Curriculum Vita of George McNinch

Personal Data

- **Web**: http://gmcninch-tufts.github.io/math
- **Email**: george.mcninch@tufts.edu
- **Address**

  Department of Mathematics
  Tufts University
  Joyce Cummings Center
  177 College Avenue
  Medford, MA 02155
  USA

- **Phone**: +1 617-627-6210
- **Citizenship**: United States of America

Higher Education

- Ph.D. (Mathematics) 1996. University of Oregon (Eugene, OR). Advisor: Gary M. Seitz
- B.S. (Mathematics, Physics) 1990. Samford University (Birmingham AL).

Academic Positions

- 2013–present. Professor Tufts University.
- 2006–2013. Associate Professor, Tufts University.
- 2004–2006. Assistant Professor, Tufts University.
- 1996-2004. Assistant Professor, University of Notre Dame.
- 1990-1996. Graduate Teaching Fellow, University of Oregon.

Grants and Awards

- 2011-2013. National Security Agency. Principal investigator: H9230-11-1-0164.
- 2008-2010. National Security Agency. Principal investigator: H98230-08-1-0110.
- 2004-2008. National Science Foundation. Principal investigator: DMS04 37482.
- 1999-2002. National Science Foundation. Principal investigator: DMS99 70301.

Service to the Profession

- 2022-03. Co-organizer (with E. Sommers): Special Session on Algebraic Groups, AMS sectional meeting at Tufts University.
- 2020-03. Co-organizer (with E. Sommers): Special Session on Algebraic Groups, AMS sectional meeting at Tufts University – **cancelled**.
- 2020, 2016, 2013. Panelist for the National Science Foundation.

- 2019-04. International member, Ph.D. committee, École Polytechnique Fédérale de Lausanne.
- 2014-11. Co-organizer (with S. Garibaldi): Special Session on Exceptional Groups in Physics, Algebra, and Geometry, AMS sectional meeting, UNC Greensboro.
- 2012-01. Co-organizer (with S. Garibaldi): Special Session on Linear algebraic groups: their arithmetic, geometry, and representations, Joint Mathematics Meeting, AMS Boston MA.

Service to Tufts University

- AY2020-2021, AY2021-2022, AY2022-2023 – AS&E Executive Commmittee. **Chair**: AY2022-2023.
- AY2020-2021, AY2021-2022 – AS&E Budget and Priorities committee (Ex-Comm liaison)
- AY2013-2014 – AY2018-2019. A&S Committee on Academic Standing and Honors. **Chair**: AY2014-2015 – AY2016-17.
- AY2014-2015 to AY2018-2019. AS&E Budget and Priorities committee Committee. **Chair**: AY2018-2019.
- AY2015-2016. AS&E Undergraduate Admissions and Financial Aid Committee.
- AY2015-2016. AS&E Residential Strategies Working Groups.
- AY2015-2016. A&S Workload Committee.
- AY2013-2014 and AY2014-2015. AS&E Faculty Research Support Advisory Committee.
- AY2012-2013. AS&E Committee on Committees.

- AY2011-2012. Faculty Research Awards Committee.
- AY2005-2006 – AY2009-2010. AS&E Undergraduate Admissions and Financial Aid Committee **Chair**: AY2009-2010

Thesis students

- Ph.D. 2021 – Nariel Monteiro, Tufts University.
- Ph.D. 2017 – Seth Rothschild, Tufts University.
- AY2016-2017 – Christian Testa (BS), Senior Honors Thesis, Tufts University.
- Ph.D. 2015 – Alex Babinski, Tufts University.
- MS 2014 – Nathan Scheinmann, l'École Polytechnique Fédérale de Lausanne (EPFL), Switzerland.
- AY2012-2013 – Samir Chowdhury (BS), Senior Honors Thesis, Tufts University.
- Ph.D. 2011 – Ellen Goldstein, Tufts University.
- Ph.D. 2007 – Art Weiss, Tufts University.
- MS 2008 – Emily Harvey, Tufts University.
- MS 2007 – Erica Waite, Tufts University.
- MS 2007 – David Earls, Tufts University.

