Joel Nagloo Curriculum Vitae

Contact Information

Address: CUNY Graduate Center, Ph.D. program in Mathematics
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Research Interest

Differential Algebra, Model Theory and Number Theory.

Education

Jul 2014 Ph.D in Mathematics, University of Leeds, United Kingdom.
Thesis: *Model theory, Algebra and Differential Equations.*
Advisor: Prof. Anand Pillay.

Oct 2010 M.Sc. in Pure Mathematics with Distinction, Imperial College London, United Kingdom.
Thesis: *Elliptic Curves and Complex Multiplication.*
Advisor: Prof. Kevin Buzzard.

Jul 2006 B.Sc.(Hons) in Mathematics with First Class, University of Mauritius, Mauritius.
Thesis: *The Estimate of the First Eigenvalue of a compact Riemannian Manifold.*
Advisor: Prof. Noor-Ul-Hacq Sookia.

Professional History

Associate Professor — Aug 2020 - *present*
Bronx Community College, CUNY

Doctoral Faculty — Aug 2019 - *present*
Graduate Center, CUNY

Assistant Professor — Jan 2016 - Aug 2020
Bronx Community College, CUNY

Visiting Assistant Professor — Aug 2014 - Jan 2016
Graduate Center & Hunter College, CUNY

Research Associate — Sep 2015 - Jan 2016
Research Foundation, CUNY
- *On NSF grant CCF-0952591*

Graduate Teaching Assistant — Jan 2012 - Dec 2013
University of Leeds, UK

Scholarships and Awards

2021-2024 National Science Foundation Standard Grant (recommended), $144,760.
2020-2021 PSC-CUNY Research Award (Traditional A) #63304-00 51, $3,499.
2019-2020 National Science Foundation Conference Grant DMS-1952694, $33,750.
2017-2020 National Science Foundation Standard Grant DMS-1700336, $60,726.
2018-2019 BCC Presidential Grant (collaborative) $10,650.
2017-2018 PSC-CUNY Research Award (Traditional A) #60456-00 48, $3,499.
2014 PhD with Research Excellence, University of Leeds, United Kingdom.
2011-2014 School of Mathematics Research Scholarship, University of Leeds, United Kingdom.
2011-2013 EPSRC Project Studentship, University of Leeds, United Kingdom.
2006 J Manrakhan Gold Medal in Mathematics, University of Mauritius, Mauritius

Visiting Positions and Research Visits

Jul 2021	Fields Institute for Research in Mathematical Sciences: Long Term Visitor.
Jul 2019	Institute for Advanced Study: as part of the Summer Collaborators program (with D. Blazquez-Sanz, G. Casale and J. Freitag).
Feb 2014	Mathematical Sciences Research Institute Berkeley: Program Associate.
Nov 2013	University of Notre Dame: Research visitor.

Peer-reviewed Publications and Preprints

1. *A Differential approach to the Ax-Schanuel, I*, with D. Blazquez-Sanz, G. Casale and J. Freitag. arXiv:2102.03384
2. D. Blazquez-Sanz, G. Casale, J. Freitag and J. Nagloo; *Some functional transcendence results around the Schwarzian differential equation,* to appear in the **Annales de la Faculté des Sciences de Toulouse** 29 (2020) - Volume in honor of Prof. H. Umemura. arXiv:1912.09963.
3. J. Nagloo, *Model theory and differential equations*, **Notices of the American Mathematical Society** (2021), Vol. 68, no. 2 177-185.
4. G. Casale, J. Freitag and J. Nagloo; *Ax-Lindemann-Weierstrass with derivatives and the genus* 0 *Fuchsian groups,* **Annals of Mathematics** (2) 192 (2020), no. 3, 721-765.
5. J. Nagloo, A. Ovchinnikov and P. Thompson; *Commuting planar polynomial vector fields for conservative Newton systems,* **Communications in Contemporary Mathematics** 22 (2020), no. 4, 1950025, 30 pp.
6. J. Nagloo; *Algebraic independence of generic Painlevé transcendents: P_{III} and P_{VI},* **Bulletin of the London Mathematical Society** 52 (2020) 100-108.
7. J. Nagloo; *On Transformations in the Painlevé Family*, **Journal de Mathématiques Pures et Appliquées**, 107 (2017) 784-795.
8. J. Nagloo and A. Pillay; *On algebraic relations between solutions of a generic Painlevé equation*, **Journal für die reine und angewandte Mathematik**, 726 (2017), 1-27.
9. O. León Sánchez and J. Nagloo; *On Parametrized Differential Galois Extensions*, **Journal of Pure and Applied Algebra**, 220 (2016) 2549-2563.
10. J. Nagloo; *Geometric Triviality of the Strongly Minimal Second Painlevé equations*, **Annals of Pure and Applied Logic**, 166 (3) (2015) 358-358.
11. J. Nagloo and A. Pillay; *On the algebraic independence of generic Painlevé transcendents*, **Compositio Mathematica** 150 (2014), 668-678.

