



DEPARTMENT OF
ANATOMY & CELL BIOLO-
GY

Points of Inter-

May 2019

Honors and Awards

Dr. Martine Dunnwald Lab

Ms. Rishika Avvari, Undergraduate, Health and Human Physiology

Rishika received the Ishan Jain Junior Scholar Travel Award to attend a scientific meeting in the next couple of years.

Special Presentations/Seminars

Dr. Darren Hoffmann

Presented a Poster at the Annual Meeting of the American Association of Anatomists entitled, "Functional Assessment of Full-body 3D Anatomy Apps in the App Stores." (April 7, 2019)

Gave an invited presentation at Kansas City University of Medicine and Biosciences entitled, "Medical Science Education Research: Getting started, Getting better, Getting published." (April 19, 2019)

Dr. Masataka Kawai

Presented an invited talk entitled: "Nebulin and tropomyosin allosterically activate the actomyosin interaction similarly," on April 1st, at the *16th Alpbach Workshop on Molecular Motors 2019*. This meeting was organized by Rasmus Schröder and Michael Geeves, and the session on "Regulatory Proteins" was chaired by Elisabetta Brunello and Luca Fusi.

Also presented a poster in the same title authored by Masataka Kawai, Tarek S. Karam, Justin Kolb, Li Wang, and Henk L. Granzier.

Special Presentations/Seminars, con-

Dr. Thomas Rutkowski

Gave a seminar on April 25 at Washington State University, School of Molecular Biosciences, entitled, "TCA cycle flux links catabolism to endoplasmic reticulum protein folding: A novel bidirectional pathway of interorganellar communication."

Dr. John Engelhardt

02/19 "Wnt/TCF Control of Glandular Myoepithelial Stem Cell Regenerative Responses in the Airway," Gordon Research Conference on Salivary Glands and Exocrine Biology, Galveston, Texas

02/19 "Wnt Pathway Control of Glandular Myoepithelial Stem Cells in the Airway", presented at Epithelial Mesenchymal Interactions in Lung Development and Fibrosis Fusion Conference, Nassau, Bahamas

02/19 "Genetically engineering animal models for specific readouts to assess delivery in vivo" (Session entitled: "Tools to assess in vivo delivery") presented at Overcoming Obstacles for Delivery of Molecular Therapies for Cystic Fibrosis Workshop, Bethesda, MD

03/19 "Glandular Myoepithelial Cells are Multipotent Reserve Stem Cells of the Proximal Airway", presented at the University of Texas Health Science Center, Houston, TX

03/19 "Improved Models of Cystic Fibrosis Lung Disease and Diabetes in the Ferret", presented at the Cystic Fibrosis RDP Seminar Series at John's Hopkins, Baltimore, MD

Recognition

Dr. Martine Dunnwald

Was the program co-chair of the American Association for Anatomy annual meeting in Orlando, FL, (April 2019). She chaired sessions on renal physiology, cell biology and introduced keynote and plenary speakers.

Was interviewed by James Pickering for his podcast, "Anatomy Education Podcast," #70: <http://anatomypodcast.libsyn.com>

Dr. Justin Sipla

Was appointed, "Foundational Science Co-Director (Mechanisms of Health and Disease Strand)," in the Carver College of Medicine this past month. The position officially starts in July 2019.

New Publications

Dr. Ling Yang

Qian Q, Zhang Z, Li M, Savage K, Cheng D, Rauckhorst AJ, Ankrum JA, Taylor EB, Ding WX, Xiao Y, Cao HJ, Yang L. 2019 "Hepatic Lysosomal iNOS Activity Impairs Autophagy in Obesity," Cell Mol Gastroenterol Hepatol, Epub date, 2019/03/31.