Service for the Tufts Mathematics Department

- AY2020-2021, AY2021-2022. Preparator, tenure case of Robert Lemke Oliver.
- AY2021-2022. Course scheduling assistant.
- AY2020-2021. Hiring Committe, NWAP Geometric Group Theory.
- AY2019-2020 and AY2020-2021. Math Department Undergraduate Director.
- 2014–2019. Associate Department Chair
- AY2019-2020. Hiring Committee, NWAP Algebraic Geometry.
- AY2017-2018. Hiring Committee, NWAP Number Theory.
- AY2016-2017. Hiring Committee, Assistant Professor in Complex Geometry.
- AY2015-2016. Hiring Committee Chair, Full Time Lecturer.
- AY2014-2015. Hiring Committee Chair, Assistant Professor in Number Theory.
- AY2013-2014. Interim Graduate Director
- AY2013-2014. Hiring Committee, NWAP algebraic geometry.
- AY2012-2013. Hiring Committee, NWAP.
- 2008–2010. Curriculum Committee Chair
- AY2006-2007. Hiring Committee, 3-year Assistant Professor in Algebraic Groups.
- 2004–2017. Graduate Committee

Workshops, Conferences, Lectures (2016-)

- 2021-11 – Invited speaker, Special Session on Cohomology, Representation Theory, and Lie Theory at the (virtual) AMS Fall Southeastern sectional meeting.
- 2021-04 – Invited (virtual) participant, Oberwolfach workshop on Algebraic Groups.
- 2020-03 – Invited speaker, Conference on The combinatorics and geometry of Jordan type and commuting varieties, Northeastern University (Boston MA) – *virtual.*
- 2019-03 – Colloquium speaker, Northern Illinois University math department, DeKalb, IL.
- 2018-11 – Invited speaker, Workshop on Algebraic Groups, Lie Algebras, and their Representations, Max Planck Institute for Mathematics, Bonn, Germany.
- 2018-06 – Invited speaker, Southeastern Lie Theory conference, University of Georgia (Athens, GA).
- 2018-05 – Invited speaker, Algebraic Groups and Geometrization of the Langlands Program, Univ Lyon and École Normale Superieure Lyon (Lyon, France).
- 2018-04 – Invited speaker, Combinatorial Aspects of Nilpotent Orbits, AMS sectional meeting, Northeastern University (Boston, MA).
- 2018-04 – Participant, workshop on Representations of Finite and Algebraic Groups Mathematical Sciences Research Institute (Berkeley, CA).
- 2017-09 – Invited speaker, workshop on Pseudo-reductive Groups Newcastle University (Newcastle, UK).
- 2017-09 – Invited speaker, Algebra seminar, University of York (York, UK).
- 2017-09 – Invited speaker, ARTIN (Algebra and Representation Theory in the North), University of Manchester (Manchester, UK). + 2016-10 – Invited speaker, special session on Combinatorial Aspects of Nilpotent Orbits, AMS sectional meeting at Bowdoin College (Brunswick, ME).

Manuscripts

1. *Nilpotent elements and reductive subgroups over a local field.* Algebras and Representation Theory 24 (2021), pp. 1479-1522. [DOI], [Springer], [Journal] and [MR].

2. *Reductive subgroup schemes of a parahoric group scheme.* Transformation Groups 25 (2020), no. 1, pp. 217-249. [MR], [DOI] and [Journal].

3. *Central subalgebras of the centralizer of a nilpotent element.* With Donna M. Testerman (École Polytechnique Fédérale de Lausanne). Proceedings of the American Mathematical Society 144 (2016), no. 6, pp. 2383–2397. [MR] and [DOI].

4. *Linearity for actions on vector groups.* Journal of Algebra 397 (2014), pp. 666–688. [MR] and [DOI].

5. *Levi factors of the special fiber of a parahoric group scheme and tame ramification.* Algebras and Representation Theory 17 (2014), no. 2, pp. 469–479. [MR] and [DOI].

6. *On the descent of Levi factors.* Archiv der Mathematik 100 (2013), no. 1, pp. 7–24. [MR] and [DOI].

