AWARD NUMBER: W81XWH-18-2-0013

TITLE: Prostate Cancer Biorepository Network (PCBN)

PRINCIPAL INVESTIGATOR: Karen Sfanos

CONTRACTING ORGANIZATION: Johns Hopkins University School of Medicine

REPORT DATE: JANUARY 2024

TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Development Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
Distribution Unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

REPORT DOCUMENTATION PAGE	*Form Approved* *OMB No. 0704-0188*

1. REPORT DATE **JANUARY 2024**	**2. REPORT TYPE** **Final**	**3. DATES COVERED** 30SEPT2018 - 29SEPT2023

4. TITLE AND SUBTITLE Prostate Cancer Biorepository Network (PCBN)	**5a. CONTRACT NUMBER** W81XWH-18-2-0013 **5b. GRANT NUMBER** PC171113 **5c. PROGRAM ELEMENT NUMBER**
6. AUTHOR(S) Karen Sfanos, Ph.D. E-Mail: ksfanos@jhmi.edu	**5d. PROJECT NUMBER** **5e. TASK NUMBER** **5f. WORK UNIT NUMBER**
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Johns Hopkins University 3400 N. Charles St. W400 Wyman Park Bldg Baltimore, MD 21218-2680	**8. PERFORMING ORGANIZATION REPORT**
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Development Command Fort Detrick, Maryland 21702-5012	**10. SPONSOR/MONITOR'S ACRONYM(S)** **11. SPONSOR/MONITOR'S REPORT NUMBER(S)**

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for Public Release; Distribution Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The Prostate Cancer Pathology Resource Network (which has since been renamed the Prostate Cancer Biorepository Network or PCBN) is a collaboration between the Johns Hopkins School of Medicine (JHU), the New York University School of Medicine (NYU), University of Washington (UW), Washington University (WU), and the Institute of Cancer Research (ICR). This Final Report covers the Coordinating Center report for award number W81XWH-18-2-0013.

15. SUBJECT TERMS

NONE LISTED

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON** USAMRDC
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(include area code)*
U	U	U	UU	30	

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

TABLE OF CONTENTS

1. INTRODUCTION:

The Prostate Cancer Biorepository Network (PCBN) is a collaboration between the Johns Hopkins School of Medicine (JHU), the New York University School of Medicine (NYU), the University of Washington (UW), Washington University (WU), Institute of Cancer Research (ICR) and the Department of Defense (DOD). The PCBN is organized with a **Coordinating Center** (JHU – led by Karen Sfanos, Ph.D.), and **Network Sites** at JHU (led by Angelo De Marzo, M.D., Ph.D.), NYU (led by Jonathan Melamed, M.D.), UW (led by Colm Morrissey, Ph.D.), Washington University (led by Bettina Drake, Ph.D.), and ICR (led by Johann de Bono, M.D., Ph.D.). The goal of the PCBN is to develop a biorepository with high quality, well-annotated specimens obtained in a systematic, reproducible fashion using optimized and standardized protocols, and an infrastructure to facilitate the growth of the resource and its wide usage by the prostate cancer research community. The specimens in the PCBN include tissues from prostatectomies and autopsies, serum, plasma, buffy coat, prostatic fluid, and derived specimens such as DNA and RNA, linked to clinical and outcome data, and supported by an informatics infrastructure. A website has been established to make the PCBN accessible to the prostate cancer research community: http://prostatebiorepository.org.

The PCRP first issued the program announcement for the PCPRN Award in spring of 2009. The award was described as providing infrastructure support for the development of a pilot prostate cancer biorepository consortium that - at the end of the 3 year funding period - would be positioned to function as a full-fledged biorepository. Although originally intended as a Network comprised of 3 sites, only JHU and NYU were awarded funding in June 2010. The first year of the award was devoted to planning and infrastructure development including developing a website and application process and developing policies for governance and specimen access. The PCBN began offering biospecimens to the research community in July 2011.

In 2013, we successfully competed for the second program announcement issued for a PCPRN Award and were awarded funding for the PCBN for 3 additional years. The PCBN was expanded from 2 to 4 Network Sites by adding investigators from UW and MSKCC. The WU Network Site was added to the PCBN in 2015 after successfully competing for a PCPRN program announcement for an additional site, bringing the total number of Network Sites to 5.

In 2017, we successfully competed for the third program announcement issued for a PCPRN Award and were awarded funding for the PCBN for an additional 3 years. The PCBN then added the first international site, the Institute of Cancer Research in the UK. The MSKCC site was not included in the most recent award (which only allows 5 Network Sites).

A fourth application for the PCPRN Award as a PCBN renewal grant was not funded in 2021, and this report consists of the final progress report for the PCBN.

2. KEYWORDS:

Biorepository, prostate cancer, biomarkers

3. ACCOMPLISHMENTS:

What were the major goals of the project?

Specific Aim 1: Collect, process, and store biospecimens annotated with clinical and pathology data from well-characterized populations of patients.
Specific Aim 2: Maintain an informatics infrastructure for secure data storage and transfer, and a web-accessible portal for users to learn about and access specimens from the PCBN.
Specific Aim 3: Continue to develop harmonized SOPs for biospecimen acquisition, processing, storage and quality control to increase the fidelity of biospecimens provided to investigators.
Specific Aim 4: Distribute biospecimens according to a prioritization plan to ensure maximal use by the prostate cancer research community.

What was accomplished under these goals?

Specific Aim 1: As reported over the years of PCBN Network Site progress reports, as a Network, we prospectively collected, processed and stored thousands of prostate cancer tissue specimens as well as biologic fluids from prostate cancer patients. We likewise prospectively constructed multiple tissue microarray (TMA) sets that we made available to the prostate cancer research community.

Specific Aim 2: We had informatics infrastructure in place at all Network Sites for specimen banking and data storage. We created a web-based tracking system for PCBN activities and specimen requests that was used by the Coordinating Center in tracking specimen requests and sample distribution. We also created a website for the PCBN in the first year of the first award that was available for users to learn about and access specimens from the PCBN.

Specific Aim 3: As a Network, we developed and made publicly available harmonized SOP protocols that covered all of our biobanking methods as well as the major tissue-oriented processes (such as harvesting prostatectomy fresh frozen tissue, fixation and processing, extracting DNA, RNA and protein, QC for DNA and RNA, and extracting serum and plasma) at each Network Site. We also provided our SOP protocols to the NCI Biospecimen Research Database. As of late 2018 through 1/19/2023 our protocols had been **downloaded 9,626 times**. We anticipate that this number increased in 2023, but will not receive the report until mid-January. We also published multiple collaborative biospecimen science publications as a Network (see Appendix).

Specific Aim 4: The infrastructure for the distribution of biospecimens (including associated IRB protocols and MTA processes) was built early into the first year of PCBN funding in 2011. Our infrastructure for prioritization as well as our biospecimen application and review process was also developed at this time.

Cumulatively, from the start of the PCBN, we filled **234 applications** for biospecimens. We likewise provided 79 letters of support for grant applications, 18 of which were funded or recommended for funding. The distribution of samples is summarized below:

TMA unstained sections: 1,692
H&E (TMA or whole tissue sections): 79
Unstained whole tissue sections: 1,526
FFPE tissue cores: 431
Frozen tissue samples: 258
RNA samples: 477
DNA samples: 229
Protein samples: 105
Serum samples: 1,809
Plasma samples: 223
Buffy coat samples: 262
Prostatic fluid samples: 216
H&E images: 117
Frozen cell pellets: 456
Her2 data: 456

What opportunities for training and professional development has the project provided?

While the project was not intended to provide training and professional development opportunities, the creation of the PCBN as a multi-institutional and eventually international collaborative resource provided rich opportunities for the faculty involved to gain knowledge and skills related to Network development and collaboration as well as management skills. The PCBN likewise provided an important opportunity for Dr. Sfanos to gain leadership experience as part of the current and final award.

How were the results disseminated to communities of interest?

Nothing to report.

What do you plan to do during the next reporting period to accomplish the goals?

Nothing to report.

4. IMPACT:

What was the impact on the development of the principal discipline(s) of the project?

