

David W. McKellar

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Education

- Aug 2018 - **PhD, Biomedical Engineering**
Cornell University
Co-advised by Benjamin Cosgrove, PhD & Iwijn De Vlaminck, PhD
- Aug 2012 – **BS with Honor in Biomedical Engineering, minor in Biology**
May 2016 Georgia Institute Of Technology

Employment

- June 2016 – **Postbaccalaureate Fellow**
June 2018 NHGRI, National Institutes Of Health
Mentors: P. Paul Liu, MD/PhD & Erika Kim, PhD
- Aug 2012 – **Undergraduate Research Assistant**
May 2016 Georgia Institute Of Technology
Mentor: Manu O. Platt, PhD

Publications

In submission

1. Norris, A. M., Johnson, C. D., Zhou, L. Y., Appu, A., **McKellar, D. W.**, Cosgrove, B. D.; Kopinke, D. (2022). Hedgehog signaling acts as cell fate determinant during adult tissue repair. *bioRxiv*, 2022.08.15.504012. <https://doi.org/10.1101/2022.08.15.504012> [\[link\]](#)

In print

1. **McKellar, D. W.**, Mantri, M., Hinchman, M., Parker, J. S. L., Sethupathy, P., Cosgrove, B. D., Vlaminck, I. de. (2022). Spatial mapping of the total transcriptome by in situ polyadenylation. *Nature Biotechnology* (in press), [\[preprint pdf\]](#) [\[link\]](#) [\[github\]](#)
2. Mantri, M., Hinchman, M. M., **McKellar, D. W.**, Z Wang, M. F., L Parker, J. S., de Vlaminck, I. Spatiotemporal transcriptomics reveals pathogenesis of viral myocarditis. *Nat Cardiovasc Res* 1–15 (2022) doi:10.1038/s44161-022-00138-1. [\[pdf\]](#) [\[link\]](#)
3. Lee, U., Stuelsatz, P., Karaz, S., **McKellar, D. W.**, Russeil, J., Deak, M., de Vlaminck, I., Lepper, C., Deplancke, B., Cosgrove, B. D., & Feige, J. N. (2022). A Tead1-Apelin axis directs paracrine communication from myogenic to endothelial cells in skeletal muscle. *iScience*, 25 (7), 104589. <https://doi.org/10.1016/j.isci.2022.104589> [\[pdf\]](#) [\[link\]](#)
4. **McKellar, D.W.**, Walter, L.D., Song, L.T. et al. Large-scale integration of single-cell transcriptomic data captures transitional progenitor states in mouse skeletal muscle regeneration. *Commun Biol* 4, 1280 (2021). <https://doi.org/10.1038/s42003-021-02810-x> [\[pdf\]](#) [\[link\]](#) [\[github\]](#)
5. Wang, MFZ, Mantri M, Chou S-P, Scuderi GJ, **McKellar DW**, Butcher JT, Danko CG, De Vlaminck, I. Uncovering transcriptional dark matter via gene annotation independent single-cell RNA sequencing analysis. *Nat. Commun.* 12, 2158 (2021). [\[pdf\]](#) [\[link\]](#) [\[github\]](#)
6. Mantri, M., Scuderi, GJ, Abedini-Nassab, R, Wang, MFZ, **McKellar, DW**, Shi, H, Grodner, B, Butcher, JT, De Vlaminck, I. Spatiotemporal single-cell RNA sequencing of developing chicken hearts identifies interplay between cellular differentiation and morphogenesis. *Nat. Commun.* 12, 1771 (2021). [\[pdf\]](#) [\[link\]](#)

Grants & Awards

- 2021 - 2022 Immuno-Engineering: Integrated Engineering and Immunology T32 trainee
- 2021 1st Place, Cornell Stem Cell Symposium Poster Competition
- 2021 Genomics Innovation Hub Seed Grant
- 2019 NSF GRFP Honorable Mention
- 2018 Postbac Poster Day Award
- 2018 NSF GRFP Honorable Mention
- 2017 NHGRI Symposium Poster Award
- 2016 - 2018 NIH Postbaccalaureate Intramural Research Training Award
- 2016 President's Undergraduate Research Award (Georgia Tech UROP)
- 2012 – 2016 Dean's List, Georgia Tech
- 2012 – 2016 Zell Miller/HOPE Scholarship
- 2012 – 2016 Pattillo Scholarship Fund Scholarship

Presentations

Invited talks

- July 28, 2022 13th International Havemeyer Foundation Horse Genome Workshop
Ithaca, NY, USA
- Sep 22, 2021 Illumina Tech Talk
Ithaca, NY, USA

Contributed Talks

- May 3, 2022 Gordon Research Conference, Single-Cell Genomics
Les Diablalets, Switzerland
- Oct 7, 2021 2021 Biomedical Engineering Society Annual Meeting
Orlando, FL, USA
- Aug 20, 2021 Cornell Biomedical Engineering Society Symposium
Ithaca, NY, USA
- Jun 14, 2021 Cornell Stem Cell Program, 8th Stem Cell Symposium
Ithaca, NY, USA
- May 20, 2020 Cornell Single-Cell Working Group Seminar
Ithaca, NY, USA
- Nov 19, 2019 Cornell Stem Cell Program WIP Seminar
Ithaca, NY, USA
- Oct 17, 2017 NIH Postbac Seminar Series
Bethesda, MD, USA
- May 26, 2017 NHGRI Translational And Functional Genomics Branch Meeting
Bethesda, MD, USA
- Feb 2, 2016 Georgia Tech InVenture Semi-Finals
Atlanta, GA, USA

Posters

- Oct 18, 2022 The New York Stem Cell Foundation Conference
New York City, NY, USA
- May 3, 2022 Gordon Research Conference, Single-Cell Genomics
Les Diablalets, Switzerland
- Oct 20, 2020 The New York Stem Cell Foundation Conference
Online
- Oct 18, 2019 2019 BMES Annual Meeting
Philadelphia, PA, USA
- May 2, 2018 NIH Postbaccalaureate Poster Day
Bethesda, MD, USA
- Oct 26, 2017 2017 NHGRI Symposium

Bethesda, MD, USA

Sep 15, 2017 NIH Research Festival
Bethesda, MD, USA

May 4, 2017 NIH Postbaccalaureate Poster
Bethesda, MD, USA

Apr 19, 2016 The Georgia Tech Annual Undergraduate Research Spring Symposium
Atlanta, GA, USA

Dec. 2, 2016 Georgia Tech Senior Design Expo
Atlanta, GA, USA

Journal & Grant Reviewing

2022 *American Journal of Physiology, Cell Physiology*

2022 Cornell Genomics Innovation Hub, Grant review committee

2022 *Advanced Science*

2020 Cornell Genomics Innovation Hub, Grant review committee

Teaching

2019 Guest Lecturer, BME 6110: Stem Cell Bioengineering (Cornell University)

2015 Teaching Assistant, BME 1300: Problems in Biomedical Engineering (Georgia Tech)

University Service

2022 - Member, College Of Engineering Graduate Student Advisory Board

2021 - 2022 Communications Director, Cornell Biomedical Engineering Society

2013 - 2014 Vice President, Biomedical Research Opportunities Society