

MILE KRAJCEVSKI
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EDUCATION

- August 1987– January 1995 **Binghamton University**, New York, New York
PhD in Mathematics.
- September 1974 Year– June 1979 **St Cyril and Methodius University**, Skopje,
Macedonia
Bachelor of Science in Mathematics with an emphasis on education.

TEACHING ACTIVITIES

EXPERIENCE

- August 2013 – Present, University of South Florida (**Assistant Professor, Department of Mathematics and Statistics**)
Tampa, Florida
- August 2009 – May 2013 University of South Florida (**Senior Instructor, Department of Mathematics and Statistics**)
Tampa, Florida
- January 2008 – May 2008 University of Milano-Bicocca (**Visiting Scholar, Department of Mathematics and Applications**)
Milano, Italy
- January 2000 – May 2000 Wesleyan University (**Visiting Assistant Professor, Department of Mathematics and Computer Science**)
Middletown, Connecticut
- August 1995 – May 2009 University of South Florida (**Instructor, Department of Mathematics and Statistics**)
Tampa, Florida
- August 1988 – May 1993 Binghamton University- The State University of New York (**Teaching Assistant, Department of Mathematical Sciences**)
New York, New York

- August 1979 – July 1988 St Cyril and Methodius University (**Teaching Faculty, College of Natural and Mathematical Sciences**)
Skopje, Macedonia

AWARDS

Best Graduating Student of the Year 1979 at the Faculty of Natural and Mathematical Sciences. St Cyril and Methodius University, Skopje, Macedonia.

SCHOLARLY ACTIVITIES (GRANT WORK AND PUBLICATIONS)

GRANTS

2013 - 2019 Helios STEM Middle School Residency Program: Transforming STEM Teacher Preparation for the Transition Years. Total award \$2,736,000 by the Helios Education Foundation.

- 2013—2016 (Implementation Funding) **co-PI**, G. Kersaint (PI) Potter, R., Ellerbrock, C. R., Plank, L., Feldman, A (co-PIs)
- 2016—2019 (Continuation of the program funding, after positive review) **co-PI**, Cheryl Ellerbrock (PI), Potter, R., Plank, L., Feldman, A (co-PIs).

2016 Faculty Learning Community Calculus Mini-Grant, Florida Consortium of Metropolitan Research Universities, total award \$30,000. Helmsley Foundation, **Co-PI** (USF Team Chair, other team members: T. Bieske, B. Curtin, S. Rimbey, D. Savchuk)

2014 USF World Faculty Travel Mobility Grant, \$2,465 (**PI**)

August 2010 - July 2016 – USF Robert Noyce Science, Technology, Engineering and Mathematics (STEM) Scholars (NSF Grant DUE-1035273), \$1,200,000 (**Co-PI**) Gladis Kersaint (PI), Allan Feldman, Jeffery Ryan (Co-PIs).

2007–2009 Florida PROMiSE

This grant was funded by the USDOE and awarded by FLDOE Mathematics and Science Partnership Initiative, in partnership with three Florida Public Universities, four large school districts, HEC, NEFEC. Funded from the Florida Department of Education as three separate grant applications and awards. **Grant Partner.**

2007 Project ACE (Achievement through Content Experience)

Hillsborough County and the Florida Department of Education.

Designed and developed professional modules to improve Mathematics content knowledge for Elementary and Middle School Teachers. Total funding \$1,284,500 Subcontract to USF \$211,731. **Grant Partner.**

