



Points of Interest

January – September 2020

Honors and Awards

Dr. Darren Hoffman

D1 Teacher of the Year Award

Selected by the first year Dental Students.

Dr. Masataka Kawai

Editor's Choice Award for 2019 Papers

for

“Functional significance of HCM mutants of tropomyosin, V95A and D175N, studied with in vitro motility assays.”

Ishii, S; Suzuki, M; Ishiwata, S; Kawai, M (2019). *Biophysics and Physicobiology* 16:28-40.
The editor was Yoshie Harada, PhD, and *Biophysics and Physicobiology* is the official
Journal of Japanese Biophysics Society.

Dr. Marc Pizzimenti

John P. Long Teaching Award in the Basic Sciences

(Finalist) Faculty of the Year, College of Medicine, The University of Iowa, Voted by First
Year Medical and PA Students.

Dr. Nathan Swailes

M1 Teacher of the Year Award

Selected by College of Medicine Students.

Dr. Sam Young

Distinguished Scholar Award

Distinguished scholars receive an investment of \$200,000/year to support their research
program and drive innovative research to expand the extramural funding base of the CCOM
by increasing extramural grant support to increase the capacity and scope of existing
institutes or centers.

Appointments & Special Recognition

Dr. Xingshen Sun

- Appointment as Research Assistant Professor, 1 June 2020

Dr. Ling Yang

- Promotion to Associate Professor, 1 July 2020

Dr. Sam Young

- Invited to be a Reviewing Editor for *Journal of Physiology*

Special Presentations & Seminars

Dr. Martine Dunnwald

- Presented in “**Virtual anatomy lounge**”
<https://amasan.informz.net/informzdataservice/onlineversion/pub/bWFpbGluZ0luc3RhbmNISWQ9Nzg3ODI2MA==>
Virtual Annual Experimental Biology Meeting week (April 2020)
- Profiled in “**What do you do to survive during the pandemic**”
<https://www.anatomy.org/AAA/Membership/Profiles/At-Home-with-Martine-Dunnwald.aspx>
- Presented virtually at the annual meeting of the society for Investigative Dermatology in May.
“ARHGAP29 regulates keratinocyte migration in vitro but not in vivo.”
Reeb, T; Stein, A; Rhea, L; Wessels, D; Soll, D; Dunnwald, M.
Society for Investigative Dermatology Annual Meeting, Scottsdale, AZ, held virtual, May 2020. *J Invest Dermatol* 140(7) S108
<https://doi.org/10.1016/j.jid.2020.03.846>

Special Presentations & Seminars

Dr. Martine Dunnwald (continued)

- Spencer Halberg (undergraduate in Dr. Sander lab working with Martine Dunnwald) was selected to be finalist in the undergraduate oral presentation competition at the Summer Biomechanics, Bioengineering and Biotransport Conference, held virtually in June.

**“Interferon regulatory factor 6 affects
keratinocyte mechanobiology.”**

Halberg, SA; Antiguas, A; Preston, AJ; Dunnwald, M; Sander, EA.
Summer Biomechanics, Bioengineering and Biotransport
Conference, Vail, CO (June 2020)

Dr. Marc Pizzimenti

- **“Developing Medical Students as Future Educators Through a Teaching Distinction Track”**

[Experimental Biology: American Physiological Society](#)

FASEB 34:1-1, April 2020; doi:10.1096/fasebj.2020.34.s1.05624

Pizzimenti, MA; Bernat, CK; Ruden, B; and Pettit JE.

Selected for Webinar Presentation (26 May 2020)

- **“Building Relationships: Anatomy for Peripheral Nerve Blocks”**

Regional Anesthesia Study Center of Iowa (RASCI, UIHC, Iowa City
Pizzimenti, MA

Zoom Presentation (6 June 2020)

- **“Navigating a Transition to Teaching in the Anatomical Sciences”**

[AAA Filling the Gap: Teaching Anatomy as a Non-Anatomist](#)

Pizzimenti, MA

Webinar (12 August 2020)

Dr. Tom Rutkowski

- **“TCA cycle activity links lipid catabolism to ER protein folding: A novel bidirectional pathway of interorganellar communication”**

Dan Diego Scripps/Sanford Burnham ER stress club, 11 August 2020.

