As we enter the holiday season, I would like to extend my heartfelt thanks to the supporters of the Center for Women’s Health Research at the University of Colorado School of Medicine. This year we celebrated the 10th Anniversary of official University center status for CWHR. We would certainly not be here today without the tremendous support from the community—thank you!

We are very excited to announce the Nancy Anschutz Endowed Chair in Women’s Health Research. A lead gift of one million dollars for this endowed chair was recently made by the Anschutz Foundation. The purpose of the endowment is to support young faculty through seed grants and to support dedicated mentoring time for senior faculty. Research funding is at an all-time low nationally, which threatens the ability of young scientists to stay in the field, and the Nancy Anschutz endowment will make a tremendous difference in supporting our young scientists. When fully endowed, this chair will be $2 million which will boost seed grant funding and augment senior faculty mentoring. We are very grateful to the Anschutz Foundation for this extraordinary gift!

At the CWHR Annual Community Luncheon on October 8th, Dr. Noel Bairey Merz, Director of the Barbra Streisand Heart Center at Cedars Sinai Medical Center, gave a compelling and passionate talk about heart disease, the number 1 killer in women. During her talk, she presented 5 healthful lifestyle habits associated with 82% lower risk of heart disease. We are very grateful to our luncheon sponsors and the 630 attendees. Immediately following the luncheon, I had the unique opportunity to meet with other national leaders in women’s health who were convened by Dr. Bairey Merz in Los Angeles to discuss funding priorities and the need for more endowed chairs in women’s health research.

On October 16th, the CWHR hosted Women’s Health Research Day in which junior faculty presented scientific posters on women’s health and sex difference research. Ginger Graham, former President and CEO of Amylin Pharmaceuticals, was our visiting professor for the day. In her keynote address, she shared stories about her own career path to highlight keys to success in creating your future. Ms. Graham was hailed both for her fascinating talk and for her ability to bring CWHR Advisory Board members and junior faculty together in a highly interactive and thought provoking event.

Finally, it is with both sadness and gratitude that we say farewell to one of the founding members of the Center for Women’s Health Research, Dr. JoAnn Lindenfeld. Dr. Lindenfeld will be leaving the University of Colorado to become the Director of the Advanced Heart Failure and Transplant Program at Vanderbilt. We extend our deepest appreciation to Dr. Lindenfeld for being an integral part of the Center’s growth. We will miss her terribly and send our very best wishes as she begins the next chapter of her successful career.
Noel Bairey Merz, MD, Director of the Barbra Streisand Women’s Heart Center at Cedars Sinai Medical Center in Los Angeles, captivated attendees at the keynote speaker at the 2014 Annual Community Luncheon on October 8th.

A cardiologist and leader in the field of women’s heart disease, Dr. Bairey Merz explained how and why heart disease presents differently in women and men and why treatment of heart disease differs between the sexes. She also gave attendees hands-on tips for reducing the risk of heart disease.

In 1984, heart disease began killing more women than men and became a new epidemic for females. **Heart disease remains the #1 killer of women at all ages.** One explanation is that cardiologists often look for male patterned heart disease in which plaque in the arteries deposits and accumulates and throws off large clots that cause heart attacks. In female patterned heart disease, the plaque erodes more slowly. The erosion is harder to see on an angiogram, but just as deadly.

**Heart disease is a largely preventable disease. Dr. Bairey Merz underscored the importance of adhering to these 5 healthful lifestyle habits:**

1. Mediterranean Nutrition  
   (See next page for USDA comparison)
2. Non-Smoking
3. Non-Obese  
   (Body Mass Index <25 or <20% overweight)
4. At Least 30 Minutes Walking/Exercise Per Day
5. One Serving of Alcohol Per Day  
   (More than two per day increases risk)

**5 HEALTHFUL LIFESTYLE HABITS associated with 82% LOWER RISK OF HEART DISEASE**

*(continued...)*
Adhering to all healthful habits is associated with lower risk of heart disease, but only 10% of the population follow these habits.

The Center for Women’s Health Research is extremely grateful to our individual, corporate, and foundation sponsors whose generous support funds the programs and research at the CWHR.