The greatest impact of the PCBN is in the large number of published manuscripts and preprints (128 to date) that have resulted from the use of the PCBN resource. The full list of these manuscripts is given in the Appendix. This has included publications in high profile journals including Nature, PNAS, Cancer Research, New England Journal of Medicine (NEJM), Oncogene, Journal of Clinical Investigation (JCI), Clinical Cancer Research, Nature Communications, and Cancer Discovery. Manuscripts citing the use of the PCBN resource continue to be published and will likely continue beyond the submission date of this report. Biomarkers that have been studied and validated using the PCBN resource include AR-V7, SPARCL1, USP22, Gr-11 Myeloid Cells, YAP, Periostin, Asporin germline variants, α3β1 integrin, Mast cells, IL-6, IL-8, Loss of function ERF mutations, *HIST1H1A*, Scavenger receptor B1, CD38, Arylsulfatase B, long non-coding RNA DANCR, Mesenchymal stem cells, DHX15, MicroRNA-1246, MicroRNA-644a, PBOV1, MEIS1, MEIS2, Orphan nuclear receptor TLX, CD133, BMI1, COMMD3:BMI1 fusion, Notch3, UXT, RBM3, CD105, ROBO1/DOCK1, FAP, RET kinase, S100A4, miR-106a~363 cluster, miR-301a, miR-375, BRN4/BRN2, Syntaxin 6, Asporin, PEG10, and many more. We have also provided scanned images that have assisted with the development of artificial intelligence (AI) algorithms and prostate cancer predictive models.

What was the impact on other disciplines?

Our SOP protocols that were provided to the NCI Biospecimen Research Database and that have been heavily downloaded benefit research beyond the field of prostate cancer research.

What was the impact on technology transfer?

Nothing to report.

What was the impact on society beyond science and technology?

Nothing to report.

5. CHANGES/PROBLEMS:

Nothing to report.

Actual or anticipated problems or delays and actions or plans to resolve them

Nothing to report.

Nothing to report.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Significant changes in use or care of human subjects

Nothing to report.

Nothing to report.

Significant changes in use of biohazards and/or select agents

Nothing to report.

6. PRODUCTS:

- **Publications, conference papers, and presentations**

Journal publications.

Please see Appendix.

Books or other non-periodical, one-time publications.

Please see Appendix.

Other publications, conference papers and presentations.

Please see Appendix.

- **Website(s) or other Internet site(s)**

https://prostatebiorepository.org/
Since we no longer have the infrastructure to fill biospecimen requests as the PCBN, the website now only covers access to the Movember TMA sets.

- **Technologies or techniques**

Nothing to report.

- **Inventions, patent applications, and/or licenses**

Nothing to report.

- **Other Products**

Nothing to report.

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What individuals have worked on the project?

Name:	*Kare Sfanos*
Project Role:	*PI*
Nearest person month worked:	*1*
Contribution to Project:	*Dr. Sfanos has served as the Director of the PCBN.*
Name:	*Sarah Ernst*
Project Role:	*CC Data and Quality Control Specialist*
Nearest person month worked:	*3*
Contribution to Project:	*Ms. Ernst has assisted with specimen request intake, tracking, and documentation, website content and updates, specimen tracking and reporting.*
Name:	*Luke Mummert*
Project Role:	*Pathology Technician*
Nearest person month worked:	*3*
Contribution to Project:	*Mr. Mummert has assisted Sarah Ernst with specimen and documentation coordination.*

Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

Nothing to report.

What other organizations were involved as partners?

This program involved interactions between five network sites at NYU, WU, UW, and ICR in addition to Johns Hopkins.

8. SPECIAL REPORTING REQUIREMENTS

COLLABORATIVE AWARDS: N/A

QUAD CHARTS: N/A

9. APPENDICES:

Appendix

Studies Utilizing the PCBN Resource:

Low-dose carboplatin modifies the tumor microenvironment to augment CAR T cell efficacy in human prostate cancer models. L. H. Porter, J. J. Zhu, N. L. Lister, S. G. Harrison, S. Keerthikumar, D. L. Goode, R. Quezada Urban, D. J. Byrne, A. Azad, I. Vela, M. S. Hofman, P. J. Neeson, P. K. Darcy, J. A. Trapani, R. A. Taylor & G. P. Risbridger. Nature Communications volume 14, Article number: 5346 (2023)
ST6GAL1-mediated aberrant sialylation promotes prostate cancer progression. Emma Scott, Emily Archer Goode, Rebecca Garnham, Kirsty Hodgson, Margarita Orozco-Moreno, Helen Turner, Karen Livermore, Kyla Putri Nangkana, Fiona M Frame, Abel Bermudez, Fernando Jose Garcia Marques, Urszula L McClurg, Laura Wilson, Huw Thomas, Adriana Buskin, Anastasia Hepburn, Adam Duxfield, Kayla Bastian, Hayley Pye, Hector M Arredondo, Gerald Hysenaj, Susan Heavey, Urszula Stopka-Farooqui, Aiman Haider, Alex Freeman, Saurabh Singh, Edward W Johnston, Shonit Punwani, Bridget Knight, Paul McCullagh, John McGrath, Malcolm Crundwell, Lorna Harries, Rakesh Heer, Norman J Maitland, Hayley Whitaker, Sharon Pitteri, Dean A Troyer, Ning Wang, David J Elliott, Richard R Drake, Jennifer Munkley. Journal of Pathology. https://doi.org/10.1002/path.6152
Human C1q Tumor Necrosis Factor 8 (CTRP8) defines a novel tryptase+ mast cell subpopulation in the prostate cancer microenvironment. Sai Nivedita Krishnan, Thatchawan Thanasupawat, Leanne Arreza, G. William Wong, Karen Sfanos, Bruce Trock, Michel Arock, Girish Shah, Aleksandra Glogowska, Saeid Ghavami, Sabine Hombach-Klonisch, Thomas Klonisch. Biochimica et Biophysica Acta (BBA) - Molecular Basis of Disease. Volume 1869, Issue 5, June 2023, 166681
MED19 encodes two unique protein isoforms that confer prostate cancer growth under low androgen through distinct gene expression programs. Rachel Ruoff, Hannah Weber, Ying Wang, Hongying Huang, Ellen Shapiro, David Fenyö & Michael J. Garabedian. Scientific Reports volume 13, Article number: 18227 (2023)
Understanding the role of Pax5 in development of taxane-resistant neuroendocrine like prostate cancers. Samikshan Dutta, Sreyashi Bhattacharya, Hanna Harris, Ridwan Islam, Sanika Bodas, Navatha Polavaram, Juhi Mishra, Dipanwita Das, Parthasarathy Seshacharyulu, Achyuth Kalluchi, Anirban Pal, Manish Kohli, Subodh Lele, Michael Muders, Surinder Batra, Paramita Ghosh, Kaustubh Datta, Michael Rowley. https://doi.org/10.21203/rs.3.rs-3464475/v1
The role of GCNT1 mediated O-glycosylation in aggressive prostate cancer. Kirsty Hodgson, Margarita Orozco-Moreno, Emma Scott, Rebecca Garnham, Karen Livermore, Huw Thomas, Yuhan Zhou, Jiepei He, Abel Bermudez, Fernando Jose Garcia Marques, Kayla Bastian, Gerald Hysenaj, Emily Archer Goode, Rakesh Heer, Sharon Pitteri, Ning Wang, David J. Elliott & Jennifer Munkley. Scientific Reports volume 13, Article number: 17031 (2023)
Learning to predict prostate cancer recurrence from tissue images. Mahtab Farrokh, Neeraj Kumar, Peter H. Gann, Russell Greiner. Journal of Pathology Informatics. Available online 4 November 2023, 100344
The role of cytomegalovirus in prostate cancer incidence and mortality. Johanna Classon, Abigail Britten, Kanar Alkass, Henrik Druid, Nicole Brenner, Tim Waterboer, Nicholas J Wareham, Effrossyni Gkrania-Klotsas, Jonas Frisén. doi: https://doi.org/10.1101/2023.10.04.23296482

