Maggy Tomova

Dean, College of Sciences
Vice Provost for Strategic Initiatives
University of Central Florida
CURRICULUM VITAE

EDUCATION AND PROFESSIONAL HISTORY

Higher Education

2022	**M.B.A.,** concentration in finance**,** University of Nebraska, Lincoln
2005	**Ph.D.,** Mathematics, University of California, Santa Barbara
2005	**Certificate in College and University Teaching**, University of California, Santa Barbara
1999	**B.S.**, Mathematics and Biochemistry, California Lutheran University

Professional and Academic Positions

2024 – present	**Vice Provost** for Strategic Initiatives, University of Central Florida
2021 – present	**Dean**, College of Sciences, University of Central Florida
2020 – 2021	**Associate Dean for the Natural, Mathematical, and Social Sciences,** College of Liberal Arts and Sciences, The University of Iowa
2017 – 2019	**Chair (DEO) and Professor**, Mathematics, The University of Iowa
2012 – 2017	**Associate Professor**, Mathematics, The University of Iowa
2008 – 2012	**Assistant Professor**, Mathematics, The University of Iowa
2007 – 2008	**Evans Instructor**, Mathematics, Rice University
2005 – 2007	**Visiting Assistant Professor**, Mathematics, The University of Iowa

ADMINISTRATIVE AND LEADERSHIP EXPERIENCE

2024 to present **Vice Provost for Strategic Initiatives,** University of Central Florida

The University of Central Florida is an R1, Hispanic-serving, metropolitan institution with about 70,000 students. The University has climbed 66 spots in the *US News and World Report* rankings since 2018, one of the fastest ascents in the country. As a Vice Provost for Strategic Initiatives, I have accomplished the following

- **Four-year graduation rate**: I lead the effort to reach 60% four-year graduation rate by summer 2025 which will qualify UCF to be a preeminent institution in Florida. I lead a team of key stakeholders, coordinate the efforts of the advising office and the colleges, and review current University policies that affect student success.
- **Annual Evaluations for Faculty**: I co-lead (with the Vice Provost for Faculty Excellence) the rewriting of the departmental documents governing the annual evaluation of faculty across the University. The Provost initiated a campus-wide review of these documents with the goal of aligning them with our increased expectations in both research and student success.

- **General Education Program:** I lead a task force to revise the University's general education program. The first round of updates is expected to be implemented in the next few months. A second round of updates, which requires Board approval, is expected to be implemented in Fall 2025
- **New Research Building:** The Vice President for Research and I were the academic representatives on the leadership group, setting priorities, assisting with fundraising, and selecting an architect for a new research building. We are currently in the design phase.

2021 to present **Dean, College of Sciences, University of Central Florida**

The College of Sciences at UCF has about 430 faculty, 15,000 undergraduates and 10 Departments and Schools spanning the Natural, Mathematical, and Social Sciences. All units have PhD programs. Some of our recent accomplishments are:

- **Supporting research:** Increased research funding from $25M before I started my position to an average of $36M in the last two years after implementing new policies and incentives.
- **Investing in Faculty:** Introduced a seed-funding program to support interdisciplinary research, faculty recognitions for exceptional accomplishments in research or teaching, and salary increases for top faculty in addition to our annual raises.
- **Investing in graduate education:** Invested about a million dollars to increase graduate student stipends to bring them to a competitive level.
- **Supporting student success:** Working with departments to improve student success in challenging classes. Our 4-year graduation rate has increased by 7 percentage points. I also set-up a College Ambassador program, launched a Student Mentoring program, and introduced a new Inclusive Design badge for classes that are welcoming to all learners.
- **Empowering staff:** Formed Staff Council, the first body in the College that represents the interests of staff and gives staff an opportunity to contribute their ideas for the well-being of the College.
- **Fiscal Management:** Responsible for a budget of about $80M in an RCM-type environment.
- **Development:** I work with six dedicated development staff in the College (they report to the Foundation) and with a strategic communication team (they report to me) to build a pipeline of supporters. Giving to the College has increased from $1.5M when I started as Dean to an average of $7.5M in the last two years.