JOURNALS / PROCEEDINGS

- Krajčevski, M. (2001). *Tilings of the Plane, Hyperbolic Groups, and Small Cancellation Conditions*. Memoirs of the American Mathematical Society (No. 733)
- Krajčevski, M. (2003). Tilings and groups. In Nagib Callaos (Ed.) *The 7th World Multiconference on Systemics, Cybernetics and Informatics July 27-30, Proceedings, Volume XIII, Systemics, Cybernetics and Informatics: Technologies and Applications*, (pp. 79 – 85) . Orlando, FL.
- Bleiler, S. K., Thompson, D. R., & Krajčevski, M. (2014). Providing written feedback on students' mathematical arguments: proof validations of prospective secondary mathematics teachers. *Journal of Mathematics Teacher Education*, 17(2), 105-127.
- Jonoska, N., Krajčevski, M., & McColm, G.(2014). Languages associated with crystallographic symmetry. *Lecture Notes in Computer Science No. 8553* (pp. 216-229).
- Jonoska, N., Krajčevski, M., & McColm, G. (2016). Counter machines and crystallographic structures. *Natural computing*, 15(1), 97-113.
- Jonoska, N., Krajčevski, M., & McColm, G.(2016). Traversal Languages Capturing Isomorphism Classes of Sierpiński Gaskets. In Unconventional Computation and Natural Computation Proceedings, *Lecture Notes in Computer Science No. 9726* (pp. 155-167).
- Krajcevski, M. & Keene, K. (2017). Student's Inclination to Use Visual Images during Problem Solving. In *Proceedings of the 20th Annual Conference on Research in Undergraduate Mathematics Education* (pp. 1273-1278). San Diego, CA
- Sears, R., Butler, K., & Krajčevski, M. (2017). The integration of technology in model eliciting activities to support mathematical reasoning. *Dimensions in Mathematics*, 37(2), p. 16-27.
- Beneteau, C., Bleiler-Baxter, S., K., Kersaint, G., Krajcevski, M., & Thompson, D. R. (2017). Multiple perspectives on collaborative teaching: Mathematicians, mathematics teacher educators, and students. In L. West & M. Boston (Eds), *Annual Perspectives in Mathematics Education (APME): Reflective and Collaborative Processes to Improve Mathematics Teaching* (pp. 247-260). Reston, VA: National Council of Teachers of Mathematics.
- Kardes, D., Krajcevski, M., & McColm, G. (2018). Assessing Visual Literacy Competency in Undergraduate Mathematics. In *Proceedings of the 21th Annual Conference on Research in Undergraduate Mathematics Education* (pp. 1450-1457) San Diego, CA.

Cannon, M., & Krajcevski, M.(2018). On prevalence of images in high school geometry textbooks. *Proceedings of the Second International Conference on Mathematics Textbooks*. Rio de Janeiro, Brazil (Accepted)

Krajcevski, M., Sears, R.,(2018). Common Visual Representations as a Source for Misconceptions of Pre-service Teachers in a Geometry Connection Course. *International Journal for Mathematics Teaching and Learning* (Accepted)

OTHER RESEARCH ACTIVITIES

Ensuring pre-service secondary teachers are prepared for state certification exams
<https://www.pearsoned.com/teachers-prepared-certification-exams/>

Checklist for Scaling Up a Student Learning Initiative in Mathematics
<https://www.pearsoned.com/checklist-for-scaling-up-a-student-learning-initiative-in-mathematics/>

Math Talk That Builds Understanding: Explain, Justify and Validate
<https://www.pearsoned.com/math-talk-that-builds-understanding-explain-justify-and-validate/>

INVITED TALKS

Krajcevski, M. (2014, June 6-9). Challenges with Using Visual Representations in Undergraduate Mathematics. Presented at the 2014 Canadian Mathematical Society Summer Meeting. Manitoba, Canada.

Krajcevski, M. (2013, October) Visual Proofs in Mathematics. Invited lecture at the University of Tampa, Tampa, FL.

Krajcevski, M. (2008, January) Hyperbolic Geometry and Tiling. Invited presentation at the University of Milano-Bicocca. Milano, Italy.

Krajcevski, M. (2000, January). Geometry of Group Presentations. Invited Presentation at Wesleyan University. Middletown, CT.

CONFERENCES (Since 2009)

Krajcevski, M. (2018, August 1-4) Drawing-to-Learn Activity as a Cognitive Tool in Undergraduate Mathematics, Presented at MAA MathFest, Denver, CO.

