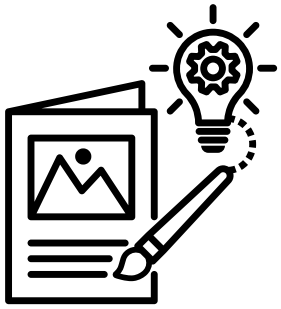
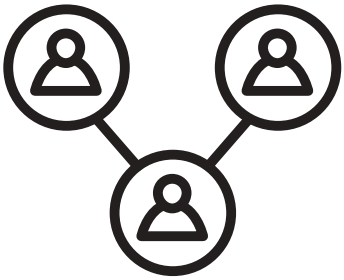
Carbone Cancer Center Research 2024 Lay Abstracts

Carbone Community Outreach & Engagement Team:



We create lay abstracts to share cancer research with our community. Sharing this research can help better understand and treat cancer in Wisconsin and beyond.

Lay abstracts are shared with:



- Community partners
- Advocacy boards
- Scientists from different fields
- Philanthropy groups

View Abstracts

https://cancer.wisc.edu/resources-for-the-community/

Contact

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jebird@wisc.edu

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How to talk about alcohol and cancer risk

What's the problem?

2 in 3 adults with cancer drink alcohol, but often do not know this can cause worse health outcomes

What did we study?

We asked 12 cancer doctors and 13 people with cancer experiences about how to discuss alcohol drinking and cancer risk.

What did we find?

Cancer doctors do not regularly talk with patients about alcohol and cancer risk. Patients want doctors to talk with them about alcohol in a non-judgmental way.

What's next?

In cancer settings, doctors can use a tool called Screening and Brief Intervention for alcohol drinking and non-judgmental terms to talk about alcohol and cancer risk.

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Freiberg, Carroll, LoConte. Poster presented at American College of Physicians Meeting in 2024.

Increasing clinical trial involvement of rural and Native Americans

Community health educators can provide education to **build partnerships** with rural communities.

Researchers **provided education on clinical trials** from the Center to Reduce Cancer Health Disparities. 62 people from rural and Native American communities in northern Wisconsin did the education.

What did we find?

After the education, rural and Native American individuals were more likely to want to be involved in clinical trials.

What's next?

This educational training can improve involvement of rural and Native American groups in future studies.

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Carroll et al. Building Partnerships to Improve Clinical Trial Accrual in Rural and Native American Communities through Community Health Educator Interventions. . ASCO QCS 2024.

How doctors talk about clinical trials

What did we study?

We asked 21 cancer doctors to talk to model patients about cancer treatments.

What did we find?

- < 1 in 2 doctors recommended the patient join a clinical trial.
- Doctors spent less time talking about clinical trials with Black compared to White patients.

Doctors need support to talk about clinical trials more equitably.

Doctors could benefit from having support and structured discussions with patients to communicate clinical trial information.

Research Article

Monica Arun Patel et al. JCO 2024.

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Finding New Treatments for Breast Cancer

Triple-Negative Breast Cancer (TNBC)

