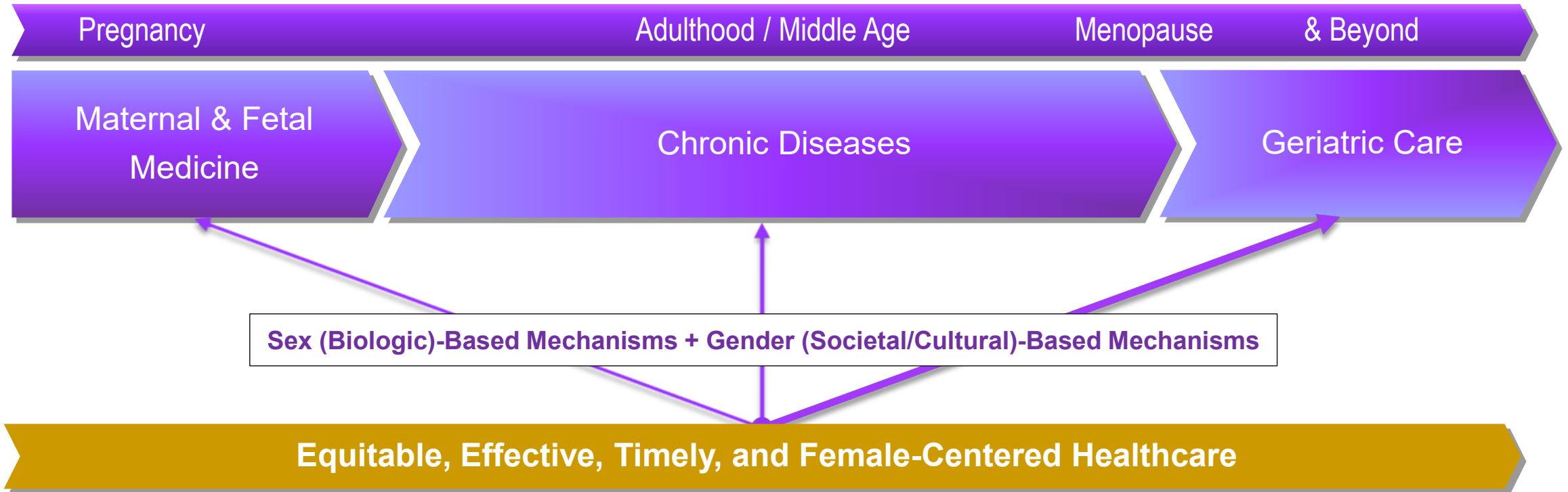




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Research Priorities for the Blavatnik Family Women's Health Research Institute



- Today's Healthcare is siloed - creating dramatic inefficiencies and discontinuity of care
- By focusing on a woman's lifespan, unique cross-disciplinary teams are brought together
- Connections across medical specialties enhance our understanding of how each sentinel stage of life contributes to future health