Special Presentations & Seminars

Dr. Ziyang Yan

- “The Development of Recombinant Adeno-Associated Virus/Human Bocavirus Vector Production System”
PepTalk 2020’s, Cambridge Healthtech Institute, San Diego, CA,
20 January 2020

New Grant Awards

Dr. John Engelhardt

Title: Center for Gene Therapy of Cystic Fibrosis

Sponsor: NIH/NIDDK

Grant/Contract #: 2 P30 DK054759-21

Project Period: 9/30/1998 – 3/31/2025

Total Award All Five Years: \$5,793,745

Title: Molecular Therapies for Cystic Fibrosis Lung Disease

Sponsor: NIH/NHLB

Grant/Contract #: 1P01HL152960-01

Project Period: 9/1/2020 – 8/31/2025

PI Animal Models Core – Total Award All Five Years: \$1,426,271

PI Project 3 - Total Award All Five Years: \$2,432,563

Dr. Tom Rutkowski

Title: Regulation of ER Homeostasis by TCA Cycle Activity: Mechanisms and Consequences

Sponsor: NIGMS

Grant/Contract #: 2R01GM115424 (Competing Renewal)

Project Period: 7/2020 – 6/2024

Total Award All Years: \$1,902,500

New Grant Awards

Dr. Tina Tootle

Title: Functions and Regulation of Nuclear Actin

Sponsor: NSF-MCB/EPSCoR

Grant/Contract #: 15276801

Project Period: 7/1/2020 – 6/30/2023

Total Award All Years: \$900,000

Dr. Zyng Yan

Title: Viral and Host Determinants of Parvovirus Replication

Sponsor: NIH/Subcontract University of Kansas Medical Center Research Institute, Inc.

Grant/Contract #: ZAQ00030

Project Period: 1/27/2020 – 12/31/2024

Total Award All Years: \$193,125

Title: Mechanisms underlying the transduction polarity of AAV in polarized human

Sponsor: NIH/Subcontract University of Kansas Medical Center Research Institute, Inc.

Grant/Contract #: ZAQ00040

Project Period: 2/13/2020 – 1/31/2022

Total Award All Years: \$127,463

Dr. Ling Yang

Title: Iowa Aging Pilot Grant

Sponsor: UIHC/CCOM

Grant/Contract #: 53380638

Project Period: 7/1/2020 – 6/30/2022

Total Award All Years: \$75,000 for year one and \$75,000 for year two contingent on progress

Dr. Sam Young

Title: Regulation of Synaptic Vesicle Dynamics in the Auditory System

Sponsor: NIH

Grant/Contract #: 11283200 (Renewal)

Project Period: 5/1/2019 – 5/31/2025

Total Award All Years: \$1,931,250

New Publications

Dr. Rob Cornell

“Genome-wide Analyses Identify a Novel Risk Locus for Nonsyndromic Cleft Palate.”

He, M., Zuo, X., Liu, H., Wang, W., Zhang, Y., Fu, Y., Zhen, Q., Yu, Y., Pan, Y., Qin, C., Li, B., Yang, R., Wu, J., Huang, Z., Ge, H., Wu, H., Xu, Q., Zuo, Y., Chen, W., Qin, Y., Liu, Z., Chen, S., Zhang, H., Zhou, F., Yan, H., Yu, Y., Yong, L., Chen, G., Liang, B., Cornell, R.A., Zong, L., Wang, L., Zou, D., Sun, L., and Bian, Z. 2020. *J Dent Res*:22034520943867

“Analysis of zebrafish periderm enhancers facilitates identification of a regulatory variant near human KRT8/18.”

Liu, H., Duncan, K., Helverson, A., Kumari, P., Mumm, C., Xiao, Y., Carlson, J.C., Darbellay, F., Visel, A., Leslie, E., Breheny, P., Erives, A.J., and Cornell, R.A. 2020. *Elife* 9.
pmcid:PMC7039683

“Functional Characterization of a Novel IRF6 Frameshift Mutation from a Van Der Woude Syndrome Family.”

