

## CURRICULUM VITÆ

### Roman Sznajder

Department of Mathematics

Bowie State University

Bowie, Maryland 20715

November 8, 2022

#### **Education**

1994 – Ph.D., Applied Mathematics, University of Maryland Baltimore County  
1992 – M.S., Applied Mathematics, University of Maryland Baltimore County  
1976 – M.S., (Magna cum Laude), Mathematics, University of Warsaw, Poland

#### **Awards**

2022 – Researcher of the Year, Departmental Award in Recognition of Outstanding Research  
2020 – 2020 Presidential Achievement Award for Research and Grants  
2018 – my paper *On known and less known relations of Leonhard Euler with Poland*, *Studia Historiae Scientiarum* 15 (2016) 75-110, was recommended by Dr. Fred Rickey to the Euler's Society, see *Opusculum*, Summer 2018 (<https://mailchi.mp/fd1f00e83093/euler-society-newsletter-summer-2018?e=bd51b5295d>)  
2017 – Extra-Miler Award by College of Arts and Sciences at BSU  
2012 – Outstanding Journal Publication Award by College of Arts and Sciences at BSU  
2002 (Fall Semester) - Sabbatical leave at the University of Maryland, Baltimore County  
2001 – Model Institutions for Excellence (MIE) Initiative Exemplary Service Award  
2000 – Model Institutions for Excellence Scholar for Academic Year 1998-1999 at BSU  
1986, 1988 – Awards from the President of the Polish Mathematical Society for coaching the prize winners in high school student Mathematical Olympiads  
1984 – Scientific Award from the President of the University of Gdańsk, Poland  
1976 – Award in J. Marcinkiewicz Competition (second place, nationwide) for best student publication in mathematics, Poland  
1972 – 1975 – Presidential Semestral Awards, University of Warsaw, Poland.

#### **Experience in Higher Education**

2006 – Tenured Professor, Department of Mathematics, Bowie State University  
2001 – 06 Tenured Associate Professor, Department of Mathematics, BSU  
2000 – 01 Tenured Assistant Professor, Department Mathematics, BSU  
1996 – 2000 Assistant Professor, Department of Mathematics, BSU  
1995 – 96 Lecturer, Department of Mathematics, Bowie State University  
1995 – Adjunct Faculty–Professor, Dept. of Mathematics and Statistics, UMBC  
1994 – 95 Instructor, Department of Mathematics and Statistics, UMBC  
1990 – 94 Teaching Assistant, Department of Mathematics and Statistics, UMBC  
1986 – 89 Lecturer, Department of Mathematics, University of Gdańsk, Poland  
1980 – 86 Senior Teaching Assistant, Department of Mathematics, University of Gdańsk  
1976 – 79 Research Assistant, Department of Mathematics, Mechanics and Informatics, University of Warsaw, Poland

#### **Articles**

- V. Girininkaitė, A. Kleinert, and R. Sznajder, *An update of the paper, On known and less known relations of Leonhard Euler with Poland*, submitted to *Studia Historiae Scientiarum*, 2022-10-17
- R. Sznajder, *A representation theorem for the Lorentz cone automorphisms*, *Journal of Optimization Theory and Applications*, electronic version October 2022, DOI: 10.1007/s10957-022-02118-8

**Articles  
(cont.)**

- R. Sznajder, *The prominence of Gdańsk Academic Gymnasium as a cornerstone of scientific developments in Gdańsk*, Studia Historiae Scientiarum 21 (2022) 60–133, published online 08-26-2022, DOI: 10.4467/2543702XSHS.22.003.15969
- Y. Gao, S.Z. Nemeth, and R. Sznajder, *The monotone extended second-order cone and mixed complementarity problem*, Journal of Optimization Theory and Applications 193 (2022) 381-407 (DOI: 10.1007/s10957-021-01962-4)
- R. Sznajder, *The life and work of Józef Marcinkiewicz. A survey article on the occasion of the 110<sup>th</sup> of his birthday anniversary and the 80<sup>th</sup> anniversary of his death* (46 pages), on the webpage of the Norbert Wiener Center for Harmonic Analysis, UMCP, Department of Mathematics, March 19, 2020. DOI: 10.13140/RG.2.2.14121.01123
- M.S. Gowda, and R. Sznajder, *A Riesz-Thorin type interpolation theorem in Euclidean Jordan algebras*, Linear Algebra and Its Applications 585 (2020) 178-190 (<https://doi.org/10.1016/j.laa.2019.09.029>)
- R. Sznajder, *On known and less known relations of Leonhard Euler with Poland*, Studia Historiae Scientiarum 15 (2016) 75–110 (DOI: 10.4467/23921749SHS.16.005.6148)
- R. Sznajder, *The Lyapunov rank of extended second order cones*, Journal of Global Optimization, 66(3) (2016) 585–593 (DOI: 10.1007/s10898-016-0445-1)
- R. Sznajder, *Kaczmarz algorithm revisited*, Technical Transactions, 2 (2015) 247–254
- J. Tao, M.S. Gowda, and R. Sznajder, *On the block norm-P property*, Linear Algebra and Its Applications, 459 (2014) 121–135
- R. Sznajder, M.S. Gowda, and J. Tao, *On the inheritance of some complementarity properties by Schur complements*, Pacific Journal of Optimization, Vol.10, pp. 343–357, 2014
- M.S. Gowda, R. Sznajder, *On the irreducibility, self-duality, and non-homogeneity of completely positive cones*, Electronic Journal of Linear Algebra, 26 (2013) 177–191.
- M.S. Gowda, R. Sznajder, and J. Tao, *The automorphism group of a completely positive cone and its Lie algebra*, Linear Algebra and Its Applications, Vol. 438, pp. 3862–3871, 2013
- R. Sznajder, M.S. Gowda, and J. Tao, *On the Uniform Nonsingularity Property for Linear Transformations on Euclidean Jordan Algebras*, Journal of Optimization Theory and Applications, Vol. 153, pp. 306–319, 2012
- M.S. Gowda, J. Tao, and R. Sznajder, *Complementarity properties of Peirce-diagonalizable linear transformations on Euclidean Jordan algebras*, Optimization and Software, 27 (2012) 719–733
- R. Sznajder, M.S. Gowda, and M. Moldovan, *More results on Schur complements in Euclidean Jordan algebras*, Journal of Global Optimization, Vol. 53, pp. 121–134, 2012
- R. Sznajder, *90th Anniversary of the Emergence of the Polish School of Mathematics: Polish Mathematics between World Wars*, posted at HPM-Americas, 2010
- M.S. Gowda, R. Sznajder, *Schur complements and determinantal formula in Euclidean Jordan algebras*, Linear Algebra and Its Applications, Vol. 432, pp. 1553–1559, 2010
- R. Sznajder, *More on the Lost Cousin of the Fundamental Theorem of Algebra*, Mathematics Magazine, Vol. 82, No 3, pp. 218–219, 2009
- M.S. Gowda, R. Sznajder, *Some global uniqueness and solvability results for linear complementarity problems over symmetric cones*, SIAM Journal on Optimization, Vol. 18, pp. 461–481, 2007

