



Quarterly Highlights

WINTER 2021 QUARTERLY HIGHLIGHTS



Hello and Best Wishes from Dr. Judy Regensteiner, CWHR Director and Co-founder

As we look back at 2020, despite the difficult year we have all had, I am amazed by all that has been made possible by science. In recent months, promising vaccinations allows us to begin to look forward to a post-pandemic world. This past year has also demonstrated the importance of a strong continued focus on research. The data we gather today will ultimately help transform medicine tomorrow. A key example is the rapid progress on a COVID-19 vaccine, which is a testament to ongoing research and the importance of investing in the next generation of researchers.

In December, the Office of Research on Women's Health (ORWH) at the National Institutes of Health (NIH), celebrated its 30th anniversary. This weeklong virtual celebration documented the progress made in women's health and sex differences research. There has been a lot of progress in women's health and sex differences research and there is increasing focus in this important area for all human health and disease. For instance, there are highly reproducible sex differences in the volume of certain regions in the human brain. We are just beginning to understand the significance of these differences which may relate to all activities controlled by the brain. Much more research will be needed to clarify the functional relevance of these differences. We are excited about all that has been made possible, but we know that more work must be done. I hope you will read our article detailing the week of activities and that you find the work as energizing as I do.

As we continue to live in a virtual world, the Center hosted its Annual Community Event in November. Our speaker was Laurie Santos, PhD, a cognitive psychologist at Yale University to speak about *The Science of Well-Being*. This timely talk detailed eight evidence-based strategies to improve happiness. The recorded talk can be found at www.cwhr.org.

We have hosted all of our events virtually for nearly one year, and while we cannot wait to meet in person again, we have expanded our audience and reached people in seven countries. In our interconnected world, our educational programs resonate with more people than ever before. We are excited to bring this important information to a wider audience and hope to utilize a hybrid model going forward.

Thank you for your continued interest in and support for women's health and sex differences research. The Center is strengthened by your partnership.

Judy Regensteiner, PhD
Professor of Medicine
Judith and Joseph Wagner Chair in Women's Health Research
Director, Center for Women's Health Research
Director, Women in Medicine and Science

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Recent and Upcoming Events

Feb 16 Arrow Quarterly Women's Health talk

Feb 18 Let's Talk: Mending a Broken Heart: Technologies, Treatments and Threats

Feb 27 19th Annual Women's Health Symposium

Mar 12 Researcher Training: Mission, Vision and Goals with Anne Libby, PhD

Apr 27 CWHR Scientific Council Annual Meeting and Researcher Panel Discussion

Apr 28 Let's Talk: Infectious Diseases

The University of Colorado Anschutz Medical Campus is postponing all in-person events. The safety of our community is extremely important to us. The Let's Talk lecture series and researcher trainings are moving online so we can continue to engage with our community. We look forward to gathering in person once it is safe to do so.

Learn more at www.cwhr.org.

Newsletter Format is Changing

In the coming months, we will be making several changes to our newsletter so we can better share the exciting news happening at the Center for Women's Health Research with you. First, in April, we are launching a short monthly update via email. This email will contain just a few articles to deliver stories to you in a timely manner. Additionally, we have moved the donor recognition listing online. We are excited to make these changes and hope you enjoy the new format.

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Celebrating 30 Years of Progress

2020 marked the 30th anniversary of the Office of Research on Women's Health (ORWH) of the National Institutes of Health (NIH). In recognition of this milestone, the ORWH held a series of virtual meetings that celebrated its role in supporting women's health research and sex and gender studies within and beyond the NIH scientific community.

Over the course of the week, the ORWH featured a series of talks on topics such as the Building Interdisciplinary Research Careers in Women's Health (BIRCWH) program, *Advancing the Health of Women Through Science*, women's mental health and more.

Judy Regensteiner, PhD, director of the Center for Women's Health Research and member of the ORWH Advisory Committee on Research on Women's Health said, "This was an important event that demonstrates the progress that has been made in women's health research. The work that has been done by ORWH is only possible because of a concerted effort made by ORWH in partnership with researchers and institutions around the country."

In addition, Dr. Regensteiner moderated a panel discussion on sex as a biological variable (SABV). Thinking about SABV and the related concept of gender requires researchers to factor sex and gender into the design, analysis and reporting of scientific results in animal and human studies. She was joined by Virginia Miller, PhD, MBA, from Mayo Clinic, Karen Freund, MD, MPH, from Tufts Medical Center and Kadir Turi, PhD, from Vanderbilt University on the panel.