Zhang, M., Zhang, J., Zhao, H., Ievlev, V., Zhong, W., Huang, W., Cornell, R.A., Lin, J., and Chen, F. 2020. *Front Genet* 11:562. pmcid:PMC7289175

Dr. Martine Dunnwald

“Interferon Regulatory Factor 6 is required for proper wound healing in vivo.”

Rhea, L; Canady, FJ; Li, M; Reeb, T; Canady, JW; Kacmarynski, DSF; Avvari, R; Biggs, LC; Dunnwald, M. *Dev Dyn* Nov 14, 2019 doi: [10.1002/dvdy.134](https://doi.org/10.1002/dvdy.134) PMID 31724286

“Non-random distribution of deleterious mutations in the DNA and protein-binding domains of IRF6 are associated with Van der Woude syndrome.”

Alade, AA; Buxo-Martinez, CJ; Mossey, PA; Gowans, LJJ; Eshete, MA; Adeyemo, WL; Naicker, T; Awotoye, WA; Adeleke, C; Bush, T; Torano, AM; Bello, CA; Soto, M; Soto, M; Ledesma, R; Marquez, M; Cordero, JF; Lopez-Del Valle, LM; Salcedo, MI; Debs, N; Li, M; Petrin, A; Olotu, J; Aldous, C; Olutayo, J; Ogunlewe, MO; Abate, F; Hailu, T; Muhammed, I; Gravem, P; Deribew, M; Gesses, M; Hassan, M; Pape, J; Adeniyani, OA; Obiri-Yeboah, S; Arthur, FKN; Oti, AA; Olatosi, O; Miller, SE; Donkor, P; Dunnwald, M; Marazita, ML; Adeyemo, AA; Murray, JC; Butali, A. *Mol Genet Genomic Med*, (8):e1355, 2020 doi: [10.1002/mgg3.1355](https://doi.org/10.1002/mgg3.1355)
PMCID: PMC7434609

New Publications

Dr. Adam Dupuy

“A genetic screen to identify gain- and loss-of-function modifications that enhance T-cell infiltration into tumors.”

Rogers, L.M., Wang, Z., Mott, S.L., Dupuy, A.J., and Weiner, G.J. 2020. *Cancer Immunol Res*

“Functional Genomic Screening Independently Identifies CUL3 as a Mediator of Vemurafenib Resistance via Src-Rac1 Signaling Axis.”

Vanneste, M., Feddersen, C.R., Varzavand, A., Zhu, E.Y., Foley, T., Zhao, L., Holt, K.H., Milhem, M., Piper, R., Stipp, C.S., Dupuy, A.J., and Henry, M.D. 2020. *Front Oncol* 10:442. pmcid:PMC7169429

Dr. John Engelhardt

“Derivation of induced pluripotent stem cells from ferret somatic cells.”

Gao, J., Petraki, S., Sun, X., Brooks, L.A., Lynch, T.J., Hsieh, C.L., Elteriefi, R., Lorenzana, Z., Punj, V., Engelhardt, J.F., Parekh, K.R., and Ryan, A.L. 2020. *Am J Physiol Lung Cell Mol Physiol* 318:L671-L83. pmcid:PMC7191474

“Regenerative Metaplastic Clones in COPD Lung Drive Inflammation and Fibrosis.”

Rao, W., Wang, S., Duleba, M., Niroula, S., Goller, K., Xie, J., Mahalingam, R., Neupane, R., Liew, A.A., Vincent, M., Okuda, K., O'Neal, W.K., Boucher, R.C., Dickey, B.F., Wechsler, M.E., Ibrahim, O., Engelhardt, J.F., Mertens, T.C.J., Wang, W., Jyothula, S.S.K., Crum, C.P., Karmouty-Quintana, H., Parekh, K.R., Metersky, M.L., McKeon, F.D., and Xian, W. 2020. *Cell* 181:848-64 e18. pmcid:PMC7294989

“A Tribute to Barrie J. Carter.”

Srivastava, A., Weitzman, M., Chatterjee, S., Engelhardt, J.F., Owens, R.A., Muzyczka, N., and Ali, R. 2020. *Hum Gene Ther* 31:491-3. pmcid:PMC7362996

“Viral Vectors, Animal Models, and Cellular Targets for Gene Therapy of Cystic Fibrosis Lung Disease.”