Role of GD2 and its biosynthetic enzyme GD3 synthase in prostate cancer tumorigenesis. Aaqib M. Bhat, Bhopal C. Mohapatra, Haitao Luan, Insha Mushtaq, Sukanya Chakraborty, Samikshan Dutta, Matthew D. Storck, Jane L. Meza, Subodh Lele, Ming-Fong Lin, Leah M. Cook, Eva Corey, Colm Morrissey, Donald W. Coulter, M. Jordan Rowley, Kaustubh Datta, Vimla Band, Hamid Band. doi: https://doi.org/10.1101/2023.03.18.533299
Regulation of Prostate Androgens by Megalin and 25-hydroxyvitamin D Status: Mechanism for High Prostate Androgens in African American Men. Jason Garcia; Kirsten D. Krieger; Candice Loitz; Lillian M. Perez; Zachary A. Richards; Yves Helou; Steve Kregel; Sasha Celada; Clementina A. Mesaros; Maarten Bosland; Peter H. Gann; Thomas E. Willnow; Donald Vander Griend; Rick Kittles; Gail S. Prins; Trevor Penning; Larisa Nonn. Cancer Research Communications (2023) 3 (3): 371–382.
Cytomegalovirus promotes proliferation and survival of prostate cancer cells and constitutes a therapeutic target. Johanna Classon, Moa Stenudd, Margherita Zamboni, Kanar Alkass, Carl-Johan Eriksson, Lars Pedersen, Alrik Schörling, Anna Thoss, Anders Bergh, Pernilla Wikström, Hans-Olov Adami, Henrik T Sørensen, Henrik Druid, Jonas Frisén. doi: https://doi.org/10.1101/2023.10.01.560348
γδ-Enriched CAR-T cell therapy for bone metastatic castrate-resistant prostate cancer. Jeremy S Frieling, Leticia Tordesillas, Xiomar E Bustos, Maria Cecilia Ramello, Ryan T Bishop, Junior E Cianne, Sebastian A Snedal, Tao Li, Chen Hao Lo, Janis de la Iglesia, Emiliano Roselli, Ismahène Benzaïd, Xuefeng Wang, Youngchul Kim, Conor C Lynch, Daniel Abate-Daga. Sci Adv . 2023 May 3;9(18):eadf0108. doi: 10.1126/sciadv.adf0108. Epub 2023 May 3.
Co-Expression and Clinical Utility of AR-FL and AR Splice Variants AR-V3, AR-V7 and AR-V9 in Prostate Cancer. *Wustmann N, Seitzer K, Humberg V, Vieler J, Grundmann N, Steinestel J, Tiedje D, Duensing S, Krabbe LM, Bogemann M, Schrader AJ, Bernemann C, Schlack K.* Biomarker Research. April 2023. https://doi.org/10.1186/s40364-023-00481-w
Upregulation of GALNT7 in Prostate Cancer Modifies O-glycosylation and Promotes Tumour Growth. Munkley J, Scott E, Hodgson K, Calle B, Turner H...Schumann B. Oncogene. February 2023. https://www.nature.com/articles/s41388-023-02604-x
Nanozyme-Catalysed CRISPR Assay for Preamplification-Free Detection of Non-Coding RNAs. *Broto M, Kaminski MM, Adrianus C, Kim N, Greensmith R, Dissanayake-Perera S, Schubert AJ, Tan X, Kim H, Dighe AS, Collins JJ, Stevens MM.* Nature Nanotechnology. August 2022. https://doi.org/10.1038/s41565-022-01179-0>
Neuropilin-2 Axis in Regulating Secretory Phenotype of Neuroendocrine-Like Prostate Cancer Cells and its Implication in Therapy Resistance. Islam R, Mishra J, Polavaram NS, Bhattacharya S, Hing Z, Bodas S, Sharma S, Bouska A, Gilbreath T, Said AM, Smith LM, Teply BA, Muders MH, Batra SK, Datta K, Dutta S. ScienceDirect. July 2022. https://doi.org/10.1016/j.celrep.2022.111097>
Ribonuclease 4 is Associated with Aggressiveness and Progression of Prostate Cancer. Vanli N, Sheng J, Li S, Xu Z, Hu G. Communications Biology. June 2022. https://doi.org/10.1038/s42003-022-03597-1>
Leptin Modulated microRNA-628-5p Targets Jagged-1 and Inhibits Prostate Cancer Hallmarks. Rios-Colon L, Chijioke J, Niture S, Afzal Z, Qi Q, Srivastava A, Ramalinga M, Kedir H, Cagle P, Arthur E, Sharma M, Moore J, Deep G, Suy S, Collins SP, Kumar D. Scientific Reports. June 2022. https://doi.org/10.1038/s41598-022-13279-x
Predicting Biochemical Recurrence of Prostate Cancer with Artificial Intelligence. Pinckaers H, van Ipenburg J, Melamed J, De Marzo A, Platz EA, van Ginneken B, van

der Laak J, Litjens G. Communications Medicine. June 2022. https://www.nature.com/articles/s43856-022-00126-3
Identification of Novel Biomarkers Differentially Expressed between African-American and Caucasian-American Prostate Cancer Patients. Ye F, Han X, Shao Y, Lo J, Zhang F, Wang J, Melamed J, Deng FM, Sfanos KS, De Marzo AM, Ren G, Wang D, Zhang D, Lee P. American Journal of Cancer Research. April 2022. Am J Cancer Res. 2022; 12(4): 1660–1670
A microRNA-based Classifier for Identification of Neuroendocrine Differentiation in Metastatic Castration-Resistant Prostate Cancer.. Saini S, Bhagirath D, Patel N, Sharma A, Lee TJ. Journal of Clinical Oncology. February 2022. DOI: 10.1200/JCO.2022.40.6_suppl.149 Journal of Clinical Oncology 40, no. 6_suppl (February 20, 2022) 149-149.
The Movember Global Action Plan 1 (GAP1)- Unique Prostate Cancer Tissue Microarray Resource. Ouellet V, Erickson A, Wiley K, Morrisse C, Berge V, Moreno CS, Tasken KA, Trudel, Trie LD, Lewis MS, Svindland A, Ertunc O, Vidal ID, Osunkoya AO, Jones T, Bova S, Lamminen T, Achtman AH, Buzza M, Kouspou MM, Bigler SA, Zhou X, Freeland SJ, Mes-Masson AM, Garray IP, Trock BJ, Taimen P, Saad F, Mirtti T, Knudsen BS, De Marzo AM. Cancer Epidemiology, Biomarkers & Prevention. February 2022. DOI: https://doi.org/10.1158/1055-9965.EPI-21-0600
Development and Validation of a Quantitative Reactive Stroma Biomarker (qRS) for Prostate Cancer Prognosis. Ruder S, Gao Y, Ding Y, Bu P, Miles B, De Marzo AM, Wheeler T, McKenney JS, Auman H, Fazli L, Simko J, Coll AH, Troyer DA, Carroll PR, Gleave M, Platz E, Trock V, Han M, Sayeeduddin M, True LD, Rowley D, Lin DW, Nelson PS, Thompson IM, Feng Z, Wei W, Brooks JD, Ittmann M, Lee M, Ayala G. Human Pathology. February 2022. DOI: https://doi.org/10.1016/j.humpath.2022.01.009
SOX2 mediates metabolic reprogramming of prostate cancer cells. de Wet L, Williams A, Gillard M, Kregel S, Lamperis S, Gutgesell LC, Vellky JE, Brown R, Conger K, Paner GP, Wang H, Platz EE, De Marzo AM, Mu P, Coloff JL, Szmulewitc RZ, Vander Griend DJ. Oncogene. January 2022. DOI: https://doi.org/10.1038/s41388-021-02157-x
Opposing Transcriptional Programs of KLF5 and AR Emerge During Therapy for Advanced Prostate Cancer. Che M, Chaturvedi A, Dehm SM. Nature Communications. November 2021. DOI: https://doi.org/10.1038/s41467-021-26612-1
MicroRNA miR-99b-5p Targets mTOR/AR axis, Induces Autophagy, and Inhibits Prostate Cancer Cell Proliferation. Niture S, Tricoli K, Qi Q, Gadi S, Hayes K, Kumar D. Research Square. October 2021. DOI: 10.21203/rs.3.rs-960315/v1
Small Extracellular Vesicle-Derived microRNAs Stratify Prostate Cancer Patients According to Gleason Score, Race and Associate with Survival of African American and Caucasian Men. Ali HEA, Gaballah MSA, Gaballa R, Mahgoub S, Hassan ZA, Toriah EA, Drake BF, Elmageed ZYA . MDPI. October 2021. DOI: https://doi.org/10.3390/cancers13205236
Loss of SELENOF Induces the Transformed Phenotype in Human Immortalized Prostate Epithelial Cells. King LK, Kadkol S, Sverdlov M, Kastrati I, Elhodaky M, Deaton R, Sfanos KS, Wang H, Liu L, Diamond AM. International Journal of Molecular Sciences. September 2021. DOI: https://doi.org/10.3390/ijms222112040
Plasma Glutamine as a Prognostic Biomarker in Localized Prostate Cancer: Comparison of Conventional Variables in Risk Stratification. Smith B, Kim S, Tighiouart M, Posadas EM, Chung L, Figlin RA, Bhowmick N, Gong J. Cancer Network. September 2021.
Altered Glucuronidation Deregulates Androgen Dependent Response Profiles and Signifies Castration Resistance in Prostate Cancer. Zimmer BM, Howell ME, Ma L,