**Articles  
(cont.)**

- R. Sznajder, M.S. Gowda, *The **Q**-property of composite transformations and the **P**-property of Stein type transformation on self-dual symmetric cones*, Linear Algebra and Its Applications, Vol. 416, pp. 437–451, 2006
- M.S. Gowda, R. Sznajder, *Automorphism invariance of **P**- and **GUS**-properties of linear transformations on Euclidean Jordan algebras*, Mathematics of Operations Research, Vol. 31, pp. 109–123, 2006
- M.S. Gowda, R. Sznajder, and J. Tao, *Some **P**-properties for linear transformations on Euclidean Jordan algebras*, Linear Algebra and Its Applications, Vol. 393, pp. 203–232, 2004 (Special Issue on Positivity in Linear Algebra)
- R. Sznajder, *An application of anisotropic regularization to the existence of weak Pareto minimal points*, Journal of Mathematical Analysis and Applications, Vol. 279, pp. 617–624, 2003
- R. Sznajder and K. Basnyat, *Dynamics of a certain sequence of powers*, International Journal of Mathematics and Mathematical Sciences, Vol. 24, No 4, pp. 283–288, 2000
- M.S. Gowda and R. Sznajder, *Weak univalence of inverse images of continuous functions*, Mathematics of Operations Research, Vol. 24, pp. 255–261, 1999
- R. Sznajder and M.S. Gowda, *On the limiting behavior of the trajectory of regularized solutions of a **P**<sub>0</sub>-complementarity problem*, in: Reformulation–Nonsmooth, Piecewise Smooth and Smoothing Methods, M. Fukushima and L. Qi, Eds., pp. 371–379, Kluwer Academic Publishers, Boston, 1998
- R. Sznajder, *Calculating norms in the spaces  $l^\infty(\Gamma)/c_0(\Gamma)$  and  $l^\infty(\Gamma)/c(\Gamma)$* , The International Journal of Mathematics and Mathematical Sciences, Vol. 21, No 2, pp. 413–415, 1998
- M.S. Gowda and R. Sznajder, *On the pseudo-Lipschitzian behavior of the inverse of a piecewise affine function*, in: Complementarity and Variational Problems; State of the Art, Proceedings of the International Conference on Complementarity Problems (1997), M.C. Ferris and J.-S. Pang, Eds., SIAM, pp. 117–131
- R. Sznajder and M.S. Gowda, *On the Lipschitz continuity of the solution map in some generalized LCPs*, in: Proceedings of the Conference on Game Theoretical Applications to Economics and Operations Research, T. Parthasarathy and T.E.S. Raghavan, Eds., pp. 171–181, Kluwer Academic Publishers, Boston, 1997
- M.S. Gowda and R. Sznajder, *On the Lipschitzian properties of polyhedral multifunctions*, Mathematical Programming, Vol. 74, No.3, pp. 267–278, 1996
- R. Sznajder and M.S. Gowda, *Nondegeneracy concepts for zeros of piecewise smooth functions*, Mathematics of Operations Research, Vol. 23, No.1, pp. 221–238, 1998
- R. Sznajder, *The horizontal linear complementarity problem*, section published in the *Topological Methods in Complementarity Theory*, by George Isac, Kluwer Academic Publishers, Dordrecht, 2000
- M.S. Gowda and R. Sznajder, *A generalization of the Nash equilibrium theorem on bimatrix games*, International Journal of Game Theory, Vol. 25, pp. 1–12, 1996
- R. Sznajder and M.S. Gowda, *Generalizations of **P**<sub>0</sub>- and **P**-properties; extended vertical and horizontal LCPs*, Linear Algebra and Its Applications, Vol. 223–224, pp. 695–715, 1995 (special issue honoring M. Fiedler and V. Pták)
- R. Sznajder, *Degree-theoretic analysis of the vertical and horizontal linear complementarity problems*, Ph.D. dissertation, University of Maryland, Baltimore County, 1994

**Articles  
(cont.)**

- M.S. Gowda and R. Sznajder, *Generalized order complementarity problem*, SIAM Journal on Matrix Analysis and Applications, Vol. 15, No.3, pp. 779–795, 1994.
- R. Sznajder and J.A. Filar, *Some comments on a theorem of Hardy and Littlewood*, Journal of Optimization Theory and Applications, Vol. 75, No.1, pp. 201–208, 1992
- R. Sznajder, *Remark on the paper of M. von Renteln ‘Finitely generated ideals in B-algebra  $H^\infty$ ’*, Collectanea Mathematica, Vol. XIX, fasc. 3, pp. 3–5, 1978
- R. Sznajder, *On isomorphic subspaces of  $C(T)$  and  $C^m(T)$* , Bull. de l'acad. pol. des Sciences, Vol. XXV, No.1, pp. 19–22, 1977

