Brittany L. Allen-Petersen, Ph.D.
201 S. University St., HANS 215, West Lafayette, IN 47907
(765) 496-1896 office ballenpe@purdue.edu BAP Lab

EDUCATION

2005-2012 Ph.D. **University of Colorado Anschutz Medical Campus (UCAMC)** Denver, CO
Cell Biology, Stem Cells, and Development (CSD)

2001-2005 B.S. **University of Michigan** Ann Arbor, MI
Molecular, Cellular, and Developmental Biology

RESEARCH POSITIONS

2019-present **Assistant Professor,** Department of Biological Sciences (tenure-track)
Member, Purdue Institute for Cancer Research
Associate Member, Indiana University Simon Comprehensive Cancer Center
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 Cδ 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

1. Salas-Escabillas DJ, Hoffman MT, Brender SM, Moore JS, Wen HJ, Benitz S, Davis ET, Long D, Wombwell AM, Chianis ERD, **Allen-Petersen BL**, Steele NG, Sears RC, Matsumoto I, DelGiorno KE, Crawford HC. Tuft cells transdifferentiate to neural-like progenitor cells in the progression of pancreatic cancer. Dev Cell. 2024 Dec 19;. doi: 10.1016/j.devcel.2024.12.003. PMID: 39721583.

2. Tinsley SL, Chianis ERD, Shelley RA, Mall GK, Dhiman A, Baral G, Kothandaraman H, Thoma MC, English IA, Daniel CJ, Acosta LCS, Solorio L, Atallah Lanman N, Pasca di Magliano M, Narla G, Dykhuizen EC, Sears RC, **Allen-Petersen BL***. KRAS-mediated upregulation of CIP2A promotes suppression of PP2A-B56α to initiate pancreatic cancer development. Oncogene. 2024 Dec;43(50):3673-3687. doi: 10.1038/s41388-024-03196-w. Epub 2024 Oct 23. PMID: 39443726.

3. Wang L, Pattnaik A, Sahoo SS, Stone EG, Zhuang Y, Benton A, Tajmul M, Chakravorty S, Dhawan D, Nguyen MA, Sirit I, Mundy K, Ricketts CJ, Hadisurya M, Baral G, Tinsley SL, Anderson NL, Hoda S, Briggs SD, Kaimakliotis HZ, **Allen-Petersen BL**, Tao WA, Linehan WM, Knapp DW, Hanna JA, Olson MR, Afzali B, Kazemian M. Unbiased discovery of cancer pathways and therapeutics using Pathway Ensemble Tool and Benchmark. Nat Commun. 2024 Aug 24;15(1):7288. doi: 10.1038/s41467-024-51859-9. PubMed PMID: 39179644; PubMed Central PMCID: PMC11343859.

4. Grygoryev D, Ekstrom T, Manalo E, Link JM, Alshaikh A, Keith D, **Allen-Petersen BL**, Sheppard B, Morgan T, Soufi A, Sears RC, Kim J. Sendai virus is robust and consistent in delivering genes into human pancreatic cancer cells. *Heliyon*. 2024 Feb28;10(5):e27221 doi: 10.1016/j.heliyon.2024. e27221 PMID: 38463758

5. Hopkins K, Buno K, Romick N, Freitas dos Santos AC, Tinsley SL, Wakelin E, Kennedy J, Ladisch M, **Allen-Petersen BL*****, Solorio L*****. Sustained Degradation of Hyaluronic Acid using an In Situ Forming Implant. 2022 *PNAS Nexus* Sep 17;1(4):pgac193 ***co-corresponding** PMID: 36714867

6. Shah VM, Dorrell C, Al-Fatease A, **Allen-Petersen BL**, Woo Y, Bortnyak Y, Gheewala R, Sheppard BC, Sears RC, Alani AW. Microfluidics Formulated Liposomes of Hypoxia Activated Prodrug for Treatment of Pancreatic Cancer. Pharmaceutics. 2022 Mar 26;14(4). doi: 10.3390/pharmaceutics14040713. PMID: 35456547

7. Tinsley SL, **Allen-Petersen BL***. PP2A and cancer epigenetics: a therapeutic opportunity waiting to happen. NAR Cancer. 2022 Mar;4(1):zcac002. doi: 10.1093/narcan/zcac002. eCollection 2022 Mar. PMID: 35118387

