

Brittany L. Allen-Petersen, Ph.D.

201 S. University St., HANS 207 • West Lafayette, IN 47907

(765) 496-1896 office • ballenpe@purdue.edu

Education

2005-2012	Ph.D.	University of Colorado Anschutz Medical Campus (UCAMC) Cell Biology, Stem Cells, and Development (CSD)	Denver, CO
2001-2005	B.S.	University of Michigan Molecular, Cellular, and Developmental Biology	Ann Arbor, MI

Research Positions

2019-present	Assistant Professor , Department of Biological Sciences Purdue University, West Lafayette, IN
2012-2019	Postdoctoral Fellow , Department of Molecular and Medical Genetics Oregon Health & Science University, Portland, OR Advisor: Rosalie C. Sears, Ph.D. Focus: The role of Protein Phosphatase 2A in pancreatic cancer
2005-2012	Graduate Student , Department of Craniofacial Biology University of Colorado Anschutz Medical Campus, Denver, CO Thesis Advisor: Mary E. Reyland, Ph.D. Thesis title: The role of Protein Kinase C δ in mammary gland development and tumorigenesis
2004-2005	Undergraduate Research Technician , Department of Medicine University of Michigan, Ann Arbor, MI Advisor: Alisa E. Koch, M.D. Focus: Effects of IL-4 and -13 gene therapies in rat adjuvant- induced arthritis

Publications

Peer Reviewed Publications

- Allen-Petersen BL** and Sears RC. Mission possible: advances in c-MYC therapeutic targeting in cancer. *BioDrugs* 2019 Aug 7. doi: 10.1007/s40259-019-00370-5
- Auciello FR*, Bulusu V*, Oon C, Tait-Mulder J, Berry M, Bhattacharyya S, Tumanov S, **Allen-Petersen BL**, Link J, Kendersky ND, Vringer E, Schug M, Novo D, Hwang RF, Evans RM, Nixon C, Dorrell C, Morton JP, Norman JC, Sears RC, Kamphorst JJ*, Sherman MH*. A stromal lysolipid-autotaxin signaling axis promotes pancreatic tumor progression. *Cancer Discov.* 2019 Mar 5. doi: 10.1158/2159-8290.CD-18-1212 *Equal Contribution
 - Biffi G and Tuveson DA. A FATal Combination: Fibroblast-Derived Lipids and Cancer-Derived Autotaxin Promote Pancreatic Cancer Growth. *Cancer Discov* May 1 2019 (9) (5) 578-580; doi: 10.1158/2159-8290.CD-19-0273
- Langer EM*, **Allen-Petersen BL***, King SM, Kendersky ND, Turnidge MA, Kuziel GM, Riggers R, Samatham R, Amery TS, Jacques SL, Sheppard BC, Korkola JE, Muschler JL, Thibault T, Chang YH, Gray JW, Presnell SC, Nguyen DG, Sears RC. Modeling tumor phenotypes *in vitro* with three-dimensional bioprinting. *Cell Rep.* 2019 Jan 15;26(3):608-623.e6. doi: 10.1016/j.celrep.2018.12.090 ***Equal Contribution**
- Allen-Petersen BL**, Risom T, Feng Z, Wang Z, Jenny ZP, Morton JP, Sansom OJ, Lopez CD, Sheppard BC, Christensen DJ, Ohlmeyer M, Narla G, and Sears RC. PP2A activation and mTOR inhibition synergistically reduce MYC signaling and decrease tumor growth in pancreatic ductal adenocarcinoma. *Cancer Res.* 2019 Jan 1;79(1):209-219. doi: 10.1158/0008-5472.CAN-18-0717

