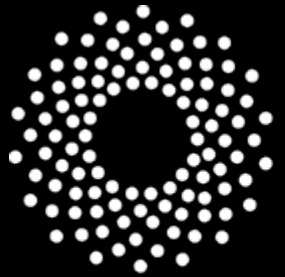
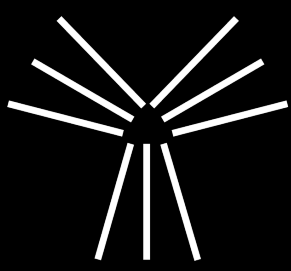


The Triangle Cytoskeleton Meeting



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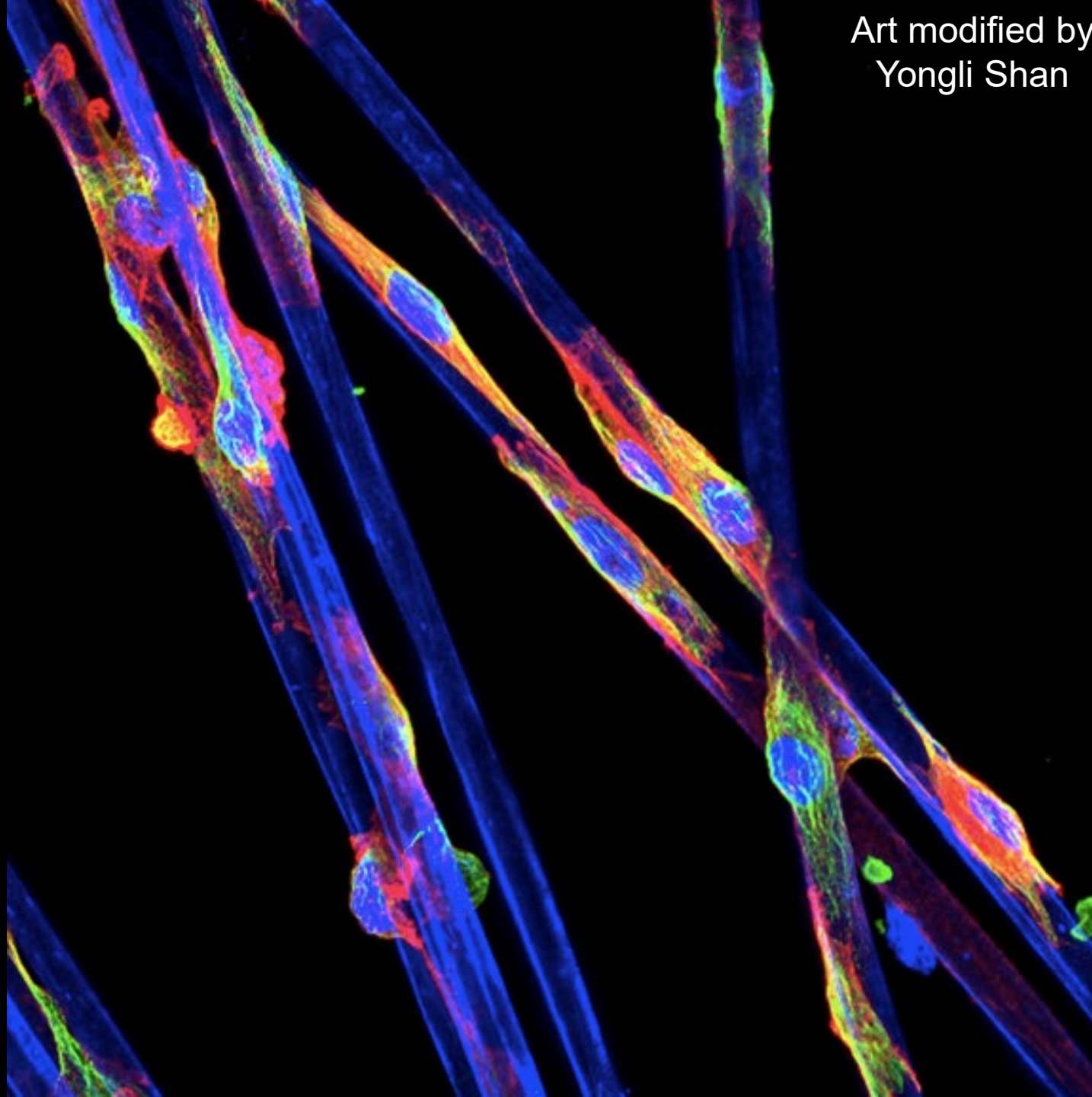
