CURRICULUM VITAE

The Johns Hopkins University School of Medicine

Andrew Josef Ewald

November 30, 2017

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

2014-present Associate Professor, Department of Cell Biology (Primary), Johns Hopkins Associate Professor, Department of Oncology (Secondary), Johns Hopkins

2014-present Associate Professor, Dept. of Biomedical Engineering (Secondary), Johns Hopkins

2008-present Member, Center for Cell Dynamics, Johns Hopkins

2008-present Member, Biochemistry, Cell and Molecular Biology Graduate Program

2009-present Member, Breast and Ovarian Cancer Program, Sidney Kimmel Comprehensive Cancer Center

2015-present Editor, Journal of Cell Science, Cambridge UK

Personal Data

855 N. Wolfe St

Center for Cell Dynamics, Rangos 452

Baltimore, MD 21205 Tel: 410-614-9288 Fax: 410-502-7826

E-mail: aewald2@jhmi.edu

Education and Training

Undergraduate

1993-1997 B.S., Physics, Haverford College, Haverford, PA

Doctoral

1997-2003 Ph.D., Biochemistry and Molecular Biophysics, Caltech, Pasadena, CA

Primary Mentor: Scott E. Fraser

Postdoctoral

2003-2008 Postdoctoral Fellow, Department of Anatomy, UCSF, San Francisco, CA

Primary Mentor: Zena Werb

Professional Experience

2003-2008	Postdoctoral Fellow, Department of Anatomy, UCSF, San Francisco, CA
2008-2014	Assistant Professor, Department of Cell Biology (Primary), Johns Hopkins
2009-2014	Assistant Professor, Department of Oncology (Secondary), Johns Hopkins
2014-present	Associate Professor, Department of Cell Biology (Primary), Johns Hopkins
2014-present	Associate Professor, Department of Oncology (Secondary), Johns Hopkins
2011	

2014-present Associate Professor, Department of Biomedical Engineering (Secondary), Johns Hopkins

PUBLICATIONS

Original Research [OR]

- Strong RK, Bratt T, Cowland JB, Borregaard N, Wiberg FC, **Ewald AJ**, "Expression, purification, crystallization and crystallographic characterization of dimeric and monomeric human neutrophil gelatinase associated lipocalin (NGAL)," Acta Crystallogr D Biol Crystallogr. 1998, Jan 1; 54(Pt 1): 93-95.
- 2. Wallingford JB, **Ewald AJ**, Harland RM, Fraser SE, "Calcium signaling during convergent extension in Xenopus," Curr Biol. 2001, May 1; 11(9):652–661. Selected for Cover; Designed microscope, collected timelapse movies, analyzed data, prepared figures, co-wrote manuscript.
- 3. **Ewald AJ**, McBride H, Reddington M, Fraser SE, Kerschman R, "Surface imaging microscopy, an automated

- method for visualizing whole embryo samples in three dimensions at high resolution," Dev Dyn, 2002. Nov 225(3): 369-375. Selected for Cover.
- 4. Chen H, Detmer SA, **Ewald AJ**, Griffin EE, Fraser SE, Chan DC, "Mitofusins Mfn1 and Mfn2 coordinately regulate mitochondrial fusion and are essential for embryonic development," J Cell Biol. 2003 Jan 20;160(2): 189-200. Recommended 1* in Faculty of 1000; Developed cell based assay, collected timelapse movies and confocal images, analyzed data, prepared figures, co-wrote manuscript.
- 5. **Ewald AJ**, Peyrot S, Tyszka JM, Fraser SE, Wallingford J, "Regional requirements for Dishevelled signaling during Xenopus gastrulation: Separable effects on blastopore closure, mesendoderm internalization, and archenteron formation," Development. 2004 Dec Part 2;131(24): 6195-6209. Recommended 2* in Faculty of 1000; Selected for Cover.
- 6. Song S, **Ewald AJ**, Stallcup B, Werb Z, Bergers G, "PDGFR□ + perivascular progenitor cells in tumors regulate pericyte differentiation and vascular survival," Nat Cell Biol. 2005 Sep; 7(9):870-9. Recommended 2* in Faculty of 1000; Developed cell based assay, collected timelapse movies and confocal images, developed analysis approaches, analyzed data, prepared figures, co-wrote manuscript.
- 7. Tyszka JM, **Ewald AJ**, Wallingford JB, Fraser SE, "New tools for visualization and analysis of morphogenesis in spherical embryos," Dev Dyn. 2005 Dec; 234(4): 974-83. *Selected for Cover; Co-developed novel analytical techniques, collected and analyzed data, built figures, wrote manuscript.*
- 8. Levin M, **Ewald AJ**, McMahon M, Werb Z, Mostov K, "A model for intussesceptive angiogenesis," Vascular Development, Wiley, Chichester, Novart Fdn Symp. 2007; 283: 37-45. *Assisted in development of novel cell based assay, collected images, contributed to figures and text.*
- 9. Yu W, Fang X, **Ewald AJ**, Hunt A, Werb Z, Mathay M, Mostov K, "Formation of cysts by alveolar type II cells in three-dimensional culture reveals a novel mechanism for epithelial morphogenesis," Mol Biol Cell. 2007 May; 18: 1693-1700. Co-developed cell based assay, collected timelapse movies and confocal images, analyzed data, prepared figures, cowrote manuscript.
- 10. Fata J, Mora H, **Ewald AJ**, Zhang H, Yao E, Werb Z, Bissell M, "The MAPK ERK-1,2 pathway integrates distinct and antagonistic signals from TGFa and FGF7 in morphogenesis of mouse mammary epithelium", Dev Biol, 2007, Jun 1; 306(1):193-207. *Co-developed cell based assay, collected timelapse movies and confocal images, analyzed data, prepared figures, co-wrote manuscript.*
- 11. Kouros-Mehr H, Bechis SK, Slorach EM, Littlepage LE, Egeblad M, **Ewald AJ**, Pai SY, Ho IC, Werb Z, "Gata-3 links tumor differentiation and dissemination in a luminal breast cancer model," Cancer Cell. 2008 Feb; 13(2): 141-52. Co-designed in vivo metastasis experiment, contributed to data analysis, figures, and text.
- 12. **Ewald AJ***, Brenot A, Duong M, Chan BC, Werb Z, "Collective epithelial migration and cell rearrangements drive mammary branching morphogenesis," Dev Cell. 2008 Apr; 14(4): 570-81. *Co-Corresponding Author; Recommended 3* in Faculty of 1000.
- 13. Martin-Belmonte H, Yu W, Rodriguez-Fraticelli AE, **Ewald AJ**, Werb Z, Alonso MA, Mostov K, "Cell polarity dynamics controls the mechanism of lumen formation in epithelial morphogenesis," Curr Biol. 2008 Apr 8; 18(7): 507-13. Developed imaging techniques, collected timelapse movies, analyzed data, contributed to figures.
- 14. Lu PF, **Ewald AJ**, Werb Z, Martin G, "Genetic mosaic analysis reveals FGF receptor 2 is required in terminal end buds during mammary gland branching morphogenesis," Dev Biol. 2008 Sep 1; 321(1):77-87. Contributed to design, conduct, and analysis of in vivo genetic experiments, built figures, co-wrote manuscript, and conducted extensive parallel in vitro experiments.
- 15. Egeblad* M, **Ewald* AJ**, Asketraud HA, Truitt M, Welm B, Bainbridge E, Peeters G, Krummel M, Werb Z, "Imaging stromal cells in intact tumor microenvironments," Dis Model Mech. 2008 Sep/Oct; 1(2/3): 155-67. * = Co-First Authors.
- Bhise N, Gray RS, Sunshine J, Htet S, Ewald AJ, Green JJ, "The relationship between terminal functionalization and molecular weight of a gene delivery polymer and transfection efficacy in mammary epithelial 2-D cultures and 3-D organotypic cultures," Biomaterials. 2010 Nov; 31(31):8088-96. Supervised RS Gray and co-supervised N Bhise. Developed cell based models in which the gene delivery polymers were tested. Contributed to conduct of experiments, interpretation of data, generation of figures, and writing of manuscript.
- 17. Nakasone ES, Askautrud HA, Kees T, Park JH, Plaks V, **Ewald AJ**, Fein M, Rasch MG, Tan YX, Qiu J, Park J, Sinha P, Bissell MJ, Frengen E, Werb Z, Egeblad M, "Imaging tumor-stroma interactions during chemotherapy reveals contributions of the microenvironment to resistance," Cancer Cell. 2012 Apr 17; 21(4):488-503. Recommended 3* in Faculty of 1000; Selected for Cover; Developed novel intravital imaging and image analysis techniques, developed organoid assay, contributed to figures, edited manuscript.
- 18. **Ewald AJ***, <u>Huebner RJ</u>, Palsdottir H, Lee JK, Perez MJ, Jorgens DM, Tauscher AN, *Cheung KJ*, Werb Z, Auer M, "Mammary collective cell migration involves transient loss of epithelial features and individual cell migration within the epithelium," J Cell Sci. 2012 Jun 1; 125(Pt 11):2638-54. **Corresponding Author.
- 19. Nguyen-Ngoc KV, Cheung KJ, Brenot A, Shamir ER, Gray RS, Hines WC, Yaswen P, Werb Z, Ewald AJ, "The

