

BETTER Treatment

ANSWERS TO Illness

NEW Cures



Vancouver  
CoastalHealth  
Research Institute  
*Healthier lives through discovery*

## The Vancouver Coastal Health Research Institute:



walking pain-free for the first time in years;  
throwing away insulin and needles;  
seeing the face of a loved one; having more  
time with family and friends...

# Healthier lives through discovery



**HEALTH RESEARCH** changes lives. The physicians, nurses, and investigators from all health related disciplines at Vancouver Coastal Health are building new hips, halting the progression of blindness, and helping diabetics become insulin-free. They are offering hope, time, and a better quality of life to people and their families suffering from the burden of illness.

Vancouver Coastal Health Research Institute (VCHRI) was officially formed in June 2003,

but has been present in spirit for much longer. For dozens of years, in academic partnership with the University of British Columbia and philanthropic partnership with VGH & UBC Hospital Foundation, research and innovation have been an integral part of the fabric of Vancouver General Hospital and UBC Hospital.

With the official formation of VCHRI, our mandate has expanded to foster and promote research and innovation across the entire Vancouver Coastal

Health Authority. We are one of Canada's largest teaching and research hospital-based institutes, attracting more research dollars and talent every year. Going forward, with the help of three multi-million dollar awards from the Canada Foundation for Innovation, we will nearly double the size of our research space. Millions more dollars are being invested in research chairs and funding grants aimed at recruiting the world's brightest minds. Better health outcomes can and will be achieved.

*Healthier lives through discovery.*

These are the words that define us. On behalf of all the clinicians, scientists, and staff at Vancouver Coastal Health Research Institute, I hope you enjoy this overview. Visit us online at [www.vchri.ca](http://www.vchri.ca).

**DR. BERNIE BRESSLER**  
*Executive Director, Vancouver Coastal Health Research Institute  
Vice President Research, Vancouver Coastal Health*

Left: Dr. Bernie Bressler

Above: Research in action at the Vancouver Coastal Health Research Institute

# Who we are

As the leading tertiary/quaternary research, referral, and teaching hospitals, VGH, UBC Hospital, and GF Strong Rehabilitation Centre form the hub of medical research activities in British Columbia. We are the major health partner of the University of British Columbia. Our acclaimed investigators are professors in the Faculty of Medicine and other life sciences faculties; they hold prestigious grants and research chairs, and are recognized around the world for their work and scientific breakthroughs. This is where multiple sclerosis was re-defined as “treatable,” where diabetics have been able to throw away their insulin and needles, where a drug to halt the progression of macular degeneration was created, and where men with prostate cancer have the best chance of survival in all of Canada.

We are committed to developing ongoing generations of health researchers. Graduate and postgraduate students make up a significant component of our research teams. These up-and-coming investigators receive the best scientific training in a rich environment that fosters excellence in research and patient care.



