

Arseniy (Senia) Sheydvasser

Graduate Center at CUNY
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RESEARCH INTERESTS Analytic Number Theory; Integral Circle/Sphere Packings; Thin Groups; Orders of Quaternion Algebras; Additive Number Theory

APPOINTMENTS 2018 - 2020 Research Associate Graduate Center at CUNY, New York

EDUCATION *Doctor of Mathematics*, 2012 - 2018
Yale University, New Haven, CT

Bachelor of Mathematics, Bachelor of Physics, Magna Cum Laude 2008 - 2012
Bowdoin College, Brunswick, ME

- PAPERS**
- *The \ddagger -Euclidean Algorithm: Applications to Number Theory and Geometry*, **arXiv:** 2001.06061
 - *The Ulam Sequence of the Integer Polynomial Ring*, **arXiv:** 1910.00109
 - *Algebraic Groups Constructed from Orders of Quaternion Algebras*, **arXiv:** 1908.01250
 - *Quaternion Orders and Sphere Packings*, **Journal of Number Theory**, accepted
 - *Rigidity of Ulam Sets and Sequences* (with J. Hinman, B. Kuca, and A. Schlesinger), **Involve** **12(3)** (2019) 521-539
 - *The Unreasonable Rigidity of Ulam Sequences* (with J. Hinman, B. Kuca, and A. Schlesinger), **Journal of Number Theory** **194** (2019) 409-425
 - *Orders Over Algebras with Involution*, **Journal of Number Theory** **183** (2017) 249-268
 - *A Corrigendum to Unreasonable Slightness*. **The American Mathematical Monthly** **123(5)** (2016) 482-85

- TALKS**
- **Graduate Center**, *The Quaternion-Bianchi Dictionary*. Nov. 2019
 - **Illustrating Number Theory and Algebra** (at ICERM), *Euclidean Algorithm in Circle/Sphere Packings*. Oct. 2019
 - **Journées sur les Arithmétiques Faibles** (at CUNY), *Applications of Model Theory to Families of Integer Sequences*. May. 2019
 - **Graduate Center**, *Hyperbolic Isometry Groups and Quaternion Algebras*. Apr. 2019
 - **Graduate Center**, *Applications of Orders with Involution*. Mar. 2019
 - **Bronx Community College**, *Two Trivial Problems and an Impossible One*. Dec. 2018
 - **Integers 2018**, *Rigidity in the Ulam sequence*. Oct. 2018

- **New York Logic Model Theory Seminar** (at CUNY), *Rigidity in the Ulam sequence*. Sep. 2018
- **CANT 2018** (at CUNY), *Rigidity in the Ulam sequence*. May. 2018
- **Rutgers University**, *Connections between Integral Sphere Packings and Quaternion Algebras*. May. 2018
- **Dartmouth College**, *Quaternion Algebras and Integral Sphere Packings*. Feb. 2017
- **University of Colorado, Boulder**, *Quaternion Algebras and Integral Sphere Packings*. Oct. 2016

TEACHING

CUNY

- Spring 2020: Calculus with Analytic Geometry II
- Spring 2019: Calculus with Analytic Geometry I

Yale University

- Spring 2018: Calculus of Functions of One Variable II (flipped classroom)
- Fall 2017: Cryptography and Computer Security
- Fall 2016: Calculus of Functions of One Variable I
- Fall 2015: Multivariable Calculus
- Spring 2014: Calculus of Functions of One Variable II (flipped classroom)

STUDENT ADVISING EXPERIENCE

Graduate Mentor at SUMRY

June-August 2017

Worked with J. Hinman, B. Kuca, and A. Schlesinger on “The Unreasonable Rigidity of Ulam Sets.”

Graduate Mentor at SUMRY

June-August 2016

Worked with R. Mintzer-Sweeney, A. Schlesinger, and K. Xiu on “Embeddings of Imaginary Quadratic Fields into Rational Quaternion Algebras.”

Graduate Mentor at DIMACS REU

June-July 2015

Worked with L. Kenigsberg on “Cymatics-Chlandi Plates.” (Kenigsberg won a Goldwater scholarship for this work)

PROGRAMMING LANGUAGES

PUBLIC TALKS

- **Massachusetts Academy of Math and Science**, *How to Keep a Secret*. Aug. 2019

BROADER IMPACTS

- Top Writer at Quora (<https://www.quora.com/profile/Senia-Sheydvasser>), writing primarily about mathematics.
- Founder of Mathematical Applications (<https://www.quora.com/q/mathematical-applications>).