

Jennifer E. Koblinski, PhD



Associate Professor of Pathology
Director of the Cancer Mouse Models Core
Co-Director of the Tissue and Data Acquisition and Analysis Core
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Education

Graduate Education

1999 Ph.D., Cancer Biology, Wayne State University School of
Medicine, Detroit, MI

Virginia Commonwealth University and Medical Center Appointments

2021 - present	Co-Director, Tissue and Data Acquisition and Analysis Core, Virginia Commonwealth University, Richmond, VA
2015 - present	Director, Cancer Mouse Model Core, Virginia Commonwealth University, Richmond, VA
2022 - present	Associate professor, Department of Pathology, School of Medicine, Virginia Commonwealth University, Massey Cancer Center, Richmond, VA (Tenured)
2013 - 2022	Assistant professor, Department of Pathology, School of Medicine, Virginia Commonwealth University, Massey Cancer Center, Richmond, VA

Special Honors

December 2018 Chosen to showcase the Cancer Mouse Models Core to Governor Ralph Northam for the Massey Cancer Center

VCU Service

2023	Member, Search Committee for Associate Director for the Division of Animal Research
2022 - present	President-elect, Women in Science, Dentistry, and Medicine (WISDM)
2021-22	Member, Basic Health Science Realignment steering committee
2021 - present	Co-Director, Tissue and Data Acquisition and Analysis Core
2015 - present	Director, Cancer Mouse Models Core Laboratory, VCU, Massey Cancer Center, Richmond, VA
2019 - present	Treasurer, Women in Science, Dentistry, and Medicine (WISDM)
2020-21	Member, VCU Bench to community advisory group
2020	Member, Search Committee for Associate Director for the Division of Animal Research
2019-20	Panel member, Investigation of Research Misconduct
2018-19	Member of planning committee for Annual Women and Science, Medicine, and Dentistry (WISDM) meeting
2017-2018	Reviewer for VCU Presidential Research Quest Fund, VCU School of Medicine, Richmond, VA

Professional Organizations

American Association for Cancer Research

Women in Cancer Research

Metastasis Research Society

Association of Biomolecular Resource
Facilities

Professional Service

2023	Member, Organizing committee for Midatlantic directors and staff of scientific cores Association of Biomolecular Resource Facilities annual meeting
2020-present	Ad-hoc reviewer, American Cancer Society TheroyLab Collaborative Pilot Grant-F-20
Nov. 2020	NSF National I-Corps Customer Insight member for Rutgers University
2017-2019	Ad-hoc reviewer for Breast Cancer Now, London, England
Oct. 2020	Academic speaker, Women in STEM leadership series, Minnesota State University, Mankato, MN

Editorial Advisory Boards

2018	Co-Editor: Analytical Cellular Pathology special issue Molecular Regulation of Cancer Cell Migration, Invasion, and Metastasis
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Recent Invited Presentations

Jan. 2023	"Technologies in TDAAC" Speaker for MDTRP Research meeting, Department of Neurology, VCU
April 2021	"Updates to CMMC services and discussion of PDX/PDO models" Speaker for Cancer Biology Program meeting, Massey Cancer Center, VCU, Richmond, VA
March 2021	"Technologies and animal models that can enhance your research" Speaker for Pharmacology and Toxicology Seminar Series, VCU, Richmond, VA
Nov. 2020	"Updates/New Technologies in the Cancer Mouse Models Core" Speaker for Developmental Therapeutics retreat, Massey Cancer Center, VCU, Richmond, VA
Oct. 2020	"Precision medicine approach to Platinum therapy." In Vivo Imaging Virtual User Group Meeting – Webinar held by PerkinElmer
March 2020	"Precision medicine for platinum" Speaker for Grand Rounds, Department of Pathology, VCU, Richmond, VA
April 2018	"Mechanisms of breast cancer metastasis to the brain", invited Speaker, 2nd Annual Nanosymposium on Engineered Health, sponsored by: University of Virginia's NanoSTAR, Virginia Tech's Center for Engineered Health and Virginia Commonwealth University, Roanoke, VA

