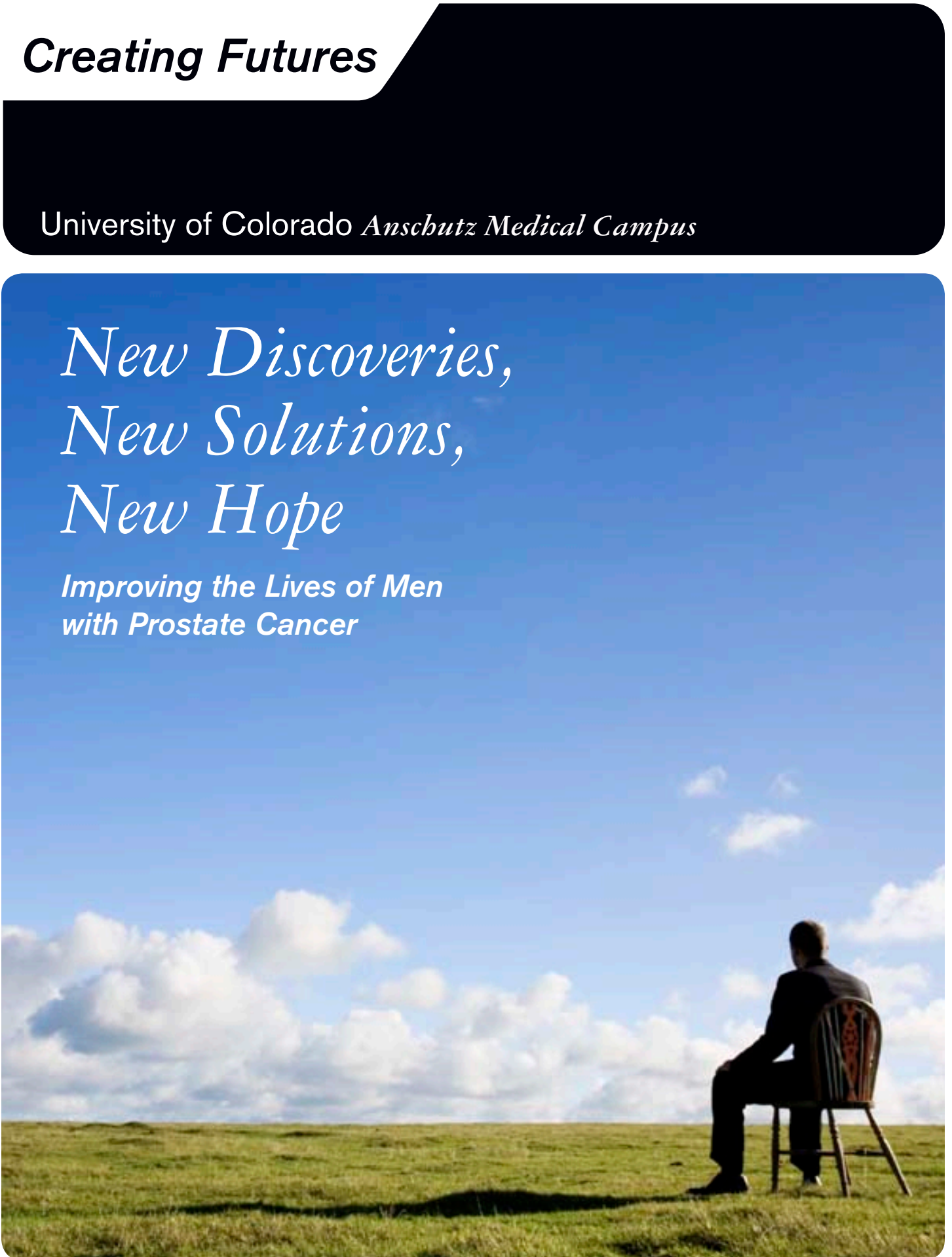


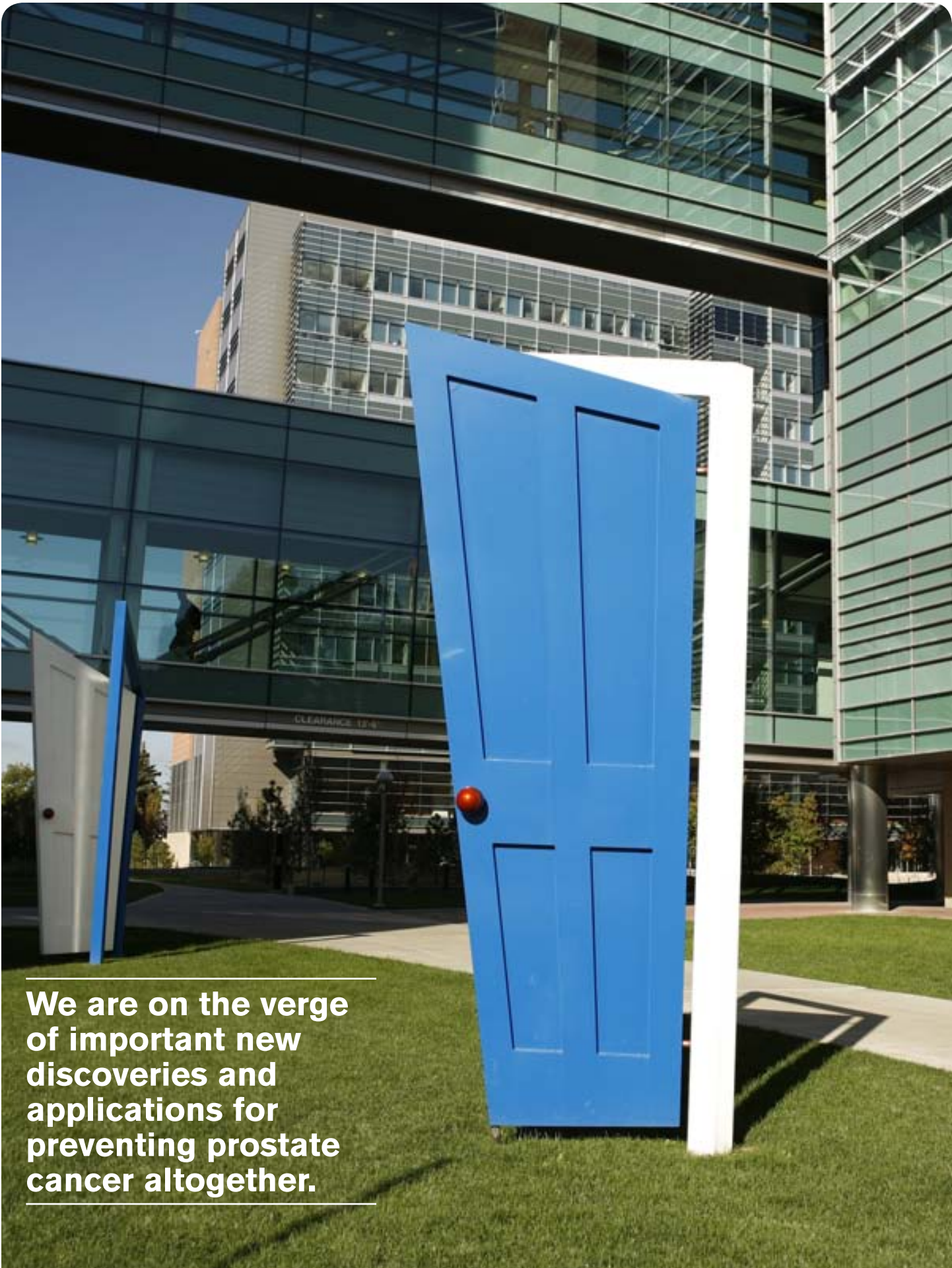
# *Creating Futures*

University of Colorado *Anschutz Medical Campus*

*New Discoveries,  
New Solutions,  
New Hope*

*Improving the Lives of Men  
with Prostate Cancer*





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**We are on the verge  
of important new  
discoveries and  
applications for  
preventing prostate  
cancer altogether.**

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# New Hope for Men with Prostate Cancer

At the University of Colorado Anschutz Medical Campus, we are dedicated to solving the challenges of prostate cancer. We know the answer lies in a combination of prevention, early diagnosis and improved treatment, and we have the experience and vision to address all three of these vital elements.