Enders JR, Lehman D, Corey E, Barycki JJ, Simpson MA. Oncotarget Open Access Impact Journal. September 2021; DOI: 10.18632/oncotarget.28059
Expression and Subcellular Localization of Discoidin Domain Receptor 1 (DDR1) Define Prostate Cancer Aggressiveness. Bonfil DR, Chen W, Vranic S, Sohail A, Shi , Jang H, Kim HR, Prunotto M, Fridman R. Research Square Preprint. August 2021; DOI: 10.21203/rs.3.rs-746690/v1
Obesity is Associated with Shorter Telomere Length in Prostate Stromal Cells in Men with Aggressive Prostate Cancer. Joshu CE, Heapy CM, Barber JR, Lu J, Zarinshenas R, Davis C, Han M, Lotan TL, Sfanos KS, De Marzo AM, Meeker AK, Platz EA. Cancer Prevention Research. April 2021; DOI: 10.1158/1940-6207.CAPR-20-0250
Novel, Non-Invasive Markers for Detecting Therapy Induced Neuroendocrine Differentiation in Castration-Resistant Prostate Cancer Patients. Bhagirath D, Liston M, Akoto T, Lui B, Bensing BA, Sharma A, Saini S. Nature Scientific Reports. April 2021; https://doi.org/10.1038/s41598-021-87441-2
Tribbles 2 Confers Enzalutamide Resistance in Prostate Cancer by Promoting Lineage Plasticity. Monga J, Adrianto I, Rogers C, Gadgeel S, Chitale D, Alumkal JJ, Beltran H, Zoubeidi A, Ghosh J. bioRxiv The Preprint Server for Biology. March 2021; doi: https://doi.org/10.1101/2021.03.26.437250
Acetylation of KLF5 Maintains EMT and Tumorigenicity to Cause Chemoresistant Bone Metastasis in Prostate Cancer. Zhang B, Li Y, Qu Q, Xie L, Barwick B, Fu C, Li X, Wu D, Xia S, Chen J, Qian WP, Yang L, Osunkoya AO, Boise L, Vertino PM, Zhao Y, Li M, Chen H, Kowalski J, Kucuk O, Zho W, Dong J. Nature Communications. March 2021; https://doi.org/10.1038/s41467-021-21976-w
The Chemokine Receptor CCR3 is Potentially Involved in the Homing of Prostate Cancer Cells to Bone: Implication of Bone-Marrow Adipocytes. Guerard A, Lauren V, Fromont G, Esteve D, Gilhodes J, Bonnelye E, Le Gonidec S, Valet P, Malavaud B, Reina N, Attane C, Muller C. International Journal of Molecular Sciences. February 2021; https://doi.org/10.3390/ijms22041994
Inhibition of Serum Response Factor Improves Response to Enzalutamide in Prostate Cancer. Watson RW, Azam H, Aura C, Russell N, McCormack J, Corey E, Morrissey C, Crown J, Gallagher WM, Prencipe M. Cancers. November 2020; https://doi.org/10.3390/cancers12123540
RNA-binding protein DDX3 mediates posttranscriptional regulation of androgen receptor: A mechanism of castration resistance. Vellky JE, McSweeney ST, Ricke EA, Ricke WA. PNAS. October 2020; https://doi.org/10.1073/pnas.2008479117
Distinct Genomic Alterations in Prostate Tumors Derived from African American Men. Liu W, Zheng SL, Na R, Wei L, Sun J, Gallagher J, Wei J, Resurreccion WK, Ernst S, Sfanos KS, Isaacs WB, Xu J. Molecular Cancer Research. October 2020; DOI: 10.1158/1541-7786.MCR-20-0648
MicroRNA determinants of neuroendocrine differentiation in metastatic castration-resistant prostate cancer. Bhagirath D, Liston M, Patel N, Akoto T, Lui B, Yang TL, To DM, Majid S, Dahiya R, Tabatabai ZL, Saini S. Oncogene. October 2020; https://doi.org/10.1038/s41388-020-01493-8
Development and Prevalence of Castration-Resistant Prostate Cancer Subtypes. Vellky JE, Ricke WA. Neoplasia. November 2020; https://doi.org/10.1016/j.neo.2020.09.002
Histone Methyltransferase DOT1L Coordinates AR and MYC Stability in Prostate Cancer. Vatapalli R, Sagar V, Rodriguez Y, Zhao JC, Unno K, Pamarthy S, Lysy B, Anker J, Han H, Yoo YA, Truica M, Chalmers ZR, Giles F, Yu J, Chakravarti D, Carneiro B, Abdulkadir SA. Nature Communications. August 2020; DOI: https://doi.org/10.1038/s41467-020-18013-7

Targeting RET Kinase in Neuroendocrine Prostate Cancer. VanDeusen H, Ramropp JR, Morel KL...Morrissey C, Corey E, Nelson PS, Ellis L, Drake JM. Molecular Cancer Research. August 2020; DOI: 10.1158/1541-7786.MCR-19-1245
Imaging Fibroblast Activation Protein Alpha Improves Diagnosis of Metastatic Prostate Cancer with Positron Emission Tomography. Hintz HM, Gallant JP, Vander Griend DJ, Coleman IM, Nelson PS, LeBeau AM. Clinical Cancer Research. July 2020; DOI: 10.1158/1078-0432.CCR-20-1358
Identifying and Treating ROBO1−ve/DOCK1+ve Prostate Cancer: An Aggressive Cancer Subtype Prevalent in African American Patients. Ferrari MG, Ganaie AA, Shabenah A, Mansini AP, Wang L, Murugan P, Davicioni E, Wang J, Deng Y, Hoeppner LH, Warlick CA, Konety BR, Saleem M. The Prostate. July 2020; DOI: https://doi.org/10.1002/pros.24018
Prostate Cancer Liver Metastasis: Dormancy and Resistance to Therapy. Ma B, Wells A, Wei L, Zheng J. Seminars in Cancer Biology. July 2020; DOI: https://doi.org/10.1016/j.semcancer.2020.07.004
Neoadjuvant PROSTVAC prior to radical prostatectomy enhances T-cell infiltration into the tumor immune microenvironment in men with prostate cancer. Sater HA, Marté JL, Donahue RN,...Madan RA, Pinto PA, Gulley JL. Journal for ImmunoTherapy of Cancer. April 2020; DOI: 10.1136/jitc-2020-000655
Characterization of RNA-binding motif 3 (RBM3) Protein Levels and Nuclear Architecture Changes in Aggressive and Recurrent Prostate Cancer. Carleton NM, Zhu G, Miller MC, Davis C, Kulkarni P, Veltri RW. Cancer Reports. January 2020; DOI: https://doi.org/10.1002/cnr2.1237
High Extra-tumoral Mast Cell Counts are Associated with a Higher Risk of Adverse Prostate Cancer Outcomes. Sullivan HH, Heaphy CM, Kulac I, Cuka N, Lu J, Barber JR, De Marzo AM, Lotan TL, Joshu CE, Sfanos KS. Cancer Epidemiology, Biomarkers & Prevention. January 2020; DOI: 10.1158/1055-9965.EPI-19-0962
Diverse AR Gene Rearrangements Mediate Resistance to Androgen Receptor Inhibitors in Metastatic Prostate Cancer. Li Y, Yang R, Henzler CM...Maher CA, Feng FY, de Bono JS, Dehm SM. Clinical Cancer Research, AACR. January 2020; DOI: 110.1158/1078-0432.CCR-19-3023
Souble CD105 is Prognostic of Disease Recurrence in Prostate Cancer Patients. Placencio-Hickok VR, Madhav A, Kim S, Duong F, Angara B, Liu Z, Bhowmick NA. Endocrine-Related Cancer. January 2020; DOI:
IL8 Expression is Associated with Prostate Cancer Aggressiveness and Androgen Receptor Loss in Primary and Metastatic Prostate Cancer. Maynard JP, Ertunc O, Kulac I, Baena-Del Valle JA, De Marzo AM, Sfanos KS. Molecular Cancer Research. January 2020; DOI: 10.1158/1541-7786.MCR-19-0595
Racial Difference in Prostate Cancer Cell Telomere Lengths in Men with Higher-Grade Prostate Cancer: A Clue to Racial Disparity in Prostate Cancer Outcomes. Heaphy CM, Joshu CE, Barber JR, Davis C, Zarinshenas, De Marzo AM, Lotan TL, Sfanos KS, Meeker AK, Platz EA. Cancer Epidemiology, Biomarkers & Prevention. January 2020; DOI: 10.1158/1055-9965.EPI-19-1462
BRN4 is a novel driver of neuroendocrine differentiation in castration-resistant prostate cancer and is selectively released in extracellular vesicles with BRN2. Bhagirath D, Yang TL, Tabatabai ZL, Majid S, Dahiya R, Tanaka Y, Saini S. Clinical Cancer Research. November 2019; DOI: 10.1158/1078-0432.CCR-19-0498
Enzalutamide-induced PTHIR-mediated TGFBR2 decrease in osteoblasts contributes to resistance in prostate cancer bone metastases. Su S, Coa J...Chen B, Yu H, Li X. bioRxiv. November 2019; DOI: https://doi.org/10.1101/829044