8. Farrington CC, Yuan E, Mazhar S, Izadmehr S, Hurst L, **Allen-Petersen BL**, Janghorban M, Chung E, Wolczanski G, Galsky M, Sears R, Sangodkar J, Narla G. Protein phosphatase 2A activation as a therapeutic strategy for managing MYC-driven cancers. *J Biol Chem*. 2020 Jan 17;295(3):757-770. doi:10.1074/jbc.RA119.011443 PMID: 31822503

9. **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

10. Auciello FR*, Bulusu V*, Oon C, Tait-Mulder J, Berry M, Bhattacharyya S, Tumanov S, **Allen-Petersen BL**, Link J, Kendsersky 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

    a. 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

11. Langer EM*, **Allen-Petersen BL***, King SM, Kendsersky 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**

12. **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 Jan1;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

13. 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

14. 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

15. 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

16. **Allen-Petersen BL**, Carter CJ, Ohm AM, Reyland ME. Protein kinase Cδ 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

17. **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

18. 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

19. 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

20. 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

ACADEMIC AND PROFESSIONAL ACHIEVEMENTS AND HONORS

2025	Al and Martha Chiscon Award for Outstanding Undergraduate Teaching, Purdue University, West Lafayette, IN (Highest award recognizing excellence in teaching within the Biological Sciences Department)
2023-2024	Enhancing Purdue Research Award
2022-2026	Junior Co-Organizer, FASEB Protein Phosphatases Conference, Palm Springs, CA
2023	Co-Organizer, Midwest Tumor Microenvironment Conference, Purdue University, IN
2022	College of Science Diversity Award, Significant effort in the advancement of diversity, equity, and inclusion within the College of Science, Purdue University, IN
2018	Poster prize recipient- FASEB, Protein Phosphatases, Snowmass Village, CO
2016	Travel award- Brenden Colson Center for Pancreatic Care, PancWEST, San Diego, CA
2016	Poster prize recipient- FASEB Protein Phosphatases, Steamboat Springs, CO
2015-2018	NIH NCI Ruth L. Kirschstein National Research Service Award (NRSA)(F32 CA192769)
2015-2017	Diversity Committee Member- Oregon Health & Science University, Molecular and Medical Genetics department
2015	Poster prize $500, Gordon Research Conference: Pancreatic Diseases, South Hadley, MA

2014 Poster prize recipient- AACR Pancreatic Cancer: Innovations in Research and Treatment, New Orleans, LA

2008-current Member, American Associate for Cancer Research (AACR)

GRANT SUPPORT

Pending Grant Support

2025-2032 **NIH NCI R01 – 1R01CA295946-01A1**
Allen-Petersen, Brittany L. (PI)
Posttranslational regulation of macropinocytosis in pancreatic cancer

Current Grant Support

2024-2028 **American Cancer Society**
Allen-Petersen, Brittany L. (PI)
The role of PP2A in pancreatic cancer nutrient scavenging

2024-2029 ***NIH NCI R01 1R01CA283394-01A1***
Solorio (PI), Allen-Petersen BL (co-I)
Stromal targeting to improve the efficacy of systemically administered drugs for pancreatic ductal adenocarcinomas

Completed Grant Support

2022-2025 **Concern Foundation**
Allen-Petersen, Brittany L. (PI)
The role of PP2A in regulating PDAC methuosis

2024-2025 **Purdue University Office of Research**
Allen-Petersen, Brittany L. (PI)
The role of PP2A-B56a in nutrient scavenging in pancreatic cancer

2022-2024 **Pancreatic Cancer Action Network**
Allen-Petersen, Brittany L. (PI)
The role of PP2A in regulating pancreatic cancer macropinocytosis

2024 **Purdue University CIS Pilot Funds**
Allen-Petersen, Brittany L. (PI)
Differential functions of PP2A during tumorigenesis

2020-2023 **NIH NCI Career Transition Award (K22)- 1 K22 CA237620-01A1**
Allen-Petersen, Brittany L. (PI)
The role of PP2A B56a in pancreatic tumorigenesis

2021-2022 **Purdue Ross-Lynn Research Scholar Award**
Allen-Petersen, Brittany L. (PI)
The role of PP2A-B56a in KRAS-Driven Tumorigenesis

2020-2021 **Ralph W. and Grace M. Showalter Research Trust Award**
Allen-Petersen, Brittany L. (PI)
The role of PP2A B56a in regulating pancreatic tumorigenesis

2020 **Purdue Center for Cancer Research – Cell Identity and Signaling**
Allen-Petersen, Brittany L. (co-PI), Kazemian, Majid (co-PI)
Transcriptional regulation of mutant KRAS in pancreatic cancer