**Articles  
(other)**

- Created a set of lecture notes, *Introduction to MATLAB* (43 pages), Fall 2022
- An extended review of a manuscript submitted to *Antiquitates Mathematicae*, Feb 2021
- Translation from Polish into English of a manuscript, *Mathematical Logic. 1943 Underground University Lectures*, by Prof. Bolesław Sobociński (June 2020)
- Laudation on behalf of Professor Lech Maligranda (Technical University of Luleå, Sweden) on the occasion of becoming a laureate of the 2016 Samuel Dickstein Polish Mathematical Society Grand Award for his outstanding achievements in history of mathematics, *Wiadomości Matematyczne*, 54 (2018) 109–113
- *Group majorization (tutorial)*, April 2018
- *Korovkin's theorem (tutorial)*, March 2022
- *Life and Work of Józef Marcinkiewicz* (a biogram), [www.foton.uj](http://www.foton.uj.edu.pl), 128 (2015) 41–45 (in Polish), an e-journal for physicists and teachers of physics, Jagiellonian University, Cracow, Poland
- Submitted short essays to the book publication, *Face time with faculty peers*, Ed. G. Acquaah, Bowie State University 2014:
  - *Reviewing Journal Manuscripts: A Professional Obligation*
  - *Making Time to Publish*
  - *How to Deal with Manuscript Rejection*
- Review (in Polish) of a book *The Fantastic Laboratory of Dr. Weigl* by Arthur Allen, W. W. Norton & Company, 2014. In: Polish Library News, [www.PolishLibrary.org](http://www.PolishLibrary.org), November/December 2014
- Extended review of the paper *The Algebraic Structure of the Arbitrary-Order Cone*, by Baha Alzalg (J Optim Theory Appl 169:32–49, 2016), published in the Mathematical Reviews MR3489795
- *Applications of iterative methods to study certain problems in the theory of dynamical systems*, Final report of the MIE Faculty Grant 1997–98 (77p.)
- Solution of Problem 827 (Spring 1994) in *Pi Mu Epsilon Journal*, 10(2) (1995) p. 149

**Professional Activities**

**Invited lectures:**

- *The Role of the Poles in Breaking the Enigma Code—A True Story.* Duquesne University, Pittsburgh, October 1, 2021, at the invitation of Polish Cultural Council, Duquesne University and Brittsburgh
- *Danzig Academic Gymnasium as the cornerstone of the intellectual activities in Gdańsk between 16th and 19th centuries,* Dickstein Forum, International conference in Kraków, Poland, September 14–17, 2021
- *The monotone extended second order cone and mixed complementarity problems,* US Naval Academy Optimization and Operations Research Conference, June 3, 2021
- *A True Story of Enigma,* Maryland STEM Festival 2019, October 19, 2019, BSU
- *A Riesz-Thorin type interpolation theorem in Euclidean Jordan algebra,* at the 30<sup>th</sup> European Conference on Operational Research, in the Mathematical Programming stream, Dublin, Ireland, June 23–26, 2019
- *On known and less known relations of Leonhard Euler with Poland,* invited lecture at PASHOM, Villanova University, February 15, 2018
- *On known and less known relations of Leonhard Euler with Poland,* invited lecture at Applied Mathematics Colloquium in the Department of Mathematics and Statistics, UMBC, March 10, 2017
- *On cones, their applications, and more,* Morgan State University, Departmental Colloquium, February 9, 2017
- *In quest of good cones,* invited lecture in the Complementarity Problems, Variational Inequalities and Equilibrium stream, at the 28<sup>th</sup> European Conference on Operational Research, Poznań, Poland, July 3–6, 2016
- *Enigma: Harnessing mathematics in cryptology,* invited colloquium lecture in the Department of Mathematics at The George Washington University, February 26, 2016
- *Enigma: Harnessing mathematics in cryptology,* invited colloquium lecture in the Department of Mathematics at the University of Maryland College Park, January 29, 2016 (my effort to publicize the widely unknown role of Polish mathematicians in the allied victory in World War II was acknowledged by the Ambassador of the Republic of Poland in the letter to the president of BSU)
- *On a generalized second order cone,* invited lecture in the session: Convex Conic Optimization Models, Properties and Algorithms (Conic Programming Cluster) at the 22<sup>nd</sup> International Symposium on Mathematical Programming, Pittsburgh, July 12–17, 2015
- *Kaczmarz algorithm revisited,* invited plenary lecture at the conference: Exact sciences and mathematics in Central-Eastern Europe from the mid-XIX century till WWII (also chaired a session), Kraków, Poland, June 11–13, 2015
- *On cones, their applications and more,* invited Polish Mathematical Society colloquium lecture at the University of Gdańsk, Poland, June 12, 2014 (in Polish)
- *On the block norm-**P** property,* Special Session on Optimization and Related Topics, March 29–30, 2014, at the 1098<sup>th</sup> American Mathematical Society Meeting at University of Maryland, Baltimore County, Baltimore, MD
- *On the irreducibility, self-duality, and non-homogeneity of completely positive cones;* invited lecture in the Complementarity Problems and Variational Inequalities cluster (Mathematical Programming stream) at the EURO-INFORMS, 26<sup>th</sup> European Conference on Operational Research, Rome, Italy, July 1–4, 2013

**Professional Activities**

**Invited lectures (cont.):**

- *Complementarity properties of linear transformations on product spaces via Schur complements*; invited lecture in the Complementarity and Variational Inequalities cluster at the 21<sup>th</sup> International Symposium on Mathematical Programming, Berlin, Germany, August 19–24, 2012
- *Life and work of Józef Marcinkiewicz*; invited seminar lecture at the Norbert Wiener Center for Harmonic Analysis, Department of Mathematics, University of Maryland, College Park, October 18, 2011
- *A norm P-property for linear transformations on Euclidean Jordan algebras*, Special Session on Advances in Optimization (in honor of Florian Potra's 60<sup>th</sup> Birthday), March 12–13, 2011, at the 1068<sup>th</sup> American Mathematical Society Meeting at Georgia Southern University, Statesboro, Georgia
- *Properties of Schur complements in Euclidean Jordan algebras*; invited lecture at the 24<sup>st</sup> European Conference on Operational Research, Session on Complementarity Problems, Variational Inequalities and Equilibrium, Lisbon, Portugal, July 11–14, 2010
- *Schur complements, Schur determinantal and Haynsworth inertia formulas in EJAs*; invited lecture at the 20<sup>th</sup> International Symposium on Mathematical Programming, Chicago, August 23–28, 2009
- *The 90<sup>th</sup> Anniversary of the Polish School of Mathematics. Polish Mathematics Between Wars*; lecture given in the Discussion Club at the Polish Library in Washington, DC (in Polish), May 1, 2009
- *Complementarity properties of cone and algebra automorphisms in Euclidean Jordan algebras*; invited lecture at the 21<sup>st</sup> European Conference on Operational Research, Session on Complementarity Problems and Equilibrium, Reykjavik, Iceland, July 2–5, 2006
- *Application of anisotropic regularization to existence of weak Pareto minimal points*; invited lecture at the American Mathematical Society Meeting at the University of Tennessee at Chattanooga, Special Session on Recent Advances in Optimization Theory, October 4–6, 2001
- *On the trajectory of regularized solutions of a  $\mathbf{P}_0$ -complementarity problem*; invited lecture at the International Conference on Nonlinear Programming and Variational Inequalities, Hong Kong, December 15–18, 1998.
- *On the limiting behavior of the trajectory of regularized solutions of a  $\mathbf{P}_0$ -complementarity problem*; invited lecture at the 20<sup>th</sup> Symposium on Mathematical Programming with Data Perturbations, The George Washington University, May 21–22, 1998
- *Some stability aspects of the linear complementarity problem and its generalizations*; invited Session on Linear Complementarity Problems at the 16<sup>th</sup> International Symposium on Mathematical Programming, Lausanne, Switzerland, Aug. 24–29, 1997
- *The Lipschitz continuity of the solution map in some generalized LCPs*; invited Session on Polyhedral Multifunctions (invited cluster on Complementarity Problems) at the INFORMS Fall Meeting, Atlanta, November 3–6, 1996
- *The horizontal linear complementarity problem*; invited Session on Linear Complementarity Problems at the 15<sup>th</sup> International Symposium on Mathematical Programming, Ann Arbor, August 15–19, 1994