Through the new Prostate Cancer Research Initiative, we are deepening our commitment to basic and clinical research to change the way prostate cancer is diagnosed, treated and, ultimately, eradicated.

Our work promises:

- Improved diagnostics that lead to effective treatments and cures.
- Personalized medicine that ensures the right treatment at the right time for every patient.
- Advanced surgical and pharmaceutical techniques that reduce side effects and preserve quality of life for the longterm.
- A deeper understanding at the molecular level that will reveal new ways of treating and preventing prostate cancer.

We are already an exceptional research and clinical care center with a track record for innovating effective new treatment options. Our survival rates for prostate cancer are the highest in the region. With your support we can do even better.

**Please help us work toward eradicating prostate cancer while continuing to improve survivorship and quality of life for patients.**



1 in 6  
One of every six American men will be diagnosed with cancer of the prostate during his lifetime. Yet funding for prostate cancer from such sources as the National Cancer Institute is significantly lower than for many other forms of cancer.

## Unlocking the Mystery of Prostate Cancer

Prostate cancer is the most frequently occurring cancer and the second-leading cause of cancer-related deaths in men in the United States. Education and screening programs have increased early diagnoses. Although there are some encouraging signs of death rates falling, 28,000 men will still die in the U.S. each year. This number will likely grow as baby boomers reach the age of highest risk.

In comparison to other cancers, such as breast cancer and leukemia, we know very little about the root causes of prostate cancer and what makes the disease progress aggressively in some men while remaining latent in others.

So many basic questions remain unanswered.

# Changing the Course of an Epidemic

Our daily challenge is to identify appropriate treatment options to save lives without overtreating patients. With prostate cancer, survival must often be achieved through therapies that can cause long-term complications—complications that can greatly diminish quality of life. This is a terrible choice that patients should not have to make.

There is hope. Momentum is growing in prostate cancer research across the country. Discoveries at the molecular level—where we can witness how genetics, chemistry and hormones contribute to prostate cancer—are helping us understand how to treat this disease with the most positive long-term outcomes. And we are on the verge of important new discoveries and applications for preventing prostate cancer altogether.

By unlocking the mystery of prostate cancer—in the lab and in the clinic—the University of Colorado Anschutz Medical Campus will develop targeted therapies and prevention strategies that will dramatically change the course of an epidemic.

*“At the University of Colorado Anschutz Medical Campus, we are tackling cancer on a comprehensive level. Ideas and information can move at lightning speed because we are working across the full spectrum of research and clinical care. Thanks to our total approach, we are seeing an acceleration of understanding, discovery and application that will have real impact for patients.”*



*Dr. Glode with a patient.*

**L. Michael Glode, MD**  
Professor, Medical Oncology



## Concentrated Treatment Improves Outcomes

With the support of the Schramm Foundation, Dr. E. David Crawford has developed three-dimensional mapping techniques that allow for targeted focal therapy for prostate cancer patients. Thanks to the research and the development of a sophisticated computer-imaging biopsy procedure, our surgeons are able to pinpoint and destroy early-stage, localized prostate cancer while sparing surrounding tissues. This minimizes damage to other vital organs and structures and greatly reduces the risk of side effects.