Jan. 2020 –2021 **Associate Dean for the Natural, Mathematical, and Social Sciences in the College of Liberal Arts and Sciences, the University of Iowa.**

The University of Iowa is an R1, AAU, state flagship institution with approximately 30,000 students. The College of Liberal Arts and Sciences is the largest College with 38 departments. My portfolio consisted of 18 departments including 440 faculty, 1100 graduate students, and 9000 undergraduates. The total budget of my departments was $76M. My focus was on faculty recruitment and development and the overall success of the departments. I collaborated with the Associate Deans for Research, Undergraduate Education, and Graduate Education, as well as with Finance and Human Resources. Some of my duties as Associate Dean were:

- **COVID**: Managed transitions into quarantine and then transitions back to in-person research and teaching during the COVID crisis.
- **Promotion and Tenure:** Led the Promotion and Tenure Committee discussions for faculty in my portfolio. Drafted promotion and tenure decision letters for the Dean.
- **Hiring faculty:** Made recommendations to the Dean regarding faculty hiring in the departments in my portfolio.

- **Fiscal Management:** Oversaw the budgets of my departments in a period of budget declines.
- **Parental leave policy:** I championed the creation of the first parental leave policy adopted by the College.

2017 – 2019 **Chair (Department Executive Officer) of Mathematics, the University of Iowa**

During my time as Chair, the Mathematics Department had 32 tenure-track faculty, eight instructional-track faculty, eight to ten visiting faculty, and approximately 90 graduate students. We taught 36,000 semester credit hours per year and provided service classes to students in the College of Liberal Arts and Sciences as well as to students in Engineering, Business, and Nursing. While I was Chair, I implemented several new initiatives:

- **An incentive program to increase the research productivity of faculty:** I implemented a tiered system for the number of semester hours faculty teach based on their research productivity measured by the quantity and quality of their publications as well as by their external funding. The system had three tiers making it achievable for faculty to improve. This initiative had broad support among the faculty and the administration. The system was implemented in Fall 2019.
- **Recruitment of outstanding faculty with diverse backgrounds**: I recruited three mathematicians for tenure-track positions, two of them female. This improved tremendously the gender diversity in the Department (increasing it to 30% of the tenure-track faculty being women; nationally the number for large public math departments is 16.5%) and strengthened the Department's research profile.
- **Fundraising:** I worked with the UI Foundation to secure a gift of $350,000 for the Department's graduate program and an additional bequest of $2.8 million dollars. I met with the donor to answer his questions and to help him decide on how to best structure his gift. I also worked with a different donor to adjust the conditions of her gift to allow the Department to use it to meet its needs.

2011 – 2015 **Founder and Director, Summer Math Institute**

I created and directed a two-week summer program for local high school students who qualified for free or reduced lunches. Most of the students had parents who had not gone to college and most were members of underrepresented ethnic groups. The Institute was funded by the National Science Foundation and I was the grant's Principal Investigator.

Leadership Training

2022 **CASS Seminar for New Deans,** Council of Colleges of Arts and Sciences
2020 – 2021 **Academic Leadership Program (ALP) fellow,** Big Ten Academic Alliance
2017 **Department Executive Officer (Chair) Seminars fellow,** Big Ten Academic Alliance
2017 – 2018 **DEO (Chair) Leadership Development Program**, The University of Iowa

Honors and Awards

2012 – 2014 **Dean's Scholar**, The University of Iowa
2011 – 2017 **NSF CAREER grant** recipient

EXTERNAL FUNDING

2021 – 2024 *Collaborative Research: RUI: Connecting spatial graphs to links and 3-manifolds*. Funded by the National Science Foundation and EPSCoR. Award amount: $217, 223. Co-Principal Investigator.

2019 –2024 *NOYCE: Recruiting and Training Community College and University Students to Become Culturally Responsive and Proficient Mathematics Teachers in Iowa.* Award Amount: $1,233,606. Co-Principal Investigator.

2017 – 2022 *FRG: Collaborative Research: Trisections – New Directions in Low-Dimensional Topology.* Funded by the National Science Foundation. Award Amount: $218,000. Principal Investigator.

2011 – 2017 *CAREER: New approaches to classical knot invariants.* Funded by the National Science Foundation. Award amount: $405,893.00. Principal Investigator.

2016 – 2016 *Advances in Quantum and Low-Dimensional Topology* Award amount: $30,000.00 (with Caprau, Cooper, and Russel).

2011 – 2013 *Applications of Thin Position to Uniqueness Problems* Funded by American Institute of Mathematics (with Blair, Campisi, Johnson, and Taylor).