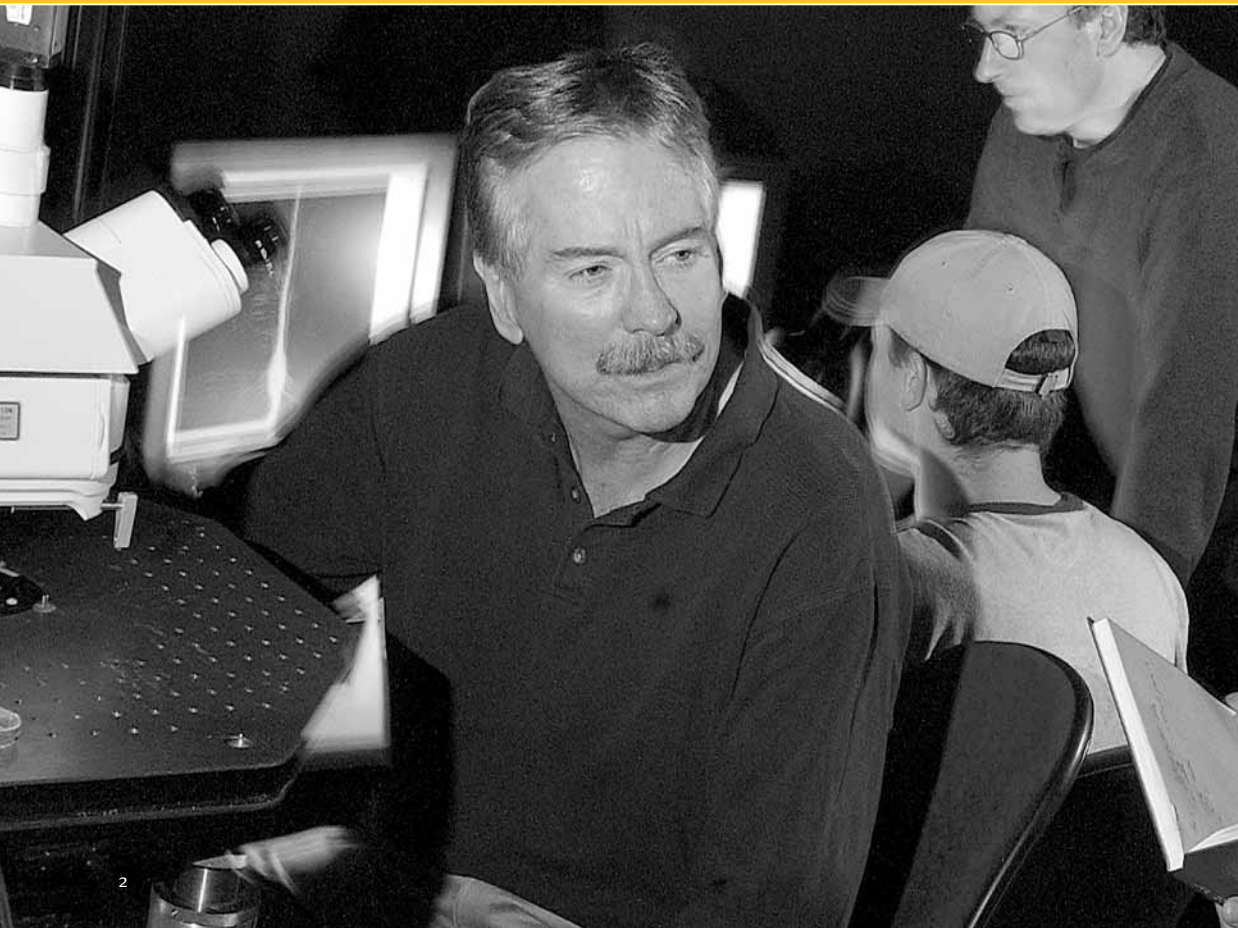
From the Prostate Centre at VGH, top left: Dr. Emma Guns, Dr. Chris Ong, Dr. Colleen Nelson (also Director of Genome BC's Microarray Platform), Dr. Michael Cox, Dr. Joyce Davison, Dr. Piotr Kozlowski. Bottom left: Dr. Martin Gleave, Director, Clinical Research; Dr. Larry Goldenberg, Director, the Prostate Centre at VGH; Dr. Paul Rennie, Director, Laboratory Research



Above: Dr. David Huntsman, Genetic Pathologist, Ovarian Cancer Research (OvCaRe) Centre

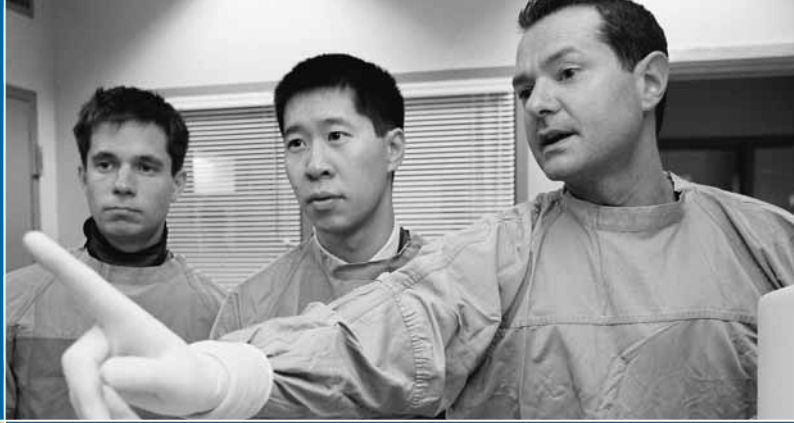


Above: Dr. Robert Molday, Canada Research Chair in Visual Science, Director, Centre for Macular Research



Left: Dr. Brian MacVicar and lab members use multi-photon laser scanning microscopy at the Brain Research Centre

Clockwise: Dr. Jason Clement, Dr. Stephen Ho, and Dr. Peter Munk (pointing), Radiology; Orthopaedic hip surgery; Graduate student, Ivan Cepeda, looking at data for a new therapy for Parkinson's disease at the Brain Research Centre



## What we do

Vancouver Coastal Health Research Institute advances the development of research activity across Vancouver Coastal Health, impacting the people of British Columbia, Canada, and beyond.