*“With the support and prayers of so many, and the skill of the doctors and staff at the Anschutz Medical Campus, my targeted treatment for prostate cancer went extremely well. Today, I am cancer-free. I feel blessed by the incredible medical care I've received.”*

**Mike Landess**  
7NEWS Anchor

*E. David Crawford, MD, and Mike Landess*

# The Opportunity to Make a Difference in Prostate Cancer is Here and Now

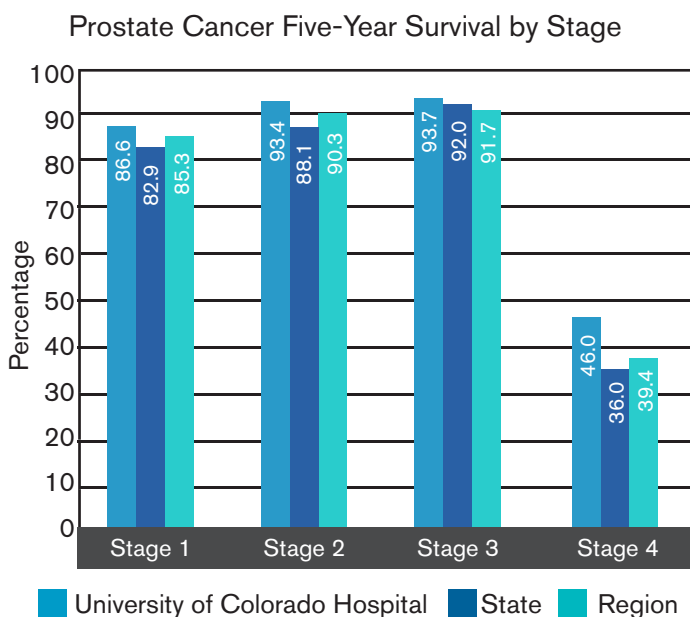
Our clinical services are regarded as the place to go for a personalized approach. The Anschutz Medical Campus is among the top 20 academic centers in the United States addressing this disease. The survival rate for prostate cancer patients is higher here than anywhere else in the Rocky Mountain region.

Each patient is an active partner in his own treatment plan. And each has the benefit of choosing from the most current options, including many that have been developed right here on our campus, such as targeted focal therapy or “male lumpectomy.” Our national network of research centers adds value for our patients, as they can access new treatment protocols that aren’t available anywhere else in our community. A leader in pathology, surgery, basic science, radiation and medical oncology, we are exceptionally well-positioned to accelerate our contributions to prostate cancer.

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We are helping to speed the transfer of new discoveries into the marketplace for the direct benefit of patients.

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*The five-year survival rates for prostate cancer patients treated at the Anschutz Medical Campus exceed the survival rates from across the state and the region.*

The Anschutz Medical Campus offers an unmatched resource for the fight against prostate cancer. It is the world’s only completely new education, research and patient care facility, and it provides the infrastructure to achieve every stage of biomedical innovation—from basic research to clinical and pharmaceutical development and commercialization—all in one place. With access to a substantial patient population throughout five affiliated hospitals, our researchers can facilitate the movement of basic research into clinical trials and speedy delivery to the community.

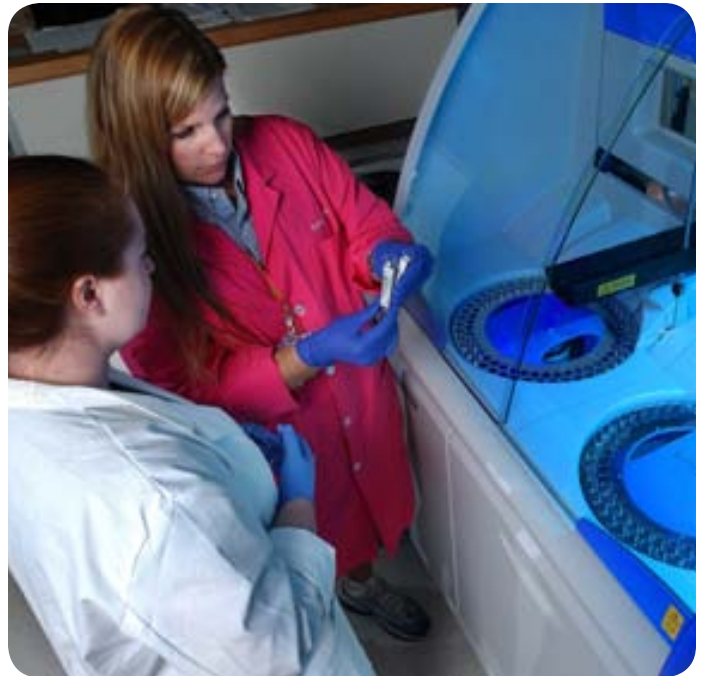
Our resources include the newly established Colorado Clinical and Translational Sciences Institute, an unprecedented statewide network of research, health care and community facilities funded by a \$76 million grant from the National Institutes of Health. Our Technology Transfer Office is a further resource, with demonstrated success in moving discoveries quickly from our laboratories to the clinic. Colorado’s burgeoning biotech industry completes the picture for an ideal environment in which to implement a bench-to-bedside research strategy that will quickly yield results for men who suffer from prostate cancer.