<b>Professional Activities</b>	<b>Session Organization:</b>
	<ul style="list-style-type: none"> <li>○ <i>Special Session on Optimization: Theory and Applications</i>, at the 2012 Spring Eastern Sectional Meeting of the American Mathematical Society, The George Washington University, March 17-18, 2012. Chaired one of the sessions</li> <li>○ <i>Perturbation Aspects of Nonlinear Complementarity</i>, at the International Conference on Nonlinear Programming and Variational Inequalities, Hong Kong, December 15–18, 1998</li> </ul>
<b>Professional Activities</b>	<b>Conference lectures:</b>
	<ul style="list-style-type: none"> <li>○ <i>On known and less known relations of Leonhard Euler with Poland</i>, History and Pedagogy of Mathematics (HPM), American University, March 13–14, 2015</li> <li>○ <i>Life and Work of Józef Marcinkiewicz</i>, Special Session on Mathematics in Poland: Interbellum, World War II, and Immediate Post-War Developments; Joint Mathematics Meetings, San Antonio, January 10–13, 2015</li> <li>○ <i>On completely positive cones</i>, MAA MD-DC-VA Section Meeting, Bowie State University, November 7–8, 2014</li> <li>○ <i>Complementarity properties of Peirce-diagonalizable linear transformations on Euclidean Jordan algebras</i>, Special Session on Optimization: Theory and Applications, The George Washington University, March 17–18, 2012</li> <li>○ <i>On certain inequalities in Euclidean Jordan Algebras</i>, The Józef Marcinkiewicz Centenary Conference Poznań, Poland, June 28–July 2, 2010</li> <li>○ <i>90th Anniversary of the Emergence of the Polish School of Mathematics: Polish Mathematics between World Wars</i>, History and Pedagogy of Mathematics (HPM) Americas Section 2010 Annual Meeting, March 13–14, 2010</li> <li>○ <i>Automorphism invariance of <b>P</b> and <b>GUS</b> properties of linear transformations on Euclidean Jordan algebras</i>, International Conference on Continuous Optimization I, Rensselaer Polytechnic Institute, August 2–4, 2004</li> <li>○ <i>On <b>P</b>-properties for linear transformations on Euclidean Jordan algebras</i>, MAA MD-DC-VA Section Meeting, The Johns Hopkins University, November 08, 2003</li> <li>○ <i>Hyperbolic geometry calculator in MATLAB</i>, MAA MD-DC-VA Section Meeting, University of Maryland, College Park, November 02, 2002</li> <li>○ <i>The semidefinite linear complementarity problem</i>, Regional Conference of the National Association of Mathematicians, Bowie State University, March 16, 2002</li> <li>○ <i>New results on univalent functions and their applications to complementarity theory</i>, MAA MD-DC-VA Section Meeting (also, a session chair), April 2000</li> <li>○ <i>Weak univalence and connectedness of inverse images of continuous functions</i>, Joint Mathematics Meetings, Baltimore, January 1998</li> <li>○ <i>Nondegeneracy concepts for zeros of piecewise smooth functions</i>, Nineteenth Symposium on Mathematical Programming with Data Perturbations, The George Washington University, May 1997</li> <li>○ <i>The Lipschitzian behavior of the inverse of a piecewise affine function</i>, (also chaired a session), Eighteenth Symposium on Mathematical Programming with Data Perturbations, The George Washington University, May 1996</li> <li>○ <i>Nondegeneracy for zeros of piecewise affine functions</i>, Seventeenth Symposium on Mathematical Programming with Data Perturbations, The George Washington University, May 1995</li> </ul>

**Professional Activities**

**Conference lectures (cont.):**

- *Nondegeneracy in vertical and horizontal linear complementarity problems*, Sixteenth Symposium on Mathematical Programming with Data Perturbations, The George Washington University, May 1994
- *Generalizations of  $\mathbf{P}_0$ - and  $\mathbf{P}$ -properties, extended vertical and horizontal LCPs*, ORSA/TIMS Joint National Meeting, Phoenix, November 1993
- *Vertical linear complementarity problem*, SIAM Annual Meeting, Philadelphia, July, 1993
- *Stability in vertical linear complementarity problem*, Fifteenth Symposium on Mathematical Programming with Data Perturbations, The George Washington University, May 1993

