

## Sarah J. Kilpatrick, MD, PhD, Editor for *AJOG*



Roberto Romero, MD, DMedSci, Editor-in-Chief for Obstetrics

**D**r Sarah Kilpatrick served as Associate Editor of the *American Journal of Obstetrics and Gynecology* (*AJOG*) for 12 years. During her tenure from 2006 to 2018, she made important contributions and served as the Editor of The Society for Maternal-Fetal Medicine's (SMFM) manuscripts. Sarah decided to step down from the Editors' team to dedicate her time to important programs in women's health at Cedars-Sinai Medical Center in Los Angeles, California. There, she holds the *Helping Hand of Los Angeles Chair* in the Department of Obstetrics and Gynecology and is the Associate Dean for Faculty Development and Diversity. Herein, we recognize and honor her contributions to *AJOG* as an Editor and to the field of obstetrics and gynecology.



brain. Sarah told me, "I was fascinated by the conceptual framework that underpinned the research, namely, that hormones can shape behavior in a lasting manner." This interest prompted her to switch from pre-med studies to pursue a doctorate in biopsychology. She graduated with honors in Psychology from Tulane in 1976 and attended The University of Chicago for her graduate degree.

### An Interest in Pheromones: Synchronized Menstrual Cycles and Sweaty Tee-Shirts

Chicago was an exciting hub for endocrinologists in the 1970s, as researchers delved into the world of pheromones, the odorless olfactory stimuli that affect other individuals and one's own behavior. In particular, Dr Martha McClintock was studying the synchronization of menstrual cycles of women who lived together in a dormitory,<sup>2</sup> a phenomenon referred to as "estrous synchronization." Pheromones were thought to be implicated as a potential mechanism for this occurrence. Sarah met Dr McClintock while working with Dr Howard Moltz, a developmental biopsychologist, who was also studying pheromones. Dr McClintock would serve as an advisor on Sarah's doctoral thesis project.

During their investigation, Dr Moltz and Sarah determined that pheromonal compounds in a mother rat's feces enabled her blind newborn pups to recognize and locate not only her but the feces itself, which was necessary to protect newborns against necrotizing enterocolitis. She published five papers based on these studies with Dr Moltz and was first author on four of the articles.<sup>3-7</sup>

### From Graduate School to Medical School

While she loved the scientific process and the work, Dr Kilpatrick's interest in medical school resurfaced. "I sensed that I wanted to be a physician and suspected that if I did not try, I may regret it," she said. To prepare, she then enrolled in the required undergraduate courses at The University of Chicago and applied to medical schools at the end of her fourth year as a doctoral student. Although she had already accepted a position as Assistant Professor in the Department of Psychology at Dartmouth College, fate beckoned. One day, she received a phone call from the Dean's office at Tulane. The Office of the Dean had received a call from Dr Gerall, her former mentor, who had continued to advocate for Sarah. Tulane's Office of Admissions invited her to interview for the last spot in the class at the medical school. She made the trip from Chicago to New Orleans and, two days later, she was formally accepted.

### Early Life, Setting the Course

Born in Needham, Massachusetts, Sarah grew up as one of four children in a traditional 1950s household. She was the first in her family to go into science and medicine; her father was a businessman and her mother devoted her time to their family. Sarah attended high school in the town of Cazenovia, just outside of Syracuse, New York. Thereafter, she was accepted into Newcomb College at Tulane University in New Orleans, where she began as a pre-med student.

At Tulane University, Sarah met Professor Arnold Gerall, an internationally recognized expert in behavioral endocrinology. Dr Gerall was well known for his pioneering work in what became known as the "organizational-activational hypothesis," which proposes that exposure to steroid hormones has a lasting effect on the organization of the central nervous system during early development.<sup>1</sup>

During her time as an undergraduate, Sarah studied the expression of gonadotropin-releasing hormone in the brain, utilizing immunohistochemistry in animals. These studies aimed to localize the expression of gonadotropin-releasing hormone in the hypothalamus, among other areas of the

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In 1981, Dr Kilpatrick received her PhD in Biopsychology and began her first semester at Tulane University Medical School. “Making the transition from doctoral student to medical student was not as easy as I’d expected,” she said. “As a graduate student in Chicago, I’d been encouraged to think critically, to ask questions, and to be creative. As a medical student, at that time, I was expected to memorize a great deal of information and to be less critical.”