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**September 25, 2023
North Carolina Museum of
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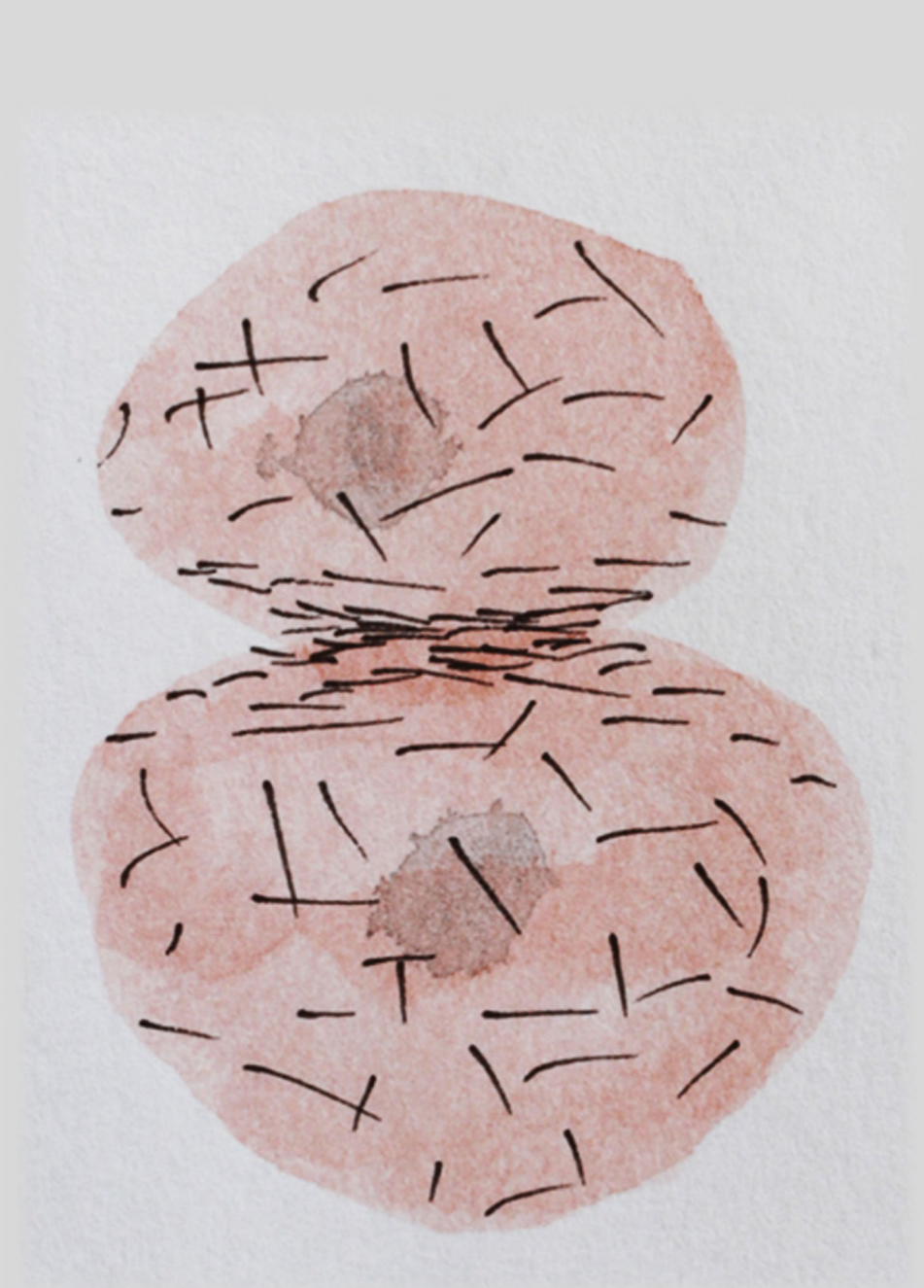
Ellysa Vogt
Jocelyn Alvarado
Alan Edwards
Veronica Farmer
Noor Singh
Parsa Zareiesfandabadi

