Annual Report
2011–2012

Changing the way we think about food –
the health of the next generation depends on it.
“Once we started learning about the benefits of whole grains – and the problems caused by processed foods – we wanted to do something about it.”
  – Bob Moore, Founder, Bob’s Red Mill

“The Moores’ commitment to a future in which we can dramatically reduce the impact of chronic diseases has the potential to positively impact the health of people not just today but for generations to come.”
  – Mark Richardson, M.D., MBA, Dean, OHSU School of Medicine

“We are working on these health initiatives as if our collective future depends on it, because it does.”
  – Lawrence Wallack, M.S., MPH, DrPH, Dean, College of Urban and Public Affairs, Portland State University
“Working together, we can play a key role in understanding how the first 1,000 days following conception can set a person on a trajectory for a long and healthy life, or a life beset by diseases such as type 2 diabetes and heart disease.”

— Kent Thornburg, Ph.D., Interim Director, Moore Institute

“The golden opportunity here is to work in partnership with Bob and Charlee Moore as a key resource. With their involvement, we can create an initiative that makes the Moores proud while establishing their permanent legacy of good health for future generations.”

— Susan Bagby, M.D., Professor of Medicine

“What children eat has an enormous impact on their health, both as children and during adulthood. With the Moore Institute, we have an opportunity to improve the health of Oregonians throughout their lives, by improving our knowledge and education around nutrition.”

– H. Stacy Nicholson, M.D., MPH, Professor and Chair of Pediatrics; Physician-in-Chief of the OHSU Doernbecher Children’s Hospital

“The Bob and Charlee Moore Institute for Nutrition and Wellness will apply what we know today to call out the root causes of poor nutrition so that we as a society can confront them, fix them and begin to help guide future generations toward a path of health and well-being through healthy eating. “

– the late Allan Price, former President, OHSU Foundation

“What drives us is the sense that we are participating in a program that will have a meaningful and measurable impact on the health of our community for generations to come.”

–Jonathan Purnell, M.D., Professor of Medicine
Remembering Allan Price

(1955-2012)

The first annual report of the OHSU Bob and Charlee Moore Institute for Nutrition & Wellness would not be complete without a tribute to Allan Price, president of the OHSU Foundation, who died shortly after the gift announcement that set the Moore Institute in motion. Allan was admired by colleagues and donors for his passionate, high-energy approach and his focus on the social benefits that result from investment in health, science and higher education.

“Allan’s life was tragically brief in years but incredibly rich in achievement and in friendships. While we mourn his death, we can also celebrate all he did to make the world – and Oregon in particular – a better place.”

Keith Thomson,
Chairman of the OHSU Foundation Board of Trustees

“Allan Price’s death is a tragic loss for OHSU and for the Moore Institute in particular. He was instrumental in developing the details of the institute plan in close consultation with Bob and Charlee Moore and John McCormick. I came to appreciate Allan’s sense of humor, genuine warmth toward donors and his life of integrity. I relied upon his advice for developing strategies for the institute’s success and long-term future. As we grieve, I hope that we will remember what he told me on several occasions, ‘Our job is to first honor the wishes of the donor.’”

Kent Thornburg, Ph.D.,
Interim Director, Moore Institute

“Along with the entire OHSU community, I am devastated by this tragic news. Our thoughts and prayers go out to his family. Allan was a great friend, a much-admired leader and an exceptional advocate for the university. We will miss him more than we can say.”

Joe Robertson, M.D.,
OHSU President
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Letter from the Dean

September 2011 was a great – and historic – month for the good health of future generations. On a crisp and clear fall day in Portland, Ore., Oregon Health & Science University, in partnership with Bob and Charlee Moore, established the OHSU Moore Institute for Nutrition & Wellness.

The focus of the Institute is on the body of knowledge known as Developmental Origins of Health and Disease (DOHaD) – a growing body of research that shows how gene-environment interactions, beginning in the womb, play a critical role in determining an individual’s lifelong health profile. In other words, adult health experiences are shaped during the earliest moments of life. OHSU faculty members are world leaders in this important research arena.

Establishing an institute is the easy part. Creating an organizational structure that supports the long-term successful execution of goals and initiatives takes vision and hard work. I am very pleased to report that rapid and meaningful progress has been made in positioning the OHSU Moore Institute to be a world leader in creating new knowledge and translating existing knowledge into the public domain in ways that meaningfully influence the health of future generations.

Under the leadership of Interim Director Kent Thornburg, the OHSU Moore Institute has developed the necessary founding elements, including a mission, guiding principles and goals, has put into place the leadership structure and – remarkably – has already funded three important community-focused research projects that align with the institute’s mission. Looking ahead, the institute is laying the groundwork for coordinated initiatives across education, outreach, policy, marketing and other platforms that will fundamentally shift society’s views on and actions related to the health value of good nutrition.

At this one-year anniversary of the founding of the institute, this is an opportune moment to pause and review progress to date, as well to gain an external expert perspective on future plans. This Annual Report compiles information about the work to date, as well as information about future plans.

I appreciate the time, experience and intellectual commitment of all who have contributed so far to ensuring that we are on the right path to creating a world-class, impactful institute.

Best regards,

Mark Richardson, M.D., MBA
School of Medicine Dean
The last 12 months have been exciting for the OHSU community. About 1 year ago, Bob and Charlee Moore made a historic gift of $25 million to OHSU for the express purpose of establishing a new institute of nutrition and wellness. The new institute will focus its efforts on improving the nutrition of women before and during pregnancy and of their newborn babies. It will offer outreach programs across the state of Oregon, new governmental policy recommendations for mothers and children and new in depth studies that will bring new discoveries on the biological underpinnings of healthy nutrition in pregnancy.

Why is the institute needed? Health statistics from all sources point to the declining health of Americans over the last 2 decades. Unfortunately, Oregon’s numbers fall in line with the national trends. Type 2 diabetes is on the increase and more Oregonians become obese every year. Heart failure continues to dominate hospital admissions and uncontrolled hypertension is increasing in spite of health campaigns urging people to get their blood pressure checked.

Recent evidence clearly points to poor nutrition before and just after birth as the primary cause of increases in chronic disease and obesity. Poor growth in the womb and infancy is associated with a range of serious chronic health problems in adulthood. The ever worsening diets of Americans are leading to a new generation of young people who have poor health and who will require expensive medical care in the future. As a nation, we have been unable to reverse this frightening trend. The Bob and Charlee Moore Institute of Nutrition & Wellness will enable Oregon Health & Science University to put real muscle behind the effort to change the negative health trajectory of Oregon’s citizens.

The new Moore Institute is off and running. An active steering committee that represents a broad spectrum of OHSU leaders is overseeing five new committees that are all highly active. For example, a new Oregon Nutrition Consortium is forming to bring together nutrition groups across the state to focus on nutritional and social support for women of childbearing age. New studies have been commissioned by the institute to investigate ways to improve nutrition during pregnancy, women with attention deficit disorders and health of children in K-12 public schools.

The Moore gift has changed OHSU forever. In the first year of the Institute’s existence, programs are already underway and we have just left the starting blocks. Please enjoy this first Annual Report and help us celebrate new opportunities to make Oregon a healthier place to live.

Sincerely,

Kent L. Thornburg, Ph.D.
The Science

When scientists, students, health professionals, public health officials and community advocates from around the globe convened in Portland for the 7th World Congress on Developmental Origins of Health and Disease (DOHaD) in September 2011, the location honored OHSU’s international leadership in this burgeoning research area. It was also the first U.S. meeting for the congress.

“Developmental origins are now understood to underlie most if not all chronic disease. Among the fetal stressors that are known to increase a person’s disease risk in adult life are under- or over-nutrition from the time of that person’s conception, and even – interestingly – prior; high levels of stress hormone in the mother; and low oxygen in the womb,” said Kent Thornburg, Ph.D., interim director of the Moore Institute and director of the OHSU Heart Research Center, as well as an internationally-recognized leader in this research field.

At least 40 OHSU investigators, spanning 12 School of Medicine units and multiple centers/institutes within OHSU – along with about $14 million in grant awards since 2009 – are focused on aspects of this research. This research area evolved at OHSU under the umbrella of the Heart Research Center – all 40 participating investigators are members of the center – and it has flourished, in part, due to the center’s collaborative framework.

The physician-scientist who founded this field, David Barker, M.D., Ph.D., is an OHSU professor of medicine, and joined OHSU in large part due to the reputation of the Heart Research Center and Dr. Thornburg in this research area. Susan Bagby, M.D., professor of medicine and also a leading researcher in the field and a member of the center, was chair of the organizing committee for the congress.

