

For Immediate Release: August 16, 2024
**Mona Merling wins the AWM Joan & Joseph Birman Research Prize
in Topology and Geometry**

The Association for Women in Mathematics (AWM) will present the sixth AWM Joan & Joseph Birman Research Prize in Topology and Geometry to **Mona Merling**, Associate Professor of Mathematics at the University of Pennsylvania, at the Joint Mathematics Meetings in Seattle, WA in January 2025. Merling is being honored for innovative and impactful research in algebraic K-theory, equivariant homotopy theory, and their applications to manifold theory.



benefited from. I first want to thank my PhD advisor Peter May for having lured me into the wonderful world of algebraic topology and for his continuous support. I also want to thank Andrew Blumberg, Mike Hill, and my postdoc mentor Jack Morava, who time and time again have generously offered their guidance, both mathematical and professional. I have had the privilege to work with many extraordinary collaborators and am grateful for each of these stimulating

relationships. I want to single out Cary Malkiewich, who over the years has become one of my closest collaborators and friends. I am touched by the support that my colleagues at UPenn have given me since I joined the department and I want to genuinely thank them for it. I am also very grateful for the incredible students I have had the honor to teach and mentor.

Citation

Merling is an exceptional researcher whose work in algebraic topology has both depth and breadth. She is a recognized authority on equivariant homotopy theory and its applications to equivariant manifolds. Her recent work generalizes and reinterprets results in differential topology in the equivariant context. Her work is the first progress seen in decades on certain foundational questions about equivariant manifolds.

Merling is currently an Associate Professor in the Department of Mathematics at the University of Pennsylvania. Before joining Penn, she was a J.J. Sylvester Assistant Professor in the Department of Mathematics at Johns Hopkins University. She received her Ph.D. in Mathematics at The University of Chicago in 2014.

Response from Mona Merling

I am honored to receive the Birman prize and humbled to have my name added to the list of previous winners. I sincerely thank Joan and Joseph Birman for their support of the mathematical community and their generosity in endowing this award.

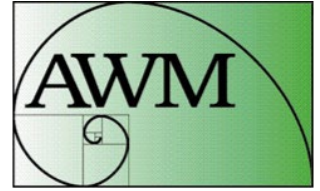
I am lucky to be part of an extensive mathematical family whose generosity and kindness I have often

I would not be here today without the many amazing women I was lucky to have as role models at every step of the way: from my math teacher back in Romania, Mihaela Flamaropol, who ignited my passion for math competitions; to my undergraduate mentor at Bard College, Lauren Rose, who early on inspired me about both research and teaching; to some of the senior leaders in my field who initiated and fostered the Women in Topology Network, Maria Basterra, Kristine Bauer, Kathryn Hess, and Brenda Johnson, who I was very privileged to be able to collaborate with as part of these workshops and who have always served as a huge inspiration and a source of endless support to me and other younger women in homotopy theory.

More than a decade ago, Mike Hill, Mike Hopkins, and Doug Ravenel set our field on fire by solving the Kervaire invariant one problem through use of sophisticated tools in equivariant stable homotopy theory. I was lucky to enter the field of equivariant homotopy theory at this exhilarating time. I am grateful that they created such a welcoming and

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inviting community for young people to join this exciting area and thrive.

As for the future, I am very enthusiastic about the connections between stable homotopy theory and low dimensional topology and I am very excited about the growing interactions between these fields.

Established in 2012, the AWM Joan & Joseph Birman Research Prize highlights exceptional research in topology/geometry by a woman early in her career. The award is made possible by a generous contribution from Joan Birman, whose work has been in low dimensional topology, and her husband, Joseph, who was a theoretical physicist specializing in applications of group theory to solid state physics. The Joint Mathematics Meetings are scheduled for January 8 – 11, 2025 in Seattle, WA.