Approved by the Regents
May 16, 2019

PROMOTION RECOMMENDATION
The University of Michigan-Dearborn
College of Arts, Sciences, and Letters

Yulia N. Georgieva-Hristova, assistant professor of mathematics, Department of Mathematics and Statistics, College of Arts, Sciences, and Letters, is recommended for promotion to associate professor of mathematics, with tenure, Department of Mathematics and Statistics, College of Arts, Sciences, and Letters.

Academic Degrees:

Ph.D.	2010	Mathematics, Texas A&M University, College Station, TX
B.S.	2002	Mathematics, Sofia University, Sofia, Bulgaria

Professional Record:

2012 – present	Assistant Professor of Mathematics, Department of Mathematics and Statistics, University of Michigan-Dearborn
2010 – 2012	Post-doctoral Associate, Institute for Applied Mathematics and its Applications, University of Minnesota, Minneapolis, MN

Summary of Evaluation:
Teaching: Professor Georgieva-Hristova's teaching is rated excellent. Professor Georgieva-Hristova has taught 21 lower division courses, six upper division courses, and three independent study courses since joining the faculty in fall 2012. Student assessment of her courses is high in terms of their average numerical responses; the open-ended comments praise her enthusiasm, passion, knowledge, ability, and student engagement. Technology plays an integral part of her teaching in the form of online homework (WeBWorK), use of software including MATLAB, and course management systems (Canvas).

Research: Professor Georgieva-Hristova's research is rated excellent. Professor Georgieva-Hristova's publication record is strong in terms of both quantity and quality.

Recent and Significant Publications:

Dong, B., Gottlieb, B., Hristova, Y., Jiang, Y., and Wang, H., "The Effect of the Sensitivity Parameter in Weighted Essentially Non-oscillatory Methods," In S. Brenner (Ed.), Topics in Numerical Partial Differential Equations and Scientific Computing, The IMA Volumes in Mathematics and its Applications, vol. 160, Springer New York, 2016, pp. 23-50.

Olson A., Ciabatti, A., Hristova, Y., Kuchment, P., Ragusa, J. and Allmaras, M., "Passive Detection of Small Low-Emission Sources: Two-Dimensional Numerical Case Studies," *Nuclear Science and Engineering*, Vol 184, no. 1, 2016, pp. 125-150.

Hristova, Y. and Zeytuncu, Y., "Why do We Need the Derivative for the Surface Area?" *PRIMUS*, 2015, DOI: 10.1080/10511970.2015.1095263.

Hristova, Y., Moon, S. and Steinhauer, D., "A Radon-type transform arising in Photoacoustic Tomography with circular detectors: spherical geometry," *Inverse Problems in Science and Engineering*, 2015, DOI:10.1080/17415977.2015.1088537.

Hristova, Y., "Inversion of the V-line transform arising in emission tomography," *Journal of Coupled Systems and Multiscale Dynamics*, Vol 3, no. 3, 2015, pp. 272-277.

Allmaras, M., Darrow, D., Hristova, Y., Kanschat, G. and Kuchment, P. "Detecting small low emission radiating sources," *Inverse Problems and Imaging*, Vol 7, no. 1, 2013, pp. 47-79.

Service: Professor Georgieva-Hristova's service is rated excellent. Her service contributions at the department level include serving on the Department Executive Committee, twice on the Faculty Search Committee, Turfe Distinguished Lecture Series Committee, Department Website Committee, Department LEOs I & II Review Committee, and Department Library Liaison. In addition, she organized or co-organized several professional meetings or conferences including the SIAM (Society for Applied and Industrial Mathematics) Great Lakes Section Spring Meeting in 2016.

External Reviewers:

Reviewer A: "Dr. [Georgieva-]Hristova has a solid publication record, which is particularly impressive given the high teaching load of the faculty at your department. Her work has been published in the best journals of our field and is highly cited in contemporary literature on the subject… To summarize, Dr. [Georgieva-]Hristova is an excellent applied mathematician, who is recognized and well respected in her field around the world. I am sure that she will continue to produce mathematical work of excellent quality for a very long time to come, and is a great asset to your applied mathematics group."

Reviewer B: "Dr. [Georgieva-]Hristova has by now published papers in three different areas of mathematics. I find this impressive for an assistant professor… Overall, it appears to me that Dr. [Georgieva-]Hristova has an ascending research trajectory. She continues to work on the (tomographic) imaging problems where she started, but has branched out with contributions in several new areas as well."

Reviewer C: "Dr. Yulia [Georgieva-]Hristova is well-established researcher in the field of inverse problems and she contributed with important results in the last couple of years. In particular, she established important results in thermoacoustics tomography (inversion of the special Radon transform) and Compton camera imaging (inversion of the V-line transform)…Yulia well contributes to our research community in terms of refereeing papers and organizing workshops. She also regularly participated with scientific talks at leading conferences and workshops. I consider her reputation comparable to other well-established researchers in her peer group who are working in the same field. I expect Yulia will continue with important contributions to the scientific community in the future."

Reviewer D: "All in all, I believe that Yulia [Georgieva-]Hristova has made several good contributions to the field of inverse problems. She is a mature researcher, capable both of fine numerical work and careful analytical studies. Her research interests are quite diverse, covering

several modalities of medical and homeland-security imaging, graph theory, and finite difference WENO schemes."

Reviewer E: "Dr. [Georgieva-]Hristova's commitment to undergraduate education is demonstrated by the PRIMUS paper…Dr. [Georgieva-]Hristova is clearly very collaborative but has at least two single-author papers… In summary, Dr. Yulia [Georgieva-]Hristova is a productive, collaborative applied mathematician and has already demonstrated scientific breadth."

Reviewer F: "Her mathematics is at a high level and she has written important articles. She has a promising research trajectory, and I feel sure she will continue to produce excellent mathematics… Her accomplishments are comparable to many of the people I evaluate for tenure at research universities, and her success is especially impressive since she has more teaching duties and other demands."

Reviewer G: "[5], [10] are her best works… This line of research is respectable, and good results are hard to obtain… Summarizing, Dr. [Georgieva-]Hristova has averaged over one publication per year since she joined UM-Dearborn."

Summary of Recommendation:
Professor Georgieva-Hristova has been rated excellent in the areas of teaching, research, and service. She has been an outstanding instructor in the classroom and has done some cutting-edge research work with her collaborators. She has made important service contributions to the department and to the professional community. We are very pleased to recommend, with strong support of the College of Arts, Sciences, and Letters Executive Committee, Yulia N. Georgieva-Hristova for promotion to associate professor of mathematics, with tenure, Department of Mathematics and Statistics, College of Arts, Sciences, and Letters.

Martin J. Hershock, Dean
College of Arts, Sciences, and Letters

Domenico Grasso, Chancellor
University of Michigan-Dearborn

May 2019