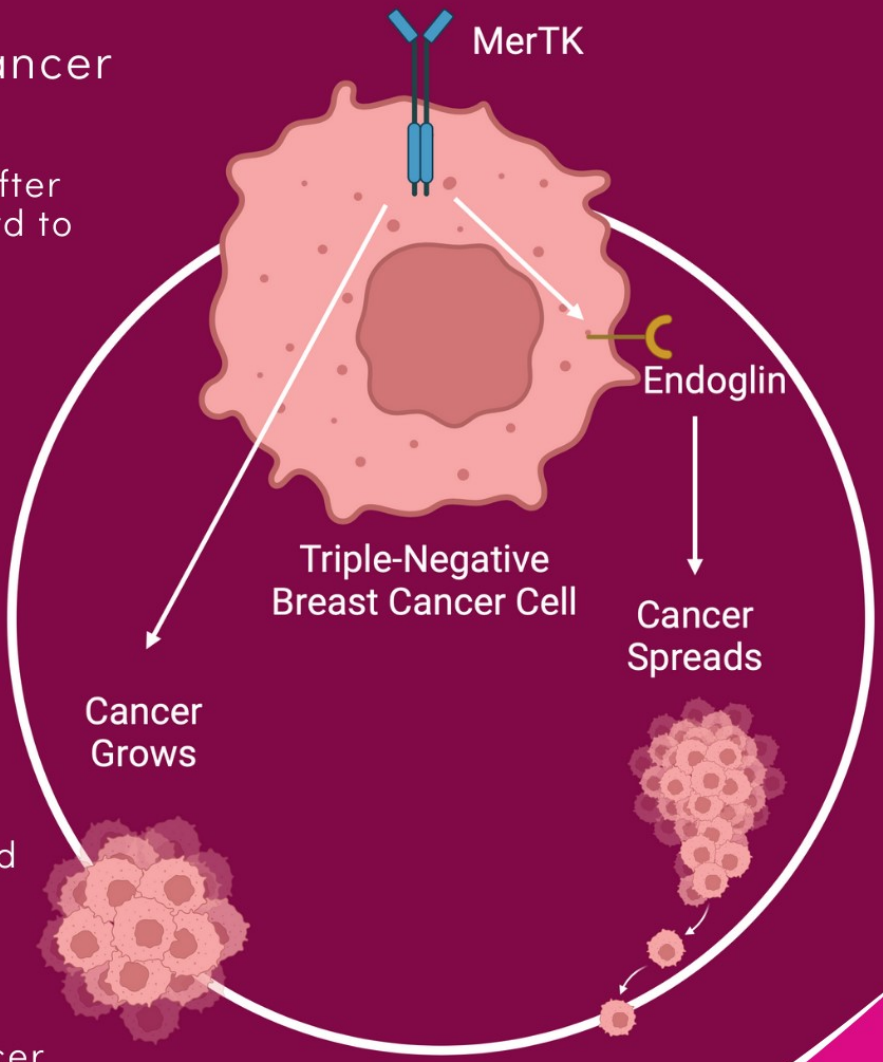
- Few people survive 5 years after TNBC diagnosis, and it is hard to treat
- TNBC cancer cells lack 3 different hormone receptors, which are normally used for cancer treatment

MerTK

- Protein on surface of cells
- Increases growth and spread of cancer

Finding New Treatments

- Scientists studied TNBC and MerTK in cells and mice to find new cancer treatments
- TNBC cells had a lot of MerTK
- Cancer cells with more MerTK grew faster
- MerTK may be spreading cancer in the body by affecting another protein called endoglin
- Future treatments could target MerTK and endoglin to stop TNBC cancer from growing and spreading



Research Article

Citation

Iida, M.; Crossman, B.E.; Kostecki, K.L.; Glitchev, C.E.; Kranjac, C.A.; Crow, M.T.; Adams, J.M.; Liu, P.; Ong, I.; Yang, D.T.; et al. MerTK Drives Proliferation and Metastatic Potential in Triple-Negative Breast Cancer. Int. J. Mol. Sci. 2024, 25, 5109.

Where can we focus our fight against colorectal cancer?

Researchers combined information from many population studies on people who were screened for, had, or died with colorectal cancer.

Lower socioeconomic status areas
(low income, education, and job status)

Fewer people screened for colorectal cancer

More people had or died with colorectal cancer

This study tells us that we could focus resources for colorectal cancer screening and care in areas with lower socioeconomic status.

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LoConte et al. Poster presented at ASCO Quality Care Symposium, 2024.

Colorectal Cancer Screening among Black Americans

Colorectal Cancer

Access to stool test kits can increase screening.
We want to know Black populations' opinions and knowledge of this test.

What did we study?

We interviewed 79 Black individuals to ask about awareness, experience with, and opinions about home testing for colorectal cancer.

Black Americans shared that they:

Would use home tests to screen for colorectal cancer

Care about how **accurate and convenient** the test is

Older individuals **preferred to have a colonoscopy**

What's next?

Community health workers can **raise awareness** by sharing information about home stool kits.

Future research needs to ask different populations about their preferences for screening.

Research Abstract

Keiser et al. JCO 2024.

