



A WORD FROM...

Kirsten Bohl, Project Lead, National Math Festival
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Photo courtesy of Kirsten Bohl/MSRI.



Photo courtesy of David Eisenbud/MSRI.

How can we promote the public understanding of mathematics without meeting the public? We've been experimenting, especially since we had planned a wonderful National Math Festival (NMF) for April 2021, and then the Washington Convention Center became a field hospital! Here are some of our experiments—perhaps you have made similar efforts or seen ways we haven't; we'd love to know! The good news is that, even during a pandemic year, math is bringing us together.

In August, MSRI launched a new National Math Festival Facebook group, Math Moms and Math Dads (<https://www.facebook.com/groups/mathmomsandmathdads>). The group quickly drew membership among parents and caregivers home with their offspring, looking for ways to connect with others in the same boat: How

do I support my child to love math, when maybe I never had a chance to do so myself? The group has grown to 303 members in just four months.

In September, led by James Tanton and with the support of the Global Math Project and the Young People's Project, MSRI launched a new NMF Weekly Puzzle Newsletter, steered by kids' questions. Among the topics so far: math and cats, math and mirrors, math and negative numbers, math and desserts, and more. (We hope you'll play along: <https://globalmathproject.org/nmf-weekly/>.)

In December, MSRI premiered the NMF Live Mathical Readings, the first dimension of the 2021 National Math Festival (which not surprisingly, reinvented itself online). Partnering with the National Council of Teachers



Figure 1. Puzzling! NMF 2019



Figure 2. We Love Math, NMF 2017

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Figure 3. Mark Mitton's Magical Math, NMF 2017



Figure 4. Holly Krieger, NMF 2019

of Mathematics (NCTM) and the National Council of Teachers of English (NCTE), we reached dozens of classrooms full of kids (and their teachers!) who were exploring math-inspiring literary works for both little ones and tweens and teens.

With NMF funding, NCTM and NCTE made grants to teachers in Title I schools to purchase copies of the Mathical titles being featured. The books are being taught in math and language arts classrooms, and kids have copies of their own. Teachers are also purchasing other books from the Mathical List, <https://www.mathicalbooks.org> (spanning ages 2–18), which now comprises 60+ titles.

In January through March, MSRI hosted the NMF Live Online Performance Series, including a Math Rap (Double Feature) with Music Notes and Professor Lyrical; “The Witches of Agnesi”, a play and panel on women in math; the Mathical Book Prize announcement; a live game show hosted by the Young People’s Project; and a split bill with Rhys Thomas (juggler) of Science Circus and Brady Haran of the YouTube channel Numberphile.

We hope you’ll join the next bit of the action, which ramps up during the weekend of **April 16–18, 2021**. The NMF Live Online will feature six math talks for a general audience (see box). We are excited about film panels on some films that are already familiar (*Hidden Figures*, *The Man Who Knew Infinity*) and less so (*The Bit Player*, *Secrets of the Surface*).

Most of all, with NMF Live Online, we are looking forward to the **hands-on interactive math activities** courtesy of roughly two dozen math organizations...including many of you! We will be in a new platform called Hopin, which mimics the ability to bring casual conversations, meandering from table to table, and live video chats in a way we hope all will find compelling (and as enjoyable as anything else right now, screen-bound as we are...). Please invite your friends, neighbors, families...no need to come to Washington, DC, for this year’s event (<https://www.nationalmathfestival.org/2021-festival>). We will bring it right to your living room.

For those who miss part of the fun along the way, we are recording many of the sessions, especially the Live Performance Series and the Live Game Show with the Young People’s Project.

Other NMF activities are on pause for the moment, as of this writing, or on “slow cook” at the very least. We have been deepening our partnership with the **DC public schools**; many planned activities have been transformed as a result of the pandemic. One that is only postponed is support for the Young People’s Project (<https://www.typp.org>) to found a **Flagway League** (Flagway is a mathletic event involving factoring of integers—and running! https://www.typp.org/about_flagway) in the DC schools. We look forward to updating you on progress in the coming months and years.

<p>Robbert Dijkgraaf: The End of Space and Time: The Mathematics of Black Holes and the Big Bang</p> <p>Erica Graham, Raegan Higgins, Candice Price, Shelby Wilson: Changing the “Face” of Mathematics</p> <p>Emille Davie Lawrence: Math Is Play!</p> <p>Jesus De Loera: Numbers through Pictures: A Taste of the Geometry of Numbers</p> <p>Steven Strogatz: Infinite Powers: The Story of Calculus</p> <p>Joseph Teran: Math and the Movies</p>
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PublicTalks, NMF 2021



Figure 5. Flagway game in progress, NMF 2017



Figure 6. Stephon Alexander, NMF 2017

Racial unity was already an underlying theme of the 2021 NMF even before the pandemic arrived—and with it, a national awakening to the centrality and urgency of the cry for social justice. While it is too soon as of this writing in December 2020 to say exactly what will emerge, there is a plan in the works to invite youth to “practice aloud together” at the intersection of mathematics, imagination, courage, and social change. Please tune in and join us for this community-building part of the festival.

Looking ahead to **Spring 2022**, we are extending the scope of the 2021 National Math Festival to include face-to-face events as part of the **North Carolina Science Festival** in the Research Triangle. This is part of a new model in which we hope to “graft math” onto eager science festivals...one festival at a time. Please visit us in person if you’re in the neighborhood!

We couldn’t do all this alone! We have some devoted key partners (<https://www.nationalmathfestival.org/who-we-are>), the Institute for Advanced Study and the National Museum of Mathematics (MoMath), and sponsors that include the Simons Foundation, the Alfred P. Sloan Foundation, the National Science Foundation, Schmidt Futures, the Kavli Foundation, and the American Mathematical Society.

The Festival could not exist without those who offer their time, labor, and financial support; those who send kids and adults our way to participate in events; those who enthusiastically join in the community you and we are seeking to build in public mathematics, one where more kids, of all backgrounds, see themselves in math, and see math in the world around them.

Credits

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Figures 2 and 5 are courtesy of Amanda Kowalski/MSRI.

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