

POINTS OF INTEREST

April-June 2024

HONORS AND AWARDS

Anatomy and Cell Biology Spring Awards Ceremony

The following students were honored at the ACB Annual Spring Awards/Ceremony Reception held on May 1st. Congratulations to all!

Emilie Jandebeur - *Award for Superior Achievement in Human Anatomy for Advanced Practice Nursing*

Hayley Bassett - *Award for Superior Achievement in Advanced Human Anatomy for Athletic Trainers*

Ryan Gudenkauf - *Award for Superior Achievement in Human Anatomy for Physical Therapists*

Kyle Armour - *Henry J. Prentiss Award for Superior Achievement in Medical Gross Anatomy*

Emma Brooks - *W. R. Ingram Award for Superior Achievement in Functional Neuroanatomy*

Reese Blacker - *Award for Superior Achievement in Dental Gross Anatomy*

Bryce Carroll - *Michael W. Finkelstein Award for Superior Achievement in Dental Histology*

Samantha Wuebker - *Mary J. C. Hendrix Graduate Leadership Award*

Jianing Li - *Tung-Yang Wing Award for Superior Achievement in Anatomy Graduate Education*

Danielle Talbot - *Award for Superior Achievement in Student Teaching in Anatomy & Cell Biology*

Dr. Feng Yuan - *Award for Superior Achievement in Postdoctoral Research*

Alec Marticoff and Jerry Xue - *Superior Academic Achievement in the Anatomical Sciences, MCA Program*

Alec Marticoff - *Excellence in Research/Teaching/Capstone, MCA Program*

Ana Barroso - *Ishan Jain Travel Award*

Dr. Darren Hoffmann

Dr. Hoffman received the 2024 M1/PA1 Teacher of the Year Award. This award is selected by the first-year Medical and Physician Assistant Students. Dr. Hoffmann worked with these students in Medical Gross Anatomy Lectures/Labs and facilitated a Case-Based Learning small group.

Salma Hassan (Cell and Developmental Biology Graduate Student, Drack Lab)

Salma successfully passed her Comprehensive Exams.

Java Hajibabazade (Molecular Medicine Graduate Student, Engelhardt Lab)

Java successfully passed her Comprehensive Exams.

The following were recognized for reaching a milestone in their service to the ACB Department

5 Years

Peipei Wu

10 Years

Dr. Sara Sebag

NEW HIRES

Ethan Breyfogle

Ethan will be working in the Engelhardt Lab as a Research Intern. Ethan graduated from the University of Iowa in 2024 with a degree in Human Physiology.

Adriane Thompson

Adriane will be working in the Engelhardt Lab as a Research Intern. Adriane graduated from the Grinnell College in 2024 with a Degree in Biology.

Defeng Li

Defeng will be working in the Engelhardt Lab, assisting the rearing crew. Defeng graduated with a Bachelor's degree from Beijing University of Chinese Medicine in 2009.

APPOINTMENTS & SPECIAL RECOGNITION

ACB Promotions

Congratulations to the recently promoted ACB Faculty Members

Dr. Martine Dunwald, Research Professor

Dr. Xingshen Sun, Research Associate Professor

New MCA Students

We are excited to announce that twelve MCA1's will join the department in the Fall of 2024. A full list of new members will be included in the next newsletter."

New Graduate Students

The following graduate students will be joining the CBD program this summer:

Brendan Creemer (Amy Ryan Lab)

Aparna Pathmanathan (Amy Ryan Lab)

Jillian Williquett (Hua Sun Lab)

Dr. Masataka Kawai

Dr. Kawai was a Visiting Professor at the School of Nursing, College of Medicine, at Soochow University in Suzhou, China from May 2nd – June 17th, 2024.

Dr. Kawai was selected as a member of the Scientific Advisory Board of the 51st European Muscle Conference in Ljubljana, Slovenia, September 2024.

Dr. Riley Leonard (Amendt Lab)

Riley successfully defended his thesis in April, entitled "Model to Study the Role of Cardiogenic Transcription Factors."

Dr. Erik Quiroz (Ryan Lab)

Erik was awarded a \$1,000 scholarship entitled "Underrepresented Trainee Development Scholarship" at the American Thoracic Society Conference, San Diego, CA, May 2024.

