

Creating Futures

University of Colorado *Anschutz Medical Campus*



Finding Answers. Saving Lives.

Center for Women's Health Research



What we don't know could kill us.

Too many women have waited too long for the answers to diabetes and cardiovascular disease. The facts indicate gaps in research, public recognition, and funding.



- **Fact:** Women develop heart disease at an older age than men and have a lower chance of survival after a heart attack or stroke.
- **Fact:** One-third of American women with diabetes do not know they have heart disease.
- **Fact:** Cardiovascular mortality is declining in men, but not in women.
- **Fact:** Heart disease's mortality rate is eight times higher than that of breast cancer. In fact, it's the biggest killer of women—and 43 percent of women don't know it.

By working to solve the mysteries of cardiovascular disease and diabetes in women, *we can save millions of lives*—and fortify the families and communities that rely on strong, healthy women.

This is the work of the Center for Women's Health Research. We have the expertise, dedication, and passion to pursue solutions. With your support, we'll strengthen our ability to achieve our goal—to make women's cardiovascular disease and diabetes a thing of the past.

"My grandmother was a wonderful, inspirational woman, who unfortunately was diagnosed with type 2 diabetes during her later years, and she died because of multiple strokes from diabetes.

It was terrible to see her quality of life deteriorate from diabetes. It struck me as unfair that we didn't have better answers. I wish I could have helped her. I named my daughter after her. I also have one of the world's best mothers, so I'm doing this work for my grandmother, my mom, and my daughter.

Everyone has women in their lives that we don't want to lose. My story is just one of many."

Judith Regensteiner, PhD

Professor of Medicine,
Division of General Internal Medicine,
School of Medicine

Director, Center for Women's Health Research

Our Vision

Closing the Knowledge and Research Gap

No one disputes that there are fundamental differences between men and women in many areas of health. Yet so many unanswered questions remain regarding why men and women exhibit symptoms differently, and why they vary in disease susceptibility and response to treatment.

We need to better understand disparities between men's health and women's health.

Medical research rarely addressed these distinctions until the late 20th century. Just 20 years ago, women were often systematically excluded from many clinical trials, for fear it would harm their reproductive capabilities.

Recently, we've begun to close the knowledge gap about women's health as researchers have taken on these issues, often at new centers and institutes oriented toward women's health. But many such centers focus on issues of reproductive health and breast cancer. No other university-based research center has focused primarily on two of the most prevalent diseases for men and women alike: diabetes and heart disease.

In 2004, three accomplished University of Colorado School of Medicine researchers launched the Center for Women's Health Research to increase the body of knowledge about the impacts of cardiovascular disease and diabetes on women.

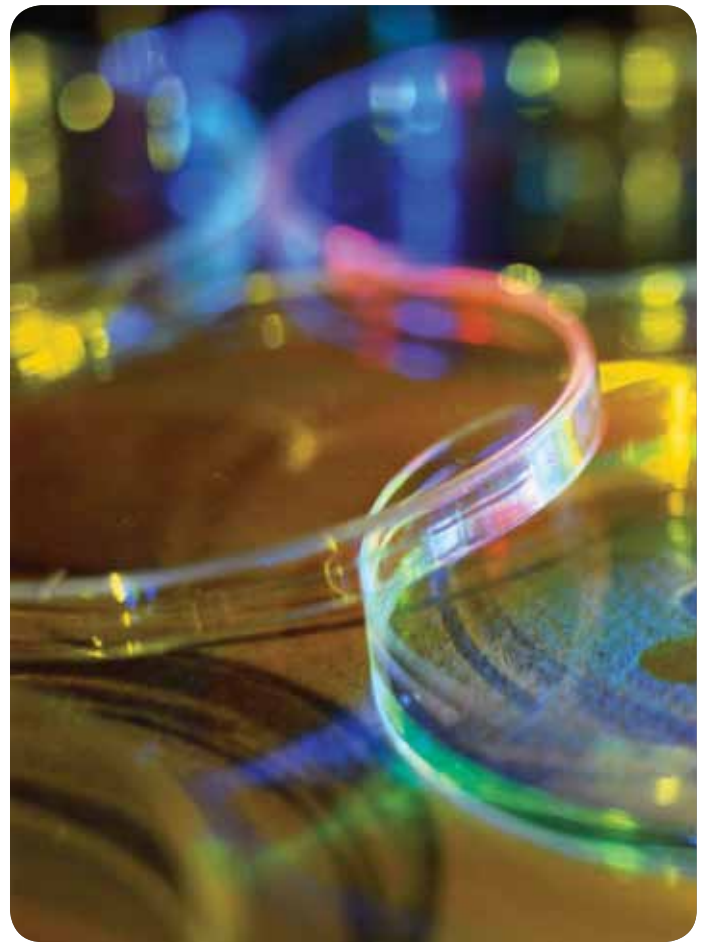
Within six years, the Center has become a growing interdisciplinary platform for research and collaboration, a focal point for education and outreach and a catalyst for increased attention toward women's health—attracting a groundswell of support from researchers, grantmakers and community members.