Several key points were made highlighting gaps as well as opportunities that research institutions have to advance women's health and sex/gender research. Opportunities mentioned included integrating SABV into medical school curricula, training investigators to better account for SABV and engaging with mentors guiding early investigators. The panel also emphasized the impact faculty can have on ensuring all research considers sex and gender and that data disaggregated by sex are always reported when reviewing journal articles and grant applications.

In addition, January 25, 2021, marked the fifth anniversary of the enactment of the NIH Policy on Sex as a Biological Variable. To highlight the ongoing work within this space, ORWH has developed various free online courses and an online primer to address the gaps in knowledge about the influences of sex and gender on health and disease and about the SABV policy and practice.

In the coming year, the ORWH is focused on providing even more information to the community. On January 27, ORWH launched a new NIH COVID-19 website and lecture series titled *Diverse Voices: COVID-19 and the Health of Women*.

To stay informed about more ORWH resources and upcoming activities, please visit the ORWH website. <https://orwh.od.nih.gov/in-the-spotlight/all-articles/orwh-hosted-30th-anniversary-virtual-meeting-series-advancing-health>.



**OFFICE OF RESEARCH
ON WOMEN'S HEALTH**

*Advancing the Health of
Women Through Science*

National Institutes of Health | 1990 – 2020

"This was an important event that demonstrates the progress that has been made in women's health research."

~JUDY REGENSTEINER, PHD

Q&A

With a Pioneer in Cardiology and Women's Health



The Center connects scientists and community members from around the country and advocates for women's health and sex differences research. One key element is the Center's Scientific Council. This group consists of internationally renowned scientific leaders in the field that help guide the scientific mission of the Center. **Nanette Wenger, MD**, professor emerita of Medicine at Emory University School of Medicine, is a longtime member of the Scientific Council and a living legend in the field of cardiology and women's health and sex differences research. We recently interviewed her about the role of innovation in women's health and sex differences research.

NOTE: Responses have been edited for length.

How did you get involved with the Center?

My involvement with the Center began in conversations with Judy Regensteiner, PhD, and some of the women who were part of the Center community board. I made several trips to Denver that were really memorable because of the people with whom I interacted. Some were scientists, some were community members and philanthropists, but all had a passion for women's health.

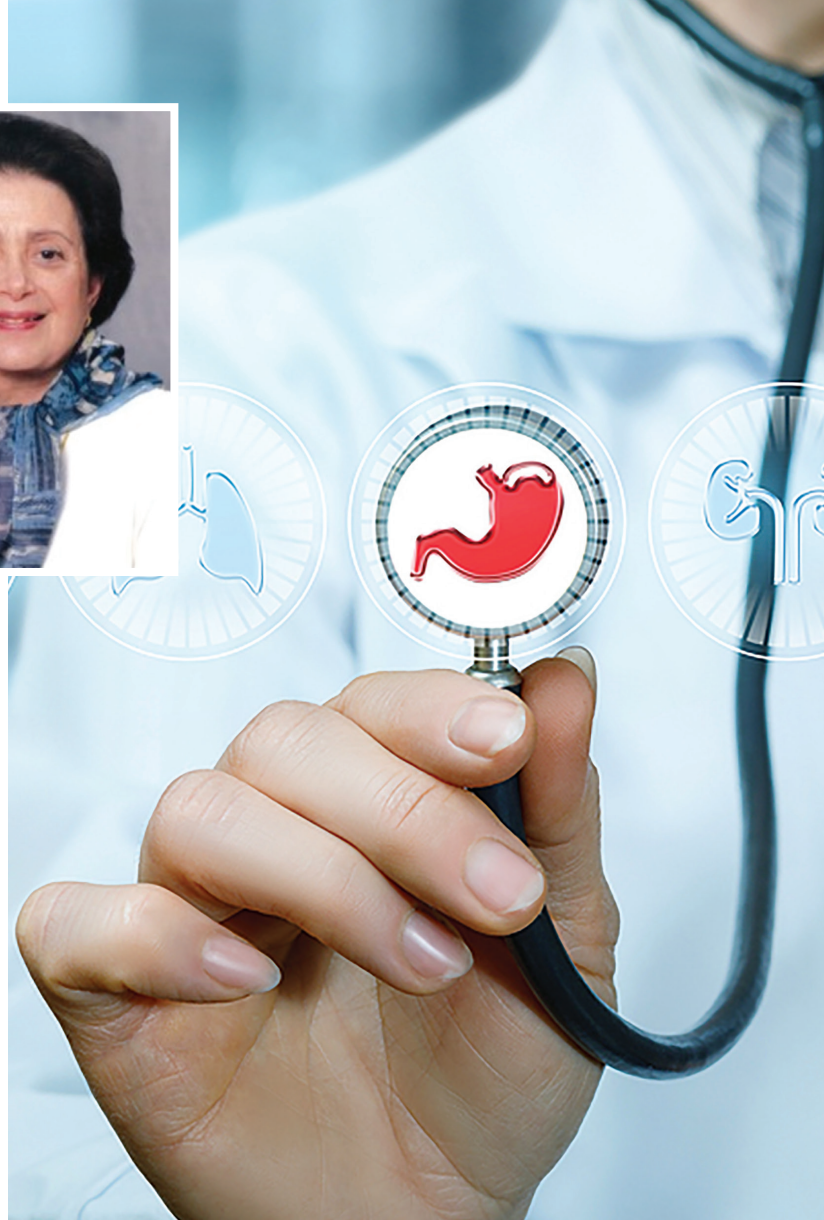
Why is it so important to involve the community?

