

The Triangle Cytoskeleton Meeting



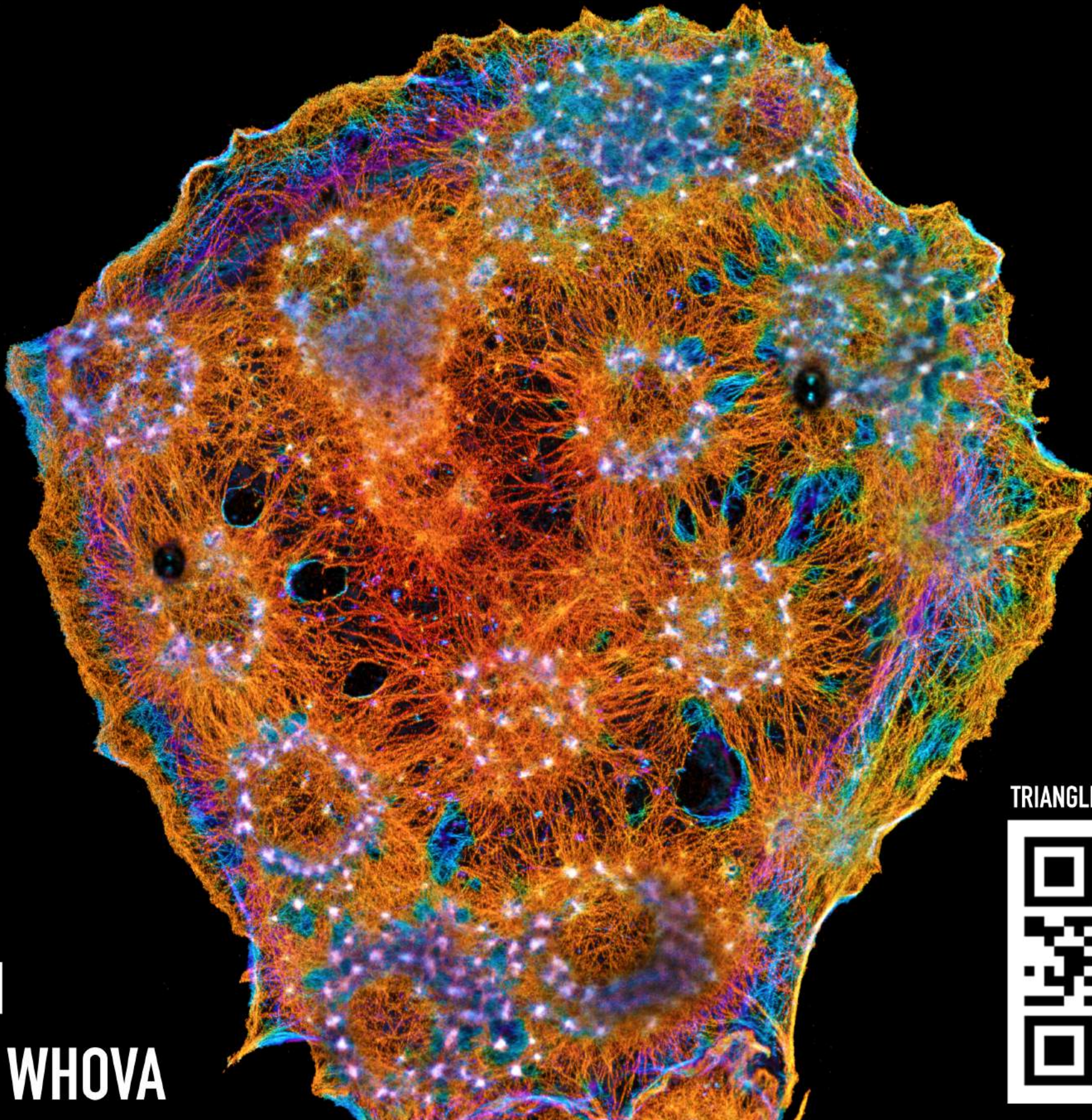
AN ASCB LOCAL MEETING



an international forum for cell biology™



SEPTEMBER 20TH, 2021
HOSTED VIRTUALLY VIA WHOVA



TRIANGLECYTOSKELETON.COM



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EVENT ORGANIZERS:

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WITH SPECIAL THANKS TO:

Delphine Bull - UNC Chapel Hill
Robert Duronio, PhD - UNC Chapel Hill
Sophia Tintori, PhD - New York University
Dylan Burnette - Vanderbilt University
Tanner Fadero - UNC Chapel Hill