**USDA vs. Mediterranean**

Dietary Recommendations (USDA=United States Department of Agriculture)
Luncheon Highlights

10th Anniversary centerpieces

Host Committee Chair Sharon Martin and guests

ABOVE: Joe Wagner, Eileen Honnen McDonald, and Mike Nelligan

RIGHT: CWHR Junior faculty researcher Kristen Demoruelle speaks about rheumatoid arthritis

Keynote speaker Noel Bairey Merz, MD

Students from the Denver School of Science and Technology-Green Valley

Noel Bairey Merz, MD and Judy Regensteiner, PhD
Women’s Health Research Day

On October 16th, the Center for Women’s Health Research hosted Women’s Health Research Day, a poster session for students and junior faculty who present their research on women’s health or sex differences to a panel of judges. This year’s keynote speaker was Ginger Graham, President of Two Trees Consulting and former president and CEO of Amylin Pharmaceuticals. By sharing her own experiences throughout her very successful career, Ms. Graham emphasized these thought provoking points to consider on the journey to creating your own future:

1. You can never imagine where your career path might take you.
2. Learning never ends and learning grows with time.
3. Transferable skills are very important.
4. The world is very small, so don’t burn any bridges.
5. You are the captain of your own ship.
6. Think about what role you have in leading if you want to affect the outcome.

Congratulations to the following winners of the poster session!

Erin Martinez: Communication on Healthy Behaviors During Pregnancy: Perspectives from Patients and Providers

Cemal Ozemek, PhD: Conduit Artery Endothelial Dysfunction Precedes Microvascular Dysfunction across the Menopause Transition

Angela Tomczik: Microbes-A New R Package For Analysis Of Microbiome And Metabolomics Data In Mother And Infant Pairs

Adrienne Stefanski: Identification of Trophoblast-Derived and Pregnancy-Associated Exosomal MicroRNAs: Implications for Immune Tolerance

Linnea Schmidt: Hedgehog Signaling in Cranial Suture Development

Kristen Demoruelle, MD: Mucosal Generation of Rheumatoid Arthritis-Related Autoantibodies in Women in the Preclinical Period of Rheumatoid Arthritis Development

Michael Oliphant: Six2 mediates epigenetic regulation of Epithelial-to-Mesenchymal Transition (EMT) markers to promote metastasis
Congratulations to the 2014 Junior Faculty Development Award Recipients!

CWHR junior faculty development awards provide seed grant funding for young researchers who are exploring important questions in women's health. Award winners are selected by a committee of senior faculty members in the Department of Medicine. The initial findings from these grants are used when applying for larger NIH grants. Many thanks to the following supporters who made these seed grants possible: The Anschutz Foundation, The List Family Foundation, The University of Colorado School of Medicine, The Connie Burwell and William W. White Foundation, and Jacqueline's Wish Fund (Karen and Steve Leaffer).

Kristen E. Boyle, PhD
Mesenchymal Stem Cells and the Epigenetic Programming of Neonatal Adiposity

Dr. Boyle's research focuses on the fetal programming of obesity. Factors such as a mother's obesity, insulin resistance, and inflammation may all play a role in her child's future risk for obesity, though how this occurs is not known. Dr. Boyle hypothesizes that in utero exposures, such as inflammation, may alter the baby's DNA structure and function. In order to address this hypothesis, she uses stem cells cultured from umbilical cord tissue of babies born to obese or normal weight mothers. These cells have the ability to differentiate into several cell types, including fat cells and muscle cells. Specifically, Dr. Boyle is interested in how the DNA structure of these cells, acquired in utero, alters their ability to differentiate into either fat or muscle cells. Results from this research may give critical insight into how exposures in utero may affect obesity risk later in life.

Kathryn Chatfield, MD, PhD
Dysregulated Cardiolipin Biosynthesis and Altered Mitochondrial Energy Production in Pediatric Idiopathic Dilated Cardiomyopathy

This research aims to understand what causes heart muscle disease, or cardiomyopathy, in children. Specifically, Dr. Chatfield is investigating idiopathic dilated cardiomyopathy (IDC), where the cause of heart failure is typically unknown but will lead to death or heart transplant in 30% of children by 1 year from the time of diagnosis. Goals of this research are to understand how IDC is different in male and female children and how this disease in children differs from IDC in adults. Better understanding of the causes of IDC will help direct new medical and dietary therapies to improve the outlook for children diagnosed with this devastating disease.