Dr. Amy Ryan was recognized for the following:

- Appointed as an advisor for then Canadian Excellence Research Chair in Lung Regenerative Medicine.
- Appointed as a member of the Women in Physiology Committee.
- Appointed as Chair of the Respiratory and GI Cell and Gene Therapy Committee for a second term.
- Served as a Respiratory, Cell and Molecular Biology (RCMB) mentor for two students at the American Thoracic Society Conference, San Diego, CA, May 2024.
- Served as a Martin Frank Diversity Travel Award Mentor at the American Physiology Society Conference, San Francisco, CA, May 2024.
- Served on the CMT NIH Grant Review Panel in Bethesda, MD, May 2024.

DEI Committee

Name Update/Change

With the current climate around diversity, equity, and inclusion, the DEI committee will be changing their name to better reflect their actions. Please reach out to one of the committee members if you have any suggestions.

Anatomy and Cell Biology Website – “About Me”

If you have not done so yet, you are welcome to share 100 words about yourself to add to your profile on the departmental website. Please send your summary to Dennis Dunnwald.

Meditation Room

Daily blocks of time will be dedicated to meditation/prayer/quiet moments in the 1-430 conference room (1:00 PM – 3:00 PM and 4:30 PM – 6:00).

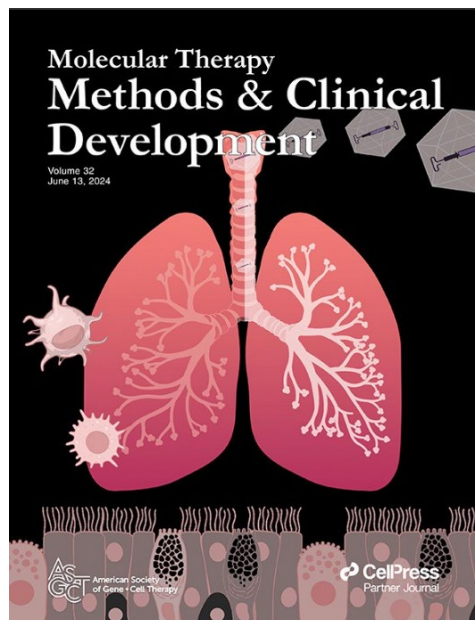
New Committee Member

The DEI committee is losing one of its members. They would like to thank Dylan Glawe for his efforts and contributions. The committee is looking for a new, non-faculty member who is interested in participating in the group. If you are interested, please email Martine Dunnwald by July 24th.

Other

Dr. Edward Tang

Dr. Tang's image was on the cover of the June issue of Molecular Therapy: Methods & Clinical Development.



SPECIAL PRESENTATIONS

Dr. Ben Calvert (Ryan Lab)

“Differential regulation of immune function by highly effective CFTR modulators in $\Delta F508$ mutant THP-1-derived macrophages,” Cystic Fibrosis Foundation Research Conference, June 2024, Stowe, VT.

Dr. Martine Dunnwald

“A novel non-canonical function for IRF6 in the recycling of E-cadherin,” presented at the Society for Investigative Dermatology Conference, May 2024, Dallas, TX.

Dr. John Engelhardt

Invited Co-Moderator for a session entitled “Role of CFTR Outside of the Airway,” Cystic Fibrosis Foundation Research Conference, Stowe, VT, June 2024.

Dr. Shuba Murthy

Murthy, S., Pathmanathan, A., Caceres, A., Sease, R. **Calvert, B.** Marconett, C., & **Ryan AL.** “IGFBP3 regulates airway basal cell stemness and airway regeneration.” American Physiology Summit 2024, Long Beach, CA.

Dr. Erik Quiroz (Ryan Lab)

Quiroz EJ, Ryan AL. “Rb Transcriptional Corepressor-like 2 Depletion Increases Self-Renewal and Sustains Differentiation Capacity in Primary Human Airway Epithelial Cells,” American Thoracic Society Conference, San Diego, CA, May 2024.

Nikki Recka (Van Otterloo Lab)

“Epidermal loss of PRMT5 leads to the emergence of an atypical keratinocyte-like cell population and defective stratification” presented at the Society for Investigative Dermatology Conference, May 2024, Dallas, TX.

Dr. Amy Ryan

“D97. Feeling stuck? Mechanisms of mucociliary (dys)function,” American Thoracic Society Conference, May 2024, San Diego, CA.

“Application of airway-on-chip models to study bacterial lung infection” Emulate/Endpoints News: Drug Discovery Day, 2024 (online event).

Dr. Tom Rutkowski

“The ER stress response in liver injury—protecting the organelle at the expense of the organ and the organism?” presented at the Department of Gastroenterology and Hepatology, Mayo Clinic, Rochester, MN, April 2024.