With Special Thanks To
Delphine Bull- UNC Chapel Hill
Robert Duronio, PhD- UNC Chapel Hill

Artwork by: Sophia Tintori, PhD- New
York University

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- 6. Mechanistic Insights to Cytoskeletal Regulation
- 7. Quantitative and Modeling Approaches in Studying the Cytoskeleton
- 8. Cytoskeleton in Development
- 9. Keynote
- 10 - 12. Poster Session 1
- 13 - 15. Poster Session 2



Triangle Cytoskeleton Meeting

September 25, 2023

9:00 - 9:30	Check in/ Breakfast
9:30 - 9:35	Introductions and Opening
9:35 - 10:20	Cytoskeleton in emerging models
10:20 - 11:20	Poster Session 1
11:20 - 12:30	Mechanistic insights to cytoskeletal regulation
12:30 - 1:30	Lunch
1:30 - 2:40	Quantitative and modeling approaches in studying the cytoskeleton
2:40 - 3:40	Poster Session 2
3:40 - 4:20	Cytoskeleton in development
4:20 - 5:00	Keynote: Trina Schroer
5:00 - 5:05	Closing Statements
5:05 - 6:00	Happy Hour

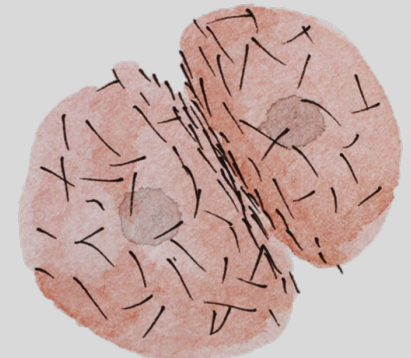
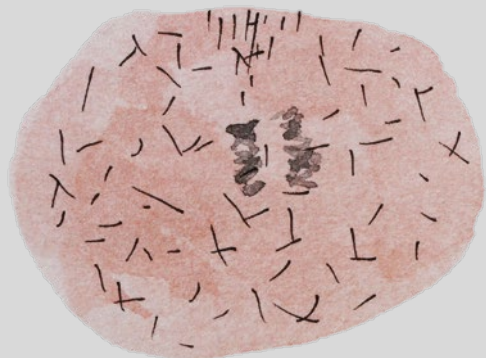
Cytoskeleton in Emerging Models

9:35 **The evolution and specification of the cytoskeletal networks**

Lillian Fritz-Laylin, University of Massachusetts Amherst

10:00 **Complex network morphology encourages mixing in
*Physarum polycephalum***

Zach Geisterfer, Duke University



Mechanistic Insights to Cytoskeletal Regulation

11:20 **Building the Body Plan: The Miracle of Morphogenesis**

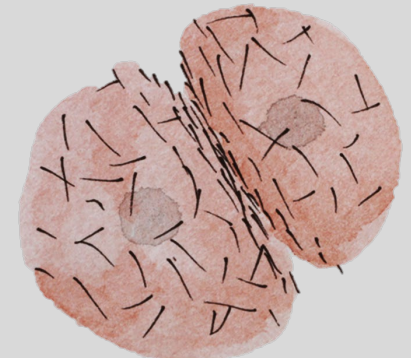
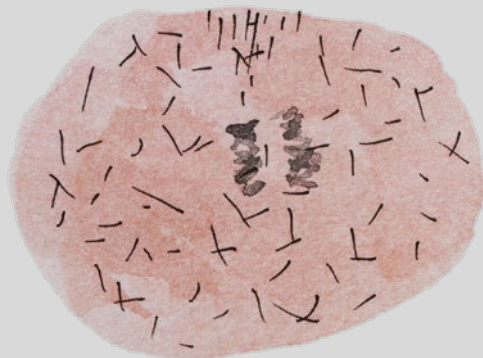
Invited Speaker Mark Peifer, UNC-Chapel Hill