As described by Dr. Thornburg, the story behind this research theme started in 1989, when Dr. Barker brought a new “lens” to the analysis of birth and death records from a group of men and women in Hertfordshire, United Kingdom. He showed that among adults who had been born in the birth weight range of five to nine pounds, more men and women died of heart disease when they were born on the lighter end of that range than on the heavier end. He also showed that being born above 9.5 pounds carried a particularly high risk for heart disease. These data initiated a new field of medicine, now known as the Developmental Origins of Health and Disease (DOHaD). Research in this field has since
demonstrated that stresses experienced in the womb – virtually all of which have roots in the social and physical environment – alter the structures of organs in the fetus, thus changing the expression of regulatory genes throughout the lifetime. Together, these two processes lead to vulnerability for disease in adult life.

Such factors and others, including maternal exposure to the kinds of social stresses associated with poor housing and unemployment, are now known to play a role not only in adult cardiovascular disease, but also diabetes, stroke, hypertension, osteoporosis, obesity, some cancers and even osteoporosis. In other words, the environmental conditions affecting mothers while pregnant predict our disease experience as adults.

Since 1989, momentum behind this research theme has grown rapidly. In February 2011, the National Institutes of Child Health and Human Development Scientific Vision Workshop on Developmental Origins of Health and Disease, co-chaired by Dr. Thornburg, issued a white paper on the topic. Dr. Barker, along with Aaron Caughey, M.D., Ph.D., and Nancy Press, Ph.D., from OHSU also participated in the NIH workshop. The white paper acknowledged the scientific evidence around this topic, noted the challenges to moving the research into the necessary next phase, and laid out a path to furthering the research theme. Excerpts from the overview state: “Our nation faces a crisis of increasing chronic disease on an epidemic scale that will reduce the health and welfare of our citizens and will impose ever increasing financial burdens on society. The outcomes arising from chronic diseases have their roots in fetal and early childhood development … We believe that we now have the scientific potential to significantly increase disease-free status of our society, but our ability to execute this change is hampered by lack of organizational structure and public support. In addition, mechanisms by which new scientific information can be translated and fully disseminated to the public are few.”

The World Congress was part of a process to accelerate the research, as well as improve public understanding of the potential public health policy implications. Dr. Barker served as honorary president and gave an address in the opening session, “Global Challenges of Developmental Disease,” focusing on the unique and critical role of the placenta as the maternal-fetal interface, impacting all types of programming results and outcomes, and its emerging potential as an accessible and powerful biomarker of future disease.
Bob and Charlee Moore - A Natural Partnership

Charlee and Bob Moore, founders of Bob’s Red Mill

*Bob and Charlee Moore’s sustained passion for healthy food combined with OHSU’s world-class expertise in nutrition makes for a powerful partnership. The new Bob and Charlee Moore Institute for Nutrition & Wellness at OHSU has the potential to change the way we think about food and health.*

Bob and Charlee Moore were early converts to the idea that whole grains are essential to good nutrition – and that the typical American diet was increasingly unhealthy. Not ones to hold strong opinions without backing them up with action, Bob and Charlee founded Bob’s Red Mill Natural Foods in the 1970s with a genuine stone mill and a mom-and-pop store in California.

“Once we started learning about the benefits of whole grains and the problems caused by processed foods, we wanted to do something about it. We built a business devoted to offering whole grains at a reasonable price and making them accessible to everyone,” said Bob.

While their competition pushed processed cereals, Bob’s Red Mill stuck to the whole grains Bob and Charlee believed in. Fast forward nearly 40 years and Bob’s Red Mill is a beloved company that ships whole grains all over the world from its headquarters in Milwaukie, Ore. And now, thanks to their success, Bob and Charlee have found a new way to back up their beliefs – philanthropy.

The couple became interested in collaborating with OHSU after learning about OHSU’s groundbreaking research exploring the developmental origins of disease. After meeting with OHSU researchers including David Barker, M.D., Ph.D., Kent Thornburg, Ph.D., and Susan Bagby, M.D., the Moores were impressed by new research showing how a mother’s eating habits during pregnancy – and even before conception – could set the stage for heart disease, obesity, cancer and other health problems for her child later on. The Moores became convinced that, if more people had access to such knowledge, we could begin to reverse some troubling health trends.

In a gesture that garnered national media attention, the Moores committed to donate $25 million to establish the Bob and Charlee Moore Institute for Nutrition & Wellness at OHSU. Their goal: to halt the rampant rise in chronic illness caused by unhealthy eating and inadequate nutrition. The institute will place a special emphasis on promoting nutrition in early life – before conception, during pregnancy, and throughout infancy and childhood.

“Bob and Charlee Moore are exceptional people. They have done what many have attempted and few have accomplished – lived their lives in accordance with their values,” said OHSU President Joe Robertson, M.D., MBA.
Rates of obesity, type 2 diabetes, heart disease, hypertension and other health problems have increased dramatically in tandem with the rise of processed foods that are high in sugar and fat but low in nutritional value. Experts call this phenomenon “high-calorie malnutrition,” and OHSU research shows that its consequences can last for generations. To break this unhealthy chain, the Moore Institute will translate OHSU’s internationally renowned research into a powerful call to action.

It’s a rallying cry the Moores can get behind. “Charlee and I have always been inspired by challenge,” said Bob. “I can’t think of a tougher challenge than changing people’s behavior when it comes to their diets. Working with OHSU we can motivate people to make the kinds of changes that promote health.”

“Food is such a basic part of life – it’s the perfect place to start making changes in public health,” said Mark A. Richardson, M.D., MBA, dean of the OHSU School of Medicine. “The Moore Institute will be instrumental in helping OHSU share what we already know to help guide future generations toward healthier choices.”
Next Steps: Dean Richardson Establishes the Institute’s Charge

In a letter sent to all School of Medicine faculty at the end of September 2011, Dean Richardson sets a course for the Moore Institute entitled "The responsibility of the Moore gift and next steps."

On Sept. 16, we announced the extraordinary act of generosity from Bob and Charlee Moore who pledged $25 million to form a partnership with OHSU to confront one of the biggest contributors to the rise of chronic disease: poor nutrition. The funds will help us rapidly – and more effectively – move scientific knowledge into the public sphere in ways that measurably improve human health.

The pledge will establish the Bob and Charlee Moore Institute for Nutrition and Wellness at OHSU in the School of Medicine. This commitment bestows on all of us an extraordinary opportunity as well as a responsibility to meet the intent and vision of the Moores.

Over the last several months, a faculty leadership group has had many conversations with the Moores about how to best and most quickly move forward with their vision that the Institute have far-reaching and immediate impact. These conversations are continuing now. While we are still in the early stages of planning, we’ve concluded that the greatest potential for direct impact on individual lives is the rapid translation of knowledge into clinical practice through education, community-based outreach, clinical nutrition research and human investigations.

As for immediate next steps, we will recruit a national figure for the Institute who will bring intellectual leadership and inspiration to the Institute, through an endowed position, as well as help lead a planning process that identifies near-term, high-impact outreach and education actions. We will also focus on examining existing research results to identify what is most relevant to human nutritional health and how to best share this knowledge in ways that help guide personal decision-making and inform public policies.

We look forward to partnering with the Moores to help realize a shared vision of changing human health by improving nutrition and our understanding of the role nutrition plays in health. The Moores’ commitment to a future in which we can dramatically reduce the impact of chronic diseases has the potential to positively impact the health of people not just today but for generations to come.
Leadership: Dr. Thornburg named Interim Director of the Moore Institute

On Jan. 30, 2012, Dean Mark Richardson named Kent Thornburg, Ph.D., interim director of the OHSU Bob and Charlee Moore Institute for Nutrition & Wellness, the first step in building the organizational framework to advance the institute’s mission.

The core commitment of the Moore Institute is to make a lasting impact on the health of people everywhere by accelerating the application of a new body of knowledge – emerging from the field of medicine now known as the Developmental Origins of Health and Disease – which links early life nutrition with later onset of chronic adult diseases.

The Moore Institute’s goal is to reduce the prevalence of adult chronic diseases by promoting healthy, nutrient-rich diets before conception, during pregnancy and lactation, and in infancy and early childhood. The Moore Institute will establish and support programs and initiatives that comprehensively address the complex clinical and social factors that together contribute to unhealthy dietary choices or limited access to healthy foods.

“The potential of the Moore Institute is transformational, and Kent’s wise leadership at its formative stage will help establish the strong intellectual and programmatic foundation essential for long-term success and impact,” said Dean Richardson.

Dr. Thornburg is a professor of medicine within the Division of Cardiovascular Medicine. He holds joint academic appointments in three additional School of Medicine departments, reflecting the breadth of his research interests and expertise. He is associate chief for research in the Division of Cardiovascular Medicine, director of the OHSU Heart Research Center, and co-chair of a national task force assigned to determine the 10-year vision of the Developmental Origins of Health and Disease for the National Institute of Child Health and Human Development at the National Institutes of Health. Dr. Thornburg joined the OHSU faculty in 1975. In addition to being an internationally known and widely published researcher, he is consistently recognized by students and faculty as an outstanding educator, having received dozens of the School of Medicine’s annual Excellence in Teaching Awards. He is a dedicated mentor to junior investigators, a sought-after lecturer and is committed to community service within OHSU and beyond.

