKM Fiber Bundles*"

Aug 2008 Workshop on "Moment Maps," EPFL, Lausanne, Switzerland.
"*Positivity of Equivariant Schubert Classes Through Moment Map Degeneration*"

Mar 2008 American Mathematical Society Eastern Section Meeting,
Special Session on "Algebraic Combinatorial Geometry," New York University, New York, NY.
"*Positivity in Equivariant Schubert Calculus: A Symplectic Approach*"

Oct 2007 American Mathematical Society Eastern Section Meeting,
Special Session on "Invariants of Lie Group Actions and Their Quotients,"
Rutgers University, New Brunswick, NJ.
"*A New Proof of a Positive Formula for Equivariant Schubert Classes*"

Jun 2007 Pacific Institute for Mathematical Sciences
Summer School on "Combinatorial Models in the Geometry and Topology of Flag Manifolds," University of Regina, Canada. Four lectures on
"*Equivariant cohomology of flag manifolds*"

Oct 2006 American Mathematical Society Eastern Section Meeting,
Special Session on "Combinatorial Methods in Equivariant Topology,"
University of Connecticut, Storrs CT.

"*Strong Equivalence of Three Definitions of the Bruhat Order and Consequences for the Equivariant Cohomology of Flag Manifolds*"

May 2006 International Conference on "Toric Topology," Osaka City University, Japan.
"*Hamiltonian GKM spaces and their moment graphs*"

Apr 2004 Mathematisches Forschungsinstitut Oberwolfach (Germany)
Workshop on "Cohomological Aspects of Hamiltonian Torus Actions and Toric Varieties."
"*Morse Interpolation for Hamiltonian GKM Spaces*"

Dec 2002 Canadian Mathematical Society Winter Meeting,
Symposion on "Symplectic Geometry," University of Ottawa, ON.
"*Morse Interpolation and Divided Differences*"

Oct 2002 American Mathematical Society Eastern Section Meeting,
Special Session on "Modern Schubert Calculus," Northeastern University, Boston MA.
"*Divided Differences and Spaces of Subwords*"

Apr 2002 Conference on "Symplectic and Contact Geometry,"
MIT, Cambridge MA.
"*Grothendiek Polynomials and Spaces of Paths*"

Jun 2001 Fields Institute for Research in Mathematical Sciences
Workshop on "Hamiltonian Group Actions and Quantization," Toronto ON.
"*Generators in Equivariant Cohomology and Equivariant K-Theory*"

Jun 2000 Canadian Mathematical Society Summer Meeting,
Symposion on "Symplectic Geometry," Hamilton ON.
"*Combinatorial Formulas for Products of Thom Classes*"

Invited Speaker at Departmental Seminars and Colloquia

Oct 2012 University of Bucharest, Romania - Theoretical Computer Science Colloquium.

Mar 2010 MIT, Cambridge, MA - Combinatorics Seminar.

Mar 2009 Johns Hopkins University, Baltimore, MD - Topology Seminar.

May 2008 UMass Boston - Mathematics Seminar.

Nov 2007 MIT, Cambridge, MA - Group Actions in Geometry Seminar.

Nov 2005 UMass Boston - Mathematics Seminar.

Nov 2005 UMass Lowell - Mathematical Sciences Seminar.

Jun 2005 University of Bucharest, Romania - Differential Geometry Seminar.

Oct 2004 George Mason University, Fairfax, VA - Mathematics Colloquium.

Apr 2004 Penn State University, State College, PA - Topology/Geometry Seminar.

Apr 2004 Chapman University, Orange, CA - Mathematics Seminar.

Apr 2004 California State University, Fullerton CA - Mathematics Colloquium.

Oct 2003 Penn State University, State College, PA - Topology/Geometry Seminar.

Mar 2002 University of Bucharest, Romania - Differential Geometry Seminar.

Nov 2001 University of Toronto, Toronto, ON - Symplectic Geometry Seminar.

