XXY | Sex and Gender
MEDICAL EDUCATION SUMMIT
A Roadmap for Curricular Innovation

PROGRAM PROCEEDINGS

AMWA
American Medical Women's Association
The Vision and Voice of Women in Medicine since 1915

Laura W. Bush
INSTITUTE for WOMEN'S HEALTH
TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER
ANGELO STATE UNIVERSITY

MAYO CLINIC

Society for Women's Health Research

XXXY | Sex and Gender MEDICAL EDUCATION SUMMIT

A Roadmap for Curricular Innovation

PROGRAM PROCEEDINGS

BROWN UNIVERSITY, Division of Sex and Gender in Emergency Medicine | **DUKE SCHOOL OF MEDICINE**, Office of Diversity and Inclusion

ACKNOWLEDGMENTS

PROCEEDINGS EDITORIAL TEAM

MARJORIE JENKINS, MD, MEHP, FACP
CHAIR, SGME SUMMIT
Professor of Medicine
Chief Scientific Officer
Laura W. Bush Institute for Women's Health
Rush Endowed Chair for Excellence in Women's Health
Texas Tech University Health Sciences Center

ELIZA LO CHIN, MD, MPH, FACP
CO-CHAIR, SGME SUMMIT
Executive Director
American Medical Women's Association
Assistant Clinical Professor of Medicine
University of California, San Francisco

MARY ROJEK, MA
Senior Editor, SGME Summit Proceedings
Doctoral Candidate, Sociology
Research Fellow
Center for Urban Research and Learning
Loyola University Chicago

DAVID EDGELL, MA
Associate Editor, SGME Summit Proceedings
Program Implementation Coordinator
TTUHSC Sex and Gender Specific Health Curriculum

DONNA RAEF
SGME Summit Administrator

MARLEY HOGGATT, MA
Instructional Designer, LWBIWH
Educational Design Strategist,
SGSH Curriculum, TTUHSC

TYRA JESKO
ThinkJesko
Custom Graphic Design

DENNIS HUMPHREY
Graphic Design

Thanks also to AMWA Student Leaders Alyssa Herrmann, Amanda Tashjian, Fatima Fahs, and Samia Osman.

ACKNOWLEDGEMENTS

We would like to acknowledge the work and support of the SGME Summit Planning Committee and Senior Advisory Committee as well as administrative support from the Laura W. Bush Institute for Women's Health, the Mayo Clinic, and the American Medical Women's Association.

PLANNING COMMITTEE MEMBERS

MARJORIE JENKINS, MD, MEHP, FACP (CHAIR)
Professor of Medicine
Chief Scientific Officer
Laura W. Bush Institute for Women's Health

ELIZA LO CHIN, MD, MPH, FACP (CO-CHAIR)
Executive Director, American Medical Women's Association

VIRGINIA MILLER, PHD (HOST CO-CHAIR)
Professor and Director
Women's Health Research Center, Mayo Clinic

ROBERT CASANOVA, MD
Assistant Dean of Clinical Sciences Curriculum
Texas Tech University Health Sciences Center

WENDY S. KLEIN, MD, MACP
Associate Professor Emeritus
Virginia Commonwealth University School of Medicine

ALYSON J. MCGREGOR, MD, MA, FACEP
Director, Division of Sex and Gender in Emergency Medicine, Associate Professor of Emergency Medicine
Warren Alpert Medical School of Brown University

KIM TEMPLETON, MD
Professor of Orthopedic Surgery and Health Policy and Management, University of Kansas School of Medicine

JAN WERBINSKI, MD, FACOG
Executive Director
Sex and Gender Women's Health Collaborative

SUMMIT ADMINISTRATOR
Donna Raef

This Summit would not have been possible without the many institutional leaders who attended the Summit and the generous contributions from our sponsors.

SENIOR ADVISORY COMMITTEE MEMBERS

STEVEN L. BERK, MD
Provost and Dean, Texas Tech University Health Sciences Center

HUMAYUN J. CHAUDHRY, DO, MS, MACP, FACOI
President and CEO, Federation of State Medical Boards

PHYLLIS E. GREENBERGER, MSW
President and CEO, Society for Women's Health Research

JOHN C. JENNINGS, MD
Professor of Medicine, Texas Tech University Health Sciences Center—Permian Basin

CYNDA ANN JOHNSON, MD, MBA
President and Dean, Virginia Tech Carilion School of Medicine and Research Institute

JOSE MANUEL DE LA ROSA, MD
Provost and Vice President for Academic Affairs
Paul L. Foster School of Medicine TTUHSC

TEDD MITCHELL, MD
President, Texas Tech University Health Sciences Center

THERESA ROHR-KIRCHGRABER, MD, FACP
President, American Medical Women's Association

ROBERT D. SIMARI, MD
Executive Dean, University of Kansas School of Medicine

CONNIE TYNE, MS
Executive Director
Laura W. Bush Institute for Women's Health

STEVEN E. WEINBERGER, MD, FACP
Executive Vice-President and Chief Executive Officer
American College of Physicians

Thanks also to:

LAURA W. BUSH INSTITUTE FOR WOMEN'S HEALTH
Angela Knapp Eggers
Donna Fansler
Linda Gilmore

MAYO CLINIC
Stephanie Faubion, MD
Marilyn Hafferty
Jillian Himli
Lisa Linn
Jessica Schmitt
Nichelle Smith

AMERICAN MEDICAL WOMEN'S ASSOCIATION
Krista Wakefield
Rochelle Wang

AV and Webcast Support was provided by Mark McGlinch, Ruth Laird, Alec Bratvold, Jason Gerdt, and Gordon Mann.

This Summit would not have been possible without the many institutional leaders who attended the summit and the generous contributions from our sponsors, the American Medical Women's Association, Laura W. Bush Institute for Women's Health, Mayo Clinic, Society for Women's Health Research, Texas Tech University Health Sciences Center School of Medicine, Sex and Gender Women's Health Collaborative, Verizon, Brown University - Division of Sex and Gender in Emergency Medicine, Duke School of Medicine - Office of Diversity and Inclusion.

SPEAKERS AND CONTRIBUTORS

BETHANY APPLEBAUM, MPH, MA
Public Health Analyst
Health Resources and Services Administration (HRSA)
U.S. Department of Health and Human Services

C. NOEL BAIREY MERZ, MD, FACC, FAHA
Women's Guild Endowed Chair in Women's Health
Director, Barbra Streisand Women's Heart Center
Director, Linda Joy Poling Women's Heart Health Program
Director, Preventive Cardiac Center
Professor of Medicine, Cedars-Sinai Heart Institute

JABBAR R. BENNETT, PHD
Associate Provost, Diversity and Inclusion
Associate Professor of Medicine
Feinberg School of Medicine, Northwestern University

STEVEN L. BERK, MD
Provost and Dean
Texas Tech University Health Sciences Center

RICHARD A. BERGER, MD, PHD
Professor of Orthopedic Surgery and Anatomy
Dean, Mayo School of Continuous Professional Development
Medical Director, Mayo Clinic Online Learning

ANN BONHAM, PHD
Chief Scientific Officer
Association of American Medical Colleges

RUTH BUSH, MD, JD, MPH
Vice Dean for Academic Affairs
Professor of Surgery
Texas A&M Health Science Center College of Medicine

ROBERT CASANOVA, MD
Assistant Dean of Clinical Sciences Curriculum
Associate Professor, Program Director Obstetrics and Gynecology
Texas Tech University Health Sciences Center, Lubbock

ELIZA LO CHIN, MD, MPH, FACP
Summit Co-chair, Executive Director
American Medical Women's Association

TERRI L. CORNELISON, MD, PHD, FACOG
Associate Director for Clinical Research
Captain, United States Public Health Service
Office of Research on Women's Health (ORWH)
National Institutes of Health

GILLIAN EINSTEIN, MD
Associate Professor, Department of Psychology
Dalla Lana School of Public Health, University of Toronto
Director, Collaborative Graduate Program in Women's Health
Visiting Professor of Neuroscience & Gender Medicine
Linköping University, Sweden

PHYLLIS GREENBERGER, MSW
President and CEO
Society for Women's Health Research

MARJORIE JENKINS, MD, MEHP, FACP
Summit Chair, Professor of Medicine
Chief Scientific Officer, Laura W. Bush Institute for Women's Health
Co-Director, Sex and Gender Curriculum Program
Texas Tech University Health Sciences Center

JANI R. JENSEN, MD
Assistant Professor, Obstetrics and Gynecology
Chair, Curriculum Development
Mayo Medical School

GEORGIOS KARARIGAS, PHD
DZHK W1 Professor Institute of Gender in Medicine
Charité University Hospital

KAROLINA KUBLICKIENE, MD, PHD
Associate Professor of Obstetrics and Gynecology
CEO, Center of Gender Medicine
Senior Scientist
Department of Clinical Science Intervention and Technology
Karolinska Institutet

MARIANNE J. LEGATO, MD, FACP
Emerita Professor of Clinical Medicine
Columbia University

JOHN LUK, MD
Assistant Dean for Interprofessional Integration
Assistant Professor of Medicine
Dell Medical School at University of Texas at Austin

ALYSON J. MCGREGOR, MD, MA, FACEP
Director, Division of Sex and Gender in Emergency Medicine
Associate Professor of Emergency Medicine
Warren Alpert Medical School of Brown University

ALEX JEFFREY MECHABER, MD
Professor of Medicine
Senior Associate Dean for Undergraduate Medical Education
University of Miami Miller School of Medicine

BONNIE M. MILLER, MD
Senior Associate Dean for Health Sciences Education
Associate Vice Chancellor for Health Affairs
Professor of Medical Education Administration
Vanderbilt University School of Medicine

VIRGINIA MILLER, PHD
Professor, Departments of Physiology and Surgery
Director, Women's Health Research Center
Mayo Clinic, Rochester MN

ANA E. NÚÑEZ, MD
Professor of Medicine
Associate Dean of Urban Health Equity, Education and Research
Director, Women's Health Education Program and
National Center of Excellence in Women's Health
Drexel University College of Medicine

JANET PREGLER, MD
Professor of Clinical Medicine
Director, Iris Cantor- UCLA Women's Health Center
David Geffen School of Medicine at University of California, Los Angeles

PATRICIA A. ROBERTSON, MD
Inaugural Member, Haile T. Debas Academy of Medical Educators
Professor, Department of Obstetrics, Gynecology and Reproductive Sciences
University of California San Francisco School of Medicine

THERESA ROHR-KIRCHGRABER, MD, FACP
President, American Medical Women's Association
Executive Director, National Center of Excellence in Women's Health
Indiana University School of Medicine

PAMELA E. SCOTT, PHD, MA
Director, Research and Development
Office of Women's Health
Food and Drug Administration (FDA)/Office of the Commissioner

CONNIE TYNE, MS
Executive Director
Laura W. Bush Institute for Women's Health

JAN WERBINSKI, MD, FACOG
Associate Clinical Professor of Obstetrics and Gynecology
Western Michigan University Homer Stryker School of Medicine
Executive Director, Sex and Gender Women's Health Collaborative

TABLE OF CONTENTS

CHAIRS' STATEMENT

Dear Colleagues,

This first U.S. Sex and Gender Medical Education (SGME) Summit convened with 148 in-person attendees and 27 webcast attendees, including faculty and students from 99 U.S. medical schools, in addition to representatives from European and Canadian institutions, federal agencies, and non-profit organizations. The participation and response of so many individuals demonstrated the breadth of interest in sex and gender issues among medical educators and colleagues in related fields.

All of our patients possess two basic human variables, sex and gender. During the Summit, national and international experts discussed how to utilize sex and gender integration as a platform for quality curricular development and assessment.

Overarching goals for the SGME Summit were to provide educational resources to assist with the integration of sex and gender evidence into medical school curricula, promote sex and gender stakeholder networks, and encourage advocacy. One of the main deliverables of the SGME Summit will be the creation and publication of national student competencies focusing on sex and gender based medicine. Participants' input during the Summit provided an invaluable resource for the development of these competencies.

We want to thank our Summit Sponsors, including the Premier Sponsors: the American Medical Women's Association, the Laura W. Bush Institute for Women's Health, the Mayo Clinic, and the Society for Women's Health Research, and others, whose generosity allowed us to provide travel grants for so many institutional leaders to attend. We are also grateful to the planning and senior advisory committees, the Mayo team, LWBIWH staff, and AMWA students whose tireless efforts made this Summit possible. Above all, we thank the Summit speakers and participants for their expertise which enriched the sessions and helped move forward the creation of a valuable roadmap to guide the development of sex and gender medical education.

Sincerely,

MARJORIE JENKINS, MD, MEHP, FACP
CHAIR, SGME SUMMIT
Professor of Medicine
Chief Scientific Officer, Laura W. Bush Institute for Women's Health
Rush Endowed Chair for Excellence in Women's Health
Texas Tech University Health Sciences Center

ELIZA LO CHIN, MD, MPH, FACP
CO-CHAIR, SGME SUMMIT
Executive Director
American Medical Women's Association
Assistant Clinical Professor of Medicine
University of California, San Francisco

A WORD FROM OUR SPONSORS

AMERICAN MEDICAL WOMEN'S ASSOCIATION

American Medical Women's Association
The Vision and Voice of Women in Medicine since 1915

The American Medical Women's Association (AMWA) was honored to co-lead this landmark Summit on sex and gender medical education. Founded in 1915, AMWA has long supported the principle that all women should have access to affordable, appropriate health care and as such, has been at the forefront of those advocacy efforts for the past century. We helped convene the National Academy on Women's Health Medical Education in 1994 for the purpose of incorporating women's health education into the curriculum of all schools. Now two decades later, we are advocating for the inclusion of an equally important and related issue – the impact of sex and gender differences in medicine, an area that has received increasing attention thanks to new research findings and the advocacy of leaders in this field. Recognizing that sex and gender should be considered in all aspects of health is an important step in the development of new medications, better management of the disease process, and programs to promote and maintain better health. What a privilege to help convene this Summit, in collaboration with partner organizations, curriculum experts and national thought leaders, as we look again to medical educators to impart this vision to the next generation of physicians.