- ECM microenvironment regulates collective migration and local dissemination in normal and malignant mammary epithelium," Proc Natl Acad Sci U S A. 2012 Sep 25; 109(39):E2595-604.
- 20. <u>Nguyen-Ngoc KV</u> and **Ewald AJ**, "Mammary epithelial elongation and myoepithelial migration are regulated by the composition of the extracellular matrix," J Microsc. 2013 Sep;251(3):212-23
- 21. <u>Beck JN</u>, Singh A, <u>Rothenberg AR</u>, Elisseeff JH, **Ewald AJ**, "The independent roles of mechanical, structural and adhesion characteristics of 3D hydrogels on the regulation of cancer invasion and dissemination," Biomaterials. 2013 Dec; 34(37):9486-95.
- 22. <u>Cheung KJ</u>, Gabrielson E, Werb Z, **Ewald AJ**, "Collective invasion in breast cancer requires a conserved basal epithelial program," Cell. 2013 Dec 19; 155(7):1639-51. *Highlighted in Science, Nature, PNAS, and Cancer Research;* Recommended 10* in Faculty of 1000.
- 23. <u>Shamir ER</u>, Papallardo É, Jorgens DM, Coutinho K, Tsai WT, Aziz K, Auer M, Tran PT, Bader JS, **Ewald AJ**, "Twist1-induced dissemination preserves epithelial identity and requires E-cadherin," J Cell Biol. 2014 Mar 3; 204(5):839-56. Recommended 6* in Faculty of 1000.
- 24. <u>Huebner RJ</u>, Lechler T, **Ewald AJ**, "Developmental stratification of the mammary epithelium occurs through symmetry-breaking vertical divisions of apically positioned luminal cells," Development. 2014 Mar; 141(5):1085-94. *Highlighted "In this Issue"*; Recommended 3* in Faculty of 1000.
- 25. Chen Q, Zhang N, <u>Gray RS</u>, Li H, **Ewald AJ**, Zahnow CA, and Pan DJ, "A temporal requirement for Hippo signaling in mammary gland differentiation, growth and tumorigenesis," Gene Dev. 2014 Mar 1; 28(5):432-7. Recommended 2* in Faculty of 1000; Supervised RS Gray and co-supervised Q Chen. Designed all in vitro experiments and worked with RS Gray to build figures and write text for those results. Contributed to design and interpretation of in vivo genetic experiments.
- 26. Bryant DM, Roignot J, Datta A, Orvereem A, Kim M, Yu W, Peng X, Eastburn D, **Ewald AJ**, Werb Z, and Mostov K, "A molecular switch for the orientation of epithelial cell polarization," Dev Cell. 2014 Oct 27; 31(2):171-87. Developed imaging techniques, collected timelapse movies, analyzed data, contributed to figures.
- 27. Chapiro J, Sur S, Savic LJ, Ganapathy-Kniappan S, Reyes J, Duran R, Chettiar-Thiruganasambandam S, Moats CR, Lin M, Luo W, Tran PT, Herman JM, Semenza GL, **Ewald AJ**, Vogelstein B, Geschwind JF, "Systemic delivery of microencapsulated 2-bromopyruvate for the therapy of pancreatic cancer," Clin Cancer Res. 2014 Dec 15; 20(24):6406-17. Worked with J Chapiro to adapt our mammary organoid assay to develop a preclinical pancreatic cancer 3D culture model. Contributed to design of figures and editing of manuscript.
- 28. Kim M, Shewan A, **Ewald AJ**, Werb Z, Mostov KE, "P114RhoGEF governs cell motility and lumen formation during tubulogenesis via ROCK-myosin II pathway," J Cell Sci. 2015 Oct 19. Developed imaging techniques, collected timelapse movies and confocal images, analyzed data, contributed to figures and text.
- 29. <u>Ellison D</u>, Mugler A, Brennan M, Lee SH, <u>Huebner RJ</u>, <u>Shamir ER</u>, Woo LA, Kim J, Amar P, Nemenman I*, **Ewald AJ***, Levchenko A*, "Cell-cell communication enhances the capacity of cell ensembles to sense shallow gradients during morphogenesis," Proc Natl Acad Sci U S A 2016 Feb 9; 113(6):E679-88. *Co-Corresponding; Recommended 3* in Faculty of 1000; Highlighted in Yale Scientific Magazine, Biotechniques.
- 30. <u>Cheung KJ, Padmanaban V, Silvestri V, Schipper K, Cohen JD, Fairchild AN,</u> Gorin MA, Verdone JE, Pienta KJ, Bader JS, **Ewald AJ**, "Polyclonal breast cancer metastases arise from collective dissemination of keratin 14-expressing tumor cell clusters," Proc Natl Acad Sci U S A. 2016 Feb 16;113(7):E854-63. Recommended 2* in Faculty of 1000; Highlighted in Scientific American, Proto Magazine (Mass General).
- 31. <u>Huebner RJ, Neumann NM, Ewald AJ</u>, "Mammary epithelial tubes elongate through MAPK-dependent coordination of cell migration.," Development. 2016 Mar 15; 143(6):983-93. *Highlighted "In this Issue."*
- 32. <u>Shamir ER, Coutinho K</u>, Auer M, **Ewald AJ**, "Twist1+ epithelial cells retain adhesive and proliferative capacity during dissemination," Biol Open. 2016 Sep 15; 5 (9): 1216-1228.
- 33. Teo WW, Merino V, Cho S, Korangath P, Liang X, Wu R, Neumann NM, Ewald AJ, Sukumar, S, "HOXA5, a regulator of cell fate transition, impedes tumor initiation and progression in breast cancer," Oncogene. 2016 Oct 20; 35(42):5539-5551. Supervised NM Neumann, served as thesis committee member for WW Teo, assisted in design and interpretation of experiments. Contributed to figures and editing of text.
- 34. Lindberg OR, McKinney A, Engler JR, Koshkakaryan G, Gong H, Robinson AE, **Ewald AJ**, Huillard E, James CD, Molinaro AM, Shieh JT, Phillips JJ, "GBM heterogeneity as a function of variable epidermal growth factor receptor variant III activity," Oncotarget. 2016 Nov 29; 7(48):79101-79116. Assisted in development of novel imaging techniques and novel GBM in vitro models. Contributed to editing of the manuscript.
- 35. Xian L, Georgess D, Huso T, Cope L, Belton A, Chang YT, Kuang W, Zhang X, Senger S, Fassano A, Huso DL, Ewald AJ, Resar LMS, "HMGA1 Amplifies Wnt Signaling and Expands the Intestinal Stem Cell Compartment and Paneth Cell Niche," Nat Communications, 2017 Apr 28;8:15008. Supervised Dan Georgess, contributed to 3D culture analysis of HMGA1 function in the intestine. Contributed to imaging, quantification, figures, and editing of text.
- 36. Asrani K, Sood A, Torres A, <u>Georgess D</u>, Phatak P, Kaur H, Dubin A, Talbot CC, Elhelu L, **Ewald AJ**, Xiao B, Worley P, Lotan TL, mTORC1 Loss Impairs Epidermal Cell-Cell Adhesion and Differentiation via Rho Kinase Activation Downstream of TGF-□, Signaling," J Clin Invest. 2017 Sep 25. Supervised Dan Georgess. Contributed to

- imaging and image analysis.
- 37. Yochum ZA, Cades J, Mazzacurati L, Neumann NM, Khetarpal SK, Wang H, Attar MA, Chatterjee S, Huang E, Chatley SC, Nugent K, Somasundaram A, **Ewald AJ**, Cho YJ, Rudin CM, Tran PT, Burns TF, "Identification of a First-in-Class Twist1 Inhibitor with Activity in Oncogene-Driven NSCLC," Mol Cancer Res. 2017 Aug 29. Supervised Neil Neumannn, contributed to assay development, experimental design, data interpretation, edited manuscript.
- 38. <u>Nguyen-Ngoc KV, Silvestri VL, Georgess D, Fairchild AN, Ewald AJ,</u> "Combined loss of non-muscle myosin IIA and IIB is sufficient to induce epithelial proliferation, J Cell Sci. 2017 Oct 1;130(19):3213-3221.
- 39. Neumann NM, Perrone MC, Vedlhuis JH, Zhan H, Devreotes PN, Brodland GW, **Ewald AJ**, "Coordination of receptor tyrosine kinase signaling and interfacial tension dynamics drive radial intercalation and tube elongation," Accepted in principle at Developmental Cell.
- 40. Scherer PC, Zaccor NW, Neumann NM, Vasavada C, Barrow R, **Ewald AJ**, Rao F, Sumner CJ, Snyder SH, "TRPV1 is a physiologic regulator of m-opiod receptors," In Press PNAS. Supervised Neil Neumannn. Contributed to imaging and image quantification.

Review Articles [RA]

- 1. Page-McCaw* A, **Ewald AJ***, Werb Z, "Matrixmetalloproteinases and the regulation of tissue remodeling," Nat Rev Mol Cell Biol. 2007 Mar; 8(3): 221-33. * = Co-First Authors, ISI Web of Science "Highly Cited Paper" Selected for Cover
- 2. Andrew DJ and **Ewald AJ**, "Morphogenesis of epithelial tubes: Insights into tube formation, elongation, and elaboration," Dev Biol. 2010 May 1; 341(1):34-55. *Selected for Cover*
- 3. <u>Gray RS, Cheung KJ</u>, **Ewald AJ**, "Cellular mechanisms regulating epithelial morphogenesis and cancer invasion," Curr Opin Cell Biol. 2010 Oct; 22(5):640-50.
- 4. <u>Huebner RJ</u> and **Ewald AJ**, "Cellular Foundations of Mammary Tubulogenesis," Semin Cell Dev Biol. 2014 Jul;31:124-31.
- 5. <u>Cheung KJ</u> and **Ewald AJ**, "Illuminating breast cancer invasion: diverse roles for cell-cell interactions," Curr Opin Cell Biol. 2014 Oct; 30:99-111.
- 6. <u>Shamir ER</u> and **Ewald AJ**, "3D Organotypic Culture: Experimental Models of Mammalian Biology and Disease," Nat Rev Mol Cell Biol. 2014 Oct; 15(10):647-64.
- 7. <u>Shamir ER</u> and **Ewald AJ**, "Adhesion in mammary development: novel roles for E-cadherin in individual and collective cell migration," Curr Top Dev Biol. 2015; 112:353-82.
- 8. <u>Cheung KJ</u>, **Ewald AJ**, "A collective route to metastasis: Seeding by tumor cell clusters," Science. 2016 Apr 8;352(6282):167-9.