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**Mechanics and Structure of Cytoskeletal
Complexes**



Art by Sophia Tintori

SCHEDULE OVERVIEW

TRIANGLE CYTOSKELETON MEETING SEPTEMBER 20TH, 2021 VIA WHOVA

9:00AM Introduction to Program

9:25AM Cytoskeleton in
Development and Disease

10:35AM Septins and Cell Membranes

12:05PM Lunch

1:02PM Cytoskeletal Dynamics

1:55PM Cell Division

2:35PM Poster Session

3:35PM Mechanics and structure of
cytoskeletal complexes

4:35PM Closing Remarks

Cytoskeleton in Development and Disease

- 9:00AM** Welcome and Introduction to Program
- 9:25AM** ARHGAP17, a Cdc42-specific GAP, localizes to invadopodia and regulates their turnover as part of an ARHGAP17/Cdc42/CIP4 complex
TCM AWARDEE Gabriel Kreider-Letterman - University of Toledo
- ECM-derived pressure and actomyosin--derived stiffness shapes the inner ear
Akankshi Munjal - Harvard/Duke University
- Abnormal form - abnormal function : intermediate filaments and neurodegeneration
INVITED SPEAKER Natasha Snider - University of North Carolina Chapel Hill
- 10:25AM** Coffee Break

Septins and Cell Membranes

10:35AM **An Integrated Modeling and Experimental Study of the Curvature Sensing Mechanisms of Septins**
Wenzheng Shi - University of North Carolina Chapel Hill

The Physical basis of curvature sensing by septins
INVITED SPEAKER Ehssan Nazockdast - University of North Carolina Chapel Hill

Septins, sterols, sphingolipids and cell wall integrity
INVITED SPEAKER Michelle Momany - University of Georgia

12:15 PM **Lunch Break**

Cytoskeletal Dynamics

1:02 PM **XMAP215 promotes microtubule catastrophe by disrupting the growing microtubule end**

Veronica Farmer - Vanderbilt University

How α -tubulin tail posttranslational modifications regulate microtubule dynamics

TCM AWARDEE *Jiayi Chen - NIH NINDS*

1:45 PM **Coffee Break**

Cell Division

1:55 PM

What are the material properties of kinetochores

Jiali Zhu- University of North Carolina Chapel Hill

AGS3 negatively regulates LGN to prevent asymmetric cell divisions

Carlos Patino Descovich - University of North Carolina Chapel Hill

2:35 PM

Poster Session

Poster Session

Table 1: Antagonistic networks of microtubules position nuclei during mitosis

Kimberly Bellingham-Johnstun – University of North Carolina

Table 2: Stability and bundle formation of Actin filaments in aqueous salt solutions

Marcelo Marucho – The University of Texas at San Antonio

Table 3: Novel WH2 Domain Proteins Regulate Chlamydomonas Actin Assembly and Cell Polarity

Cameron MacQuarrie – Geisel School of Medicine at Dartmouth College

Table 4: Screening the antibacterial effectors acting against pathogenic FtsZ using *S. pombe* as a model system

Sakshi Poddar – National Institute of Science Education and Research

Table 5: Single septin in *Chlamydomonas* associates with the chloroplast envelope and evolutionarily related translocon proteins