Involving the community gave the Center a very different perspective. It allowed the community to learn about the Center, its work and its scientists. This also allowed the Center and its scientists to interact with the community. I must admit that I have shamelessly stolen this idea, giving credit

where credit is due. As we have lived through COVID, what we have learned is that what we considered scientific parlance is now dinner table conversation. People learn about science, they learn about evidence-based research and clinical trials, regulatory, etc., and I expect that some of that sharing with the community is what has enabled huge enrollment in the vaccine trials.

Why was a center dedicated to women's health innovative?

Let me go back to the 1980s, which is when I became interested in women's heart health. What you have to realize is that for most of the last century women's health is what I have termed "bikini medicine" meaning it involved the areas of the body covered by bikini bathing suits – the breasts and the reproductive system. Everything else was not considered relevant.



Why was it vital to recognize women's health and sex differences in medicine?

An important feature to emphasize is that when we study women's health and when we study sex and gender differences, we are really studying men's health as well. Anything that we do that will improve women's health and identify important sex and gender differences will have major ramifications for improving men's health.

Twenty years ago, could you see what women's health research would look like today?

I don't believe when I started asking the questions that I would ever dream how far we have come. In the 1980s, as I was caring for women who had heart disease in the hospital and in the clinic, I found nothing in the scientific literature to guide my care for those women. We were using therapies and tests that had been validated in middle-aged men — almost exclusively middle-aged Caucasian men — and applying it globally. We began to see that women with heart disease had adverse outcomes compared with their male peers and this is why the questions became important. I challenged the organizations with whom I worked such as the American Heart Association, American College of Cardiology, National Institutes of Health, and the National Heart Lung and Blood Institute (now known as the National Heart Lung and Blood Institute). People just shrugged their shoulders. As a matter of fact, my chief at the time, who was both one of my colleagues and my mentor, said, "You know you're developing a wonderful reputation as a clinical trialist and clinical cardiologist. Why are you sidelining your career to examine something that is not paramount?" Well, I thought it was paramount, and over time I was able to enroll other people in my vision.

After many prompts the NIH had a conference on women and heart disease. It derived from a workshop that had occurred about six years earlier. It was my privilege to co-chair the conference and the result was the *New England Journal of Medicine* paper for which I was lead author. The paper talked about women and coronary heart disease, and it was the first time that women and heart disease had been linked in a prestigious journal publication. What ensued was a number of clinical scientists, both women and men, suddenly

realizing that there was a huge knowledge gap and that the knowledge gap adversely affected women's health.

What role has mentorship played in your life?

During my career I have had fantastic mentors but most all of them were men. During my time in medical school, I was fortunate enough to have very senior cardiologists who mentored me.

When I arrived at the Emory University School of Medicine as a brand-new faculty member, Dr. J. Willis Hurst, who was both a mentor and a colleague, had a mantra of excellence. As long as I did quality work, I was supported in it. Even though he thought that my venturing into women's heart health was sidelining my career, he supported me just as he previously had. Again, it was a matter of having a mentor who supported something with which at least early on he did not agree. When women's heart health came to the forefront, his comment to me was, "Nanette, I am so delighted that you didn't listen to me."

What advice do you have for junior faculty in cardiology?