Nov 2001 Yale University, New Haven, CT - Topology Seminar.

Mar 2001 University of California at Berkeley, Berkeley CA - Combinatorics Seminar.

Feb 2001 State University of New York, Albany NY - Mathematics Colloquium.

Feb 2001 Yale University, New Haven CT - Lie Groups Seminar.

Nov 2000 MIT, Cambridge MA - Schubert Calculus Seminar.

Other Conferences Attended:

Mar 2010 "Localization Techniques in Equivariant Cohomology," American Institute of Mathematics, Palo Alto CA.

Jun 2008 "Moment Maps," Centre de Recerca Matematica, Universitat Autonoma de Barcelona, Spain.

Jan 2008 "Mathematical Physics and Geometric Analysis," Fields Institute, Toronto ON, Canada.

May 2007 "Interactions between Algebraic Combinatorics and Algebraic Geometry" Workshop, Centre de Recherches Mathematiques, Montreal QC, Canada.

May 2005 "Moment Maps in Various Geometries" Workshop, Banff International Research Station, Banff AB, Canada.

Aug 2004 "Moment Maps and Surjectivity in Various Geometries" Workshop, American Institute of Mathematics, Palo Alto CA.

Jun 2004 "Retrospective in Combinatorics" Conference, MIT, Cambridge MA.

Aug 2000 "Mathematical Challenges of the 21st Century," UCLA, Los Angeles CA.

Research Support:

- Travel Grant, American Institute of Mathematics, March 2010
- Travel Grant, EPFL - Bernoulli Center, Lausanne, August 2008
- Travel Grant, Osaka City University, Osaka, May 2006
- Research Development Grants, Penn State University, 2003-2005
- Travel Grant, American Institute of Mathematics, August 2004
- US Junior Oberwolfach Fellow Grant, NSF, April 2004
- VIGRE Gibbs Instructorship, Yale University, 2000-2003
- Travel Grant, Fields Institute, Toronto, June 2001
- Clay Mathematics Institute Liftoff Program, June-August 2000.
- Travel Grant, American Mathematical Society, August 2000.
- Travel Grants, Canadian Mathematical Society, August 2000, December 2002.

Ph.D. Thesis Committees:

- Gourishankar Seal, 2017. Co-advisor (with J. Weitsman), Department of Mathematics, Northeastern University, Boston.
- Rosanne Vetro, 2015. Member, Thesis Committee, Department of Computer Science, UMass Boston.
- Dan Pletea, 2013. Member, Thesis Committee, Department of Computer Science, UMass Boston.
- Silvia Sabatini, 2009. Member, Thesis Committee, Department of Mathematics, Massachusetts Institute of Technology (MIT), Cambridge, MA.
- Charles Cochet, 2003. Consultant, Thesis Committee, Department of Mathematics, University Paris 7.

Other Research Activity:

- Research Affiliate, Department of Mathematics, MIT, September 2008 - 2018.
- Refereed manuscripts for journals and conference proceedings
  Advances in Mathematics
  Algebra, Geometry, and Applications Seminar Proceedings

Algebraic and Geometric Topology
Boletín de la Sociedad Matemática Mexicana
Bulletin of the London Mathematical Society
CAARMS13 Proceedings
Discrete Mathematics
Experimental Mathematics
Geometry and Topology
Information Processing Letters
International Journal of Mathematics and Mathematical Sciences
International Mathematics Research Notes
Journal of Algebraic Combinatorics
Journal of Differential Geometry
Osaka Journal of Mathematics
Revue Africaine de la Recherche (ARIMA) Journal
SIGMA (Symmetry, Integrability and Geometry: Methods and Applications)

- Reviewed 3 books and 42 articles for *Mathematical Reviews*.