Merging science with patient care, our bench investigators work in collaboration with clinicians to focus on **translational research**. Our goal is to rapidly advance a wide range of discoveries from drug therapies to new treatments, from advanced surgical techniques to new medical devices. All of which will help the patient population get well and stay healthy.

Our research areas of excellence include brain research & neurological sciences, clinical epidemiology, hip health & musculoskeletal research, immunity & infection, prostate cancer, respiratory & critical care, spinal cord research, dermatology, emergency medicine, interventional cardiology, macular research, and women's health.



# Where we do it

The majority of our work is conducted at Vancouver General Hospital, UBC Hospital, and GF Strong Rehabilitation Centre. These first-rate facilities provide a range of medical, surgical, and psychiatric services covering virtually every specialty.

Vancouver Coastal Health Research Institute also promotes research activity throughout the rest of the health authority. Research initiatives are currently being developed in the area of community health as well as local community hospitals.

Specialized facilities promote a collaborative work environment where individuals with diverse research orientations and expertise can come together to share ideas, technology, and research questions in a mutually supportive manner.



Above: Jim Pattison Pavilion, Vancouver General Hospital (VGH)



Far right: The Jack Bell Research Centre at VGH

Middle right: Rendering of the new International Collaboration on Repair Discoveries (ICORD) facility at VGH (see page 7)

Right: Graduate student, Ivan Waissbluth, at the Centre for Respiratory & Critical Care Medicine



# Impact

Research and innovation define our future. New understanding of biological mechanisms, new drugs, new illness prevention strategies all shape the delivery of health care and the well-being of people in British Columbia and around the world. Our task is not only discovery, but also to use what we learn to create healthier lives. One small example is making the research expertise at Vancouver Coastal Health Research Institute available to the scientific community through hundreds of contracts and service agreements that are signed each year. Many of these are for clinical trials, which allow patients to obtain leading-edge drugs and treatments that cannot be offered outside of a research hospital. The medical breakthroughs of today and tomorrow will improve the quality of our health care for future generations.

World-class innovation also leads to economic impact. Investigators work with the University-Industry Liaison Office of UBC to commercialize their discoveries. In the past few years, a number of companies have been established to develop, produce, and sell new products and technologies developed at VCHRI. This activity is part of a growing vibrant biotech industry that adds millions to the BC economy.

Our people are a resource. As a centre of excellence in health research and innovation, VCHRI will continue to attract many of the brightest minds from around the world, helping to position British Columbia and Canada as a world leader in the 21st century knowledge economy.

Better health care, positive economic impact, and creating knowledge and innovation leaders. We are committed to this process. VCHRI is here to make it happen.



Left: Dr. Chris Ong at the Jack Bell Research Centre



Left: MSFHR and VGH & UBC Hospital Foundation are jointly funding successful investigators who are training in cancer research with a supervisor located at either Vancouver General Hospital or UBC Hospital. Funding recipients and special guests pictured left include (front row, left to right): Dr. Simon Sutcliffe, Alison Karst and David Boyd-Thomas. Back row: Dr. Aubrey Tingle, Dr. Susan Moore and Dr. Nolan Filipenko

## Our Partners

Vancouver Coastal Health Research Institute works with numerous organizations to help achieve its research goals.