11:45 **Effects of disease-causing point mutations and single Kelch domain deletions on gigaxonin-induced IF protein clearance in cells**

Cassandra L. Phillips, UNC-Chapel Hill

12:10 **Model-based classification of anchored molecular motor-biopolymer interactions**

John B. Linehan, UNC-Chapel Hill



Quantitative And Modeling Approaches in Studying the Cytoskeleton

1:30 **Motile Properties of nonmuscle myosin 2c**

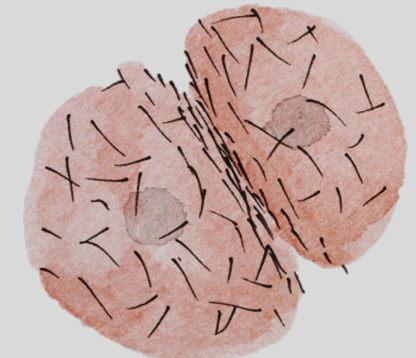
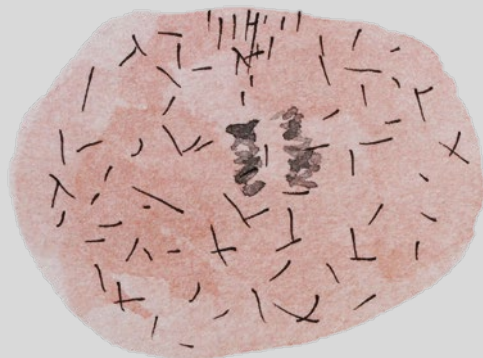
Mohammad Ashikur Rahman, NIH NHLBI

1:55 **G-actin diffusion is insufficient to achieve F-actin assembly
in fast-treadmilling protrusions**

Ravi Appalabhotla, North Carolina State University

2:20 **The cytoskeleton and shell mechanics in animal and
bacterial cells**

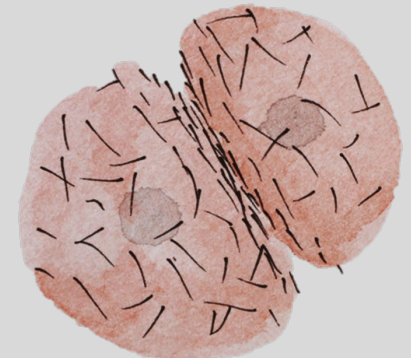
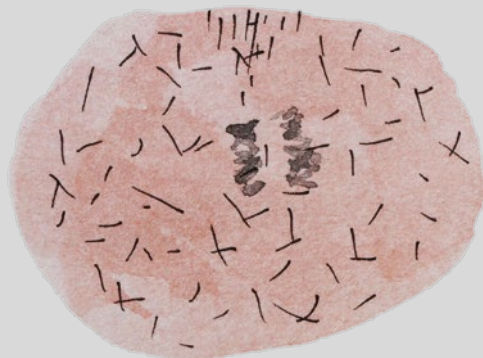
[Invited Speaker Christoph Schmidt](#), Duke University



Cytoskeleton in Development

- 3:40 **Fibroblast Growth Factor Signaling is Required for Ectoderm Structure and Function in *Drosophila* Dorsal Closure**
Mina Amini, Duke University