Book Chapters, Monographs [BC] Not applicable

Other Publications:

Proceedings Reports [PR]

1. **Ewald AJ**, "Quantitative real-time analysis of collective cancer invasion and dissemination," SPIE Proceedings. May 2015.

Editorials and News & Views [ED]

- 1. **Ewald AJ** and Wallingford JB, "Vertebrate gastrulation: sticky or tense?" Curr Biol. 2008 Jul 22; 18(14): R615-7
- 2. <u>Cheung KI</u> and **Ewald AJ**, "Invasive leader cells: metastatic oncotarget," Oncotarget. 2014 Mar 30; 5(6):1390-1.
- 3. **Ewald AJ** and Egeblad M, "Sugar coated cell signaling," Nature. 2014 Jul 17; 511(7509):298-9.
- 4. **Ewald AJ**, "An arresting story about basement membrane invasion," Dev Cell. 2015 Oct 26; 35(2):143-4.
- 5. **Ewald AJ**, "3D Cell Biology- The expanding frontier," J Cell Sci, 2017 Jan. Introduction to special issue on 3D cell biology that I edited.
- 6. **Ewald AJ**, "Pulling cells out of tumors, Nat Cell Biol. 2017 Mar 1;19(3):147-149.

Methods and Techniques, "How I Do It" articles [MT]

- 1. **Ewald AJ**, Werb Z, Egeblad M. 2011 Feb 1;(2):pdb.top97. Dynamic, Long-Term In Vivo Imaging of Tumor-Stroma Interactions in Mouse Models of Breast Cancer Using Spinning-Disk Confocal Microscopy. Cold Spring Harb Protoc.
- 2. **Ewald AJ**, Werb Z, Egeblad M. 2011 Feb 1;(2):pdb.prot5562. Preparation of Mice for Long-Term Intravital Imaging of the Mammary Gland. Cold Spring Harb Protoc.
- 3. **Ewald AJ**, Werb Z, Egeblad M. 2011 Feb 1;(2):pdb.prot5563. Monitoring of Vital Signs for Long-Term Survival of Mice Under Anesthesia. Cold Spring Harb Protoc.
- 4. **Ewald AJ**. 2013 Feb 1;2013(2):100-17. Practical considerations for long-term time-lapse imaging of epithelial morphogenesis in three-dimensional organotypic cultures. Cold Spring Harb Protoc.

- 5. **Ewald AJ**. 2013 Feb 1;2013(2):130-3. Isolation of mouse mammary organoids for long-term time-lapse imaging. Cold Spring Harb Protoc.
- Nguyen-Ngoc KV, Shamir ER, Huebner RJ, Beck JN, Cheung KJ, Ewald AJ, "3D Culture Assays of Murine Mammary Branching Morphogenesis and Epithelial Invasion," Methods Mol Biol. 2015;1189:135-62. Selected for Cover.

Media Releases or Interviews [MR]

2012 Hopkins Press Release for 2012 PNAS Paper

http://www.hopkinsmedicine.org/news/media/releases/breast_cancer_cells_enticed_to_spread_by_tumorous_environment

2013 Hopkins Press Release for 2013 Cell Paper

http://www.hopkinsmedicine.org/news/media/releases/first_step_of_metastasis_halted_in_mice_with_breast_cancer

- 2013 Interviewed for Baltimore's Fox 45 Evening News for 2013 Cell paper.
- 2014 Hopkins Press Release for 2014 JCB Paper

http://www.hopkinsmedicine.org/news/media/releases/velcro_protein_found_to_play_surprising_role_in_cell_migration

- Hopkins Press Release for Metastatic Breast Cancer Network Research Leadership Award http://www.hopkinsmedicine.org/news/media/releases/metastatic_breast_cancer_network_chooses_johns_hopkins_researcher_for_leadership_award
- 2016 Yale Press Release for 2016 PNAS Paper

http://www.pressreleasepoint.com/cell-cell-communication-more-better-point

2016 Hopkins Press Release for 2016 PNAS Paper

http://www.hopkinsmedicine.org/news/media/releases/cancer cells travel together to forge successful metastases

2016 Breast Cancer Research Foundation Researcher Spotlight

https://www.bcrfcure.org/researchers/andrew-ewald

https://www.bcrfcure.org/blog/bcrf-researcher-finds-cancer-cells-travel-together-forge-metastases

2017 Breast Cancer Research Foundation Instagram Takeover- 9/28/17

Other Media [OM] (Videos, Websites, Blogs, Social Media, etc.)

- 2014 YouTube: Science Out of the Box: Stopping Breast Cancer Leader Cells: 1/14/16; 10,865 views as of 1/30/17; https://www.youtube.com/watch?v=gezIo3p2dl8
- 2016 Research Highlighted in April issue of Scientific American by Viviane Callier: "Cancerous Coconspirators: Tumor Cells That Travel Together Spread Cancer"
- Tomorrows Discoveries: Stopping the Spread of Breast Cancer Cells; 766 views as of 1/30/17; https://www.youtube.com/watch?v=sYOoI9TWQ5M
- 2017 Journal of Cell Science- Cell Scientist to Watch Jan 2017 Special Issue on 3D Cell Biology
- 2017 Journal of Cell Biology- People and Ideas Feature Jan 2017 Issue

FUNDING

EXTRAMURAL Funding (Show as current, pending, previous under each subcategory and follow format above.)

Research Extramural Funding - Grants or contracts obtained to support a research initiative

Current

10/1/13-9/30/18 Intercellular interactions driving collective epithelial metastasis

Breast Cancer Research Foundation BCRF-17-048

(this grant is renewable indefinitely, subject to annual progress)

\$1,242,332

Role: PI, 37% effort

5/1/15-12/31/18 Research Scholar Award

Metastatic Breast Cancer Network

\$150,000

Role: PI, 0% effort, no salary

5/16/15-3/18/18 Collaborative Research: Multicellular communication in gradient sensing

National Science Foundation PD-11-7246

\$502,501

Role: MPI (Ewald, Levchenko, Nemenman), 2% effort

8/26/15-8/25/18 Postdoctoral Fellowship

Susan G. Komen Foundation

\$180,000

PI: Georgess (Ewald Lab Postdoctoral Fellow)

Role: Mentor, 2% effort, no salary

9/30/15-9/29/18 Synthetic Biology Approach to Turn Cells Phagocytic against Breast Cancer Cells Breakthrough Award Level 1 DoD CDMRP Breast Cancer Research Program BC141955P1 \$350,000 Role: MPI (Ewald, Inoue), 8.5% effort 7/1/16-6/30/21 Collective invasion, metastasis, and the TME Commonwealth Foundation \$3,000,000 Role: MPI (Ewald, Matsui, Bhujwalla), 20% effort 8/29/16-7/31/21 U54 Physical Sciences in Oncology Center Grant NCI U54 CA210173 \$7,500,000 Role: Project 1 Co-Investigator, 5% effort 1/1/17-12/31/19 Deciphering the molecular control of cancer invasion through quantitative analysis and modeling JKTG Foundation \$450,000 Role: PI, 5% effort Pathway Discovery and Target Validation for Outgrowth of Breast Cancer Metastases 7/1/17-6/30/22 NCI U01CA217846 \$3,000,000 Role: MPI (Ewald, Bader), 20% effort Pending 4/1/18-3/31/23 Integrating bioinformatics into multiscale models for hepatocellular carcinoma NCI U01 CA212007 \$2,500,000 Role: MPI (Fertig, Ewald, Popel, Tran), 10% effort Priority Score: 20 7/1/18-6/30/23 Metastasis-On-A-Chip CRUK Grand Challenge GBP 20,000,000 Role: Investigator, PI=K. Konstantopoulos Previous 9/1/09-8/31/10 Prostate Cancer SPORE Young Investigator Award NIH/NCI P50 CA58236 (PI Nelson) \$50,000 Award PI: Lotan Role: Co-I, 10% effort 6/1/10-5/31/11 Breast Cancer SPORE Career Development Award NIH/NCI P50 CA088843 (PI- Sukumar) \$50,000 Role: PI, 37.5% effort 6/1/10-5/31/11 Breast Cancer SPORE Pilot Project Award NIH/NCI P50 CA088843 (PI- Sukumar) \$50,000 Role: PI, 5% effort 5/1/11-3/31/13 Nrf2 as a critical determinant of smooth muscle function NIH/NHLBI R01 HL107361 \$1,250,000