2017-2018 **Cancer Early Detection and Research (CEDAR) Seed Grant**-
Sherman, Mara H. (PI); Allen-Petersen, Brittany L. (Team member)
Defining early determinants of inflammation-driven pancreatic tumorigenesis

2015-2018 **NIH Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (F32)-** 1F32CA192769-01
Allen-Petersen, Brittany L. (PI)
MYC is a critical downstream effector in KRAS-driven pancreatic cancer

ACADEMIC SERVICE

Service

2024-*present* Sloan Center for Systemic Change, Biological Sciences Representative, Purdue University, IN
2024-2025 Department Head Search Committee, Biological Sciences Department, Purdue University, IN
2023-2025 Strategic Planning Committee, Biological Sciences Department, Purdue University, IN
2023-*present* Co-leader, Pancreatic Cancer Challenges and Solutions Working Group, Indiana University, IN
2023 CABTRAC, Diversity Panel, Irvine CA
2022 Faculty search committee member, Biological Sciences, Purdue University, IN
2020-*present* Faculty Mentor, Science Scholars, Purdue University, IN
2020-*present* Cancer Research Training and Education Coordination (CRTEC), Purdue Institute for Cancer Research, Purdue University, IN
2020-*present* Biological Sciences Graduate Admissions Committee, Purdue University , IN
2019-2020 Biological Sciences Safety Committee, Purdue University, IN
2015-2017 Diversity Committee Member- OHSU, MMG department, OR
2013-2015 Research Week Organizing Committee- OHSU, OR
2013-2015 Chair- OHSU Postdoctoral Research in Progress Seminar Series, OR
2010 Admissions Committee- UCAMC, Cell Biology, Stem Cells and Development , CO
2009-*present* American Association for Cancer Research (AACR)
2008-2010 Graduate Advising Committee- UCAMC, Cell Biology, Stem Cells and Development, CO
2008-2010 Vice President of Communications- UCAMC Student Senate, CO
2007- 2009 Co-president- UCAMC, Prism Diversity Group, CO

Conference Organization

12/2026 Junior Co-Organizer, FASEB Protein Phosphatases Conference 2026, Palm Springs, CA
12/2024 Junior Co-Organizer, FASEB Protein Phosphatases Conference 2024, Palm Springs, CA
11/2024 Co-Organizer, Gianaris Pancreatic Cancer Symposium, Indiana University, IN

INVITED SEMINARS AND ABSTRACTS

05/2023 Co-Organizer, Midwest Tumor Microenvironment Conference, Purdue University, IN

External

01/2025 Department of Pharmacology, Medical College of Wisconsin, Milwaukee, WI
12/2024 Invited talk – FASEB Protein Phosphatases Conference 2024, Palm Springs, CA
09/2024 Invited talk – PanCAN scientific summit, Boston, MA
08/2024 Department of Molecular and Medical Genetics, OHSU, Portland, OR
11/2023 Department of Developmental and Cell Biology, University of California Irvine, CA

11/2023	Department of Pharmacology, Case Western Reserve University, Cleveland, OH
08/2023	EMBO Protein Phosphatases, Copenhagen, Denmark
04/2023	Department of Biology, DePauw University, Greencastle, IN
12/2022	Invited short talk – FASEB Protein Phosphatases Conference, Palm Springs CA
10/2022	Department of Molecular and Cellular Biochemistry, University of Kentucky, Lexington, KY
07/2013	Invited short talk - Gordon Research Conferences, Pancreatic Diseases, South Hadley, MA

Internal

10/2023	Purdue Institute for Cancer Research, Purdue University, West Lafayette, IN
11/2022	Purdue University, Department of Chemistry, West Lafayette, IN

PATENTS

04/2022	Purdue University, Department of Biomedical Engineering, West Lafayette IN
03/2020	Purdue University, Department of Biochemistry, West Lafayette IN

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 Granted # 11789011**.
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).

Graduate Students

Sara Filippelli	Graduate Student (Biological Sciences), 2022-
Brittany Heil	Graduate Student (PULSe), 2020-
Garima Baral	Graduate Student (Biological Sciences), 2019-
Claire Pfeffer	Graduate Student (PULSe), 2019-
Sanika Gulavani	Graduate Student (Biological Sciences), 2024-
Lauren Gartenhaus	Graduate Student (PULSe), 2024-

Undergraduate Students

Emma Kay	Biology (Purdue ’26), 2023-
Indiraa Doraivel	Cell, Molecular, and Developmental Biology (Purdue ’25), 2022-
Roe Chianis	Chemical Biology and Biochemistry (Purdue ’25), 2022-