I'm delighted by the Center's focus on cardiovascular disease because that is the major killer of women. Therefore, we have a long way to go in terms of trying to remedy that problem. The question that I've often asked in lectures is whether this is biology, bias or both. I think it's both. Again, the Center's support for women studying women's heart health is extremely important. Mentors, both the academic mentors and the community mentors, identify the relevance of the research to the community and relevance of the community to the research and provide guidance. A mentor is a sounding board. A good mentor keeps someone from doing something that would be disadvantageous to their career but other than that it is a forum for discussion. I suspect that having mentored so many men and women throughout my career, I've learned just as much from them as I've given.

To see more of our interview, visit www.cwhr.org.

Sex Differences in Acute Kidney Injury

and Implications for the Heart

Danielle Soranno, MD,
is researching mice to find out.



Acute kidney injury (AKI) occurs when the kidneys suddenly stop working properly. This is common for patients in the hospital, can increase their length of stay and results in worse patient outcomes. AKI can also significantly impact other organ systems – particularly the cardiovascular system. Animal studies have shown that AKI can cause cardiac complications similar to that of a heart attack, and large adult studies show that AKI increases the risk of heart attack and stroke even years after the initial AKI event. New research at the Center is looking at the connection between AKI and heart health to understand if female sex protects the heart from AKI.

“Acute kidney injury has historically been studied separately from chronic kidney disease, but we are seeing more evidence that AKI can lead to long-term kidney disease,” said Danielle Soranno, MD, Center researcher. “AKI research formerly often only looked at four hours to one day out from the injury, but our study wanted to see the long-term effects of AKI - from one month to one year - to better understand estrogen and its protective qualities on women’s

hearts.” In AKI research, Dr. Soranno is one of the few investigators to propose research that looks at the effects of AKI on the heart up to 12 months later.

The study found that male mice with AKI developed high blood pressure and that their hearts did not pump as well as mice that did not have AKI. Females also developed high blood pressure, but their hearts were still able to pump well. “Our findings suggested that estrogen was protective for energy utilization in the heart in females,” said Dr. Soranno. Understanding the mechanisms underlying these sex differences could result in better patient outcomes for both men and women dealing with AKI.

Dr. Soranno had attended several Annual Community Luncheon events with the Center. “Every time I was at the luncheon, I knew that I needed to include sex differences in my research,” said Dr. Soranno. “It was just a matter of gathering some initial data so I could put together a proposal.”

After starting in biomedical engineering, Dr. Soranno was urged by her mentors to apply to medical school.

She is now a clinician-scientist at the CU Anschutz Medical Campus. "I was drawn to basic science because it paired well with my background interests and I liked the challenge," said Dr. Soranno. "Not a lot of clinicians pursue research. It is challenging and you aren't sure if you are going to succeed. It is really a study in resiliency." In addition to her robust research program, Dr. Soranno is also a pediatric nephrologist at Children's Hospital Colorado. "There is so much to be gained from the clinic. Some things sound great in the lab, but you have to understand the clinic to translate that knowledge into patient care."

Dr. Soranno credits the Center with helping launch her long-term AKI study as well as for fostering a collaborative environment. She is currently funded by a Junior Faculty Research Development Award, along with Dr. Peter Baker, another Center scientist. "I have met so many science friends and collaborators through the Center. It is exciting. I think one of the main downsides with COVID professionally is losing the impromptu connections that we used to make in the lab and other gatherings on campus."

The Junior Faculty Research Development Awards, or seed grants, jump-start ideas and help researchers build careers in women's health and sex differences research. The funding along with mentoring, trainings, networking and biostatistical support make it possible for junior researchers to obtain crucial pilot data, submit for larger grants and become independent investigators. Each seed grant is typically \$25,000, with \$50,000 grants periodically awarded for multi-disciplinary team research projects.

"Our seed grant program is extremely effective and seeing our awardees succeed is one of the great joys of working with the Center," said Jane Reusch, MD, associate director at the Center. "These grants support new ideas and junior faculty to pursue innovative research in the much-needed area of women's health and sex differences. This is a tangible result from philanthropic support in our community."

Congratulations to the recipients of the 2020 Junior Faculty Research Development Awards:

Thank you to the funders of these awards:

The Anschutz Foundation
The Jacqueline Leafer Foundation
The List Family Foundation
The Ludeman Family
University of Colorado School of Medicine

Kimberley Bruce, PhD

Sex Differences in Microglial-lipoprotein Metabolism and Alzheimer's Disease Risk

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Michelle A. Clementi, PhD

Intraindividual Sleep Variability and Circadian Factors in Adolescent Girls with Chronic Migraine: Associations with Psychological Functioning

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Mindful Moms to Be

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Altered PVAT Phenotype by Thermoneutrality Compromises Vasoreactivity: Does Sex Matter?