PI: An Role: Co-I, 1.5% effort 6/1/11-5/31/12 Regulation of dissemination by cell-cell adhesion and the tumor microenvironment Safeway Foundation \$50,000 Role: PI, 1.5% effort, no salary 9/15/11-8/30/15 Analysis of the signaling and mechanical cues promoting metastasis NIH/NCI 5 U01 CA 155758 \$1,086,307 MPI: Levchenko and Lauffenburger Role: Co-I, 3.5% effort 11/14/11-11/13/12 Pilot Project: PKD1 and Mammary Branching Morphogenesis NIH/NIDDK P30 DK090868 (PI- Watnick) Baltimore PKD Research and Clinical Core Center \$50,000 Role: Pilot Project PI, 10% effort 4/1/12-3/31/13 Pilot Project: Relationships among matrix mechanics, adhesion, and proliferation NIH/NCI U54 CA151838 (PI- Searson, Pomper) JHU Center of Cancer Nanotechnology Excellence \$25,000 Role: Pilot Project PI, 5% effort 7/1/12-6/30/15 Postdoctoral Fellowship: Dissecting the role of p63 mediated cell adhesion in collective breast cancer invasion. W81XWH-12-1-0018 DoD CDMRP Breast Cancer Research Program \$300,000 PI: Cheung Role: Mentor to my postdoctoral fellow (Kevin Cheung), 5% effort, no salary 7/1/12-6/30/16 Regulation of dissemination by the myoepithelium and intercellular adhesion RSG-12-141-01-CSM American Cancer Society \$600,000 Role: PI, 20% effort 10/15/12-11/30/13 Pilot Project: Twist1 induced dissemination as a platform to develop anti-metastatic therapies NIH/NCI 5 P50 CA 058184 (PI-Baylin) \$70,000 Role on project: Co-I, 2.5% effort 1/1/13-12/31/14 Pilot Project: Imaging tumor subpopulations at the invasive edge NIH/NCI 5 P50 CA 103175-07 JHU ICMIC Program \$25,000 to Dr. Ewald PI: Bhujwalla Role: Pilot Project PI, 2.5% effort, no salary 4/1/13-12/31/13 Organoids as model systems for patient prognosis and treatment Avon Foundation 304-2259 (PI-Stearns) \$50,000 Role: Project PI, 5% effort Pilot Project: Real-Time Analysis of PKD1 and PKD2 Dependent Cyst Formation 7/1/13-12/31/14

NIH/NIDDK P30 DK090868

\$50,000

Baltimore PKD Research and Clinical Core Center

PI: Watnick

Role: Pilot Project PI, 10% effort

7/1/13-6/30/15 Basal marker+ cells lead collective invasion and dissemination across breast cancer subtypes

036-13

Mary Kay Ash Foundation

\$86,940

Role: PI, 5% effort

1/1/14-12/31/14 Epithelial collective invasion as a target of the immune response in SLE: Mechanistic implications

Jerome L. Greene Foundation

\$80,000

Role: MPI (Ewald, Casciola-Rosen), 5% effort

9/1/14-3/31/16 Organoids as model systems for individualizing cancer prognosis and treatment

NIH/NCI Administrative Supplement to CCSG P30 CA006973

\$200,000

PI: Nelson (CCSG)

Role: Project Leader, 20% effort

3/1/15-2/28/16 Epithelial collective invasion as a target of the immune response in SLE: Mechanistic implications

Jerome L. Greene Foundation Scholar Award

\$35,000

Role: MPI (Ewald), 5% effort

7/1/16-6/30/17 Shared Instrumentation Grant

NIGMS 1S10OD020152

\$600,000

Role: Major User, 0% effort, no salary

Educational Extramural Funding

Current

Training grant participation

2009- Biochemistry, Cellular and Molecular Biology Program

NIH/NIGMS 5T32GM007445

PI: Machamer

Role: Training Grant Faculty and Mentor

2010- Molecular Targets for Cancer Detection and Treatment

NIH/NCI 5T32CA009071

PI: Nelson

Role: Training Grant Faculty and Mentor

2011- Clinical and Laboratory Research Training for Surgical Oncologists

NIH/NCI 2T32CA126607

PI: Leach

Role: Training Grant Faculty

2013- Medical Scientist Training Program

NIH 3T32 GM007309

PI: Siliciano

Role: Training Grant Faculty and Mentor

2014- Training Program in Translational Research in Imaging

NIH 5T32 EB010021

PI: McVeigh

Role: Training Grant Faculty

2014- Conte Center for Digestive Disease

NIH/NIDDK 5P30 DK089502

PI: Donowitz

Role: Research Base Faculty

2015- Rheumatic Diseases Research Core Center

NIH/NIAMS 5P30 AR053503

PI: Rosen

Role: Research Base Faculty

2016- Training in Areas Fundamental to Cancer Research

NIH/NCI 5T32 CA009110 PI: Matunis, Coulombe Role: Training Grant Faculty

Other Extramural Funding, including Philanthropy

Current

1/1/13-12/31/16 Pilot Project: Invasion, dissemination, and metastasis in triple negative breast cancer

Cindy Rosencrans Fund for Triple Negative Breast Cancer Research

\$75,000 to Dr. Ewald

PI: Stearns

Role: Pilot Project PI, 2.5% effort, no salary

11/1/16-8/31/18 Accelerating research in metastatic breast cancer

Philanthropic gift from Andy Buerger \$19,000; anticipated annual gifts

Role: PI, 1% effort

12/1/17-8/31/18 Theresa's Research Foundation Leadership Award

\$6,000; anticipated future gifts

Role: PI, 1% effort

INTRAMURAL Funding

Research Intramural Funding

Current

7/1/16-12/31/17 *Provost's Discovery Award*

Johns Hopkins University, Office of the Provost

\$125,000

Role: MPI (Ewald, Tran, Bader, Popel, Fertig), 5% effort

<u>Previous</u>

7/1/12-6/30/13 Graduate Fellowship: Molecular basis of Twist1-induced epithelial dissemination

Isaac and Lucille Hay Fund (PI- Devreotes)

\$32,000 PI: Shamir

Role: Mentor to my graduate student (Shamir), 5% effort, no salary

7/1/13-6/30/14 Graduate Fellowship: Myosin II as a negative regulator of epithelial proliferation

Isaac and Lucile Hay Fund (PI- Devreotes)

\$32,000

PI: Nguyen-Ngoc

Role: Mentor to my graduate student (Nguyen-Ngoc), 5% effort, no salary

7/1/15-6/30/17 *Catalyst Award*

Johns Hopkins University, Office of the Provost

\$75,000

Role: PI, 5% effort

Educational Intramural Funding - None

Clinical Intramural Funding - Not Applicable

System Innovation or Quality Improvement Intramural Funding - Not Applicable

Other Intramural Funding - Not Applicable

CLINICAL ACTIVITIES- Not Applicable

EDUCATIONAL ACTIVITIES

Educational Focus

I leverage my interdisciplinary background in the physical and life sciences to develop quantitatively trained scientists at the interface between biology, medicine, and engineering. To accomplish this goal, I teach in the core curriculum for both medical students and graduate students, including leading a medical student discussion group during the Scientific Foundations of Medicine unit. I train undergraduate students, master's students, doctoral students, and postdoctoral fellows in my lab. I also participate in GBO and thesis committee meetings across multiple graduate programs. Finally, I serve on the Admissions Committee for the MSTP, BCMB, and BME Ph.D. programs.

Teaching

Classroom Instruction

2009	BCMB Elective on Cell Migration, Lecturer, JHUSOM
2010 – present	BCMB Cell Structure & Dynamics, Lecturer on Extracellular Matrix and Epithelium, JHUSOM
2011	BCMB Ethics and Career Issues in Science, Discussion Leader, JHUSOM
2011	Professional Development Office: Research Leadership Course, Panel Member, JHUSOM
2011 - 2017	SFM Cell Physiology, Small Group Discussion Leader, JHUSOM
2012	BCMB Elective on the Cytoskeleton, Lecturer and Discussion Leader, JHUSOM
2013	BCMB Elective on Developmental Biology, Lecturer, JHUSOM
2013 – present	SFM Cell Physiology, Lecturer, Cell Physiology, JHUSOM
2014 – present	Tissue Engineering (580.442), Lecturer, JHU Whiting School of Engineering
2014	Introduction to Biomedical Research and Careers, JHU Krieger School of Arts and Sciences
2014	Development and Treatment of Colorectal and Breast Cancer Course, PhD Program in Clinical
	Oncology, Utrecht Medical Center, Netherlands
2015	BME: Theory of Cancer, (2 lectures), JHU Whiting School of Engineering
2015 – present	Cellular and Molecular Medicine Core Course, Lecturer, JHUSOM
2016	Medical School Intersession on Cancer Cell Migration: Co-Directed with Miho Iijima

Clinical Instruction - Not applicable.