### Academic

- University of British Columbia
- Simon Fraser University
- University of Victoria
- British Columbia Institute of Technology

### Health

- VGH & UBC Hospital Foundation
- Providence Health Care— St. Paul's Hospital
- BC Children & Women's Hospital
- BC Cancer Agency

### Granting Agencies

- Canada Foundation for Innovation (CFI)
- Canadian Institutes for Health Research (CIHR)
- CDC Atlanta
- Genome BC and Genome Canada

- Michael Smith Foundation for Health Research (MSFHR)
- National Cancer Institutes of Canada and the US
- National Institutes of Health (NIH)
- Natural Sciences and Engineering Research Council of Canada (NSERC)
- Social Sciences and Humanities Research Council (SSHRC)

### Government

- British Columbia Ministry of Health Services
- Health Canada

# Research Areas of Excellence

With a focus on translational research and innovation, Vancouver Coastal Health Research Institute develops research programs and initiatives across the health spectrum.



Above: Dr. Max Cynader, PhD, FRSC  
Director, Brain Research Centre at  
UBC Hospital

Right: Dr. Thomas Oxland, PhD  
Director, Centre for Hip Health &  
Musculoskeletal Research Program

**Brain Research Centre**  
Unravelling the biological enigmas of the brain and understanding how to better treat diseases caused by injury, the **Brain Research Centre** is home to many of North America's leading authorities on mechanisms of brain function and neurological disorders of the brain, including multiple sclerosis, Parkinson's disease, and schizophrenia. Over 160 clinicians and scientists work under the leadership of Dr. Max Cynader in a multidisciplinary environment where the bench-to-bedside principle reaches its full potential of bringing better health to patients with neurological and psychiatric disorders.

The Brain Research Centre is also home to the **Mood Disorders Centre**.

Together, depression and bipolar disorder affect approximately 4 million Canadians, with only 25 percent being diagnosed and treated. The social and economic cost of these mood disorders is significant. The Mood Disorders Centre, led by two internationally recognized experts in depression and bipolar disorder, Dr. Raymond Lam and Dr. Lakshmi Yatham, works to improve the treatment of people with mood disorders through innovative research, clinical care, and patient education.

## Centre for Clinical Epidemiology & Evaluation

How does organizational change affect health outcomes? What is the utilization of cardiovascular health care by differing population groups? These are the kinds of questions the **Centre for Clinical Epidemiology & Evaluation (C2E2)** regularly explores. Led by Dr. Mark Fitzgerald, C2E2 develops and supports clinical research and evaluation of clinical programs and provides expertise in clinical research methodology and statistics to other VCHRI investigators and health care policy makers. Investigators have a diverse range of specialties from family practice and emergency medicine to health economics and outcomes evaluation.

## Centre for Hip Health & Musculoskeletal Research

Hip fractures and hip osteoarthritis contribute enormously to the cost of health care in Canada. VGH is set to be the home of the world's first **Centre for Hip Health**. Under the direction of Dr. Tom Oxland, the centre will bring together researchers from a





wide range of disciplines to investigate and treat hip fractures and osteoarthritis, and create new surgical solutions. The group's immediate goals are to reduce hip fractures by 10 percent, detect osteoarthritis earlier, and develop new treatments.

### Immunity & Infection Research Centre

From auto-immune disorders that lead to diabetes to preventing rejection in organ transplantation, the **Immunity & Infection Research Centre** team, led by Dr. Robert McMaster, works to understand the immune mechanisms that both fight infectious diseases and cause immune disorders. Investigators are internationally

recognized for their work in preventing and treating the rejection of transplanted organs and bone marrow, and in diabetes research involving islet cell transplantation. At the Ike Barber Human Islet Transplant Laboratory, the research team, headed by Drs. Garth Warnock and Mark Meloche, has developed a one-day outpatient procedure in which human islet cells that lead to regular insulin production are transplanted into patients with type-1 diabetes. This procedure is showing successful results, giving hope of a cure for type-1 diabetes.

### Centre for Respiratory & Critical Care Medicine

The **Centre for Respiratory & Critical Care Medicine**, led by Dr. John Fleetham, links respira-

tory research to clinical practice. Multidisciplinary teams made up of physicians, nurses, physiotherapists, and other health professionals are working to improve prevention, diagnosis, and treatment of respiratory and critical care illnesses, including lung cancer, asthma, chronic obstructive pulmonary disorder, sleep apnea, and tuberculosis. Investigators are combining strategies from epidemiology, clinical research, and basic sciences to provide new insights into these serious illnesses.