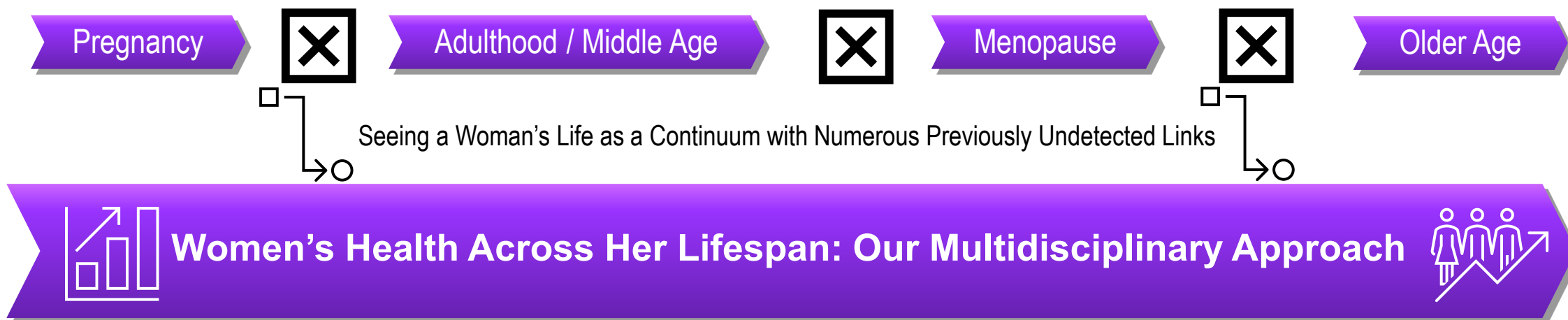


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Women's Health Across Her Lifespan: Our Multidisciplinary Approach

Women's Health Across Her Lifespan: Our Multidisciplinary Approach



- Connecting Biologic Pathways and Employing Novel Predictive Modeling Linking Early Life Conditions with Older Age Diseases
- Integrate Diverse Approaches to AI-Based Risk Models and Imaging Algorithms with the Ultimate Goal to Develop Targeted Treatment Strategies

Updates from the Blavatnik Family Women's Health Research Institute

- Targeted hires have increased productivity for the institute contributing diverse expertise to heighten novelty for our sex-based research
- The goal of all research programs - include multiple specialties / areas of expertise to explore novel disease pathways
 - **Clinical Expertise** Now Includes: Cardiology, Genetics, Geriatrics, Imaging, Obesity, Oncology, & Pathology adding to prior expertise in Obstetrics & Gynecology
 - **Analytical Expertise** Now Includes: Biostatistics and Clinical Trials, Patient-Centered Outcomes, Machine Learning & Other Advanced Generative Artificial Intelligence Modeling adding to prior expertise in Epidemiology
- Significant pilot research shows promise for revealing novel research in pregnancy, obesity, cardiovascular disease, and cancer for diseases impacting women
- Women mentoring women for diverse & equitable leadership in medicine
- Mentoring programs for high school to early-career investigators
- The Blavatnik Foundation investment has led to significant federal funding!



Women's Health Across Her Lifespan: Targeted Research Programs

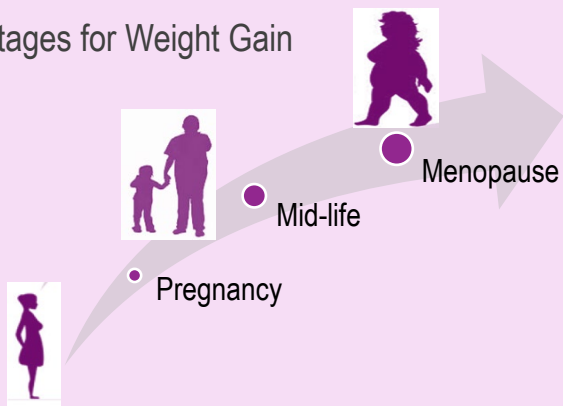


Adverse Pregnancy Outcomes

- Hypertension During Pregnancy
- Peripartum Cardiomyopathy
- Spontaneous Coronary Artery Dissection

- Linking To Early Onset Heart Failure & Premature Death, Especially in Black Women

Life Stages for Weight Gain

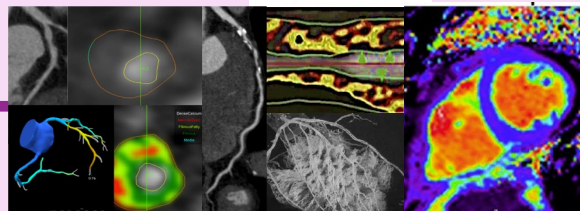


- Critical Details are Lacking
 - Changes in Fat Depots
 - Alterations Skeletal & Other Muscle Including Fat Stranding in the Muscle
 - Remodeling of the Heart with Increased Mass & Declining Function - Linked to Heart Failure