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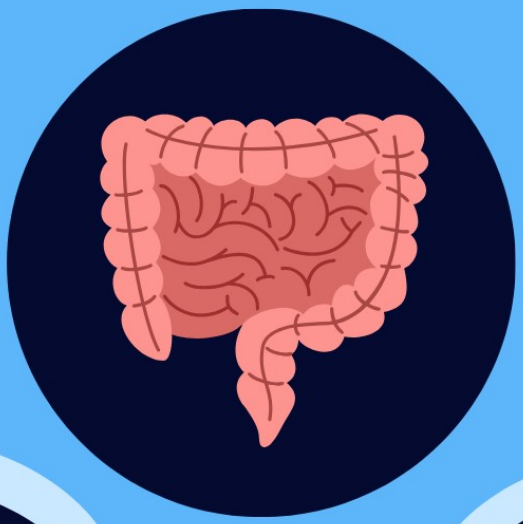
How Bile Acids Impact Colorectal Cancer

Bile acids help the colon absorb and move nutrients



>100,000 people each year get colorectal cancer

3rd leading cause of cancer deaths

Bile Acid
7 - OXO - DCA

Scientists studied how these bile acids impacted cancer in cells and in mice

Bile Acid
3 - OXO - LCA

More tumors and an environment that can lead to cancer in the gut

Less growth of cancer cells, better gut function, fewer tumors

May be related to colorectal cancer

May be useful in treatment of colorectal cancer

More research by this team:

This research helps us understand how colorectal cancer happens and how to better treat it.

Research on 3-OXO-LCA:

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F. Sun, X. Dong, M. Qi, T. Fu. AACR 2024.

Dong, Xingchen; Sun, Fei; Fu, Ting. DDW 2023.

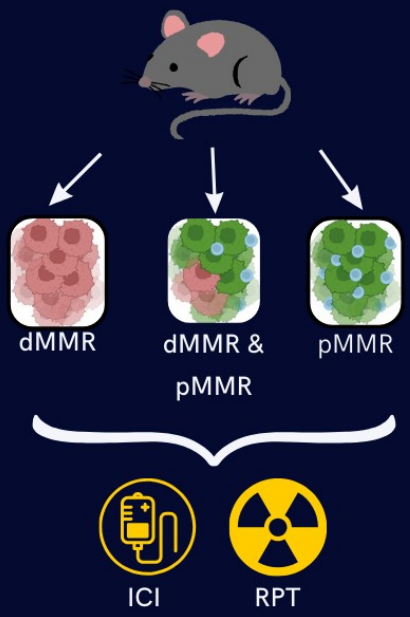
Testing Colorectal Cancer Treatments in Mice

RESEARCH ABSTRACT

WHY DO WE USE MICE TO STUDY CANCER?

Before testing cancer treatments in humans, scientists test how well they work in other animals. Mice are often used for testing because we can change their DNA, see cancers in them, and test treatments quickly. However, mice do not naturally grow all the same cancers as humans. For this study, the scientists changed mice DNA so they would grow colorectal cancers that are seen in humans.

WHAT DID WE STUDY?



Human colorectal cancer often has dMMR and pMMR cells. dMMR cells lack a DNA repair protein, while pMMR cells have the repair protein. These two types of cancer cells may need different treatments.

To study colorectal cancer treatments, scientists changed mice DNA so they would grow cancers that have dMMR, pMMR, and a mix of the two cell types.

The scientists gave these mice cancer treatments called immune checkpoint inhibition (ICI) therapy and radiopharmaceutical therapy (RPT) to see how well they worked against dMMR and pMMR cancer cells.

WHAT DID WE LEARN?

dMMR colorectal cancer cells may be best treated by RPT followed by ICI.
pMMR colorectal cancer cells are not well treated by ICI but can be treated with RPT.

WHAT'S NEXT?

ICI and RPT treatments may be tested in clinical trials in humans with dMMR colorectal cancer cells.