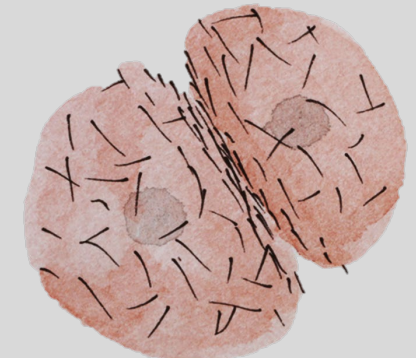
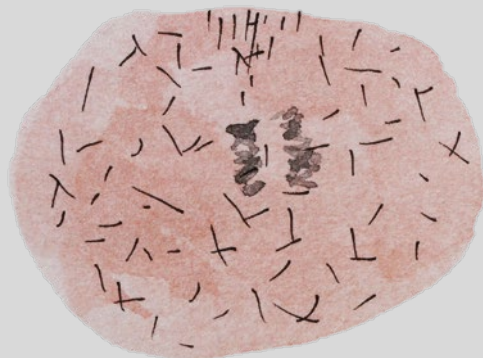
- 4:05 **Control of microtubules in neuronal processes by profilin 1 and actomyosin**
Eric A. Vitriol, Medical College of Georgia at Augusta University



Keynote

4:20 **Dynactin, the final frontier**

Trina Schroer, Johns Hopkins University



Poster Session 1

1 Septin localization and assembly rates are modulated by lipid packing

Brandy Curtis

2 Studying the role of brain enriched E3 ubiquitin ligase TRIM9 in Alzheimer's Disease

Anca Frasineanu

3 An RNAi screen to identify collective cell migration regulators reveals roles for the Plexin/Semaphorin system

Jenevieve Norton

4 Coronin 1A role in TRIM67-regulated neuronal morphogenesis

Chris Ho

5 The impact of tubulin post-translational modifications on morphodynamics of organelles during neuronal differentiation

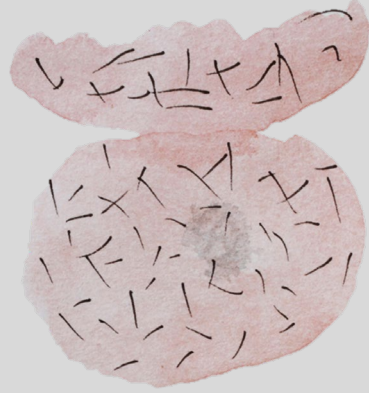
Chih-Hsuan (Sherry) Hsu

6 Viscoelasticity of the Cell Nucleus and Intranuclear Transport

Mingru Li

7 The anillin ANI-2 and kinase SPE-6 function in male germline organization in *C. elegans*

Emily Larsen



Poster Session 1

8 Understanding the role of F-actin in regulation of chloroplast division in green alga
Chlamydomonas reinhardtii
Sheng-An Chen

9 Measurement of cellular traction forces in customizable three-dimensional geometries
Max Hockenberry

10 The Regulation of Exocytosis during Neuronal Morphogenesis
Samantha Ryken

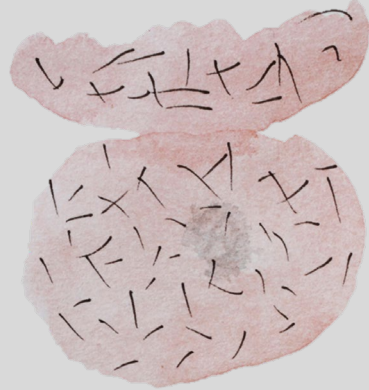
11 ARP2/3 Branched Actin Regulation of Clathrin Plaques
Mark Hazelbaker

12 Using the worm *C. elegans* as a model to study the role of neuronal beads in neurodegenerative conditions
Kin Gomez

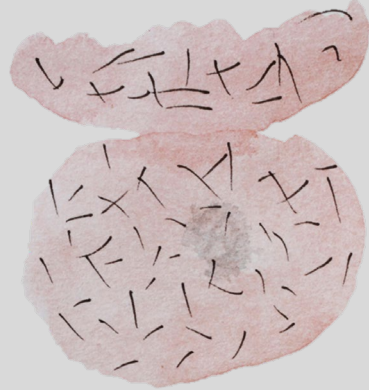
13 The roles of plastin and beta-heavy spectrin in the assemblage and constriction of the cytokinetic ring
Michael Norman