- a. **Allen-Petersen BL** and Sears RC. The use of protein phosphatase 2A activators in combination therapies for pancreas cancer. *Oncotarget* 2019;10(21):2008-2009 doi.org/10.18632/oncotarget.26772
5. Farrell AS*, Joly MM*, **Allen-Petersen BL**, Worth PJ, Lanciault C, Sauer D, Link J, Pelz C, Heiser LM, Morton JP, Muthalagu N, Hoffman MT, Manning SL, Pratt ED, Kendsersky ND, Egbukichi N, Amery TS, Thoma MC, Jenny ZP, Rhim AD, Murphy DJ, Sansom OJ, Crawford HC, Sheppard BC, Sears RC. MYC regulates ductal-neuroendocrine lineage plasticity in pancreatic ductal adenocarcinoma associated with poor outcome and chemoresistance. *Nat Commun.* 2017;8(1):1728. *Equal Contribution
6. Janghorban M, Farrell AS, **Allen-Petersen BL**, Pelz C, Daniel CJ, Oddo J, Langer EM, Christensen DJ, Sears RC. Targeting c-Myc by antagonizing PP2A inhibitors in breast cancer. *Proc. Natl. Acad. Sci.* 2014 Jun 24; 111(25):9157-62 doi: 10.1073/pnas.1317630111
7. Farrell AS, **Allen-Petersen BL**, Daniel CJ, Wang X, Wang Z, Rodriguez S, Impey S, Oddo J, Vitek MP, Lopez CD, Christensen DJ, Sheppard BC, Sears RC. Targeting Inhibitors of the Tumor Suppressor Protein Phosphatase 2A for the Treatment of Pancreatic Cancer. *Mol Cancer Res.* 2014 Jun; 12(6):924-39 doi: 10.1158/1541-7786.MCR-13-0542
8. **Allen-Petersen BL**, Carter CJ, Ohm AM, Reyland ME. Protein kinase C δ is required for ErbB2-driven mammary gland tumorigenesis and negatively correlates with prognosis in human breast cancer. *Oncogene.* 2014 Mar 6;33(10):1306-15 doi:10.1038/onc.2013.59
9. **Allen-Petersen BL***, Miller MR*, Neville MC, Anderson SM, Nakayama KI and Reyland ME. Loss of protein kinase C delta alters mammary gland development and apoptosis. *Cell Death Dis.* 2010 Jan;1(1):e17 doi: 10.1038/cddis.2009.20 * Equal Contribution
10. Noble SL, **Allen BL**, Goh LK, Nordick K, Evans TC. Maternal mRNAs are regulated by diverse P body-related mRNP granules during early *Caenorhabditis elegans* development. *J Cell Biol.* 2008 Aug 11; 182(3):559-72 doi: 10.1083/jcb.200802128
11. Haas CS, Amin MA, Ruth JH, **Allen BL**, Ahmed S, Pakozdi A, Woods JM, Shahrara S, Koch AE. In vivo inhibition of angiogenesis by interleukin-13 gene therapy in a rat model of rheumatoid arthritis. *Arthritis Rheum.* 2007 Aug; 56(8):2535-48
12. Haas CS, Amin MA, **Allen BB**, Ruth JH, Haines GK 3rd, Woods JM, Koch AE. Inhibition of angiogenesis by interleukin-4 gene therapy in rat adjuvant-induced arthritis. *Arthritis Rheum.* 2006 Jul 25; 54(8):2402-2414

Invited Commentary

1. **Allen-Petersen BL** and Sears RC. RAS and MYC: Co-conspirators in Cancer. National Cancer Institute RAS Dialogue. 2017 www.cancer.gov/research/key-initiatives/ras/ras-central/blog/2017/myc-ras

Grant Support

2020-2023	NIH NCI Career Transition Award (K22)- 1 K22 CA237620-01A1 Allen-Petersen, Brittany L. (PI) <i>The role of PP2A B56α in pancreatic tumorigenesis</i>
2017-2018	Cancer Early Detection and Research (CEDAR) Seed Grant- Sherman, Mara H. (PI); Allen-Petersen, Brittany L. (Team member) <i>Defining early determinants of inflammation-driven pancreatic tumorigenesis</i>
2015-2018	NIH Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (F32)- 1F32CA192769-01 Allen-Petersen, Brittany L. (PI) <i>MYC is a critical downstream effector in KRAS-driven pancreatic cancer</i>
2013	N.L. Tartar Trust Fellowship Allen-Petersen, Brittany L. (PI)

*Targeting the PP2A inhibitor, SET, as a therapeutic for pancreatic cancer***Awards, Membership, and Advanced Course Work**

Awards

2018	Poster prize recipient- FASEB, Protein Phosphatases, Snowmass Village, CO
2016	Poster prize recipient- FASEB, Protein Phosphatases, Steamboat Springs, CO
2016	Brenden-Colson Center for Pancreatic Cancer Travel Award- PancWest Symposium, San Diego, CA
2015	Poster prize recipient- Gordon Research Conferences, Pancreatic Diseases, South Hadley, MA
2014	Poster prize recipient- AACR Pancreatic Cancer, New Orleans, LA
2007	Outstanding Research Award at 21 st Annual Student Research Forum- UCAMC

Membership

2015-2017	Diversity Committee Member- OHSU, MMG department
2013-2015	Research Week Organizing Committee- OHSU
2013-2015	Chair- OHSU Postdoctoral Research in Progress Seminar Series
2012-2019	Member- OHSU Brenden-Colson Center for Pancreatic Care
2010	Admissions Committee- UCAMC, Cell Biology, Stem Cells and Development
2009-present	Associate Member- American Association for Cancer Research (AACR)
2008-2010	Graduate Advising Committee- UCAMC, Cell Biology, Stem Cells and Development
2008-2010	Vice President of Communications- UCAMC Student Senate
2007- 2009	Co-president- UCAMC, Prism Diversity Group
2006-2012	Member- Mammary Gland Program Project Grant, UCAMC

Advanced Course Work

2018	OHSU Vollum Writing Program
2018	OHSU RCR Training for Scholars and Trainees
2015, '18, '19	OHSU Unconscious Bias Training

Meetings and Abstracts

Selected Invited Talks

2013	Invited short talk - Gordon Research Conferences, Pancreatic Diseases, South Hadley, MA Targeting Myc through phosphatase activation and kinase inhibition as a novel therapeutic for pancreatic cancer
------	--