(continued...)
Erin Giles, PhD

*Exercise, Inflammation, and the Menopausal Transition*

Dr. Giles will study how weight gain during menopause may increase inflammation in fat tissue and how this may lead to the development of metabolic diseases (like diabetes) in postmenopausal women. During menopause, weight is often gained in the fat surrounding the organs, and this has many negative health effects. Dr. Giles will test whether exercise during the early stages of menopause may be able to shift this weight gain to subcutaneous fat depots (like the hips and thighs), reducing the risk of developing metabolic disease. This grant will allow us to further our understanding of the tissue-specific beneficial effects of exercise after menopause, ultimately reducing the harmful effects of menopause.

Vanessa Sherk, PhD

*Osteogenic Responses to Exercise with Obesity*

Bone strength can be enhanced by weight bearing exercise. A prevailing belief has been that obesity builds stronger bones and protects against osteoporosis. However, it is now apparent that in some cases obesity actually increases the risk for osteoporosis. The goal of this project is to find out how obesity affects the way that bones adapt to exercise. A second goal is to determine whether obesity and exercise affect how bone-building cells (osteoblasts) respond to insulin and glucose. The results of this study can help inform the design of exercise programs to ensure that the benefit of exercise on bones can be maximized. This would ultimately help lower the risk of bone fracture, which is a common cause of frailty in older women.

Stacey Simon, PhD

*The Role of Circadian Factors and Sleep Disordered Breathing on Insulin Resistance in Girls with Polycystic Ovarian Syndrome*

In addition to being at increased risk for type 2 diabetes and cardiovascular disease, adolescents with Polycystic Ovarian Syndrome (PCOS) are much more likely to have sleep problems. Adolescents are already at risk for sleep problems, as social, biological, and environmental factors predispose teens for chronic sleep deprivation. This research study plans to examine multiple sleep factors and investigate differences between girls with PCOS and obesity and their similar-weight peers, as well as examine the relationship between sleep and insulin resistance. Information learned from this study will help us better understand the relationship between sleep and obesity and how to intervene to improve sleep and insulin resistance, thereby potentially preventing diabetes and cardiovascular disease in girls with PCOS.

(continued...)
Sarah Perman, MD  
Gender Differences in the Decision to Withdraw Life Sustaining Therapy after Cardiac Arrest  
Patients who have a cardiac arrest (when the heart stops) have a complicated hospital course and often do not survive to hospital discharge. Sometimes this occurs because decisions are made to discontinue life support. Our preliminary data suggest that “Do not resuscitate” orders are established earlier in women than in men. Therefore we are seeking to evaluate if there is a difference in how often and under what circumstances life support is discontinued in women versus men after cardiac arrest. Our hope is that this pilot work will shed further light on the gender differences in cardiac arrest outcomes that have been observed.

Laura Brown, MD  
Decreasing the Lifelong Risk of Cardiovascular Disease and Diabetes in infants affected by IUGR  
The susceptibility to different illnesses, including heart disease, diabetes, and obesity are primarily determined by how a baby grows in the womb. This is commonly termed the “fetal origins of adult disease.” When the placenta does not function properly, passage of nutrients to the fetus is reduced and the baby does not grow normally (a problem called intrauterine growth restriction, or IUGR). Those babies born with low birth weight are at higher risk of developing heart disease and diabetes later in life, compared to those babies who grew normally in the womb. Dr. Brown’s research is focused on finding nutritional strategies to improve an IUGR baby’s muscle growth in order to prevent these diseases that develop later in life.

Kudos to CWHR Researchers!  
Brian Stauffer, MD received a R01 grant for his research, “Molecular and Functional Mechanisms of Pediatric Heart Failure.” This project evaluates sex differences in the failing human pediatric heart.

Teri Hernandez, PhD recently received a R01 grant for her project, “Randomized Trial of Diet in Gestational Diabetes: Metabolic Consequences to Mother and Offspring.”