**Professional Activities**

**Conferences attended:**

- US Naval Academy Optimization and Operations Research Conference, June 3, 2021
- Joint Mathematics Meetings, AMS, January 6–9, 2021 (virtual)
- *Philosophies of Liberation*, September 11–12, 2020. Virtual International Conference. Guest speaker: Prof. Henrico Dussel, the creator of this philosophical discipline
- *Jubilee 2019 Conference* at the Wiener Center for Harmonic Analysis, University of Maryland College Park, dedicated to the celebration of the 80<sup>th</sup> birthday of Dr. John Benedetto, September 19–21, 2019
- *February Fourier Talks*, Norbert Wiener Center, University of Maryland College Park, organizer: Dr. John Benedetto
  - February 21–22, 2008   · February 17–18, 2011   · February 20–21, 2014
  - February 19–20, 2009   · February 16–17, 2012   · February 19–20, 2015
  - February 18–19, 2010   · February 21–22, 2013   · February 18–19, 2016
  - February 15–16, 2018   · October 6–7, 2022
- *MAA MathFest 2015*, Washington, D.C., August 5–8, 2015
- *Humanities and Technology Association Conference*, Bowie State University, Oct.04–06, 2012, Chair of the sessions, *Technological Development: Theoretical and Actual and Visions of Technology for the Human Conditions*
- *Humanities and Technology Association Conference*, Bowie State University, Oct.13–15, 2011, Chair of the session, *Computational Thinking in the Curriculum*
- *Humanities and Technology Association Conference*, Bowie State University, Sept. 30, October 2, 2010, Organizing Committee Member, Chair of the session, *Technology, Theory and Applications*
- *From Banach Spaces to Frame Theory and Applications*, conference in honor of Professor Peter Casazza, Norbert Wiener Center at the University of Maryland, College Park, May 20–22, 2010
- Joint Mathematics Meetings, Washington, DC, January 5–8, 2009
- MAA Colloquium honoring Paul Halmos (Grand Opening Celebration of the Carriage House Conference Center), Washington DC, April 20, 2007
- Advances in Control and Partial Differential Equations, conference in honor of Professor Thomas I. Seidman, UMBC, October 28–29, 2006
- 21<sup>st</sup> European Conference on Operational Research, Reykjavik, Iceland, July 2–5, 2006

**Professional Activities**

**Conferences attended (cont.):**

- 7<sup>th</sup> HBCU-UP National Research Conference 2006, Baltimore, February 9–12, 2006
- 4<sup>th</sup> International Conference on Complementarity Problems 2005, Stanford University, California, August 9–12, 2005
- Fall 2004 MAA MD-DC-VA Section Meeting, Morgan State University, November 5–6, 2004
- Fall 2003 MAA MD-DC-VA Section Meeting, The Johns Hopkins University, November 7–8, 2003
- Joint Mathematics Meetings, Baltimore, January 15–18, 2003
- Fall 2002 MAA MD-DC-VA Section Meeting, University of Maryland, College Park, November 1, 2002
- Maryland-Penn State Semiannual Workshop on Dynamical Systems and Related Topics, University of Maryland, College Park, March 17–21, 2001
- Spring 2000 MAA MD-DC-VA Section Meeting, Bowie State University, April 29, 2000
- National INFORMS Meeting, Philadelphia. Attending one-day session: Semidefinite Programming, November 7, 1999
- International Conference on Complementarity Problems, University of Madison, Wisconsin, June 9–12, 1999
- Spring MAA Regional Meeting, James Madison University, Harrisonburg, Virginia, April 10, 1999. Mr. Dan MacCarthy, my advisee, presented a paper, *Interval Matrices and Related Topics*.
- Joint Mathematics Meetings, Baltimore, January 1998
- International Conference on Complementarity Problems, The Johns Hopkins University, Baltimore, November 1–4, 1995
- Fourteenth Symposium on Mathematical Programming with Data Perturbations, The George Washington University, May 1992
- Polish–German Democratic Republic (GDR) Conferences in Functional Analysis:
  - Oberhof, GDR–1976 · Nowy Sącz, Poland–1978 · Georgenthal, GDR–1979
  - Wisła, Poland–1980 · Jachranka, Poland–1985
- International Conference on Approximation and Function Spaces, Gdańsk, Poland, August 27–31, 1979
- International Conference on Operator Algebras, Ideals and Their Applications in Theoretical Physics, Leipzig, DDR, September 11–21, 1977
- International Congress of Mathematicians, Warsaw, Poland, 1983
- International Congress of Mathematicians, Helsinki, Finland, 1978

**Seminar presentations:**

- *Some recent developments in the theory of closed convex cones*, The University of Birmingham, UK, June 22, 2017
- *On known and less known relations of Leonhard Euler with Poland*, University of Maryland, Baltimore County, Pi Mu Epsilon talk, May 1, 2015
- *On known and less known relations of Leonhard Euler with Poland*, Bowie State University, April 17, 2015
- *On Univalent Functions*, Bowie State University, October 24, 2014

**Professional Activities**

**Seminar presentations (cont.):**

- *Hypatia of Alexandria: First Woman Mathematician*, Bowie State University, March 28, 2014
- *90<sup>th</sup> Anniversary of Emergence of the Polish School of Mathematics; Polish Mathematics Between the World Wars*, Bowie State University, December 1, 2009
- *Relatives of a Fundamental Theorem of Algebra and the Descartes' Rule of Signs*, Bowie State University, November 21, 2008
- *Complementarity properties of quadratic representations in Euclidean Jordan algebras*, Optimization Seminar at the Department of Mathematics and Statistics at UMBC, November 9 and 16, 2006
- *Lyapunov stability theorem. Its extensions and relatives*, Bowie State University, April 27, 2006
- *Tarski's fixed point theorem and some of its consequences*, Bowie State University, April 21, 2005
- *The hyperbolic geometry calculator*, Bowie State University, April 25, 2002
- *Recent developments in semidefinite linear complementarity problems*, The George Washington University, April 12, 2002
- *The variational inequality problem*, Bowie State University, February 14 and 21, 2002
- *On some results in the theory mathematical programming*, University of Gdańsk, Poland, June 28, 2001
- *Equations associated with  $\mathbf{P}_0$ - and  $\mathbf{P}$ -functions and related topics*, Bowie State University, April 27, 1999
- *Applications of  $\mathbf{P}_0$ - and  $\mathbf{P}$ -functions to optimization problems*, The George Washington University, April 9, 1999
- *Trajectories of regularized solutions of  $\mathbf{P}_0$ - and  $\mathbf{P}$ -equations and related topics*, The Catholic University of America, March 31, 1999
- *The theorems on uniqueness and their applications*, University of Gdańsk, Poland, July 16, 1998
- *Recent developments in the theory of piecewise affine functions*, The Catholic University of America, April 29, 1998
- *Uniqueness theorems and their applications*, The Catholic University of America, October 22, 1997
- *Some applications of the contraction mapping principle. Iterative schemes*, The George Washington University, February 7, 1997
- *The contraction mapping principle and iterative methods*, Bowie State University, December 3, 1996
- *On Hardy spaces of analytic functions* (in Polish), Gdańsk Branch of Polish Mathematical Society, March 13, 1981