THERESA ROHR-KIRCHGRABER, MD, FACP
President, American Medical Women's Association
Executive Director, National Center of Excellence in Women's Health
Indiana University School of Medicine

LAURA W. BUSH INSTITUTE FOR WOMEN'S HEALTH

Laura W. Bush Institute for Women's Health
Texas Tech University Health Sciences Center
Angelo State University

Since its inception, the Laura W. Bush Institute for Women's Health has been committed to expanding research and education in the area of sex and gender medicine. Our chief scientific officer, Marjorie Jenkins, MD, MEHP led this initiative and continues to promote the application of scientific research to advance personalized medicine. Sponsoring the first Sex and Gender Medical Education Summit held at the Mayo Clinic was the next step in bringing together curriculum leaders from across the country and the world to ensure that sex and gender differences are integrated at all levels of medical education. Our Institute's Sex and Gender Specific Curriculum at www.sexandgenderhealth.org and *Y Does X Make a Difference* CME Modules were launched at the Summit. We have also partnered with the Sex and Gender Women's Health Collaborative to launch the Sex and Gender National Practitioner Registry at www.sgwhc.org so that patients can identify providers who are dedicated to personalized care through the science that supports "Differences Matter." Our mission is to improve the lives and health of women and we believe this Summit is a crucial step forward. By translating science into practice, medical knowledge benefits patients as quickly as possible.

CONNIE TYNE, MS
Executive Director, Laura W. Bush Institute for Women's Health
Texas Tech University Health Sciences Center

MAYO CLINIC

MAYO CLINIC

Mayo Clinic was proud to host this groundbreaking Sex and Gender Medical Education Summit. We all recognize that sex and gender are important variables. This is reflected at a high level by the National Institutes of Health's initiatives and the growing effort to incorporate principles of individualized medicine. Those who are in practice and education are pursuing this out of their own insights and passions. We realize that for a cultural shift to occur, we need to incorporate this into curricula throughout the formative education years, and then reinforce it beyond so that it is truly an integral part of lifelong learning. This symposium was organized to provide resources and spark the development of future resources to embed sex and gender concepts into the entirety of medical education. Mayo Clinic recently celebrated its 150th anniversary. We remember the words of Dr. William Mayo, "The best interest of the patient is the only interest to be considered, and in order that the sick may have the benefit of advancing knowledge, union of forces is necessary." This union is exactly what has been formed here. We are thrilled that the Mayo Clinic could be an environment to catalyze these efforts.

RICHARD A. BERGER, MD, PHD
Professor of Orthopedic Surgery and Anatomy
Dean, Mayo School of Continuous Professional Development
Medical Director, Mayo Clinic Online Learning

THE SOCIETY FOR WOMEN'S HEALTH RESEARCH

The Society for Women's Health Research (SWHR) was established in 1990 to focus on the lack of inclusion of women in medical research. We were the first and only organization to question if research done on young white healthy males could be applied to women. We were met with considerable resistance.

We are proud of our accomplishments. We:

- worked with Congress to pass legislation in 1993 which mandated the inclusion of women and minorities in clinical trials,
- submitted a proposal to the Institute of Medicine (IOM) asking them to validate sex differences research, which they did, and I quote "every cell has a sex."
- established the Organization for the Study of Sex Differences in 2006,
- publish the open access journal, the *Biology of Sex Differences,*
- created interdisciplinary research networks in sex differences in medical fields (details available on our website www.swhr.org),
- work with Congress to change policies at the NIH,
- work with the FDA on sub-demographic analysis, and
- will publish *The X Effect: The Fight to Personalize Medicine for Womankind*.

Twenty-five years later, it is thrilling to be attending a Summit on how to translate what we know so far about sex and gender differences into medical curricula. This is truly a momentous occasion.

PHYLLIS GREENBERGER, MSW
President and CEO
Society for Women's Health Research

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER

Supporting the 2015 SGME Summit represents the TTUHSC School of Medicine's continued commitment to encourage national dissemination of innovative educational programs. Within the realm of sex and gender, medical educators should strive to create curricula that educate health professionals to care for males and females optimally. We have a long way to go nationally in creating this body of work around sex and gender specific healthcare, but it is efforts such as the SGME Summit which are vital to creating a synergistic platform around this work. In addition to our funding support, I was pleased we could share our pioneering sex and gender educational resources with Summit attendees. These resources have been tested in institutions such as the Mayo Clinic which was the Summit's host, and have received great reviews. The science is irrefutable that when it comes to health, sex and gender differences matter, and in some cases, matter greatly. A major goal among medical educators should be that every future clinician asks themselves at the beginning of each patient encounter "Does Sex Matter?" and proceeds accordingly. As the Dean, I agreed to support the 2015 SGME Summit, in part, because its work is foundational to achieving this goal.

STEVEN L. BERK, MD
Provost and Dean
Texas Tech University Health Sciences Center

> ***Within the realm of sex and gender, medical educators should strive to create curricula that educate health professionals to care for males and females optimally.***
> Steven L. Berk, MD

INTRODUCTION TO THE SUMMIT

THE SGME SUMMIT

The Sex and Gender Medical Education (SGME) Summit was convened at the Mayo Clinic in Rochester, Minnesota on October 18-19, 2015. The Summit was initially envisioned by a group of individuals from diverse organizations engaged in sex and gender science and education. A national collaboration was launched to create a roadmap for integrating sex and gender scientific evidence into medical education. At the Summit, U.S. and international leaders of sex and gender based medicine and medical education presented information about the integration of sex and gender into their curricula, while federal officials and researchers discussed the evolving sex and gender integration landscape at federal agencies and academic health sciences centers. Medical curricula leaders from 111 U.S. and international medical schools attended the Summit, as did representatives from professional, student and nonprofit organizations and government agencies. Others from the U.S. and abroad participated via webcast. The Summit concluded with working groups where participants developed plans for creating sex and gender based competencies for medical education and for integrating sex and gender knowledge at their medical schools.

The SGME Summit emerged, in part, from a prior Mayo Clinic workshop in September 2012 which welcomed representatives from 13 U.S. schools of medicine and public health, along with representatives from federal and international agencies, to discuss strategies, resources, and methods for embedding sex and gender based medicine into medical curricula.

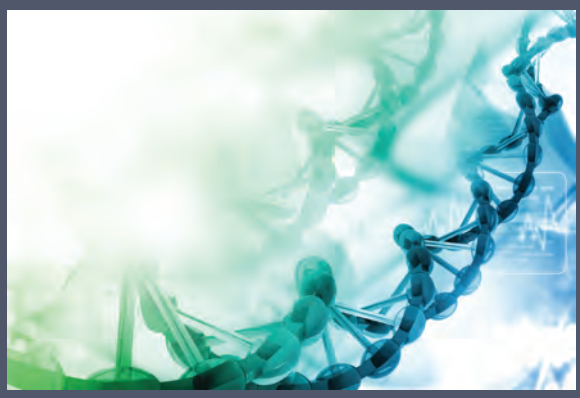
CLARIFYING THE TERMINOLOGY

The definitions of the terms sex and gender are broadly utilized, yet are distinct terms often used incorrectly as synonyms, even in basic science publications. Gender refers to a person's self-representation and behavior as man or woman within the context of social structure and culture. Gender is framed in terms of masculinity and femininity. Sex, a biological construct, refers to the segregation of living things generally as male or female according to their reproductive organs and chromosomal complement. The health impact of these two variables is not mutually exclusive, and their complex interactions are woven throughout the fabric of individualized health.

MEDICAL EDUCATION'S VALLEY OF DEATH

Published results of sex and gender based research can be translated into practice only when this knowledge is incorporated into medical education and training. Without systematic inclusion of such topics into medical school and post-graduate curricula, sex and gender specific medicine cannot be translated into widespread clinical practice to benefit patients. "Just as research scientists who view the 'valley of death' as the chasm to overcome when translating basic science findings into human studies, medical educators must face their own 'valley of death,' which is transferring both knowledge, and more importantly, clinical application to students who are the future medical providers," noted Summit Chair Dr. Marjorie Jenkins. Without this occurring, patients will not benefit from even the most promising of research discoveries.

"Every cell is sexed and every person is gendered."
Institute of Gender and Health, Canadian Institutes of Health Research



(Introduction continued)

INTEGRATION OF SEX AND GENDER INTO MEDICAL EDUCATION

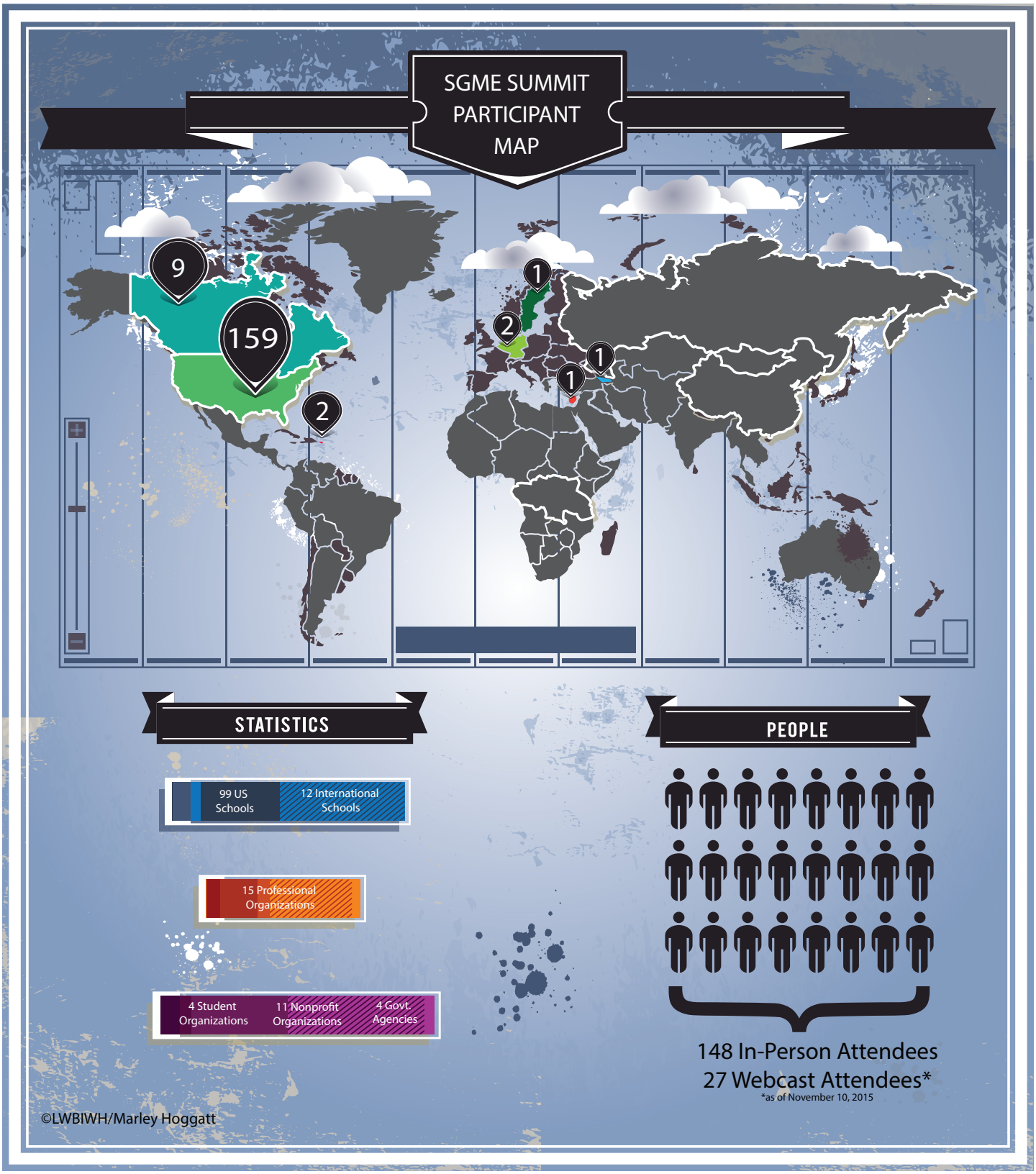
Sex and gender can be integrated in many different ways into medical education, ranging from stand-alone student electives to a longitudinal sex and gender "thread" where these concepts are incorporated into each and every area of student learning. Since sex and gender are two basic variables that all humans possess, a comprehensive approach throughout health education is optimal. In order to design appropriate curricula, it is imperative that sex and gender educational resources be readily available to both educators and students. The Summit shared the expertise of internationally renowned leaders in sex and gender based medicine and medical education and introduced available SGME resources. Educational materials may be found at www.sexandgenderhealth.com, www.sgwhc.org and other sources identified in these proceedings.

CHALLENGES AND FUTURE DIRECTION

At the conclusion of the Summit, participants were enthusiastic about how they could integrate sex and gender knowledge into their medical education curricula. The Roadmap to Reality section on page 30 presents a model for a curricular change team and discusses plans for student competencies that arose out of the robust discussions both prior to and during this seminal event. Additional resources and methodologies are included in the appendix.

There are many challenges in fully elucidating the contribution of sex and gender to health. If the question "Does sex and gender matter?" is not continually voiced, healthcare will become rooted in a gender neutral mentality. While gender neutrality may be desirable in certain contexts, in medicine it compromises care for both men and women and contributes to medical errors and health disparities. If women and men are not more equally represented in research studies, and if health outcomes data are not gender stratified, then critical knowledge gaps will remain. Yet, even the known body of evidence has not been fully incorporated into U.S. medical school curricula. Without this occurring, patients, both women and men, cannot reap the benefits of truly personalized care.

SUMMIT BY THE NUMBERS



PARTICIPANTS' SURVEY RESULTS
An Overview

I am familiar with the topic of sex and gender differences in health and disease.