Kristen Demoruelle, MD received a K23 Mentored Patient-Oriented Research Career Development Award for her project “The Lung as an Originating Site of Autoimmunity in Rheumatoid Arthritis.”

Jacinda Nicklas, MD, MPH, MS was named the newest BIRCWH scholar (Building Research Careers in Women’s Health). Her project title is Fit After Baby: A mobile health (mHealth) lifestyle intervention program to increase postpartum weight loss in women at elevated risk for cardiometabolic disease.

Amy Huebschmann, MD was awarded a K23 Career Development grant for her project “Targeting Physical Activity to Improve Cardiovascular Health in Type 2 Diabetes.”
Researchers Spotlight:

Kristen Demoruelle, MD

CWRH Researcher Speaks at the 2014 Annual Community Luncheon about her Research on Rheumatoid Arthritis

CWRH researcher Dr. Kristen Demoruelle wants to know why rheumatoid arthritis affects 3 times more men than women. With rheumatoid arthritis, joint damage occurs as a result of the immune system attacking the joints, and the disease can also adversely affect the heart and lungs. In fact, coronary artery disease is the leading cause of death in patients with rheumatoid arthritis. More than 1 million people suffer from this devastating disease and the cause is unknown.

Dr. Demoruelle credits the CWRH for the integral role that it has played in funding her work as a young investigator, in giving her a strong mentoring team, in establishing important new collaborations, and in modifying her career path so that she now has a stronger focus on understanding the role of sex differences in rheumatoid arthritis.

Dr. Demoruelle is a former BIRCWH scholar (Building Interdisciplinary Research Careers in Women’s Health) and with excellent mentoring by Dr. Judy Regensteiner and Dr. Mike Holers, she was recently awarded an independent research grant from the National Institutes of Health for her work on rheumatoid arthritis.

Donor Spotlight:

UMB Bank is a passionate supporter of each community it serves. As the leading sponsor of the CWRH 2014 Annual Community Luncheon, UMB Bank demonstrates its commitment to and concern for both the physical and financial well-being of its clients. Dana Abraham, President of UMB Private Wealth Management, stated that: “UMB is thrilled that the story of heart disease and women and diabetes and women are being told and addressed by the CWRH. I applaud the contributions that the Center is making to impact the lives of women today and future generations. The CWRH is changing the world for our mothers, sisters and daughters.” A special thank you to UMB Bank!
CWHR Extends its Gratitude to JoAnn Lindenfeld, MD

It is with heavy hearts that we bid farewell to the Associate Director of the Center for Women’s Health Research, JoAnn Lindenfeld, MD, who has accepted a position as Director of the Advanced Heart Failure and Transplant Program at Vanderbilt University in Nashville, Tennessee.

Dr. Lindenfeld was instrumental in founding the Center for Women’s Health Research in 2004. As an internationally recognized expert in heart failure in women and Director of the Cardiac Transplant Program at the University of Colorado, Dr. Lindenfeld’s research has focused on heart failure in women, the use of beta blockers in heart failure, mechanisms of renal dysfunction after heart transplantation, ventricular dysfunction in diabetes, and peripartum cardiomyopathy.

She currently serves as President of the Heart Failure Society of America and is author of over 150 publications. We extend our deepest appreciation and gratitude to Dr. Lindenfeld and wish her much success at Vanderbilt!

Welcome to Leah Seiffert, our new Program Assistant

The Center for Women’s Health Research welcomes its newest staff member, Leah Seiffert! As the Program Assistant, she provides administrative and programmatic assistance to the senior staff of the CWHR including the Director, Managing Director and the Program Manager. She also supports communications to the Advisory Board, and to affiliated internal CU and external constituencies and stakeholders, and will support the implementation of fundraising events, programs, and Education and Outreach initiatives.

Prior to joining the Center for Women’s Health Research, Leah held administrative positions at Northwestern University for over four years. At Northwestern University, she provided administrative assistance to the Executive Director of Research Facilities in the Office for Research. She also served as Program Assistant for the Non-equilibrium Energy Research Center (NERC), where she provided support to 12 Principle Investigators and over 45 postdoctoral fellows and graduate students.

Leah holds a Master’s degree in Music Performance from Northwestern University, and a Bachelor’s degree in Music Performance from The Juilliard School.
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