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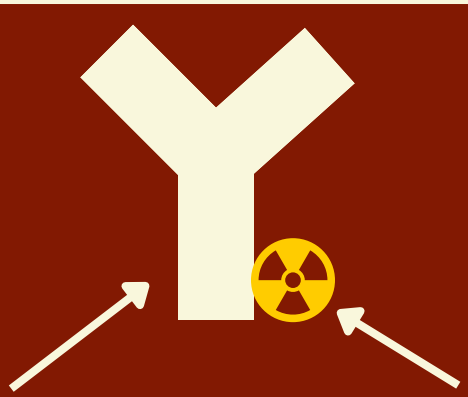
Santina M. Snow, Dawn Albrecht, Paul A. Clark, Caroline P. Kerr, Joseph J. Grudzinski, Justin J. Jeffery, Hansel Comas Rojas6, Reinier Hernandez6, Kristina A. Matkowskyj, Jamey P. Weichert, Zachary S. Morris, Richard B. Halberg. AACR 2024.

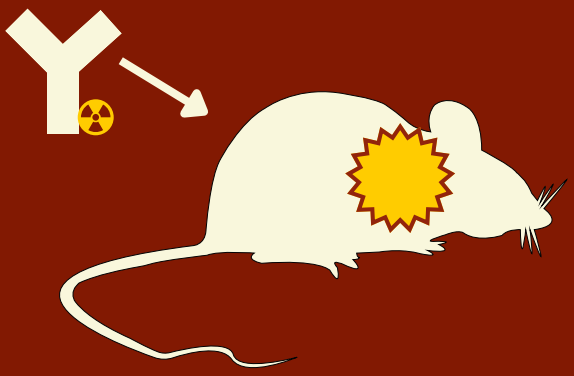
Camels, Cancers, Clues

In head and neck cancer, a protein called MET drives cancer growth and spread
Researchers tried to see MET to give us clues to better find and treat cancer

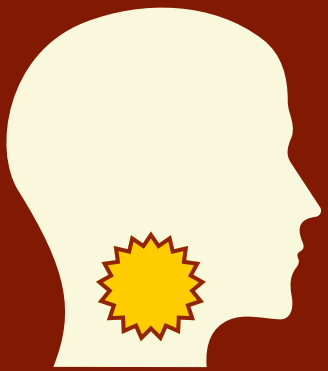


Researchers used a camelid antibody, naturally found in camels, binds to MET

Radioactive molecule, lets us see the camelid antibody and MET in PET scans



In mice, the camelid antibody binds to MET in head and neck tumors and lights up in a PET scan



Next, researchers will test the camelid antibody in humans to see if it is safe and can find cancers that have MET protein

Minne, et al. Mol Pharm. 2024 Dec 2;21(12):6376–84.

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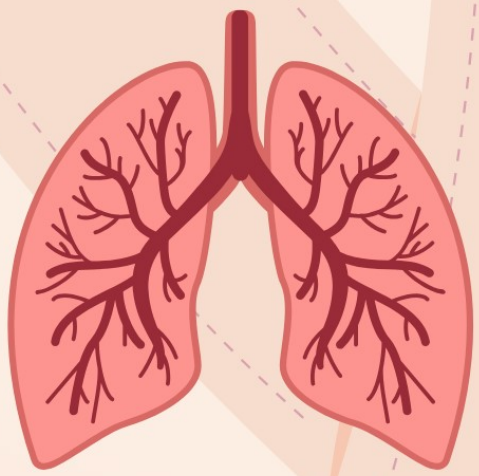
How can we better treat lung cancer?

Our DNA has a gene called MET that helps cells stay healthy and grow normally. When MET is mutated, cancer can grow and spread.



Scientists found that lung cancer tumors with different MET gene mutations may need different cancer treatments.

Future studies can look at what cancer treatments may work best for lung cancers with different MET mutations. This research helps us know how to better treat lung cancer.