PRE-TEST: 81% Agree/Strongly Agree POST-TEST: 93% Agree/Strongly Agree

Does your institution require OSCEs or other simulated patient cases in women's health?

PRE-TEST: 28% No/Unsure/No, but Interested POST-TEST: 37% No/Unsure/No, but Interested

The FDA should consider recommending dosages based on the sex of the patient.

PRE-TEST: 69% Agree/Strongly Agree POST-TEST: 97% Agree/Strongly Agree

Sex and gender based medicine is a fundamental aspect of precision medicine.

PRE-TEST: 40% Strongly Agree POST-TEST: 81% Strongly Agree

"The resources that were made available to Summit participants are outstanding, and they will facilitate the promotion of additional curricular emphasis of this area."

"I will develop a proposal for our curriculum committee that we include sex- and gender-specific material in all our courses and clerkships...I will also request that student assessments include items about sex- and gender-based differences."

Respondents: 67 pre-test, 62 post-test (not matched)

SUMMIT KEYNOTE

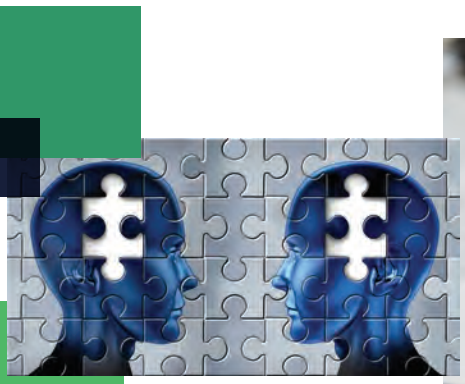
TAKING SEX AND GENDER FROM THE BENCH TO THE BEDSIDE REQUIRES THE CLASSROOM

ANN BONHAM, PHD
Association of American Medical Colleges

It's not breaking news that women continue to be underrepresented in clinical trials and preclinical studies, despite key sex influences on biology and health outcomes. Recently, a new NIH policy, which the AAMC endorsed, calls for grant applications to explain how relevant biological variables such as sex are factored into research designs and analyses for studies in humans and vertebrates. So, why should we be considering this given all the other pressures on science? Recognizing that sex matters in biological processes in health and disease is about good science and providing high quality care to both women and men. The key, however, for long term progress is by engaging learners – medical students, residents, fellows, graduate students and postdoctoral fellows, and by integrating sex as a biological variable and gender as a cultural variable throughout the educational continuum (undergraduate, graduate, and post-graduate learning), and throughout the venues of learning in classrooms, clinical settings, laboratories, and communities.

> ***Recognizing that sex matters in biological processes in health and disease is about good science and providing high quality care to both women and men.***
>
> Ann Bonham, PhD

Academic medicine can help lead this effort by sharing innovative examples of sex and gender based curricula, modeling practices in our clinical mentors, engaging institutional leaders to recognize this as integral to medical education, and helping shape relevant federal policies. The public depends upon the medical and scientific establishment to think critically about its own research, its standards, its processes, and the effectiveness with which it serves patients. If we want to equip the next generation of scientists and physicians with the ability to think critically about these issues, our work must start in the classroom.



SEX AND GENDER BASED MEDICINE: WHAT IT IS AND WHAT IT ISN'T

C. NOEL BAIREY MERZ, MD, FACC, FAHA
Barbra Streisand Women's Heart Center
Cedars Sinai Medical Center

There are numerous differences in cardiovascular disease (CVD) between men and women. Women have a higher prevalence of coronary microvascular dysfunction, heart failure with preserved ejection fraction, Tako-Tsubo syndrome (aka stress-induced cardiomyopathy), and post-myocardial infarction depression than men. Women also have a greater sensitivity to electrocardiographic QT prolonging medications and have higher heart failure mortality with the medication digoxin. A mounting literature further documents important sex differences in pharmacology, including response to cardiac medications such as beta blockers and ACE inhibitors.[1] Women are referred for heart transplant at a more severe level of heart failure, suggesting that transplantation is less often considered for women.

The recognition that sex and gender affect the pathophysiology and the expression of human disease prompted the USA's National Institutes of Health (NIH) to mandate inclusion of both men and women in clinical studies, and when studying a health condition that impacts both sexes, to analyze the data by sex. The Institute of Medicine (IOM) and others provided action items to improve CVD care for women. Despite the NIH mandate and the IOM call for action, women remain the minority of research subjects, yet are the majority of persons dying of CVD.

> ***Despite the NIH mandate and the IOM call for action, women remain the minority of research subjects, yet are the majority of persons dying of CVD.***
>
> C. Noel Bairey Merz, MD, FACC, FAHA

Sex and gender based medicine is the most "ready for translation" approach among the genomic/proteiomic/metabolomic personalized medicine approaches. While traditional medicine is evidence- and guideline-based and extrapolates from mega-trials to the whole disease population, it neglects subgroups (e.g. the majority subgroup of women). Sex and gender based medicine considers an important genetic difference – women and men – and includes the effects of lifestyle and environment transmitted by epigenetic modifications. For example, if a fetus is

exposed to severe nutrient limitation during gestation, females and males display different epigenetic profiles which impact future health. Sex and gender based medicine is also attractive because of our existing substantial body of knowledge in the form of registry and clinical trial data that includes women and men.

To better understand and respond to sex and gender differences in medical care, we need initiatives to increase awareness of these differences, develop a common knowledge base, collaborate across disciplines, develop career opportunities for young scientists, and provide common training tools for students.

1. Bairey Merz CN, Regitz-Zagrosek Y. The case for sex- and gender-specific medicine. *JAMA Intern Med* 2014 Aug 1;173(8);1348-9.

INTERNATIONAL SEX AND GENDER CURRICULUM PANEL AND DISCUSSION

VIRGINIA MILLER, PHD
Women's Health Research Center
Mayo Clinic

Leaders in medical education from Germany, Sweden, Canada, and the U.S. presented successes and barriers in developing and integrating sex and gender based medicine into medical curricula. This was followed by a thought-provoking discussion with the audience. Dr. Marianne Legato provided a capstone summary.

Over the last decade of the 20th century, biomedical research at major universities around the world shifted from concentrating on the unexplored aspects of women's biology to the larger view of investigating and comparing both sexes, giving birth to the science of sex and gender based medicine. Although separated by distance and culture, several common challenges and successes have emerged in efforts to embed sex and gender into medical education. A "change agent" most often self-designated by vision and passion, is required in tandem with committed financial and structural resources from the highest level of institutional leadership. Preconceived and unconscious biases surrounding sex and gender based medicine limit understanding of the benefits to overall patient care. Clear articulation of key principles is essential: "sex" is a biological variable influencing all aspects of health and disease, and "gender" defines social and cultural variables by which an individual's environment "writes" on the body.[1,2] Concepts of sex and gender must be embedded throughout medical curricula, and all stakeholders must be engaged.

Charité Hospital (Germany) successfully implemented this integration, developing an eGender training module (http://egender.charite.de) and a literature database (http://gendermeddb.charite.de). Karolinska Institutet (Sweden) engaged an international team of students, managers, and engineers to develop interdisciplinary teaching resources and case studies for undergraduate and graduate programs (http://ki.se/en/research/education-at-centre-for-gender-medicine). The Institute of Gender and Health (Canada) focused on training physicians, medical and graduate students through online webinars (http://www.cihr-irsc.gc.ca/e/48641.html), a research case book (http://www.cihr-irsc.gc.ca/e/44082.html), and training modules (https://www.youtube.com/watch?v=fdftL6S94hs).

When asked if they would attend next year's Summit, 100% of participants indicated that they would, dependent on funding.

(International Panel continued)

The University of Toronto's Collaborative Graduate Program in Women's Health (Canada) developed student seminars and a core course, Gender and Health. Texas Tech University Health Sciences Center (U.S.) established a peer reviewed slide library and in-depth online interactive modules outlining sex and gender differences on a wide array of topics (http://www.sexandgenderhealth.org). Although many challenges remain, these international leaders communicated the feasibility, methods, and success of incorporating fundamental principles of sex and gender based medicine into medical school curricula.

A listing of these and other resources is located in the Appendix on page 45 of these proceedings.

1. Wizemann TM, Pardue ML, editors. *Exploring the Biological Contributions to Human Health: Does Sex Matter?* Washington, DC.: Institute of Medicine, Board on Health Sciences Policy; 2001.

2. Einstein, G. Situated Neuroscience: Elucidating a Biology of Diversity. In: Bluhm R, Maibom H, Jacobson, AJ, editors. *Neurofeminism: Issues at the Intersection of Feminist Theory and Cognitive Science*, New York: Palgrave McMillan; 2012. p. 145–174.

PANEL PARTICIPANTS:

VIRGINIA MILLER, PHD - MODERATOR
Women's Health Research Center
Mayo Clinic

ROBERT CASANOVA, MD - UNITED STATES
Texas Tech University Health Sciences Center, Lubbock

GILLIAN EINSTEIN, MD - CANADA
Collaborative Graduate Program in Women's Health
Dalla Lana School of Public Health
University of Toronto

GEORGIOS KARARIGAS, PHD - GERMANY
Institute of Gender in Medicine
Center for Cardiovascular Research
Charité University Hospital

KAROLINA KUBLICKIENE, MD, PHD - SWEDEN
Centre for Gender Medicine
Karolinska Institutet, Karolinska University Hospital, Stockholm

Panel Capstone Summary
MARIANNE J. LEGATO, MD, FACP
Columbia University College of Physicians and Surgeons

SEX AND GENDER IN RESEARCH AND EDUCATION: THE FEDERAL LANDSCAPE

Representatives from the FDA, HRSA, and NIH ORWH discussed current and future initiatives regarding the inclusion of sex and gender in research and education.

BETHANY APPLEBAUM, MPH, MA
Health Resources and Services Administration (HRSA)
U.S. Department of Health and Human Services

HRSA is the primary Federal agency for improving access to health care by strengthening the health care workforce, building healthy communities, and achieving health equity. HRSA's programs provide health care to people who are geographically isolated, economically or medically vulnerable. In 2012, the U.S. Department of Health and Human Services' (HHS) Office of Women's Health (OWH) commissioned the interdisciplinary *Women's Health Curri- cula: Final Report on Expert Panel Recommendations*. The report recommended that "institutions determine their readiness to integrate gender-specific women's health education across the curriculum, ensure champions, change leaders, and student advocates within their programs are engaged, use evidence-based curric- ular products and methods, and expand the inclusion of these issues throughout the health pro- fessions' curriculum." The full report can be found here:

http://www.aacn.nche.edu/education-resources/HRSA-Womens-Health-Curricula-Report.pdf

TERRI L. CORNELISON, MD, PHD, FACOG
United States Public Health Service
Office of Research on Women's Health (ORWH)
National Institutes of Health (NIH)

This year, the NIH ORWH celebrates twenty-five years of promot- ing women's health research. In 1993, the NIH Revitalization Act required women be included in all clinical research studies, and trials be designed to permit analysis of a different effect in women. In 2015, the NIH introduced new policies to enhance reproducibility and now expects researchers to factor sex as a biological variable into research designs, analyses, and reporting in vertebrate animal and human studies. The NIH encourages studying sex to strengthen science and has created continuing education online programs to support ongoing learning by clinicians and researchers. Continuing education credits for physicians, pharmacists, and nurses through the online modules are free, and they can be accessed here:

https://sexandgendercourse.od.nih.gov/

PAMELA E. SCOTT, PHD, MA
Office of Women's Health
Food and Drug Administration (FDA)

The FDA is interested in patient or population characteristics, including sex and gender, which could impact the safety and effectiveness of an FDA-regulated product. The FDA addresses sex and gender differences through guidance for industry, assessment of data in product applications, research, education and scientific dialogues. Most recently, it does so through the FDASIA 907 Action Plan:

http://www.fda.gov/downloads/RegulatoryInformation/Legislation/FederalFoodDrugandCosmeticActFDCAct/SignificantAmendmentstotheFDCAct/FDASIA/UCM410474.pdf

which listed actions that the FDA would pursue in order to increase the enrollment and participation of subgroups in clinical trials, improve the completeness and quality of demographic subgroup data collection, reporting, and analysis, and make demographic subgroup data more available to the public. In collaboration with the American Association of Colleges of Pharmacy, the FDA OWH developed in 2012 the Women's Health Curriculum & Toolkit for Pharmacy Schools which can be found at:

http://www.aacp.org/RESOURCES/EDUCATION/WHC/Pages/default.aspx.

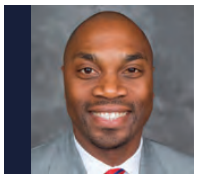
> ***"Unless the effect of sex is studied, we are at risk for misunderstanding the physiology of half the population."***
> Arnold AP, van Nas A, Jusis AJ. Systems biology asks new questions about sex differences. *Trends Endocrinol Metab* 2009; 20: 471-476.

These federal agencies consistently seek ways to increase the quality and quantity of research related to sex and gender differences, to report these differences to the public, and to educate future health professionals on the importance of considering the role of sex and gender in healthcare.

> "Study sex differences from womb to tomb."
> Wizemann TM, Pardue ML, editors. *Exploring the Biological Contributions to Human Health: Does Sex Matter?* Washington, DC: Institute of Medicine, Board on Health Sciences Policy; 2001.

FACULTY AND STUDENT NEEDS

SEX AND GENDER IN MEDICINE: PATIENT AND PROVIDER CONSIDERATIONS



JABBAR R. BENNETT, PHD
Feinberg School of Medicine
Northwestern University

There is a long history of physicians, researchers, and policy makers who have addressed health issues among the LGBT community. This history can be traced back to Kinsey's work in 1948. The first transgender patient had sex change surgery in 1952. The American Psychiatric Association removed homosexuality from the DSM as a mental illness in 1973 and subsequently removed gender identity disorder in 2012. AIDS activists organized in 1987 to form ACT UP which pushed the federal government to respond to the AIDS crisis. In 2010, the U.S. Department of Health and Human Services released a report with a goal of improving LGBT health, followed by the Institute of Medicine's and the Joint Commission's reports in 2011. In 2013, the U.N. called for an end to "reparative therapies" and to medical approaches that harm children born with differences of sex development (DSD).