Teaching

Teaching Experience:

Classes taught at UMass Boston (Fall 2005 - present)

- Math 140 - Calculus I
- Math 141 - Calculus II
- Math 240 - Multivariable Calculus
- Math 242 - Multivariable and Vector Calculus
- Math 260 - Linear Algebra
- Math 310 - Applied Ordinary Differential Equations
- Math 345 - Probability and Statistics
- Math 354 - Vector Calculus
- Math 356 - Differential Geometry
- Math 390 - Problem Solving Seminar
- Math 458 - Theory of Numbers
- Math 478 - Independent Study
  Introduction to Topology • Topics in Geometry •
  Mathematics for Finance • Applied Probability
- Math 480 - Special Topics
  Topics in Combinatorics

Classes taught at Penn State Altoona (Fall 2003 - Spring 2005)

- Math 140 - Calculus with Analytic Geometry, I
- Math 141 - Calculus with Analytic Geometry, II

Classes taught at Yale University (Fall 2000 - Spring 2003)

- Math 115 - Calculus of Functions of One Variable
- Math 118 - Introduction to Functions of Several Variables
- Math 118S - Mathematics for Economists
- Math 225 - Linear Algebra and Matrix Theory
- Math 246 - Ordinary Differential Equations
- Math 435 - Differential Geometry

Classes taught at MIT (Winter 1997 - Summer 2000)

- Primary instructor for Calculus, Project Interphase (Summer 1998, 1999)
- Recitation instructor for
  - 18.022 Multivariable Calculus
  - 18.02A Multivariable Calculus - Intensive
  - 18.01 Calculus
  - 18.095 Mathematics Lecture Series
- Coordinator for the Mathematics Tutoring Center (Fall 1998).
- Mentor for
  - Research Science Institute (RSI)
  - Summer Program for Undergraduate Research

Classes taught at the University of Bucharest, Romania (1995-1996)

- Linear Algebra; Differential and Riemannian Geometry; Lie Groups.

Other Teaching Activities:

- Lecture notes for Math 242 - Multivariable and Vector Calculus.
- Lecture notes for Math 260 - Linear Algebra.
- Lecture notes for Math 458 - Theory of Numbers.
- Advisor for students with major or minor in Mathematics, UMass Boston, 2006 - .
- Advisor for students with major in Engineering, Penn State Altoona, 2003 - 2005.
- Contributor to OpenCourseWare at UMass Boston: materials for Calculus I, II, and III.
- Course coordinator for Math 140 - Calculus I, 2008-2010.

Teaching Related Conferences and Workshops

- 14th Annual Legacy of R. L. Moore Conference, Washington, DC. Jun 2011
- UMass Boston Educational Technology Conference, Boston, MA. May 2011
  Presentation: *Using WeBWorK in Mathematics Instruction*
- 12th Annual Legacy of R. L. Moore Conference, Austin TX. Jul 2009
- CONNECT Math Conference, Massasoit Community College, MA. May 2009
  "Essential Topics in Mathematics,"
- UMass Boston Educational Technology Conference, Boston, MA. May 2007
  Panel presentation: "*Sharing Your Course with the Public (OpenCourseWare)*"
- 10th Annual Legacy of R. L. Moore Conference, Austin TX. Apr 2007
- Instructional Technology Conference, Sturbridge, MA. Apr 2007
  "The Scholarship of Learning and Teaching: Technology and Reflective Practice."
- COSMIC Seminar, Spring 2007 semester
- CIT's Annual Conference, "Teaching for Transformation," Boston, MA. Jan 2007
  Panel Presentation: "*Mini-Lessons with Technology*"
- CIT Seminar, UMass Boston, Fall 2006 semester.
  "Working with Technology in Our Courses: Pedagogical and Critical Perspectives,"
- Project NExT Workshops
  Providence RI (August 2004), Phoenix AZ (January 2004), Boulder CO (July 2003)
- Section NExT Meetings, Allegheny Montain MAA Section
  Slippery Rock (March 2005), Pittsburgh (September 2004), Buckhannon (March 2004)
- PREP Workshop, Providence RI, June 2005
  "Internet-Based Interactive Multivariable Calculus"
- 8th Annual Legacy of R. L. Moore Conference, Austin TX, April 2005.
- MAA Minicourse, Atlanta GA, January 2005
  "ConcepTests and Peer Instruction: Active learning in the calculus classroom"
- 7th Annual Legacy of R. L. Moore Conference, Austin TX, March 2004.