Papers in preperation

Algebraic relations between solutions of Painlevé equations, with J. Freitag.

Invited Conference Talks

Apr 2021	*Unlikely Intersections, Diophantine geometry, & related fields*, University of Reading, UK.
Nov 2020	*Algebraic Dynamics & its Connections to Difference/Differential Equations*, BIRS (Online).
June 2020	*Model Theory of DEs, Algebraic Geometry, & their Applications to Modeling*, BIRS (Online).
Mar 2019	*Model Theory, Differential/Difference Algebra, and Applications*, CUNY and NYU, USA.
Aug 2018	*Model-Theoretic Methods in Number Theory & ADEs*, University of Manchester, UK.
Jul 2018	*Conference for African-American Researchers in Math*, Institute for Advanced Studies, USA.
Jun 2018	*Around Functional Transcendence*, University of Oxford, UK.
May 2018	*Algebra, Arithmetic & Combinatorics of Differential Equations*, CIRM Luminy, France.

Invited Conference Talks (Continued)

May 2018	*2018 ASL North American Annual Meeting*, Western Illinois University, USA
Mar 2018	*Model Theory and Applications*, Henri Poincaré Institute, Paris, France
Oct 2017	*Midwest Model Theory Day*, University of Illinois at Chicago, USA.
May 2017	*Special Session, AMS Spring Eastern Sectional Meeting*, City University of New York, USA.
Oct 2016	*Differential Algebra and related topics VII*, City University of New York, USA.
May 2016	*Workshop on Differential Algebra*, City University of New York, USA.
Apr 2015	*Model Theory, Difference/Differential Equations and Applications*, CIRM Luminy, France.
Mar 2015	*Model Theory Conference, Stellenbosch University*, South Africa.
Jan 2015	*Model theory Special Session, Joint Math. Meetings San Antonio*, Texas, USA.
Dec 2014	*Model theory Special Session, Winter Meeting of the CMS*, Hamilton Ontario, Canada.
Nov 2013	*Differential Algebra and Model Theory Mini Conference*, University of Notre Dame, USA.
May 2013	*Model theory Special Session, ASL North American meeting*, Waterloo, Canada.
Nov 2012	*CMS Research afternoon, University of Cambridge*, UK.
Sep 2012	*Differential/Difference equations, Integrable systems, Model theory Conference*, Leeds, UK.