14 Experimental method to measure turgor pressure in vivo applied to *E. coli* cells
Renata Garces

15 Exploring determinants of spindle elongation rate in the fission yeast *S. pombe*
Taylor Couture



Poster Session 1



16 Probing Structural and Force Dynamics during the Process of Phagocytosis
Jim Fan

17 Calcium/Calmodulin Dependent Protein Kinase Kinase-2 (CaMKK2) facilitates Protein Kinase G (PKG)-dependent remodeling of the actin cytoskeleton to increase tumor cell invasion and metastasis
Debarati Mukherjee

18 A novel role for Semaphorin/Plexin Signaling in Collective Cell Migration in vivo
Maik Bischoff

19 Regulated sonic hedgehog signaling is required for actomyosin activity and patterned cell remodeling during cranial neural tube closure
Eric Brooks

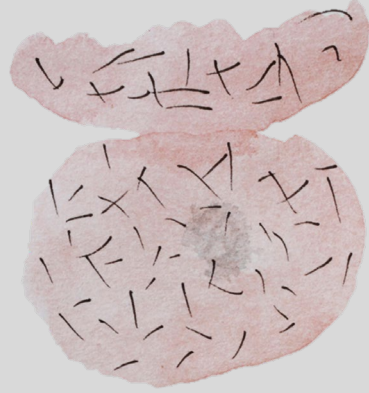
20 Biosensors that report the stretch-mediated opening of specific talin domains; application to adhesion and podosome signaling
Gabriel Kreider-Letterman

21 Super-resolution microscopy reveals nanoscale actin and tight junction network reprogramming in mesothelial cells and corneal endothelial cells
Yang Zhang

Poster Session 2

22 Elucidation of the Molecular Basis and Cellular Functions of Vinculin-Actin Directional Catch Bonding

Mohammad Ashhar Iqbal Khan



23 Super-resolution microscopy reveals nanoscale actin and tight junction network reprogramming in mesothelial cells and corneal endothelial cells

Jiahui Chen

24 Examining the role of a β -importin, Tnpo-SR, in the dynamic cytoskeletal reorganization of germline stem cells in *Drosophila*