# Accelerating Bench-to-Bedside Discoveries

New investments in additional world-class expertise, laboratories and technology will accelerate our pace of discovery and offer new hope to patients at every stage of prostate cancer.

The Prostate Cancer Research Initiative will be a model of cooperative research. The resources of the Anschutz Medical Campus and our national reputation will enable us to attract two outstanding leaders for this Initiative—a Director of Basic Research and a Director of Translational Research. Their work will be supported by our pathology lab that houses an extensive tissue bank, providing researchers with a repository of tumors and cells from which they can study and learn.

Our team, which includes the top surgeons, oncologists and radiologists in the region, will come together in the Prostate Cancer Research Initiative to deploy state-of-the-art technologies, partner with industry and train the best minds to change the face of prostate cancer forever.



## Pathology: Part of the Solution

In order to provide top-notch, personalized treatment for prostate cancer, the interdisciplinary team on the Anschutz Medical Campus relies on the talented doctors and researchers in the Department of Pathology to provide a diagnosis and to study the causes, nature and effects of disease. Under the leadership of internationally recognized pathologist M. Scott Lucia, MD, the Prostate Diagnostic Laboratory enables us to bring basic science discoveries to the bedside faster than ever before.

Advanced clinical trials provide patients with the most cutting-edge and effective options. Molecular pathology guides new, personalized treatments. State-of-the-art imaging supports the most precise diagnoses and furthers our understanding of disease. And our world-class biorepository of cancer tissue is used to record cell lines and unlock the secrets of prostate cancer through the use of sophisticated computer modeling.



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Our world-class biorepository serves as a central tissue bank for multiple sites. This large physical “database” of prostate cancer provides doctors and researchers with essential information on tumor types and effective treatments. It also gives us a strong reputation in clinical trials. We are currently partnering with pharmaceutical industry leaders such as Johnson & Johnson and Protox Therapeutics.

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# Individualized Treatment Produces Best Results

Precise staging and the ability to pinpoint the exact location of disease is critical in prostate cancer. Doctors must determine with great accuracy whether a patient needs treatment or not. More resources will enable us to:

- Provide noninvasive diagnosis and targeting of prostate cancer in the gland. We have developed and are evaluating light refraction, much like ultrasound, to aid in this area.
- Develop computer-imaging techniques to offer precise measurements of tissue levels so we can know exactly how aggressive prostate cancer is in each patient.
- Devise state-of-the-art biopsy techniques to guide minimally invasive therapies such as “male lumpectomy.”
- Test ways to alter and destroy cancer at the molecular level using electroporation (electrical currents), photodynamics (targeted light therapy), nanotechnology and toxins that are targeted specifically to prostate cancer cells.
- Explore how to manipulate the body’s own resources in the endocrine/hormone and immune systems to attack prostate cancer.

## An Essential Piece of the Puzzle: Radiation Oncology

For many men with prostate cancer, radiation is an essential part of their treatment. Our radiation oncologists are among the best practitioners in the nation, including those from leading cancer hospitals such as MD Anderson, Cedars-Sinai and the Mayo Clinic.

Our prostate cancer treatment has been extremely successful. “Five years post-treatment, we are finding that PSA control rates for patients are above 95 percent. That is going to hold up in 10 years as well,” says David Raben, MD, professor at University of Colorado Denver. “Our goal is to continue this trajectory.”