"Women's health improves with the knowledge gained through research. We believe the only way to ensure this continues long term is to train and foster the development of researchers in the field of women's health."

JoAnn Lindenfeld, MD

Professor of Medicine, Division of Cardiology,
School of Medicine

Associate Director, Center for Women's Health Research



"The brilliance and dedication of these researchers has been very impressive. The Center has instituted a unique research model—this is the only place in America where this is going on."

Jim Cohig
CWHR Donor



The Center for Women's Health Research

Distinctive Attributes, Impressive Achievements

A woman goes to the emergency room with chest pain, and is sent home. "Just acid indigestion, or maybe anxiety," she's told. But cardiac symptoms can present differently in women, so the diagnosis was botched. In fact, it was a heart attack.

Stories like this are too common: stories the Center for Women's Health Research aim to rewrite.

Based at the University of Colorado School of Medicine on the Anschutz Medical Campus, the Center for Women's Health Research is America's only center conducting research, mentoring junior faculty and educating women and health care professionals focused exclusively on cardiovascular disease and diabetes in women.

The Center:

- **Attracts renowned researchers** to the Anschutz Medical Campus to investigate cardiovascular disease and diabetes. Their talent has a magnetic effect, drawing an ever-better pipeline of investigators to study, practice and make discoveries here in the Rocky Mountain Region—helping us better understand the underpinnings of disease.
- **Sponsors 16 junior researchers**, an 800+ percent increase within five years, **who are generating groundbreaking insights** in areas such as:
 - o Connections between preeclampsia (hypertension during pregnancy) and obesity, adverse outcomes and postpregnancy health
 - o The effects of diabetes on women's cardiovascular systems, and prospective treatment approaches
 - o Differences in atherosclerotic blockage tendencies between men and women

"Since I became involved with the Center for Women's Health Research, I'm even more aware of the importance of good health. If I have questions, I make sure I get the answers. I am now more aggressive about taking care of myself, and I encourage my family and friends to do the same. Women tend to take care of themselves last, but we need to be responsible for our own health."

Mary Sissel
Donor and CWHR Advisory Board Chair



- o Gender differences in cardiac care
- o The role of female hormones in cardiac disease prevention

- **Provides crucial mentorship** through a unique collaborative research model, by which the Center’s seasoned mentors provide scientific and career guidance for tomorrow’s leading investigators. The junior investigators, in turn, mentor the newest researchers.
- **Fosters broad collaboration** among CU School of Medicine researchers in fields as diverse as cardiology, hematology and neonatology, since complex medical problems require a holistic approach that breaks down silos.
- **Attracts research grant funding** that fuels our region—\$10 million since the Center’s founding, including a prestigious \$2.5 million Building Interdisciplinary Research Careers in Women’s Health grant (*see p9*) from the National Institutes of Health.
- **Reaches a network of influential, caring supporters** through its citizen advisory board, and through community talks and physician-directed programs.
- **Educates, coalesces and empowers women and men** throughout the Rocky Mountain region and beyond to find answers, and save lives.