- Krajčevski, M & Sears, R. (2018, June 14 -15) Common Visual Representations as a Source for Misconceptions in Geometry Connection Course. Poster presentation at Geometry for Secondary Teachers Conference, Ann Arbor, MI
- Krajčevski, M. (2018, February 9-10). Navigating Mathematical Formalism Through Visualization in Undergraduate Linear Algebra. Presented at the Joint Meetings of the Florida Section of MAA. Davie, FL.
- Krajčevski, M. (2018, January 10-13). Investigating Drawing as a Cognitive Strategy in Undergraduate Linear Algebra Course. Presented at the 2018 Joint Mathematics Meetings, MAA. San Diego, CA.
- Krajčevski, M., & Kardes, D. (2017, July 26-29). The Use of Drawing as a Cognitive Tool in Undergraduate Mathematics. Presented at the 2017 MAA MathFest. Chicago, IL.
- Cannon, M. & Krajčevski, M. (7-10, May 2017) On Prevalence of Images in High School Geometry Textbooks, Presented at the II International Conference on Mathematics Textbook Research and Development ICTM 2, Rio de Janeiro, Brazil.
- Krajčevski, M. & Keene, K. (2017, February 23-25). Student's Inclination to Use Visual Images During Problem Solving. Presented at the SIGMAA – RUME Conference on Research in Undergraduate Education. San Diego, CA.
- Cannon, M. & Krajčevski, M. (2016, December 2). Prevalence of Typical Images in High School Geometry Textbooks. Presented at the MAA-41st FL Suncoast Regional Meeting. St. Petersburg, FL.
- Beneteau, C., Bleiler-Baxter, S., Kersaint, G. & Krajčevski, M., (2016, July). Navigating Co-Teaching: Perspectives from Mathematicians, Mathematics Educators, and Students. Presented at the 13th International Congress on Mathematical Education. Hamburg, Germany.
- Krajčevski, M. (2016, January 5-9). Students' Inclination to Incorporate Sketches During Problem Solving. Presented at the AMS Joint Mathematics Meeting. Seattle, WA.
- Krajčevski, M., & Sears, R. (2015, October 24). Pre-Service Teachers' Misconceptions About Visual Representations of Altitude, Median and Angle Bisector of a Triangle. Presented at the Fall Western Sectional Meeting of AMS. Fullerton, CA.
- Krajčevski, M. (July, 2015). Guest Lecturer for the course Computational Hydraulics at the Department of Integrated Water Systems and Governance, UNESCO-IHE Institute for water Education. Delft, The Netherlands.
- Krajčevski, M. (2015, January 10-13). Do Typical Visual Representations Obstruct Mathematical Cognition?. Presented at the AMS Joint Mathematics Meeting. San Antonio, TX.

- Jonoska, N., McColm, G., & Krajčevski, M. (2014, July 14–18). Languages Associated with Crystallographic Structures. 2014 UCNC London. Ontario, Canada.
- Jonoska, N., McColm, G., & Krajčevski, M. (2014, March 29-30). Crystallographic Structures and Intersection Hierarchy of Context-free Languages. Presented at the AMS Spring Eastern Sectional Meeting during Special Session on Discrete Geometry in Crystallography. Maryland, Baltimore.
- Krajčevski, M. (2014, February 21-22). The Role of Visualization in Undergraduate Mathematics. Presented at the MAA Florida Section Meeting. Fort Myers, FL.
- Kersaint, G., Sears, R., & Krajčevski, M. (2014, February 5-8). Partnership to Design a Middle School Mathematics Teacher Preparation Program from the Ground Up. Presented at the 2014 Annual Association of Mathematics Teacher Educators (AMTE) Conference. Irvine, CA.
- Bleiler, K. S., Thompson, R. D., & Krajčevski, M. (2013, April). Strengths and Weaknesses of Preservice Secondary Teachers' Proof Validation. Presented a poster at the NCTM Annual Meeting, Research Pre-session. Denver, CO.
- Bleiler, K. S., Thompson, R. D., & Krajčevski, M. (2013, January). Lesson Learned from a Teaching Experiment Focused on Proof Validation. Presented at the AMS Joint Mathematics Meeting. San Diego, CA.
- McColm, G., Krajčevski, M., & Jonoska, N. (2012, June). Languages Associated with Crystallographic Structures. Presented at the Turing Centenary Conference, CiE 2012: How the World Computes. Cambridge, UK.
- Krajčevski, M. (2011, February). Random Groups. Presented at the MAA 44th Annual Meeting. Orlando, FL.
- Bleiler, S., Kersaint, S. K., & Krajčevski, M. (2011, January). Differing views on assessment: Two instructors' strategies for modeling assessment techniques for prospective secondary mathematics teachers in an upper level team-taught geometry course. Presented at the AMS Joint Mathematics Meeting. New Orleans, LA.
- Kersaint, G. & Krajčevski, M., (2010, June). Collaborative Effort between a Mathematician and a Mathematics Teacher Educator to Enhance the Mathematics Preparation of Teachers. Presented at the Science and Mathematics Teacher Imperative 2010 National Conference. Cincinnati, OH.
- Krajčevski, M. (2009). Cayley Graphs - an Attempt to Visualize a Group. Presented at the MAA Suncoast Regional Meeting XXXIV. Lakeland, Florida