**Professional Activities**

**Workshop Presentations:**

- Organized two-month workshop (September-October 2019) for undergraduate students in the Department of Mathematics at BSU on modeling with differential equations in preparation for SIMIODE/SCUDEM IV 2019 challenge. Also, served as a coach of one of the teams.
- *Enigma: Harnessing mathematics in cryptology*, Faculty Institute, Bowie State University, August 25, 2016
- *Farey sequences*, invited lecture by the III Liceum Ogólnokształcące (high school) in Gdynia, Poland, June 10, 2014 (in Polish)
- *Solving polynomial equations. The story of Fundamental Theorem of Algebra*, March 18, 2004, Bowie State University, sponsored by the MIE
- *Helly's theorem and its applications*, November 29, 2001, sponsored by the MIE
- *Some (almost forgotten) theorems on localization of zeros of polynomials*, April 24, 2001, sponsored by the MIE
- *Word Problem Solving Workshops*, sponsored by the MIE, aiming at the MIE tutors, organized on November 11, 1996, March 20, 1997, October 14, 1997, October 15, 1998, and November 4, 1999
- For the *1<sup>st</sup> Step Program-99*, sponsored by the NSF, conducted six (6) informational sessions on activities in the Department of Mathematics, BSU for the incoming nine-graders from Oxon Hill High School
- *Some old and new problems in mathematics at the dawn of the third millennium*, a seminar intended for the MIE assistants, February 18, 1999

**Professional Activities**

**Workshops attended:**

- *The Lvov School of Mathematics 1919–1929*, lecture by prof. Maryam Vulis. PASHOM, the history of mathematics seminar, Villanova University, January 23, 2020.
- *Reading and Critical Thinking Strategies: Before-During-After Reading*, October 5, 2011, a seminar by Pat Miller at BSU
- *Teaching a Course in the History of Mathematics* workshop (January 6 & 8, 2009), by Drs. F. Rickey and V. Katz, at Joint Mathematics Meetings, Washington DC
- *International Conference on Continuous Optimization (ICCOPT I) Summer School*, July 31–August 1, 2004. The event sponsored by the NSF, Mathematical Programming Society, IBM Research, and Rensselaer Polytechnic Institute
- *Mentoring Undergraduate Research*, conducted by Dr. J. Gallian, The Johns Hopkins University, Baltimore, November 7, 2003
- *Advanced Programming Techniques in MATLAB*, The Math works, Columbia, MD, December 6, 2002
- *AMS Short Course on Quantum Computation*, by Dr. S. Lomonaco, at the Joint Mathematics Meetings, Washington, DC, January 17–18, 2000
- *Developing strategies to enhance performance in Analysis and Abstract Algebra for math majors in HBCU's aspiring to Graduate Studies in Mathematics*, organized by the Department of Mathematics, Howard University, Washington, DC, September 19, 1999
- *Developing critical thinking skills among the students*, the CETL workshop conducted by Dr. L. Brown, Howard University, April 20, 1999

**Professional Activities**

**Workshops attended (cont.):**

- *Chaotic Dynamics Workshops*, by Dr. D. Gulick and J. Scott, College Park, October 25, 1997, March 7, 1998, April 17, 1999
- *Chaotic Dynamics Workshop*, by Dr. D. Gulick and J. Scott, Montgomery College, Takoma Park, July 21–25, 1997
- *Differential Equations Workshop*, by Dr. G.J. Stuck et al., College Park, Nov. 9, 1996
- *Proposal Writing Workshop* at BSU, by Dr. A. Bridgewater from NSF, Oct. 22, 1996
- Developmental Mathematics Mini-Conference, Bowie State University, January 1996

**Professional Activities**

**Mentoring students' research projects:**

- Mr. Raymond Carson, *Initial survey of reformulations of the Riemann Hypothesis*, 2015–2016
- Mr. Raymond Carson, *On Farey sequences and related topics*, 2014–2015
- Ms. Sandra Maldonado (grad. student), *Hyperbolic geometry calculator II*, Spring 2003
- Ms. Jamila Williams, *MATLAB-based hyperbolic geometry calculator*, 2001–2002
- Mr. Omar Abdullah, *Theory of matrices and its applications*, 2000–2001
- Ms. Ogechi Onyewu, *Intermediate value property*, Spring 2000
- Mr. Ronald McCrae, *The Gibbs phenomenon*, 1999–2000
- Mr. Dan MacCarthy, *Matrix analysis approach to certain problems in linear optimization*, 1998–1999
- Mr. Kanchan Basnyat, *Applications of iterative methods to study certain problems in theory of dynamical systems*, 1997–1998

**Professional Activities**

**Other activities:**

- Translating texts of mathematical competition problems for High Schools (30 problems) and Middle Schools (20 problems) into Polish language, March 2020, 2021 and 2022. This international competition—the Purple Comet—draws the students from 60 countries, which use 24 different languages. The competition is ran by Drs. T. Andreescu and J. Kane (latter from the University of Wisconsin).
- EXPO poster exhibit, T. Marshall Library, April 1–12, 2019.
- Reviewer for Mathematical Reviews (since November 2013).
- Reviewed college textbooks for Addison Wesley Longman publishing company, International Thompson Publishing, and Harper Collins College Publishers 1996
- Developed and taught special programs in mathematics for experimental high school classes under the supervision of the Department of Mathematics of the University of Gdańsk, 1984–1988
- Participated in the XXVII Semester on Approximation Theory and Function Spaces, International Mathematical Banach Center of the Polish Academy of Sciences in Warsaw, Poland, Spring 1986
- Coached gifted and talented high school students towards the Mathematical Olympiads, Gdańsk, Poland, 1984–1987