“What we aspire to achieve through the Moore Institute could have a lasting impact on individual and population health, and I am honored to serve as interim director,” said Dr. Thornburg. “Research over the past two decades has shown us that appropriate maternal, fetal and early life nutrition can dramatically decrease the manifestation of many adult diseases. Our charge – and challenge – will be to integrate this information into our communities in ways that demonstrably improve human health.”
Leadership: The Moore Institute Steering Committee

At the same time, the roster of the Moore Institute Steering Committee was finalized, and it set about establishing the institute’s mission and founding principles.

Susan Bagby, M.D., Professor in the Department of Medicine; Chair of the Community Education and Outreach Committee

Dr. Bagby’s career-long research program focuses on mechanisms of hypertension and the roles of the kidney and the renin-angiotensin system. This led to an early interest in the importance of poor nutrition in the womb as a cause of later hypertension, and hence to the revolutionary work of Professor David Barker and the concept of developmental origins of chronic disease. She currently studies developmentally-induced hypertension in a novel model of perinatal maternal protein restriction in microswine, including work on enhanced arterial reactivity to angiotensin II in juveniles as a manifestation of early nutritional programming and as a precursor to adult hypertension.

“I am deeply honored to help shape the new Moore Institute so that it can bring to reality Bob and Charlee’s passion to restore whole-food nutrition for Oregonians of current and future generations. Bob’s cautionary reminder -- that scientists have been notoriously ineffective in bringing our new knowledge to those in our communities who most need it – propels our efforts to enlist the talents of academic, public-health, and non-profit partners as we reshape the nutritional culture of our state.” - Dr. Bagby

Irene Barhyte, CPA, CTP, Senior Associate Dean for Finance and Administration, School of Medicine

Irene has responsibility and oversight both for the finances of the School of Medicine and the Faculty Practice Plan. She has a deep knowledge of OHSU’s organization and financial systems. She was involved in planning for and implementing the integration of OHSU Medical Group into the School of Medicine as the new Faculty Practice Plan, and has been involved in special projects related to research administration.

Aaron Caughey, M.D., Ph.D., Professor and Chair in the Department of Obstetrics and Gynecology, Director of the OHSU Center for Women’s Health

Dr. Caughey is nationally recognized as a dedicated clinician, accomplished educator and prolific researcher. Dr. Caughey has a special interest in Diabetes in Pregnancy. His research interests have focused on utilizing a broad array of methodologies including standard biostatistical techniques as well as decision- and cost-effectiveness analysis to address questions in obstetrics and maternal-fetal medicine regarding post-term pregnancy, preeclampsia, and diabetes in pregnancy, obesity and weight gain, as well as prenatal diagnosis. He believes that a key component to obesity prevention is using the energy and focus of pregnant mothers to change their habits for the sake of their children.

“If we can get pregnant women to eat better and exercise, this may fundamentally change not only their habits, and the habits of others in their family, but also will improve the intrauterine environment for their babies as well.” - Dr. Caughey
Jennifer Flores, Director of Principal Gifts for the OHSU Foundation
Jennifer is responsible for raising significant levels of philanthropic support for OHSU by providing strategic direction and day-to-day oversight of the principal gifts program (gifts of $1M or more). In her role at the Moore Institute, she helps manage the relationship between OHSU and Bob and Charlee Moore, while seeking principal gifts to support the institute.
"The Moore Institute for Nutrition and Wellness resonates with my personal interests and passions as a mother and a citizen concerned about the obesity epidemic in America. We have to act now by educating girls in their childbearing years to get healthier kids now and for generations to come." - Jennifer Flores

Kathleen McFall, Director of Communications, OHSU School of Medicine
Kathleen is the director of communications for the School of Medicine. In her role, she oversees communications strategy and production of materials describing clinical, research, education and outreach missions specifically for the School of Medicine, and collaborates closely with communications partners throughout OHSU.
"The Moore Institute provides a crucial platform for broadly and effectively communicating issues of nutrition that can make a significant difference in people’s lives. The work that the institute is doing, and will do in the years to come, has the potential to pay huge dividends in our nation’s health. I’m excited and honored to contribute to this effort.” - Kathleen McFall

H. Stacy Nicholson, M.D., MPH, Professor and Chair in the Department of Pediatrics
Physician-in-Chief of the OHSU Doernbecher Children’s Hospital
Dr. Nicholson’s research interests include childhood brain tumors, Langerhans cell histiocytosis (LCH), the development of new cancer therapies, the health of adult survivors of childhood cancer, and how an academic health center can improve the health and well-being of children. At OHSU, he established the Pediatric Neuro-Oncology Program at Doernbecher. He also founded the Developmental Therapeutics Program in the Kenneth W. Children’s Cancer Center at Doernbecher and served as the Division Head of Pediatric Hematology/Oncology prior to becoming Department Chair in 2005.
"What children eat has an enormous impact on their health, both as children and during adulthood. With the Moore Institute, we have an opportunity to improve the health of Oregonians throughout their lives, by improving our knowledge and education around nutrition.” - Dr. Nicholson

Eric Orwoll, M.D., Professor in the Department of Medicine; Director of the Oregon Clinical and Translational Research Institute; Associate Dean for Clinical Science; Associate VP for Clinical Research
Dr. Orwoll is an internationally recognized expert in the area of bone biology and metabolic bone disease and has considerable experience in basic, clinical, and epidemiological research. His major areas of research interest include the epidemiology, etiology and therapy of osteoporosis in men, the evaluation of new diagnostics and therapeutics, effects of sex steroids on skeletal biology, and skeletal genetics. He is an experienced leader in academic medicine, with extensive responsibility for clinical and translational research planning and management.
"The research being conducted at the Moore Institute is critical for improving translational knowledge about nutrition, and the nutritional health of our communities. Its impact will be felt across the scientific spectrum, helping investigators working in areas from chronic disease to musculoskeletal disorders.” - Dr. Orwoll
Jonathan Purnell, M.D., Professor in the Department of Medicine, Divisions of Endocrinology and Cardiovascular Medicine. Associate Director Moore Institute
Dr. Purnell’s research has focused on understanding the causes and consequences of obesity, metabolic syndrome and diabetes in humans. Early in his career he explored the relationships between fat distribution and risk for cardiovascular disease and insulin resistance. This led to nutritional intervention studies testing the effects of diets of differing macronutrient content (fat, carbohydrate, and protein) on hormonal signals that determine appetite and body weight. Most recently he is using advanced magnetic resonance imaging techniques to understand how the brain responds to changes in diet and weight regulatory hormones as well as returning to intensive metabolic studies of pregnant women to learn more about how maternal obesity and diabetes affects the health of the placenta and baby.

“What drives us is the sense that we are participating in a program that will have a meaningful and measurable impact on the health of our community for generations to come.” - Dr. Purnell

David Robinson, PhD, Professor in the Department of Physiology and Pharmacology, with joint appointments in the Department of Ophthalmology and the Center for Research on Occupational and Environmental Toxicology; Executive Vice Provost
Dr. Robinson’s research interests have been directed toward gaining a better understanding of the role retinal development plays in the maturation of the circadian and visual systems. Most recently he has been leading the OHSU participation in the NCRR funded eagle-i Consortium, made up of nine member institutions, which is building a prototype of a national research resource discovery network that will help biomedical scientists search for and find previously invisible, but highly valuable, research resources.

“Among the many things that excite me about the Moore Institute is the strong emphasis on better educating not only the public on the importance of nutrient-rich diets based on wholesome foods in the prevention of chronic diseases, but also future healthcare professionals through the development of a robust interprofessional curriculum for our students.” - Dr. Robinson

Lori Sobelson, Director of Community Outreach, Bob’s Red Mill Natural Foods
Lori is responsible for overseeing funding that founders, Bob Moore and his wife Charlee, have donated to various Oregon institutions. In addition to working closely with these institutions she oversees the company’s cooking school, teaches cooking and nutritional classes and travels throughout the United States speaking and teaching on behalf of the company to educate the public that “Whole Grains Foods For Every Meal of the Day” yields positive change in the health of individuals and our society as a whole.