In providing care to LGBT patients, it is important to recognize that stigma is a component of patients' experiences. Stigma occurs at individual, interpersonal, and structural levels. Power relations between patients and providers can affect the extent to which patients experience stigma as they seek care. For example, LGBT patients are often victims of discriminatory behaviors, including blaming, shaming, and othering. An additional challenge for these patients is that they are likely to have experienced physical and sexual trauma. This creates a barrier to seeking care, exacerbates the stigma experience, and results in adverse health outcomes. In providing care to LGBT patients, providers should consider stigma, trauma, and the role of the intersectionality of sex and gender with factors such as class, income, education, ability, age, sexual orientation, immigration status, and geography.

There are now a number of resources and recommendations for providing care to LGBT patients. This includes the American College of Physicians recommendations, models for promoting health equity, and the AAMC's resource guide, among others.

WHAT STUDENTS THINK ABOUT SGBM: RESULTS OF A NATIONAL CLIMATE SURVEY

MARJORIE R. JENKINS, MD, MEHP, FACP
Laura W. Bush Institute for Women's Health
Texas Tech University Health Sciences Center

Sex and gender based medicine (SGBM) is defined as the practice of medicine based on the understanding that biology and social factors have important implications for prevention, screening, diagnosis, and treatment. There have been various initiatives to improve the integration of these topics into medical curricula. However, the extent of this integration and its impact on students' knowledge has not been fully studied. By surveying U.S. medical students on the degree to which their schools addressed these topics and their understanding of these topics, this study examined the role of gender based medicine in medical school curricula. An email solicitation with a link to an anonymous survey was sent to student members of five U.S. medical student organizations. A total of 1,191 students completed the survey, with 1,097 meeting the inclusion criteria for final analysis. 96% of respondents strongly agreed or agreed that sex and gender medicine improves patient management, and 94% strongly agreed or agreed that it should be a part of the medical school curriculum.

(What Students Think about SGBM continued)

Only 2.1% of participants agreed or strongly agreed that SGBM is the same as "women's health." The majority of students also agreed or strongly agreed that the medical knowledge base is primarily derived from the male model (Figure 1). Students reported widely varying degrees of exposure to evidence-based health differences between men and women (Figure 2).

Overall, we found that medical students recognized the difference between SGBM and women's health and understood the translational value of SGBM principles in the clinical setting. However, there was variable discordance among students between expressed knowledge and their perceived amount of exposure to these evidence based health differences between men and women. This, along with marked inconsistency in regard to the reported inclusion of the topics within curricula, demonstrated that future efforts toward uniform integration of sex and gender evidence into medical education are needed.

This survey was conducted in collaboration with the American Medical Student Association, the America Medical Women's Association, the Asian Pacific American Medical Student Association, the Latino Medical Student Association, and the Student National Medical Association.

FIGURE 1. MEDICAL STUDENTS' KNOWLEDGE AND CURRICULUM EXPOSURE

	Strongly Agree or Agree (%)
I am familiar with the topic of sex and gender differences in medicine	85.5
Knowing sex and gender differences improves one's ability to manage patients	96.0
The majority of medical knowledge is based on data obtained from males	63.2
Medical education should include the teaching of sex and gender differences	94.4
Sex and gender medicine is the same as women's health	2.1

FIGURE 2. PERCENTAGE OF STUDENTS REPLYING BOTH YES TO KNOWLEDGE OF SPECIFIC SEX AND GENDER HEALTH DIFFERENCES & HAVING MODERATE TO EXTENSIVE CURRICULAR COVERAGE IN THE SAME TOPIC AREA

CURRICULUM TOPIC	KNOWLEDGE	POSSESSED S&G SPECIFIC KNOWLEDGE & HAD MODERATE TO EXTENSIVE CURRICULUM EXPOSURE (%)
Cardiology	Presenting symptoms of MI	86.9
Rheumatology	Outcomes after low impact fracture in adults	47.5
Substance Abuse	Narcotic Addiction	29.7
Pharmacology	Dosing of Zolpidem	13.1

WHERE TO GO WHEN YOU WANT TO KNOW: SGBM EDUCATION RESOURCES

JANICE WERBINSKI, MD, FACOG
Western Michigan University
Homer Stryker School of Medicine
Sex and Gender Women's Health Collaborative

Dr. Werbinski's presentation included a comprehensive look at myriad Sex and Gender Based Medicine (SGBM) resources available to educators, learners, and researchers.

ORGANIZATIONS DEDICATED TO SGBM: The Sex and Gender Women's Health Collaborative is an umbrella organization which distributes pivotal research information and facilitates collaboration among individuals and organizations about SGBM. It also hosts a National SGBM Practitioner Registry where physicians can be listed as being proficient in SGBM.

SGBM FOCUSED WEBSITES: The German GenderMed database contains over 12,000 articles from PubMed screened for SGBM content. The Gendered Reactions site, developed by ThinkTrain and the Karolinska Institute Center for Gender Medicine, contains information about drug side effects that are sex and gender differentiated.

WEBSITES THAT INCLUDE SGBM RESOURCES: Sites for researchers, practitioners, or learners are offered by federal agencies, academic institutions, professional organizations, nonprofit organizations, and consumer sites.

JOURNALS: Those publishing articles from an SGBM perspective include: the *Journal of Women's Health*, the *Biology of Sex Differences*, as well as the *Journal of Gender Specific Medicine*.

SGBM REFERENCE BOOKS AND TEXTBOOKS: Examples include *Principles of Gender Specific Medicine*, *Handbook of Clinical Gender Medicine*, and *Sex and Gender Aspects in Clinical Medicine*.

SEX AND GENDER EDUCATIONAL PRODUCTS FROM THE LAURA W. BUSH INSTITUTE FOR WOMEN'S HEALTH (LWBIWH): The Institute offers downloadable PowerPoint slides, CME learning modules, a slide library, and other educational materials.

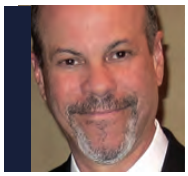
PUBMED SGBM TOOL: Developed by the LWBIWH, this tool is designed to screen articles in PubMed for SGBM content.

INSTITUTE OF MEDICINE REPORTS: *Exploring the Biological Contributions to Human Health: Does Sex Matter?; Women's Health Research: Progress, Pitfalls and Promise; Sex Differences and Implications for Translational Neuroscience Research; Sex Differences in the Brain: From Genes to Behavior.*

A complete listing of the above resources is included in Dr. Werbinski's SGME Summit slide presentation, and a primary listing of resources is located in the Appendix on page 45 of these proceedings.

"Sex and Gender is not a women's health issue. It is not a male or female issue. It is a patient care issue."
Robert Casanova, MD

LESSONS FROM THE FIELD: MODELS OF SEX AND GENDER BASED CURRICULA



ROBERT CASANOVA, MD
Texas Tech University Health Sciences Center

This session highlighted real-world SGBM implementation models. The speakers outlined efforts underway at their home institutions to integrate sex and gender into their curricula. They presented barriers, varying approaches, and solutions to integration.

Dr. Ruth Bush described how Texas A&M University developed a second year Health Disparities selective to field test Texas Tech's Sex and Gender Specific Health (SGSH) modules on osteoporosis and diabetes. Both modules generated positive feedback (animation and interprofessional approach) and a desire to incorporate them into the general curriculum. Dr. Jani Jensen (Mayo) also tested the SGSH modules during a transitional block between preclinical and clinical years with 41/43 learners completing the mandatory osteoporosis module and twenty-five voluntarily completing the diabetes module. Instructor feedback was positive, praising its fit for millennial learners and use for "flipped classrooms." Learners commented positively about videos and the interprofessional approach. Dr. Robert Casanova (Texas Tech) presented the SGSH website including slide library, online modules, continuing medical education and PubMed Search Tool. He emphasized the development of materials through student led audits, faculty involvement, and cutting edge instructional design. Dr. Alyson McGregor showcased Brown University's Sex and Gender in Emergency Medicine Program focusing on "advanced care through person specific education and advocacy." She outlined core competencies that can be adapted to undergraduate medical education. She reviewed products that included a video series and a public education campaign. She also addressed issues of time, space and resources. Dr. Janet Pregler reviewed UCLA's fifteen years of incorporating sex and gender which initially began with women's health. She emphasized focusing on that which will have the biggest impact, developing a mission statement with goals and objectives, and identifying and involving interested individuals, especially within curriculum committees. Dr. Ana Núñez outlined the long history of the study of health equity at Drexel which includes sex and gender. She noted multiple resources (websites, Prezi's, blogs, case studies). Lessons included linking to mission and relevance, attaching to whatever "train is moving," engaging stakeholders, and functioning as a resource.

A summary of lessons from individual SGBM leaders is in the Appendix on page 48.

RUTH BUSH, MD, JD, MPH
Texas A&M Health Science Center
College of Medicine

JANI R. JENSEN, MD
Mayo Medical School

ROBERT CASANOVA, MD
Texas Tech University Health Sciences Center, Lubbock

ALYSON J. MCGREGOR, MD, MA
Warren Alpert Medical School of Brown University

JANET PREGLER, MD
Iris Cantor-UCLA Women's Health Center
David Geffen School of Medicine at University of California, Los Angeles

ANA E. NÚÑEZ, MD
Women's Health Education Program
National Center of Excellence in Women's Health
Drexel University College of Medicine

AVOIDING THE SHOEHORN: STRATEGIES FOR INCORPORATING NEW CURRICULAR CONTENT

BONNIE M. MILLER, MD
Vanderbilt University School of Medicine

During the past ten years, curriculum designers for undergraduate medical education (UME) have faced the challenge of incorporating topics essential for 21st century physicians into already bulging curricula. In addition to Sex and Gender Based Medicine, these topics include quality improvement and safety, interprofessional teamwork, informatics, and the social and behavioral determinants of health. Simultaneously, we must meet accreditation standards for contact time, while we are being challenged to reduce the length of UME in order to reduce our graduates' debt and respond to the predicted need for a larger physician workforce.

Vanderbilt University School of Medicine's approach to managing these curricular topics continues to evolve. Like many schools, we initially added discipline-based courses, such as ethics and genetics. As the number of topics increased, we began to integrate them into other courses or bundle them into interdisciplinary courses. In addition, we added third year intersessions to ensure that we introduced topics at the most developmentally appropriate times. In an effort to have a more coherent and coordinated approach to curricular management, we then developed longitudinal threads and courses as part of a larger curriculum revision. Content experts first define the learning objectives. We then systematically assess what we already have in our curriculum and consider the best learning strategies and assessment methods. This requires a great deal of faculty development. We use a curriculum mapping approach of linking domains of knowledge to competencies and learning objectives. These are all components of building a coherent curriculum.

In terms of sex and gender based medicine, there are a number of LCME standards that are particularly relevant, including societal problems, cultural competence, health disparities and personal bias. AAMC competencies are also relevant, including applying social and behavioral science to patient care, communication, and cultural competency.

Although it is important to have a strategy in order to build a coherent curriculum, it is essential to consider the culture of your medical school. Cultural change is challenging, but possible.

> "There is no research discovery, no matter how amazing, that will save a patient's life unless it first traverses a learning environment."
> Marjorie Jenkins, MD, MEHP, FACP

INTEGRATING NEW CURRICULAR CONTENT: THINK ASSESSMENT FIRST

ALEX J. MECHABER, MD, FACP
University of Miami
Leonard M. Miller School of Medicine

The final step in the curriculum development cycle is typically assessment, evaluation and feedback.[1] Assessment is a critical step through which developers of new curricular content can better understand if the goals and objectives of the curriculum were met. In order to effectively integrate new curricular content into new or existing courses, assessments should be designed and created simultaneously with teaching content. Assessments can serve as valuable learning tools, and strategic selection of assessment methods is essential. Results of assessments can help identify whether learners have attained competency in curricular content, can provide support and buy-in for new content, in addition to affirming the sustainability of the curriculum. So, think assessment first! Ensure that assessment and the selected assessment models are entertained early in the curriculum development process.

> ***Assessments can serve as valuable learning tools, and strategic selection of assessment methods is essential.***
> Alex J. Mechaber, MD, FACP

There are six steps to curriculum assessment. These include: problem identification, needs assessment, establishing goals and objectives, developing educational strategies, implementation, obtaining feedback and evaluation. After evaluation, curriculum revisions should be made by faculty. The blueprint for designing assessment is to identify users, identify uses, identify resources, identify evaluation questions, strategically select evaluation designs, select measurement methods and instruments, address ethical concerns, collect data, analyze data, and report results.

In general, assessment should be built into all phases of the curriculum. However, nimble methods of curricular assessment are also useful and can be part of the evaluation toolbox. Nimble methods include ecological momentary assessment, continuous quality improvement, and iterative reflection. Each of these methods is easily implemented and provides information that guides curricular modification.

1. Kern DE, Thomas PA, Howard DM, Bass, EB. *Curriculum Development for Medical Education: A Six-Step Approach*. Baltimore: Johns Hopkins UP; 1998.