Amanda Powell

25 TRIM9 modulates cytoskeletal dynamics, membrane remodeling, and motility in melanoma

Kimberly Lukasik

26 TRIM9 regulates netrin-dependent morphogenesis through the regulation of plasma membrane DCC and UNC5C

Sampada Mutalik

27 Simulating global PCP orientation establishment without morphogens

Abhisha Thayambat

28 SPE-54 is required for proper pseudopod shape and function in *C. elegans* sperm

Corinne Vanella

Poster Session 2

29 The E3 ubiquitin ligase TRIM9 regulates actin dynamics and synapse formation

Elliot Evans

30 Identifying Vinculin-Tension-Sensitive Protein-Protein Interactions by Mass Spectrometry

Meghan Reynolds

31 Regulated cell contractility controls small intestinal villus architecture

Taylor Hinnant

32 Time-lapse imaging reveals cytoskeletal disruptions that perturb cell and chloroplast division in

Chlamydomonas reinhardtii

Rossie Clark-Cotton

33 Phase Field Model to Study Integrin Based Signaling and Fibroblast Haptotaxis

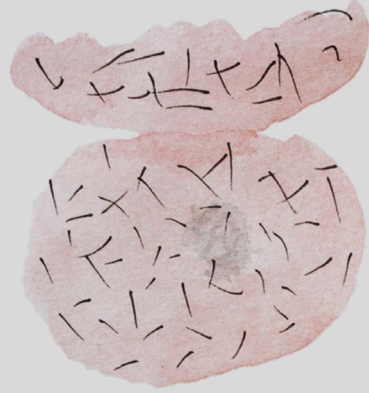
Joseph Koelbl

34 Microtubule Dynamics and Cargo Localization in Cellular Response to Axon Injury

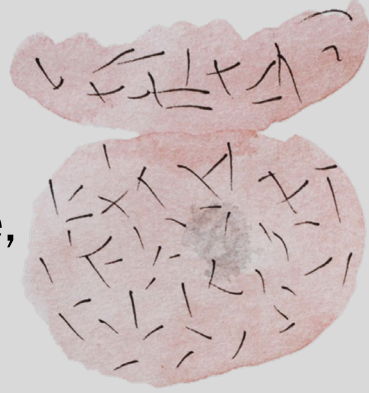
Hannah Scanlon

35 Ultrafast Contraction: Unraveling Changes in the Myoneme-Based Cytoskeletal Networks during Contraction in *Spirostomum* sp.

Joseph Lannan



Poster Session 2



36 Getting there in one piece: Highly conserved small GTPases are required in a non-protrusive, migrating leader cell to maintain cellular integrity
Noor Singh