Based on her earlier studies in biopsychology, Dr Kilpatrick expected she would go into endocrinology, but she did not enjoy internal medicine as much as she anticipated. When she completed her rotation in the Department of Obstetrics and Gynecology at Tulane, she said, “I liked everything about it and felt that I could make a difference providing care for women through this discipline.”

During medical school, Dr Kilpatrick published her first paper in *AJOG* with Dr Atef Moawad, a maternal-fetal medicine specialist at The University of Chicago, in 1982.<sup>8</sup>

### A Latent Phase of Labor

After medical school in New Orleans, Dr Kilpatrick completed her residency and pursued a fellowship in maternal-fetal medicine at the University of California, San Francisco (UCSF). In the early 1990s, UCSF was a young, vibrant medical community that encouraged interdisciplinary work in the clinical and basic sciences. Dr Kilpatrick took full advantage of this experience, working with faculty members in both areas. Her collaboration with Dr Russell Laros, then Chief of Obstetrics at UCSF, began on the clinical side studying maternal and neonatal outcomes in cases of a prolonged latent phase of labor, resulting in the publication of a paper in *AJOG*.<sup>9</sup> Further encouragement by Dr William (Bill) Parer led her to apply for the MFM fellowship, and Dr Kilpatrick then engaged in basic science research with Dr Robert Taylor and Dr James Roberts, who studied preeclampsia. Their investigation produced a study that was published in the *American Journal of Physiology*, for which Dr Kilpatrick was the first author.<sup>10</sup>

### From UCSF to the University of Illinois, Chicago

After her residency, Dr Kilpatrick joined the faculty at UCSF in 1991 as Assistant Professor in Residence of Obstetrics and Gynecology. At that time, she also served in the roles of Director and Co-Director for a number of UCSF programs that included the areas of Obstetrics, Perinatal Outreach, HIV and Pregnancy, and Diabetes and Pregnancy. “I enjoyed my time there and the intellectual energy across campus at UCSF,” she said. “I credit Dr Robert Jaffe, the former Chair of the Department of Obstetrics and Gynecology, for generating energy and supporting intellectual curiosity about research among the faculty. I enjoyed the department’s weekly meetings, where the faculty shared and discussed research ideas that often sparked a project.” Out of these meetings, for example, came Dr Kilpatrick’s work on term breech presentation.<sup>11–13</sup>

In 1999, Dr Kilpatrick was recruited by Dr Sherman Elias, Chair of Obstetrics and Gynecology at the University of Illinois at Chicago, to become Director of the Division of Maternal-Fetal Medicine and Professor of Obstetrics and Gynecology. She served in these roles for four years, working with Dr Elias to improve the department, particularly the MFM division. Dr Kilpatrick recruited a number of new faculty members, including Dr Isabelle Wilkins from Baylor College of Medicine, who is now Director of Ultrasound at the University of Pittsburgh, and Dr Judith Hibbard, who now serves as Professor and Vice Chair for Obstetrics in the Division for Maternal-Fetal Medicine at the Medical College of Wisconsin. Dr Kilpatrick also built up the MFM Division and maintained the University’s focus on the importance of diversity and general excellence.

Dr Kilpatrick became Interim Chair and then Chair of the Department of Obstetrics and Gynecology in 2003, President of the Medical Staff at the University of Illinois Medical Center in 2005, and Vice Dean for the College of Medicine in 2006. In 2008, she was appointed as the inaugural recipient of the Dr Theresa S. Falcon-Cullinan Endowed Professorship in Obstetrics and Gynecology. Dr Falcon-Cullinan was a practicing obstetrician and gynecologist who had a distinguished career in Peoria, Illinois.

While in Chicago, Dr Kilpatrick collaborated with Dr Stacie Geller, an epidemiologist and health outcomes researcher, and their work led to a more precise definition of maternal mortality and morbidity, occurrences that had previously been referred to as “near misses.”<sup>14</sup> Dr Kilpatrick was influential in establishing criteria for these events (eg, receiving a transfusion of four or more units of blood or admission to an intensive care unit), and these are currently recognized not only as markers of severe maternal morbidity but also as obstetrical care quality improvement metrics.

### Cedars-Sinai Medical Center in Los Angeles

In 2010, the leadership at Cedars-Sinai Medical Center, an academic, nonprofit hospital with a large delivery volume, contacted Dr Kilpatrick about an appointment as Chair of Obstetrics and Gynecology. Viewing the environment as ideal for further research, she saw the opportunity to conduct a number of clinical trials involving pregnant women<sup>15,16</sup> in a diverse environment that supported multidisciplinary and translational work.