DOI: <http://dx.doi.org/10.1016/j.jcmgh.2019.03.005>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30926581>

Dr. Thomas Rutkowski

Rutkowski DT. 2019 "Liver function and dysfunction - a unique window into the physiological reach of ER stress and the unfolded protein response." FEBS J,

286(2):356-378. PMCID: PMC6056347

DOI: <http://dx.doi.org/10.1111/febs.14389>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/29360258>

Dr. Marc Pizzimenti

Morecraft RJ, Ge J, Stilwell-Morecraft KS, Rotella DL, Pizzimenti MA, Darling WG. "Terminal Organization of the Corticospinal Projection from the Lateral Premotor Cortex to the Cervical Enlargement (C5-T1) in Rhesus Monkey." J Comp Neurol,

Epub date: 2019/04/30

DOI: <http://dx.doi.org/10.1002/cne.24706>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/31032921>

Dunnwald M, Pizzimenti MA. 2019 "A Case Study of Malrotated Kidneys with Asymmetric Multiple Renal Arteries, Variant Venous Drainage, and Unilateral Ureteral Duplication." Case Rep Vasc Med, Epub date: 2019/04/24.

DOI: <http://dx.doi.org/10.1155/2019/1893137>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/31011461>

PMCID: PMC6442374

PMID: 31032921

Dr. Xiaoming Liu

Jia Y, You X, Ma N, Li H, Liu G, Wang Y, Xue J, Shi J, Wei J, Li Y, Yang J, Liu X. 2019 "Phenotypic Analysis of BrdU Label-Retaining Cells during the Maturation of Conducting Airway Epithelium in a Porcine Lung." Stem Cells Int, Epub date: 2019/04/03

DOI: <http://dx.doi.org/10.1155/2019/7043890>

PMCID: PMC6415319

PMID: 30936924

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30936924>

Yu M, Sun X, Tyler SR, Liang B, Swatek AM, Lynch TJ, He N, Yuan F, Feng Z,

Rotti PG, Choi SH, Shahin W, Liu X, Yan Z, Engelhardt JF. 2019 "Highly Efficient Transgenesis in Ferrets Using CRISPR/Cas9-Mediated Homology-Independent Insertion at the ROSA26 Locus." Sci Rep, 9(1):1971

PMCID: [PMC6374392](https://pubmed.ncbi.nlm.nih.gov/PMC6374392/)

PMID: 30760763

DOI: <http://dx.doi.org/10.1038/s41598-018-37192-4>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30760763>

New Publications

Dr. Masataka Kawai

Ishii S, Suzuki M, Ishiwata S, Kawai M. 2019 "Functional significance of HCM mutants of tropomyosin, V95A and D175N, studied with in vitro motility assays." *Biophys Physicobiol*, 16:28-40. PMID: 30923661
PMCID: [PMC6435021](https://pubmed.ncbi.nlm.nih.gov/PMC6435021)

DOI: http://dx.doi.org/10.2142/biophysico.16.0_28

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30923661>

Dr. Darren Hoffmann

Hoffmann DS, Dancing D, Rosenbaum M. 2019 "Massage and Medicine: An Interprofessional Approach to Learning Musculoskeletal Anatomy and Enhancing Personal Wellness." *Acad Med*, Epub date: 2019/02/06 PMID: 30720530

DOI: <http://dx.doi.org/10.1097/ACM.0000000000002623>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30720530>

[Published a blog article](#) related to research on 3D Anatomy Technology entitled, "[Adventures in 3D Anatomy: From Reluctant Developer to Enthusiastic User – The Gale Blog](#)," April 8, 2019. This blog post was linked to two subsequent articles in the educational press:

[The University of Iowa Carver College of Medicine Improves Student Exam Scores with Gale Interactive: Human Anatomy - Cengage | Cengage](#)

[University of Iowa Investigates Teaching with 3D Models -- Campus Technology](#)

Dr. Ziyang Yan

Sun X, Yi Y, Yan Z, Rosen BH, Liang B, Winter MC, Evans TIA, Rotti PG, Yang Y,

Gray JS, Park SY, Zhou W, Zhang Y, Moll SR, Woody L, Tran DM, Jiang L, Vonk AM, Beekman JM, Negulescu P, Van Goor F, Fiorino DF, Gibson-Corley KN, Engelhardt JF. 2019 "In utero and postnatal VX-770 administration rescues multiorgan disease in a ferret model of cystic fibrosis." *Sci Transl Med*, 11(485) ppi: eaau7531.