Support:

- Program for Instruction Innovation Grant, UMass Boston, 2010
- Dean's Development Fund Grant, Penn State Altoona, 2004-2005
- Travel Grant, Schreyer Institute for Teaching Excellence, Penn State University, 2005
- Travel Grants, Educational Advancement Foundation 2004, 2005, 2007, and 2009.
- AMS Project NExT Fellow Grant, AMS and Penn State Altoona, 2003-2004

Service

Grants

- *STEM A2B Transfer Academy* (PI), Summer 2022, $26,000, funded, MA DHE, BHCC
- *STEM A2B Transfer Academy* (PI), Summer 2021, $25,000, funded, MA DHE, BHCC
- *STEM A2B Transfer Academy* (PI), Summer 2020, $35,000, funded, MA DHE, BHCC
- *STEM A2B Transfer Academy* (PI), Summer 2019, $25,000, funded, MA DHE, BHCC

Department of Mathematics, UMass Boston

- Associate Chair, August 2010 - June 2012.
  Assisted the Chair in the administration of the Department.
  Focused on advising, transfer credit, graduation requirements.
- Curriculum Committee, Fall 2008 - Spring 2012. Chair, Fall 2009 - Spring 2011.
  Developed and implemented the "Honors in Mathematics" award.
  Developed and implemented an improved version of Math 242 - Multivariable Calculus.
  Developed two advanced undergraduate courses:
  Math 356 (Differential Geometry) and Math 454 (Analysis on Manifolds).
- Personnel Committee, Fall 2006 - Spring 2008, Fall 2011-Spring 2012
  Participated in the annual review process for full-time and part-time faculty.
- Recruitment Committee, Fall 2006 - Spring 2012
  Member, Search Committee for Department Chair (2009-2010), tenure-track Assistant Professor positions (2007-2012), part-time faculty, and administrative positions.
- Honors Committee, Spring 2010, Spring 2014.
- Course Coordinator for Math 140 - Calculus I, Fall 2008 - Spring 2010
  Attended lectures and provided feed-back; Wrote common final exams.
- Web master for the departmental web site, Spring 2005 - present
  Redesigned and maintained the departmental web site (www.math.umb.edu).
  Developed and implemented online evaluation forms for Math 114Q.

College of Science and Mathematics, UMass Boston

- Associate Dean, Jan 2018 – August 2022
  Instructional Planning, Academic Policy, Undergraduate Studies, UTeach Program
  Designed and implemented Activity-Based Instructional Planning and Activity-Based Budgeting for NTT activities. Supervised the Student Success Center on interim basis (2018, 2020). Actively participated in the implementation of Curriculog *at UMass Boston. Coordinated Program Reviews (AQUAD), Merit Scholarships, Peer-Assisted Support, Undergraduate Research activities, and STEM A2B programs for transfer students (2019- 2022)*
- College Personnel Committee, CSM, Chair Fall 2017; Member Fall 2022 - .
  This committee reviews departmental recommendations concerning reappointment through the tenure decision year (fourth-year review), tenure, promotion to the rank of associate professor, and promotion to senior rank.
- Chair, College Faculty Senate, Fall 2012 - Spring 2016; member: Fall 2010-Spring 2016.
  The Senate is the governing body representing the faculty of the College of Science and Mathematics.
- Member, Scholarships Selection Committee, 2013 - 2017
  The scholarship winners are based primarily upon the students scholastic achievement and character.
- Member, Student Success Task Force, Spring 2009

The Student Success Task Force (SSTF) was charged with considering the question of what CSM can do to enhance the retention and graduation rate of entering freshmen.