37 Understanding how actomyosin dynamics drive apical constriction
Pu Zhang

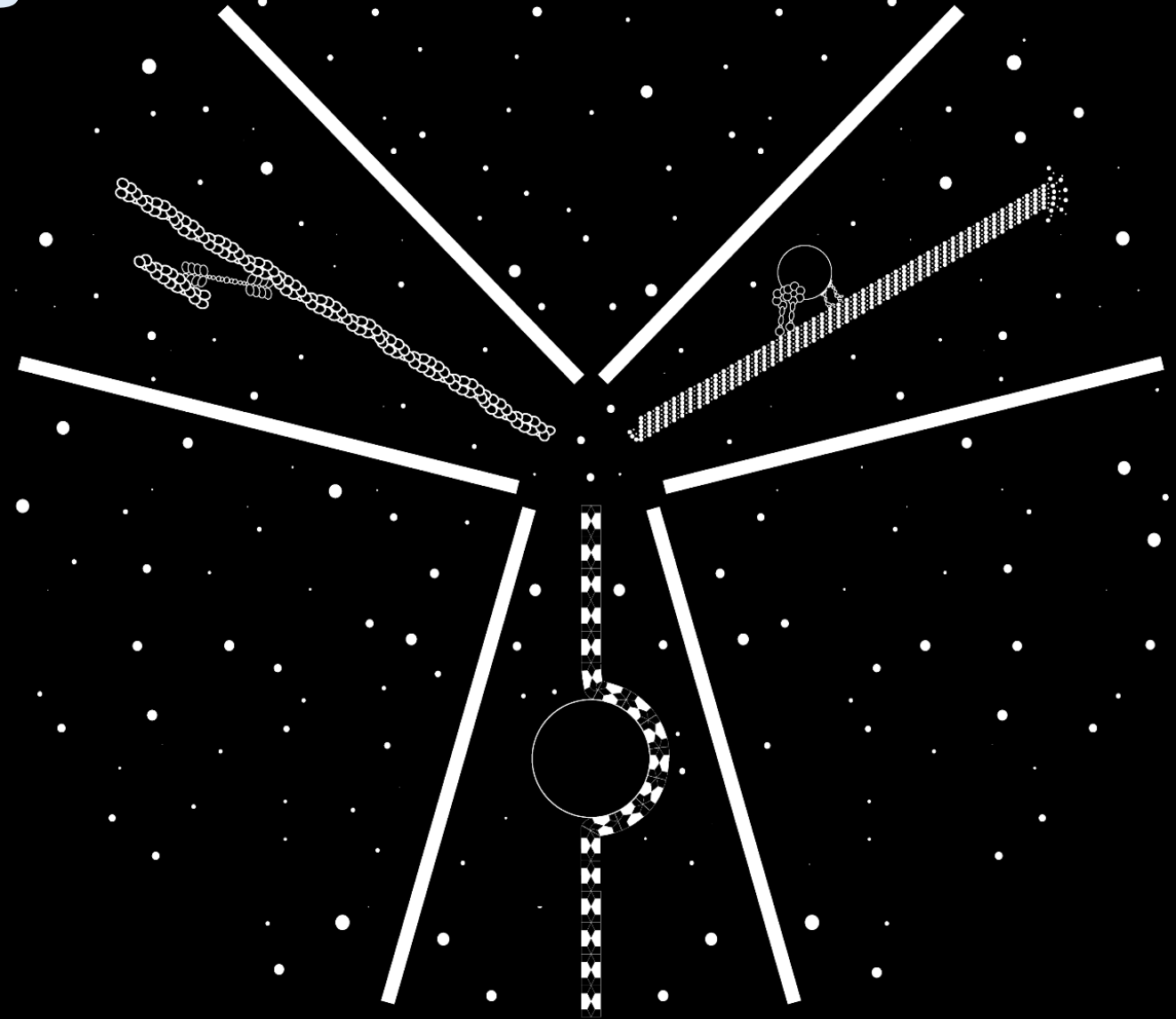
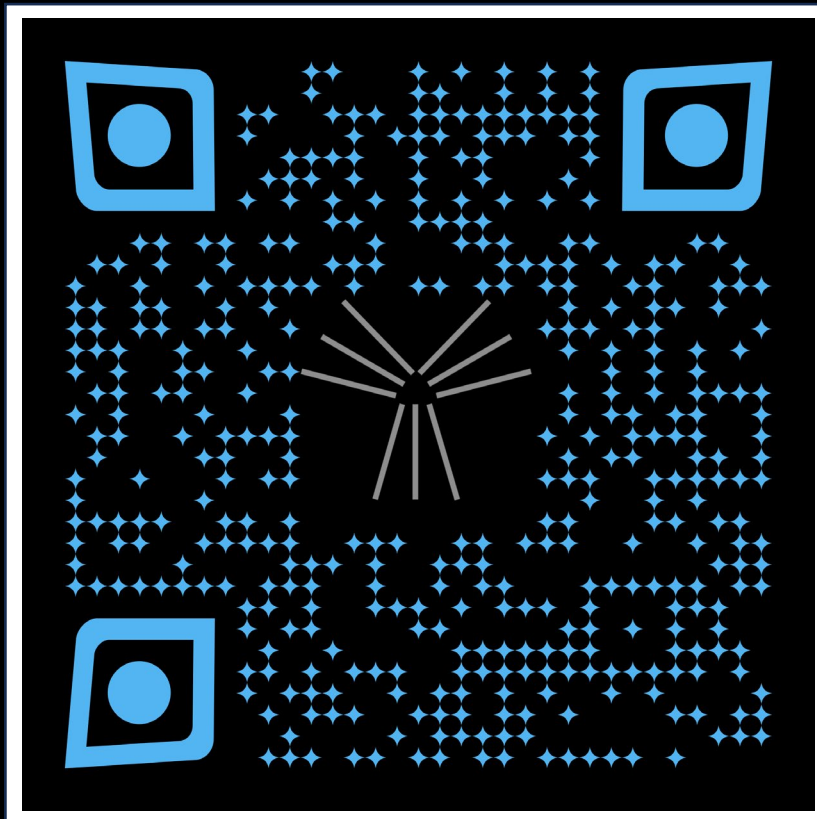
38 Probing mechanotransduction pathways in breast cancer metastasis through visualization and control of vinculin conformation
Joseph Szulczewski

39 Model-based classification of anchored molecular motor-biopolymer interactions
John Linehan

40 Septins throughout phylogeny are predicted to have a transmembrane domain, which in *C. elegans* is sufficient to drive membrane recruitment and necessary for septin localization
Jenna Perry

41 The Intrinsically disordered region of *Drosophila* Canoe plays a critical role in linking adherens junctions to the cytoskeleton during embryonic morphogenesis
Corbin Jenson

Thank you for attending Triangle Cytoskeleton Meeting 2023



Logo by Alan Edwards