Diane Stadler, Ph.D., R.D.
Assistant Professor of Medicine; Director of the OHSU Graduate Programs in Human Nutrition; Chair of the Inter-Professional Nutrition Education Subcommittee
Dr. Stadler’s research interests center on “extreme nutrition interventions” for the treatment and prevention of disease. She is involved in population-based studies of potential nutritional treatments for attention deficit/hyperactivity disorder and autism and is leading an initiative at OHSU to incorporate nutrition training across the curriculum. She mentors students completing M.S. degrees in clinical nutrition.
Mary Stenzel-Poore, Ph.D., Professor and Chair of the Department of Molecular Microbiology and Immunology; Senior Associate Dean for Research, Associate Vice President for Basic Science
Dr. Stenzel-Poore is a nationally recognized neuroimmunologist and NIH-funded investigator for over 20 years. Her lab focuses on immunotherapy research that seeks to protect the brain against injury in stroke. In her role as senior associate dean for research, she has responsibility for strategically leadership of the research mission in collaboration with research leaders throughout the university. She is currently shepherding Oregon’s primary biomedical discovery engine serving the state’s 3.8 million citizens and beyond.
"Part of our research vision is to rapidly translate new knowledge into practices that improve human health. The Moore Institute will make a real difference by opening up a channel for dialogue about nutrition and healthy lifestyles with patients and families throughout Oregon and beyond.” - Dr. Stenzel-Poore

Kent Thornburg, Ph.D., Professor in the Department of Medicine; Director, Heart Research Center; Interim Director, Moore Institute
Dr. Thornburg is an internationally known expert in cardiopulmonary physiology, placentology, developmental programming and pregnancy. His research focuses on the roles of the placenta and the intrauterine environment as programming agents for adult-onset chronic disease and he leads studies on maternal diet and body in regulating fetal growth in women of Oregon. He is committed to community service within OHSU and beyond including K-12 education programs, undergraduate research training programs and ethnic health programs.
"Working together, we can play a key role in understanding how the first 1000 days following conception can set a person on a trajectory for a long and healthy life, or a life beset by diseases such as type 2 diabetes and heart disease.” - Dr. Thornburg

Christine Wallace, Planning Facilitator, Catalysis, LLC
Christine Wallace has an extensive background in nonprofit leadership, strategic planning, group facilitation, program development, and corporate social responsibility. She serves organizations ranging from private corporations, science and health institutions, museums, environmental organizations and other non-profits. She has worked throughout the U.S. and Puerto Rico, as well as internationally in Canada, China, Germany, Ireland, Mexico, Singapore, South Korea, and the UK. At OHSU, she has been involved as a consultant on a number of projects, including coordination of the School of Medicine Research Roadmap, planning for the Harold Schnitzer Diabetes Health Center, and the development of the new Moore Institute for Nutrition & Wellness. She also has a strong personal interest in nutrition and its foundational role on overall health and wellness.
Mission

At the OHSU Bob and Charlee Moore Institute for Nutrition & Wellness we believe that reducing the prevalence of chronic diseases throughout life starts by promoting healthy, nutrient-rich diets based on wholesome foods - before conception, during pregnancy and lactation, and in infancy and early childhood.

We support this in current and future generations by offering programs that:

- Educate through professional training and community outreach.
- Conduct research through human and community-oriented clinical, basic and translational science.
- Provide clinical care through the development of new preventive measures and treatments.
- Address public policy issues to promote improved nutritional health in the community.
Founding Principles

The worsening health of the U.S. population over the last generation is evidenced by a large body of research. A number of factors predict a health care crisis in the decades ahead:

- Less nutritious diets and declining physical activity
- Decreasing average birth weight
- Increasing rates of obese and overweight adults and children
- Increasing rates of type 2 diabetes
- Increasing rates of uncontrolled hypertension
- Increasing rates of hospitalization from heart failure
- Increasing rates of nutrition-related chronic disease in minority populations
- Declining longevity and reduced quality of life

These factors will precipitate and prolong a severe health care economic crisis as greater numbers of people will require increasingly intensive health care services over the coming decades.

Fortunately the foundation of scientific knowledge needed to reduce the burden of disease and create healthier communities has already been laid:

The Developmental Origins of Health and Disease (DOHaD) is a growing body of research that shows that gene-environment interactions, beginning in the womb, play a critical role in determining an individual’s life-long health profile. In other words, our adult health experiences are shaped during the earliest moments of life.

This research demonstrates that the health of individuals and, by extension, the population, depends on good nutrition immediately before and during the first 1,000 days after conception. Further, the effects of poor nutrition in early life are passed on to subsequent offspring resulting in an enduring effect over two to three generations.

Thus, the health of the next two generations, and the associated costs of health care, will be determined by the nutrition mothers and their children receive today.

A revolution in how we eat, especially among young girls, women of childbearing age and pregnant women, would immediately lead to dramatic improvements in individual health and well-being. In the long run, our communities would be healthier, which, in turn, would translate into significant economic benefits for society.

Wholesome nutrition includes the daily consumption of whole grains, fruit, vegetables and low-fat sources of protein and minimal amounts of sugars, sweetened drinks and animal-based fats.

The mission of the OHSU Bob and Charlee Moore Institute for Nutrition & Wellness is to reduce the prevalence of chronic diseases throughout life by promoting healthy, nutrient-rich diets based on wholesome foods before conception, during pregnancy and lactation, and in infancy and early childhood.

The OHSU Bob and Charlee Moore Institute for Nutrition & Wellness is dedicated to improving the health of Oregonians and people across the globe to ensure a healthy future for the next generations.
The Importance of International Collaborations

Studies around the world have shown that fetal programming of adult disease is a universal phenomenon. There are, however, geographical variations in fetal nutrition and growth and in the pattern of diseases that is programmed. If the Moore Institute is to become a major force in improving the nutrition of girls and young women, it needs to have access to major studies in other countries. Among these, the Helsinki Birth Cohort is one of the most important. It comprises 20,000 men and women who were born in Helsinki, Finland during 1924-1944 and have been followed up through their lives. Their size at birth, maternal body size, childhood growth, reproductive history, educational attainment, illnesses are closely documented. This ongoing study is funded by the National Institute of Aging through OHSU (Principal Investigator, David Barker). In more than 100 publications it has a) extended the range of diseases that are now known to be programmed and include certain cancers; b) shown the importance of paths of childhood growth following small size at birth; and c) shown the importance of maternal body size and placental size and shape in programming later disease.

The Moore Institute also has access to the Dutch Hunger Winter cohort that comprises 2,000 men and women who were in utero before, during and after the wartime famine in western Holland (Principal Investigator, Tessa Roseboom). The famine began abruptly in the winter of 1944 and ended after 7 months. Continued funding is being sought from the NIH through OHSU. To date the study has shown that people in utero during the famine have increased rates of cardiovascular disease and type 2 diabetes. Continued investment in the Helsinki and Dutch Famine Birth Cohorts is throwing new light on the early origins of aging and life expectancy.

The Moore Institute also has close links to a network of studies in India (Principal Investigator, Caroline Fall). These include the first-ever randomized trial of preconceptional food supplementation among young married women living in the slums of Mumbai, and longitudinal studies of young adults born in Delhi and children born in Mysore. The Institute is also associated with studies of placental size shape and function in Saudi Arabia and Tunisia, (Principal Investigator, Saleh Alwasel).
Research Mission

One of the Moore Institute’s foundational principles is the promotion of clinical and translational science to reduce the prevalence of chronic diseases across the lifespan in current and future generations by promoting whole-food nutrition before conception, during pregnancy and lactation, and in infancy and early childhood. The institute will accomplish this by harnessing existing strengths in research capacity at OHSU in the fields of nutrition and developmental origins of health and disease to create programs that address the complex clinical and social factors related to and arising from poor nutrition defined as poor dietary choices or unavailability of healthy foods.

Shortly after receiving the initial gift from the Moore’s, the steering committee issued a request for letters of intent to fund several “founding” projects. Proposals could address any of the main mission areas of the Moore: education, patient-oriented research, clinical care or public policy. Very shortly after that, 56 proposal letters were received representing investigators from multiple institutions across the state of Oregon. Six investigators were invited to submit a formal application and present their proposals to the committee from which three were ultimately selected for funding.

These three proposals were chosen for their emphasis on whole food nutrition, targeting of either pre-pregnant or pregnant women, their potential for evolving into a sustainable partnership with the Moore, a strong possibility of achieving sustainable grant funding in the future and the likelihood for having a “high-impact” on the field of developmental origins. Funding for these proposals began in July 2012 and the following are summaries and interim reports of their progress by the principal investigators.
Improving Adolescent Awareness of the Epigenetics of Generational Nutrition

Principal Investigators:
Jackilen Shannon, Ph.D., Academic Title/affiliation: Scientist, CROET; Associate Professor, Public Health & Preventive Medicine.
Lisa Marriott, Academic Title/affiliation: Associate Director, Let’s Get Healthy! – CROET

Brief description of project goals: This proposal addresses the Moore Institute’s central commitment to reducing the prevalence of chronic diseases across the lifespan in current and future generations by introducing middle school students to the concept of epigenetics and promote their understanding of how their current behaviors, specifically dietary intake, can impact their health and the health of future generations. We will accomplish this through implementation of an intervention study with pre-post evaluation to examine the impact of an epigenetics module on student knowledge, attitudes, and intended behaviors regarding a whole-foods diet. This project will leverage Let’s Get Healthy!, an established education and research exhibit at Oregon Health & Science University (OHSU), as a tool for subject recruitment, intervention delivery, and data collection. We will include focus group testing of the “Nurture your Nature” epigenetics module followed by implementation of the module at a Let’s Get Healthy! fair. Pre, post and follow up surveys as well as fair statistics will be used to evaluate effectiveness of the module in modifying knowledge, attitudes and intended behaviors relating to epigenetics and the consumption of a whole foods diet.