Sequencing Small Non-coding RNA from Formalin-fixed Tissues and Serum-derived Exosomes from Castration-resistant Prostate Cancer Patients. Bhagirath D, Dahiya R, Majid S, Tabatabai ZL, Saini S. JOVE. November 2019; DOI: 10.3791/60549
Exploitation of CD133 for the Targeted Imaging of Lethal Prostate Cancer. Glumac PM, Gallant JP, Shapovalova M, Li Y, Murugan P, Gupta S, Coleman I, Nelson PS, Dehm SM, LeBeau AM. Clinical Cancer Research, AACR. November 2019; DOI: 10.1158/1078-0432.CCR-19-1659
Syntaxin 6-Mediated Exosome Secretion Regulates Enzalutamide Resistance in Prostate Cancer. Peak TC, Panigrahi GK, Praharaj PP, Su Y...Vander Griend DJ...Deep G. Molecular Carcinogenesis. November 2019; DOI: https://doi.org/10.1002/mc.23129
PEG10 Promoter-Driven Expression of Reporter Genes Enables Molecular Imaging of Lethal Prostate Cancer. Shapovalova M, Lee JK, Li Y, Vander Griend DJ, Coleman I, Nelson PS, Dehm SM, LeBeau AM. Cancer Research. September 2019; DOI: 10.1158/0008-5472.CAN-19-2181
Centrosome Loss Results in an Unstable Genome and Malignant Prostate Tumors. Wang M, Nagle RB, Knudsen BS, Cress AE, Rogers GC. Oncogene. September 2019; DOI:https://doi.org/10.1038/s41388-019-0995-z
Cancer/Testis Antigens Differentially Expressed in Prostate Cancer: Potential New Biomarkers and Targets for Immunotherapies. Kagohara LT, Carleton NM, Takahasi S, Shiraishi T, Mooney SM, Vessella RL, Getzenberg RH, Kulkarni P, Veltri RW. bioRxiv. August 2019; DOI: https://doi.org/10.1101/646869
COMMD3:BMI1 Fusion and COMMD3 Protein Regulate C-MYC Transcription: Novel Therapeutic Target for Metastatic Prostate Cancer. Umbreen S, Banday MM, Jamroze A, Mansini AP, Ganaie AA, Ferrari MG, Maqbool R, Beigh FH, Murugan P, Morrissey C, Corey E, Konety BR, Saleem M. Molecular Cancer Therapeutics. August 2019; DOI: 10.1158/1535-7163.MCT-19-0150
Multi-Immersion Open-Top Light-Sheet Microscope for High-Throughput Imaging of Cleared Tissues. Glaser AK, Reder NP, Chen Y, Yin C, Wei L, Kang S, Barner LA, Xie W, McCary EF, Mao C, Halpern AR, Stoltzfus CR, Daniels JS, Gerner MY, Nicovich PR, Vaughan JC, True LD, Liu JTC. Nature Communications. July 2019; DOI: 2781.
Comparative Analysis of AR Variant AR-V567es mRNA Detection Systems Reveals Eminent Variability and Questions the Role as a Clinical Biomarker in Prostate Cancer. Bernemann C, Humberg V, Thielen B, Steinestel J, Chen X, Duensing S, Schrader AJ, Boegemann M. Clinical Cancer Research. July 2019; DOI: 10.1158/1078-0432.CCR-18-4276
Molecular Profiling Stratifies Diverse Phenotypes of Treatment-Refractory Metastatic Castration-Resistant Prostate Cancer. Labrecque MP,...Nelson PS, Morrissey C. Journal of Clinical Investigation. July 2019; DOI: https://doi.org/10.1172/JCI128212.
Upregulation of Scavenger Receptor B1 is Required for Steroidogenic and Nonsteroidogenic Cholesterol Metabolism in Prostate Cancer. Gordon JA, Noble JW, Midha A, Derakhshan F, Wang G, Adomat HH, Tomlinson Guns ES, Lin YY, Ren S, Collins CC, Nelson PS, Morrissey C, Wasan KM, Cox ME. Cancer Research. July 2019; DOI: 10.1158/0008-5472.CAN-18-2529
Asporin Restricts Mesenchymal Stromal Cell Differentiation, Alters the Tumor Microenvironment, and Drives Metastatic Progression. Hughes RM, Simons BW, Khan H, Miller R...Isaacs JT, Brennen WN, Park BH, Hurley PJ. Cancer Research. May 2019; DOI: 10.1158/0008-5472.CAN-18-2931
Prostate-Specific Loss of UXT Promotes Cancer Progression. Wang Y, Schafler ED, Thomas PA, Ha S, David G, Adney E, Garabedian MJ, Lee P, Logan SK. Oncotarget. January 2019; DOI: 10.18632/oncotarget.26573

DHX15 is Up-Regulated in Castration-Resistant Prostate Cancer and Required for Androgen Receptor Sensitivity to low DHT Concentrations. Xu Y, Song Q, Pascal LE, Zhong M, Zhou Y, Zhou J, Deng FM, Huang J, Wang Z. The Prostate. February 2019; DOI: https://doi.org/10.1002/pros.23773
Role of a Novel-Race Related Tumor Suppressor microRNA Located in Frequently Deleted Chromosomal Locus 8p21 in Prostate Cancer Progression. Bhagirath D, Yang TL, Tabatabai ZL, Shahryari V, Majid S, Dahiya R, Tanaka Y, Saini S. Carcinogenesis Integrative Cancer Research. March 2019; DOI: https://doi.org/10.1093/carcin/bgz058
MicroRNA-644a Disrupts Oncogenic Transformation and Warburg Effect by Directly Downregulating Multiple Genes of Tumor-Promoting Pathways. Ebron JS, Shankar E, Singh J, Sikand K, Weyman CM, Gupta S, Linder DJ, Liu X, Campbell MJ, Shukla GC. Cancer Research. February 2019; DOI: 10.1158/0008-5472.CAN-18-2993
Targeting FOXA1-Mediated Repression of TGF-B Signaling Supresses Castration-Resistant Prostate Cancer Progression. Song B, Park SU, Zhao JC, Fong K, Li S, Lee Y, Yang YA, Sridhar S, Lu X, Abdulkadir SA, Vessella RL, Morrissy C, Kuzel TM, Catalona W, Yang X, Yu J. J Clin Invest. February 2019; DOI: 10.1172/JCI122367
Inhibition of De Novo Lipogenesis Targets Androgen Reeptor Signaling in Castration-Resistant Prostate Cancer. Zadra G, Ribeiro CF, Chetta P, Ho Y, Cacciatore S, Gao X, Syamala S, Bango C, Photopoulos C, Huang Y, Tyekucheva...Adams J, Peluso S, Dehm S, Plymate SR, Loda M. Proc Natl Acad Sci USA. Jan 2019; DOI: 10.1073/pnas.1808834116
Therapeutic Considerations for Ron Receptor Expression in Prostate Cancer. Brown NE, Sullivan C, Waltz SE. EMS Cancer Science Journal. July 2018; PMCID: PMC6377156
A Method to Quantify Centrosomes at Single-Cell Level in Human Normal and Cancer Tissue. Wang M, Knudsen BS, Nagle RB, Rogers GC, Cress AE, Zheng Y. Molecular Biology of the Cell. January 2019; doi.org/10.1091/mbc.E18-10-0651
Androgen Receptor Splice Variant-7 Expression Emerges with Castration Resistance in Prostate Cancer. Sharp A, Coleman I, Yuan W, Sprenger C, Dolling D, Rodrigues DN, Russon JW, Figueiredo I, Dertan C, Seed G, Riisnaes R, Uo T, Neeb A, Welti J, Morrissey C, Carreira S, Luo J, Nelson PS, Balk SP, True LD, de Bono JS, Plymate SR. J Clin Invest. January 2019; doi.org/10.1172/JCI122819
Adding the Team to T1 Translation Research: A Case Study of Multidisciplinary Team Science in the Evaluation of Biomarkers of Prostate Cancer Risk and Prognosis. Marrone MT, Joshu CE, Peskoe SB, De Marzo AM, Heaphy CM, Lupold SE, Meeker AK, Platz EA. Clinical Chemistry. December 2018; doi: 10.1373/clinchem.2018.293365
Tumor-Infiltrating Mesenchymal Stem Cells: Driver of the Immunosuppressive Tumor Microenvirnoment in Prostate Cancer? Krueger TE, Thorek DLJ, Meeker AK, Isaacs JT, Brennen WN. The Prostate. November 2018; doi: https://doi.org/10.1002/pros.23738
CD38 is Methylated in Prostate Cancer and Regulates Extracellular NAD+. Mottahedeh J, Haffner MC, Grogan TR, Crowell PD, Beltran H, Sboner A, Bareja R, Esopi D, Isaacs WB, Yegnasubramanian S, Rettig MB, Elashoff DA, Platz EA, De Marzo AM, Teitell MA, Goldstein AS. Cancer and Metabolism. September 2018; doi: https://doi.org/10.1186/s40170-018-0186-3
RNA-Binding Motif 3 Protein Expression and Nuclear Architecture Changes as a Combined Biomarker to Predict Aggressive and Recurrent Prostate Cancer. Carleton NM, Zhu G, Miller MC, Davis C, Veltri RW. Cancer Research Frontiers. July 2018; doi: 10.17980/2017.192
Abstract 1070: Discoidin Domain Receptor 1 (DDR1): A Potential Suppressor of Prostate Cancer Progression. Bonfil RD, Sohail A, Vranic S, Oliveria DS, Shi D, Chen