Local Leaders, Coming Together

The Center’s community-based advisory board consists of committed volunteers, philanthropists and ambassadors united by a passion to improve women’s health. The board oversees the Center’s aggressive strategic plan, promotes the importance of women’s health throughout their broad, influential networks and takes the lead in raising philanthropic dollars to underwrite scientists doing critical women’s health research.

“I support the Center because it strategically focuses research on the considerable knowledge gap in women’s health, believing that healthy women make for healthy families and communities overall,” says **Toni Cohig**, recent advisory board chair. “The potential impact on society is immense.”



Profile in Science

Intrauterine growth restriction, a circumstance that inhibits fetal growth, is a common problem during pregnancy. It can lead to low birthweight among other serious complications, and increased risk of disease for the newborn in the long term. Aided by a grant from the Center, CU School of Medicine neonatologist **Laura Brown, MD** is pursuing this area of inquiry. “**If we can find ways to prenatally improve the baby’s growth, we can prevent the problem,**” she says.





Preparing to Overcome Challenges

Diabetes afflicts 9.3 million American women, while 9 million women have cardiovascular disease. Families everywhere suffer the crippling impact of these diseases.

The long-term key to better treatment, diagnosis and prevention is research. Insights gained in clinics, hospitals and everyday life can yield clues toward overcoming these diseases. But it takes a major medical institution such as the University of Colorado School of Medicine at the Anschutz Medical Campus, which can target its expertise, resources, technology and academic rigor toward earlier diagnoses, novel therapies, even cures.

Investigators affiliated with the Center for Women's Health Research overcome challenges in labs and clinics everyday. You can help them overcome challenges of logistics and resources including:

- **A difficult federal-funding landscape:** The medical grants budget for the National Institutes of Health, a primary supporter of academic research, has lost ground relative to inflation in each of the last five years. The NIH now funds, on average, fewer than 15 percent of grant applicants, in a time when economic turbulence has diminished alternate research-funding streams.

• **A daunting climate for junior researchers:**

As federal funding tightens, grants gravitate toward scientists with established track records. To establish those track records, young researchers must be encouraged and incentivized to keep them pursuing innovative science.

• **Overloaded commitments of Center leadership:**

Inadequate funding reduces the amount of time the Center’s director and associate director can dedicate to their important work doing guiding the Center. With financial support, they could increase their ability to lead and provide mentorship for the Center.

There’s no better time than now to strengthen the efforts of the Center for Women’s Health Research.

Some of the world’s most accomplished and promising scientific talent is assembled at the Anschutz Medical Campus. And we have unprecedented demand from researchers who want to study here. Assisted by more than 1,500 individuals who have stepped up to support this dream, we’re turning the Center into a global hub for fighting diabetes and cardiovascular disease in women.



An Innovative Health Care City

The Center benefits from the state-of-the-art resources of the Anschutz Medical Campus—a 225-acre medical research, teaching and clinical campus of vision and scope unparalleled in the Rocky Mountain region. The campus benefits from a collaborative approach that links expertise across myriad disciplines and moves research quickly from bench to bedside and back. The campus benefits from the resources of the University of Colorado, ranked among the top five in National Institutes of Health grants to public universities.



“There are very few places with the very new infrastructure that the University of Colorado has, and the campus is very collaborative. The region’s outdoor lifestyle facilitates numerous studies on the influence of physical activity on heart disease.”