Poster abstract from Javeri et al. AACR 2024:

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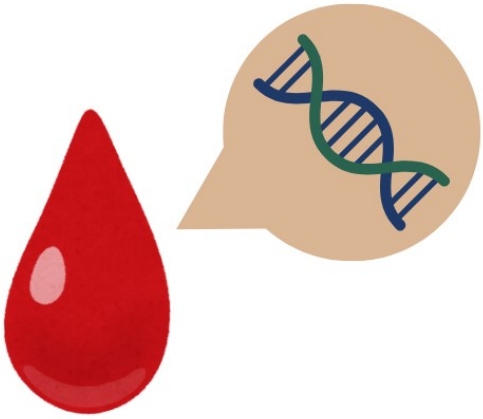
KIMPLE LAB
PRECISION CURATIVE MEDICINE

How blood tests can help us treat skin cancer

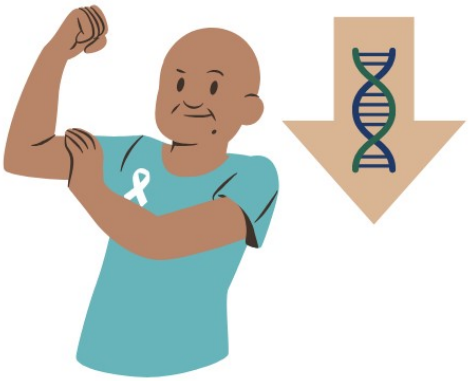
the goal



When someone has skin cancer, circulating tumor DNA (ctDNA) can be found in the blood

Testing blood for ctDNA may tell us whether cancer treatments are working

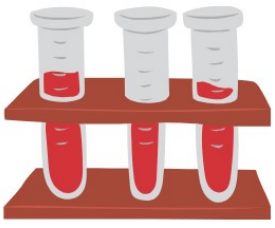
the findings



Patients with better cancer outcomes had lower ctDNA levels as early as 3-4 weeks after immunotherapy (cancer treatment)

Next, we need studies with more patients to see if this ctDNA blood test can help us find the best treatment strategy for cancer patients

the study



We tested ctDNA levels in blood from 46 advanced skin cancer patients before and after cancer treatment

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Vincent Ma, Yeonhee Park, Janmesh Patel, Madison Harris, Matthew Mannino, Jennifer Schehr, Alexander Birbrair, Shuang Zhao, Joshua Lang. ASCO 2024.

Research on Skin Cancer

How do we treat skin cancer?

One type of skin cancer treatment is immune checkpoint blockade (ICB) therapy. This therapy helps the body's immune system to kill cancer cells.

ICB does not work well for most skin cancers.

Why does ICB not work on all skin cancers?

Skin cancer cells have a lot of the protein called MZB1. In this study, the scientists found that MZB1 in skin cancer cells affects immune responses, which makes it hard for ICB therapy to work.

What's next?

Future studies can look at how to target MZB1 so that ICB therapy can better treat melanoma.

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G. Chhabra, C. A. Shirley, J. M. Krien, M. A. Ndiaye, N. Ahmad. A potential oncogenic role and immunoregulatory mechanisms of MZB1 in melanoma. AACR 2024.

Research on Skin Cancer

What did we study?

Melanoma (skin cancer) cells have 10 types of frizzled proteins (FZD). We wanted to see how one of the proteins, FZD7, affects cancer. We studied FZD in cells in a lab and in mice.

What did we find?

Melanoma cells have a lot of FZD7 protein. FZD7 proteins may be increasing growth and spread of melanoma cancer.

What's next?

We will study how FZD7 proteins make melanoma grow and spread in the body.

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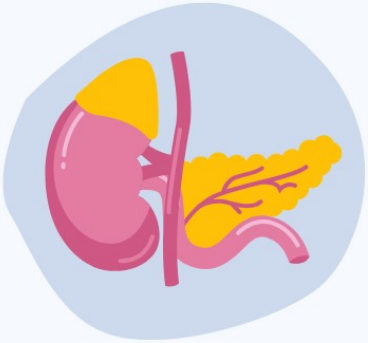
M. Nihal, S. A. Umar, A.-B. A. Chang, N. Ahmad, H. Chang. Role of Frizzled 7 in melanoma development and metastasis. AACR 2024.

Treating Pancreatic Cancer

What Did We Study?



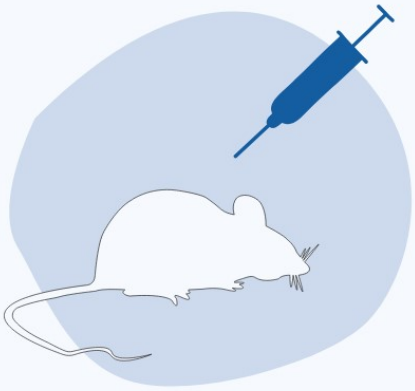
- Many people die from pancreatic cancer
- Cancer in the pancreas is hard to treat
- We tested two treatments in cells, first on their own, then together

What Did We Learn?

