

Curriculum Vitae  
**Evan J. Morrison**

Howard Hughes Medical Institute Gilliam Fellow

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## **Education**

- 2018 – 2025      Ph.D. in Molecular Biology & Biochemistry  
University of Colorado Anschutz Medical Campus, Aurora, CO  
Thesis Project: Discovery and characterization of a MetAP-dependent N-degron pathway  
Advisor: Dr. Olivia S. Rissland.
- 2011 – 2016      B.S. in Chemistry & B.A. in Philosophy  
Metropolitan State University of Denver, Denver, CO  
Research Project: Determination of Higher Order Structures in the Cap-Independent Translation Enhancer of the Blackcurrant Reversion 2 Virus.  
Advisor: Dr. Megan Filbin-Wong.

## **Academic experience**

- 09/2017 – 08/2018      Clinical Research Coordinator  
University of Colorado Cancer Center  
Job Duties: Investigate research protocols to determine subject eligibility for participation in clinical research trials. Obtain informed consent and conduct research visits with patients (take vitals, perform EKGs, examine critical lab values, and document and grade adverse events (CTCAE v.4.0)) to ensure patient safety. Process and ship biospecimens for laboratory analysis.
- 09/2016 – 09/2017      Laboratory Researcher  
National Jewish Health  
Center for Genes, Environment and Health  
Research Project: Hepatic expression of chemokine ligand 20 is modulated by miR-590.  
Advisor: Dr. Johanna K. DiStefano
- 06/2016 – 08/2016      RNA Bioscience Initiative Intern (REU)  
University of Colorado School of Medicine  
Department of Biochemistry & Molecular Genetics  
Research Project: High throughput determination of higher order structures in the 3'UTR of a viral long noncoding RNA.  
Advisor: Dr. Jeffrey Kieft.
- 06/2015 – 06/2016      Student Research Assistant  
Metropolitan State University of Denver  
Department of Chemistry  
Research Project: Determination of higher order structures in the cap-independent translation enhancer of the blackcurrant reversion virus.  
Advisor: Dr. Megan Filbin-Wong

## Research skills

Laboratory techniques	Knowledge of biochemistry, molecular biology, and genetics experiments utilizing: gel electrophoresis, capillary electrophoresis, DNA purification, primer and G-block design, molecular cloning, transfection, transduction, RNA purification, <i>in vitro</i> transcription, <i>in vitro</i> translation, RT-qPCR, siRNA, miRNA, SHAPE and chemical probing, Western blot, ribosome fractionation and purification, immunoprecipitation, luciferase assays, LC-MS/MS, CRISPR KO, CRISPRi, CRISPRa, and mammalian cell culture.
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## Grant support

09/2022 –	HHMI Gilliam Fellowship-GT14919 (PI: Morrison) Howard Hughes Medical Institute A tripeptide motif induces rapid protein decay in human cells
06/2021 – 08/2022	NSF GRFP-2020300571 (PI: Morrison) National Science Foundation Primary protein sequence regulates gene expression.
05/2020 – 04/2021	NIH T32-GM136444 (PI: Morrison) National Institute of Health/National Institute of General Medical Sciences Amino acid concentration influences ORF dependent mRNA stability