### Spinal Cord Repair: International Collaboration On Repair Discoveries (ICORD)

New research discoveries, surgical advances, and new approaches in rehabilitation are all leading to better health outcomes for people with spinal cord injury. Through increased collaboration, researchers at **ICORD** believe even more significant advances can occur. ICORD, led by Dr. John Steeves,

Trek Magazine/Martin Dee

Left: Sleep Disorders Unit, Centre for Respiratory & Critical Care Medicine. Standing left to right: Dr. Michael Schulzer, Dr. John Fleetham (Director), Dr. Jonathan Fleming, Dr. Alan Mulgrew. Seated left to right: Dr. Frank Ryan, Dr. Peter Hamilton, Dr. Najib Ayas

Below: Dr. John Steeves, John and Penny Ryan BC Leadership Chair and Director, ICORD



has over 50 principal investigators as well as 300 trainees and dozens of national and international researchers. The scope of work includes understanding the growth of nerve cells to improving surgical techniques for

patients with spinal cord injuries. When the new ICORD facility on the VGH campus is complete in 2007, it will be the world's largest and most broad-based spinal cord research group.

## The Prostate Centre at Vancouver General Hospital

One in six men will face a diagnosis of prostate cancer in their lifetime; twenty-five percent of them will die from it. **The Prostate Centre** at Vancouver General Hospital is Canada's largest comprehensive research and treatment clinic for prostate cancer in Canada. Led by Drs. Larry Goldenberg and Martin Gleave, this world-renowned research and clinical team focuses its efforts on fighting prostate cancer through improved understanding of prevention, diagnosis, and treatment, as well as patient education. The Prostate Centre's goal is to advance understanding of the biology of prostate cancer and to translate that understanding into practical therapy to improve the length and quality of life of patients.

### Dermatology

78,000 patient visits are made each year to the **Skin Care Centre**. Led by Dr. Harvey Lui, physicians and investigators focus on research in cancer epidemiology and biology, skin cancer detection, hair disorders, lipids and the skin barrier,

and skin immunology. Through the Skin Care Centre's Clinical Trials Unit, clinicians are able to provide the latest experimental drug, surgical, and laser treatments to patients under careful medical supervision.

### Emergency Medicine Research

The **VGH Department of Emergency Medicine Research Division**, under the direction of Dr. Riyad B. Abu-Laban, has a broad clinical research program and is involved in multiple national and local studies. Key areas of investigation include cardiac arrest, trauma, substance abuse, toxicology, pharmacology, clinical decision rules, hyperbaric medicine, respiratory illnesses, falls in the elderly, and domestic violence.

### Interventional Cardiology

The Interventional Cardiology team, led by Dr. Jaap Hamburger, is the largest such program in Canada. Encompassing

researchers and clinicians at Vancouver General Hospital and St. Paul's Hospital, the **Vancouver Interventional Cardiology** team delivers clinical cardiac care as well as investigates cardiac function and disease. The team initiated stem cell research for cardiovascular repair. They also design and manage clinical trials, and share clinical and research expertise internationally through the annual Transcatheter Cardiovascular Therapeutics (TCT) conference—one of the world's largest medical conferences.

### Macular Research

One in three Canadians will experience macular degeneration. It is the leading cause of age-related blindness. Thanks to research done at the **Centre for Macular Research (CMR)**, the progression of this

disease can now be halted. The goal of the CMR, led by Drs. Robert Molday and Michael Potter, is to combine its strength in basic and translational science with the centre's clinical expertise to develop new treatments and cures for retinal disease.

### Women's Health

Vancouver General Hospital is world-renowned for its extensive archive of over 1,000,000 cancer tissue samples dating back over 50 years. Using microarray technology, members of the **OvCaRe** team, led by Dr. Dianne Miller, are mining the database of ovarian cancer tissue samples to study potential markers for ovarian cancer progression and its response to therapy.

At the **Centre for Menstrual Cycle and Ovulation Research (CeMCOR)**, led by Dr. Jerilynn Prior, researchers study the



Far left: Dr. Michael Potter, Vitreous-Retinal Surgeon, Centre for Macular Research

Left: Dr. Jerilynn Prior, Director, Centre for Menstrual Cycle and Ovulation Research (CeMCOR)

Below: Dr. Dianne Miller, Gynecologic Oncologist, Ovarian Cancer Research (OvCaRe) Centre



science of the menstrual cycle and ovulation physiology from adolescence to menopause. A major focus of the Centre is the study of the effects of progesterone therapy on metabolism, endothelial function, and bone changes. A significant component of activities also involves public education and the translation of research findings into changes in clinical practice.

