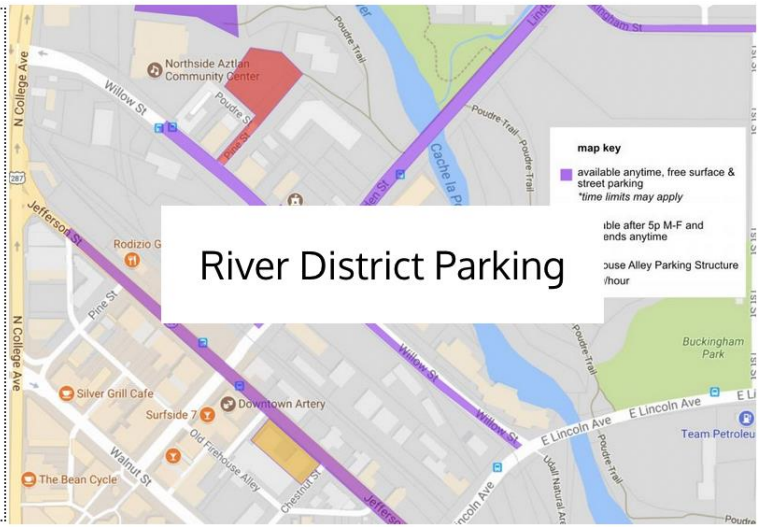

Front Range
Worm Meeting

Front Range Worms Schedule

Time	Speaker	University/Lab	Topic
9:45-10 AM	***Coffee and breakfast***		
10:00-10:10	Ann Wehman Fred H		
10:15-10:40	Ann Wehman	Denver University (DU)	Lipid asymmetry, extracellular vesicles, and phagocytic clearance
10:40-10:55	Jessica Hill	CSU/Nishimura Lab	Fine scale methods for assessing gut bacteria in the C. elegans intestine
10:55-11:20	Bethany Lucas	Regis University	*C. elegans*, from the classroom to the community
11:20-11:35	Julie Moreno	CSU/ EHS	Discovering therapeutics for neurotoxicity using C. elegans
11:35-12:00	Tom Larocca	CSU/EHS	Worms in the translational aging research ark
12:00-1:30 PM	**Lunch and posters**		
1:30-2:10	Fred Hoerndli, David Fay, Shaul Yogev, Rachel Doser Lyndsay Wikenbach		PhD Sucess Panel
2:15-2:30	Owen Funk	UWyoming/ Fay Lab	Cell fusion and gene expression in the *C. elegans* hypodermis
2:30-2:55	Sunil Kumar	Denver University	*C. elegans* models: A sweet spot in drug discovery for neurodegenerative disorders
2:55-3:10	Chris Link	CU Boulder	Single-cell RNA-Seq analysis of transgenic C. elegans expressing human tau protein.
3:10-3:30	**Coffee and Cookies**		
3:30—4:30	**Shaul Yogev**	**Yale Medical School**	**Formation and function of the axonal cytoskeleton**
4:30-5:00pm	Concluding remarks and brainstorming for next year		

Parking



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Short Talks Titles and Abstracts

- **Fine scale methods for assessing gut bacteria in the C. elegans intestine (10:40-10:55AM).**
  - *Jessica Hill, Nishimura lab, CSU*

- **Discovering therapeutics for neurotoxicity using C. elegans (11:20-11:35AM).**
  - *Julie Moreno, Moreno Lab, EHS CSU*

- **Cell fusion and gene expression in the C. elegans hypodermis (2:15-2:30PM).**
  - *Owen Funk, Fay Lab, U Wyoming*

  While most eukaryotic cells are mononucleate and diploid, some break the mold with multiple nuclei residing within the same shared cytoplasm. These syncytia are found throughout nature, and the C. elegans hyp7 hypodermal syncytia contains 139 nuclei making it an ideal model to study syncytial function. Despite the many syncytia found throughout nature fundamental questions remain: 1) are nuclei within a common cytoplasm compositionally and functionally distinct, 2) how are unique nuclear identities acquired, and 3) does nuclear heterogeneity contribute to proper cell and organismal function? To explore these questions, we are manipulating hyp7 fusion events via eff-1 mutants to assess transcriptomic changes and developmental delays in worms with an unfused hypodermis. Moving forward we hope to validate candidates from the transcriptomic study via smFISH and use single-nuclei genomics to characterize heterogeneity within the mature hyp7.