## Publications

1. Leti F., **Morrison E.**, DiStefano JK. *Long noncoding RNAs in the pathogenesis of diabetic kidney disease: implications for novel therapeutic strategies.* Personalized Medicine. 2017;14(3): 271-8. DOI:10.2217/pme2016-0107.
2. **Morrison EJ.**, Champagne DP., Dzieciatkowska M., Nemkov T., Zimring JC., Hansen KC., Guan F., Huffman DM., Santambrogio L., and D'Alessandro A. *Parabiosis incompletely reverses aging-induced metabolic changes and oxidant stress in mouse red blood cells.* Nutrients. 2019; 11(6). DOI:10.3390/nu11061337.
3. Bertolone L., Kalani Roy M., Hay A., **Morrison EJ.**, Stefanoni D., Fu X., Kanas T., Gladwin M., Kleinman S., Dumont LJ., Stone M., Nemkov T., Busch M., Zimring JC., D'Alessandro A. *Impact of taurine on red blood cell metabolism and implications to blood storage.* Transfusion. 2020. DOI: 10.1111/trf.15810.
4. Bertolone L., Shin HKH., Stefanoni D., Baek JH., Gao Y., **Morrison EJ.**, Nemkov T., Thomas T., Francis RO., Hod EA., Zimring JC., Yoshida T., Karafin M., Schwartz J., Hudson KE., Spitalnik SL., Buehler PW., D'Alessandro A. *ZOOMICS: comparative metabolomics of red blood cells from old world monkeys and humans.* Frontiers in Physiology. 2020. DOI: 10.3389/fphys.2020.593841.
5. D'Alessandro A., Hay A., Dzieciatkowska M., Brown BC., **Morrison EJ.**, Hansen KC., Zimring JC. *Protein-L-isoaspartate O-methyltransferase is required for in vivo control of oxidative damage in red blood cells.* Haematologica. 2020. DOI: 10.3324/haemtaol.2020266676.

6. Thomas T., Cendali F., Fu X., Gamboni F., **Morrison EJ.**, Beirne J., Nemkov T., Antonelou MH., Kriebardis A., Welsby I., Hay A., Dziewulska KH., Busch MP., Kleinman S., Buehler PW., Spitalnik SL., Zimring JC., D'Alessandro A. *Fatty acid desaturase activity in mature red blood cells and implications for blood storage quality*. Transfusion 2021. DOI: 10.1111/trf.16402.
7. Barrington CL., Galindo G., Koch AL., Horton E., **Morrison EJ.**, Tisa S., Stasevich TJ., Rissland OS. *Synonymous codon usage regulates translation initiation*. Cell Reports 2023. DOI: 10.1016/j.celrep.2023.113413
8. **Morrison EJ\***, Rao DM\*, Horton ER\*, Barrington CL\*, Briney CA\*, Henriksen JC\*, Martinez-Seidel F\*, Sterling EM\*, Provencio ED., Harris M., Allen E., Hesselberth J., Rissland OS. *Systematic identification and characterization of eukaryotic and viral 2A peptide-bond-skipping sequences*. Cell Reports 2025. DOI: 10.1016/j.celrep.2025.115822  
\*These authors contributed equally.
9. **Morrison EJ.**, Shvartz D., Horton ER., Bekturova A., Koren I., Rissland OS. *UBR4 regulates a MetAP-dependent N-degron pathway*. Under review. DOI: <https://doi.org/10.1101/2024.10.03.616566>
10. **Morrison EJ.**, and Rissland OS. *The generation and consequences of N-terminal proteoform diversity*. Cell Reports 2025. DOI: 10.1016/j.celrep.2025.116275