W, Jang H, Saliganan AD, Wasinski BD, Kim HRC, Fridman RA. AACR. July 2018; doi: 0.1158/1538-7445.AM2018-1070
Effect of Preanalytic Variables on an Automated PTEN Immunohistochemistry Assay for Prostate Cancer. Guedes LA, Morais CL, Fedor H, Hicks J, Gurel B, Melamed J, Lee P, Gopalan A, Knudsen BS, True LD, Scher HI, Trock BJ, De Marzo AM, Lotan TL. Archives of Pathology and Laboratory Medicine. May 2018; doi: https://doi.org/10.5858/arpa.2018-0068-OA
Cell-type Specific Expression of Oncogenic and Tumor Suppressive microRNAs in the Human Prostate and Prostate Cancer. Kumar B, Rosenberg AZ, Choi SM, Fox-Talbot K, De Marzo AM, Nonn L, Brennen WN, Marchionni L, Halushka MK, Lupold SE. Sci Rep. May 2018; doi:
Notch3 Promotes Prostate Cancer-Induced Bone Lesion Development via MMP-3. Ganguly SS, Hostetter G, Tang L, Frank S, Saboda K, Mehra R, Wang L, Li X, Keller ET, Miranti CK. Oncogene. June 2018; doi:
BMI1 drives metastasis of prostate cancer in Caucasian and African-American men and is a potential therapeutic target: hypothesis tested in race-specific models. Ganaie A, Beigh FH, Astone M, Ferrari MG, Maqbool R, Umbreen S, Parray AS, Siddique HR, Hussain T, Murugan P, Morrissey C, Koochekpour S, Deng Y, Konety B, Hoeppner L, Saleem M. Clinical Cancer Research, August 2018; doi:
Prostate cancer susceptibility gene HIST1H1A is a modulator of androgen receptor signaling and epithelial to mesenchymal transition. Williams KA, Lee M, Winter JM, Gildea DE, Calagua C, Curry NA, Lichtenberg J, Ye H, Crawford NPS. Oncotarget, June 2018; doi:
Novel Junction-specific and Quantifiable In Situ Detection of AR-V7 and its Clinical Correlates in Metastatic Castration-resistant Prostate Cancer. Zhu Y, Sharp A, Anderson CM, Silberstein JL, Taylor M, Lu C, Zhao P, De Marzo AM, Antonarakis ES, Wang M, Wu X, Luo Y, Su N, Rodrigues AN, Figueiredo I, Welti J, Park E, Ma XJ, Luo J. European Urology, May 2018; doi: 10.1016/j.eururo.2017.08.009
The identification of a novel antibody for CD133 using human antibody phage display. Glumac PM, Forster CL, Zhou H, Murugan P, Gupta S, LeBeau AM. The Prostate, May 2018; doi: 10.1002/pros.23656
ETS2 is a prostate basal cell marker and is highly expressed in prostate cancers aberrantly expressing p63. Torres A, Alshalalfa M, Davicioni E, Gupa A, Yegnasubramanian S, Wheelan SJ, Epstein JI, De Marzo AM, Lotan TL. The Prostate, May 2018; doi: 10.1002/pros.23646
Systemic surfaceome profiling identifies target antigens for immune-based therapy in subtype of advanced prostate cancer. Lee JK, Bangayan NJ, Chai T, Smith BA, Pariva TE, Yun S, Vashisht A, Zhang Q, Park JW, Corey E, Huang J, Graeber TG, Wohlshlegel J, Witte ON. PNAS, February 2018; doi: 10.1073/pnas.1802354115
Microsatellite instability in prostate cancer by PCR or next-generation sequencing. Hempelmann J.A, Lockwood C.M, Konnick E.Q, Schweizer M.T, Antonarakis E.S, Lotan T.L, Montgomery B, Nelson P.S, Klemfus N, Salipante S.J, Pritchard C.C. Journal for Immunotherapy of Cancer, April 2018; doi: 10.1186/s40425-018-0341-y
MEIS1 and MEIS2 Expression and Prostate Cancer Progression: A Rolde fo HOXB13 Binding Partners in Metastatic Disease. Bhanvadia R.D, VanOpstall C, Brechka H, Barashi N.S, Gillard N.S, Gillard M, McAuley E.M, Apiz J, Paner G.P, Chan W, Andrade J, De Marzo A, Han M, Szmulewitz R.Z, Vander Griend D..J. Clinical Cancer Research, May 2018; doi: 10.1158/1078-0432.CCR-17-3673

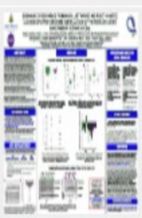
Orphan nuclear receptor TLX contributes to androgen insensitivity in castration-resistant prostate cancer via its repression of androgen receptor transcription. Jia L, Wu D, Wang Y, You W, Wang Z, Xiao L, Cai G, Xu Z, Zou C, Wang F, Yuen-Chun J, Ng C, Chen F. Oncogene, March 2018; doi: 10.1038/s41388-018-0198-z
PBOV1 as a potential biomarker for more advanced prostate cancer based on protein and digital histomorphometric analysis. Carleton NM, Zhu G, Gorbounov M, Miller MC, Pienta KJ, Resar LM, Veltri RW. The Prostate, March 2018; doi: 10.1002/pros.23499
MicroRNA-1246 is an exosomal biomarker for aggressive prostate cancer. Bhagirath D, Yang TL, Bucay N, Sekhon K, Majid S, Shahryari V, Dahiya R, Tanaka Y, Saini S. Cancer Research, December 2017; doi: 10.1158/0008-5472
MYC Targeted Long Non-Coding RNA DANCR Promotes Cancer in Part by Reducing p21 Levels. Lu Y, Hu Z, Mangala KS, Stine ZE, Hu X, Jiang D, Xiang Y, Zhang Y, Pradeep S, Rodriguez-Aguayo C, Lopez-Berestein G, DeMarzo A, Sood AK, Zhang L, Dang CV. Cancer Research, September 2017; doi: 10.1158
Arylsulfatase B is Reduced in Prostate Cancer Recurrences. Feferman L, Deaton R, Bhattacharyya S, Xie H, Gann PH, Melamed J, Tobacman JK. IOS Press Content Library, December 2017; doi: 10.3233
Identifying Dysregulated Epigenetic Enzyme Activity in Castrate-Resistant Prostate Cancer Development. Lee JH, Yang B, Lindahl AJ, Damaschke N, Boersma MD, Huang W, Corey E, Jarrard DF, Denu JM. ACS, September 2017; doi: 10.1021
DHX15 promotes prostate cancer progression by stimulating Siah2-mediated ubiquitination of androgen receptor. Jing Y, Nguyen MM, Wang D, Pascal LE, Guo W, Xu Y, Ai J, Deng FM, Masoodi KZ, Yu X, Zhang J, Nelson JB, Xia S and Wang Z. Oncogene, February 2018; doi: 10.1038
Mesenchymal stem cell infiltration during neoplastic transformation of the human prostate. W. Nathaniel Brennen, Baohui Zhang, Ibrahim Kulac, L. Nelleke Kisteman, Lizamma Antony, Hao Wang, Alan K. Meeker, Angelo M. De Marzo, Isla P. Garraway, Samuel R. Denmeade, John T. Issacs Oncotarget, February 2018; doi: 10.18632
Automated analysis of co-localized protein expression in histologic sections of prostate cancer. Thomas A. Tennill, Mitchell E. Gross, Hermann D. Frieboes PLOS One, May 2017; doi: 10.371
Exome Sequencing of African-American Prostate Cancer Reveals Loss-of-Function ERF Mutations. Franklin W. Huang, Juan Miguel Mosquera, Andrea Garofalo, Coyin Oh, Maria Baco, Ali Amin-Mansour, Bokang Rabasha, Samira Bahl, Stephanie A. Mullane, Brian D. Robinson, Saud Aldubayan, Francesca Khani, Beerinder Karir, Eejung Kim, Jeremy Chimene-Weiss, Matan Hofree, Alessandro Romanel, Joseph R. Osborne, Jong Wook Kim, Gissou Azabdaftari, Anna Woloszynska-Read, Karen Sfanos, Angelo M. De Marzo, Francesca Demichelis, Stacey Gabriel, Eliezer M. Van Allen, Jill Mesirov, Pablo Tamayo, Mark A. Rubin, Isaac J. Powell, and Levi A. Garraway Cancer Discovery, May 2017; doi: 10.1158/2159-8290.CD-16-0960
Differential Long-Term Stability of microRNAs and RNU6B snRNA in 12-20 Year Old Archived Formalin-Fixed Paraffin-Embedded Specimens. Sarah B. Peskoe, John R. Barber, Qizhi Zheng, Alan K. Meeker, Angelo M. De Marzo, Elizabeth A. Platz and Shawn E. Lupold BMC Cancer, January 2017; doi: 10.1186/s12885-016-3008-4
Low Intratumoral Mast Cells are Associated with a Higher Risk of Prostate Cancer Recurrence. Heidi A Hempel, Nathan S Cuka, Ibrahim Kulac, John R Barber, Toby C Cornish, Elizabeth A Platz, Angelo M De Marzo, Karen S Sfanos. The Prostate, March 2017; doi: 10.1002/pros.23280
α3β1 Integrin Suppresses Prostate Cancer Metastasis via Regulation of the Hippo Pathway. Afshin Varzavand, Will Hacker, Deqin Ma, Katherine Gibson-Corley, Maria