CME Instruction

	/ ·
THML.	Regional
,	11051011111

2014	Breast Tumor Boards, Johns Hopkins Hospital
2016	Breast Cancer Multidisciplinary Conference, Johns Hopkins / Regional
2016	Pathology Grand Rounds, Johns Hopkins Hospital
2017	

2017 Translational Research Conference, Sidney Kimmel Comprehensive Cancer Center

2017 Breast Tumor Boards, Johns Hopkins Hospital

National

2014	Kidney Week, American Society of Nephrology, Philadelphia, PA
2014	San Antonio Breast Cancer Symposium, San Antonio, TX
2016	Metastatic Breast Cancer Conference, Houston, TX: Invited Speaker
2016	Northwestern University / H Foundation Symposium, Chicago, IL
2015	

2017 Metastatic Breast Cancer Conference, Houston, TX: Invited Speaker and Program Committee Member 2018 Metastatic Breast Cancer Conference, Baltimore, MD: CME Activity Director & Conference Organizer

Workshops / Seminars

National

2010 American Association of Cancer Research, Methods Workshop, Washington, DC

2016 Cold Spring Harbor Laboratory Course on Organotypic and Next Generation Culture Methods

Mentoring

Pre-Doctoral Advisees / Mentees

2010 – 2015 Robert Huebner, B.S., BCMB Ph.D. Student, Ewald Lab

- Publications: OR18, OR24, OR29, OR31, RA4, MT6
- 2012: Contributed Talk, SDB National Meeting
- 2012: 2nd Prize, Best Talk, JHU BCMB Retreat
- 2013: Contributed Talk, ASCB National Meeting

- 2013: ASCB Travel Award 2013: Lewis Travel Award 2014: SDB Travel Award
- 2010 2015Kim-Vy Nguyen-Ngoc, B.S., BCMB Ph.D. Student, Ewald Lab
 - Publications: OR19, OR20, MT6, OR38
 - 2013: ASCB Travel Award
 - 2013: Lewis Travel Award
 - 2013: Isaac and Lucille Hay Graduate Fellowship, Dept. of Cell Biology, JHU
 - 2013: Contributed Talk, ASCB National Meeting
- 2010 2014Eliah Shamir, B.S., MSTP/BCMB Ph.D. Student, Ewald Lab
 - Publications: OR19, OR23, OR29, OR33, RA6, RA7, MT6
 - 2010: Tom Kelly Award for Outstanding 1st Year Ph.D. Students, JHU SoM
 - 2011: 2nd Prize, Best Talk at the BCMB Retreat
 - 2012: 1st Prize in Basic Science, SKCCC Oncology Fellow Research Day
 - 2012: 1st Place, Best Poster at the BCMB Retreat
 - 2012: Finalist, Paul and Daisy Soros Fellowships for New Americans
 - 2012: Contributed Talk, Gordon Research Conf. on Mammary Gland Biology
 - 2012-3: Isaac and Lucille Hay Graduate Fellowship, Dept. of Cell Biology, JHU
 - 2012: Lewis Travel Award
 - 2013: 1st Prize in Basic Science, SKCCC Oncology Fellow Research Day
 - 2013: Nature Cell Biology Best Poster Award, GRC Cell Contact and Adhesion
 - 2013: ASCB Travel Award
 - 2014: Invited Talk, ASBMB, Experimental Biology, San Diego, CA
 - 2014: Contributed Talk, Gordon Research Conf. on Cell Polarity Signaling
 - 2014: Outstanding Poster Prize, Safeway Breast Cancer Foundation Retreat
 - 2014: Martin & Carol Macht Award, JHU SoM, Young Investigator's Day
 - 2014: ASCB's Norton B. Gilula Award
- 2012 2017Neil Neumann, B.S., MSTP/BCMB Ph.D. Student, Ewald Lab
 - Publications: OR31, OR32, OR36, OR39, OR40
 - Microsymposium Talk, ASCB National Meeting, 2017
- 2013 Koen Schipper, M.S., Ph.D. Student in Jos Jonker's Lab NKI, Amsterdam, NL
 - Publications: OR30
 - 2013: Earned his M.S. from U. Leiden based on thesis in Ewald Lab
- 2014 2015Veena Padmanaban, B.S., M.S. Student, Ewald Lab
 - Publications: OR30
 - Microsymposium Talk, ASCB National Meeting, 2017
- 2014 present Vanessa Silvestri, B.S., BCMB Ph.D. Student, Ewald Lab
 - Publications: OR30, OR38
 - Minisymposium Talk, ASCB National Meeting, 2017
- 2014 present Orit Katarina Sirka, B.S., BCMB Ph.D. Student, Ewald Lab
 - 2013: Tom Kelly Award for Outstanding 1st Year Ph.D. Students, JHU SoM
- 2015 present Veena Padmanaban, B.S., M.S. BCMB Ph.D. Student, Ewald Lab
- 2016 present Andrew Fraser, B.S., MSTP /BME Ph.D. Student, Ewald Lab
 - 2016: Inaugural recipient of the David Yue Memorial Scholarship, JHU SoM
 - 2017: Finalist for Hertz Foundation Fellowship

Post-Doctoral Advisees / Mentees

- 2009 2010Ryan Gray, Ph.D., Postdoctoral Fellow, Solnica-Krezel Lab, U. Washington, St Louis
 - Publications: OR16, OR19, OR25, RA3
 - 2010: Contributed Talk, SDB Regional Meeting
 - 2015: Appointed to the Faculty of the University of Texas at Austin
- 2010 2015Kevin Cheung, M.D., Medical Oncology Fellow, Ewald Lab
 - Publications: OR18, OR19, OR22, OR30, RA3, RA5, RA8, ED2, MT6

- 2012-5: DoD CDMRP Breast Cancer Program Postdoctoral Fellowship
- 2012: Finalist for Rangos Medal for Creative Thinking in Cancer Research
- 2012: 1st Prize in Basic Science Research, Safeway Breast Cancer Retreat
- 2012: San Antonio Breast Cancer Symposium, Meritorious Abstract
- 2012: AACR Scholar in Training Award (awarded twice)
- 2013: Contributed Talk: AACR Special Meeting on Invasion and Metastasis
- 2013: Contributed Talk: AACR Frontiers in Basic Cancer Research
- 2013: Contributed Talk, ASCB National Meeting
- 2014: Helen B. Taussig Award, JHU SoM, Young Investigator's Day
- 2014: Invited Talk, Gordon Research Conference on Intermediate Filaments
- 2014-9: BWF Career Award for Medical Scientists
- 2015: Appointed to the Faculty of the Fred Hutchinson CRC

2014 - present Dan Georgess, Ph.D., Postdoctoral Fellow, Ewald Lab

- Publications: OR35, OR36, OR38
- 2015: American Association of Anatomists Postdoctoral Fellowship
- 2015-2018: Susan G. Komen Foundation Postdoctoral Fellowship
- Microsymposium Talk, ASCB National Meeting, 2017

2017- present Isaac Chan, M.D., Ph.D., Medical Oncology Fellow, Ewald Lab 2017 Chris Hanley, Ph.D., Visiting Postdoctoral Scholar, Ewald Lab 2018- present Eloise Grasset, Ph.D., Medical Postdoctoral Fellow, Ewald Lab

Co-Advisor for Students in Clinical Departments:

2015- Jawara Allen, Sears Lab, Department of Medicine; BCMB / MSTP 2015- Nasif Islam, Garza Lab, Department of Dermatology, BCMB

Thesis Committees

2009	Nupura Bhise, Ph.D., Biomedical Engineering (BME), Green Lab, Dissertation Cmte., Co-Advisor
2010	Deok-Ho Kim, Ph.D., BME, Levchenko Lab, Dissertation Cmte. Member
2010	Ashley Rothenberg, Ph.D., BME, Elisseeff Lab, Dissertation Committee Member, Co-Advisor
2011-2015	Robert Huebner, BCMB, Ewald Lab, Thesis Advisor
2011-2015	Kim-Vy Nguyen-Ngoc, BCMB, Ewald Lab, Thesis Advisor
2011-2015	Qing Ma, Ph.D., BCMB, Matunis Lab, Dissertation Committee Member
2011-2012	Leliani Sharpe, M.D., Ph.D., BCMB/MSTP, Craig Lab, Dissertation Committee Member
2011-2012	David Ellison, Ph.D., BME, Levchenko Lab, Dissertation Committee Member, Co-Advisor
2012-2015	Eliah Shamir, BCMB/MSTP, Ewald Lab, Thesis Advisor
2012-	Beverly Dancy, Ph.D., BCMB, Pharmacology, Cole Lab, Dissertation Committee Member
2012-2015	Xia Feng, BSPH, Biochemistry and Mol Bio, Coulombe Lab, Dissertation Committee Member
2012-2016	Wei Wen Teo, CMM, Sukumar Lab, Dissertation Committee Member
2013-2017	Neil Neumann, BCMB, Ewald Lab, Thesis Advisor
2013-2015	Audrey Hendley, Human Genetics, Leach Lab, Dissertation Committee Member
2013	Ben Lin, BME, Levchenko Lab, Dissertation Committee Member
2013-	Jarrett Smith, BCMB, Seydoux Lab, Dissertation Committee Member
2013-2017	Elisabet Pujadas, BME/MSTP, Feinberg Lab, Dissertation Committee Member
2013-	Kaitlyn Sadtler, BME, Elisseeff Lab, Dissertation Committee Member
2013-	Leah Greenspan, BCMB, Matunis Lab, Dissertation Committee Member
2014-	Katarina Sirka, BCMB, Ewald Lab, Thesis Advisor
2014-	Vanesa Silvestri, BCMB, Ewald Lab, Thesis Advisor
2015-2017	Fengrong Wang, BSPH BMB, Coulombe Lab, Dissertation Committee Member
2015-	Michelle Levine, BCMB, Holland Lab, Dissertation Committee Member
2015-	Felix Yu, BCMB, Pharmacology, Liu Lab, Dissertation Committee Member
2015-	Chris Booth, BCMB, Yang Lab, Dissertation Committee Member
2015	Sarita Koride, Whiting School Chem BE, Wirtz and Sun Labs, Dissertation Reader and Examiner
2015-	Kester Coutinho, BCMB, Inoue Lab, Dissertation Committee Member, Co-Advisor
2017-	Jawara Allen, BCMB, Sears Lab, Dissertation Committee Member, Co-Advisor