Dr. Feng Yuan

“Transgenic ferret models define ionocyte and intercalated cell function” presented at the Department of Nephrology, Iowa City, IA, April 2024.

“Pulmonary ionocytes regulate chloride secretion and absorption via CFTR” presented at the UAB Gregory Fleming James Cystic Fibrosis Research Center, Birmingham, AL, June 2024.

NEW GRANT AWARDS

Dr. Martine Dunnwald

Title: Formation and Function of the Periderm

Sponsor: NSF

Role: PI

Total Award: \$809,029 direct costs, \$463,789 indirect costs

Dr. Feng Yuan

Title: Dissecting Pulmonary Ionocyte Subtypes and Their Functional Roles in Cystic Fibrosis

Sponsor: Cystic Fibrosis Research Institute

Role: PI

Total Award: \$140,000 direct costs, \$0 indirect costs

SUBMITTED GRANTS

Dr. Brad Amendt

Title: Nanoparticle Design and Delivery of RNA to Treat Bone Defects

Sponsor: NIH

Role: PI

Total Award: \$2,120,260 direct costs, \$1,176,720 indirect costs

Dr. Martine Dunnwald

Title: Uncovering the Roles of Migrating Cells in Driving Tissue Stiffness to Coordinate Development

Sponsor: W. M. Keck Foundation

Role: PI

Total Award: \$1,492,033

Dr. Adam Dupuy

Title: Evaluating adaptive and genetic responses to targeted therapies in low grade serous ovarian cancer

Sponsor: NIH

Role: PI

Total Award: \$1,767,788 direct costs, \$981,122 indirect costs

Dr. Tom Rutkowski

Title: ER Stress-induced Hepatocyte De-differentiation in Liver Injury

Sponsor: NIH

Role: PI

Total Award: \$1,820,537 direct costs, \$1,010,398 indirect costs

Dr. Amy Ryan

Title: Stem cell exhaustion and impaired airway regulation

Sponsor: NIH

Role: PI

Total Award: \$1,820,797 direct costs, \$997,241 indirect costs

Title: Spatial regulation of IGFBP3 in airway basal cells stemness attrition

Sponsor: NIH

Role: PI

Total Award: \$2,401,473 direct costs, \$1,294,539 indirect costs

Dr. Xingshen Sun

Title: Advanced Assisted Reproduction Techniques (aARTs) for Long-Term Preservation of Genome-Edited (GE)

Sponsor: NIH

Role: PI

Total Award: \$275,000 direct costs, \$152,625 indirect costs

Dr. Ziyang Yan

Title: Advancing Human Gene Therapy through Ferret Models

Sponsor: NIH

Role: PI

Total Award: \$275,000 direct costs, \$152,625 indirect costs

Title: Novel molecular mechanisms of human parvovirus replication

Sponsor: NIH (Subaward through University of Kansas Medical Center)

Role: PI

Total Award: \$250,000 direct costs, \$138,750 indirect costs

Dr. Ling Yang

Title: The Hepatic ER-regulated Liver-Heart Crosstalk in Sepsis

Sponsor: NIH

Role: PI

Total Award: \$2,127,953 direct costs, \$1,818,014 indirect costs

Dr. Feng Yuan

Title: Environmental Signals Induce Ionocyte Specification in Cystic Fibrosis

Sponsor: Cystic Fibrosis Foundation

Role: PI

Total Award: \$450,000 direct costs, \$54,000 indirect costs

NEW PATENTS

Dr. Ziyang Yan

Yan Z, Engelhardt JF, Qiu J and Wang Z. Bocaparvovirus small noncoding RNA and uses thereof., Country of Filing: US; Patent#: US11,999964, Issue date: 6/4/2024.

NEW PUBLICATIONS

Dr. Martine Dunnwald

Antiguas, A., & **Dunnwald, M.** (2024). A novel noncanonical function for IRF6 in the recycling of E-cadherin. *Molecular biology of the cell*, 35(7), ar102. <https://doi.org/10.1091/mbc.E23-11-0430>

Kumari, P., Friedman, R. Z., Pi, L., Curtis, S., Paraiso, K., Visel, A., **Rhea, L., Dunnwald, M.**, Patni, A. P., Mar, D., Bomstyl, K., Mathieu, J., Ruohola-Baker, H., Leslie, E., White, M. A., Cohen, B. A., Cornell, R. A. *Two non-coding variants associated with isolated orofacial cleft promote binding of transcriptional repressors FOXE1 or ETS2 and reduce expression of IRF6.* bioRxiv 2024.06.01.596914; doi: 10.1101/2024.06.01.596914