Rebecca L. Scalzo, PhD

The Sex Specific Impact of Type 2 Diabetes on the Gene Expression Signature Associated with Skeletal Muscle Mitochondria

Owen Vaughan, PhD

How to Prevent Cardiac Dysfunction in Children of Obese Pregnant Women: The Mechanistic Role of Fetal Circulating microRNAs

Mary O. Whipple, PhD, RN

Understanding the Role of Knowledge, Mood, and Sense of Meaning in Sedentary Behavior Engagement Among Older Women with Type 2 Diabetes: Implications for All Older Women

Learn more about these and the work of other Center scientists at www.cwhr.org.

Researcher Trainings

Every month, the Center offers a different training to Center researchers to hone and sharpen their research, grants management and other core skills. These tailored, hands-on trainings are provided by senior faculty of the Center as well as other experts at the CU Anschutz Medical Campus and are a hallmark of our mentorship programming. Below is a listing of our trainings over the last six months.

Transitioning Back to Research

AUGUST 21, 2020

Vice Chancellor for Research **Thomas Flaig, MD**, joined Center researchers for an interactive discussion regarding transitioning back to research in the time of COVID. Dr. Flaig was appointed to this role in March 2020 and is overseeing efforts to resume on-campus research, among many other duties. He spoke with researchers about the policies in place to keep them and study participants safe while on campus and the order in which research is being brought back to campus.

Negotiation Fundamentals

SEPTEMBER 16, 2020

Anne Libby, PhD, professor and vice chair for academic affairs in the CU Department of Emergency Medicine and senior faculty at the Center, presented a training on negotiation to researchers. This training helped participants understand the goals and elements of negotiation and how to intentionally tailor communication to improve negotiation outcomes.

FOUR STEPS TO NEGOTIATION:

- Assess the benefits and costs.
- Prepare by understanding your interests and your counterpart's interests.
- Share unique information and engage.
- Bring alternative solutions that improve the situation for both parties.

How to Get the Most Out of Your Collaboration with a Biostatistician

OCTOBER 16, 2020

Biostatistician **John Rice, PhD**, joined Center researchers for a talk titled *How to Get the Most Out of Your Collaborations with a Biostatistician*. We offer this talk to our researchers regularly due to the importance of working with biostatisticians on campus.

KEY TRAINING OBJECTIVES:

- Better understand the roles of biostatisticians and data analysts.
- Factors to consider when create a study design.
- Understanding the data.

How to Hire (So You Don't Need to Fire)

NOVEMBER 13, 2020

Janine Higgins, PhD, professor of pediatrics, presented *How to Hire (So You Don't Need to Fire)*. The training was an overview of hiring strategies that helped participants understand the process for hiring, best practices and creating a cohesive team.

KEY TAKEAWAYS:

- Provide structure and a path to success for all team members.
- Professional development is the key for retention.
- Be transparent when things aren't going well.
- Thank the team for good work.

The Science of Scientific Writing: Reader Expectations and Needs

DECEMBER 9, 2020

Our December researcher training, *Reader Expectations: Giving Readers What They Want*, focused on critical skill for researchers of all levels: writing. Led by **Drew Bixby**, assistant director of the Writing Center at CU Denver@Anschutz, this training featured both an interactive seminar and a copy editing clinic. This was the first in what may become a series of workshops where we partner with the Writing Center at CU.

"I loved that training. One of the most useful ones yet, at least for me. I would absolutely be interested in more writing workshops. It is how I spend 90% of my time, and we ALL need improvement." – December attendee

Women's Health Research Day



On January 11, the Center for Women's Health Research hosted the 12th Annual Women's Health Research Day, a celebration of women's health and sex and gender differences research. Typically, researchers from across the University of Colorado Anschutz Medical Campus, the University of Colorado Boulder,

the University of Colorado Colorado Springs and Colorado State University gather to hear from a national leader in women's health and present their latest findings to peers and senior scientists in a judged poster session.

While the poster session was canceled this year, we were pleased to feature **Patricia Gabow, MD, MACP**, for the virtual keynote address.

Dr. Gabow spent her medical career at Denver Health, including serving as its CEO for 20 years. She is a professor emerita of medicine at the University of Colorado School of Medicine and a master of the American College of Physicians. She has authored over 170 articles, book chapters, and books, including her most recent book, *TIME'S NOW for Women Healthcare Leaders: A Guide to the Journey*.

Dr. Gabow's talk, "Women in American Healthcare – Problems and Promise," took a comprehensive look

at the many roles of women in healthcare, from recipients of care and caregivers, to researchers, leaders and members of the workforce.