2011 – 2013 *USTARS (Underrepresented Students in Topology and Algebra Research Symposium* Funded by NSF. Co-Principal Investigator.

2007 –2011 *Special surfaces in knot complements.* Funded by the National Science Foundation. Award amount: $90,238.00, Principal Investigator.

2009 *Geometric topology in three and four dimensions* Funded by National Science Foundation. Award amount: $25,000.00. Co-Principal Investigator.

TEACHING

Student Advising

CHAIR OF PHD COMMITTEE

2016 – 2021 Pongtanapaisan, Puttipong
2016 – 2021 Aranda, Roman
2016 – 2021 Rodman, Daniel
2012 – 2016 Grove, Colin
2011 – 2013 Watkins, Amanda
2011 – 2013 Benson, Katie
2010 – 2012 Schirmer, Trent
2009 – 2012 Zupan, Alex

Other Teaching Activities

2005 – 2011 Assistant Director and Research Mentor, Research Experience for Undergraduates (summer program), California State University Channel Islands

SCHOLARSHIP

Publications

1. Blair, R., Campisi, M., Taylor, S., Tomova, M. (2021) Kirby-Thompson distance for trisections of knotted surfaces. Accepted. J of the London Math. Soc.

2. Taylor, S., Tomova, M. (2021) Tunnel number and bridge number of composite genus 2 spatial graphs. Accepted. Pacific Journal of Mathematics.

3. Castro, N., Islambouli, G., Miller, M., Tomova, M. (2021) The relative L-invariant of a compact 4-manifold. Accepted. Pacific Journal of Mathematics.

4. Blair, R., Campisi, M., Taylor, S., Tomova, M. (2019) Distortion and the bridge distance of knots. Accepted. *Journal of Topology*

5. Taylor, S., Tomova, M. (2018) Thin position for knots, links, and graphs in 3-manifolds. *Algebraic and Geometric Topology* 18: 1361-1409.

6. Taylor, S., Tomova, M. (2018) Additive invariants for knots, links and graphs in 3-manifolds. *Geometry and Topology* 22(6): 3235-3286.

7. Aranda, R., Kim, S., Tomova, M. (2018) Representativity and waist of cable knots. *Journal of Knot Theory and Its Ramifications* 27(4).

8. Blair, R., Campisi, M., Johnson, J., Taylor, S., Tomova, M. (2017). Exceptional and cosmetic surgeries on knots. *Mathematische Annalen*. 367: 581-622.

9. Blair, R., Campisi, M., Johnson, J., Taylor, S., Tomova, M. (2017). Neighbors of knots in the Gordian Graph. *American Mathematical Monthly*. 124: 4-23.

10. Blair, R., Campisi, M., Johnson, J., Taylor, S., Tomova, M. (2016). Distance two links. *Geometriae Dedicata*, *180*(1), 17-37.

11. Blair, R., Futer, D., Tomova, M. (2015). Essential surfaces in highly twisted link complements. *Algebraic and Geometric Topology*, *15*(3), 1501-1523.

12. Morris-Rivera, M., Tomova, M., Wyels, C., Yeager, A. (2015). The radio number of C_n-C_n. *Ars Combinatoria*, *120*, 7-21.

13. Taylor, S., Tomova, M. (2013). C-Essential surfaces in (3-manifold, graph) pairs and levelling edges of Heegaard spines. *Communications in Analysis and Geometry*, *21*(2), 259-330.

14. Blair, R., Tomova, M., Yoshizawa, M. (2013). High distance bridge surfaces. *Algebraic and Geometric Topology*, *13*, 2925-2946.

15. Benson, K., Porter, M., Tomova, M. (2013). The radio numbers of all graphs of order n and diameter n – 2. *Le Matematiche*, *68*(2), 167-190.

16. Blair, R., Tomova, M. (2013). Width is not additive. *Geometry and Topology*, *17*(1), 93-156.

17. Canales, D., Tomova, M., Wyels, C. (2013). A gap in the achievable radio number line. *AKCE Int. J.Graphs Comb., 10*(4), 349-357.

18. Taylor, S., Tomova, M. (2012). Heegaard surfaces for certain graphs in compression bodies. *Revista Matematica Complutense*, *25*(2), 511-555.