Research Grants/Contracts

April 2022 - March 2026	Role: Collaborator Faber (mPI) NIH/NCI \$250,000 MYCN drives a druggable SUMOylation program in neuroblastoma.
April 2022 - March 2023	Role: mPI Faber/Koblinski (mPI) NIH/NCI \$250,000 SHP2 inhibitors for high-risk neuroblastoma.
July 2022 - June 2023	Role: mPI Farrell/Koblinski (mPI) NIH/NCI \$98,062 Precision medicine for platinum in ovarian cancer by exploiting tumor glycoaminoglycan profiles to enhance tumor drug delivery.

Oct. 2022 - Sept. 2027	Role: Collaborator Farrell (PI) NIH/NCI \$92,800 Pancreatic cancer, platinum and the immune response.
Sept. 2021 - August 2023	Role: Collaborator, Oh (PI) NIH/NCI \$150,000 Targeting a novel antitumor IGFBP-3/TMEM219 axis in non-small cell lung cancer treatment.
Sept. 2021 - August 2024	Role: Collaborator, Litovchick (PI) NIH/NCI \$426,938 Role of the DREAM complex in the lung tumor suppression.
Nov. 2021 - Oct. 2026	Role: Collaborator Tang/Bear (mPI) NIH/NCI \$62,500 Developing a therapy-responsive prognostic biomarker in the EFGR/K-RAS pathway to detect cancer disparity in African American TNBC patients.
Sept. 2021 - August 2026	Role: Collaborator Tang/Bear (mPI) NIH/NCI \$92,800 Developing a precision prognostic biomarker to guide treatment decisions for triple-negative breast cancer.
Sept. 2021 - August 2026	Role: Collaborator, Parajuli (PI) NIH/NCI \$1,552,500 Targeting TGIF network to suppress pancreatic cancer driven muscle cachexia.
July 2022 - June 2024	Role: Collaborator, Bear/Tang (mPI), CHBRB \$62,576 Validating a prognostic biomarker to augment immune-oncology (I/I) therapy and stratify TNBC patients in the clinic.
May 2022 - April 2024	Role: Collaborator, Salloum (PI), NIH/NovoMedix, LLC \$642,040 Cardioprotective and synergistic anti-tumor effects of novel small molecules with doxorubicin for treatment of TNBC.
Feb. 2022 - Jan. 2024	Role: Collaborator, Harada (PI), NIH/NIDCR \$399,186 Targeting gain-of-function p53 and BCL-2 for small cell lung cancer treatment.
Feb. 2022 - Jan. 2024	Role: Collaborator, Faber (PI), Children's Cancer Research Fund \$250,000 MYCN drives a druggable SUMOylation program in neuroblastoma.
June 2020 - May 2024	Role: Collaborator, Faber (PI), NIH/NCI, \$228,750, Neuroblastoma reliance on DNMT1 through amplified MYCN.

Recent Publications

Peer Reviewed Publications

Jacob, S., Tuner, T.H., Cai, J., Floros, K.V., Yu, A.K., Coon, C., Kharti, R., Alzubi, M.A., Jakubik, C.T., Bouck, Y.M., Puchalapalli, M., Shende, M., Boikos, S., Dozmorov, M.G., Hu, B., Harrell, J.C., Benes, C., **Koblinski, J.E.***, Costa, C.*, and Faber, A*. Genomic screen reveals UBA1 as a potent and druggable target in c-MYC-high TNBC models. (2022) PNAS Nexus 1: 1-13. PMID: PMC9802478.