INTRODUCTION OF AN LGBT CURRICULUM AT THE UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

PATRICIA A. ROBERTSON, MD
University of California, San Francisco School of Medicine

Approximately ten years ago, there was little LGBT curriculum at the University of California, San Francisco (UCSF). Despite individual efforts of faculty members to emphasize population diversity that included LGBT individuals, the only mention of LGBT patients was in the microbiology course in regards to gay men and HIV virus. A concerned group of medical students came to the administration about this curriculum deficit. Consequently, a couple of cases in the doctor-patient course in the first year of medical school were changed to LGBT patients, and a two hour curriculum was developed for second year medical students in the Life Cycle course. The first hour of class is an introduction to LGBT patient care by an LGBT faculty member, and a three member panel tells their stories regarding their experience with the medical care system as a lesbian, a trans person, and a gay man. Afterwards, students go to their small groups and are joined by an out LGBT faculty member to facilitate two to three cases, usually a teen who is transitioning, a lesbian couple in which a medical student asks which of them is the "real mother" of their child in the ER, and a gay man who presents with diarrhea, which etiology is not related to his sexual activity. The effectiveness of this curriculum is shown to be statistically significant in many of the fields studied.[1]

In the third year of clerkship, there is a didactic lecture on lesbian health[2,3] for medical students in the integrated clerkship track, but not predictably for medical students on the traditional track. LGBT health questions have been written for Step 2. A workshop on LGBT health was included on Faculty Development Day. The UCSF LGBT Leadership Collaborative is developing LGBT curricula for the dental and pharmacy schools.

1.Kelley L, Chou C, Dibble S, Robertson P. A critical intervention in lesbian, gay, bisexual and transgender health: knowledge and attitude outcomes among second year medical student. *Teach Learn Med*. 2008 July-Sep; 20(3): 248-53.

2.Dibble S, Robertson P. *Lesbian health 101: a clinician's guide*. San Francisco: UCSF Nursing Press, 2010.

3.Robertson PA, Dibble SL. Lesbian and bisexual women's health research: building the evidence for best practices. *LGBT Health*. 2015; 2(2):89-90.

"Increasingly health researchers, policy makers, and practitioners concerned with sex and gender are acknowledging the importance of race/ethnicity, class, income, education, ability, age, sexual orientation, immigration status, and geography and are grappling with how to best conceptualize and respond to issues of differences among women and men and how these shape lives and health."

Olena Hankivsky. Women's health, men's health, and gender and health: Implications of Intersectionality. *Social Science & Medicine*. 2012; 74:1712-1720.

SGBM IN INTERPROFESSIONAL EDUCATION: PUTTING IT ALL TOGETHER

JOHN LUK, MD
Dell Medical School at University of Texas at Austin

Sex and gender specific health involves a multitude of health professionals working together as a collaborative team to deliver value-oriented, safe, patient-centered care. Interprofessional collaborative practice forms a pillar for value-oriented, safe, patient-centered care. Preparing our future practitioners to be effective in a collaborative practice culture requires intentional, consistent, and immersive educational experiences that not only foster learners' nascent professional identity formation, but also expand it to one in which an interprofessional collaborative orientation becomes a part of learners' core. Moreover, the practical work manifestation of this orientation - the capacity to collaborate as a member of an interprofessional team, evinces as an entrustable professional activity among the thirteen elaborated for all entering residents in a report from the Association of American Medical Colleges.[1] A health ecosystem that values and includes interprofessional collaborative practice education would kindle and sustain the forces needed for success. In such an ecosystem, a robust, longitudinal integrative learning approach that employs a range of active, experiential opportunities in the classroom and clinical work, coupled with opportunities for interprofessional dialogue and self-reflection, could promote the acquisition and integration of the core competencies of interprofessional collaborative practice into learners' professional identity. These competencies include: values/ethics for interprofessional practice, roles/responsibilities, interprofessional communications, and teams and teamwork.[2] An interprofessional integration approach could more comprehensively expose learners to important topics such as sex and gender specific health, and more importantly, enable learners to gain true agency to practice sex and gender specific health care.

A key to effective interprofessional education is interprofessional identity formation. This is facilitated when individuals learn content together within the context of a team. Within organizations, team building is essential and it begins at the front desk. All team members need to feel that they are an important factor in patient care.

[1]https://members.aamc.org/eweb/upload/Core%20EPA%20Curriculum%20Dev%20Guide.pdf. Accessed 2015 September 10.
[2]https://www.aamc.org/download/186750/data/core_competencies.pdf. Accessed 2015 September 10.

WORKSHOP ACTION PLAN SUMMARIES

ALYSON J. MCGREGOR, MD, MA, FACEP
Division of Sex and Gender in Emergency Medicine
Warren Alpert Medical School of Brown University

WORKSHOP A: UTILIZATION OF SGBM RESOURCES IN U.S. MEDICAL SCHOOLS: OVERCOMING BARRIERS TO ACHIEVE ACTION

Group Facilitators: Dr. Kathleen Digre, Dr. Patricia Garcia, Dr. Suzanne Harrison, Dr. Linda Solis, Dr. Alex Mechaber, Dr. Virginia Miller, Dr. Ana Núñez, and Dr. Pamela Schaff

This workshop focused on participants sharing examples of successful models of curricular integration at their institutions that would help to incorporate SGBM. An overarching theme amongst the groups was the concern for the present lack of knowledge and assessment of how much and in what format SGBM content already exists within medical school curricula. This would need to be further clarified in order for additional and appropriate incorporation of SGBM content to be successful.

A potential vehicle for including SGBM material is a curriculum thread. Medical school curriculum developers, perhaps through the formation of an advisory committee, should first define learning objectives, recommend strategies for integrating material into existing curricula, and ensure such material is in line with existing learning objectives, LCME standards, and AAMC domains. The role of faculty development cannot be overlooked. Faculty should be educated about SGBM and its incorporation into medical school curricula in a variety of ways. In particular, tailoring the presentation of SGBM to the needs of specific audiences and limiting criticism of individual faculty's existing educational materials would be crucial for success. For example, clinical case presentations could involve patients of both sexes, compelling students to examine sex differences in patient presentation, diagnosis and treatment. Importantly, faculty need to be rewarded for the time and effort they invest in strengthening SGBM curricula.

(Workshop A continued)

A number of barriers to incorporating SGBM content into existing medical school curricula were identified. These include limited resources (e.g. faculty time and effort), time constraints within existing curricula, uncertainty regarding the ideal time to introduce this content to medical students, and persistent knowledge gaps about SGBM.

Potential strategies to increase the incorporation of SGBM content involve assessing the current need for SGBM content, raising awareness about the importance of this topic, identifying stakeholders, collaboration among key players who develop medical school curricula, faculty development, integrating SGBM content into existing educational activities, and including national groups such as the Liaison Committee for Medical Education (LCME).

Utilization of online modules, educational portfolios, and premade lecture slides as well as standalone electives are all ways SGBM could be assimilated into existing curricula. SGBM knowledge and its clinical application could benefit from the development of "apps" that would allow for real-time information retrieval. The importance of student involvement in this process should not be overlooked; students can be the force that drives faculty to include SGBM into the material they teach, spearhead the assessment of existing SGBM content, and even develop supplementary content. Knowledge of SGBM will also need to be included into assessment so that all students understand the need to learn the information. Finally, program evaluation to determine the success and sustainability of any efforts to incorporate SGBM would be key. Ongoing surveillance of any clinical issues that arise as a result of increasing evidence of sex and gender differences would be useful going forward for continued integration of SGBM into curricula.

WORKSHOP B: CREATING SGBM STUDENT COMPETENCIES IN ALIGNMENT WITH THE AAMC

Group Facilitators: Dr. Michelle Berlin, Dr. Robert Carroll, Dr. Michelle Forcier, Dr. Wendy Klein, Dr. Kim Templeton, and Dr. Jan Werbinski

In this workshop, participants discussed creating a framework for the development of national SGBM medical student competencies.

The initial dialogue centered on which approach would be most successful - the development of a unique set of competencies or adapting existing women's health competencies to meet the needs of SGBM. One recommendation was to follow a framework similar to the one in the article "Foundations for a Novel Emergency Medicine Subspecialty: Sex, Gender and Women's Health" by McGregor et al.,[1] with the inclusion of additional organ systems and "side bars" that could alert faculty to specific topics that could be discussed further. Because SGBM curricula should encompass all health conditions, traditional topics taught under the rubric of obstetrics/gynecology should also be included. Establishing a panel of experts such as those who created competencies at the World Health Organization and American College of Clinical Pharmacy would be useful. The AAMC's "Implementing Curricular and Institutional Climate Changes to Improve Health Care for Individuals Who Are LGBT, Gender Nonconforming, or Born with DSD: A Resource for Medical Educators" would be a useful resource and starting point.

It was agreed that sex and gender based differences should be instituted at the very beginning of medical school to ensure students understand the basic science that supports these concepts. Integration within standard lectures, facilitated small group discussions, Objective Structured Clinical Examinations (OSCEs), standardized patients, and clinical experiences are all educational opportunities that can facilitate understanding of SGBM. Most case-based scenarios can illustrate principles of SGBM by changing the sex or gender of the patient under discussion. Entrustable Professional Activities (EPAs) should also have SGBM integration, as cultural sensitivity is inherent to them.

Engaging students to become change agents is essential to attaining true integration. If students perceive that sex and gender are not addressed during a particular educational experience, they should be encouraged to inquire about it openly. Student evaluations should be updated to include specific assessment of SGBM content within the curriculum and their personal competence and comfort in this area.

As SGBM is a new area, faculty development will be crucial. This includes both faculty at the parent site, as well as faculty involved with preceptorships and other clinical experiences. This could be included in existing annual faculty development or competency assessments. SGBM should also be added to existing conflict of interest forms signed by visiting speakers so that they are aware that they will be evaluated on this criterion.

The LCME and other health professionals' accrediting bodies should be engaged regarding the vital nature of including SGBM content, and according to standards and practices of their organization, determine how best to ensure this vital content is adequately included in educational programs.

Ultimately, inclusion of SGBM would continue to improve medical students' understanding of precision medicine and patient-centered care as they use a sex and gender lens when viewing data and during patient encounters. This would be consistent with recommendations from the recent American Medical Association ChangeMedEd 2015 conference, at which participants recommended that patient-centered care and social determinants of health be emphasized more often and earlier in the curriculum. The use of Miller's pyramid[2] to cover multiple levels and progressive achievement of milestones can provide achievable "floors" for which all schools can be held to account.

Note: A manuscript regarding this work is in preparation.

1. McGregor AJ, Madsen T, Clyne B. Foundations for a novel emergency medicine subspecialty: sex, gender, and women's health. *Academic Emergency Medicine*. 2014;21(12):1469-77.
2. Miller G. The Assessment of clinical skills/competence/performance. *Academic Medicine*. 1990;65(9 Suppl):S63-7.

FROM ROADMAP TO REALITY: YOUR ROLE AS A CHANGE AGENT

MARJORIE R. JENKINS, MD, MEHP, FACP
Laura W. Bush Institute for Women's Health
Texas Tech University Health Sciences Center

Note: Some of the information listed below was presented live at the Summit, while additions were provided by Dr. Jenkins after evaluation of and feedback from the Summit.

This Summit provided resources to faculty and students so that they could go back, start conversations, and engage their institutions in the process of formalizing the integration of sex and gender evidence into curricula. Change is possible. Our role as change agents requires cultivating networks and developing a critical piece to successful SGBM curriculum integration, the Curriculum Change Team. The Curriculum Change Team includes four key members: curriculum influencer, content expert, student champion, and institutional leader. (see Figure)

- Curriculum Influencer: Faculty responsible for development, integration and/or delivery of curricular content.
- SGBM Content Expert: Basic science and clinical faculty with expertise in clinically meaningful sex and/or gender differences who will participate in the development of evidence-based educational resources.
- Student Champion(s): Student leaders fully invested in educational content development and the engagement of faculty and peers.
- Institutional Leader: Individual who provides verbal support and funding resources to ensure integration, evaluation and assessment.

No scientific discovery can save a life without first traversing a learning environment on its way to the patient. We must assist current health professionals in recognizing the increasing body of knowledge around sex and gender differences, and even more so, passing this knowledge to future providers. The 2015 SGME Summit was a tipping point in formalizing an approach to the integration of sex and gender into medical education. There is still a long way to go and success will require an ongoing commitment from Summit attendees, U.S. medical school leadership, students, accrediting bodies, and other stakeholders.

As is the case with any high quality educational endeavor, the Summit was planned and executed with tangible measureable outcomes for evaluation and dissemination in mind. (see Table)

SEX AND GENDER CURRICULUM CHANGE TEAM

Figure: Sex and Gender Medical Education Curriculum Change Team
Source: Marjorie Jenkins, MD, MEHP, TTUHSC Laura W. Bush Institute for Women's Health

TABLE: 2015 SEX AND GENDER SUMMIT OUTCOMES

Short-term: (Time of program - 3 months post)
• Pre- and post-program knowledge, attitudes and awareness survey
• No-cost access provided for all attendees to the curricular educational products found at www.sexandgenderhealth.com
• Distribution of Summit Proceedings to national and international medical schools, professional organizations, SGBM stakeholder organizations, federal policy and funding agencies
• Development and distribution of an SGME messaging toolkit
Mid-term: (within 18 months)
• Expanded utilization of available SGBM educational resources and increased curricular integration as assessed by a 6 month post Summit participant survey
• Publication of a special SGME-themed *Biology of Sex Differences* journal supplement
• Development and publication of SGME student competencies
Long-term: (within 5 - 7 years)
• Convene an Interprofessional Sex and Gender Health Education Summit
• Formal integration of sex and gender scientific content throughout U.S. medical school curricula
• Repeat administration of the SGBM National Medical Student Survey assessment

"You cannot provide the very best patient care to every patient every time if you don't think about inquiry, innovation, and improvement, so that we can always become better than what we are now."