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2009	Deok-Ho Kim	Levchenko Lab	Biomedical Engineering
2010	Kshitiz Gupta	Levchenko Lab	Biomedical Engineering
2010	David Ellison	Levchenko Lab	Biomedical Engineering
2010	Matthew Ward	Leahy Lab	BCMB
2011	Wei-Wen Teo	Sukumar Lab	Pathobiology
2011	Basil Hussain	Cormack Lab	BCMB
2011	YiJie Li	Matunis Lab	BCMB
2011	Adriel Bergman	Levchenko Lab	Biomedical Engineering
2011	Benjamin Lin	Levchenko Lab	Biomedical Engineering
2011	Jinseok Park	Levchenko Lab	Biomedical Engineering
2011	Sean Cho	Sukumar Lab	CMM
2012	Alison Suarez	Inoue Lab	BCMB
2012	Sarah Head	Liu Lab	Pharmacology
2013	Xun Ding	D. Montell Lab	Biological Chemistry
2013	Sung Hoon Lee	Levchenko Lab	BME
2013	Kaitlyn Sadtler	Elisseeff Lab	BME
2013	Julie Lade	Bumpus Lab	Pharmacology
2013	Leah Greenspan	Matunis Lab	BCMB
2014	Meredith McGuire	Espenshade Lab	BCMB
2014	Eric Schiffhauer	Robinson Lab	BCMB
2015	Cory White	Wolfgang Lab	BCMB
2015	Priyanka Kothari	Robinson Lab	BCMB
2016	Lionel Chia	Resar Lab	Pathobiology
2016	Emily Cook	Margolis Lab	BCMB
2017	Maria Vitery	Liu Lab	Physiology
2017	Josh McNamara	Li Lab	BCMB

High School, Undergraduate, and Visiting Students: (*Asterisk for URM)

2010 *Chijindu Nworgu, JHU CUPID Program

2012 *Ugochukwu "Kelvin" Ihenacho, JHU IBBS Summer Internship Program (SIP)

2013 Mohammed Abubaker-Sharif, JHU BME Undergraduate

2013-2014 *Alicia Coronado, JHU BME Undergraduate 2014 *Adam Elsaidy, JHU SARE High School Student

2014- Daniel Kim, JHU MCB Undergradaute

2015 *Siri Keyaka, JHU SARE High School Student
2015-2016 Gabriela Frid, JHU BME Undergraduate
2015 Kiara Kaylor, JHU MCB Undergraduate

2015 Michaela Krakorova, Medical Student, St Anne's University Hospital, Brno, Czech Republic 2015 Matej Hlavac, High School Intern, St Anne's University Hospital, Brno, Czech Republic

2016 *Alexis Tisdale, JHU SARE High School Student 2016 Hunter Hoogaker, JHU SIP Undergradaute

2016 *Benjamin Owusu, U. Alabama at Birmingham, Ph.D. Student

2016- Alex Choi, JHU MCB Undergraduate 2017- Seyvonne Ip, JHU MCB Undergraduate

2017- Emmett van Venrooy, JHU MCB Undergraduate 2017- Dani Vaithilingam, JHU MCB Undergraduate

Post-Doctoral Mentoring Committees:

2010 -	SeYeon Chung	Andrew Lab, Dept of Cell Biology
2010-	Afshan Ismat	Andrew Lab, Dept of Cell Biology
2010	Tasuko Ueno	Inoue Lab, Dept of Cell Biology
2013-	Raj Loganathan	Andrew Lab, Dept of Cell Biology
2015-	Corrine Kliment	Robinson Lab, Dept of Cell Biology

2015- Xia Feng Fischbeck Lab, NINDS

Faculty Mentoring

2014- Hariharan Easwaran Oncology Junior Faculty Mentoring Committee Member

2014-	Laura Wood	Pathology	Faculty Mentor for Research and Grant Writing
Educational Pro	gram Building / 1	Leadership	
2009-	BCMB	Interviewing Candidates	for Admission
2010-	BME	Interviewing Candidates	for Admission
2010-	MSTP	Interviewing Candidates	for Admission
2010-	BME	Admissions Committee	
2012-	BCMB	Admissions Committee	
2015-	MSTP	Admissions Committee	
2016-2017	SOM	Young Investigator Day	Awards Selection Committee

Educational Demonstration Activities to External Audiences, on or off campus - Not applicable.

RESEARCH ACTIVITIES

Research Focus.

My laboratory seeks to understand how epithelial tissues are built during normal development and how their structure and function are altered during malignant progression. We have developed novel 3D culture, imaging, and molecular genetic techniques to enable real-time analysis of the cellular basis of epithelial growth. Our current goal is to understand how epithelial cells acquire the ability to spread to and colonize distant sites during metastasis.

Normal mammary epithelial development	Loss of cell-cell adhesion, proliferation	Local, basement membrane invasion	Dissemination, therapeutic resistance, and metastasis
Dev Bio 2007	Cancer Cell 2008	PNAS 2012	DMM 2008
Dev Bio 2008	J. of Cell Science 2012	J. of Microscopy 2013	Cancer Cell 2012
Dev Cell 2008	Development 2014	Biomaterials 2013	JCB 2014
Genes & Dev 2014	Development 2016	Cell 2013	Oncogene 2016
PNAS 2016a			PNAS 2016b
			Biology Open 2016
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Research Program Building / Leadership

2011	Head Judge, Poster Prize Committee, Safeway Breast Cancer Retreat
2012	Poster Judge, BCMB Graduate Student Retreat
2012-2013	Organizer of the Lewis Talks, Dept. of Cell Biology Graduate Student and Postdoc Seminar Series
2013	Judge, Rangos Medal for Creative Thinking in Cancer Research
2013	Poster Judge, Safeway Breast Cancer Retreat, Summer 2013
2014	Co-Organizer: Safeway Breast Cancer Retreat
2014-	Chair, Department of Cell Biology Lewis Travel Award Committee

Research Demonstration Activities to external audience, on or off campus - Not applicable.

Inventions, Patents, Copyrights

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2011 Eliah R. Shamir, Phuoc Tran, Andrew J. Ewald, "Platform to study TWIST-1 mediat	ted cancer
metastasis," JHU Reference # C11782. Disclosure filed, patent application abandone	ed.
2014 Kevin J. Cheung and Andrew J. Ewald, "Molecular Signatures of Invasive Cancer Sul	bpopulations," JHU
Reference # C11851. Patent pending, US 20140336282 A1.	
Veena Padmanaban, Livia Casciola-Rosen, Antony Rosen, Andrew J. Ewald, "Autoar	ntibodies as anti-
cancer therapeutic agents." JHU Reference # C13604. Disclosure filed.	

Technology Transfer Activities (e.g. Company Start-ups) - Not applicable.

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES: - Not Applicable

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

2009 - present JHU School of Medicine Microscope Facility Advisory Committee

2012 - present Department of Cell Biology Prize Committee

2012 – 2013 Research Advocacy Discussion Group, Johns Hopkins University, School of Medicine
 2013 Junior Faculty Interview Team for JH Medicine Vice Dean for Research Search
 2013 Rally for Medical Research: Represented Johns Hopkins Medicine on Capital Hill

2014 – 2019 Founding Co-Director of the Hopkins-Allegheny Health Network Cancer Research Fund: Responsible

for awarding \$2 million/ year in cancer research grants, awarded across Johns Hopkins and AHN. I designed the peer review system, do outreach to the basic science departments, and serve on the

Research Council that makes final funding decisions after peer review.

2015 Internal Member, Dean's Review of the Department of Oncology

2015-2016 Search Committee: Assistant Professor in Center for Cell Dynamics: Recruited Bin Wu, Biological Chem.

2016-2018 School of Medicine Committee on Outside Interests

Editorial Activities

Editorial Board Appointments

2015- Editorial Advisory Board, American Journal of Physiology, Cell Physiology

2015-2016 Guest Editor – Journal of Cell Science: Focus on 3D Cell Biology

2016- Editor – Journal of Cell Science

2018 Guest Editor – Current Opinion in Cell Biology 'Cell Dynamics' September Issue

Journal Peer Review Activities

2001- Developmental Biology 2004- Molecular Biology of the Cell

2004- Cancer Research

2004- Clinical Cancer Research 2005- Breast Cancer Research

2005- Cold Spring Harbor Laboratory Press

2005- Journal of Cell Biology 2006- Nature Cell Biology

2008- Science

2010- Biophysical Journal
2010- Development
2011- Current Biology
2011- Developmental Cell

2011- Nature Reviews Molecular Cell Biology

2011- Integrative Biology 2011- Nature Methods

2011- Nature

2011- Journal of Cell Science

2012- Journal of Visualized Experiments

2012- PLoS One 2012- EMBO Reports

2012- Clinical and Experimental Metastasis

2012- Oncogene 2013- Nature Protocols

2013- Developmental Dynamics

2014- Proceedings of the National Academy of Sciences

2016- Nature Communications

2016- Philosophical Transactions of the Royal Society B

Other Peer Review Activities

2010-2015 Scientific Advisory Board, IMI PREDECT: 21 site European Union wide public-private partnership to

develop novel complex models for cancer target validation. (2015 Chair)

2011 Reviewer, Icelandic Research Fund, RANNIS

2011-2012 Reviewer, Netherlands Organization for Health Research and Development (ZonMw)