*Co-Corresponding author

Manna, D., Reghupaty, S.C., Camarena, M.D.C., Mendoza, R.G., Subler, M.A., **Koblinski, J.E.**, Martin, R., Dozmorov, M.G., Mukhopadhyay, N.D., Liu, J., Qu, X., Das, S.K., Lai, Z., Windle, J.J., Fisher, P.B., and Sarkar, D. Melanoma Differentiation Associated Gene-9/Syndecan Binding Protein (MDA-9/SDCBP) Promotes Hepatocellular Carcinoma (HCC). (2022) Hepatology PMID:36120720

Cai, J., Kurupi, R., Greninger, P., Egan, R.,K., Stein, G.,T., Muchie, E., McClanaghan, J., Puchalapalli, M., Dozmov, M., Gold, H, Boikos, S.A., **Koblinski, J.E.**, Hao, H., Caponigro, G., Benes, C.H., and Faber, A. High-risk neuroblastoma with NF1 loss of function is targetable using SHP2 inhibition. *In preparation to be resubmitted to MCT. April 2022*

Kurupi, R. Chawla, A.T., Cai, J., Hu, B., Puchalapalli, M., Coon, C.M., Crowther, G.S., Egan, R.K., Murchie, E., Greninger, P., Powell, K.M., Jacob, S., Ghotra, M.S., Boikos, S.A., **Koblinski, J.E.**, Harada, H., Sun, Y., Morgan, I.M., Basu, D., Benes, C.H., and Faber, A. Targeting SHP2 blocks both PI3K and MEK signaling in HNSCC. *In preparation to be resubmitted to Cancer Research April 2022*

Hampton, J.D, Peterson, E.J., Katner, S.J., Turner, T.H., Alzubi, M.A., Harrell, J.C., Dozmorov, M.G., Gigliotti, P.J., Kraskauskiene, V., Shende, M., Idowu, M.O., Puchalapalli, M., Hu, B., Litovchick. L., Katsuta, E., Takabe, K., and *Farrell, N.P. and ***Koblinski, J.E.** Exploitation of sulfated glycosaminoglycan status for precision medicine of platinum in triple-negative breast cancer. In press Mol. Cancer Ther. *These authors are both corresponding author. **Research Highlight in the issue.** (2022) Mol. Cancer Ther. 21:243.

Ahmadinejad, F., Bos, T., Hu, B., Britt, E., **Koblinski, J.**, Souers, A.J., Levenson, J.D., Faber, A.C., Gewirtz, D., and Harada, H. Senolytic-mediated elimination of head and neck tumor cells induced into senescence by cisplatin. (2022) Mol Pharmacol. 101:168-180. PMID:34907000.

Fairchild, C.K., Floros, K. V., Jacob, S., Coon, C.M., Puchalapalli, M., Hu, B., Harada, H., Dozmorov, M.G., **Koblinski, J.E.**, Smith, S.C., Domson, G., Levenson, J.D., Souers, A.J., Takabe, N., Ebi, H., Faber, A.C., and Boikos, S.A. Unmasking BCL-2 Addiction in Synovial Sarcoma by Overcoming Low NOXA. (2021) *Cancers* 13:2310. PMID: PMC8150384.

Heisey, D., Jacob, S. Lochman, T.L., Kurupi, R., Ghotra, M.S., Calbert, M.L., Maves, Y.K., Shende, M., Maves, Y.K., **Koblinski, J.E.**, Dozmorov, M.G., Boikos, S.A., Benes, C.H., and Faber, A.C. Pharmaceutical interference of the EWS-FLI1-driven transcriptome by co-targeting H4K27ac and RNA polymerase activity in Ewing Sarcoma. (2021) *Mol. Cancer Ther.* 20:1868-1879. PMID: 34315769.

Floros, K., Cai, J., Kurupi, R., Fairchild, C., Shende, M., Coon, C., Powell, K., Belvin, B., Hu, B., Puchalapalli, M., Ramamoorthy, S., Swift, K., Lewis, J., Dozmorov, M., Glod, J., **Koblinski, J.E.**, Boikos, S., Jacob, S., and Faber, A.C. MYCN-amplified neuroblastoma is addicted to iron and vulnerable to inhibition of the system Xc-/glutathione axis. (2021) *Cancer Res.* 81:1896- 1908. PMID:33483374.