Tang, Y., Yan, Z., and Engelhardt, J.F. 2020. *Hum Gene Ther* 31:524-37. pmcid:PMC7232698

“Cellular Cleavage and Polyadenylation Specificity Factor 6 (CPSF6) Mediates Nuclear Import of Human Bocavirus 1 NP1 Protein and Modulates Viral Capsid Protein Expression.”

Wang, X., Xu, P., Cheng, F., Li, Y., Wang, Z., Hao, S., Wang, J., Ning, K., Ganaie, S.S., Engelhardt, J.F., Yan, Z., and Qiu, J. 2020. *J Virol* 94. pmcid:PMC6955249

New Publications

Dr. John Engelhardt (continued)

“In Situ Analysis Reveals That CFTR Is Expressed in Only a Small Minority of beta-Cells in Normal Adult Human Pancreas.”

White, M.G., Maheshwari, R.R., Anderson, S.J., Berlinguer-Palmini, R., Jones, C., Richardson, S.J., Rotti, P.G., Armour, S.L., Ding, Y., Krasnogor, N., Engelhardt, J.F., Gray, M.A., Morgan, N.G., and Shaw, J.A.M. 2020. *J Clin Endocrinol Metab* 105. pmcid:PMC7341165

Dr. C. Andrew Frank

“Homeostatic control of Drosophila neuromuscular junction function.”

Frank, C.A., James, T.D., and Muller, M. 2020. *Synapse* 74:e22133. pmcid:PMC68173953

Dr. Darren Hoffmann

“Benefits of a multi-institutional, hybrid approach to teaching course design for graduate students, post-doctoral scholars, and leaders.”

Hoffmann, D.S., Kearns, K., Bovenmyer, K.M., Cumming, P., Drane, L., Gonin, M., Kelly, L., Rohde, L., Tabassum, S., Blay, R. 2020. *Teaching and Learning Inquiry* (accepted)

“Gross Anatomy During the Pandemic: Cadaver dissection is essential as a learning tool (white paper).”

Caroll, M.A., Hoffmann, D.S., Karnes, J.L., Sanders, S.L. 2020.

<https://www.anatomy.org/AAA/Resources/Report-Prioritizing-Cadaveric-Dissection.aspx?zs=EdQGF1&zl=13mv5>

Dr. Xiaoming Liu

“Modulation of Wnt/beta-catenin signaling in IL-17A-mediated macrophage polarization of RAW264.7 cells.”

Yuan, C., Yang, D., Ma, J., Yang, J., Xue, J., Song, F., and Liu, X. 2020. *Braz J Med Biol Res* 53:e9488. pmcid:PMC7307890

Dr. Marc Pizzimenti

“Changes in ipsilesional hand motor function differ after unilateral injury to frontal versus frontoparietal cortices in Macaca mulatta.”

Darling, W.G., Pizzimenti, M.A., Rotella, D.L., Ge, J., Stilwell-Morecraft, K.S., and Morecraft, R.J. 2020. *Exp Brain Res* 238:205-20.

New Publications

Dr. Tom Rutkowski

“NAPDH and Glutathione Redox Link TCA Cycle Activity to Endoplasmic Reticulum Homeostasis.”

Gansemer, E.R., McCommis, K.S., Martino, M., King-McAlpin, A.Q., Potthoff, M.J., Finck, B.N., Taylor, E.B., Rutkowski, D.T. *iScience*. 2020 May 22;23(5):10116; doi: <https://doi.org/10.1016/j.isci.2020.10116>; Epub 2020 Apr 29

Dr. Tina Tootle

“Nuclear architecture as an intrinsic regulator of *Drosophila* female germline stem cell maintenance.”

Duan, T., Green, N., Tootle, T.L., and Geyer, P.K. 2020. *Curr Opin Insect Sci* 37:30-8. pmcid:PMC7089816

“Cardiac injury modulates critical components of prostaglandin E2 signaling during zebrafish heart regeneration.”

FitzSimons, M., Beauchemin, M., Smith, A.M., Stroh, E.G., Kelsch, D.J., Lamb, M.C., Tootle, T.L., and Yin, V.P. 2020. *Sci Rep* 10:3095. pmcid:PMC7033201

“Prostaglandins regulate invasive, collective border cell migration.”