7. *Some good-filtration subgroups of simple algebraic groups.* With Chuck Hague (The McKeogh Company). Journal of Pure and Applied Algebra 217 (2013), no. 12, pp. 2400–2413. [MR], [arXiv] and [DOI].

8. *Levi decompositions of a linear algebraic group.* Transformation Groups 15 (2010), no. 4, pp. 937–964. [MR], [DOI] and [arXiv].

9. *Nilpotent centralizers and Springer isomorphisms.* With Donna M. Testerman (École Polytechnique Fédérale de Lausanne). Journal of Pure and Applied Algebra 213 (2009), no. 7, pp. 1346–1363. [MR], [DOI] and [arXiv].

10. *Nilpotent subalgebras of semisimple Lie algebras.* With Paul Levy (Lancaster University) and Donna M. Testerman (École Polytechnique Fédérale de Lausanne). Comptes Rendus Mathématique, Académie des Sciences, Paris 347 (2009), no. 9-10, pp. 477–482. [MR] and [DOI].

11. *The centralizer of a nilpotent section.* Nagoya Mathematical Journal 190 (2008), pp. 129–181. [MR], [arXiv] and [Euclid].

12. *Completely reducible Lie subalgebras.* Transformation Groups 12 (2007), no. 1, pp. 127–135. [MR], [DOI] and [arXiv].

13. *Completely reducible SL(2) homomorphisms.* With Donna M. Testerman (École Polytechnique Fédérale de Lausanne). Transactions of the American Mathematical Society 359 (2007), no. 9, pp. 4489–4510 (electronic). [DOI], [arXiv] and [MR].

14. *On the centralizer of the sum of commuting nilpotent elements.* Journal of Pure and Applied Algebra 206 (2006), no. 1-2, pp. 123–140. [DOI], [arXiv] and [MR].

15. *Optimal SL(2) homomorphisms.* Commentarii Mathematici Helvetici 80 (2005), no. 2, pp. 391–426. [arXiv], [DOI] and [MR].

16. *Nilpotent orbits over ground fields of good characteristic.* Mathematische Annalen 329 (2004), no. 1, pp. 49–85. [DOI], [arXiv] and [MR].

17. *Sub-principal homomorphisms in positive characteristic.* Mathematische Zeitschrift 244 (2003), no. 2, pp. 433–455. [arXiv], [DOI] and [MR].

18. *Faithful representations of SL(2) over truncated Witt vectors.* Journal of Algebra 265 (2003), no. 2, pp. 606–618. [MR], [arXiv] and [DOI].

19. *Adjoint Jordan Blocks.* Unpublished manuscript (2003). [arXiv].

20. *Component groups of unipotent centralizers in good characteristic.* With Eric Sommers (University of Massachusetts Amherst). Journal of Algebra 260 (2003), no. 1, pp. 323–337. [MR], [DOI] and [arXiv].

21. *The second cohomology of small irreducible modules for simple algebraic groups.* Pacific Journal of Mathematics 204 (2002), no. 2, pp. 459–472. [MR], [arXiv] and [DOI].

22. *Abelian unipotent subgroups of reductive groups.* Journal of Pure and Applied Algebra 167 (2002), no. 2-3, pp. 269–300. [DOI], [arXiv] and [MR].

23. *Filtrations and positive characteristic Howe duality.* Mathematische Zeitschrift 235 (2000), no. 4, pp. 651–685. [MR] and [DOI].

24. *Semisimplicity of exterior powers of semisimple representations of groups.* Journal of Algebra 225 (2000), no. 2, pp. 646–666. [MR] and [DOI].

25. *Semisimple modules for finite groups of Lie type.* Journal of the London Mathematical Society 60 (1999), no. 3, pp. 771–792. [MR] and [DOI].

26. *Dimensional criteria for semisimplicity of representations.* Proceedings of the London Mathematical Society 76 (1998), no. 1, pp. 95–149. [DOI] and [MR].

27. *Semisimplicity in positive characteristic.* Algebraic groups and their representations, NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci. 517 (1998), pp. 43–52. [MR].

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