If successful, this project will introduce thousands of middle school students throughout the state to the science of epigenetics and help them understand the importance of diet in modifying epigenetic events that can impact their own health and the health of future generations.

Activities to Date:
Following are the three phases and our progress or planned progress toward meeting the goals of each phase. We are on track to meeting our proposed timeline with near completion of all phase 1 activities and beginning the necessary discussions to complete phase 2 activities.
Activities to Date: Following are the three phases and our progress or planned progress toward meeting the goals of each phase. We are on track to meeting our proposed timeline with near completion of all phase 1 activities and beginning the necessary discussions to complete phase 2 activities.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Progress to Date or Proposed</th>
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<tbody>
<tr>
<td>Phase 1 –</td>
<td><strong>Activity</strong></td>
</tr>
<tr>
<td>• Review of existing materials</td>
<td><strong>Progress to Date or Proposed</strong></td>
</tr>
<tr>
<td>• Identify Epigenetic Education</td>
<td>Epigenetic Education subcommittee members identified (Susan Bagby, Mitch Turker, Phil Yates, Lisa Weasel)</td>
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<tr>
<td>Subcommittee</td>
<td>First subcommittee meeting held on 09/12/12 to review goals of project, role of subcommittee members.</td>
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<tr>
<td>• Develop module recommendations</td>
<td>Established Google docs folder for collecting and sharing existing educational materials</td>
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<tr>
<td></td>
<td>Developed and posted detailed timeline.</td>
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<tr>
<td></td>
<td>Second meeting scheduled for 4 hours to brainstorm and agree upon goals for the module and identify 3 to 4 possible module ideas.</td>
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<tr>
<td></td>
<td>(10/17/2012)</td>
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<tr>
<td></td>
<td>*OHSU Teacher Advisory Committee meeting Oct. 19th – we will present project and request feedback from teachers regarding what they feel will and will not work for their students *</td>
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<tr>
<td>Phase 2 –</td>
<td><strong>Activity</strong></td>
</tr>
<tr>
<td>• Sub-committee conducts informal</td>
<td><strong>Year 1 LGH Fair – working with the principal and science teacher at St. Helens middle school to determine a date. Likely in November Update ICESS full committee on Oct. 12</strong></td>
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<tr>
<td>interviews at Yr. 1 LGH school fair</td>
<td>**Icess Ideas for storyboarding presented to ICESS for approval prior to LGH fair. **</td>
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<tr>
<td>• Vet module ideas with full ICESS</td>
<td></td>
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<tr>
<td>committee.</td>
<td></td>
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<tr>
<td>• Determine 3-4 ideas to move forward</td>
<td>*Activity not originally proposed but added to current plan.</td>
</tr>
<tr>
<td>for storyboarding.</td>
<td><strong>Due to the timing of the ICESS and education sub-committee meetings, the module proposals will not be vetted at the 10/12 meeting, but will be reviewed by members electronically to allow for input and discussion prior to the LGH fair.</strong></td>
</tr>
<tr>
<td>Phase 3 –</td>
<td><strong>Activity</strong></td>
</tr>
<tr>
<td>• Module mock ups (story boards)</td>
<td><strong>Progress to Date or Proposed</strong></td>
</tr>
<tr>
<td>• 2 student and 1 teacher focus groups</td>
<td>Storyboards will be developed for the Year 01 fair in November. Focus groups will occur in the winter and early spring 2013. Final production to begin in spring 2013. Application for teachers to attend the summer 2013 summer program to develop lesson plans and beta-test the module has been developed. Applications will be posted on our website and available for teachers to apply beginning on October 12th at the Oregon Science Teacher Association (OSTA) meeting in Salem. Dates for 2013 teacher curriculum development summer session have been set for June 19-28, 2013. Pre-post surveys to be developed in summer 2013 following completion of lesson plans.</td>
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<tr>
<td>for module review</td>
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<tr>
<td>• Approval of final module plan</td>
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<tr>
<td>• Final module production and</td>
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<tr>
<td>programming</td>
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Nutrient-Rich, Whole-Food Dietary Intervention in Pregnant Women with ADHD

Principal Investigator: Joel Nigg, Ph.D., Director, Division of Psychology Professor of Psychiatry, Pediatrics, and Behavioral Neuroscience

Summary: This is a project to study the relations of prenatal nutrition to infant brain development in a sample at high risk for having infants with altered brain development and also at high risk for eating badly: women with high levels attention-deficit/hyperactivity disorder symptoms who are currently pregnant.

Study Personnel:
Katie Holton, Ph.D., Research Associate Professor, Behavioral Neuroscience, project lead and supervisor
Colleen Schmitt, MSW., (in-kind), Project Director ADHD program
Andrea O’Donnell, R.N., Women’s Health Research Unit
Monica Rincon, M.D., Staff Scientist in Division of Women’s Health
M.J. Dunne, B.A., full-time project coordinator
Angela Horton, OCTRI bionutrition unit
Corinne Stevens, B.A., MRI technician for infant scans
Damien Fair, Ph.D., Assistant Professor, Behavioral Neuroscience, consultant for MRI data analysis
Diane Stadler, Ph.D., Assistant Professor, Director, Graduate Programs in Human Nutrition, OHSU, Consultant.
Perrie O’Tierney, Ph.D., postdoctoral fellow, Heart Research Center
Leo Pereira, M.D., Chief of the Division of Women’s Health in OB/GYN. Consultant

Brief description of project goals:
This research targets a population of pregnant women who are at elevated risk of poor nutrition and of having offspring with serious mental and behavioral health problems, mediated by delayed brain development, two vulnerabilities that are thought to interact. This study 1) utilizes a nutrient-rich, whole-food dietary intervention; 2) targets at-risk women and offspring; 3) has future potential for high-impact by introducing new dietary prevention avenues for mental, behavioral, and learning problems in children; 4) utilizes existing collaborations between OHSU researchers, including an existing ADHD research team in psychiatry, neonatology, and the OCTRI Bionutrition Unit; and 5) provides data that can be used to leverage future external funding for a new at-risk pregnancy cohort at OHSU that is expected to be of considerable interest to NIH Institutes. This project has the long term potential to significantly reshape how the field understands development of mental illness, and extends developmental origins theory to behavioral outcomes via application of its principals to alteration in offspring neural development related to temperament and behavior.

The Original Research Aims:
Aim 1: To assess nutrient intake, dietary compliance and effectiveness of changing diet in pregnant women with ADHD. This is a group known to have poor nutrition and be at risk for obesity, and also to have problems with treatment compliance particularly if treatment is burdensome or time-consuming. Thus, we will evaluate feasibility of this low-cost, low-burden intervention in this high risk group.

Aim 2: To assess change in maternal ADHD, depression and anxiety symptoms after 1 month and 2 months on the intervention diet, as compared to placebo diet. This will enable us to evaluate effectiveness of the intervention in improving pregnant women’s functioning in this high-risk sample. It is anticipated that changes in mood and attention will make the intervention inherently rewarding, and in turn enable a positive (virtuous) cycle of better nutrition and well care.

Aim 3: To evaluate biological and behavioral outcomes in the offspring to age 3 months. Because the offspring are at elevated risk both environmentally and genetically of
behavioral and health problems mediated by altered brain development, we will evaluate effectiveness of the low cost dietary intervention in altering fundamental developmental parameters relevant to physical and psychiatric risk in the offspring. Key outcomes include (a) infant physical health assessed via weight and growth parameters and perinatal health (APGAR score, and perinatal complications), (b) infant neural development assessed via MRI (while asleep; no sedation), and (c) infant temperament assessed via a laboratory observation paradigm.