Epub date: 2019/03/29 PMID: 30918114

DOI: <http://dx.doi.org/10.1126/scitranslmed.aau7531>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30918114>

Yu M, Sun X, Tyler SR, Liang B, Swatek AM, Lynch TJ, He N, Yuan F, Feng Z,

Rotti PG, Choi SH, Shahin W, Liu X, Yan Z, Engelhardt JF. 2019 "Highly Efficient Transgenesis in Ferrets Using CRISPR/Cas9-Mediated Homology-Independent Insertion at the ROSA26 Locus." *Sci Rep*, 9(1):1971.

PMID: 30760763 PMCID: [PMC6374392](https://pubmed.ncbi.nlm.nih.gov/PMC6374392)

DOI: <http://dx.doi.org/10.1038/s41598-018-37192-4>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30760763>

New Publications

Dr. John Engelhardt

Sun X, Yi Y, Yan Z, Rosen BH, Liang B, Winter MC, Evans TIA, Rotti PG, Yang Y,

Gray JS, Park SY, Zhou W, Zhang Y, Moll SR, Woody L, Tran DM, Jiang L, Vonk AM, Beekman JM, Negulescu P, Van Goor F, Fiorino DF, Gibson-Corley KN, Engelhardt JF. 2019 "In utero and postnatal VX-770 administration rescues multiorgan disease in a ferret model of cystic fibrosis." *Sci Transl Med*, 11(485):ppi: eaau7531.

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Yu M, Sun X, Tyler SR, Liang B, Swatek AM, Lynch TJ, He N, Yuan F, Feng Z.

Rotti PG, Choi SH, Shahin W, Liu X, Yan Z, Engelhardt JF. 2019 "Highly Efficient Transgenesis in Ferrets Using CRISPR/Cas9-Mediated Homology-Independent Insertion at the ROSA26 Locus." *Sci Rep*, 9(1):1971.

PMID: 30760763 PMID: [PMCID: PMC6374392](https://pubmed.ncbi.nlm.nih.gov/30760763/)

DOI: <http://dx.doi.org/10.1038/s41598-018-37192-4>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30760763>

Tyler SR, Rotti PG, Sun X, Yi Y, Xie W, Winter MC, Flamme-Wiese MJ, Tucker BA, Mullins RF, Norris AW, Engelhardt JF. 2019 "PyMINER Finds Gene and Autocrine-Paracrine Networks from Human Islet scRNA-Seq." *Cell Rep*, 26(7): 1951-1964 e8.

PMID: 30759402 PMID: [PMCID: PMC6394844](https://pubmed.ncbi.nlm.nih.gov/30759402/)

DOI: <http://dx.doi.org/10.1016/j.celrep.2019.01.063>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30759402>

Norris AW, Ode KL, Merjaneh L, Sanda S, Yi Y, Sun X, Engelhardt JF, Hull RL. "Survival in a bad neighborhood: pancreatic islets in cystic fibrosis." *J Endocrinol*, Epub date: 2019/02/14, pii: JOE-18-0468.R1

PMID: 30759072 DOI: <http://dx.doi.org/10.1530/JOE-18-0468>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30759072>

Sun X, Yi Y, Liang B, Yang Y, He N, Ode KL, Uc A, Wang K, Gibson-Corley KN, Engelhardt JF, Norris AW. 2019 "Incretin dysfunction and hyperglycemia in cystic fibrosis: Role of acyl-ghrelin." *J Cyst Fibros*, pii: S1569-1993 (19):30016-5.