## Abstracts and poster presentations

1. Shields EJ., **Morrison EJ.**, Filbin-Wong ME. *Determination of Viral Cap-Independent Translation Enhancer RNA structure using Computer Modeling and Chemical Modification*. Presented at the Metropolitan State University of Denver Undergraduate Research Conference 2016. 22 April, Denver, Colorado.
2. **Morrison EJ.**, Shields EJ., Filbin-Wong ME. *Determination of Higher Order Structures in the Cap-Independent Translation Enhancer of the Black Currant Reversion Virus 2*. Presented at the Metropolitan State University of Denver Undergraduate Research Conference 2016. 22 April, Denver, Colorado.
3. **Morrison E.**, Leti F., Gerhard GS., Still C., and DiStefano JK. *Hepatic Expression of Chemokine Ligand 20 (CCL20) in Nonalcoholic Steatohepatitis is Modulated by miR-590-5p*. Presented at the Center for Genes, Environment and Health 2017. 27 February, Denver, Colorado.
4. **Morrison EJ.**, Rissland OS. The N-terminus regulates gene expression in humans. Presented at the Annual Gilliam Fellows Meeting 2021. 22 September, virtual conference.
5. Abudushalamu A., **Morrison EJ.**, Rissland OS. METAP2 expression is regulated by translation elongation. Presented at the SACNAS NDiSTEM Conference. 2022. 27. October, San Juan, Puerto Rico.
6. **Morrison EJ.**, Horton E., Rissland OS. Characterization of a novel N-terminal degron in human cells. Presented at the Howard Hughes Medical Institute December Meeting. 2022. 14 December, Chevy Chase, Maryland.
7. **Morrison EJ.**, Horton E., Rissland OS. UBR4 mediates the quality control of pen-ultimate Arg/N-recognins in mammals. Presented at the Howard Hughes Medical Institute Annual Gilliam Fellow Meeting. 2023. 31 March, Chevy Chase, Maryland.

8. **Morrison EJ**, Horton E., Rissland OS. Dynamic regulation of tertiary N-degron motifs in humans. Presented at RNA Society 2023. 03 June, Singapore, Singapore.
9. **Morrison EJ**, Horton E., Rissland OS. Tertiary lysines and arginines destabilize proteins in human cells. Presented at the Howard Hughes Medical Institute Annual Gilliam Fellow Meeting. 2023. 28 September, Chevy Chase, Maryland.
10. **Morrison EJ**, Horton E., Rissland OS. Methionine cleavage by METAP2 produces primary N-degrons. Presented at the Howard Hughes Medical Institute December Meeting. 2023. 13 December, Chevy Chase, Maryland.
11. **Morrison EJ**, Horton E., Rissland OS. UBR4 regulates a MetAP2-dependent Arg/N-degron pathway. Presented at the Howard Hughes Medical Institute December Meeting. 2024. 18 September, Chevy Chase, Maryland

## **Oral presentations**

- 05/2014      Openness and closedness: metaphors in discourse  
                  Undergraduate English Conference, Division of Linguistics  
                  SpringHill Suites, Denver, CO
- 05/2016      Higher order structures in the cap-independent translation enhancer of the blackcurrant virus 2  
                  Metropolitan State University of Denver, Department of Chemistry Speaker Series
- 04/2021      Primary protein sequence regulates gene expression  
                  Metropolitan State University of Denver, Department of Chemistry Speaker Series  
**Invited speaker**
- 10/2023      Tying up loose ends: Characterization of a novel N-degron pathway in humans  
                  \*Awarded Outstanding Research Presentation in Cell/Molecular Biology and Developmental Biology  
                  SACNAS NDiSTEM 2023  
                  Oregon Convention Center, Portland Oregon
- 05/2024      UBR4 regulates a MetAP2-dependent Arg/N-degron pathway  
                  2024 SEP Rising Stars in Biomedical Sciences  
                  Sanford Burnham Prebys, La Jolla, California  
**Invited Speaker**

## **Lectures in service of education and outreach**

- 02/2019      From rAGs to riTChes: on becoming an RNA biochemist  
                  DSST: Conservatory Green High School; **Invited speaker**.
- 03/2020      Where does it all go? Metabolism and the chemistry of life  
                  Aurora Science and Technology Middle School; **Invited speaker**.
- 08/2021      Writing a message: How the beginning of the ORF dictates gene expression  
                  Science Gong Show; **Invited Speaker**

05/2022 Those we render invisible: racialized gendered reductionism from an empirical point of view  
 WiSTEM Annual Symposium 2022  
 University of Colorado-Denver, Anschutz Medical Campus