This study will test a low cost, portable intervention for improved nutrition in a sample of women with attention deficit/hyperactivity disorder (ADHD). Thirty women with ADHD will be recruited via prenatal care clinics at OHSU and, if necessary, partner clinics. They will be randomly assigned to an active (nutrient-dense whole food diet) intervention group, which we have previously piloted with success, or a placebo group, which will receive support but no dietary guidance. Groups will run for 3 months every other week for a total of 6 sessions, with intervening telephone check. Measures. Repeat 24-hour recalls, food diaries, and specially designed food frequency questionnaires will be used to estimate nutrient intake and to measure dietary compliance. Infant APGAR (well-being) scores, growth, and perinatal complications will be obtained from the medical chart. At age 3 months the infant will complete a developmental temperament assessment and a sleeping MRI scan. Analysis and Outcome. Primary outcomes will be: 1) assessment of dietary change in women with ADHD to evaluate ability of this population to change dietary intake in this type of intervention; 2) effectiveness of dietary change as measured by mother’s ADHD and mood symptoms after 1 month and 2 months on the diet; 3) basic health indices in the infant, (4) neural development in the infant, and (5) behavioral markers (temperament) in the infant.

Activities to date:
We used the month of July to modify the design and adjust the budget to the award amount. The redesign changes were (1) reduction in staff and faculty salaries, (2) eliminate the control group and change this condition to a treatment-as-usual group, (3) eliminate outcome follow up beyond the neonatal MRI scan (which will be funded by other internal funds available to Dr. Nigg, the PI, which are being used to increase the reach of the Moore funding), (4) reduce the number of nutritional call backs from 3 to 2. We appointed Dr. Holton to her research associate professor position. Thus Dr. Holton was able to begin planning with us and with her help we submitted IRB requests for the study.

We hired a project coordinator, and began the re- allocation of duties for our staff and investigators, and ordering of materials and preparation of training and nutritional binders and materials. We began weekly project meetings to finalize protocol and to re-activate procedures we had used in a pilot project the year before. In the meantime, the IRB protocols were approved in mid-August. By late August we had the full time coordinator hired and she had begun her training. On Sept 18, we began recruiting women and conducted our first consent interviews that week. As of one week later, we consented one and are now moving ahead with initiation of data collection.

Next Steps: We expect recruitment to proceed apace now. We will recruit women through the OHSU and possibly other maternal clinics, obtain detailed nutritional information from them, and randomly assign them to either a nutrition group or care as usual. (One design change that we made to accommodate the budget reduction at award was to drop the proposed treatment control group and replace this with a treatment-as-usual group.) For archival purposes we will also collect cord blood and placenta at delivery, as these data will help us with other grant proposals. We will then schedule the newborns for a neonatal MRI scan of the brain. The MRI scan is completed while the baby naps, without anesthesia. Data analysis will indicate (a) whether women with ADHD could alter their nutritional intake in response to this low-cost, portable intervention, (b) whether the women’s stress and mood improved as a result, (c) how changes in maternal nutrition influenced infant neural development and growth right after birth. (Also to accommodate the budget reduction, we eliminated plans to follow the infants past the neonatal scan).
Pregnancy Exercise & Nutrition (PEN) Program

Principal Investigator: Linn Goldberg, M.D., Professor of Medicine, Head, Division of Health Promotion & Sports Medicine

Key Personnel:
Diane Elliot, M.D., Professor of Medicine, Division of Health Promotion & Sports Medicine
Jessica Voge, M.D., OHSU Resident, Obstetrics and Gynecology
Diane Stadler, R.D., Ph.D., Assistant Professor, Director, Graduate Programs in Human Nutrition, OHSU
Sarah McCormick, R.D., M.S., Research Associate, Coordinator of Healthy Team Healthy U, OHSU
Michelle Otis, Senior Research Assistant, Training Coordinator, Healthy Team Healthy U, OHSU.
Rachel Drushella, Research Assistant II, Trainer, Healthy Team Healthy U, OHSU.

Brief description of project goals:
The proposed investigation is a prospective, randomized study targeting women beginning in their first trimester, focusing on achieving or maintaining a healthy diet and active lifestyle to prevent gestational diabetes mellitus (GDM). To accomplish this, our initial plan is to develop a team-based (5 women/team); peer led interactive curriculum, and accompanying web-based intervention with the specific focus on healthy dietary and physical activity recommendations for pregnant women, with weekly goal setting and feedback, during the eight weekly sessions, combining it with the 12-session Healthy Team Healthy U, intervention, that was developed by the PI of the PEN Program (Linn Goldberg, M.D.). Analysis of the pregnant women will occur during each trimester and 12-weeks post delivery. Health of the baby during and after delivery will be retrieved from the subject’s obstetrician. The assessments will include: 1) weight gained during pregnancy; 2) blood pressure; 3) weekly health thermometer self-ratings; 4) fasting glucose, insulin and Hemoglobin A1C levels; 5) dietary intake and physical activity surveys, 6) gym attendance/physical activity logs; 7) gestational birth age; 8) delivery mode; 9) infant birth weight and 10) Hemoglobin A1C, weight and blood pressure at 12 weeks post-delivery.

The Original Research Aims:
Aim 1: Develop and implement, an 8-session, team (five women/team) and web-based educational program beginning the first trimester of pregnancy, designed to reduce risk factors for gestational diabetes, overweight and obesity among pregnant women.
Aim 2: Implementation of OHSU’s Healthy Team Healthy U (HTHU), team and web based wellness program developed by the applicants immediately following the 8-session program, which focuses on wellness (healthy nutrition, stress reduction and regular physical activity),
Aim 3: Assess outcomes of both intervention teams and controls (15 women in each group) with respect to 1) weight gained during pregnancy; 2) blood pressure; 3) weekly health thermometer self-ratings; 4) fasting glucose, insulin and Hemoglobin A1C levels; 5) dietary intake and physical activity surveys, 6) gym attendance/physical activity logs; 7) gestational birth age; 8) delivery mode; 9) infant birth weight and 10) Hemoglobin A1C, weight and blood pressure at 12 weeks post-delivery.

Activities to date:
Aims 1 and 2:
- Meetings and consultations with OHSU obstetricians and obstetric dietitians, nurse midwives, Family and Sports Medicine, and the Healthy Team Healthy U group have taken place. Based on the recommendations of this
committee, we will blend the Healthy Team Healthy U (HTHU) curriculum, including all of the 12-sessions, with the proposed 8 PEN Program Sessions. This will create a seamless 20-session program that is unique to the PEN Program.

- Eleven of the twenty sessions have been written and placed into the standard curriculum format.
- Nine of the remaining sessions have been outlined, with most sessions’ structure and activities formatted. These will be ready for review by our consultation team in approximately 7-10 days.
- Multiple consultations with the web developer have occurred, and the online component has been initiated.
- Text messages encouraging healthy goals for the intervention have been developed.
- Email encouragement messages for the intervention have been developed.
- Consent forms have been created, submitted and are being reviewed by OHSU’s Institutional Research Board.
- Phone screening script has been developed.
- The information handout to distribute to the control group has been determined and will be the same as identified in the original proposal (http://www.womenshealth.gov/pregnancy/you-are-pregnant/staying-healthy-safe.cfm)
- A recruitment flyer has been developed and formatted to post in strategic locations around the OHSU campus, and an information brochure developed and formatted to distribute to OHSU obstetric care providers for recruitment of their patients.

Aim 3:

- Assessment consultations have occurred with the Oregon Clinical & Translational Research Institute (OCTRI), setting up online diet, exercise and health surveys. Meetings with OHSU Obstetrics to develop assessment materials, and consultation with the biostatistics group about analyses of the nutrition instruments have occurred and will continue. After discussion with the advisory members, the Edinburgh Postnatal Depression Scale (EPDS) was added to the data collection instruments, along with the Fat Intake Screener, which will be modified for the PEN Program by OCTRI. The following activities concerning Aim 3 include the following:
  - Medical questionnaire and physician physical examination documents have been developed and reviewed by the OHSU Institutional Review Board.
  - REDCap online data collection website and survey tools have been developed and tested for managing online surveys that will include:
    - Fruits and vegetables Screener
    - 24-hour diet recall
    - Fat Intake Screener
    - Diet Survey Questionnaire (DSQ)
    - Pregnancy Physical Activity Questionnaire
    - Edinburgh Prenatal Depression Scale
  - Selection and purchase of accelerometers for objective physical activity assessments has occurred after information gathering from sales representatives and OHSU investigators.
  - Laboratory assessments are established, with REDCap data entry tools created.
  - Home exercise bands for strength training have been ordered.

Summary:
The PEN Program with the curriculum, website, text and emails, and all necessary assessment tools is on target to begin subject recruitment by the end of November 1, 2012, using the OHSU Obstetrics clinics. Subjects will be enrolled in groups of 10 for balanced randomization. The curriculum materials for the first 10 sessions will be placed into booklet form, and commence once the first 10 subjects are cleared for study participation. The current timeline for completion of the curriculum implementation is on target to be done by June, 2013. Depending on the time needed for recruitment, the fourth follow-up, which occurs 12 weeks after baby delivery may require an extension of time beyond the June 30, 2013 end of the grant period for full data collection and analysis.
Media and Marketing Committee

The mission of the Bob and Charlee Moore Institute for Nutrition & Wellness is sweeping and visionary. The Media and Marketing Committee is galvanized around this historic opportunity to translate essential scientific information about the effect of early nutrition on adult disease to the public in ways that are effective, measurable and repeatable. The task will not be easy but the reward – the potential for positive impact to long-term public health – is enormous.