2012 Reviewer, United Kingdom, NCRRR

2012-	Reviewer, Unite	ed Kingdom, Medical Research Council
2012-		nan Frontiers in Science Program
2012		ne Thesis of Johanna Partanen, University of Helsinki, Finland
2013	Reviewer, Fren	·
2013		ey Foundation, Ad Hoc Grant Reviewer
2013		ch Breast Cancer Foundation (Stichting Pink Ribbon)
2013		· · · · · · · · · · · · · · · · · · ·
		w Committee, The Mary Kay Foundation
2014		n G. Komen Foundation, Postdoctoral Fellowships.
2015		an Association for Cancer Research
2016		st Cancer Alliance Research Task Force Workshop:
		Invited Speaker and Panelist
		: Invited Speaker, Discussion Leader
		n Advisor: I am working with scientists and advocates to develop funding priorities and
		the cancer biology space for this emerging foundation.
2016		Wellcome Trust
2016		European Research Council
2016		ch Cancer Society
2016	Cancer Researc	
2016		n G. Komen Foundation, Career Catalyst Research Grants
2016	Reviewer, Breas	st Cancer Research Foundation Investigator-Initiated Drug Research Program
Advisory Com	mittaga Darriar	Crowns /Study Soctions
•		v Groups/Study Sections
2009		y Directed Medical Research Programs, Breast Cancer Research Program, Training-Cell
2014		Review Meeting r and Panelist, NCI Strategic Workshop on Biomimetic Tissue Engineered Systems for
2014		
2015	Advancing Can	
		er, CDMRP Breast Cancer Research: Integration Panel for Breakthrough Level 1 and 2
2015		r, NCI-Sanger Joint Workshop: Human Cancer Models, Opportunities and Challenges,
2017	Bethesda, MD	CDMPD D C D L D
2017		er, CDMRP Breast Cancer Research: Integration Panel for Breakthrough Level 1 and 2
2017		er, NCI Beau Biden Cancer Moonshot Initiative Study Section "Integration and
2017		Emerging Technologies to Accelerate Cancer Research"
2017-	External Adviso	ory Board, U54 Cancer Systems Biology, Oregon Health and Sciences University
Professional So	ocieties	
		rican Society for Cell Biology (ASCB)
1	2015-2018	Member, ASCB Membership Committee
2001 - present		ty for Developmental Biology (SDB)
2010 - present		rican Association of Anatomists (AAA)
2010 present	2011	Member, AAA Young Investigators Prize Committee
	2012	Chair, AAA Young Investigators Prize Committee
	2013-2014	Member, AAA Postdoctoral Fellowship Selection Committee
2010 - present		rican Association for Cancer Research (AACR)
P	2014-2016	Steering Committee Member, AACR Tumor Microenvironment Working Group
	2016	Chairperson of the Migration and Invasion Section of the Tumor Biology Subcommittee
	_010	of the AACR Program Committee
	2017	Member, Cell Culture and Animal Models of Cancer Section of the Tumor Biology
	2017	Subcommittee of the 2018 Program Committee
Conference Or	·oanizer	Substituting of the 2010 11081am committee
Regional	Summer	
2014	Co-Organizer:	Safeway Regional Breast Cancer Retreat
2011	oo organizer.	sateway regional Dieast Saileer Refeat
National		
2016	Scientific Program Committee, MBCA Metastatic Breast Cancer Conf., Houston, TX	
2017	Elected Vice-Chair, Gordon Research Conference, Cell Contact and Adhesion	
2019	Elected Chair,	Gordon Research Conference, Cell Contact and Adhesion
T		
International	0 : .:c p	ram Committee: EACR Coodbye Flat Rielogy Conference Rarlin
/LLL/S	SCIONTIFIC DECOR	wern Lorenteton, H.A. K. L-OOGDVO HIGT BIOLOGY LORTOFORCO Korlin

Scientific Program Committee: EACR Goodbye Flat Biology Conference, Berlin,

2017	Organizer, Company of Biologists Workshop on 3D Cell Biology, Wiston House, UK
2018	Chair, Scientific Program Committee: EACR Goodbye Flat Biology Conference, Berlin

Session Chair

National	
2010	Session Chair, Bioimage Informatics 2010, Carnegie Mellon University, Pittsburgh, PA
2011	Session Chair, Gordon Research Conference, Mammary Gland Biology, Providence, RI
2015	Session Chair, Gordon Research Conference, Directed Cell Migration, Galveston, TX
2016	Co-Chair of the Multicellular Interactions, Tissues, and Development Minisymposium, ASCB
2017	Session Chair, Keystone Symposia, Cell Plasticity within the Tumor Microenvironment, Big Sky, MT
2017	Session Chair, Gordon Research Conference, Directed Cell Migration, Galveston, TX
2017	Session Chair, Gordon Research Conference, Cell Contact and Adhesion, Andover, NH
2016 2017 2017	Co-Chair of the Multicellular Interactions, Tissues, and Development Minisymposium, ASCB Session Chair, Keystone Symposia, Cell Plasticity within the Tumor Microenvironment, Big Sky, MT Session Chair, Gordon Research Conference, Directed Cell Migration, Galveston, TX

International

Session Chair: EACR Goodbye Flat Biology Conference, Berlin, 10/2-5/16 2015-2016

Consultantships None

RECOGNITION

Awards, Honors

1993	National Merit Scholar, Raytheon Corporation
1996	Howard Hughes Biomedical Research Scholar: Haverford College
1997	Honors in Physics: Haverford College
1997-2002	Burroughs Welcome Fund Ph.D. Fellowship: Computational Molecular Biology
2002	Beckman Institute Executive Committee Grant
2003-2005	NIH Institutional Postdoctoral Fellowship: CVRI, UCSF
2005-2008	California Breast Cancer Research Program: Postdoctoral Fellow
2008	UCSF School of Medicine Dean's Postdoctoral Research 2nd Prize
2009	Johns Hopkins Breast Cancer Retreat: 1st Place in Basic Science Research.
2010	SKCCC Breast Cancer SPORE Career Development Award, 2010
2011	Distinguished Lecturer, Braman Family Breast Cancer Institute, Sylvester CCC
2011	American Association of Anatomists Morphological Sciences Award: "For outstanding contributions to
	the field of epithelial morphogenesis"
2012	American Cancer Society Research Scholar Award
2013	Keynote Speaker, NCI Physical Sciences in Oncology National Meeting, Scottsdale, AZ
2013	Keynote Speaker, UVA Core Course in Integrative Biosciences
2014	Jerome L. Greene Foundation Discovery Project
2014	Web Health Silver Medal for Webcast "Science Out of the Box, Stopping Breast Cancer Leader Cells"
2014	ASCB Share Your Science 1st Place Award
2014	Fellow, Keith R. Porter Endowment for Cell Biology: "For exceptional contributions to cell biology"
2015	Keynote Speaker, Gordon Research Seminar, Directed Cell Migration
2015	SPIE Systems Biology Pioneer Award: For development of epithelial organoids as a platform for tissue
	level systems biology"
2015	Metastatic Breast Cancer Network Research Leadership Award: "For expansion of our basic
	understanding of the biology of metastasis"
2016	Johns Hopkins University Provost's Discovery Award
2017	Metastatic Breast Cancer Network Research Leadership Award- Renewal
2017	Theresa's Research Foundation Leadership Award

Invited Talks

Invited Talks Prior	to Ioining	the Hotbins	Faculty.
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11/7/07	Invited Speaker, Five Prime Therapeutics, San Francisco, CA
11/16/07	Invited Speaker, UCSF Comprehensive Cancer Center Seminar Series, SF, CA
1/17/08	Invited Speaker, Program in Cell Biology, Memorial Sloan Kettering Cancer Center, NY, NY
1/28/08	Invited Speaker, Department of Molecular and Cell Biology, University of California at Berkeley
2/21/08	Invited Speaker, Department of Biological Sciences, Carnegie Mellon, Pittsburgh, PA
2/27/08	Invited Speaker, Department of Pathology, Yale Medical School, New Haven, CT
3/19/08	Invited Speaker, Center for Cell Dynamics, Johns Hopkins Medical School, Baltimore, MD