Brian Stauffer, MD
Denver Health and CU School of Medicine Cardiologist
CWHR junior researcher



Looking Toward the Future

Our goal is to be *the* leading international center for cardiovascular disease and diabetes science as it relates to women. Our strategic plan gives us a strong, future-focused foundation upon which to grow our successes to date. Already, we have become a research and information

authority, and our discoveries have helped reorient health care professionals in the right direction. But we've just begun—millions of women must see the Center go further still.



► **Fact:** Diabetes can be especially hard on women. The burden of diabetes on women is unique because the disease can affect both mothers and their unborn children. Diabetes can cause difficulties during pregnancy, such as a miscarriage or a baby born with birth defects. Women with diabetes are also more likely to have a heart attack, and at a younger age, than women without diabetes.

To this end, the Center aims to:

- **Endow and fund its operations** to become sustainable in the long term
- **Attract more junior investigators** whose research we support, growing to more than 30 within three years
- **Become a core participant in the Health and Wellness Institute**, a landmark CU collaboration that will empower individuals to achieve healthier lives through sustainable changes in diet, physical activity and personal health management
- **Bring research results into communities regionally and nationally**, educating women, providers, underserved populations and the public at large—and inspiring impassioned individuals to fight to improve funding, diagnosis and treatment.

In the long term, the Center aims to broaden its focus to look systemically and holistically at a range of women's health issues. With donor support, there's no limit to our capabilities.



From left: Catherine Cooper Campbell, Carole Cooper Hayward, Polly Cooper Nelson

“Our mother was a lifelong donor, and a lifelong learner. As a CU alumna, she was a great supporter of the university—she was a trustee of the CU Foundation, and in her later years she channeled her enthusiasm through the medical programs. She passed away seven years ago, and we set up a Center for Women's Health Research lectureship in her memory. It would have been something mother would have helped sponsor.”

Carole Hayward and Catherine Campbell
CWHR donors

Among the National Institutes of Health's prestigious grant programs is the **Building Interdisciplinary Research Careers in Women's Health (BIRCWH)** program, which funds junior faculty to become researchers in women's health through interdisciplinary training. Competing nationally with top universities, the Center was one of just 15 recipients of a 2007 \$2.5 million BIRCWH award—representing a striking vote of confidence.



The grants, given over a five-year period, have expanded the Center's ability to generate groundbreaking science. We are committed to raising additional private support to help these researchers remain funded, recruit and retain new investigators and accelerate the pace of their research.

Profile in Science



CU School of Medicine perinatal epidemiologist **Anne Lynch, MD, MSPH** has explored links between blood markers of inflammation in early pregnancy and preeclampsia—a hypertensive disease of pregnancy that

can have long-term implications for women's cardiovascular health. Her findings may suggest a more proactive, preventive approach to obesity in women. But Lynch is reaching out beyond the lab to educate women about the importance of perinatal health, as co-chair of a regional Healthy Women, Healthy Babies initiative. “The Center opens up new areas for me,” she says. **“I had originally just been thinking about pregnancy-related research. Now, I've been thinking more about women's health in general, and have seen my work come full circle.”**





Be Part of the Future of Women's Health

You can fuel tomorrow's discoveries by supporting our efforts to raise \$30 million for...

- **Endowed Faculty Chairs:** We are seeking three chairs to support the dedicated involvement of senior CU faculty with the Center. These will provide the leadership stability necessary to sustain a world-class research program, and ensure reliable funding for these positions in perpetuity.

Endowment goal: \$6 million

- **Seed and Bridge Grants for Junior Researchers:** By doubling the number of junior researchers to 30, we can ensure a pipeline of scientists working at the University of Colorado School of Medicine, propelling the university further toward the forefront of the women's health research landscape. Private support in this area will directly fund critical research projects related to diabetes and cardiovascular health.

Endowment goal: \$10 million

- **Professorships and Fellowships for Senior Researchers:** This support will provide laboratory and career mentorship for junior scientists, and be a magnet for top national talent in related fields.

Endowment goal: \$4 million

- **A Program Endowment:** The endowment will ensure the sustainability of the Center for the long term.