Samed Delic – Duke University

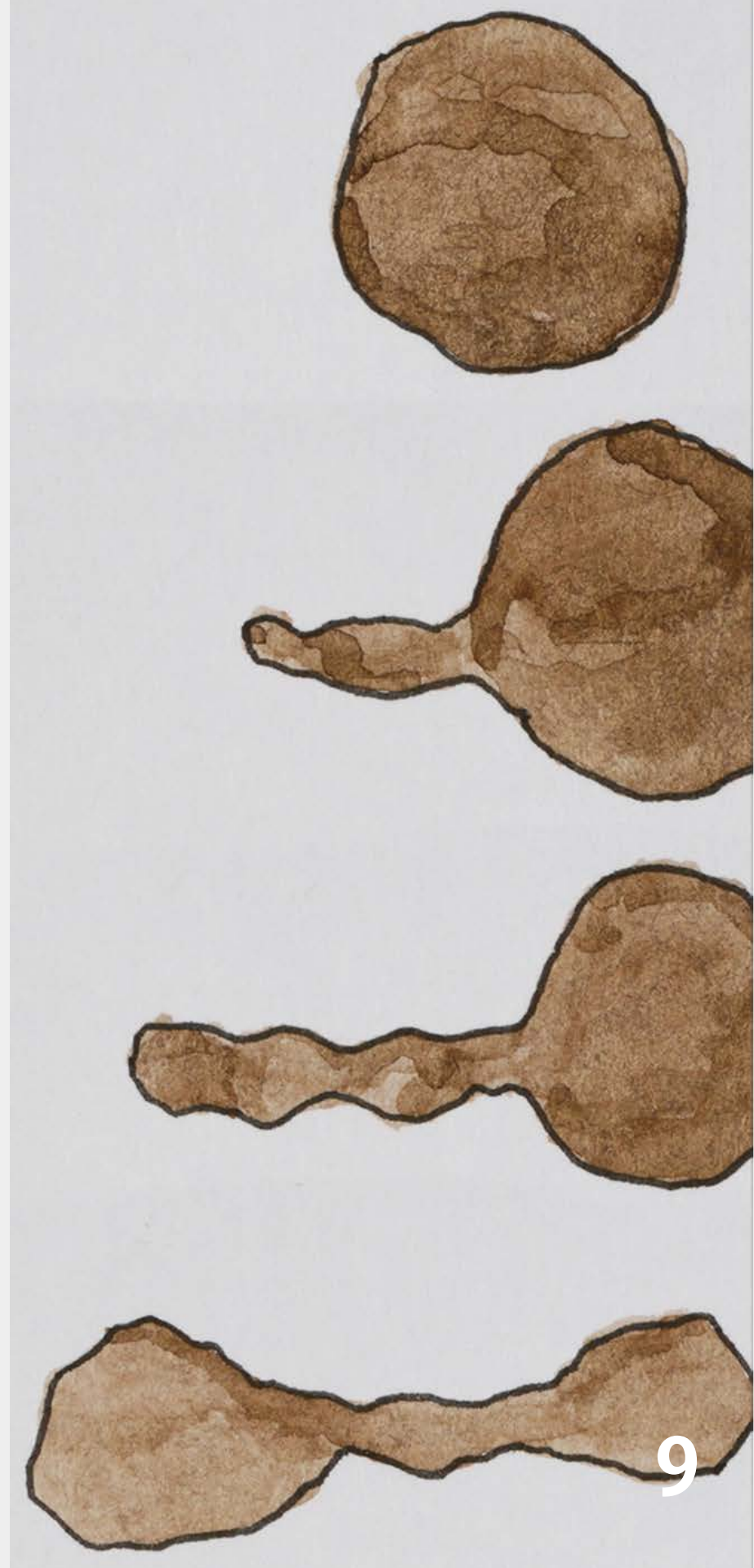
Table 6: Using knockdown and knockouts of post translational modification enzymes to understand the role of tubulin PTMs on the motility and viability of *Trypanosoma brucei*

Katherine Wentworth – Clemson University

Table 7: Actin cytoskeleton is regulated by the formins in *Leishmania major*

Renu Kushwaha – IISER Kolkata

Art by Sophia Tintori



Poster Session

Table 8: An Improved Protocol for High-Throughput Polyacrylamide Hydrogels

Jim Fan – UNC – Chapel Hill

Table 9: Arp2/3 complex-mediated actin networks in ciliary membrane protein delivery in *Chlamydomonas*

Brae Bigge – Dartmouth College

Table 10: Anchoring Mechanisms in the Fission Yeast Contractile Ring

Blake Commer – North Carolina State University

Table 11: Nuclear SUN1 stabilizes endothelial cell-cell junctions and promotes productive angiogenic sprouting

Danielle Buglak – University of North Carolina Chapel Hill

Table 12: Scaling Relationship Between Phagocytic Cup and Engulfment Forces

Megan Kern – University of North Carolina Chapel Hill

Table 13: The Role of SUP-13/ARRD-15 in Controlling the Transition of AIP1 Isoforms in *C. elegans* Body Wall Muscle

Mario Lewis – Emory University

Table 14: Is there poleward flux in budding yeast kinetochore microtubules during metaphase?