Throughout her talk, Dr. Gabow explained how American healthcare is in need of change and that women, who have so often been excluded from healthcare leadership, bring valuable perspectives and skills that can help enable that change.

Women in academia face many obstacles, such as conscious and unconscious bias, sexual harassment, penalties for motherhood, burnout and imposter syndrome. Dr. Gabow suggested actions that governments, institutions and individuals can take to promote women in healthcare leadership, including:

- Eliminating/limiting bias in language, hiring and promotion
- Eliminating sexual harassment and requiring accountability
- Instituting equitable policies, such as parental family leave and affordable, accessible childcare
- Creating pay equity and pay transparency
- Formalizing mentoring and sponsorship
- Requiring monitoring and reporting of progress

She emphasized that through transparency, structure and more equitable systems, we can hope to create a more equitable healthcare system for all Americans.

Following the keynote, Dr. Gabow participated in a special Q&A session for Center researchers. Throughout the discussion, Dr. Gabow emphasized the importance of leading from where you stand. Her powerful message resonated with all faculty and staff in attendance.

"American healthcare is in need of change and that women, who have so often been excluded from healthcare leadership, bring valuable perspectives and skills that can help enable that change."

2020 Annual Community Event

Enhancing Well-Being and Investing in Women's Health

On November 11, Laurie Santos, PhD, professor of psychology at Yale University, shared eight evidence-based tips for improved well-being at the Center for Women's Health Research Annual Community Event. The Annual Community Event is the signature community outreach program for the Center. In past years, hundreds of people have gathered to learn more about women's health and sex differences research. This year, due to COVID-19 restrictions, the event was hosted via livestream.

"We are all going through so much, not the least of which is facing the incredibly difficult time that is COVID-19. So many of our routines have changed," said Dr. Santos. "We are working in different ways than we had been before, and many of us are facing uncertainty and fear and a lot of emotions that seem incredibly negative." Her timely talk centered on eight strategies to improve well-being.

"Even though things are really tough right now, it still makes sense to focus on happiness," said Dr. Santos. Research suggests that during stressful times, it is just as important to focus on happiness because of the connection between physical and mental health. "Happiness isn't just something that feels good, it is something that may be causally relevant to a lot of the other outcomes we want to see at this time," explained Dr. Santos.

New Seed Grants

The annual event also showcased the latest recipients of the Junior Faculty Research Development Awards (seed grants) from the Center. "Seed grants are an integral part of the Center's mission. Every year we award these grants in a highly competitive process where MD and PhD scientists submit grant applications," said Jane Reusch, MD, associate director at the Center. These \$25,000 grants allow researchers to gather preliminary data, which enable them to

subsequently apply for larger grants to further their research.

Highlighting the successes of the Junior Faculty Research Development Grants was **Vijay Ramakrishnan, MD**, associate professor in the Department of Otolaryngology. Dr. Ramakrishnan focused his talk on the disparities between women and men in his research on chronic rhinosinusitis (CRS). This condition inflicts a severe quality of life impairment with symptoms such as headache, sleep dysfunction and depression. He noted that women have more negative side effects from CRS than men. This condition causes \$12.8 billion in lost productivity every year and demonstrates the importance of understanding the connection between physical and mental health. Dr. Ramakrishnan noted, "When you look at women versus men, we noticed two key observations. One, women presented symptoms at an earlier age. Second, women had a worse symptom score than men despite having a relatively comparable amount of disease."

Continued Investments in Women's Health and Sex Differences Research

Nearly 1,600 people registered for the annual event and joined the Center not only from Denver but from around the country and the world. "Scientific research is more important now than ever and women's health and sex differences research is relevant both with regards to COVID-19 and for all healthcare," said Judy Regensteiner, PhD, director of the Center. "We are looking forward to the time when we can be in person, and I am confident with the advances underway in science that we will be able to gather again." The event raised critical support for the Center to advance women's health and sex/gender difference research and education programs.

Visit www.cwhr.org to view the event recording.

Thank You to Our 2020 Annual Community Event Benefactors

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Special thanks to longstanding supporters Lin and Steve Carlson for their generosity to the Center for Women's Health Research.

Let's Talk : Conversations about Women's Health Living in Harmony with Your Hormones

Our final *Let's Talk* lecture of 2020 focused on hormones. This lecture series offers evidence-based health information to our community from scientists at the University of Colorado Anschutz Medical Campus. Our speakers helped us better understand the role hormones play in women's health. We also learned from leading experts about relatively common hormone disorders like polycystic ovary syndrome (PCOS) and thyroid disease, and how the combination of hormonal changes, normal aging and menopausal symptoms can wreak havoc on weight control for many women.