Bonnie M. Miller, MD

SUMMIT PARTICIPANTS

ALABAMA

UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE

Nicholas Van Wagoner, MD
Assistant Professor

Lauren Walter, MD
Assistant Professor

ARIZONA

UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE, PHOENIX

Linda Nelson, MD, PHD, FACOG
Professor

CALIFORNIA

KECK SCHOOL OF MEDICINE OF THE UNIVERSITY OF SOUTHERN CALIFORNIA

Pamela Schaff, MD
Associate Dean for Curriculum

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Marcia Stefanick, PHD
Professor Obstetrics and Gynecology
Stanford Prevention Research Center

UNIVERSITY OF CALIFORNIA DAVIS SCHOOL OF MEDICINE

Shadi Aminololama-Shakeri, MD
Director of Breast Imaging Fellowship
Assistant Professor, Department of Radiology

UNIVERSITY OF CALIFORNIA, LOS ANGELES DAVID GEFFEN SCHOOL OF MEDICINE

Rachel Brook, MD
Resident Physician

Janet Pregler, MD, FACP
Professor of Clinical Medicine
Director, Iris Cantor-UCLA Women's Health Center

UNIVERSITY OF CALIFORNIA, SAN DIEGO SCHOOL OF MEDICINE

Burton Ober
Student Services Manager

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO SCHOOL OF MEDICINE

Patricia A. Robertson, MD
Inaugural Member, Haile T. Debas Academy of Medical Educators
Professor, Department of Obstetrics, Gynecology and Reproductive Sciences

COLORADO

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE

Rita Lee, MD
Associate Professor

CONNECTICUT

FRANK H. NETTER MD SCHOOL OF MEDICINE AT QUINNIPIAC UNIVERSITY

Anna-leila Williams, PhD, MPH
Associate Professor of Medical Sciences

Rachel Feldman
Medical Student

YALE SCHOOL OF MEDICINE

Njeri Thande, MD
Assistant Professor of Medicine

FLORIDA

FLORIDA INTERNATIONAL UNIVERSITY

Carla Lupi, MD
Associate Professor

FLORIDA STATE UNIVERSITY COLLEGE OF MEDICINE

Suzanne Harrison, MD, FAAFP
Education Director, Family Medicine

NOVA SOUTHEASTERN UNIVERSITY COLLEGE OF OSTEOPATHIC MEDICINE

Robin Jacobs, PhD
Director and Associate Professor

UNIVERSITY OF CENTRAL FLORIDA COLLEGE OF MEDICINE

Denise Kay, PhD
Assistant Professor
Executive Director
Longitudinal Curricular Themes

UNIVERSITY OF MIAMI LEONARD M. MILLER SCHOOL OF MEDICINE

Alex Mechaber, MD
Professor of Medicine
Senior Associate Dean for Undergraduate Medical Education

UNIVERSITY OF SOUTH FLORIDA MORSANI COLLEGE OF MEDICINE

Michelle Lyman, BS
Medical Student

GEORGIA

MOREHOUSE SCHOOL OF MEDICINE

Martha Elks, MD, PhD
Senior Associate Dean

ILLINOIS

CHICAGO MEDICAL SCHOOL AT ROSALIND FRANKLIN UNIVERSITY OF MEDICINE AND SCIENCE

Monica L. Cummings, DMin
Director, Training and Educational Programs

LOYOLA UNIVERSITY CHICAGO STRITCH SCHOOL OF MEDICINE

Beth Mueller, MD, FACS
Associate Professor

Mary Rojek, MA
Doctoral Candidate, Sociology

NORTHWESTERN UNIVERSITY, THE FEINBERG SCHOOL OF MEDICINE

Jabbar Bennett, PhD
Associate Provost, Diversity and Inclusion
Associate Professor of Medicine

Patricia Garcia, MD
Professor, Obstetrics and Gynecology
Curriculum Director Phase 1 and 2

RUSH MEDICAL COLLEGE

Neelum Aggarwal, MD
Director of Research, Rush Heart Center for Women
Associate Professor, Department of Neurological Sciences and Rush Alzheimer's Center

Jay Behel, PhD
Assistant Dean, Academic Development

Tanya Friese, DNP
Assistant Professor

SOUTHERN ILLINOIS UNIVERSITY SCHOOL OF MEDICINE

Karen Reynolds, MS RN
Curriculum Development Specialist

INDIANA

INDIANA UNIVERSITY SCHOOL OF MEDICINE

Regina Kreisle, MD PhD
Interim Associate Dean and Director

Theresa Rohr-Kirchgraber, MD, FACP
Executive Director
IU National Center of Excellence in Women's Health
President, American Medical Women's Association

IOWA

UNIVERSITY OF IOWA CARVER COLLEGE OF MEDICINE

Katherine Imborek, MD
Clinical Assistant Professor

KANSAS

UNIVERSITY OF KANSAS

Giulia Bonaminio, PhD
Associate Dean for Medical Education

Kim Templeton, MD
Professor of Orthopedic Surgery and
Health Policy and Management

KENTUCKY

UNIVERSITY OF KENTUCKY COLLEGE OF MEDICINE

Keisa Fallin-Bennett, MD, MPH
Associate Professor

UNIVERSITY OF LOUISVILLE

Katie Leslie, PhD
Program Director, Office of Diversity and Inclusion

LOUISIANA

LOUISIANA STATE UNIVERSITY HEALTH SCIENCES CENTER SCHOOL OF MEDICINE, NEW ORLEANS

Mark Townsend, MD
Professor

LOUISIANA STATE UNIVERSITY HEALTH SCIENCES CENTER SCHOOL OF MEDICINE, SHREVEPORT

Gunjan Kahlon, MD
Assistant Professor

MAINE

UNIVERSITY OF NEW ENGLAND COLLEGE OF OSTEOPATHIC MEDICINE

John Kazilionis, DO
Clinical Assistant Professor

MARYLAND

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE

Susan Cheng, MD
Senior Associate Dean for Diversity and Inclusion

Erica McClaskey, MD, MS, FAAFP
Associate Professor

HOWARD UNIVERSITY COLLEGE OF MEDICINE

Sonya K. Sobrian, PhD
Associate Professor

JOHNS HOPKINS UNIVERSITY

Eloiza Domingo-Snyder, MS
Director, Diversity, Inclusion and Cultural Competency

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

Jessica Servey, MD, FAAFP
Assistant Dean for Faculty Development

MASSACHUSETTS

BOSTON UNIVERSITY SCHOOL OF MEDICINE

Deborah Vaughan, PhD
Professor, Anatomy and Neurobiology

TUFTS UNIVERSITY SCHOOL OF MEDICINE

Kirstin Dardano, MD
Associate Professor of Obstetrics and Gynecology

UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL

Sara Shields, MD, MS, FAAFP
Clinical Professor of Family Medicine and Community Health

MICHIGAN

MICHIGAN STATE UNIVERSITY COLLEGE OF OSTEOPATHIC MEDICINE

Laryssa Kaufman, MD, FACP
Associate Professor

OAKLAND UNIVERSITY WILLIAM BEAUMONT SCHOOL OF MEDICINE

Fatima Fahs
Medical Student
AMWA Student President

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

Maggie Riley, MD
Assistant Professor of Family Medicine Development

WESTERN MICHIGAN UNIVERSITY HOMER STRYKER M.D. SCHOOL OF MEDICINE

Brandy Shattuck, MD
Assistant Professor, Deputy Medical Examiner

MINNESOTA

MAYO MEDICAL SCHOOL

Richard Berger, MD, PhD
Professor of Orthopedic Surgery and Anatomy
Dean, Mayo School of Continuous Professional Development
Medical Director, Mayo Clinic Online Learning

Caroline Davidge-Pitts, MD
Fellow, Department of Endocrinology

Jani Jensen, MD
Assistant Professor, Obstetrics and Gynecology
Chair, Curriculum

Juliana Kling, MD
Assistant Professor

Virginia Miller, PhD
Professor, Departments of Physiology and Surgery
Director, Women's Health Research Center

Jacqueline Thielen, MD
Assistant Professor

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL

Jilyan G. Decker
Medical Student

MISSOURI

UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE, COLUMBIA

Jane McElroy, PhD
Associate Professor

NEBRASKA

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE

Regan Taylor, MD, FACP
Assistant Professor

NEW MEXICO

NEW MEXICO STATE UNIVERSITY BURRELL COLLEGE OF OSTEOPATHIC MEDICINE

Robert Ketchum, PhD
Associate Dean for Academic Affairs

UNIVERSITY OF NEW MEXICO SCHOOL OF MEDICINE

Cameron Crandall, MD
Professor, Director LGBTQ Inclusion and Diversity

NEW YORK

ALBANY MEDICAL COLLEGE

Alyssa Herrmann
Medical Student

Amanda Tashjian
Medical Student

ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY

Frederick Nagel, MD, MPH
Assistant Professor

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS

Marianne Legato, MD, FACP
Emerita Professor of Clinical Medicine

NEW YORK MEDICAL COLLEGE

Kathryn Spanknebel, MD
Associate Professor of Surgery

STONY BROOK UNIVERSITY SCHOOL OF MEDICINE

Anat Biegon, PhD
Professor

SUNY, UNIVERSITY AT BUFFALO, JACOBS SCHOOL OF MEDICINE AND BIOMEDICAL SCIENCES

Glenna Bett, PhD
Vice Chair for Research, OBGYN
President, SMBS Faculty Council

Roberta Gebhard, DO
Hospitalist
Society of Teachers of Family Medicine

WEILL CORNELL MEDICAL COLLEGE

Darius Paduch, MD, PhD
Associate Professor

NORTH CAROLINA

THE BRODY SCHOOL OF MEDICINE AT EAST CAROLINA UNIVERSITY

Robert Carroll, PhD
Associate Dean for Medical Student Education

DUKE UNIVERSITY SCHOOL OF MEDICINE

Sharon Hull, MD, MPH
Division Chief, Family Medicine

Nancy Weigle, MD
Professor

WAKE FOREST SCHOOL OF MEDICINE

Katherine Schafer, MD
Assistant Professor

OHIO

CASE WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE

Sana Loue, JD, PhD, MPh, MSSA, MA
Vice Dean for Faculty Development and Diversity

Henry Ng, MD
Assistant Professor of Medicine and Pediatrics

OHIO STATE UNIVERSITY COLLEGE OF MEDICINE

Camilla Curren, MD
Assistant Professor of Internal Medicine

OHIO UNIVERSITY HERITAGE COLLEGE OF OSTEOPATHIC MEDICINE

Jane Balbo, DO
Assistant Professor, Family Medicine

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE

Aaron Marshall, PhD
Professor

THE UNIVERSITY OF TOLEDO COLLEGE OF MEDICINE

Imam Mohamed, MD
Associate Dean for Admissions

WRIGHT STATE UNIVERSITY, BOONSHOFT SCHOOL OF MEDICINE

Mary White, PhD
Professor

OREGON

OREGON HEALTH AND SCIENCE UNIVERSITY

Michelle Berlin, MD, MPH
Co-Director, Center for Women's Health

Amy Stenson, MD, MPH
Assistant Professor

PENNSYLVANIA

DREXEL UNIVERSITY COLLEGE OF MEDICINE

Ana E. Núñez, MD
Associate Dean of Urban Health Equity, Education and Research
Director, Women's Health Education Program and National Center of Excellence in Women's Health

Judith Wolf, MD
Associate Professor of Medicine

PENNSYLVANIA STATE UNIVERSITY COLLEGE OF MEDICINE

Jennifer McCall-Hosenfeld, MD, MSc, FACP
Associate Professor of Medicine and Public Health Sciences

PERELMAN SCHOOL OF MEDICINE AT THE UNIVERSITY OF PENNSYLVANIA

Benoit Dubè, MD
Assistant Dean for Diversity and Inclusion

TEMPLE UNIVERSITY SCHOOL OF MEDICINE

Robert Bettiker, MD
Associate Professor

WIDENER UNIVERSITY SCHOOL OF HUMAN SERVICE PROFESSIONS

Justin Sitron, PhD
Associate Professor

RHODE ISLAND

THE WARREN ALPERT MEDICAL SCHOOL AT BROWN UNIVERSITY

Katie Baird
Medical Student

Rebecca Barron, MD, MPH
SGEM Teaching Fellow

Michelle Forcier, MD, MPH
Associate Professor

Alyson J. McGregor, MD, MA, FACEP
Director, Division of Sex and Gender in Emergency Medicine

SOUTH CAROLINA

MEDICAL UNIVERSITY OF SOUTH CAROLINA COLLEGE OF MEDICINE

Alyssa A. Rheingold, PhD
Professor

TENNESSEE

LINCOLN MEMORIAL UNIVERSITY DEBUSK COLLEGE OF OSTEOPATHIC MEDICINE

Rex Hobbs, PA-C, MPAS
Associate Professor

MEHARRY MEDICAL COLLEGE

Kimberly Looney, MD
Assistant Professor and Associate
Program Director

QUILLEN COLLEGE OF MEDICINE - EAST TENNESSEE STATE UNIVERSITY

Caroline Abercrombie, MD
Assistant Professor

Rebekah Rollston
Medical Student

UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER

Patrick Ryan, PhD
Assistant Dean for Medical Education

VANDERBILT UNIVERSITY SCHOOL OF MEDICINE

Bonnie M. Miller, MD
Senior Associate Dean for Health Sciences Education
Associate Vice Chancellor for Health Affairs
Professor of Medical Education Administration

TEXAS

BAYLOR COLLEGE OF MEDICINE

Sara Elizabeth Blutt, PhD
Assistant Professor

DELL MEDICAL SCHOOL

Sue Cox, MD
Executive Vice Dean for Academics

John Luk, MD
Assistant Dean for Interprofessional Integration

TEXAS A&M HEALTH SCIENCE CENTER, COLLEGE OF MEDICINE

Ruth Bush, MD, JD, MPH
Vice Dean for Academic Affairs
Professor of Surgery
Chair of Medical Education

Rania Cannaday, MD
Assistant Professor

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER SCHOOL OF MEDICINE

Susan Bergeson, PhD
Associate Professor

Robert Casanova, MD
Assistant Dean of Clinical Sciences Curriculum
Associate Professor, Medical Clerkship Director Obstetrics and Gynecology

Marjorie R. Jenkins, MD, FACP
Chair, 2015 Sex and Gender Medical Education Summit
Professor of Medicine
Associate Dean for Women in Health and Science

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER PAUL L. FOSTER SCHOOL OF MEDICINE