- Treatment Induced Alterations in Fat Depots Identifying Links to Improved Weight Management, Fitness, Key Metabolic Disorders - Diabetes

Cardiovascular Disease & Premature Death

- Dysmenorrhea & Endometriosis
- Premature Menopause
- Coronary Microvascular Dysfunction
- Mitral Valve Prolapse



- Mechanism of Sudden Death in Women
- Fat Inflammation & Fibrosis
- Vessel Physiology – Alterations in Flow & Shear Stress

Precision Modeling for Chronic Diseases - Cancer & Cardiovascular Disease

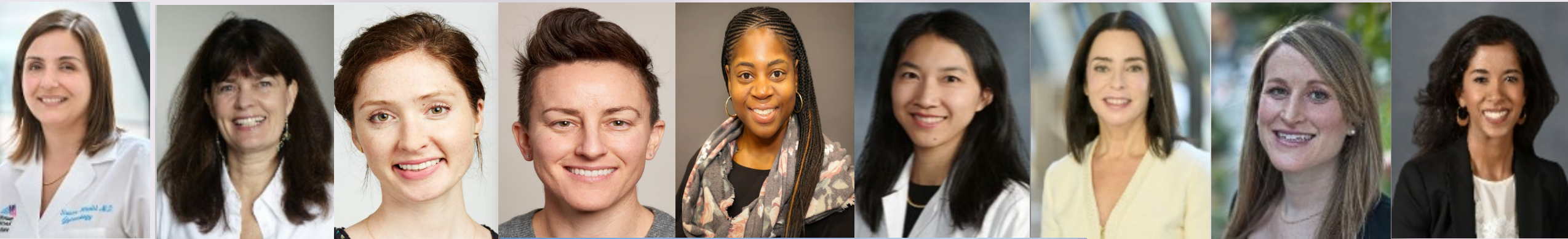
- Network of Risk Factors Leading to Cancer & Cardiovascular Diseases
- Employ ML / NLP Methods for Precision Modeling

- Early Detection Models Unique to Women
- Causal Mediation Isolating Unique Risk Pathways for Cancer / CVD Outcomes

Full Circle Mentoring Programs

- High School Summer Program for Young Women from Harlem & the Bronx
 - Summer program on sex-specific research & health equity & mentoring from BFWHRI faculty for 25 students
- Medical Student Program in Sex-Based Research
 - 1-yr of dedicated research support & mentoring from BFWHRI faculty for 1 student
- International Research Fellow
 - 2-yrs of dedicated research support & mentoring from BFWHRI faculty for 1 student





Where Would Our Institute Like to Go Next?

What would we do if we had \$5 m?

- **Full Circle Mentoring Programs**
 - High School Summer Program for Young Women from Harlem & the Bronx
 - Summer program on sex-specific research & health equity for 35 students
 - Medical Student Program in Sex-Based Research
 - 1-year of dedicated research for 2 students
 - International Research Fellow in Sex & Gender Science
 - 2-years of dedicated research for 2 physician / scientist trainees
 - Blavatnik Family Assistant Professorship
 - 5-years of research funding to support 2 early career researchers who show promise in developing groundbreaking women's health research
- **Redefining Obesity and Wellness in Adolescents and Younger Women**
 - Blavatnik - NYC Public Schools Collaborative
 - Role of early life fitness, weight, and nutrition with environmental health conditions
 - Pre- (e.g., Adolescent / Young Women) and Post-Pregnancy Weight Gain
 - Consequences of early adult obesity and detection of early, adverse risk patterns of cardiometabolic diseases
- **Unearthing Links Between Early Life Conditions with Older Age Diseases - Toward Early Detection of Women at Risk for Cancer & Cardiovascular Diseases**
 - Generative Artificial Intelligence Modeling of Early Life Trajectories for Older Age Diseases
 - Building on models of dysmenorrhea, endometriosis, polycystic ovary syndrome...