Lab Alumni

Samantha Tinsley	Graduate Student, PULSe, Ph.D. July 2023
Sydney Clifford	Undergraduate Student, CMB (Purdue ’24), 2021-2024
Talia Kidder	Undergraduate Student, Biology (Purdue ’24), 2023-2024
Anna Darling	Undergraduate Student, Genetics (Purdue ’24), 2023-2024
Mei Bahler	Undergraduate Student, Biology (Purdue ’24), 2022-2024
Najd Alshammari	Undergraduate Student, Biology (Purdue ’23), 2022-2023
Rebecca Shelley	Undergraduate Student, Biology (Purdue ’22), 2019-2022
Madilyn Reid	Undergraduate Student, Biology (Purdue ’23), 2019-2021
Elizabeth Hoffman	Undergraduate Student Biology (Purdue ’23) 2019-2021

GRADUATE COMMITTEES

Siya Goel	High School Student, West Lafayette Jr./Sr. High School ’22

Preliminary Exams: †Prelim Chair

Solomon Otchere	*BMCMP*, Nathaniel Mabe lab
Franklin Yeo	*PULSe,* Matt Olsen lab
Kenan Ozcan	*Biological Sciences,* Andrea Kasinski lab
†Kristen Huseman	*PULSe,* Danzhou Yang lab
Lauren Wilbanks	*PULSe,* Elizabeth Parkinson lab
Andrew DeMarco	*Biochemistry,* Mark Hall lab
Anthony Murphy	*Biological Sciences,* Jason Hanna lab

Thesis Committee: †Prelim Chair

Daye Kwon	*Biology Sciences,* John Tesmer lab
†Iman Meeva	PULSe, Andrea Kasinski lab
Kevina Sonawala	*Biology Sciences,* Qing Deng lab
Sukhamndeep Karu	PULSe, Emily Dykhuizen lab
Samira Piltan	*Biology Sciences,* Andrea Kasinski lab
Lehao Wu	*Medicinal Chemistry and Molecular Pharmacology,* Valerie O’Brien lab
Jessica Vennstra	*PULSe,* Matt Scarpelli lab

ALLEN-PETERSEN LAB

Anukrishna Radhakrishnan	*PULSe,* Matt Scarpelli lab
Tyler Pikes	*Biological Sciences,* Qing Deng lab
Emily Hutton	*Biological Sciences,* Education, Stephanie Gardner lab
Basilia Liu	*Biological Sciences,* Jason Hanna lab
Ramya Modi	*Chemistry,* Elizabeth Parkinson lab (**Graduated, Ph.D, 2023**)
Shreyas Iyer	*PULSe,* Andrea Kasinski lab
Marvis Monteiro	*Medicinal Chemistry and Molecular Pharmacology*, Michael Wendt lab
Nimod Janson	*Biological Sciences,* Jason Hanna lab
Julie Son	*Biological Sciences,* Andrea Kasinski lab
Surbhi Sood	*PULSe,* Emily Dykhuizen lab (**Graduated, Ph.D, 2024**)
Guanming Jiao	*Medicinal Chemistry and Molecular Pharmacology,* Emily Dykhuizen lab
Vaani Ohri	*Biological Sciences,* Angeline Lyon lab (**Graduated, Ph.D, 2024**)
Annaleigh Powell	*Biological Sciences*, Jason Hanna lab (**Graduated, Ph.D, 2024**)

TEACHING

Mitchell Ayers	*Medicinal Chemistry and Molecular Pharmacology*, Michael Wendt lab (**Graduated, Ph.D, 2024**)
Apekshya Chhertri	*Basic Medical Sciences*, Sophie Lelièvre lab (**Graduated, M.S., 2021**)
Kelsey Hopkins	*Biomedical Engineering*, Luis Solorio lab (**Graduated, Ph.D, 2022**)

Primary Instructor

2024-present	Genetics Seminar Course (BIOL441) – 16 lectures/Fall; 40 students, Purdue University
2021-present	Molecular Biology of Cancer (BIOL51600) – 40 lectures/Spring; 100 students Purdue University

Guest Lectures

2025	Immunology of Cancer and Infectious Disease (BIOL59400) – Guest Lecturer, Purdue University
2020-2021	Pathways in Human Health and Disease (BIOL595) – Guest Lecturer, Purdue University
2016-2018	Advanced Topics in Cancer Biology (CanB616) – Guest Lecturer, OHSU

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.
Scientific Director of the Henry Ford Pancreatic Cancer Center
Henry Ford
Email: hcrawfo1@hfhs.org

REFERENCES