Powell, K.M., Lochmann, T.L., Floros, K.V., Calbert, M.L., Kurupi, R., Stein, G.T., McClanaghan, J., Murchie, E., Egan, R.K., Greninger, P., Dozmorov, M., Ramamorrthy, S., Puchalapalli, M., Hu, B., Shock, L., **Koblinski, J.E.**, Glod, J., Boikos, S.A., Benes, C.H., and Faber, A.C. Catastrophic ATP loss underlines a metabolic combination therapy tailored for MYCN-amplified neuroblastoma. (2021) *PNAS* 118:e2009620118.

Gorle, A.K., Haselhorst, T., Katner, S.J., Everest-Dass, A.V., Hampton, J.D., Peterson, E.J., **Koblinski, J.E.**, Katsuta, E., Takabe, K., von Itzstein, M., Berners-Price, S., and Farrell, N.P. Conformational modulation of iduronic acid-containing sulfated glycosaminoglycans by a polynuclear platinum compound. Implications for development of antimetastatic platinum drugs. (2021) *Angew Chem. Int. Ed. Engl.* 60:3283-3289. PMID: PMC7902481.

Floros, K., Jacob, S., Hu, B., Puchalapalli, M., **Koblinski, J.E.**, Boikos, S., Scaltriti, M., and Faber, A.C. Targeting transcription of MCL-1 overcomes NOXA-deficiency to sensitize HER2-amplified breast cancers to HER2 inhibitors. (2021) *Cell Death & Disease* 12:179. PMID: PMC7884408.

Aqbi, H.F. Coleman, C., Zarei, M., Manjili, S.H., Graham, L., **Koblinski, J.** Guo, C., Xie, Y., Guruli, G., Bear, H.D., Idowu, M.O., Habibi, M., Wang, X., and Manjili, M. Local and distant tumor dormancy during early-stage breast cancer are associated with the predominance of infiltrating T effector subsets. (2020)

Breast Cancer Res. 22:116. PMCID: PMC7594332.

Hakim, S. Craig, J.M, **Koblinski, J.E.**, and Clevenger, C.V. Inhibition of prolyl isomerase activity of cyclophilin A by a non-immunosuppressive cyclosporine impedes prolactin receptor mediated signaling, mammary tumorigenesis and metastases. (2020) *iScience* 23:101581. PMCID: PMC7549119.

Wang, D., Naydenov, N.G., Dozmorov, M.G., **Koblinski, J.E.**, and Ivanov, A. Anillin regulates breast cancer cell migration, growth and metastasis by non-canonical mechanism involving control of cell stemness and differentiation. (2020) *Breast Cancer Res.* 22: 3. PMCID: PMC6947866.

Sayyad, M., Puchalapalli, M., Vergara, N., Wangensteen Mosticone, S., Moore, M., Mu, L., Edwards, E., Anderson, A., Kall, S., Sullivan, M., Dozmorov, M., Singh, J., Idowu, M., and **Koblinski, J.E.** Syndecan 1 facilitates breast cancer cell metastasis to the brain. (2019) *Breast Cancer Res. Treat.* 178: 35-49. PMID: 31327090. PMID: 31327090.

Verma, A., Cohen, D.J., Schwartz, N., Muktipaty, C., **Koblinski, J.**, Boyan, B.D., and Schwartz. 24R,25-Dihydroxyvitamin D3 regulates breast cancer cell in vitro and in vivo. (2019) *BBA -General Subjects.* 1863: 1498-1512. PMID: 31125679.

Puchalapalli, M, Mu, L, Edwards, C., Kaplan-Singer, B, Eni, P, Belani, K, Finkelstein, D, Patel, A, Sayyad, M., and **Koblinski, J.E.** The laminin-?1 chain derived peptide, AG73, binds to syndecans on breast cancer cells and alters filapodia formation. (2019)

Anal Cell Pathol. 9192516 eCollection 2019. PMCID: PMC6515157. Garcia, E., Kraskauskene, V., **Koblinski, J.E.**, and Jefferson, K. Interaction of Gardnerella vaginalis and vaginolysin with the apical versus basolateral face of a 3-dimensional model of vaginal epithelium. (2019) *Infection and Immunity.* 87: e00646-18. PMCID: PMC6434120.