What would we do if we had \$10 m?*

- Expand Our Full Circle Mentoring Programs
- **Redefining Obesity and Wellness Across a Woman's Life Stages**
 - Expanding NYC Public Schools Collaborative to Embark on Interventional Approaches
 - Critical Stages of Weight Gain Throughout a Women's Life – from Childhood to Menopause and Beyond
 - Treatment Interventions to Optimize Health and Wellness in Women
- **Unearthing Links Between Early Life Conditions with Older Age Diseases - Toward Early Detection of Women at-Risk for Cancer & Cardiovascular Diseases**
- Improved Understanding of the Biology of Menopause - Especially as it Relates to Cancer and Cardiovascular Disease
- Understanding Quality of Life and Well Being for the Older Woman

*Topics in purple & underlined are expanded or added on programs for this section.

The Future of the Blavatnik Family Women's Health Research Institute

With a gift of \$5 Million	With a gift \$10 Million
<p>Full Circle Mentoring Programs</p> <ul style="list-style-type: none"> High School Summer Program for Young Women from Harlem & the Bronx: Expand to 35 students (from 25 students) Medical Student Program in Sex-Based Research: 1-year of dedicated research for 2 students (doubled from 1 student) International Research Fellow in Sex & Gender Science: 2-years of dedicated research for 2 physician / scientist trainees (doubled from 1 student) Establish the Blavatnik Family Assistant Professorship providing 5-years of research funding to support 2 early career researchers who show promise in developing groundbreaking women's health research (New) 	<p>Full Circle Mentoring Programs</p> <ul style="list-style-type: none"> High School Summer Program for Young Women from Harlem & the Bronx: Expand to 35 students (from 25 students) Medical Student Program in Sex-Based Research: 1-year of dedicated research for 2 students (currently 1 student) International Research Fellow in Sex & Gender Science: 2-years of dedicated research for 2 physician / scientist trainees (currently 1 trainee) Establish the Blavatnik Family Assistant Professorship providing 5-years of research funding to support 4 early career researchers who show promise in developing groundbreaking women's health research (New)
<p>Redefining Obesity and Wellness</p> <ul style="list-style-type: none"> Program Scope: Adolescents and Younger Women Formalize the Blavatnik - NYC Public Schools Collaborative pilot program exploring the role of early life fitness, weight, and nutrition with environmental health conditions (New) Launch Pre- (e.g., Adolescent / Young Women) and Post-Pregnancy Weight Gain Research investigating the consequences of early adult obesity and detection of early, adverse risk patterns of cardiometabolic diseases (New) 	<p>Redefining Obesity and Wellness</p> <ul style="list-style-type: none"> Expand Program Scope: Beyond Adolescents and Younger Women to Across a Woman's Life Stages Expand the Blavatnik - NYC Public Schools Collaborative to include new interventional approaches (New) Expand Weight Gain Research program spanning a woman's life from childhood to menopause and beyond (New) Develop Treatment Interventions to Optimize Health and Wellness in Women (New)
<p>Unearthing Links Between Early Life Conditions with Older Age Diseases - Toward Early Detection of Women at Risk for Cancer & Cardiovascular Diseases</p> <p>Expand Program to include:</p> <ul style="list-style-type: none"> Generative Artificial Intelligence Modeling of Early Life Trajectories for Older Age Diseases (New) Building on models of dysmenorrhea, endometriosis, polycystic ovary syndrome, etc. (New) 	<p>Unearthing Links Between Early Life Conditions with Older Age Diseases - Toward Early Detection of Women at-Risk for Cancer & Cardiovascular Diseases</p> <p>Expand Program to include:</p> <ul style="list-style-type: none"> Improved Understanding of the Biology of Menopause - Especially as it Relates to Cancer and Cardiovascular Disease (New) Understanding Quality of Life and Well Being for the Older Woman (New) <p>*Topics in bold are expanded or added on programs for this section.</p>