Invited Seminar Talks

May 2021	*Logic Seminar*, University of Manchester, UK.
Mar 2021	*Floating Logic Seminar*, Bogotá Logic Group, Colombia.
Jan 2021	*Number theory Seminar*, Princeton University/IAS (online).
Dec 2020	*Models and Sets Seminar*, University of Leeds, UK (online).
Nov 2020	*Pure Mathematics Research Seminar*, University of East Anglia, UK (online).
Oct 2019	*Study Group in Number Theory*, Graduate Center CUNY, USA.
Mar 2019	*Logic Seminar*, Rutgers University, USA.
Feb 2019	*Math Research Seminar*, Bronx Community College CUNY, USA.
Nov 2018	*Math Colloquium*, McMaster University, Canada.
Nov 2018	*Model Theory Seminar*, McMaster University, Canada.
Sep 2018	*Kolchin Seminar in Differential Algebra*, Graduate Center CUNY, USA.
Dec 2017	*Kolchin Seminar in Differential Algebra*, Graduate Center CUNY, USA.
Nov 2017	*Kolchin Seminar in Differential Algebra*, Graduate Center CUNY, USA.
Mar 2017	*Logic Workshop*, Graduate Center CUNY, USA.
Dec 2016	*UPenn Galois Seminar*, University of Pennsylvania, USA.
Nov 2016	*Kolchin Seminar in Differential Algebra*, Graduate Center CUNY, USA.
Oct 2016	*UCLA Logic Colloquium*, University of California, Los Angeles, USA.
Nov 2015	*Kolchin Seminar in Differential Algebra*, Graduate Center CUNY, USA.
Oct 2015	*Model Theory Seminar*, Graduate Center CUNY, USA.
Dec 2014	*Math Research Seminar*, Bronx Community College CUNY, USA.
Dec 2014	*Model Theory Seminar*, McMaster University, Canada.
Oct 2014	*Logic Workshop*, Graduate Center CUNY, USA.
Oct 2014	*Kolchin Seminar in Differential Algebra*, Graduate Center CUNY, USA.
Sep 2014	*Kolchin Seminar in Differential Algebra*, Graduate Center CUNY, USA.
Jun 2014	*Manchester Logic Seminar, University of Manchester*, UK.
Mar 2014	*Lancashire Yorkshire Model Theory Seminar*, University of Leeds, UK.
Feb 2014	*UC Berkeley Model Theory Seminar*, University of California, Berkeley, USA.
Oct 2013	*Pure Mathematics Seminar*, University of East Anglia, UK.
Nov 2012	*Joint Model Theory Seminar of Leeds and Manchester*, UK.
Apr 2012	*Mathematical Physics Seminar*, Loughborough University, UK.

Undergraduate Students mentored

2021 Mohamed Bassimbo, under the NSF-LSAMP undergraduate research program.

2017 Manzour Bekere, under the NSF-LSAMP undergraduate research program.

Professional Services

Co-organizer of the *Kolchin Seminar in Differential Algebra,* Graduate Center CUNY. Ongoing.

Co-organizer of the *Special Session Functional equations and interaction*, AMS-SMF-EMS joint meeting, Summer 2022, Grenoble, France.

Member of the Local Organizing Committee for the *Differential Algebra and Related Topics (DART) X conference,* Feb 2020, Graduate Center CUNY.

Member of the Program Committee for the *ASL North American Meeting,* Spring 2019, Graduate Center CUNY.

Organizer of the *Model Theory Seminar,* Spring 2019, Graduate Center CUNY.

Co-organizer of the *Model Theory Special Session, ASL North American Meeting,* Spring 2016, University of Connecticut.

Co-organizer of the *British Postgraduate Model Theory Conference,* Spring 2014, University of Leeds.

Refereeing for *Applicable Algebra in Engineering, Communication and Computing; Advances in Applied Mathematics; Annals of Pure and Applied Logic; Bulletin of the French Mathematical Society; Confluentes Mathematici; Journal of Symbolic Logic.*

Teaching Experience

Bronx Community College

Instructor

Teaching duties included designing the syllabus and lecture notes; lecturing, assigning and grading homework; writing and grading exams; and holding weekly office hours.

- *Courses:* Introduction to Computer Programming I (×3)
  Abstract Algebra (×2)
  Analytic Geometry And Calculus III (×2)
  Pre-calculus (×2)
  Discrete Mathematics I (×2)
  Elementary Algebra (×9)
  College Algebra and Trigonometry
  Probability and Statistics

Hunter College

Instructor

Teaching duties included designing the syllabus and lecture notes; lecturing, assigning and grading homework; writing and grading exams; and holding weekly office hours.

- *Courses:* Theory of Numbers
  Theory of Numbers (Graduate level)
  Pre-calculus

University of Leeds

Teaching Assistant

Teaching duties included holding weekly tutorials, writing and grading worksheets; holding office hours; and grading exams.

- *Courses:* Ring and Polynomials
  Number Systems (×2)
  Linear Algebra