Regional Invited Talks as Faculty, Not Including Hopkins Entities:		
11/8/10	Invited Speaker, Carnegie Institute of Washington, Dept. of Embryology, Baltimore, MD	
3/21/11	Invited Speaker, NCI, Center for Cancer Research, Lab. of Cell and Develop. Signaling, Frederick, MD	
11/16/11	Invited Speaker, Department of Biology, University of Maryland, Baltimore County	
9/23/13	Invited Speaker, Polycystic Kidney Disease Symposium, University of Maryland, Medical Center	
6/5/14	Invited Speaker, Mid-Atlantic Directors and Staff of Scientific Cores: Research Advocacy	
7/20/15	Invited Speaker, NCI-Sanger Joint Workshop: Human Cancer Models, Opportunities and Challenges,	
	Bethesda, MD	
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12/13/08	Talks as Faculty: Levited Speeker, American Society for Cell Rielegy National Meeting, SE, CA	
2/12/09	Invited Speaker, American Society for Cell Biology National Meeting, SF, CA Invited Speaker, Gordon Conference on Salivary Glands and Exocrine Secretion, Galveston, TX	
3/11/09	A contract of the contract of	
9/17/09	Seminar Speaker, University of Virginia, Cell Biology Seminar Series, Charlottesville, VA	
	Seminar Speaker, NIH, National Heart Lung and Blood Institute, Bethesda, MD	
4/17/10	Invited Speaker, American Association of Cancer Research, Methods Workshop, Washington, DC	
9/18/10 1/28/11	Session Chair, Bioimage Informatics 2010, Carnegie Mellon University, Pittsburgh, PA	
	Distinguished Breast Cancer Lecturer, Univ Miami Sylvester Cancer Center, Miami, FL	
4/10/11 6/13/11	Morphological Sciences Award Lecture, American Association of Anatomists, Washington, DC	
6/21/11	Session Chair, Gordon Research Conference on Mammary Gland Biology, Providence, RI Invited Speaker, 3rd Frontiers in Biomechanics Meeting, American Society for Mechanical Engineering,	
0/21/11		
11/7/11	Summer Bioengineering Conference, Nemacolin Resort, Farmington, PA Seminar Speaker, Department of Biology, Catholic University, Washington, DC	
11/12/12	Seminar Speaker, Department of Biology, Cathone University, washington, DC Seminar Speaker, Dept. of Molecular Cell Biology, University of Texas at Austin	
1/12/12	Invited Speaker, Gordon Research Conference on Directed Cell Migration, Galveston, Texas	
4/11/13	Invited Speaker, Bio-IT World Expo, Boston, MA	
4/19/13	Keynote Lecturer, NCI Physical Sciences in Oncology Network PIs Meeting, Scottsdale, AZ	
5/13/13	Invited Speaker, Advanced Models of Imaging Based Drug Screening, Houston, TX	
11/8/13	Keynote Lecturer, Core Course in Integrative Biosciences, U. of Virginia, Charlottesville, VA	
12/14/13	Invited Speaker, American Society for Cell Biology, National Meeting, New Orleans, LA	
1/30/14	Seminar Speaker, Biological Sciences Seminar Series, Carnegie Mellon University, Pittsburgh, PA	
2/13/14	Seminar Speaker, Molecular, Cell, and Developmental Biology Series, UCSB, Santa Barbara, CA	
2/26/14	Invited Speaker, Biomimetic Tissue Engineered Systems for Advancing Cancer Research Workshop, NCI	
3/13/14	Seminar Speaker, Center for Molecular Studies in Digestive and Liver Diseases, U. Penn, PA	
4/1/14	Seminar Speaker, Department of Cancer Biology, University of Massachusetts, Worchester, MA	
5/16/14	Seminar Speaker, Skirball Institute, NYU School of Medicine, NY, NY	
9/30/14	Invited Speaker and Panelist, Human Cancer Model Systems Kickoff Meeting, NCI, Bethesda, MD	
10/3/14	Seminar Speaker, Mayo Clinic Cancer Center, Jacksonville, FL	
10/17/14	Seminar Speaker, Memorial Sloan Kettering CC, Cancer Biology and Genetics Program, NY, NY	
11/15/14	Invited Speaker, Kidney Week, American Society of Nephrology, Philadelphia, PA	
12/6/14	Invited Speaker, American Society for Cell Biology, National Meeting	
12/10/14	Invited Speaker, San Antonio Breast Cancer Symposium, San Antonio, TX	
1/25/15	Keynote Lecturer, Gordon Research Seminar, Directed Cell Migration, Galveston, TX	
2/4/15	Invited Speaker, Ohio State University Mathematical Biosciences Institute, Workshop 4: Tumor	
	Heterogeneity and the Microenvironment	
3/23/15	Seminar Speaker, University of Michigan, Ann Arbor, Center for Organogenesis and separately to the	
	Translational Oncology Department, Ann Arbor, MI	
4/24/15	Invited Award Lecture, SPIE Conference, Systems Biology Pioneer Award	
6/18/15	Invited Lecture, New York Academy of Sciences, Quantitative Biology Workshop.	
6/29/15	Invited Speaker, Gordon Research Conference, Cell Contact and Adhesion, NH	
9/22/15	Seminar Speaker, Icann School of Medicine at Mt Sinai, Department of Oncological Sciences	
12/1/15	Invited Speaker, AACR Special Conference on Tumor Metastasis, Austin, TX	
1/8/15	Invited Speaker, AACR Function of Tumor Microenvironment in Cancer Progression, San Diego, CA	
2/2/16	Seminar Speaker, University of Pittsburgh Cancer Institute, Basic and Translational Seminar Series	
3/14/16	Invited Speaker, Prostate Cancer SPORE National Meeting, Fort Lauderdale, FL	
3/15/16	Seminar Speaker, Columbia University Medical Center, Dept. of Genetics and Development	
4/6/16	Seminar Speaker, Ohio State University, Molecular Biology – Cancer Genetics	
4/16/16	Invited Speaker, Tumor Microenvironment Working Group Townhall, AACR, New Orleans, LA	
4/29/16	Invited Speaker, R.H. Lurie Cancer Symposium, Northwestern University, Chicago, IL	

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6/15/16	Invited Speaker, Gordon Research Conference on Cell Polarity Signaling, Mt Snow, VT
9/10/16	Invited Speaker, Albert Institute Bladder Cancer Symposium, Denver, CO
10/21/16	Invited Speaker and Discussion Leader, Metastatic Breast Cancer Alliance, Houston, TX
11/9/16	Seminar Speaker, Lineberger Comprehensive Cancer Center, University of North Carolina at Chapel Hill
12/5/16	Minisymposium Co-Chair, ASCB National Meeting, San Francisco, CA
1/11/17	Invited Speaker, Keystone Symposia, Cell Plasticity within the Tumor Microenvironment, Big Sky, MT
1/27/17	Invited Speaker, Gordon Research Conference on Directed Cell Migration, Galveston, TX
2/14/17	Seminar Speaker, Department of Biochemistry and Biophysics, UCSF
3/23/17	Seminar Speaker, Department of Comparative Oncology, U Penn, PA
4/25/17	Systems Biology of Metastasis, MD Anderson and NCI, Houston, TX
6/1/17	Seminar Speaker, Bioengineering and Center for Spatial Systems Biology, OHSU, Portland, OR
6/22/17	Vice Chair, Gordon Research Conf. on Cell Contact and Adhesion, Andover, MA
10/13/17	Speaker and Organizer, Metastatic Breast Cancer Alliance Methods Workshop, Houston, TX
11/17/17	Invited Speaker, National Cancer Institute, Future of Imaging Workshop, Bethesda, MD
11/29/17	Invited Speaker, NCI Doorstep Meeting on Redox Cancer Cell Biology, Baltimore, MD
12/1/17	Invited Speaker, University of Pennsylvania Veterinary Cancer Center Symposium, Philadelphia, PA
12/2/17	Invited Speaker, ASCB National Meeting, Member Organized Subgroup: Cell Cycle Regulation of
12/2/1/	
2/1/10	Morphogenetic Behavior, Philadelphia, PA
2/1/18	Keynote Speaker, American Cancer Society Laureate Luncheon, Naples, FL
2/8/18	Lab-Wide Seminar Speaker, Cold Spring Harbor Lab, NY
4/5/18	Seminar Speaker, Dept. of Cell Biology, Duke University, Durham, NC
4/16/18	Invited Speaker, AACR National Meeting, Forum on Monoclonal vs. Polyclonal Metastasis, Chicago, IL
5/9/18	Seminar Speaker, Medical University of South Carolina, Charleston, SC
6/25/18	Invited Speaker, Gordon Research Conference, Signaling by Adhesion Receptors, Biddeford, ME
9/26/18	Seminar Speaker, Cancer Center, West Virginia University, Morgantown, WV
10/12/18	Invited Speaker and Organizer, Metastatic Breast Cancer Conference, Baltimore, MD
11/9/18	Invited Speaker, Systems Approaches to Cancer Biology, Woods Hole, MA
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	<u>vited Talks as Faculty:</u>
10/4/08	Invited Speaker, 50th Symposium of the Society for Histochemistry, Interlaken, Switzerland
9/25/09	Invited Speaker, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany
9/30/09	Invited Speaker, Carl Zeiss Microimaging Biosciences Division, Jena, Germany
10/4/09	Invited Speaker, EMBO Conference on Morphogenesis and Dynamics of Multicellular Systems, Heidelberg, Germany
12/14/11	Seminar Speaker, Yokohama City University, Yokohama, Japan
12/14/11	Invited Speaker, Molecular Biology Society of Japan, Yokohama, Japan
5/22/12	Invited Speaker, IMI PREDECT Consortium, Preclinical Modeling of Cancer, Helsinki, Finland
6/7/12	Seminar Speaker, Faculty of Medicine, University of Helsinki, Finland
6/26/12	Invited Speaker, 7th Abercrombie Meeting on Cell Migration, St. Catherine's College, Oxford, UK
6/28/12	Seminar Speaker, Breakthrough Breast Cancer Unit, University of Manchester, UK
6/4/13	Invited Speaker, Cellular Dynamics During Development, Regeneration, and Cancer, CSMB, Niagra-on-
0/ 1/ 13	the-Lake, Canada
6/23/13	Invited Speaker, First International Conference on Epithelial Tubulology, Sapporo, Japan
5/5/14	Seminar Speaker, Department of Pathology, University Medical Center, Utrecht, Netherlands.
11/4/14	Invited Speaker, Goodbye Flat Biology: 3D Models and the Tumor Microenvironment, EACR, Berlin
7/7/15	Invited Speaker, Beatson Cancer Research Institute, Glasgow, Scotland
7/9/15	Invited Speaker, Francis Crick Institute, London, England
9/1/15	Invited Speaker, 18T Vienna, Austria
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9/2/15	Invited Speaker, CEITEC, "Creating Life in 3D", Brno, Czech Republic
10/2/16	Scientific Organizing Committee and Speaker, EACR, Goodbye Flat Biology, Berlin, Germany
2/5/17	Organizer and Speaker: Intercellular Interactions in Context: Towards a Mechanistic Understanding of Cells in Organs, Wiston House, Sussex, UK
5/10/17	Seminar Speaker, Goodman Cancer Research Centre, McGill University, Montreal, Canada
Planned	·
3/6/18	Distinguished Seminar Speaker, University Radboud Medical Center, Nijmegen, Netherlands
3/8/18	Invited Speaker, UNITO-POLITO Conferences on Imaging of Cancer Dynamics, Turin, Italy
3/21/18	Invited Speaker, Hunter Valley Meeting on Cell Biology, NSW, Australia
9/10/18	Speaker and Chair, Scientific Program Committee, EACR, Goodbye Flat Biology, Berlin, Germany
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