

Andrew R. Gainer-Dewar

Education

- 2007–2012 **Ph.D. (Mathematics)**, *Brandeis University*, Waltham, MA.
Thesis: “T-species, quotients, and graph enumeration”
Supervisor: Ira M. Gessel
- 2003–2007 **B.S. (Mathematics) & B.A. (Philosophy)**, *Mercer University*, Macon, GA.

Professional appointments

- 2014–2015 **Visiting asst. prof. of mathematics**, *Hobart and William Smith Colleges*, Geneva, NY.
- 2012–2014 **Visiting asst. prof. of mathematics**, *Carleton College*, Northfield, MN.

Research interests

Enumerative combinatorics, combinatorial graph theory, combinatorial species, combinatorial molecular biology.

Professional memberships and recognition

- 2014 **AMS-MRC participant**, *Algebraic and Geometric Methods in Applied Discrete Mathematics*.
- 2013–2014 **MAA National Project NExT Fellow**.
- 2013– **Member, Mathematical Association of America**.
- 2008– **Member, American Mathematical Society**.

Teaching

- 2014–2015 **Hobart and William Smith Colleges**, 4/yr.
Calculus I, Calculus II, “Discovering in Mathematics”
- 2012–2014 **Carleton College**, 5/yr.
Calculus I, Calculus II, Linear Algebra, Graph Theory (indep. study)
“The Mathematics of Democracy” (first-year seminar)
- 2008–2010 **Brandeis University (graduate instructor)**, 2/yr.
Precalculus, Calculus I, Calculus II, Linear Algebra

Undergraduate scholarship supervised

- 2013–2014 **The graph algorithm for the boolean number of a Coxeter system**, *Carleton*.
Four students, independent original research
- 2012–2013 **On the species of bipartite point-determining graphs**, *Carleton*.
Four students, independent original research

Grants awarded

- 2015 **Branching parameters for RNA folding**, *AMS-MRC followup collaboration grant*, AMS.
- 2014 **AMS-MRC participation grant**, AMS, NSF.
- 2014 **L^AT_EX workshop**, *Development funding*, Carleton College Mathematics Department.
- 2013–2014 **Project NExT fellowship**, MAA, Mary P. Dolciani Foundation, Carleton College.

Presentations and talks

Research (invited)

- 2014 **T-species and the enumeration of unlabeled bipartite blocks**.
- o St. Olaf College Math, Statistics, and Computer Science research seminar
 - o Minnesota State University Mankato mathematics seminar

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◦ University of Minnesota combinatorics seminar

Research (other)

2015 **Species with an equivariant group action**, *Joint Mathematics Meetings*, San Antonio.

2014 **Enumeration of bipartite graphs and blocks**, *Joint Mathematics Meetings*, Baltimore.

2013 **Γ -species and the enumeration of k -trees**, *Joint Mathematics Meetings*, San Diego.

2012 **Contemporary graph enumeration and k -trees**, *Brandeis*, Ph.D. defense.

Undergraduate

2014 **The mathematics of democracy**, *Carleton*.

2013 **Making strategy count: combinatorial game theory and the surreal numbers**, *Carleton*.

2012 **Arrow's Theorem and the impossibility of democracy**, *Carleton & Brandeis*.

Pedagogy

2014 **A&I: not just for humanists anymore**, *Carleton Learning and Teaching Center*, panelist.

Panel discussion of approaches for running first-year seminars outside the humanities

Service

2014– **Mathematical Reviews contributor**, *AMS*.

2013–2014 **Department \LaTeX workshop developer and coordinator**, *Carleton*.

2013–2014 **Department newsletter “Problem of the Week” editor**, *Carleton*.

2013 **JMM-2014 panel sessions coordinator**, *Project NExT*.

2013 **Sophomore writing portfolio reader**, *Carleton*.

2013– **Contributor to Sage computer algebra system**, trac: agd.

2013– **JMM Undergraduate Poster Session Judge**.

2012–2014 **Department social coordinator**, *Carleton*.

2012–2013 **Math GRE preparation coordinator**, *Carleton*.

2008–2012 **Graduate student representative and social coordinator**, *Brandeis*.

Publications and preprints

Mathematical research

2014 [1] (with Ira Gessel). “Counting unlabeled k -trees”. In: *Journal of Combinatorial Theory, Series A* 126, pp. 177–193. DOI: 10.1016/j.jcta.2014.05.002. arXiv: 1309.1429 [math.CO].

[2] (with Ira Gessel). “Enumeration of bipartite graphs and bipartite blocks”. In: *The Electronic Journal of Combinatorics* 21.2, P40. arXiv: 1304.0139 [math.CO].

2012 [3]. “ Γ -species and the enumeration of k -trees”. In: *The Electronic Journal of Combinatorics* 19.4, P45. arXiv: 1208.5993 [math.CO].

[4]. “ Γ -species, quotients, and graph enumeration”. PhD thesis. Brandeis University. arXiv: 1204.1402 [math.CO].

Preprints

2014 [5]. *Enumeration of labeled and unlabeled k -gonal and polygonal 2-trees and succulents by vertices*. Preprint. arXiv: 1309.4481 [math.CO].

[6]. *Species with an equivariant group action*. Preprint. arXiv: 1401.6202 [math.CO].