PMID: 30738804

DOI: <http://dx.doi.org/10.1016/j.jcf.2019.01.010>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30738804>

Fernandez-Petty CM, Hughes GW, Bowers HL, Watson JD, Rosen BH, Townsend SM, Santos C, Ridley CE, Chu KK, Birket SE, Li Y, Leung HM, Mazur M, Garcia BA, Evans, TIA, Libby EF, Hathorne H, Hanes J, Tearney GJ, Clancy JP, Engelhardt JF, Swords, WE, Thornton DJ, Wiesmann WP, Baker SM, Rowe SM. 2019 "A glycopolymer improves vascoelasticity and mucociliary transport of abnormal cystic fibrosis mucus." *JCI Insight*, 4(8), Epub date 2019/04/19

DOI: <http://dx.doi.org/10.1172/jci.insight.125954> PMID: 30996141

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30996141>

New Publications

Dr. Adam Dupuy

Loeb KR, Hughes BT, Fissel BM, Osteen NJ, Knoblauch SE, Grim JE, Drury LJ, Sarver A, Dupuy AJ, Clurman BE. 2019 "Insertional mutagenesis using the Sleeping Beauty transposon system identifies drivers of erythroleukemia in mice." *Sci Rep*, 9(1):5488.

DOI: <http://dx.doi.org/10.1038/s41598-019-41805-x>

PMCID: PMC6445099

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30940846>

Dr. Martine Dunnwald

Dunnwald M, Pizzimenti MA. 2019 "A Case Study of Malrotated Kidneys with Asymmetric Multiple Renal Arteries, Variant Venous Drainage, and Unilateral Ureteral Duplication." *Case Rep Vasc Med*, Epub date: 2019/04/24.

DOI: <http://dx.doi.org/10.1155/2019/1893137>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/31011461>

PMCID: PMC6442374

PMID: 31032921

Martine Dunnwald and Ralph Marcucio. Orlando Sun Shines on Science, *Anatomy Now*, February 2019.

https://www.anatomy.org/orlando-sun-shines-on-science.html?_zs=8PntE1&_zl=Qfet4

Dr. Botond Banfi

Nakano Y, Wiechert S, Banfi B. 2019 "Overlapping Activities of Two Neuronal Splicing Factors Switch the GABA Effect from Excitatory to Inhibitory by Regulating REST."

Cell Rep, 27(3):860-871 e8.

Epub date: 2019/04/18.

DOI: <http://dx.doi.org/10.1016/j.celrep.2019.03.072>

PMID: 30995482

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30995482>

Dr. Brad Amendt

Kousa YA, Zhu H, Fakhouri WD, Lei Y, Kinoshita A, Roushangar RR, Patel NK, Agopian AJ, Yan W, Leslie EJ, Busch TD, Mansour TA, Li X, Smith AL, Li EB, Sharma DB, Williams TJ, Chai Y, Amendt BA, Liao EC, Mitchell LE, Bassuk AG, Gregory S, Ashley-Koch A, Shaw GM, Finnell RH, Schutte BC. "The TFAP2A-IRF6-GRHL3 genetic pathway is conserved in neurulation." *Epub*: Jan 25, 2019 pii: 5301727.

PMID: 30689861

DOI: <http://dx.doi.org/10.1093/hmg/ddz010>

Website: <https://www.ncbi.nlm.nih.gov/pubmed/30689861>

Akkouch A, Zhu M, Romero-Bustillos M, Eliason S, Qian F, Salem A, Amendt BA, Hong L. 2019 "MicroRNA-200c Attenuates Periodontitis by Modulating Proinflammatory and Osteoclastogenic Mediators." *Stem Cells Dev*, Epub date 2019/04/25.

DOI: <http://dx.doi.org/10.1089/scd.2019.0027>

PMID: 31017046

Website: <https://www.ncbi.nlm.nih.gov/pubmed/31017046>