## **Honors, special recognitions, and awards**

- 1999 Denver Mile High Scholar  
 Samuels Elementary School
- 2000 Samuel's Elementary School Super Citizen  
 Samuels Elementary School
- 2013 Provost's Honor Roll  
 Metropolitan State University of Denver
- 2013 Metro Scholar Need Award  
 Metropolitan State University of Denver  
 \$1250.00
- 2014 Metro Scholar Need Award  
 Metropolitan State University of Denver  
 \$800.00
- 2016 LAS Student Research Grant  
 Metropolitan State University of Denver  
 \$500.00
- 2016 2016 Outstanding Student of the Year Nominee  
 Metropolitan State University of Denver, College of Letters, Arts and Sciences
- 2018 RNA Bioscience Initiative Academic Enrichment Award  
 University of Colorado-Denver, Anschutz Medical Campus  
 \$5000.00
- 2020 Molecular Biology Predoctoral NRSA T32 Institutional Training Fellowship  
 University of Colorado-Denver, Anschutz Medical Campus  
 \$24,816.00
- 2021 – 2022 National Science Foundation Graduate Research Fellowship  
 University of Colorado-Denver, Anschutz Medical Campus  
 \$46,000.00 per year
- 2022 – Howard Hughes Medical Institute Gilliam Fellowship  
 University of Colorado-Denver, Anschutz Medical Campus  
 \$55,000.00 per year
- 2023 SACNAS NDiSTEM Travel Scholarship  
 University of Colorado-Denver, Anschutz Medical Campus
- 2023 Outstanding Research Presentation in Cell/Molecular Biology and Developmental Biology  
 NDiSTEM SACNAS 2023, Portland, Oregon

- 2024      Sanford Burnham Prebys 2024 Rising Stars in Biomedical Sciences  
Stanford Burnham Prebys, La Jolla, California
- 2025      AAAS/*Science* Program for Excellence in Science  
Nominated by Dr. Jennifer Richer, Dean of CU Anschutz Graduate School  
University of Colorado-Denver, Anschutz Medical Campus

### **Professional affiliations**

- 2019 – Present    Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)  
National Student Member
- 2019 – Present    American Society for Biochemistry and Molecular Biology (ASBMB)  
University of Colorado-Denver, Anschutz Medical Campus  
Student Member
- 2018 – Present    RNA Society  
University of Colorado-Denver, Anschutz Medical Campus  
Student Member
- 2014 – Present    Golden Key International Honor Society  
Metropolitan State University of Denver  
Student Member

### **Committee and service responsibilities**

- 2024 –        Black Graduate Student Association  
University of Colorado-Denver, Anschutz Medical Campus  
Student Member
- 2022 – Present    RNA Bioscience Initiative Summer Internship Program Admission Committee  
University of Colorado-Denver, Anschutz Medical Campus  
Reviewer
- 2021 – 2022     Women in Science, Technology, Engineering and Mathematics (WiSTEM)  
University of Colorado-Denver, Anschutz Medical Campus  
Ally Coordinator
- 2021 – 2023     Molecular Biology Graduate Advisory Committee  
University of Colorado-Denver, Anschutz Medical Campus  
Student Representative
- 2020 – 2023     Diversity, Equity and Anti-Racism (DEA-R) Recruitment Committee  
Biochemistry and Molecular Genetics  
University of Colorado-Denver, Anschutz Medical Campus  
Co-chair

2020 – 2022	Seminar Committee Biochemistry and Molecular Genetics University of Colorado-Denver, Anschutz Medical Campus Student Member
2020 – 2022	National Science Foundation Graduate Research Fellowship Review Committee University of Colorado-Denver, Anschutz Medical Campus Reviewer
2019 – 2020	Molecular Biology T32 Round Table Planning Committee University of Colorado-Denver, Anschutz Medical Campus Student Member
2019 – Present	Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) Local Student Member
2014 – 2016	Louis Stokes Colorado Alliance for Minority Participation Metropolitan State University of Denver Student Member