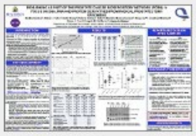
Hawayek, Omar J. Tayh, James A. Brown, Michael D. Henry and Christopher S. Stipp Cancer Research, September 2016; doi: 10.1158/0008-5472.CAN-16-1483
Prediction of Prostate Cancer Recurrence using Quantitative Phase Imaging: Validation on a General Population. Shamira Sridharan, Virgilia Macias, Krishnarao Tangella, Jonathan Melamed, Emily Dube, Max Xiangtian King, Andre Kajdacsy-Balla and Gabriel Popescu Scientific Reports, September 2016; 6: 33818. doi: 10.1038/srep33818
Analytic Validation of RNA In Situ Hybridization (RISH) for AR and AR-V7 Expression in Human Prostate Cancer. Liana B. Guedes, Carlos L. Morais, Fawaz Almutairi, Michael C. Haffner, Qizhi Zheng, John T. Issacs, Emmanuel S. Antonarakis, Changxue Lu, Harrison Tsai, Jun Lup, Angelo M. De Marzo, and Tamara L. Lotan Clinical Cancer Research, September 2016; DOI: 10.1158/1078-0432.CCR-16-0205
Identification of miR-30b-5p as Direct Regulators of Androgen Receptor Signaling in Prostate Cancer by Complementary Functional microRNA Library Screening. Binod Kumar, Salar Khalenghzadegan, Brian Mears, Koji Hatano, Tarana A. Kudrolli, Wasim H. Chowdhury, David B. Yeater, Charles M. Ewing, Jun Luo, William B. Issacs, Luigi Marchionni and Shawn E. Lupold Oncotarget, September 2016; doi: 10.1158/0008-5472.CAN-16-1483
ACSL4 Promotes Prostate Cancer Growth, Invasion and Hormonal Resistance. Wu X, Deng F, Li Y, Daniels G, Du X, Ren Q, Wang J, Wang LH, Yang Y, Zhang D, Ye F, Melamed J, Monaco ME, Lee P Oncotarget, December 2015; doi: 10.18632/oncotarget.6438
A Paracrine Role for IL6 in Prostate Cancer Patients: Lack of Production by Primary or Metastatic Tumor Cells. Shu-Han Yu, Qizhi Zheng, David Esopi, Anne Macgregor-Das, Jun Luo, Emmanuel S. Antonarakis, Charles G. Drake, Robert Vessella, Colm Morrissey, Angelo M. De Marzo, and Karen S. Sfanos Cancer Immunology Research, October 2015; 3(10):1175–84. doi: 10.1158/2326-6066.CIR-15-0013
Germline Variants in Asporin Vary by Race, Modulate the Tumor Microenvironment and are Differentially Associated with Metastatic Prostate Cancer. Paula J. Hurley, Debasish Sundi, Brian Shinder, Brian W. Simons, Robert M. Hughes, Rebecca M. Miller, Benjamin Benzon, Sheila F. Faraj, George J. Netto, Ismael A. Vergara, Nicholas Erho, Elai Davicioni, R. Jeffrey Karnes, Guifang Yan, Charles Ewing, Sarah D. Isaacs, David M. Berman, Jennifer R. Rider, Kristina M. Jordahl, Lorelei A. Mucci, Jessie Huang, Steven S. An, Ben H. Park, William B. Isaacs, Luigi Marchionni, Ashley E. Ross, and Edward M. Schaeffer Clinical Cancer Research, Oct 7, 2015. doi: 10.1158/1078-0432.CCR-15-0256
A Novel Quantitative Multiplex Tissue Immunoblotting for Biomarkers Predicts a Prostate Cancer Aggressive Phenotype. Guangjing Zhu, Zhi Liu, Jonathan I. Epstein, Christine Davis, Christhunesa S. Christudass, H. Ballentine Carter, Patricia Landis, Hui Zhang, Joon-Yong Chung, Stephen M. Hewitt, M. Craig Miller, and Robert W. Veltri Cancer Epidemiol Biomarkers Prev., Sept 24, 2015; 24(12):1864-72. doi: 10.1158/1055-9965.EPI-15-0496
Molecular Evidence That Invasive Adenocarcinoma Can Mimic Prostatic Intraepithelial Neoplasia (PIN) and Intraductal Carcinoma Through Retrograde Glandular Colonization. Michael C. Haffner, Christopher Weier, MengMeng Xu, Ajay Vaghasia, Bora Gürel, Berrak Gümüşkaya, David M. Esopi, Helen Fedor, Hsueh-Li Tan, Ibrahim Kulac, Jessica Hicks, William B. Isaacs, Tamara L. Lotan, William G. Nelson, Srinivasan Yegnasubramanian, Angelo M. De Marzo The Journal of Pathology, Aug 31, 2015; 238(1):31–41. doi: 10.1002/path.4628

Overexpression of Periostin in Stroma Positively Associated with Aggressive Prostate Cancer. Yuan Tian, Caitlin H. Choi, Qing Kay Li, Farah B. Rahmatpanah, Xin Chen, Sara Ruth Kim, Robert Veltri, David Chia, Zhen Zhang, Dan Mercola, Hui Zhang PLoS One, June 4, 2015; 10(6):e0130333. doi: 10.1371/journal.pone.0130333
A Gold Nanoparticle-Enabled Blood Test for Early Stage Cancer Detection and Risk Assessment. Tianyu Zheng, Nickisha Pierre-Pierre, Xin Yan, Qun Huo, Alvin Almodovar, Felipe Valerio, Inoel Rivera-Ramirez, Elizabeth Griffith, David D Decker, Sixue Chen, and Ning Zhu ACS Appl. Mater. Inter., March 10th 2015; 7(12):6819-27. doi: 10.1021/acsami.5b00371
The Hippo Pathway Effector, YAP, Regulates Motility, Invasion and Castration-Resistant Growth of Prostate Cancer Cells. Lin Zhang, Shuping Yang, Xingcheng Chen, Seth Stauffer, Fang Yu,Subodh M. Lele, Kai Fu, Kaustubh Datta, Nicholas Palermo, Yuanhong Chen, and Jixin Dong Mol. Cell. Biol., Feb 2015; 35(8):1350-62. doi:10.1128/MCB.00102-15
LEF1 Targeting EMT in Prostate Cancer Invasion is Mediated by miR-181a. Jiaqian Liang, Yirong Li, Garrett Daniels, Karen Sfanos, Angelo De Marzo, Jianjun Wei, Xin Li, Wenqiang Chen, Jinhua Wang, Xuelin Zhong, Jonathan Melamed, Jun Zhao, and Peng Lee
Investigation of miR-21, miR-141, and miR-221 Expression Levels in Prostate Adenocarcinoma for Associated Risk of Recurrence After Radical Prostatectomy. Qizhi Zheng, Sarah B. Peskoe, Judit Ribas, Fatema Rafiqi, Tarana Kudrolli, Alan K. Meeker, Angelo M. De Marzo, Elizabeth A. Platz, and Shawn E. Lupold Prostate, Dec 2014; 74(16):1655-62. doi: 10.1002/pros.22883
Tumour-infiltrating Gr-11 Myeloid Cells Antagonize Senescence in Cancer. Diletta Di Mitri, Alberto Toso, Jing Jing Chen, Manuela Sarti, Sandra Pinton, Tanja Rezzonico Jost, Rocco D'Antuono, Erica Montani, Ramon Garcia-Escudero, Ilaria Guccini, Sabela Da Silva-Alvarez, Manuel Collado, Mario Eisenberger, Zhe Zhang, Carlo Catapano, Fabio Grassi and Andrea Alimonti Nature, 2014 Nov 6; 515(7525):134-137. doi: 10.1038/nature13638
AR-V7 and Resistance to Enzalutamide and Abiraterone in Prostate Cancer. Emmanuel S. Antonarakis, Changxue Lu, Hao Wang, Brandon Luber, Mary Nakazawa, Jeffrey C. Roeser, Yan Chen, Tabrez A. Mohammad, Yidong Chen, Helen L. Fedor, Tamara L. Lotan, Qizhi Zheng, Angelo M. De Marzo, John T. Isaacs, William B. Isaacs, Rosa Nadal, Channing J. Paller, Samuel R. Denmeade, Michael A. Carducci, Mario A. Eisenberger, and Jun Luo N. Engl. J. Med., Sep 2014; 371:1028-1038. doi: 10.1056/NEJMoa1315815
AR-Regulated TWEAK-FN14 Pathway Promotes Prostate Cancer Bone Metastasis. JuanJuan Yin, Yen-Nien Liu, Heather Tillman, Ben Barrett, Stephen Hewitt, Kris Ylaya, Lei Fang, Ross Lake, Eva Corey, Colm Morrissey, Robert Vessella, and Kathleen Kelly Cancer Res., Aug 2014; 74: 4306 - 4317. doi: 10.1158/0008-5472.CAN-13-3233
Hepatocyte Growth Factor-Like Protein is Required for Prostate Tumor Growth in the TRAMP Mouse Model. Vasiliauskas J, Nashu MA, Pathrose P, Starnes SL, Waltz SE Oncotarget., 2014 Jul 30; 5(14):5547-58.
USP22 Regulates Oncogenic Signaling Pathways to Drive Lethal Cancer Progression. Randy S. Schrecengost, Jeffry L. Dean, Jonathan F. Goodwin, Matthew J. Schiewer, Mark W. Urban, Timothy J. Stanek, Robyn T. Sussman, Jessica L. Hicks, Ruth C. Birbe, Rossitza A. Draganova-Tacheva, Tapio Visakorpi, Angelo M. De Marzo, Steven B. McMahon, and Karen E. Knudsen Cancer Res., Jan 2014; 74: 272 - 286. doi: 10.1158/0008-5472.CAN-13-1954