Fox, E.F., Lamb, M.C., Mellentine, S.Q., and Tootle, T.L. 2020. *Mol Biol Cell* 31:1584-94

“Fascin regulates protrusions and delamination to mediate invasive, collective cell migration in vivo.”

Lamb, M.C., Anliker, K.K., and Tootle, T.L. 2020. *Dev Dyn* 249:961-82

Dr. Ziyang Yan

“Cellular Cleavage and Polyadenylation Specificity Factor 6 (CPSF6) Mediates Nuclear Import of Human Bocavirus 1 NP1 Protein and Modulates Viral Capsid Protein Expression.”

Wang, X., Xu, P., Cheng, F., Li, Y., Wang, Z., Hao, S., Wang, J., Ning, K., Ganaie, S.S., Engelhardt, J.F., Yan, Z., Qiu, J. *J Virol*. 2020; 94(2):e01444-19. PMID: 31666379, PMC6955249

“Viral Vectors, Animal Models, and Cellular Targets for Gene Therapy of Cystic Fibrosis Lung Disease.”

Tang, Y., Yan, Z., Engelhardt, J.F. *Hum Gene Ther*. 2020; 31(9-10):524-537. PMID: 32138545. PMCID: PMC7232698

New Publications

Dr. Ziyang Yan (continued)

**“Establishment of a Recombinant AAV2/HBoV1 Vector
Production System in Insect Cells.”**

Deng, X., Zou, W., Yan, Z., Qiu, J. *Genes (Basel)*. 2020. 11(4):439. PMID: 32316599, PMCID: PMC7231168

**“Human Bocavirus 1 Infection of Well-Differentiated
Human Airway Epithelium.”**

Yan, Z., Deng, X., Qiu, J. *Curr Protoc Microbiol*. 2020. 58(1):e107. PMID: 32639683, PMCID: PMC7422954

Dr. Ling Yang

**“The unfolded protein response regulates hepatic autophagy
by sXBP1-mediated activation of TFEB.”**

Zhang, Z., Qian, Q., Li, M., Shao, F., Ding, W.X., Lira, V.A., Chen, S.X., Sebag S.C., Hotamisligil, G.S., Cao, H., Yang, L. 2020. *Autophagy*. 2020 Jul 15:1-15. doi: <https://doi.org/10.1080/15548627.2020.1788889>. Online ahead of print. PMID: 32597296

**“A putative long noncoding RNA-encoded micropeptide
maintains cellular homeostasis in pancreatic beta cells.”**

Li M., Shao, F., Qian, Q., Yu, W., Zhang, Z., Chen, B., Su, D., Guo, Y., Phan, A.V., Song, L.S., Stephens, S.B., Sebag, J., Imai, Y., Yang, L./HuoJun, C. 2020. *bioRxiv*, doi: <https://doi.org/10.1101/2020.05.12.091728>

Dr. Samuel Young

“Using Sox2 to alleviate the hallmarks of age-related hearing loss.”

Yamoah, E.N., Li, M., Shah, A., Elliott, K.L., Cheah, K., Xu, P.X., Phillips, S., Young, S.M. Jr., Eberl, D.F., Fritzsche, B. 2020 May;59:101042. doi: <https://doi.org/10.1016/j.arr.2020.101042>. Epub 2020 Mar 12. Review. PubMed PMID: 32173536

**“Presynaptic development is controlled by the
core active zone proteins CAST/ELKS.”**

Radulovic, T., Dong, W., Goral, R.O., Thomas, C.I., Veeraraghavan, P., Montesinos, M.S., Guerrero-Given, D., Goff, K., Lubbert, M., Kamasawa, N., Ohtsuka, T., Young, S. M., Jr. 2020 Jun;598(12):2431-2452. doi: <https://doi.org/10.1113/JP279736>. Epub 2020 May 19. PubMed PMID: 32304329

Additional Announcements

- The first cohort of MCA students [graduated \(virtually\)](#) on 16 May 2020.
- The new cohort of 5 MCA students began their course of study in August 2020. See all of the current [MCA students on the ACB website](#).