<b>Professional Activities</b>	<p><b>Reviewed articles for research journals:</b></p> <p>Acta Mathematica Scientia, Acta Mathematica Hungarica, Annals of Operations Research, Antiquitates Mathematicae, Asia-Pacific Journal of Operational Research, Applied Mathematics Letters, Computational Optimization and Applications, Electronic Journal of Linear Algebra, European Journal of Operational Research, IMA Journal on Numerical Analysis, Intl. Journal on Computers and Mathematics, International Game Theory Review, Journal of Global Optimization, Journal of Mathematical Analysis and Applications, Journal of Optimization Theory and Applications, Journal of Symbolic Computation, Journal of the Nigerian Mathematical Society, Linear Algebra and Its Applications, Linear and Multilinear Algebra, Mathematics of Operations Research, Mathematical and Computational Applications, Mathematical Programming, Numerical Algorithms, Operations Research Letters, Optimization, Optimization Letters, Optimization Methods and Software, SIAM Journal on Control and Optimization, SIAM Journal on Optimization, SIAM Journal on Matrix Analysis and Applications, Studia Mathematica, Studia Historiae Scientiarum, Current Methodology and Applications of Sensitivity and Stability Analysis in Mathematical Programming (A.V. Fiacco, Ed.)</p> <p><b>Review of external research proposals:</b></p> <ul style="list-style-type: none"> <li>○ Submitted to the Division of Mathematical Sciences of the NSF, 2003</li> <li>○ Submitted to the EPSRC, United Kingdom, 2014</li> <li>○ <i>Structured nonnegative matrices, inverse problems and applications</i>, submitted to the Chilean Scientific Council, 2020</li> </ul> <p><b>Professional Activities</b></p> <p><b>Reading doctoral dissertations and master's theses:</b></p> <ul style="list-style-type: none"> <li>○ External examiner of Mr. S. Gokulraj doctoral dissertation <i>A study on linear and bi-linear games</i>, Department of Mathematics, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu, 610005, India, March 16, 2021</li> <li>○ External reader of Mr. Galamo Monkam's doctoral dissertation <i>The coefficients in the <math>n^{\text{th}}</math> iterative power of a formal power series</i>, Department of Mathematics, Morgan State University, Baltimore, USA, September 3, 2020</li> <li>○ External reader of a Ph.D. dissertation <i>The Study of Infinite Tensor Product Spaces and Their Applications</i>, by Ms. Golden Hayden, Department of Mathematics, Howard University, December 10, 2018</li> <li>○ External examiner and reader of Mr. Galamo Monkam proposal for a doctoral qualifying examination <i>Formal series and their applications</i>, Department of Mathematics, Morgan State University, Baltimore, USA, August 17, 2017</li> <li>○ External examiner and reader of a Ph.D. dissertation <i>Complementarity problems, variational inequalities and extended Lorentz cones</i>, by Mr. Guohan Zhang, School of Mathematics, The University of Birmingham, UK, June 23, 2017</li> <li>○ External reader of a Ph.D. dissertation <i>Some New Results on Complementarity Problems</i>, by K. Palpandi, Indian Institute of Technology Madras, Chennai, India, June 2017</li> <li>○ External reader of a Ph.D. dissertation <i>Spectral sets and functions on Euclidean Jordan Algebras</i>, by Mr. Juyoung Jeong, UMBC, April 2017</li> </ul>
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**Professional Activities**

**Reading doctoral dissertations and master's theses (cont.):**

- External reader of a Ph.D. dissertation *Positive operators, Z-operators, Lyapunov rank, and linear games over closed convex cones*, by Mr. Michael Orlitzky, UMBC, April 2017
- External reviewer of a Ph.D. dissertation *Foundations for Analysis on Banach Spaces*, by Mr. Timothy Myers, Department of Mathematics, Howard University, Nov. 22, 2016
- External examiner and reader of Mr. Michael Orlitzky proposal for a doctoral qualifying examination *On the value of a linear game relative to the Lyapunov rank of a proper cone*, Department of Mathematics and Statistics, UMBC, May 2015
- External examiner and reader of Mr. Juyoung Jeong proposal for a doctoral qualifying examination *On the Lyapunov Rank of Permutation Invariant Proper Cones and Spectral Cones*, Department of Mathematics and Statistics, UMBC, December 2014
- External reviewer of Mr. David Trott Ph.D. dissertation *Topheavy and special Bishop-Phelps cones, Lyapunov rank, and related topics*, Department of Mathematics and Statistics, Department of Mathematics and Statistics, UMBC, April 2014
- External examiner for Mr. David Trott a doctoral qualifying examination at the Department of Mathematics and Statistics, UMBC, May 2013
- *Linear Complementarity Problems over Symmetric Cones*, Ph.D. dissertation by Mr. I. Jeyaraman, Department of Mathematics, Indian Institute of Technology Madras, India, July 2011
- *Cone Complementarity Problems over  $R_+^n$  and  $S_+^n$* , Ph.D. dissertation by A. Chandrashekaran at Indian Institute of Technology, Madras, India, November 2009
- *A Geršgorin type theorem, spectral inequalities, and simultaneous stability in Euclidean Jordan algebras*, Ph.D. dissertation by Ms. Melania Moldovan, Department of Mathematics and Statistics, UMBC, April 2009
- *Geometric Optimization Problems with Applications to Ellipsoidal Approximations and Quasi-Newton methods*, Ph.D. dissertation by Ms. Filiz Gurtuna, Department of Mathematics and Statistics, UMBC, May 2008
- *Topics in Structured Convex Optimization and Nonlinear Programming*, Ph.D. dissertation by Ms. Olena Shevchenko, Department of Mathematics and Statistics, UMBC, April 2007
- External examiner for Ms. Filiz Gurtuna doctoral oral examination at the Department of Mathematics and Statistics, UMBC, October 2005
- *Properties of Some Matrix Classes in Linear Complementarity Theory*, Ph.D. dissertation by Mr. Arup Kumar Das, Indian Statistical Institute, Calcutta, India, July 2005
- *Some P properties for linear transformations on the Lorentz cone*, Ph.D. dissertation by Mr. Jiyuan Tao, Department of Mathematics and Statistics, UMBC, May 2004
- External examiner for Mr. Jiyuan Tao doctoral oral examination at the Department of Mathematics and Statistics, UMBC, October 2003
- *Nonparametric Measures of Dependence for Biometric Data Studies*, Ph.D. dissertation by Ms. Anna Osmoukhina, Dept. of Mathematics and Statistics, UMBC, April 2003
- *The P and Globally Uniquely Solvable properties in semidefinite linear complementarity problems*, Ph.D. dissertation by Ms. Yoon Song at the Department of Mathematics and Statistics, UMBC, May 2002
- *Some applications of H-differentiability to optimization, complementarity and variational inequality problems*, Ph.D. dissertation by Mr. Mohammad Tawhid, Department of Mathematics and Statistics, UMBC, May 2000