University of Massachusetts Boston

- College Representative, UMass Boston Faculty Council, Fall 2016 – Fall 2017;
  The UMass Boston Faculty Council ensures the representation of members of the faculty in the governance of the Boston campus and the University of Massachusetts.
- Committee Chair, Review of Andrew Grosovsky, Dean of the CSM, Fall 2015.
  The review committee has been charged with soliciting and analyzing information about Dean Grosovsky's administrative knowledge, skills, and accomplishments, and with summarizing its findings in a written report to the Provost.
- Committee Member, Review of Edward Lambert, Vice Chancellor for Government Relations and Public Affairs, Spring 2017.
  The review committee has been charged with soliciting and analyzing information about the vice chancellor's administrative knowledge, skills, and accomplishments, and with summarizing its findings in a written report to the chancellor.
- College Representative, JFK Award Selection Committee, Spring 2016, 2017;
  The John F. Kennedy Award for Academic Excellence is the highest honor given to UMass Boston graduates; the award is given to the graduating senior who best exemplifies academic excellence, commitment to service, and good citizenship.
- Member, Organizing Committee of the Annual Conference on Teaching, Learning & Technology, Spring 2017;
- Task Force Member, Teaching Soul Committee, Spring 2016 - Spring 2017
  The committee has been appointed by the provost, with the charge of recommending practical strategies for effectively expressing and strengthening UMass Boston's identity as a "Research University with a Teaching Soul."
- Coach and local organizer for the William Lowell Putnam Competition, 2006-present
  Prepared students through weekly problem solving sessions each fall semester.
  The UMB team ranked **21st** *(2011),* **22nd** *(2015),* **24th** *(2014) out of 400+ teams;*
  Received and processed registration forms and exams, administered 6-hour exams.
- Review Committee, Comprehensive Scholarships for Continuing Students, 2006-2015.
  Evaluated 300+ application packages: essay, recommendation letter, and transcript.
- Member, Academic Dishonesty Panel, Fall 2011 and Summer 2016.
  Panels convened by the Associate Provost to hear appeals of students.
- Member, Academic Technology Committee, Fall 2011 - Spring 2014.
- Member, Campus Fellowship Committee, Fall 2011
  Interview two students who were applying for Fulbright fellowships;
  Assessed the student's potential and offered constructive feed-back.
- Member, Academic Support Programs College Personnel Committee, Spring 2011
  Reviewed one candidate for promotion to Senior Lecturer
- Mathematics Faculty Work Group, Title III Grant, Spring 2009.
  Participated in meetings with representatives of five community colleges.
  Discussed methods to improve transfer student recruitment and retention.

Community

- Member, panel at OCW workshop for Boston public high school teachers, July 2010.
- "Transformations in Geometry" Presentation, Haitian Scientific Society, March 2007.
- Judge for the Undergraduate Poster Session, AMS-MAA Joint Meetings, 2004, 2005.
- Judge for the Pennsylvania Junior Academy of Science Competition, 2004, 2005.

Profession

- Grader, W.L. Putnam Mathematical Competition (2021-), USA(J)MO (2023-)
  organized by the Mathematical Association of America (MAA)
- UMass Boston representative on the Math Pathways Working Group, 2017 -2018
  [...] to build momentum and legitimacy for mathematics pathways and to create policy-enabling conditions for both two-year and four-year institutions to implement mathematics pathways aligned to programs of study.
- UMass Boston Disciplinary Expert, MassTransfer Pathways, 2015-2016
  The primary goal of this project is to create a unified system of transfer that will allow students to seamlessly move from two-year institutions to four-year institutions.
- Organizer, Special Session on "Symmetries of Symplectic Manifolds and Related Topics" at the Mathematical Congress of the Americas, Montreal, July 24-28, 2017.
- Reviewer for Mathematical Reviews. Reviewed 3 books and 42 articles.
- Referee for research journals and conference proceedings.
- Member, Calculus Board of Advisors, Houghton Mifflin Company, 2003-2006.