**Committee members:** The committee is comprised of a breadth of communications experts from across OHSU mixed with research faculty advisors. The membership is intentionally designed to create a collaborative framework that brings together – and leverages – all aspects of marketing and outreach expertise at OHSU, blended with scientific knowledge, to further the goals of the Moore Institute.

- Bob Applegate, Director, OHSU Community Relations
- Susan Bagby,* Professor, Department of Medicine
- Lora Cuykendall, Director, OHSU Strategic Communications
- Kathy Dean, Director, OHSU Healthcare Marketing
- Tamara Hargens-Bradley, Senior Communications Specialist, OHSU Media Relations
- Brycie Jones, Manager, OHSU Social Media
- Kathleen McFall, Director, School of Medicine Communications (Chair)
- Lisa Rhuman, Administrator, Moore Institute
- Rachel Shafer, Senior Communications Specialist, School of Medicine Communications
- Cate Soulages, Director, OHSU Foundation Communications
- Mary Stenzel-Poore,* Senior Associate Dean for Res., Chair, Molecular Microbiology & Immunology
- Kent Thornburg,* Interim Director, Moore Institute
- To be named, Communications Specialist, Moore Institute
- *Faculty Advisory Group

**Five-year goal:** The Moore Institute will be known nationally and internationally as a leader in the innovative use of media and marketing tools to communicate about the developmental origins of health and disease (DOHAD) research in ways that measurably increase awareness of the impact of nutrition on population health in target audiences.

**Committee first year goals: Our building year**

1. Build the media and marketing team
2. Begin to establish the institutional presence and expertise of the Moore Institute (through earned media opportunities, leadership speaking engagements, internal faculty communications, website development, brochure, etc.)
3. Finalize a five-year marketing, media and strategic communications plan for the Moore Institute Partner with an external agency to support this effort. This will include:
4. The overarching messages and “slogans” for use by all committees of the Moore Institute (the message platform/keystone messages)
5. A plan to further establish the institute’s identity with key foundational pieces/tool kit/actions (expanded website, video, social media, email distribution lists, partner outreach tools, etc.)
6. A comprehensive multi-year public health outreach campaign (with metrics and repeatable techniques) structured in phased implementation modules such that key pieces can be executed coincident with funding
7. Definition of primary and secondary target audiences
8. Definition of metrics of success
9. Articulation of how the plan does (or can) integrate and support goals for other Moore Institute committees
10. Execute on first implementation module in the strategic plan (to include socializing the message platform/keystone messages)
11. Coordinate and support communications for other Moore Institute committees, and grant recipients
12. Recruit dedicated Moore Institute communications specialist to oversee goals and tactics

**Progress to date:** The Media and Marketing Committee has made progress in establishing the identity (the “brand”) of the Moore Institute – in the media, public arena and also internally with faculty and students – and has put down the groundwork to create the five-year strategic communications plan. The committee has:

- Captured significant regional and national media coverage starting with the establishment of the institute and the pledging of the $25 million gift and continuing to secure earned local and national media by placing key Moore spokespeople at high profile OHSU events, community speaking engagements, providing experts for media requests, media release about foundational grants, developing a blogging presence, commissioning coverage in large-circulation School of Medicine alumni print magazine
- Developed institutional presence among faculty and students with internal outreach from director and consistent coverage in internal communications news channels
- Developed key promotional tools including banners, brochures, etc.
- Established the Moore Institute website with news, updates, scientific context, events and leadership messages
- Recruited a part-time communications specialist for the Moore Institute (partnership with Dean’s office)
- Partnered with OHSU Healthcare Marketing and OHSU Strategic Communications to issue Request for Proposals from external creative team/strategic communications agencies to develop the five-year marketing, media and strategic communications plan (review now underway)
- Developed initial connections with potential partner television stations, including in rural Oregon and a Spanish-language station
Community Education and Outreach Committee

**Mission:** To work with Oregon community leaders to motivate and empower young girls, pregnant mothers, parents and their children to choose balanced whole-food nutrition for themselves, their families and their communities.

**Long-Term Goal:** To (re) introduce a whole-food-based, hands-on, nutrition/culinary science *experience* in curricula of Oregon K-12 schools, with concurrent engagement of parents/families and with sufficient flexibility to be adaptable nationally

**Guiding principles:**
- Honor community needs within a public health context
- Capitalize on community talent
- Engage parents, families
- Respect diversity in language and culture

**Committee members:**
- Susan P. Bagby, M.D., Professor, Department of Medicine, OHSU, Chair
- Joanne Rogovoy, Program Director, March of Dimes
- Elizabeth Adams, Ph.D. Assistant Professor, Public Health & Preventive Medicine, OHSU
- Eric Schoenberg, M.D., ENT, VA Medical Center, Portland, OR
- Christine Wallace, Planning Facilitator, Catalysis LLC
- Joe Ichter, Asst. Prof. Family Medicine/AHEC Chair, OHSU Community Partnerships for Health,
- Lisa Domenico, Senior Program Mgr. Cancer Control Outreach, OHSU Knight Cancer Institute
- Lori Sobelson, Director of Corporate Outreach, Bob’s Red Mill Natural Foods
- Marie Dahlstrom, Executive Director/Publisher Familias en Acción/eSalude Today.com
- Michelle Guitteau, Compensation and Pension Staff Examiner/Liaison, Portland VA
- Susan Hunter, MBA, Vice President Advancement, National College of Natural Medicine
- Steven Hiatt, Director, Food and Nutrition Services, OHSU
- Susan Shugerman, Asst. Vice Provost, Education Outreach, OHSU

**Year 01 Goals:**

*Project I.* To increase awareness among the broad Oregon community of the importance of whole-foods nutrition prior to conception and during the first 1000 days of life.”

Initiate a Moore Institute Resource Center using multimedia platforms, speakers’ bureau (tapping OHSU, academic partners, and community partners), ensure broad accessibility

*Project II.* Develop a Roadmap guiding the design of a school-based intervention program; prioritize and initiate elements within each of three phases (see Graphic): Engagement, Design, and Implementation.
Target population: school-age children and their parents

Phase I. Engage Partners
- Motivate and empower key policy-level stakeholders to become active partners
- Motivate and empower key school-based stakeholders to become active partners
- Identify community-based organizations with existing resources and infrastructure linked to schools, motivate and empower them to become active partners and/or collaborators

Strategy:
- Share scientific knowledge about role of early-life nutrition on postnatal health and disease and its impact on public health and health policy;
- Learn capacities of, and seek input from, each partner to develop opportunities for collaboration and design strategies

Phase II. Design
With input from partners, design a flexible multi-option sustainable product/program with modular components and providing age-specific content.

Phase III. Implementation
Anticipate that existing and new partners will be required.
Nutrition Education for Health Care Professionals Committee

The central commitment of the OHSU Moore Institute for Nutrition & Wellness is to reduce the prevalence of chronic diseases across the lifespan in current and future generations by promoting healthy, nutrient-rich diets based on whole-foods in early life, before conception, during pregnancy and lactation, and infancy and early childhood. One of the four founding principles of the Moore Institute is to provide education through professional training and community outreach.

The OHSU Committee on Nutrition Education for Health Care Professionals will facilitate the integration of nutrition education, including the key concept of the effect of early nutrition on adult disease, for health care professionals throughout the greater OHSU community.

Committee members: The committee is comprised of representatives from across the OHSU community who provide interdisciplinary expertise to integrating innovative strategies for nutrition education across the curriculum—from the classroom, to the clinic, to the community.

