

ELLIOT CARTEE

evc34@cornell.edu | <http://pi.math.cornell.edu/~cartee/>

Research Experience

- Research with Prof. Alexander Vladimirsky (Cornell University) on Pedestrian Flow Modeling, Surveillance-Evasion Games, Uncertainty Quantification, and Mean Field Games, 2014-2019
- Visiting Student Research Collaborator with the Department of Operations Research and Financial Engineering at Princeton University, Fall 2018

Awards

- Robert J. Bättig Graduate Prize for Excellent Achievements in Research (\$2500 prize)
Cornell Mathematics Department 2018-2019
- Pauline and Irving Tanner Dean's Scholar, Cornell University

Publications

- Cartee, E., & Vladimirsky, A. "Control-Theoretic Models of Environmental Crime"
Submitted to *SIAM Journal on Applied Mathematics*.
- Cartee, E., Lai, L., Song, Q., & Vladimirsky, A. "Time-Dependent Surveillance-Evasion Games"
Accepted for presentation at *IEEE CDC 2019*.
- Cartee, E., & Vladimirsky, A. "Anisotropic Challenges in Pedestrian Flow Modeling"
Communications in Mathematical Sciences, 16(4), 1067–1093 (2018).
- Virgin, L. N., Plaut, R. H., & Cartee, E. "The Effect of Gravity on a Slender Loop Structure"
In *Nonlinear Dynamics, Volume 1* (pp. 185-190). Springer, Cham (2016).
- Virgin, L. N., Plaut, R.H., & Cartee, E. "Adjacent Equilibria in Highly Flexible Upright Loop on Rigid Foundation" *Experimental Mechanics*, 55(6), 1191-1197 (2015).
- Khan, S., Johnson, J., Cartee, E., & Yao, Y. "Global regularity of chemotaxis equations with advection" *Involve, a Journal of Mathematics*, 9(1), 119-131 (2015).

Presentations

- Control-Theoretic Models of Environmental Crime*: September 16, 2019
Scientific Computing and Numerical Analysis seminar, Cornell University
- Surveillance-Evasion Mean Field Games*: July 17, 2019
International Congress on Industrial and Applied Mathematics, Valencia, Spain
- Time-Dependent Surveillance-Evasion Games*: April 6, 2019
Applied Math Days 2019, Rensselaer Polytechnic Institute
- Anisotropic Interactions in Pedestrian Flow Modeling*: March 23, 2019
New York State Regional Graduate Mathematics Conference, Syracuse University

Surveillance-Evasion Mean Field Games (Poster): October 11, 2018

NSF Algorithms for Threat Detection Workshop, American University

Anisotropic Challenges in Pedestrian Flow Modeling (Poster): August 28, 2017

Mean Field Games Workshop, UCLA (IPAM)

Models of Pedestrian Flow: April 6th, 2015

Scientific Computing and Numerical Analysis seminar, Cornell University

Teaching Experience (Cornell University)

Head TA, MATH 2940: Linear Algebra for Engineers, Fall 2019

Head TA, MATH 2930: Differential Equations for Engineers, Spring 2019

REU Graduate Student Mentor, Summer 2018

Head TA, MATH 2930: Differential Equations for Engineers, Fall 2017

Instructor, MATH 1110: Calculus I, Spring 2017

Head TA, MATH 2930: Differential Equations for Engineers, Fall 2016

TA, MATH 2930: Differential Equations for Engineers, Spring 2016

Grader, MATH 4250: Differential Equations and Numerical Analysis, Fall 2015