Dr. John Engelhardt

Evans IA, **Sun X, Liang B**, Vegter AR, Guo L, Lynch TJ, **Zhang Y**, Zhang Y, **Yi Y**, Yang Y, Feng Z, **Park SY**, Shonka A, McCumber H, Qi L, **Wu P, Liu G**, Lacina A, Wang K, Gibson-Corley KN, Meyerholz DK, Limoli DH, Rosen BH, **Yan Z**, Bartels DJ, **Engelhardt JF**. In utero and postnatal ivacaftor/lumacaftor therapy rescues multiorgan disease in CFTR-F508del ferrets. *JCI Insight*, 2024, Apr 22;9(8):e157229. PMID: 11141870.

Tang Y, Ebadi M, Lei J, Feng Z, Fakhari S, **Wu P**, Smith MD, Limberis MP, Kolbeck R, Excoffon KJ, **Yan Z, Engelhardt JF**. Durable transgene expression and efficient re-administration after rAAV2.5T-mediated fCFTR Δ R gene delivery to adult ferret lungs. *Mol Ther Methods Clin Dev*, 2024, Mar 28;32(2):101244. PMID: 11024656

O'Donnell JEM, Hastings LA, Briody JN, Chan CL, Colombo C, Douglas TA, Freedman SD, Gonska T, Greenfield JR, Leung DH, Lin AYL, Moran A, Prentice BJ, Putman M, Trotter M, Tullis E, Westall GP, Verge CF, Wainwright CE, Ooi CY, **Engelhardt JF**, Katz T, King S, Lewindon PJ, Matson AG, McDonald CM, Moheet A, Narkewicz MR, Oliver M, Ramm GA, Sellers ZM, Wilschanski M. SHIFTing goals in cystic fibrosis – managing extrapulmonary disease in the era of CFTR modulator therapy; Proceedings of the International Shaping Initiatives and Future Trends (SHIFT) Symposium. *Pediatric Pulmonology*, 2024, 59:1661-1676

Dr. Masataka Kawai

Xi, J., Feng, H. Z., Jin, J. P., Yuan, J., & **Kawai, M.** (2024). Biomechanical evaluation of flash-frozen and cryo-sectioned papillary muscle samples by using sinusoidal analysis: cross-bridge kinetics and the effect of partial Ca²⁺ activation. *Journal of muscle research and cell motility*, 10.1007/s10974-024-09667-7. Advance online publication. <https://doi.org/10.1007/s10974-024-09667-7>

Kawai, M., & Iorga, B. (2024). Oscillatory work and the step that generates force in single myofibrils from rabbit psoas. *Pflügers Archiv : European journal of physiology*, 476(6), 949–962. <https://doi.org/10.1007/s00424-024-02935-y>

Dr. Ziyang Yan

Evans IA, **Sun X**, **Liang B**, Vegter AR, Guo L, Lynch TJ, **Zhang Y**, Zhang Y, **Yi Y**, Yang Y, **Feng Z**, **Park SY**, Shonka A, McCumber H, Qi L, **Wu P**, **Liu G**, Lacina A, Wang K, Gibson-Corley KN, Meyerholz DK, Limoli DH, Rosen BH, **Yan Z**, Bartels DJ, **Engelhardt JF**. In utero and postnatal ivacaftor/lumacaftor therapy rescues multiorgan disease in CFTR-F508del ferrets. *JCI Insight*, 2024, Apr 22;9(8):e157229. PMID: 11141870.

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Ning K, Zhao J, **Feng Z**, **Park SY**, McFarlin S, Cheng F, **Yan Z**, Wang J, Qiu J. N6-methyladenosine modification of a parvovirus-encoded small noncoding RNA facilitates viral DNA replication through recruiting Y-family DNA polymerases. *Proc Natl Acad Sci U S A*. 2024 Jun 18;121(25):e2320782121. PMID: 38875150.

Dr. Ling Yang

Qian, Q., Li, M., Zhang, Z., Davis, S. W., Rahmouni, K., Norris, A. W., Cao, H., Ding, W. X., Hotamisligil, G. S., & **Yang, L.** (2024). Obesity disrupts the pituitary-hepatic UPR communication leading to NAFLD progression. *Cell metabolism*, S1550-4131(24)00134-7. Advance online publication. <https://doi.org/10.1016/j.cmet.2024.04.014>

Please share news of your activities with Madison O’Leary for publication in the quarterly Points of Interest Newsletter. This information is circulated throughout the Department, as well as published on the ACB Department website.