Stony Brook Math Club

Faculty talk

with Dennis Sullivan

"What do things look like?" or
"Making advanced mathematics seem simpler."

I.) Besides Euclidean geometry in every dimension, there is also in every dimension the unique unbounded totally symmetrical geometry called hyperbolic geometry.

II.) How is the free abelian group on k generators different from the free group on k generators? What does each one look like? What does any infinite group look like?

This, given that it has a finite set of generators. The idea of the answer is due to Gromov.

III.) What are closed Riemann surfaces, what are their universal covers, and what do they look like? This uses the Gromov idea of rough or quasi geometry.

IV.) What does our three-dimensional space look like ? What does any abstract three-dimensional space look like?

Eight building blocks of an answer are due to Thurston strongly using Gromov's idea in (II) and the pictures in (III).

Thursday, October 12, 2023
7:00–8:00 pm in P-131, Math Tower