## **Teaching record**

### ***Undergraduate***

CHE 4350            Biochemistry laboratory  
01/2015 – 05/2015    Teaching Assistant  
                          Metropolitan State University of Denver

CHE 3000            Analytical chemistry  
08/2015 – 12/2015    Supplemental Instructor  
                          Metropolitan State University of Denver

CHE 4310            Biochemistry I  
01/2016 – 05/2016    Supplemental Instructor  
                          Metropolitan State University of Denver

### ***Graduate***

MOLB 7950           Bioinformatics and statistics  
08/2022 – 12/2022    Teaching Assistant  
                          University of Colorado-Denver, Anschutz Medical Campus

IDPT 7806           Foundations in Biomedical Sciences  
08/2022 – 12/2022    Teaching Assistant  
                          University of Colorado-Denver, Anschutz Medical Campus

## **Mentoring and training**

### ***Undergraduate***

- 12/2015 – 09/2022     Laura Baquero (student: Biology major)  
                             Metropolitan State University of Denver  
                             Currently Doctoral Candidate in the Molecular and Cellular Biology Program at University of Washington
- 06/2022 – 08/2022     Adina Abudushalamu (student: Biochemistry & Computer Science major)  
                             University of Colorado Denver, Anschutz Medical Campus  
                             Currently Graduate Student at the University of California, Davis
- 06/2023 – 08/2023     Emily Allen (student: Biology major)  
                             University of Colorado Denver, Anschutz Medical Campus  
                             Currently Graduate Student at University of Michigan
- 09/2023 – 05/2024     Edgar Provencio (student: Biology Major)  
                             University of Colorado-Denver, Anschutz Medical Campus  
                             Currently student in the Biology Program at Metropolitan State University of Denver
- 06/2024 – Present     Tan Hyunh (student: Biology Major)  
                             University of Colorado-Denver, Anschutz Medical Campus  
                             Currently student in the Biology Program at Metropolitan State University of Denver

### ***Professional Research Assistants and graduate students***

- 02/2022 – 06/2022     Emma Horton (Professional Research Assistant)  
                             University of Colorado Denver, Anschutz Medical Campus  
                             Currently Research Assistant at the Allen Institute, Seattle Washington

## **Community service**

- 12/2012– 03/2014     Mentor and Volunteer Coordinator  
                             Aurora Youth Options, Aurora, Colorado
- 02/2019 – 12/2021     Sexual Assault Victims Advocate  
                             The Blue Bench, Denver, Colorado
- 2019 – 2020     RNA Bioscience Initiative Summer Internship Program Group Leader  
                             University of Colorado-Denver, Anschutz Medical Campus
- 2019     Neuroanatomy Teaching Assistant, SACNAS Summer Academy  
                             University of Colorado-Denver, Anschutz Medical Campus
- 09/2020 – 03/2023     Bryant Webster STEM Scholar Mentor  
                             University of Colorado-Denver, Anschutz Medical Campus
- 06/2023 – 09/2023     CC2STEM Mentor  
                             University of Colorado-Denver, Anschutz Medical Campus

## **References**

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|----------------|---|
| (303) 724-3219 | Dr. Olivia Rissland<br><a href="mailto:olivia.rissland@gmail.com">olivia.rissland@gmail.com</a><br><a href="http://www.risslandlab.com">www.risslandlab.com</a>                                 |
| (303) 724-3309 | Dr. Sujatha Jagannathan<br><a href="mailto:sujatha.jagannathan@cuanschutz.edu">sujatha.jagannathan@cuanschutz.edu</a><br><a href="http://www.jagannathan-lab.org/">www.jagannathan-lab.org/</a> |
| (303) 724-3567 | Dr. Neelanjan Mukherjee<br><a href="mailto:neelanjan.mukherjee@cuanschutz.edu">neelanjan.mukherjee@cuanschutz.edu</a><br><a href="http://www.mukherjeelab.org/">www.mukherjeelab.org/</a>       |