Editorials, Reviews, Book Chapters (Peer and Non-Peer Reviewed):

Bear, H., Landry, J., Rozeboom, A., Muralidaran, V., Peran, I., Byers, S.W., Kraskauskene, V., Berry, D.L., and **Koblinski, J.E.** "Multiplex immunofluorescence for Murine Tissue Models" In: M. Surace, H. Abdulsater, and J. Rodriguez Canales (Ed)., *Methods in Molecular Biology*, Springer Nature to be published in Spring 2023.

Neff, E. P. **Koblinski, J.E.**, Covid-19 Q&A: Keeping a cancer core going. (2020) Lab Animal 49:163.

Kall, S. and **Koblinski, J.E.** Genes that mediate organotropism. In: R. Jandial and K. Hunter (Ed.), Metastatic Cancer: Integrated Organ System and Biology Approach. Landes Bioscience, Austin, TX. 2012, Available: <http://www.landesbioscience.com/curie/chapter/5371/>

Koblinski, J.E. Review of Metastasis Research Protocols, 2nd Edition, Doody's Review Service (on-line). 2012, Available: <http://www.doody.com>

Kikkawa, Y, Hozumi, K, Katagiri, F, Nomizu, M, Kleinman, HK, and **Koblinski, J.E.** Laminin-111 derived peptides in cancer. Cell Adh Migr. 7: 105-256, 2013. PMID:PMC3544779

Benton, G., Arnaoutova, I., George, J., Kleinman, H.K., and **Koblinski, J.** Matrigel: from discovery and ECM mimicry to assays and models for cancer research. Adv. Drug Deliv. Rev., 2014. PMID:24997339

Editorials, Reviews, Book Chapters (Peer and Non-Peer Reviewed):

Naydenov, N., Wang, D, Dozmorov, D., **Koblinski, JE**, and Ivanov, A. "Anillin regulates breast cancer cell migration, growth and metastasis by non-canonical mechanisms involving control stemness and differentiation." Experimental Biology 2020, April 4-7, 2020, San Diego, CA.

Koblinski, J.E. Peterson, E.J., Hampton, J.D., Harrell, J.C. and Farrell, N.P. "Toward Precision medicine for platinum " 2019 AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics, October 26-30, 2019, Boston, MA.

Oh Y, Qing C, Harrell JC, **Koblinski JE**. "A novel targeted antibody therapy for cancer: Exploring the IGFBP3/IGFBP-3 receptor axis as an anti-tumor and anti-metastatic signaling in cancer". 2019 AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics, October 26-30, 2019, Boston, MA.

Mosticone Wangensteen, S., Sayyad, M., Puchalapalli, M, Sullivan, M. Singh, J., Ratchfor, B., Abrams, J., Jahromi, M., Hu, B., Idowu, M. and **Koblinski, J.E.** Syndecan-1 mediates breast cancer metastasis to the brain through IL-8 and

PECAM-1 signaling, AACR Immunobiology of primary and metastatic CNS Cancer. 2018. *chosen for mini-symposium talk.

Sayyad, M., Puchalapalli, Hu, B., and **Koblinski, J.E.** Brain metastatic versus non-metastatic breast cancer exosomes influence astrocyte response. Proc. Am. Assoc. Koblinski Ramachandran, Jennifer E. 26 of 34 Cancer Res. 2018.

Katner, S., Hampton, D.J, Petterson, E., Katsuto, E., Sayyad, M., Takabe, K., **Koblinski, J.**, and Farrell, N. Heparan sulfate, a new target for platinum in metastatic TNBC. Proc. Am. Assoc. Cancer Res. 2018.

Lay Press Interview or Publications:

October 2022: <https://www.masseycancercenter.org/news/massey-scientists-pinpoint-druggable-target-in-aggressive-breast-cancer>

August 2022: <https://www.mcvfoundation.org/news/stories/platinum-precision>

February 2022: <https://www.masseycancercenter.org/news/with-personalized-medicine-a-shelved-cancer-drug-could-get-another-shot>

October 2021: Interview with Studylog
<https://www.studylog.com/interview-with-jennifer-koblinski/>