<b>Professional Activities</b>	<b>Reading doctoral dissertations and master's theses (cont.):</b> <ul style="list-style-type: none"> <li>○ <i>On characterizations of <math>P_0</math>- and <math>P</math>-properties in nonsmooth functions</i>, Master's thesis by Ms. Yoon Song at the Department of Mathematics and Statistics, UMBC, May 1999</li> <li>○ <i>Optimal stopping regions for a two-component change-point problem in continuous time</i>, Ph.D. dissertation by Mr. Zhiyuan Liang at the Department of Mathematics and Statistics, UMBC, Baltimore County, June 1998</li> <li>○ <i>Path-following interior point methods for LP and LCP</i>, Ph.D. dissertation by Mr. Detong Zhang at the Department of Mathematics and Statistics, UMBC, August 1996</li> <li>○ <i>Connectedness of Solution Sets in Linear Complementarity Problem</i>, Master's thesis by Ms. Cristen Jones at the Department of Mathematics and Statistics, UMBC, July 1996</li> </ul>
<b>Professional Activities</b>	<b>Portfolio review for tenure/promotion:</b> <ul style="list-style-type: none"> <li>○ Promotion portfolio evaluation of Dr. Mohammed A. El-shorbagy, Assistant Professor, Prince Sattam Bin Abdul Aziz University, Kingdom of Saudi Arabia, to the rank of the Associate Professor, April 2020.</li> <li>○ Dr. G. Ravindran, Associate Professor, Indian Statistical Institute, Kolkata, India, October 2019</li> <li>○ Dr. Mohamed Tawhid, Associate Professor, Department of Mathematics and Statistics, Thompson Rivers University, Department of Mathematics and Statistics, Kamloops, Canada, November 2013</li> <li>○ Dr. G. Ravindran, Associate Professor, Indian Statistical Institute, Kolkata, India, 2011</li> <li>○ Dr. Arup K. Das, Assistant Professor, Indian Stat. Institute, Kolkata, India, April 2011</li> <li>○ Dr. Mohamed Tawhid, Assistant Professor, Department of Mathematics and Statistics, Thompson Rivers University, Department of Mathematics and Statistics, Kamloops, Canada, November 2009</li> </ul>
<b>Professional Activities</b>	<b>Grants:</b> <ul style="list-style-type: none"> <li>○ <i>Application of iterative methods to study certain problems in the theory of dynamical systems</i>, grant proposal (\$7,000) approved for funding by the 1997–98 MIE Faculty Grants Program</li> <li>○ <i>Matrix analysis approach to certain problems in linear optimization</i>, grant proposal (\$7,000) approved for funding by the 1998–99 MIE Faculty Grants Program</li> <li>○ <i>Identifications of hindrances in learning process among students of selected service mathematics courses at Bowie State University</i>, CETL Summer Fellow Grant proposal service (\$4,700) approved for funding, April 2008</li> </ul>
<b>Research Interests</b>	Mathematical Optimization, Complementarity Problems and Variational Inequalities, Nonlinear Analysis, Functional Analysis, History and Philosophy of Mathematics
<b>Computer Skills</b>	Operating Systems: Windows 10, Windows NT, Unix/Linux Software: MATLAB, LINDO Applications: L <sup>A</sup> T <sub>E</sub> X, MS Office Application Suite, Blackboard, PeopleSoft

**Membership**

- American Mathematical Society (AMS, lifetime membership)
- Society for Industrial and Applied Mathematics (SIAM)
- Mathematical Optimization Society (MOS, lifetime membership)
- Polish Mathematical Society (lifetime membership)
- American Friends of the University of Warsaw, Inc. (AFUW)

**Professional Activities**

**Service:**

- Appointed an Advisory Editor of the *Studia Historiae Scientiarum*, a journal of the Polish Academy of Science (indexed in Scopus, DOAJ, ICI Master Journals List, among others), 2021–
- Appointed a member of the Editorial Board of the *Antiquitates Mathematicae*, a history of mathematics journal of the Polish Mathematical Society, 2021–
- Developed and brought to its final stage the Plus/Minus System of Grading at Bowie State University (pending a final approval by the Faculty Senate). The project started in 2011.
- Graduate Program Coordinator in Applied and Computational Mathematics, Graduate Council member, 1997–
- Departmental representative to the University Senate, 2019–
- Departmental alternate representative to the University Senate, 2009–2019
- Member at large of the University Senate, 2006–2009
- Departmental liaison to the BSU library, 1999–
- Member of the Academic Standards and Policies Committee, Fall 2005–
- Member of the Associate Provost Search Committee, Fall 2011
- Chairperson of the DVMT Task Force Committee, Fall 2007
- Chairperson of the Departmental Promotion Committee, Fall 2007
- Chairperson of the Chair Reaffirmation Committee, Spring 2008
- Chairperson of the Faculty Search Committee, Spring 2008
- Member of the Library Disaster Recovery Plan Committee, 2006–2007
- Member of the General Education Subcommittee, BSU Middle States Periodic Review, Spring 2005
- Member of the Provost Search Committee, Spring 2004
- Member of the Dean Search Committee, Spring 2004
- Member of the Campus Master Plan Committee, 2002–
- Member of the Faculty Council Technology Committee, 1999–2002, chair since 2001
- Member of the University Intellectual Property Committee, 2001–2002
- Member of the University Council at Bowie State University, 1997–1999
- Chair of the Middle States Library Self-Study Committee, 2000–2001
- Member of the University Assessment Committee, 2006–2008
- Member of the Information Technology Services Committee, 1997–1999
- Member of the Graduate Council Publications Committee, 1998–1999
- Member of the University Elections Committee, 1997–2000

**Professional Activities** **Service (cont):**

- Member of the Chair Search Committee, April–May 1997
- Member of the Faculty Search Committee, 1997, 1998, 1999, 2001, 2002, 2003, 2005
- Representative of the Department of Mathematics and Statistics of the University of Maryland Baltimore County to the Graduate Student Association, 1991–1993
- Member of the Board of the Polish Mathematical Society, Gdańsk Branch, 1986–1988

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