The University of Colorado Anschutz Medical Campus offers a variety of the newest and most effective radiation techniques such as Intensity Modulated Radiation Therapy (IMRT), which adjusts the beams of radiation as they come out of the machine in order to protect the rectum and the bladder. Image Guided Radiotherapy (IGRT) enables doctors to use CT scans to do imaging on a daily basis prior to each treatment, lending the procedure precision-accuracy to the nearest millimeter. Other



*David Raben, MD, right, consults with Robyn Swing who helps prostate cancer patients navigate their treatments, including involvement in clinical trials.*

treatment options include brachytherapy, which includes permanent seed implantation and High Dose Rate (HDR) temporary brachytherapy, implanting radiation directly into the prostate.

Part of what distinguishes our oncologists from other practitioners in the region is their ability to do real-time planning and receive immediate feedback in the operating room at the time they implant the seeds. This enables them to have more precision as they plan the location of implantation. Because the prostate can distort and change at the time of the procedure, it is essential to get the image of the prostate right there in the operating room. At most hospitals in the region, radiation oncologists plan the location of implantation as much as two weeks in advance of the procedure, during which time, the location of the prostate and other internal organs may shift.

For more serious patients, oncologists provide a combination of high dose radiation of HDR with IMRT. “The biggest challenge for high-risk patients is to reduce toxicity and at same time improve survival,” says Raben. “At this time, the University of Colorado Anschutz Medical Campus is the only place in the state approved to participate in this treatment by the Radiation Therapy Oncology Group.”

# Preventing Prostate Cancer in the First Place



We are already contributing new understanding of the biologic and genetic basis of prostate cancer. Greater investment will accelerate our work to:

- Explore the effect of dietary supplements in preventing prostate cancer.
- Test the capacity of natural products to inhibit tumor growth, such as silibinin, an ancient remedy found in milk thistle that has shown great promise in the laboratory.
- Understand the role of molecular biomarkers, such as prostate specific antigen (PSA), in prostate cancer so that we can identify who is at risk and offer treatment earlier than ever before.
- Create innovative combinations of MRI technology, needle biopsy, ultrasound and nuclear medicine to identify cancer and determine prognosis with great accuracy.
- Coordinate major prevention trials, including testing a vaccine to prevent recurrence of prostate cancer after treatment and investigating a urine test to diagnose the disease.



## Sometimes, the biggest ideas come in the smallest packages

Our own Dr. Priya N. Werahera is collaborating with Dr. Stephen Boyes at the Colorado School of Mines on a project that could, in the near future, revolutionize the diagnosis and treatment of prostate cancer. They are studying the use of nanoparticles—1,000 times smaller than a human cell—to carry chemotherapeutic drugs directly, and exclusively, to target and destroy cancer cells. Such targeted chemotherapies will not only save lives, they will entirely eliminate common side effects, such as impotency associated with surgery and radiation. “The other significant advantage is that these nanoparticles will be able to find and destroy even disease that has metastasized to other parts of the body,” Dr. Werahera explains.

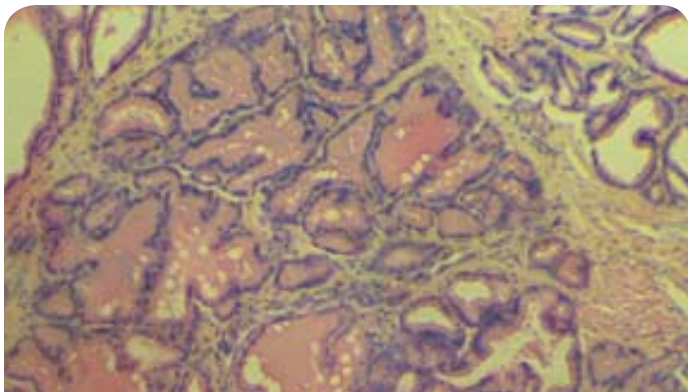
*Priya N. Werahera, PhD*

# Disseminating the Best Information to Prevent and Diagnose Disease

We are one of the few prostate cancer programs to have an on-site epidemiologist, a highly trained scientist who is studying trends and characteristics of prostate cancer in large populations in search of clues for more effective diagnosis and treatment. As our basic and clinical research programs increase our understanding of the root causes of disease, and our epidemiologist consolidates the information, we will continue to develop public education programs and raise awareness. Dr. E. David Crawford, one of our leading surgeons, is chair of the National Prostate Cancer Education Council, which further ensures that what we learn about prevention and early diagnosis will be communicated quickly and well to men in Colorado and across the country