- **Single-cell RNA-Seq analysis of transgenic C. elegans expressing human tau protein (2::55-3:10).**
  - *Chris Link, CU Boulder*

  Deposition of the tau protein is well correlated with neuronal dysfunction in multiple neurodegenerative diseases, but the actual mechanism(s) by which tau causes neuropathology have not been resolved. We have used single cell sequencing to characterize gene expression in two well-characterized C. elegans transgenic strains that express either wild type (CK144) or V337M mutant (CK10) 4-repeat human tau using a pan-neuronal promoter. Expression of V337M mutant tau, which is associated with inherited frontotemporal dementia, results in more dramatic motor defects than wild type tau in these transgenic models, supporting the relevance of these models to human pathology. Unexpectedly, preliminary results suggested a reduction in expression of transcripts associated with coelomocytes in the CK10 strain in comparison to CK144. Coelomocytes are non-neuronal cells known to phagocytose proteins from the body cavity, and our initial microscopy indicates that coelomocyte number may be reduced in the CK10 strain relative to CK144. These observations suggest non-cell-autonomous tau pathology is occurring in this model. As tau is known to be secreted in the brain and tau pathology is believed to spread in neurodegenerative diseases, we are considering whether this model can be used to characterize the molecular basis of tau export and re-uptake.

Poster Titles and authors:

- Investigating the role of activity-dependent ROS signaling on glutamate receptor transport in excitatory neurons.
  - *Kaz Knight, Hoerndli lab, CSU*

- Investigating the role of mitochondrial Ca2+ on AMPAR trafficking
  - *Ennis Deihl, Hoerndli lab, CSU*

- Pathways impacting anterior embryogenesis in C. elegans
  - *Balasubramaniam Boopathi, Boothby Lab, U Wyoming*

- Effects of Piki-1 Mutants in the Hypodermis
  - *Gabrielle Reimann, Fay Lab, U Wyoming*

- Role of amino-phospholipid translocase tat-1 in intracellular trafficking
  - *Shae Milne, Fay Lab, U Wyoming*

- **Skn-1, Nrf homolog, Mediate Cannabidiol Cellular Stress Responses in C. elegans**
  - *Abdullatif Alsulami, Moreno Lab, CSU*

- **Determining the role of LC3-associated phagocytosis in polar body membrane breakdown**
  - *Shrutti Koli, Wehman lab, DU*

Material for "How to have a successful PhD Panel":

⇒ **Taking Positive Steps Towards PhD Success**

- https://hellobio.com/blog/taking-positive-steps-towards-phd-success.html?utm_content=content&utm_medium=email&utm_campaign=mar-23-3&utm_source=hellomail

⇒ **The Life Scientists' Guide For New PhD Students**

- https://hellobio.com/blog/the-life-scientists-guide-for-new-phd-students.html

⇒ **The Science PhD Survival Pack**

- https://hellobio.com/blog/the-science-phd-survival-pack.html

⇒ **The Most Common PhD Problems & How to Get Past Them**

- https://hellobio.com/blog/the-most-common-phd-problems-and-how-to-get-past-them.html

⇒ **The Recipe for Sweet PhD Success - Part 1**

- https://hellobio.com/blog/the-recipe-for-sweet-phd-success-pt1.html

⇒ **The Recipe for Sweet PhD Success - Part 2**

- https://hellobio.com/blog/the-recipe-for-sweet-phd-success-pt2.html

⇒ **Navigating the Mentor-Mentee Relationship**

- https://hellobio.com/blog/navigating-the-mentor-mentee-relationship.html?utm_content=content&utm_medium=email&utm_campaign=mar-23-5&utm_source=hellomail

⇒ **Help I am a Scientist:**

- **Helpiamascientist.com**

⇒ **Modest advice from The Stearns Lab at Yale:**

- **https://stearnslab.yale.edu/modest-advice**

⇒ **How do you apply for a post-doc?**

- **https://gonzales.science/resource-blog**

List of participants email, lab, and title, presenter or not:

Participant Name	Institution	Lab	Title	Email	Role
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