KEY TAKEAWAYS:

- Polycystic ovarian syndrome (PCOS) affects 6-10% of females in the United States.
- PCOS is caused by both genetic and environmental factors.
- Hypothyroidism is 10 times more common in women than in men.
- Women in their 40s see a 25% decrease in metabolic rate and a reduction in fat-free muscle mass.
- During menopause women are at an increased risk for depressive symptoms.

Go to www.cwhr.org to learn more about the *Let's Talk* lecture series.



Donor Spotlight

Kate Brown

A Must Have Program

Advisory Board Member Advocates for Women's Health and Sex Differences

Understanding cardiovascular disease in women's health is personal for Kate Brown, founder of Boulder Organic Foods and Center Advisory Board member. Her father and grandfather both had cardiovascular disease, so Kate visited a doctor to better understand her risk factors. "I told my new doctor about my family history and she said, 'you don't have to worry about that – women don't get heart disease.' That was terrifying," said Kate. "You have to be pretty insulated to not know that women get heart disease. I wondered how many other patients that doctor had seen who now didn't think they had to worry about heart disease." Many patients do not advocate for their own health and are passive listeners to physician advice.

"I wondered how many other patients that doctor had seen who now didn't think they had to worry about heart disease."

"One critical component of the Center's mission is the community education piece. I know my body better than anyone else, and if the community is educated, they can work with their physicians rather than be passive receptors of medical information," said Kate. Since 2017, she has been an Advisory Board member, a key supporter of the Annual Community Event and the mission of the Center, demonstrating her commitment to both research and community.

"When I first had lunch with Nan Eklund, who was Chair of the Advisory Board at the time, and Judy Regensteiner, I was surprised to hear about the lack of research in women's health and sex differences. I didn't

know this had been the state of medical research for so long," said Kate. "This is an underlying reality in medicine that people don't know about — that sex differences weren't extensively studied until 1994. Because of this, there is a sense that the status quo is okay, but to me that is ludicrous." That initial conversation prompted Kate to give back to the Center both through philanthropy and as a member of the Advisory Board. "So often we hear frustrating news, and we think 'it shouldn't be this way,' but in this instance, the Center had a path forward to actually change women's health," said Kate.

Fourteen years ago, Kate founded Boulder Organic Foods and has grown the organization into a national brand. It started by accident following her daughter's tonsillectomy. "I went to the store to find some soup for my daughter when I realized that there were so many ingredients in the soups that didn't even look like food," said Kate. With some additional research and connections with Whole Foods, Boulder Organic Foods was born.

In the field of food manufacturing, there are few female founders. This has inspired her to be an active mentor by reaching out to students at the University of Colorado to serve as a much-needed resource for aspiring leaders. Kate said, "As one of the few women founders in food manufacturing, it has been interesting to learn the landscape and find my place." To her this demonstrated the importance of mentorship, a part of the mission at the Center that resonated with Kate. "Mentorship was one of the first things that captured me about

"We cannot allow this disparity to be the unknown foundation of our medical system." ~ KATE BROWN

the Center. I really think that mentorship is central to helping develop all industries."

Expanding a Critical Service to the Community

As a member of the Center's Advisory Board, Kate is integral in helping the Center move forward in achieving its goals. She hopes that the Center will continue to grow, reaching more people in the community and funding additional research. "The more voices we can get talking about women's health, the better. Let's get more research funded. Let's spotlight

more scientists to get attention on the important topic of women's health. Let's get more education out to our community so they can get healthier," said Kate.

"My general feeling about the Center is that I'm so glad that it started. This is not a nice to have. This is crucial. We cannot ignore women's health any longer. We cannot allow this disparity to be the unknown foundation of our medical system. We have to do this work, expand the Center and bring women's health into the light so people can learn about it."

Enduring Legacy of Former Scientific Council Member, Dr. Elizabeth Barrett-Connor

Dr. Elizabeth Barrett-Connor was a former member of the Center Scientific Council, a leader in the field of endocrine physiology, and a respected leader in sex and gender differences research. You can read more about her in our Summer 2019 newsletter. While Dr. Barrett-Connor sadly passed away in June 2019, her scientific stature and legacy live on through her impressive portfolio of publications as well as her stature in the field of women's health research.