Lee Rosenthal, PhD
MD/MPH Degree Program Coordinator
Society, Community and the Individual Faculty

UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER, SAN ANTONIO

Linda Grace Solis, PhD
Interim Director, Student Diversity, Inclusion, Wellbeing, & Professional Development

UTAH

UNIVERSITY OF UTAH SCHOOL OF MEDICINE

Gretchen Case, PhD
Assistant Professor

Kathleen Digre, MD
Professor, Neurology and Ophthalmology

VERMONT

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE

Charlotte Reback, MD
Course Director

VIRGINIA

VIRGINIA COMMONWEALTH UNIVERSITY SCHOOL OF MEDICINE

Wendy Klein, MD
Associate Professor Emeritus

Susan Kornstein, MD
Professor
Director, VCU Institute for Women's Health

VIRGINIA TECH CARILION SCHOOL OF MEDICINE

Cynda Ann Johnson, MD
President and Founding Dean

UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE

Christine Peterson, MD
Associate Professor, Obstetrics and Gynecology
Assistant Dean for Student Affairs

WISCONSIN

MEDICAL COLLEGE OF WISCONSIN

Herodotos Ellinas, MD
Associate Professor

UNIVERSITY OF WISCONSIN SCHOOL OF MEDICINE AND PUBLIC HEALTH

Elizabeth Petty, MD
Senior Associate Dean for Academic Affairs

INTERNATIONAL

CHARITÉ UNIVERSITÄTSMEDIZIN BERLIN – GERMANY

Georgios Kararigas, PhD
DZHK W1 Professor, Institute for Gender in Medicine

KAROLINSKA INSTITUTET – SWEDEN

Karolina Kublickiene, MD, PhD
Associate Professor of Obstetrics and Gynecology
CEO, Center of Gender Medicine
Senior Scientist, Dept. of Clinical Science Intervention and Technology

MEMORIAL UNIVERSITY OF NEWFOUNDLAND FACULTY OF MEDICINE – CANADA

Scott Moffatt, MD, CCFP, FCFP
Assistant Dean for Student Affairs

SAN JUAN BAUTISTA SCHOOL OF MEDICINE – PUERTO RICO

Alvaro Perez, MD
Director of Assessment and Curriculum Evaluation

UNIVERSITY OF MANITOBA FACULTY OF MEDICINE – CANADA

Eileen J. Burnett
Medical Student

UNIVERSITY OF OTTAWA FACULTY OF MEDICINE – CANADA

Nahid Azad, MD
Director, Office of Gender and Equity Issues

UNIVERSITY OF TORONTO FACULTY OF MEDICINE – CANADA

Hosanna Au, MD, FRCPC
Director, Foundations Curriculum Unit 3

Amy Bourns, MD
Faculty Lead for LGBTQ

Gillian Einstein, MD
Associate Professor, Dept. of Psychology, Dalla Lana School of Public Health
Director, Collaborate Graduate Program in Women's Health
Visiting Professor of Neuroscience and Gender Medicine, Linköping University, Sweden

WESTERN UNIVERSITY SCHULICH SCHOOL OF MEDICINE AND DENTISTRY – CANADA

Gary Tithecott, MD, FRCP
Associate Dean, Undergraduate Medical Education

PROFESSIONAL ORGANIZATIONS

AMERICAN ASSOCIATION OF COLLEGES OF OSTEOPATHIC MEDICINE

Garren Gebhardt, DO
Assistant Professor of Medicine

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Ann Bonham, PhD
Chief Scientific Officer

AMERICAN COLLEGE OF PHYSICIANS

Susan Hingle, MD
Associate Professor

AMERICAN MEDICAL STUDENT ASSOCIATION

Deborah Hall, MD
National President

AMERICAN MEDICAL WOMEN'S ASSOCIATION

Eliza Chin, MD, MPH, FACP
Executive Director
Summit Co-Chair

CEDARS SINAI MEDICAL CENTER

Noel Bairey-Merz, MD, FACC, FAHA
Women's Guild Chair in Women's Health
Director, Barbra Streisand Women's Heart Center
Director, Linda Joy Poling Women's Heart Health
Program Director, Preventive Cardiac Center
Professor of Medicine

Shivani Dhawan, MS, CCRP
Research Operations Associate

FEDERATION OF STATE MEDICAL BOARDS

Humayun Chaudhry, DO, MS, MACP, FACOI
President and CEO

FOOD AND DRUG ADMINISTRATION

Pamela E. Scott, PhD, MA
Director, Research and Development
Office of Women's Health

GERALD P. MURPHY CANCER FOUNDATION

David Waters, PhD
Executive Director

LAURA W. BUSH INSTITUTE FOR WOMEN'S HEALTH

Marley Hoggatt, MA
Instructional Designer

Connie Tyne, MS
Executive Director

NATIONAL INSTITUTES OF HEALTH, OFFICE OF RESEARCH ON WOMEN'S HEALTH

Terri Cornelison, MD, PhD, FACOG
Associate Director for Clinical Research
Captain, United States Public Health Service

SEX AND GENDER WOMEN'S HEALTH COLLABORATIVE

Jan Werbinski, MD, FACOG
Executive Director

Nicole Miller, MS, PTA
Media Specialist

SOCIETY FOR WOMEN'S HEALTH RESEARCH

Phyllis Greenberger, MSW
President and CEO

STUDENT NATIONAL MEDICAL ASSOCIATION

Nailah Cash-O'Bannon
Region II Director
Medical Student

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Nancy Lee, MD
Director, Office on Women's Health

U.S. HEALTH RESOURCES AND SERVICES ADMINISTRATION

Bethany Applebaum, MPH

PARTICIPANTS VIA WEBINAR

AMERICAN MEDICAL WOMEN'S ASSOCIATION

BINGHAMTON UNIVERSITY – STATE UNIVERSITY OF NEW YORK

BRITISH COLUMBIA WOMEN'S HOSPITAL AND HEALTH CENTRE
(PROVINCIAL HEALTH SERVICES AUTHORITY) – CANADA

CYPRUS INTERNATIONAL UNIVERSITY -- CYPRUS

HARVARD MEDICAL SCHOOL

MAYO CLINIC

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

NATIONAL INSTITUTES OF HEALTH, OFFICE OF RESEARCH ON WOMEN'S HEALTH

NORTHEAST OHIO MEDICAL UNIVERSITY

NEW YORK UNIVERSITY

PORTLAND STATE UNIVERSITY

TEMPLE UNIVERSITY SCHOOL OF MEDICINE

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER

TIBLISI MEDICAL ACADEMY - GEORGIA

UNIVERSITY OF BRITISH COLUMBIA – CANADA

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

UNIVERSITY OF MÜNSTER - GERMANY

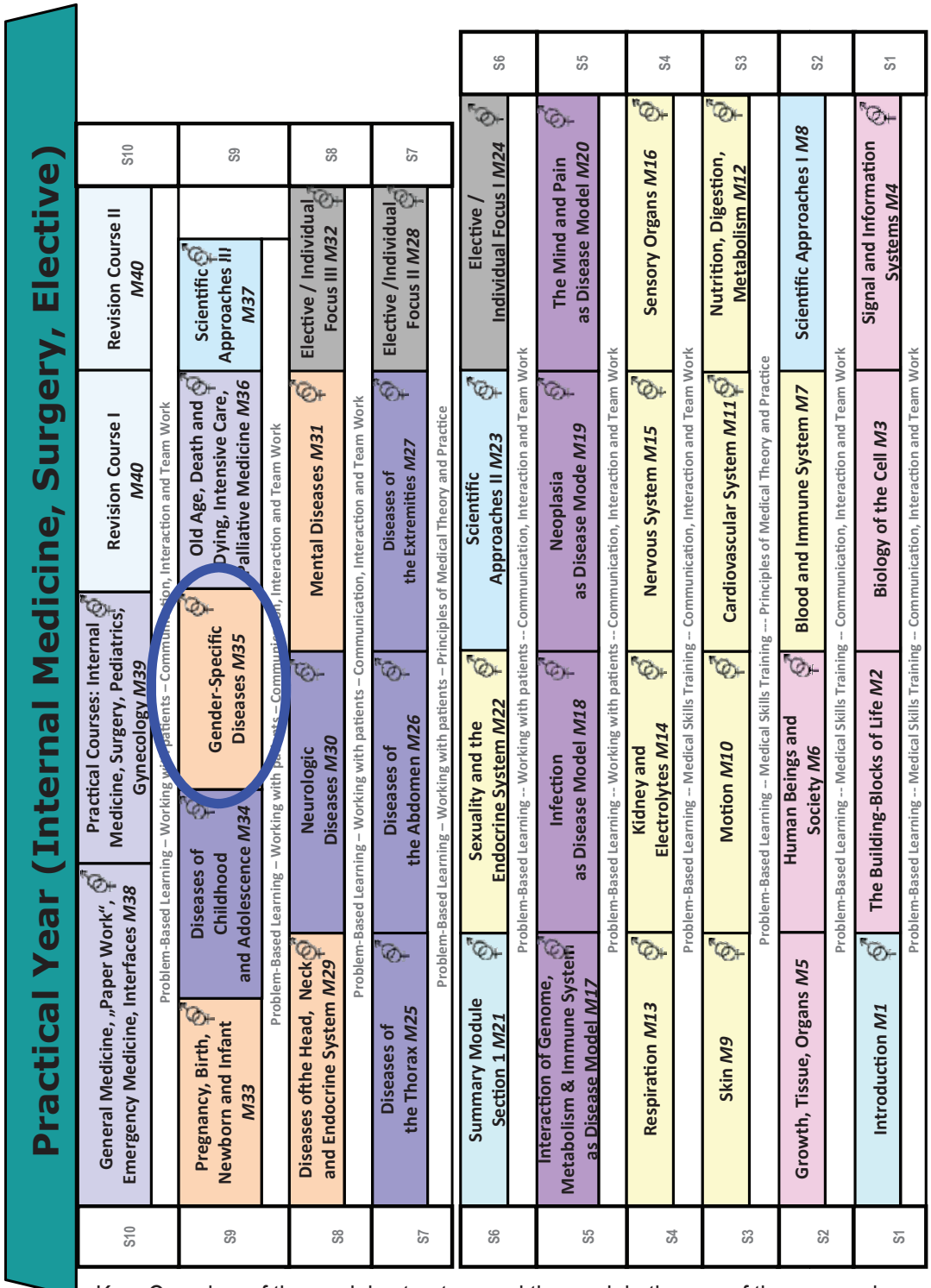
UNIVERSITY OF NEW MEXICO SCHOOL OF MEDICINE

UNIVERSITY OF PIKEVILLE - KENTUCKY COLLEGE OF OSTEOPATHIC MEDICINE

WEST TEXAS A&M UNIVERSITY

APPENDIX

Sex and gender aspects of the modular medical curriculum at Charité



Key: Overview of the module structure and the module themes of the new undergraduate medical curriculum. The symbol ♂♀ indicates the integration of sex and gender medicine issues and gender perspective.

Ludwig S, Oertelt-Prigione S, Kurmeyer C, Gross M, Grüters-Kieslich A, Regitz-Zagrosek V, Peters H. A successful strategy to integrate sex and gender medicine into a newly developed medical curriculum. *Journal of Women's Health.* 2015, 24(12): 996-1005.

SEX & GENDER BASED MEDICINE RESOURCES

MEDICAL EDUCATION CURRICULAR MATERIALS

CHARITÉ UNIVERSITY HOSPITAL
Institute of Gender in Medicine
eGender Curriculum
http://egender.charite.de/en/index.php

CIHR INSTITUTE OF GENDER AND HEALTH
Gender, Sex, & Health Research Case Book
www.cihr-irsc.gc.ca/e/44082.html

DREXEL UNIVERSITY COLLEGE OF MEDICINE
Gender and Ethnic Medicine Project
http://webcampus.drexelmed.edu/gem/default.htm

SEX AND GENDER WOMEN'S HEALTH COLLABORATIVE
http://www.sgwhc.org

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER, LAURA W. BUSH INSTITUTE FOR WOMEN'S HEALTH
Sex and Gender Specific Health Curriculum
http://www.sexandgenderhealth.org

CONTINUING MEDICAL EDUCATION COURSES

NIH ORWH THE SCIENCE OF SEX AND GENDER IN HEALTH
http://sexandgendercourse.od.nih.gov

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER, LAURA W. BUSH INSTITUTE FOR WOMEN'S HEALTH
Y Does X Make A Difference CME Series
http://www.laurabushinstitute.org

RESEARCH INTEGRATION TOOLS

CIHR INSTITUTE OF GENDER AND HEALTH
Sex and Gender in Biomedical Research
http://www.cihr-irsc-igh-isfh.ca
Webinars
http://www.cihr-irsc.gc.ca/e/8673.html

KAROLINSKA INSTITUTET CENTRE FOR GENDER MEDICINE
http://ki.se/en/research/tools-for-sex-and-gender-analysis-in-health

NATIONAL INSTITUTES OF HEALTH – OFFICE OF RESEARCH ON WOMEN'S HEALTH
http://orwh.od.nih.gov/

STANFORD UNIVERSITY/EUROPEAN COMMISSION/US NATIONAL SCIENCE FOUNDATION
Gendered Innovations in Science, Health & Medicine, Engineering, and Environment
http://genderedinnovations.stanford.edu

LITERATURE SEARCH & DATABASE RESOURCES

CHARITÉ UNIVERSITY HOSPITAL
Institute of Gender in Medicine
GenderMed Database
http://gendermeddb.charite.de/?site=home&lang=eng

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER, LAURA W. BUSH INSTITUTE FOR WOMEN'S HEALTH
Pubmed Search Engine Tool
www.sexandgenderhealth.com

CONSUMER AND PROFESSIONAL RESOURCES

EUROPEAN SOCIETY OF GENDER HEALTH AND MEDICINE
http://www.gendermedicine.org

NATIONAL INSTITUTES OF HEALTH – OFFICE OF RESEARCH ON WOMEN'S HEALTH
http://orwh.od.nih.gov

SEX AND GENDER WOMEN'S HEALTH COLLABORATIVE
http://www.sgwhc.org

SOCIETY FOR WOMEN'S HEALTH RESEARCH
www.swhr.org

TEXTBOOKS

Einstein G. *Sex and the Brain: A Reader*. Cambridge: MIT Press; 2007.