TBLR1 as an Androgen Receptor (AR) Coactivator Selectively Activates AR Target Genes to Inhibit Prostate Cancer Growth. Garrett Daniels, Yirong Li, Lan Lin Gellert, Albert Zhou, Jonathan Melamed, Xinyu Wu, Xinming Zhang, David Zhang, Daniel Meruelo, Susan K Logan, Ross Basch, and Peng Lee Endocr. Relat. Cancer, Jan 2014; 21:127-142. doi: 10.1530/ERC-13-0293
Tracking the Clonal Origin of Lethal Prostate Cancer. Michael C. Haffner, Timothy Mosbruger, David M. Esopi, Helen Fedor, Christopher M. Heaphy, David A. Walker, Nkosi Adejola, Meltem Gürel, Jessica Hicks, Alan K. Meeker, Marc K. Halushka, Jonathan W. Simons, William B. Isaacs, Angelo M. De Marzo, William G. Nelson and Srinivasan Yegnasubramanian J. Clin. Invest., Nov 2013; 123(11):4918–4922. doi: 10.1172/JCI70354
Phosphorylation of the Androgen Receptor by PIM1 in Hormone Refractory Prostate Cancer. S Ha, N J Iqbal, P Mita, R Ruoff, W L Gerald, H Lepor, S S Taneja, P Lee, J Melamed, M J Garabedian and S K Logan Oncogene, Sep 2013; 32(34):3992-4000. doi: 10.1038/onc.2012.412
Secreted Protein, Acidic and Rich in Cysteine-Like 1 (SPARCL1) is Down Regulated in Aggressive Prostate Cancers and is Prognostic for Poor Clinical Outcome. Paula J. Hurley, Luigi Marchionni, Brian W. Simons, Ashley E. Ross, Sarah B. Peskoe, Rebecca M. Miller, Nicholas Erho, Ismael A. Vergara, Mercedeh Ghadessi, Zhenhua Huang, Bora Gurel, Ben Ho Park, Elai Davicioni, Robert B. Jenkins, Elizabeth A. Platz, David M. Berman, and Edward M. Schaeffer PNAS, Sep 2012; 109:14977-14982. doi: 10.1073/pnas.1203525109
Regulation of a Novel Androgen Receptor Target Gene, the Cyclin B1 Gene, Through Androgen-Dependent E2F Family Member Switching. Yirong Li, David Y. Zhang, Qinghu Ren, Fei Ye, Xin Zhao, Garrett Daniels, Xinyu Wu, Brian Dynlacht, and Peng Lee Mol. Cell. Biol., Jul 2012; 32:2454-2466. doi: 10.1128/MCB.06663-11

PCBN Publications and Published Abstracts:

	If This is True, What Does it Imply? How End-User Antibody Validation Facilitates Insights into Biology and Disease. *Sfanos KS, Yegnasubramanian S, Nelson WG, Lotan TL, Kulac I, Hicks JL, Zheng Q, Bieberich CJ, Haffner MC, De Marzo AM.* Asian Journal of Urology, January 2019. https://doi.org/10.1016/j.ajur.2018.11.006
	Prostate Cancer Biorepository (Flyer). 2018 AACR Annual Meeting. April 14-18, 2018. Chicago, IL.
	LuCaP Prostate Cancer Patient-Derived Xenografts Reflect the Molecular Heterogenetiry of Advanced Disease and Serve as Models for Evaluating Cancer Therapeutics. *Nguyen HM, Vessella RL, Morrissey C, Brown LG, Coleman IM, Higano CS, Mostaghel EA, Zhang X, True LD, Lam HM, Roudier M, Lange PH, Nelson PS, Corey E.* The Prostate, May 2017. doi:10.1002/pros.23313.
	Rapid Loss of RNA Detection by In Situ Hybridization in Stored Tissue Blocks and Preservation by Cold Storage of Unstained Slides. *Baena-Del Valle J , Zheng Q, Hicks J, Fedor H, Trock B, Morrissey C, Core E, Cornish TC, Sfanos KS, De Marzo AM.* American Journal of Clinical Pathology. October 2017; doi: 10.1093/ajcp/aqx094
	Biobanking of Derivatives from Radical Retropubic and Robot-Assisted Laparoscopic Prostatectomy Tissues as Part of the Prostate Cancer Biorepository Network. *Darshan M, Zheng Q, Fedor HL, Wyhs N, Yegnasubramanian S, Lee P, Melamed J, Netto GJ, Trock BJ, De Marzo AM, Sfanos KS.* Prostate. 2014 Jan;74(1):61-9. doi: 10.1002/pros.22730. Epub 2013 Sep 21.
	Biobanking of Derivatives from Radical Retropubic and Robot−Assisted Laparoscopic Prostatectomy Tissues as part of the Prostate Cancer Biorepository Network (PCBN). Society for Basic Urological Research (SBUR) Meeting. November 15-18, 2012. Miami, FL

	The Prostate Cancer Biospecimen Network (PCBN) *Pe Benito R, Fedor H, Gorman M, Netto G, Sfanos KS, Kolmer P, Darshan M, Morgan J, Lee P, De Marzo AM, Trock BJ, Melamed JM.* ISBER 2012 Annual Meeting & Exhibits. May 15-18 2012. Vancouver, British Columbia, Canada.
	Prostate Cancer Biorepository (Flyer). 2012 AACR Annual Meeting. March 31-April 4 2012. Chicago, IL.
	Biobanking as Part of the Prostate Cancer Biorepository Network (PCBN): A focus on DNA, RNA and Protein Derivative from Radical Prostatectomy Specimens. *Darshan M, Fedor H, Zheng Q, Kolmer P, Pe Benito R, Gorman M, Lee P, Melamed JM, Trock BJ, De Marzo AM, Sfanos KS.* OBBR BRN Symposium. February 22-23 2012
	Ischemia / Fixation Trial Tissue Microarray. *Pe Benito R, Fedor H, Gorman M, Netto G, Sfanos KS, Kolmer P, Darshan M, Morgan J, Lee P, De Marzo AM, Trock BJ, Melamed JM.* OBBR BRN Symposium. February 22-23 2012
	Prostate Cancer Biorepository Network: Prostate Cancer Specimens for Your Research (Flyer). CDMRP IMPaCT 2011 Conference. March 9-12 2011. Orlando, FL.
	The Prostate Cancer Biorepository Network (PCBN). CDMRP IMPaCT 2011 Conference. March 9-12 2011. Orlando, FL.