- Diane Stadler, Ph.D., R.D., Assistant Professor, Division of Health Promotion & Sports Medicine, Director, Graduate Programs in Human Nutrition, OHSU School of Medicine (Chair)
- Sonja Connor, M.S., R.D., Associate Professor, Division of Endocrinology, Metabolism & Clinical Nutrition, OHSU School of Medicine
- David Robinson, Ph.D., Professor & Executive Vice Provost, OHSU
- Jonathan Purnell, M.D., Associate Professor, Division of Endocrinology, OHSU School of Medicine
- Kristen J. Lampi, M.S., Ph.D., Professor, Division of Integrative Biosciences, OHSU School of Dentistry
- Kathleen Holton, Ph.D., MPH, Research Assistant Professor, Department of Behavioral Neuroscience and Graduate Programs in Human Nutrition
- To be named, Representative from the OHSU Department of Public Health & Preventive Medicine (invited Janne Boone-Heinonen, PhD, MPH)
- To be named, Representative from the OHSU School of Nursing

Short-term Goals: Our primary short-term goals are to:
- “Map” the nutrition curriculum to identify where nutrition is taught within the university curriculum and to link specific concepts to program goals and student learning objectives
- Determine if educational opportunities are sufficient to promote competence in fundamental nutrition knowledge and nutritional interventions/counseling skills to promote healthful behavior change
- Use innovative, step-wise strategies to integrate nutrition education within and across the curriculum and into practice
- Promote nutrition education as the platform to launch the collaborative OHSU inter-professional education initiative
- Evaluate the ability of health care providers trained at OHSU to efficiently and effectively transfer nutrition assessment and behavior change strategies from the classroom into practice to enhance health and wellness

Long-term Goal: Our long-term goal is to offer a robust, fully integrated nutrition assessment and education training program within and across the OHSU curriculum for all health care professionals so that healthy,
nutrient-rich, whole-food diets are promoted and accepted early in life, before conception, during pregnancy and lactation, through infancy, childhood, and adolescence and into adulthood.

Progress to date: Members of the Moore Institute Committee on Nutrition Education have:

1. Initiated a preliminary curriculum map of nutrition education options across the OHSU curriculum (see attached)
2. Participated in the discussion to create a common (single) academic calendar to facilitate interprofessional education.
3. Attended the School of Medicine M.D. Curriculum Transformation retreat and promoted the incorporation of an integrated nutrition curriculum
4. Started the revision of the Metabolism Lecture Series, including 12 hours of nutrition topics, for 2nd year medical students to include patient-centered counseling to follow healthy, nutrient-rich, whole-food diets with a focus on the Fetal Origins Concept.
5. Developed an interdisciplinary Nutrition & Oral Health Seminar Series that will be piloted during the Fall Term, 2012 with students and faculty from the Graduate Programs in Human Nutrition and the School of Dentistry
6. Invited the greater OHSU health care community to participate in a series of discussions on the PLoS Medicine series on “Big Food” to stimulate debate on the influence of the food industry in global health and how public health professionals may respond. The series includes essays on:

   7. Food Sovereignty: power, Gender, and the Right to Food
   8. The Impact of Trans-national “Big Food” Companies on the South: A view from Brazil
   9. Thinking Forward: The Quicksand of Appeasing the Food Industry
   10. Soda and Tobacco Industry Corporate Social Responsibility Campaigns: How Do They Compare?
   11. Manufacturing Epidemics: The Role of Global Producers in Increased Consumption of Unhealthy Commodities including Processed Foods, Alcohol, and Tobacco
   13. The discussions will take place in the Fall of 2011
   14. Contributed to the design and curriculum development for the Moore Institute pilot research projects:
   15. The PEN project (Goldberg)
   16. Maternal Dietary Intervention to ADHD (Nigg)
Public Health and Policy Committee

Since May the following activities have taken place:
1. Thornburg and Wallack met with Governor Kitzhaber’s policy team in Salem on June 7, 2012.
2. Wallack invited Alejandro Querral, program officer at the Northwest Health Foundation, to accept the role as vice chair of the committee.
3. Wallack met with the Moore Institute Steering Committee to present the overall plan for the committee.
4. Wallack authored a letter inviting people to serve on the committee and also made personal visits to two of the members to convince them to serve. To date all people asked have agreed to serve.

Committee Members include:
- Janet Byrd, Director, Neighborhood Partnerships
- Swati Adarker, President and CEO, Children’s Institute
- Sue Hildick, Director, Chalkboard Project
- Norwood Knight Richardson, M.D., MBA, VP & Chief Administrative Officer, OHSU
- Donald Krahmer, Jr. Shareholder, Schwabe, Williamson & Wyatt
- Cheri Pies, Professor, Maternal & Child Health, University of California, Berkeley
- David Robinson, Executive Vice Provost, OHSU
- David Springer, Dean of Social Work, PSU
- Keith Tomijan, Director, United Way
- Additional recruitment is underway with a focus on increasing diversity, including younger people

1. Wallack drafted an op-ed piece for the Oregonian and received feedback from several people including Thornburg. The piece coauthored by Wallack and Thornburg has now been published.
2. Wallack, along with Liana Winett at PSU, has been working with Real Reason a cognitive science research group in Oakland, CA regarding a science based framing strategy for communicating DOHaD issues to policy makers. It starts from the assumption that if this science is so compelling why is it so difficult to get opinion leaders and policy makers to understand and act on this. To date these activities have included:
   3. A number of planning phone calls involving Real Reason principals and Lori Dorfman, director of the Berkeley Media Studies Group
   4. A trip by Liana and Larry to Oakland to meeting with Alyssa Wulf and Erik Sahlin (Real Reason), Cheri Pies (UC Berkeley School of Public Health), and Lori Dorfman (Berkeley Media Studies Group) to present the problem to Real Reason and start the discussion.
   5. Larry to Berkeley to meet with Real Reason to review a preliminary proposal they had submitted (In both cases all travel and meeting costs were provided by the College of Urban and Public Affairs or Larry)
6. There is interest in making the PSU-OHSU collaboration on the Moore Institute/DOHaD one of the three main joint initiatives of the PSU-OHSU Strategic Alliance. Thornburg and Wallack have been asked to present this to the Strategic Alliance meeting on September 27. Kent was not available so Larry Wallack attended and advocated for the project.

Goals for the upcoming period are:
- Complete recruitment of the committee
- Finalize first year committee objectives
- Develop background documents
- Hold first committee meeting
- Secure additional funding for cognitive science research from the Moore Institute to match the Northwest Health Foundation and PSU funding
- Implement first year objectives
Moore Nutrition Consortium

The OHSU Bob and Charlee Moore Institute for Nutrition & Wellness is dedicated to improving the health of Oregonians and people across the globe to ensure a healthy future for the next generation. We believe that reducing the prevalence of chronic diseases throughout life starts by promoting healthy, nutrient-rich diets based on wholesome foods - before conception, during pregnancy, and in infancy. We also believe that we cannot make an impact on maternal nutrition without a broad base of expertise. To this end, the Moore Nutrition Consortium is being formed to bring nutrition-oriented groups together to align themselves with the institute, to share their knowledge and resources, to seek new collaborations and to use their collective voices to improve maternal and infant nutrition in the state of Oregon.

The most important function of the consortium will be to bring Oregon’s nutrition experts together to specifically address the diets and social conditions of young girls, women of reproductive age and their infants.

An executive committee has been formed to steer the consortium and members. Members of this committee to date are:

- Rachel Bristol, Former Executive Director of the Oregon Food Bank, Chair
- Nancy Becker, Research Dietician, Oregon Public Health Institute, Chair, Oregon Nutrition Policy Alliance
- Marylou Hennrich, Executive Director, Oregon Public Health Institute
- Anne Hoisington, Senior Instructor, Nutrition Specialist, College Of Public Health and Human Sciences, Oregon State University
- Christine Wallace, Volunteer, Moore Steering Committee

The executive committee agrees that nutrition in the womb is a major driving force that underlies the declining health of Oregonians. It is enthusiastic about the prospect of unifying nutrition experts across the state toward one goal—the health of the women of Oregon.
Envisioning the Future of the OHSU Bob and Charlee Moore Institute for Nutrition & Wellness

**Intervention Trials in Rural Communities**
We propose to determine ways to improve the health of Oregon women and to address the obesity/diabetes epidemic within the state by conducting intervention trials that will conduct diet and behavior programs in rural cities in Oregon and compare them to control cities.

**International Summit on Maternal Nutrition**
There is a need for a regular summit to discuss and implement nutrition policies for countries around the globe. We propose a bi-annual event that will take advantage of our close relationship with the world’s experts in the field. We will seek joint funding partners among philanthropic groups. The outcome of the meetings will be published reports on the progress of nutritional studies for girls and pregnant women in the U.S. and abroad.

**The Basic Science of Programming**
Basic programs in placental and maternal biology will be supported through the Institute. Included in this will be an epigenetics “center.” The center will be formed to understand the mechanisms by which genes are turned off and on in different nutritional environments. The center will align with the current genomics core in the School of Medicine and the new Center for Biocomputing.

**Alignment with the National Institute of Child Health and Human Development**
We will work with the NICHD to align institute projects with its strategic plan. We will have regular communications with officials and program officers representing the NIH Institute.

**Department of Maternal Nutritional Chemistry**
OHSU has an urgent need to develop experts in the chemistry of maternal nutrition. The Moore Institute will sponsor new faculty with expertise in maternal nutrition who will align with existing departments and form a virtual nutritional chemistry department. The hiring of such faculty will depend on attracting new philanthropic support.
Join the Moore Institute as we create permanent, positive change through nutrition now and for future generations.

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