- On their own, the treatments did not work well
- Together, the treatments worked well against cancer

What's Next?

- Test both treatments together in animals
- See if they are safe for humans to use next



Scan For More Info

L. J. Koeppel, A. Stram, R. J. Millikin, E. Riedl, M. Hossan, E. Lin, R. Stewart, J. D. Kratz. AACR Meeting 2024.

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Wisconsin Prostate Cancer SPORE

Improving Prostate Cancer Outcomes

What is the Prostate Cancer SPORE?

The UW Prostate Cancer Specialized Program of Research Excellence (SPORE) is funded by the National Cancer Institute and has a team of researchers at UW Carbone Cancer Center working to improve outcomes for prostate cancer patients. The program funds training and research to develop the next generation of prostate cancer researchers and cutting-edge studies.

What are we studying?

The researchers study prostate cancer, from individual cells in a lab to people in clinical trials. There are three main research projects of the Prostate Cancer SPORE.

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Wisconsin Prostate Cancer SPORE
Project 1:

Understanding resistance to prostate cancer treatments

What do we know?

Advanced and metastatic (spreading) prostate cancer is very deadly. This cancer often is resistant to treatment.

What will we study?

Researchers will study prostate cancer cells from patients. In the lab, they will test how the area around cancer cells affects the cancer and look for better treatments for early prostate cancers.

What do we want to find out?

Researchers want to know what is happening in the tumor microenvironment, which is the area around the cancer cells. This can tell us what is causing resistance to treatment and what is allowing cancer to spread in the body.

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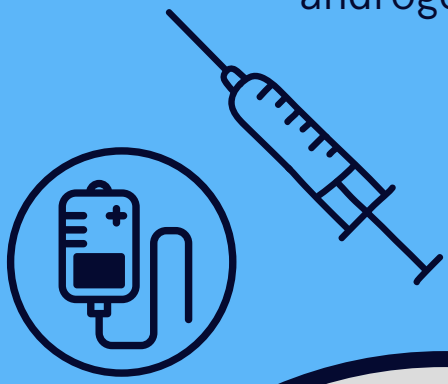
Wisconsin Prostate Cancer SPORE Project 2:

Creating new prostate cancer treatments

What do we know?

One type of cancer treatment uses vaccines. Anti-tumor vaccines target specific proteins in cancer cells, and can treat prostate cancer. One protein to target is the androgen receptor.



What do we want to find out?

Researchers want to know how to best use this new cancer vaccine with the hormone therapy usually used to treat prostate cancer.

What will we study?

Researchers will test the androgen receptor vaccine and immunotherapy treatment together in the lab, and in human clinical trials.

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Wisconsin Prostate Cancer SPORE
Project 3:

Improving outcomes for patients with treatment resistant prostate cancer

What do we know?

Metastatic castration-resistant prostate cancer (mCRPC) is hard to treat. This cancer spreads to multiple spots in the body. Some of these spots cannot be treated with hormone therapy.

What will we study?

Researchers will use new computer analysis tools to find cancer cells in patients that are not responding to treatment and target these with radiation therapy in clinical trails.

What do we want to find out?

In this project, researchers want to know if treating individual cancer spots that don't respond to hormone treatment with radiation will help hormone treatment work longer on the rest of the cancer cells and give the patient better outcomes.

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Wisconsin Prostate Cancer SPORE

The Next Generation: Funding Training and Research

Career Enhancement Program (CEP)

To move our research findings into care for patients with prostate cancer, we need scientists with special knowledge. The CEP provides formal training for scientists who want to find new prevention and treatment for prostate cancer.

Developmental Research Program (DRP)

This program supports new and unique cancer studies that will improve survival and quality of life for people with prostate cancer. We fund smaller studies than can become larger projects of the Wisconsin Prostate SPORE or be funded by other institutes.

CEP

DRP

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