COURSE COORDINATION

August 2006– May 2009- University of South Florida, Tampa, Florida
MAC1147 Precalculus Algebra and Trigonometry

August 2006– May 2009- University of South Florida, Tampa, Florida
MAC1114 Trigonometry

August 2003– May 2006- University of South Florida, Tampa, Florida
MAC1105 College Algebra

Roles and responsibilities as the Course Coordinator included the following:

- Assign instructors to courses
- Select curriculum materials and relevant tasks to be used in the course
- Create syllabus, and assessment measures
- Evaluate course equivalency to other institutions
- Meet with various individuals to discuss means to promote student success
- Identify criteria for pre-requisites for the course

LIAISON

August 2009– Present- University of South Florida, Tampa, Florida
Department of Mathematics and Statistics and the Department of Secondary Education

- Modify existing mathematics courses traditionally offered to the College of Education students
- Create new courses for newly established middle school teacher preparation programs

COURSE DEVELOPMENT

Design of new undergraduate and graduate courses, and also facilitated course redesign efforts. The list of courses includes:

- MTG 4214 Modern Geometry (redesigned the content)
- MTG 3212 Geometry (designed course for COE students)
- MTG3207 Geometry Connections (newly designed course for Preservice Middle School teachers)
- Visual Complex Analysis (newly designed special topic course)
- Visual Topology (newly designed special topic course)
- Visual Algebra (newly designed special topic course)
- MAE 5935 Teaching College Mathematics (newly designed course for the graduate mathematics program)

MENTORSHIP

- Supervised a postdoctoral scholar: Dr Deniz Kardes Birinci
- Supervised master thesis: Megan Cannon, graduated 2017.
- Honors Thesis supervision: Ricardo Carrion-Carrero, Marai Roque Solares
- Member committee member: two PhD candidates, three master's theses.

Teaching Supervision

- Supervised teaching assistants
- Coordinated Teaching Seminars to improve the teaching proficiency of our teaching assistants from 1995 to 2017.

PROFESSIONAL AND SERVICE ACTIVITIES

SERVICE AT THE UNIVERSITY OF SOUTH FLORIDA

Pi Mu Epsilon

- Permanent correspondent of Florida Epsilon Chapter.

USF Math Club

- Faculty sponsor and advisor.

Undergraduate Committee

- Development of new courses and curricula

Nagle Lecture Series Committee

- Co-chair of the committee during 2004-2005, and 2013-2014.

College of Arts and Sciences

- Undergraduate advisor 2000-2001.

College of Education Search Committee

- Member of two tenure-track positions Search Committees at College of Education, Department of Secondary Education, 2011 and 2012.

PROFESSIONAL SERVICE

Organized Special Session on Visualization in Mathematics:

Perspectives of Mathematicians and Mathematics Educators, I & II. (January 10-13, 2018) at the Joint Mathematics Meetings of AMS, San Diego. CA, (with Karen Keene).

Officer of the Florida Section of the Mathematical Association of America, 2017-2018
VP- Elect for Programs

Organized a workshop: Visualizing Mathematical Notions Through Freehand Drawing (2017, February 17-18), at the Joint Annual Meeting of MAA-Florida Section. Bradenton, FL.

Organized Mini Symposium: Mathematical Crystallography I-IV, at the SIAM Conference on Mathematical Aspects of Material Science. Philadelphia, PA 2016, May 8-12 (with McColm, G., Jean-Guillaume, E., & Senechal, M)

Founding member of the Center for the Improvement of Teaching and Research in Undergraduate STEM Education (CITRUS) (2014- Present)

Manuscript Reviewer for Math and Art, An Introduction to Visual Mathematics by Sasho Kalajdzievski, CRC Press, 2008.

MEMBERSHIPS

- American Mathematical Society
- Mathematical Association of America
- National Council of Teachers of Mathematics
- Pi Mu Epsilon, National Honorary Mathematics Society