

**THE CATHOLIC UNIVERSITY OF AMERICA**  
**Washington, DC 20064**

**SEMINAR IN FUNCTIONAL ANALYSIS**  
**AND RELATED AREAS**

**Wednesday, October 26, 2022**

**4:45 p.m. - 6:30 p.m.**

**SPEAKER:** Michael Somos  
The Catholic University of America

**TITLE:** Algebra, Geometry and Diophantine Equations

**ABSTRACT:** I will talk about my recent results on using generalized Somos-4 sequences to solve some cubic Diophantine equations using the chord and tangent construction on cubic curves in the plane. This involves Totally Symmetric Medial (TSM) Quasigroups instead of the usual abelian group of addition of points defined on an elliptic curve. I will use examples studied by Fibonacci, Fermat, Euler, and Lucas. I motivate the elementary algebra with Euclidean geometry.

**The presentation will be given via Zoom. The corresponding link will be sent to everyone in advance.**

**ORGANIZERS:** V. Bogdan (The Catholic University of America), P. Kainen (Georgetown University), R. Kalpathy (The Catholic University of America), and A. Levin (The Catholic University of America).

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**Web page:**

<https://mathematics.catholic.edu/faculty-and-research/mathematics-seminar/index.html>