Endowment goal: \$10 million

There are many ways you can make a lasting gift to the Center, and opportunities to leave a legacy for yourself, a loved one or an influential colleague. University of Colorado Foundation development officers can help match the Center's strategic priorities with your personal passions.

“Jacqueline’s Gift” Begins a Family Legacy in Honor of Women’s Heart Health

Karen and Steven Leaffer’s Center involvement has roots in a personal commitment to women’s heart health.

The Denver residents eagerly anticipated the birth of twins when late in her pregnancy, Karen developed peripartum cardiomyopathy—a rare, unpreventable condition that can lead to congestive heart failure or death. At 31 weeks Karen, in the final stages of congestive heart failure, underwent an emergency Caesarean section. Karen and their infant son Jacob survived; the other twin, Jacqueline, did not.



Karen and Steven wondered: *How many families had been devastated by the loss of a mother, a daughter, a wife, a sister? To health conditions that, in this day and age, should be treatable?*

They concluded: Women’s health issues have not been given the priority they deserve. Systemic change was needed. And there would be no more fitting way to honor Jacqueline than to help fuel that change. In the Center, they found a partner.

The Leaffers’ contribution made such an impact on the Center’s advisory board that they matched Jacqueline’s gift dollar-for-dollar, with 100 percent member participation. They launched the Center in a significant way.

The Leaffers still support the Center, underwriting the strategic plan and supporting the researchers. Karen is on the Center’s advisory board. “We wanted to create a legacy in honor of Jacqueline, and realized in doing so we have created a legacy for Jacqueline that honors our belief in women’s health research,” she says.

Profile in Science

CU School of Medicine internist **Amy Huebschmann, MD** was inspired to pursue her research by her father, who suffered from type 2 diabetes. “He went from being a couch potato to an avid daily exerciser, losing 40 pounds, and controlling his diabetes with diet and exercise,” Huebschmann says.



But women with diabetes may find that exercise feels more difficult than it does for their male counterparts, and also tend to struggle more with depression. **“Exercise is a cornerstone of diabetes treatment,”** says Huebschmann, a CWHR junior researcher who investigates barriers to exercise for women with type 2 diabetes. Her work to identify and address why exercise feels difficult for women could lead to individualized exercise needs assessments, and tailored interventions to increase physical activity for women with diabetes.



The Founders

The research of CWHR director **Judith Regensteiner, PhD**, professor of medicine in CU's School of Medicine's divisions of general internal medicine and cardiology, seeks a better understanding of cardiovascular effects of diabetes in women. She has extensive expertise in vascular diseases, including peripheral arterial disease, and has been principal investigator or co-investigator of large grants to assess exercise capacity and gender differences in type 2 diabetes.



CWHR associate director **JoAnn Lindenfeld, MD**, professor of medicine in the CU School of Medicine's division of cardiology, has been recognized as one of the top physicians nationally by the Castle Connolly Guide to America's Top Doctors, and regionally by 5280 magazine. Her expertise includes heart failure in women, peripartum cardiomyopathy, use of beta-blockers in heart failure and mechanisms of ventricular dysfunction.

Researcher **Lorna Moore, PhD**, is internationally renowned for research on how humans adapt to high altitude, with a focus on how women adjust to physiological demands of pregnancy and the impact of altitude on maternal and infant health. She now is dean of the graduate school of arts and sciences at Wake Forest University.



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

Contact

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Be Part of the Solution

Imagine a future in which mothers, grandmothers and daughters can overcome cardiovascular disease and diabetes.

Just imagine how much more joy, laughter and revelation will be in store for all of us.

So many pieces are in place to enable the Center to make great strides in research on women's health—and to date, hundreds of individuals and organizations have stepped up in support. Please join us in this vital endeavor as we fight cardiovascular disease and diabetes, one woman at a time.

University of Colorado
Anschutz Medical Campus

center for
Women's Health
RESEARCH

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

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