## Did you know?

- Vancouver Coastal Health Research Institute (VCHRI) is one of Canada's largest research institutes in terms of total funding among the country's research and teaching hospitals or health regions.
- VCHRI has almost 1,000 ongoing research projects and initiatives.
- Research means economic impact: every dollar spent on research in BC returns \$6 to \$8 in direct and indirect benefits to the BC economy. Funding sources to VCHRI include grants and contracts from federal and provincial agencies and companies, VGH & UBC Hospital Foundation, and revenue from commercialization of intellectual property.
- VCHRI has over 250,000 sq feet of research space, primarily located at Vancouver General Hospital and UBC Hospital.
- VCHRI investigators hold: 10 Canada Foundation for Innovation awards, 171 Canadian Institutes for Health Research awards, 3 Genome Canada awards, and numerous Canada Research Chairs and other research chairs through the University of British Columbia.
- VCHRI has more than 275 principal investigators and over 250 graduate and post-graduate trainees.

## Our Mission

Research at Vancouver Coastal Health Research Institute leads and excels in the generation of health knowledge through discovery, education, application, and evaluation.



*in it for life.*

VGH & UBC Hospital Foundation provides ongoing financial support to the Vancouver Coastal Health Research Institute.

Thanks to the generosity of their donors, VGH & UBC Hospital Foundation funds research chairs and programs, has established the *in it for life* Awards Fund for investigators, and recently raised \$45 million for the Prostate Centre at VGH.

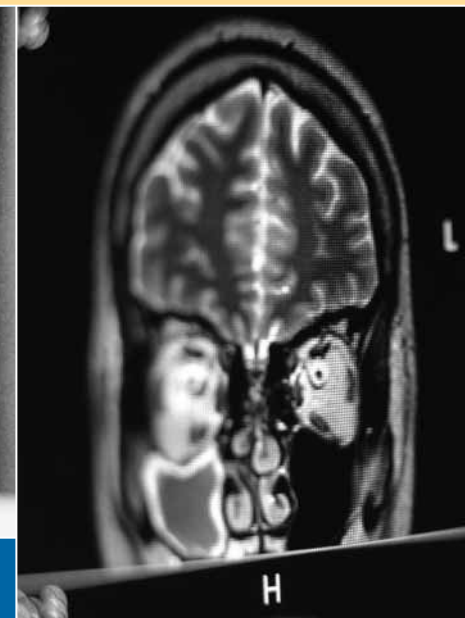
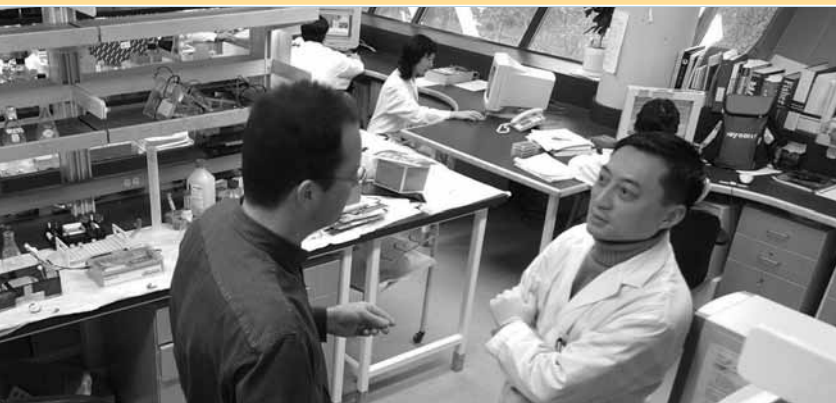
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**FRONT COVER:**

Left: Bilateral uncemented hip replacements

Centre: Dr. Larry Goldenberg, Director, the Prostate Centre at VGH

Right: Dr. Catharine Rankin with graduate student Susan Rai investigating the cellular basis of learning and memory at the Brain Research Centre

**BACK COVER:**

Left: Multidisciplinary lab, Brain Research Centre

Centre: Dr. Bas Masri, Orthopaedic Surgeon, Centre for Hip Health

Right: Brain Scan

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CoastalHealth**  
**Research Institute**  
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