*Paul A. Bunn, Jr., MD, the James Dudley Chair in Cancer Research, consults with Heather Coats, RN, MS, nurse practitioner in medical oncology.*



*Microphotograph of stained prostate cross-section, taken through a microscope.*

## Developing “Rational Therapies” that Can Discriminate Between Cancer and Healthy Cells

Andrew Thorburn, PhD, professor of pharmacology, and his team are combining cancer-seeking molecules with targeted anti-cancer toxins into a deadly form of “Trojan horse” that essentially tricks cancer cells into self-destruction. “We are starting to reach the end game of cancer,” he says. “The progress we’ve seen in the last 40 years is staggering—mortality rates in many cancers are going down for the first time in human history. Now is the time to make the investment in exponential gains to solve this problem permanently.”

## Educating Tomorrow’s Innovators

As a program in the University of Colorado system, we have the global reach and mission to educate tomorrow’s leaders in cancer research and treatment. We will continue to prepare outstanding clinicians, surgeons, researchers and technicians. We are already an attractive choice for top medical school graduates because of our leading faculty, our broad range of disease treatments, our large and diverse patient population and our high volume of surgeries. Further investment in the Prostate Cancer Research Initiative will attract the most curious and energetic students and enable us to train the best people to stay on at the University of Colorado Anschutz Medical Campus.

# Help Eradicate Prostate Cancer

We seek \$20 million in public and private support for the Prostate Cancer Research Initiative, to be combined with a comparable investment in clinical facilities. The resulting capabilities will:

- accelerate our scientific productivity,
- expand our patient care capacity, and
- enhance our opportunity for significant ongoing funding from the National Cancer Institute as a Specialized Program of Research Excellence.

Your generous contribution to the Initiative will generate meaningful returns in understanding, treating and preventing prostate cancer. Thank you for helping us make new discoveries, find new solutions and offer new hope for husbands, brothers, fathers and sons who are anxiously awaiting these breakthroughs.

## Donors Making a Difference: The Men's Event

For 36 years, men throughout the Denver Metro area have gathered to raise money to fight cancer with an event organized by men, for men. For the past four of those years, what has become known as the "Men's Event" has supported prostate cancer research and patient care.

"We make grants to survivorship and education programs related to prostate cancer. The bulk of the funds raised, however, we grant to Drs. Glode and Crawford at the University of Colorado Cancer Center," says Joel Edelman, longtime organizer of the event and executive director of the AMC Cancer Center.

Over the past four years, nearly \$100,000 has gone to research and education programs led by Glode and Crawford, who give a special briefing to cancer survivors and their family members and friends before the fete begins.

The Men's Event features a silent auction, a celebrity auctioneer and great food. Chairmen of the dinner have included civic leaders like Dick Robinson, Charlie Gallagher, Bob Malone, Tom Gamel and Jim Basey.

For more information on the event, which happens every November, contact Joel Edelman at [edelmanj@amc.org](mailto:edelmanj@amc.org).



*Dr. E. David Crawford gives a special briefing at the Men's Event, supporting prostate cancer research and patient care.*



*“With the help of generous individuals, we will build on our momentum in prostate cancer research, continually improving treatment, making new discoveries and finding new solutions.”*

**E. David Crawford, MD**

Professor of Surgery, Urology, Radiation Oncology  
Head, Urologic Oncology

E. David Crawford Endowed Chair in Urologic Oncology



**Your generous contribution will help us find the key to ending the epidemic of prostate cancer.**

To learn about the many ways you can make a gift:

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*All gifts should be payable to the University of Colorado Foundation, specifying the appropriate fund.*

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