TEXAS ★ STATE ®

Topology Seminar at Texas State

When: Friday, April 28, 2023, 11:00 a.m.

Where: DERR 333 *and* ZOOM (Zoom info at bottom of page)

Presenter: Dr. Sean Corrigan

Title: Milnor's Exotic 7-sphere

Abstract: We will revisit John Milnor's famous 1956 construction of some smooth manifolds which are homeomorphic, but not diffeomorphic, to the standard 7-sphere. The constructions are those of fiber bundles whose base spaces are the 4-sphere and whose fibers are the 3-sphere. Their classification up to homeomorphism utilizes a classic result of Morse theory, while the diffeomorphism classification involves a numeric invariant defined by Milnor. The definition of this numeric invariant makes clever use of some major topological breakthroughs that occurred in the mid-1950s, and the resulting examples remain a testament to the profound way in which algebra breathes life into topology.

The number of different differentiable structures on spheres in low dimensions

dimension	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
# structures	1	1	1	?	1	1	28	2	8	6	992	1	3	2	16256	2	16	16

Zoom Information

Meeting URL (click this)
Meeting ID: 977 0390 3382
Password: manifolds