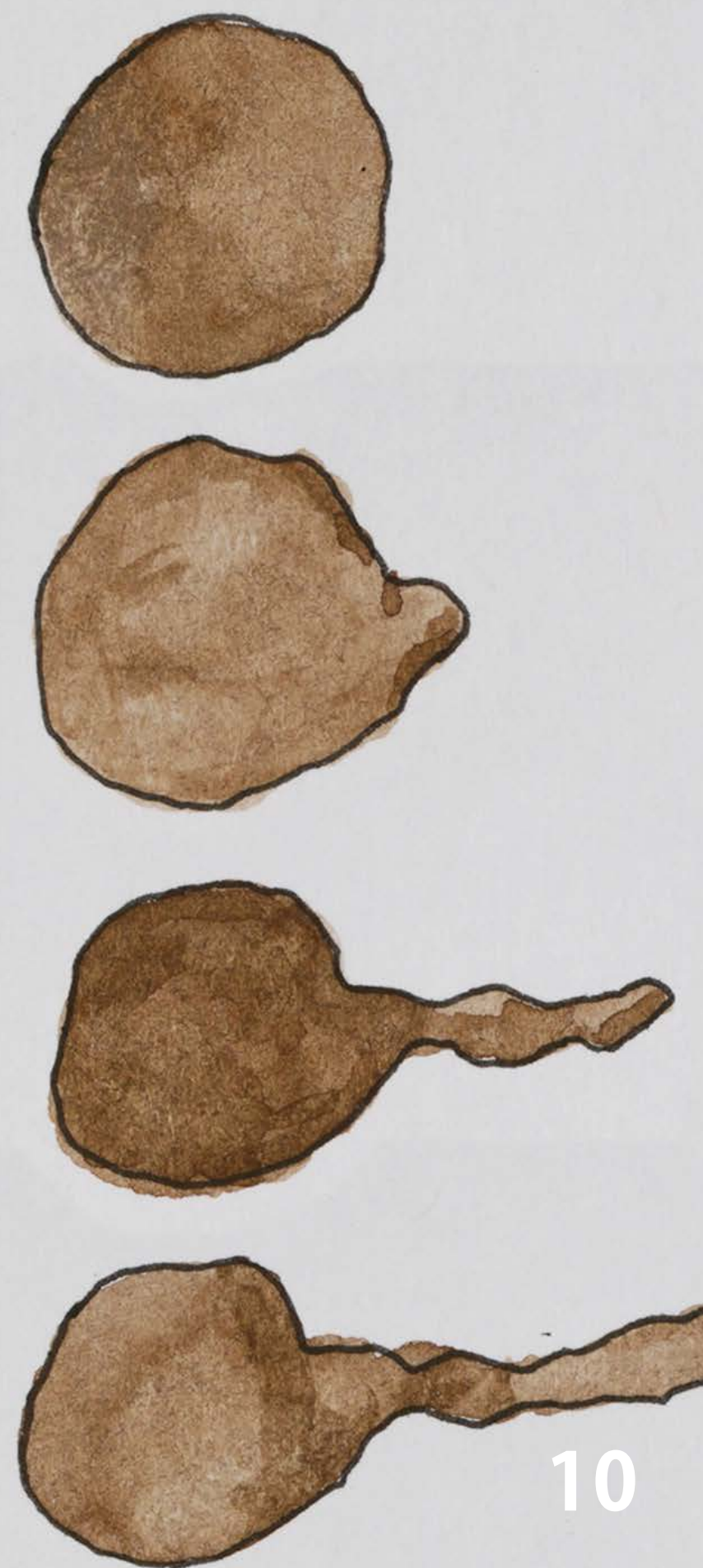
Dillon Sloan – University of North Carolina Chapel Hill

Table 15: Development of a Phagocytic Uptake Assay based on Actin Regulator Manipulation

Oheneba Boateng – University of North Carolina Chapel Hill

Table 16: Investigating Cardiomyocyte Dysfunction in Dilated Cardiomyopathy Associated with Duchenne Muscular Dystrophy

Darren Wilson – University of London



Mechanics and Structure of Cytoskeletal Complexes

3:35PM **Identification of Green-lineage osmotic pathways
uncovers a novel role for actin during stress acclimation**

Josep Vilarrasa - Stanford University

**The Cell Junction Protein Polychaetoid/ZO-1 Ensures
Junction Robustness during Morphogenetic Movements
of Drosophila Embryogenesis**

Anja Schmidt- University of North Carolina Chapel Hill

**Linking local connectivity and biochemical properties to
large-scale actin contractility**

***INVITED SPEAKER** Julio Belmonte - North Carolina State University*

4:35PM **Closing Remarks**

The background is a dark, textured watercolor wash. In the center-left, there is a diagram of a cytoskeleton. It features a central point from which several white lines radiate outwards, representing microtubules. These lines connect to a network of black lines that form a complex, branching structure, likely representing actin filaments or intermediate filaments. The overall style is artistic and scientific.

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