Nathan Burns

✉ nburns6@vols.utk.edu   in LinkedIn
🌐 http://nathan-p-burns.github.io/

Education

2021 – Present   **Ph.D. Mathematics**
University of Tennessee
Advisor: Theodora Bourni

2016 – 2020   **M.Math. Mathematics**: First Class with Honours
University of Edinburgh
Thesis title: *Artin-Schelter Regular Algebras*
Advisor: Sue Sierra

Research

Publications

1. T. Bourni, N. Burns, and S. Catron, "Classification of convex ancient solutions to free boundary curve shortening flow in convex domains," *The Journal of Geometric Analysis*, vol. 35, no. 7, p. 210, 2025, ISSN: 1559-002X. 🔗 DOI: 10.1007/s12220-025-02036-x.

In Preperation

1. T. Bourni, N. Burns, and M. Langford, *Classification of convex ancient free boundary curve shortening flows in convex noncompact domains*, In preparation.

Service

25/26 Academic Year   **Co-organizer for the Geometric Analysis Seminar**
University of Tennessee, Knoxville.

Academic Activity

Spr. 2025   **Academic Visitor**: Mar. 2 2025 - Mar. 8 2025
Australian National University

Fall 2024   **Program Associate**: Oct. 21 2024 - Nov. 22 2024
SLMath (Formerly the MSRI)
New Frontiers in Curvature: Flows, General Relativity, Minimal Submanifolds, and Symmetry.

Talks

Oct 2025   **AMS Fall Central Meeting: AMS Special Session on Riemannian Geometry and Symmetry II @ Saint Louis University**
Saint Louis University

May 2025   **Rutgers Gauge Theory, Low-Dimensional Topology, and Geometric Analysis**
Rutgers University

Mar. 2025   **Geometric Analysis Seminar**
Australian National University

Talks (continued)

Feb. 2025	▉	**MATRIX - MFO Tandem Workshop: Nonlinear Geometric Diffusion Equations** MATRIX Institute (Creswick, Australia)
Nov. 2024	▉	**Graduate Student Seminar** SLMath (Formerly the MSRI)
Mar. 2024	▉	**Geometric Flows and Relativity Workshop** Punta Del Este (Uruguay)

Conference Attendance

Jun. 2025	▉	**Topics in Differential Geometry** Brown University
May 2025	▉	**Rutgers Gauge Theory, Low-Dimensional Topology, and Geometric Analysis** Rutgers University
Feb. 2025	▉	**MATRIX - MFO Tandem Workshop: Nonlinear Geometric Diffusion Equations** MATRIX Insistute (Creswick, Australia)
	▉	**The 30th Southern California Geometric Analysis Seminar** University of California, Irvine
Nov. 2024	▉	**Geometry and Analysis of Special Structures on Manifolds** SLMath (Formerly the MSRI)
Oct. 2024	▉	**Recent Progress on Geometric Analysis and Riemannian Geometry** SLMath (Formerly the MSRI)
Jul. 2024	▉	**Bridging PDE and Geometric Flows** Cardiff University
Apr. 2024	▉	**Kansas Geometric Analysis Conference** Wichita State University
Mar. 2024	▉	**Geometric Flows and Relativity Workshop** Punta Del Este (Uruguay)
	▉	**Geometric Flows and Relativity Summer School** Universidad de La República

Teaching

Grad. School	▉	**Instructor of Record** Math 152 - Calculus for the Life Sciences (2 Sections) Math 113 - Mathematical Reasoning (3 Sections)
	▉	**Teaching Assistant** Math 241 - Calculus III (1 Section) Math 231 - Differential Equations I (1 Section) Math 125 - Basic Calculus (1 Section) Math 119 - College Algebra (1 Section)

Fellowships/Awards

Sum. 2025	▉	**Summer Departmental Research Fellowship**
Spr. 2025	▉	**Spike Tickle STEM Endowed Fellowship**
Spr. 2024	▉	**Graduate Student Fellowship**: Passing Oral Exam Early
	▉	**Graduate Student Academic Achievement Award**

Fellowships/Awards (continued)

Spr. 2023   ▐   **Graduate Student Fellowship**: Passing Preliminary Exams Early

Fall 2021   ▐   **F.M Dryzer Memorial Fellowship**

Grad. School   ▐   **Graduate School Fellowship**: Previous Outstanding Record