Legato M. *Principles of Gender-Specific Medicine*, 2nd ed. London: Elsevier; 2010.

McGregor, AJ, Choo, EK, Becker, BM. *Sex and Gender in Acute Care Medicine*. Cambridge: Cambridge University Press; 2016.

Oertelt-Prigione S, Regitz-Zagrosek V, editors. *Sex and Gender Aspects in Clinical Medicine*. London: Springer-Verlag; 2012.

Regitz-Zagrosek V. editor. *Sex and Gender Differences in Pharmacology*. Heidelberg: Springer-Verlag; 2012.

Schenk-Gustafsson K, DeCola PR, Pfaff DW, Pisetsky DS, editors. *Handbook of Clinical Gender Medicine*. Basel: Karger; 2012.

JOURNALS

BIOLOGY OF SEX DIFFERENCES
Official Journal of the Organization for the Study of Sex Differences
http://www.bsd-journal.com

CLINICAL THERAPEUTICS, ANNUAL THEMED ISSUE ON WOMEN'S HEALTH/GENDER MEDICINE
http://www.clinicaltherapeutics.com

JOURNAL OF WOMEN'S HEALTH
http://www.liebertpub.com/jwh

MEMBERSHIP ORGANIZATIONS

THE FOUNDATION FOR GENDER-SPECIFIC MEDICINE, INC
www.gendermed.org

INTERNATIONAL SOCIETY OF GENDER MEDICINE
http://www.isogem.com

ORGANIZATION FOR THE STUDY OF SEX DIFFERENCES
http://www.ossdweb.org

SEX AND GENDER WOMEN'S HEALTH COLLABORATIVE
www.sgwhc.org

SOCIETY FOR WOMEN'S HEALTH RESEARCH
www.swhr.org

POSTERS

BARRON R, SANCHEZ Y, AND MCGREGOR AJ
A novel preclinical elective on Sex- and Gender-Specific Medicine.

BEHEL JM, FRIESE T, CHUBINSKAYA S, NOLAN CM, KENT PM
Speaking with a single voice: The integration of educational and institutional efforts in LGBTQ Health.

BIEGON A, ACOSTA-MARTINEZ M, CHANDRAN L
A 'SELECTIVE' course proposal on gender based medicine.

FELDMAN RE, BERNARD A, COPES L, HOLLAND A, KOWALSKY D, SIMONE G, AND MCCAVE E
The Human Sexuality Workshop 2015: An inter-professional event to increase student comfort with LGBT patients.

HERRMANN A, TASHJIAN A, RAMAKRISHNAN R, RAMINENI T, ROKAS T, AND JENKINS MR
Gender-specific and men's and women's health curriculum national survey.

HOOK KM AND KUECK AS
LGBT patient narratives to teach sexual history-taking.

KAHLON G AND OUBRE C
Facilitated reflection to increase student engagement.

KLING JM, VIGGIANO TR, ROSE SH, AND MILLER VM
Sex and gender based medical curricula for post-graduate medical education.

LESLIE, KF, SAWNING S, HOLTHOUSER A, STEINBOCK S, MARTIN L, JONES VF, AND SHAW MA
eQuality: Integrating medical education competencies to improve health care for people who are LGBT, gender nonconforming, or born with differences of sex development.

LOUE S, MONTGOMERY L, AND STANGE K
An integration model to promote inclusivity in the academic medical center.

LYMAN ME AND STOKLOSA HM
Identification and intervention: Teaching healthcare professionals about human trafficking.

MADSEN TE AND MCGREGOR AJ
Training emergency physicians in gender specific medicine: Assessing attitudes of program directors and residency graduates.

MATTHEWS D, YOKOYAMA M, AND AGGARWAL NT
Gender differences in Alzheimer's Disease onset and progression: Taking research findings and applying them to medical education.

MCGREGOR AJ, MILLER V, WERBINSKI J, AND TEMPLETON K
Sex and Gender Women's Health Collaborative: A novel resource towards improving medical education and practice.

NELSON LR, NELSON EM, AND BARCELLONA DS
Integration of basic science with behavioral science and ethics material in the preclinical curriculum covering sexuality, gender identity and reproduction.

PATEL H, JENKINS MR, CHEON J, CROOKS S, SONG M, AND CASANOVA R
Sex- and gender- based medicine curriculum project: Slide library.

JENKINS MR, CASANOVA R, CROOKS C, AND CHEON J
Sex and gender-based medicine online multimedia case-based learning.

ROJEK M
Learning that medical curricula need to change: Women's health leaders' emerging awareness.

SERITAN AL, AMINOLOLAMA-SHAKERI S, AND SERVIS M
Gender and sexuality curriculum for psychiatry residents.

SHAH A, ZIA S, HARLAN G, SCHAFF P, AND ELLIOTT D
Lecture, discussion, debrief: The LGBT curriculum at the Keck School of Medicine of USC.

THATIKUNTA M, ECKSTRAND KL, NG H, CONNORS JS, HAYMER M, LEHMAN JR, NUYEN B, ORUGANTI P, PATEL S, PETTY EM, AND STREED CG
The equal curriculum: Student and educator guide to LGBT health.

THIBERT K, HALL DV, KOETJE J, DECKER J, DOMOGAUER JD, KLEINTOP JS, AND ROLLSTON R
AMSA's Sexual Health Leadership Course.

TOWNSEND MH AND BISHOP-BAIER M
Gender and peer assessment in team-based learning: A three-year study.

WOLF JE, DESLANDES JN, LU L, OLURONBI RA, DAVIS-WOODS AN, AND NÚÑEZ AE
Promoting sex/gender personalized medicine – the Drexel Medicine experience.

INDIVIDUAL LESSONS FROM THE FIELD
Summary Lessons from SGBM Leaders

RUTH BUSH, MD, JD, MPH
Texas A&M Health Science Center College of Medicine

CURRICULAR INNOVATION: *Created a five-week program called Selectives, a humanities course in health disparities for second year students. Pilot tested the online Osteoporosis and Diabetes modules from the Texas Tech SGSH website.*

The modules were an effective way for students to learn. They found them interesting and the animations helped keep students' attention. Students asked for a similar approach to learning organ systems. The modules provided a good overview from basic science concepts, gross anatomy and histology, through pharmacology, treatment plans and gender based differences. Students enjoyed the team approach toward patient care. They learned the important questions to ask in a clinical encounter, and the modules gave students an idea of how they could tailor their practice to provide better patient care.

As a way of learning, students wanted to be able to direct how quickly they listened to the modules. They preferred to use main arrows rather than clicking on hyperlinks. It would be helpful to consider students' educational development stage prior to using specific modules.

JANI R. JENSEN, MD
Mayo Medical School

CURRICULAR INNOVATION: *Pilot-tested Texas Tech's SGBH Osteoporosis Module in a six-week transitional block between the second and third year.*

Young learners have a short attention span. The modules are an example of instructional design that is effective with today's students. The modules allow for self-paced learning and for instructors to "Flip the Classroom." Students enjoyed using the modules. Even though only the osteoporosis module was required, 53% of students also completed an unrequired diabetes module. Students thought it was a good introduction to new concepts as well as a good review of topics. The clinical integration, video clips and patient charts were useful.

A completion report was available, but the instructor did not have access to student scores. Access and set up issues need to be considered when using modules.

ROBERT CASANOVA, MD
Texas Tech University Health Sciences Center, Lubbock

CURRICULAR INNOVATION: *Medical students audited courses and identified gaps related to SGBM content. This information was used to create the Sex and Gender Specific Health website with educational materials using an interprofessional model of care.*

Students systematically audited all basic science courses and found gaps related to SGBM content in the curriculum. The faculty response to their report was overwhelmingly positive and ultimately led to the development of a website with teaching materials that include: lecture slides, learning modules, clinical cases, continuing medical education, a PubMed search tool, and resources. Lecture slides include speaking points, level of evidence and references. Learning modules are composed of three sections, with each module intended for a different year of medical education. The overall model is based on a triad of student, basic scientist and healthcare professional. After beta testing, assessment of student learning was expanded to include completion grades and time spent. Assessment includes pre- and post-test quizzes with attitudinal measures. Students were involved throughout the development process.

The biggest challenge was time. With so much crammed into the curriculum, another lecture was out of the question. Instead, slides were "sprinkled" into existing lectures. Online modules were utilized as a "flipped classroom." A second challenge was expertise. Faculty felt that they were not content experts, so content was created in the form of slides and modules.

ALYSON J. MCGREGOR, MD, MA, FACEP
Warren Alpert Medical School of Brown University, Sex and Gender in Emergency Medicine Program

CURRICULAR INNOVATION: *Developed SGBM core competencies for three areas of Emergency Medicine: research, education, and advocacy.*

The model for emergency medicine at Brown addresses both learners and patients and enables them to adopt a sex and gender (S&G) lens. A fellowship program was created with two tracks, physician researcher and educator. Students had opportunities for elective rotations. Resources were developed that include a medical textbook, *Sex and Gender in Acute Care Medicine*. Short educational videos were created for all who provide patient care in an emergency department. A public education campaign increased patient awareness of S&G, and enabled patients to question their physicians. Brown's S&G experts became a resource for other researchers to learn how to analyze and re-examine issues of S&G. Networking with faculty across departments was important because S&G crosses disciplines. Building alliances such as with a community advisory board was also helpful.

(Lessons from the Field continued)

There were a number of challenges, including limited time and space in the curriculum. It is more effective to integrate S&G throughout the curriculum, but given the competition for resources, it is good to start small and build on successes. In the absence of faculty mentorship, build on local and national relationships, make the curriculum interdisciplinary, and allow those who are newly trained an opportunity to advance. With the challenges of funding, learn to think creatively, e.g. grateful patients or incentives for learners. When there is resistance to change, having a diverse steering committee comprised of local, national, expert and lay individuals can be helpful.

JANET PREGLER, MD
Iris Cantor-UCLA Women's Health Center
David Geffen School of Medicine at University of California, Los Angeles

CURRICULAR INNOVATION: *Fifteen years ago, sex and gender concepts were added to the curriculum as part of an overall curricular transition from a discipline based to an organ based curriculum.*

UCLA's experience was that integrating sex and gender concepts into the curriculum required working on multiple levels. On a broad level, it was important to create a mission statement, goals and objectives for the SGBM program. UCLA adapted existing national recommendations when possible, gained an understanding of the local curricular content and structure to identify opportunities to integrate S&G content, and designated faculty to be actively involved in both annual and major curriculum change processes.

It was important to identify allies within the curriculum. UCLA formed a "working group" on women's health and S&G issues. This included all faculty and key staff who might teach, advocate or mentor on S&G issues. Identifying research performed in basic science and clinical departments related to S&G issues helped identify faculty with these interests; these faculty became allies. At UCLA, basic science faculty who previously had not worked in this area became interested in promoting SGBM after receiving information on the timeliness of this topic, e.g. IOM and NIH reports and statements. Methods that can be implemented at an individual level include: educating "high impact" faculty and staff who are curricular leaders, volunteering to write a case or lecture that includes SGBM, and adapting existing resources for your organization and courses. Students and the community can also be allies. At UCLA, women's health, which is a part of SGBM, resonated with students and donors when framed as a health disparity.

A significant challenge was the lack of room to add anything in most curricular plans, so integration of SGBM was best. Efforts must continually be made to reinforce learning about SGBM. Some faculty required reminders that S&G disparities go across topic areas. Strong advocacy for curricular time may be necessary. At UCLA, medical students were unpredictable in their concerns and feedback, even though they realized that these issues were important for their practices. Involving students and eliciting detailed feedback can be helpful.

ANA E. NÚÑEZ, MD
Women's Health Education Program
National Center of Excellence in Women's Health
Drexel University College of Medicine

CURRICULAR INNOVATION: *An evolving curricular model, with funding and organizational infrastructure to facilitate curricular innovation.*

Drexel created programs and offices that could support curricular innovation and obtained funding for curricular projects. The Drexel curriculum evolved over time, initially focusing on women's health and more recently adopting a sex and gender approach. It began with a longitudinal comprehensive women's health curriculum developed by Drexel's Women's Health Education Program and National Center of Excellence in Women's Health, with funding from the Fund for the Improvement of Secondary Education (FIPSE) and DHHS/OWH. Drexel and AMWA also established the National Academy of Women's Health Medical Education which produced a faculty resource guide. Drexel's Office of Urban Equity, with funds from NIH and NHLBI, developed cross-cultural education with SGBM that was trauma informed. More recently, Drexel created a community based engagement model and network, Philadelphia Ujima, with support from DHHS/OWH.

For curricular innovation, it is essential to involve all stakeholders, including learners, faculty and the administration, and link S&G to one's mission. Learners need to be engaged; creative, learner-engaged opportunities are well received. Attitudinal change is best created using videos and media resources, e.g. YouTube. Learning must be made relevant, such as linking curricula to experiential learning and research. Students need to be involved throughout the process. For faculty, available resources such as CME modules and resource guides can be adapted to their needs. Assessing student learning of SGBM is important, such as tracking completion and grades on learning modules, and using pre and post-test quizzes with attitudinal measures. On an individual level, it is helpful to function as a resource for others – a 'decoder' of new SGBM knowledge. Attach your efforts to whatever 'train is moving' in your organization and nationally. Be vigilant for the long haul.

There are a number of challenges in implementing new curricular content. These include: framing relevance as administrations and priorities change, the need for vigilance and raising awareness about what SGBM is and what is needed, the lack of a discrete specialty in SGBM or fellowships to 'grow' faculty experts, funding, and support.