Currently, Dr Kilpatrick serves as Associate Dean for Faculty Development and Diversity, Director for the Perinatal Outreach Program, Chair of the Department of Obstetrics and Gynecology, and the Helping Hand Endowed Chair of Obstetrics and Gynecology at Cedars-Sinai, as well as Professor of Clinical Obstetrics and Gynecology at the David Geffen College of Medicine at UCLA.

### Creating Synergy

Given Dr Kilpatrick’s recognition of the importance of interdisciplinary work, she promoted collaborative research between health care colleges at the University of Illinois at

Chicago, and between departments at the University's College of Medicine. Her efforts are evident in the list of funded projects for which she was a co-investigator with the College of Nursing, the College of Pharmacy, and the School of Public Health.

Dr Kilpatrick was also a mentor on the National Institutes of Health-funded K30 grant from the School of Public Health and Program Director for the University of Illinois, Chicago's first K12 grant, the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development-funded Building Interdisciplinary Research Careers in Women's Health (BIRCWH) program.

BIRCWH is a mentored career-development program that connects junior faculty to senior faculty with shared research interests in women's health and sex-differences research. Over three years, Dr Kilpatrick mentored nine women faculty members as part of the BIRCWH program, all of whom run their own programs and have been widely recognized in their areas with awards and leadership positions.

At Cedars-Sinai, "my focus is on facilitating interactions around women's health with the development of multidisciplinary clinical programs, including the inflammatory bowel disease in pregnancy program, a breast cancer in pregnancy group, and a women's heart program." She has also spearheaded a postpartum heart health program with Dr Noel Bairey Merz for women presenting hypertensive disorders in pregnancy.

### Leadership in Obstetrics and Gynecology

Dr Kilpatrick has served on a number of national boards, including the Board of the SMFM and the American Board of Obstetrics & Gynecology MFM Division. She was first elected to the Executive Board of the SMFM in 2004 and became its president in 2009. During her term, she emphasized diversity with the goal that the Executive Board be reflective of the Society's membership.

Her numerous awards for teaching and service include the UCSF Outstanding Academic Faculty Award, the APGO and CREOG Excellence in Teaching Awards at UIC, the Golden Apple Teaching Award at Cedars-Sinai Medical Center, the March of Dimes Jonas Salk Award for Physician Leadership, and the Society of Maternal-Fetal Medicine Annual Award.

### Associate Editor at AJOG

Dr Kilpatrick told me that she was honored when asked by Dr Thomas Garite to be an Editor for *AJOG*. "[I was] excited to be involved and work with leaders in obstetrics, such as Dr Edward Quilligan, Dr Frederick Zuspan, Dr Garite, Dr Jay Iams, among other editors," she said.

Dr Kilpatrick served as an Associate Editor for the SMFM issue of *AJOG* from 2002 to 2011, was appointed Associate Editor of *AJOG* in 2006, and, in 2011, became Senior Editor of the SMFM issue. During her tenure at *AJOG*, she managed a total of 2122 manuscripts, 535 of which were for the SMFM.

Through her collaboration with the other Editors over the past 12 years, "I came to appreciate the importance of

thoughtful editing and the goal of communicating the best science on important topics." Complementing her collaborative style, Dr. Kilpatrick was reliable and industrious and spoke her mind during conference calls and Editors' meetings.

Among her many enjoyments as an Editor was becoming acquainted with and learning from people of backgrounds other than her own as well as those practicing in specialized areas within obstetrics and gynecology. "We spend most of our academic lives in our own little sphere," she said. "It's really nice to broaden that sphere."

### Next Steps

Dr Kilpatrick told me that stepping down from her position at *AJOG* was not an easy decision to make; however, the new projects that she is pursuing at Cedars-Sinai require more of her time, and she looks forward to executing these plans in the coming years. She will be enthusiastically pushing for an even bigger focus on women's health.

### Views on the Future of Obstetrics and Gynecology

Anticipating what may be ahead for our discipline, Dr Kilpatrick remarked on the changes taking place within the health care system overall and the potential for different models of paying for health care. Although these structural changes will not have an immediate effect, they will ultimately impact the leaders of the field, which she sees as a positive change.

Dr Kilpatrick also foresees that prevention will focus on outpatient health care more often taking place in the home and via telemedicine or telehealth, leaving inpatient health care to focus more on critically ill patients. Finally, Dr Kilpatrick believes that more emphasis, including funding, must be given to understanding gender differences resulting from one's biology and affecting access to and provision of health care. ■

### ACKNOWLEDGMENT

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