Selected Poster Presentations

2018	AACR Pancreatic Cancer: Advances in Science and Clinical Care, Boston, MA The role of PP2A B56 α in pancreatic cancer cell plasticity
2018	FASEB, Protein Phosphatases, Snowmass Village, CO The role of PP2A B56 α in pancreatic cancer cell plasticity
2017	Gordon Research Conferences, Exocrine and Endocrine Pancreas, Waterville Valley, NH The role of PP2A B56 α in pancreatic cancer initiation and progression
2016	FASEB, Protein Phosphatases, Steamboat Springs, CO The role of PP2A B56 α in pancreatic cancer initiation and progression
2016	PancWest Symposium, San Diego, CA The role of PP2A B56 α in pancreatic cancer initiation and progression
2015	Gordon Research Conferences, Pancreatic Diseases, South Hadley, MA Protein Phosphatase 2A (PP2A) activation functions synergistically with mTOR inhibition in pancreatic cancer
2015	AACR MYC: From Biology to Therapy, La Jolla CA

Protein Phosphatase 2A (PP2A) activation functions synergistically with kinase inhibition in pancreatic cancer

- 2014 AACR Pancreatic Cancer: Innovations in Research and Treatment, New Orleans LA
Phosphatase activation and kinase inhibition as a novel therapeutic strategy for pancreatic cancer
- 2013 Keystone Symposia, Keystone CO
Targeting the PP2A tumor suppressor for the treatment of human pancreatic cancer
- 2013 AACR Annual Meeting, Washington DC
Targeting the PP2A tumor suppressor for the treatment of human pancreatic cancer
- 2009 AACR 100th Annual Meeting, Denver CO
Protein Kinase C delta regulated apoptosis in mammary gland biology and tumorigenesis
- 2009 AACR Pathobiology of Cancer Workshop, Snowmass CO
Protein Kinase C delta regulated apoptosis in mammary gland biology and tumorigenesis
- 2008 Mammary Gland Biology Gordon Conference, Lucca (Barga), Italy
The role of Protein Kinase C delta regulated apoptosis during mammary gland development
- 2007 Mammary Gland Biology Gordon Conference, Newport RI
The role of Protein Kinase C delta regulated apoptosis in mammary epithelial cells during mammary gland development

Patents

1. King SM, Nguyen DG, Gorgen VA, Shepherd BR, Presnell SC, Sears RC, **Allen-Petersen BL**, Langer EL. Engineered Three-Dimensional Breast Tissue, Adipose Tissue, and Tumor Disease Model. Filed 2014. Patent Number: WO2015152954.
2. Presnell SC, King SM, Nguyen DG, Jo M, Sears RC, **Allen-Petersen BL**, Langer EL. Three-Dimensional Bioprinted Tumor Models for Drug Testing. Filed 2017. Patent Number: WO2018035138 (International application).

Mentorship

Graduate Students

- 2019- Samantha Tinsley: Graduate Student (PULSe, Biological Sciences)
- 2019- Claire Pfeffer: Graduate Rotation Student (PULSe)
- 2019- Garima Baral: Graduate Rotation Student (Biological Sciences)

Undergraduate Students

- 2019- Rebecca Shelley: Cell, Molecular, and Developmental Biology (Purdue '22)
- 2019- Madilyn Reid: Biology (Purdue '23)
- 2019- Elizabeth Hoffman: Biology (Purdue '23)
- 2015-2018 OHSU- Mary Thoma: University of San Diego, Undergraduate, Summer Intern

High School Students

- 2016 OHSU- DeAuj'Zhane Coley: Ted R. Lilley Continuing Umbrella of Research Education (CURE) Program- *Poster Prize Winner

Graduate Committees

Thesis Committee

- Mitchell Ayers** *Medicinal Chemistry and Molecular Pharmacology, Michael Wendt laboratory*
- Kelsey Hopkins** *Biomedical Engineering, Luis Solorio laboratory*

Oral Exam Committee

- Mitchell Ayers** *Medicinal Chemistry and Molecular Pharmacology, Michael Wendt laboratory*

Teaching

- 2020 BIOL59500 (Lecturer)
 Pathways in Human Health and Disease
 Lecture Title: Combination Therapies Downstream of RTKs
 Undergraduate/Graduate Biological Sciences, Purdue University
- 2016-2018 CanB616 Advanced Topics in Cancer Biology (Lecturer)
 Oregon Health & Science University
- 2008-2009 *Graduate Student Teacher*
 UCAMC, Graduate CORE Course
- 2007-2008 *Graduate Student Tutor*
 UCAMC Cell Biology, Stem Cells and Development

References

Rosalie C. Sears Ph.D

Professor- Molecular & Medical Genetics Department
Co-Director Brenden-Colson Center for Pancreatic Care
Oregon Health & Science University
Phone: 503-494-6885
Email: searsr@ohsu.edu

Mary E. Reyland Ph.D.

Professor- Craniofacial Biology / Cell Biology, Stem Cells and Development program
University of Colorado Denver, Anschutz Medical Campus
Phone: 303-724-4572
Email: Mary.Reyland@ucdenver.edu

Howard Crawford Ph.D.

Professor- Molecular & Integrative Physiology
Director of the Pancreas Research Program
University of Michigan
Email: howcraw@umich.edu