19. Blair, R., Tomova, M. (2011). Companions of the unknot and width additivity. *Journal of Knot Theory Ramifications*, *20*(4), 497-511.

20. Johnson, J., Tomova, M. (2011). Flipping bridge surfaces and bounds on the stable bridge number. *Algebr. Geom. Topology*, *11*(4), 1987-2005.

21. Tomova, M., Wyels, C. (2011). Pebbling graph products. *Ars Combinatoria*, *98*, 493-499.

22. Martinez, P., Ortiz, J., Tomova, M., Wyels, C. (2011). Radio numbers for generalized prism graphs. *Discussiones Mathematicae Graph Theory*, *31*(1), 45-62.

23. Tomova, M. (2009). Cut-disks for level spheres in link and tangle complements. *Topology and Its Applications*, *156*(4), 783-794.

24. Szaniszlo, Z., Tomova, M., Wyels, C. (2009). The N-queens problem on a symmetric Toeplitz matrix. *Discrete Math.*, *309*(4), 969-974.

25. Tomova, M. (2009). Thin position for knots in a 3-manifold. *Journal of Lond. Math. Soc*, *80*(1), 85-98.

26. Scharlemann, M., Tomova, M. (2008). Conway products and links with multiple bridge surfaces. *Michigan Math. Journal*, *56*(1), 113-144.

27. Tomova, M. (2008). Distance of Heegaard splittings of knot complements. *Pacific J. Math.*, *236*(1), 119-138.

28. Scharlemann, M., Tomova, M. (2008). Uniqueness of bridge surfaces for 2-bridge knots. *Math. Proc. Cambridge Philos. Soc.*, *144*(3), 639-650.

29. Tomova, M. (2007). Multiple bridge surfaces restrict knot distance. *Algebr. Geom. Topol.*, *7*(2), 957-1006.

30. Scharlemann, M., Tomova, M. (2006). Alternate Heegaard genus bounds distance. *Geometry and Topology*, *10*(1), 593-617.

31. Tomova, M. (2006). Compressing thin spheres in the complement of a link. *Topology Appl.*, *153*(15), 2987-2999

Selected Invited Lectures and Conference Presentations

2023 *Genus 1 Bridge Numbers of Satellite Knots*, UNAM, Merida, Mexico
2020 Speaker at the Distinguished Women in Math speaker series, UT Austin
Properties of Knots in Thin Position
Generalizing classical invariants to achieve additivity
2020 *Generalizing classical knot invariants*, Fico González-Acuña Low Dimensional Topology Seminar, Mexico
2019 *Distortion and the Bridge Distance of Knots*, Georgia Topology Conference
2018 Panelist, Nebraska Conference for Undergraduate Women in Mathematics
2016 *A width is additive*, Georgia Topology Conference, University of Georgia
2015 *Neighbors of knots in the Gordian graphs*, AMS Sectional meeting, Fullerton
2015 *High distance knots are well behaved*, Midwest Women in Mathematics Symposium
2014 *Highly twisted knot diagrams*, Brigham Young University
2014 *Knot Diagrams and Essential Surfaces*, Michigan State University
2014 *Obtaining Topological Information from Knot Diagrams*, Oklahoma State University
2013 *Thin Position, Special Surfaces and Edge Leveling*, UT Austin
2013 *Progress on the Cabling Conjecture*, AMS Meeting, Iowa State University
2013 *Distances and the Cabling Conjecture*, Hempelfest, Rice University
2012 *Cosmetic Surgery*, Bradley University Colloquium
2012 *High Distance Bridge Surfaces and their Applications*, Syracuse University
2011 *Flipping bridge surface*, Washington University, St Louis, Missouri
2011 *Width is not additive*, AMS Sectional meeting, Special Session on Invariants in Knot Theory and Low-dimensional Topology, Lincoln, Nebraska
2011 *Flipping bridge surfaces and bounds on the stable bridge number*, AMS Sectional Meeting on Geometry and Applications of 3-Manifolds, Worcester, Massachusetts
2011 *Flipping bridge surface*, Topology Seminar, University of California, Santa Barbara

Editorial Boards:

2017– present Algebraic and Geometric Topology

Scientific Committee:

2019 7th Midwest Women in Mathematics Symposium

Community Outreach

2019 – 2020 Organizer, free math tutoring for children of immigrant families.
2016 – 2017 Organizer, Saturday Math Fun for elementary school students.