

David W. McKellar

dwm269@cornell.edu | mckellardw.github.io | github.com/mckellardw

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*, [\[link\]](#) [\[preprint pdf\]](#) [\[preprint ink\]](#) [\[github\]](#)
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 Fellowship
- 2021 1st Place, Cornell Stem Cell Symposium Poster Competition
- 2021 Cornell Genomics Innovation Hub Seed Grant
- 2019 NSF GRFP Honorable Mention
- 2018 NIH 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 Diablerets, 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 Diablerets, 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 Day
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