In the world of research, citation metrics (how often and widely your publications are cited) are often used to show the impact of your work. However, these metrics can be misleading or inaccurate due to varying databases and a lack of standardization. We recently learned about a publication on a comprehensive, standardized citation metrics database for the most-cited authors across all fields of science. Dr. Barrett-Connor ranked #107 out of more than 6.8 million authors across all fields of science (biomedical, engineering, economics, etc.)! We are proud to have called Dr. Barrett-Connor a friend and colleague and continue to be amazed at her impact on women's health research.



...her scientific stature and legacy live on through her impressive portfolio of publications.

Researcher Accolades



Kristen Boyle, PhD



David Kao, MD



Ramón Lorca, PhD



Megan Kelsey, MD, MS

Kristen Boyle, PhD

Was elected chair-elect to the American Society for Nutritional Maternal, Perinatal and Pediatric Nutrition Research Interest Section and was nominated to be a member of the Precision Prognostics for Gestational Diabetes Working Group for the American Diabetes Association/ European Association for the Study of Diabetes Precision Medicine Diabetes Initiative.

David Kao, MD

Won the National Heart, Lung and Blood Institute's Big Data Analysis Challenge: Creating New Paradigms for Heart Failure Research.

Ramón Lorca, PhD

Received funding from the American Heart Association through the Innovative Project Award Program. His two-year project is titled *Optogenetic Control of Vascular Function During Pregnancy*. He also received a grant from the NIH for a project titled *Myometrial Artery Potassium Channel Activity in Intrauterine Growth Restriction Pregnancy*.

Megan Kelsey, MD, MS

Was appointed to serve as medical director of lifestyle medicine at Children's Hospital Colorado. This position will oversee the hospital's multidisciplinary program for weight management and related comorbidities. She also received the University of Colorado Nutrition and Obesity Research Center's Outstanding Faculty Member Award. Dr. Kelsey is now also a co-investigator on a new multicenter study sponsored by the NIH titled *BREATHE, A Mindfulness-Based Intervention for Depression and Insulin Resistance in Adolescents*.

Kristen Nadeau, MD, MS, Alex Barker, PhD, and Petter Bjornstad, MD

Were awarded an Innovative Project Award from the American Heart Association for a project titled *The Effects of Bariatric Surgery on the Cardio-Renal Axis in Youth-onset Type 2 Diabetes*, which seeks to determine the effects of metabolic bariatric surgery on cardio-renal function and bioenergetics in adolescents with obesity and type 2 diabetes.

Student Accolade: Haylie Petrick

The Center recently sponsored a student award that was provided to Haylie Petrick from the CU School of Medicine who presented a poster titled *Comparison of Maternity Care Outcomes Among Rural Colorado Hospitals Using Birth Certificate Data*. This was a presentation at the 35th Annual Student Research Forum. The Center is proud to support the pipeline of research, from a career day for high-school aged girls to pre-doc fellowships and faculty seed grants.



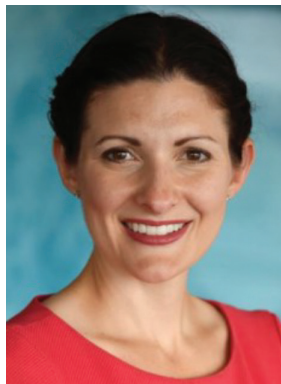
Kristen Nadeau, MD, MS



Petter Bjornstad, MD



Stacey Simon, PhD



Danielle Soranno, MD



Kalie Tommerdahl, MD



Mary Whipple, PhD, RN

Stacey Simon, PhD

Was selected as the Society of Pediatric Psychology representative to the American Psychological Association Committee on Women in Psychology. This committee is dedicated to ensuring women achieve equality within the psychological community nationally and around the world.

Danielle Soranno, MD

Received a grant from the state of Colorado for a project titled *Urine Color-Changing Diagnostics to Alert Patients to Transplant Rejection*. This proof-of-concept award will help Dr. Soranno develop a microgel that can detect inflammation in the kidneys.

Kalie Tommerdahl, MD

Was awarded the Children's Hospital Colorado Research Institute Research Scholar Award for her project titled *MANATEE-T1D: Metformin and Automated Insulin Delivery System Effects on Renal Vascular Resistance, Insulin Sensitivity, and Cardiometabolic Function in Youth with Type 1 Diabetes*.

Mary Whipple, PhD, RN

Received the 2020 Colorado Nutrition and Obesity Research Center (NORC) Award for Outstanding PHD Instructor/Fellow. This award recognizes PhD post-doctoral fellows and junior faculty who have made significant contributions to the NORC's success through research accomplishments, leadership and service.



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Conversations about Women's Health



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