MATH ENCOUNTERS

IMAGINE THAT! MATH in the ART MUSEUM

Speaker: Ingrid Daubechies

Wednesday, July 10, 2024

Special introduction by **Thomas Lin**, founder of *Quanta Magazine* and *Quanta Books*.

Afternoon Presentation 4:00 pm ET (New York)

Evening Presentation

Join mathematician Ingrid Daubechies to hear the fascinating story of how an interdisciplinary and multicultural group of art historians, artists, mathematicians, and engineers teamed up to reunite, for the first time in more than 100 years, the eight known panels of a 14th-century Italian altarpiece – and then to reconstruct the missing ninth panel. While an art reconstruction expert was able to design and paint the missing piece, it took mathematical image analysis to "virtually age" the new panel — to mimic 650 years of aging pigments, dulling colors, and development of fine cracks. And once that was done, the team also figured out how to apply virtual aging in the reverse, transforming old, aged works to corresponding "freshly painted versions, thereby rejuvenating age-old works of art. They even developed a program to address the impact of the stabilizing hardwood lattice backing many old paintings, digitally removing the effect of this "cradling" and creating a new, art conservator-friendly software tool called *Platypus* in the process.

/:00 pm E1 (New York)

National Museum of Mathematics 225 Fifth Avenue New York, NY

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