CURRICULUM VITAE

Teresa Kaye Woodruff, Ph.D.
President Emerita and MSU Research Foundation Professor
Michigan State University, East Lansing, MI
tkw@msu.edu

EDUCATION

1981-1985 Olivet Nazarene University, Kankakee IL; B.S., Zoology, B.S., Chemistry, *Phi Delta Lambda, summa cum laude*

1985-1989 Northwestern University, Evanston, IL; Ph.D., Department of Biochemistry, Molecular Biology and Cell Biology, *Sigma Xi*

ACADEMIC APPOINTMENTS

2020-Present MSU Research Foundation Professor of Obstetrics, Gynecology and Reproductive Biology, College of Human Medicine; and, Biomedical Engineering, College of Engineering, Michigan State University

2013-2020 Professor, Department of Biomedical Engineering, Robert R. McCormick School of Engineering and Applied Science, Northwestern University

2012-2020 Professor, Department of Medical Social Sciences, Feinberg School of Medicine, Northwestern University

2008-Present Collaborative Faculty Member, Oregon National Primate Research Center

2007-2020 Thomas J. Watkins Memorial Professor of Obstetrics and Gynecology, Feinberg School of Medicine, Northwestern University

2006-2020 Professor, Department of Obstetrics and Gynecology, Feinberg School of Medicine, Northwestern University

2004-2006 Professor, Department of Medicine and Department of Neurobiology and Physiology, Northwestern University

1997-2004 Associate Professor, Department of Medicine and Department of Neurobiology and Physiology, Northwestern University (tenured)

1995-1997 Research Associate Professor, Department of Medicine and Department of Neurobiology and Physiology, Northwestern University

1993-1995 Research Scientist, Department of Discovery Research, Genentech, Inc.

1991-1993 Scientist, Department of Cell Culture Research and Development, Genentech, Inc.

1989-1991 Postdoctoral Fellow, Department of Cell Culture Research and Development, Genentech, Inc.

ACADEMIC LEADERSHIP ROLES

2024-Present President Emerita, Michigan State University

2024 Special Advisor to the President and Provost, Michigan State University

2022-2024 Interim President, Michigan State University

2020-2022 Provost and Executive Vice President for Academic Affairs, Michigan State University

2017-2020 Dean, Associate Provost for Graduate Education, The Graduate School, Northwestern University

2015-2020 Director, Center for Reproductive Science, Northwestern University

2012-2020 Vice Chair for Research, Department of Obstetrics and Gynecology, Northwestern University

2007-2020 Founder and Director, The Oncofertility Consortium, Northwestern University

2006-2020 Founder and Chief, Division of Fertility Preservation, Northwestern University

2006-2020 Founder and Director, Women's Health Research Institute, Northwestern University

2006-2015 Associate Director, Center for Reproductive Science, Northwestern University

2002-2007 Director, Basic Sciences, Robert H. Lurie Comprehensive Cancer Center, Northwestern University

CAREER CAPSULE: Dr. Woodruff founded the field of oncofertility that provides fertility sparing or preservation options to young people with fertility-threatening conditions including cancer treatments. Her work spans the development of physician guidelines, patient awareness and education materials, and a comprehensive bench to bedside research portfolio that is advancing our understanding of ovarian follicle function. She is an advocate for women in science and a leader in federal policy changes that now include sex as a biological variable. She has current and past leadership roles spanning three decades, including interim president, as well as provost and executive vice president for academic affairs at Michigan State University (MSU), associate provost for graduate education and dean of The Graduate School at Northwestern University (NU), founder and director of the Oncofertility Consortium and the Women's Health Research Institute (NU). She has served numerous professional societies including as president of the Endocrine Society and editor-in-chief of *Endocrinology.* She is civically active and is an elected and present member of The Economic Club of Chicago and The Chicago Network. Woodruff served on the school board of the Chicago-based Young Women's Leadership Charter School and on the Board of Trustees for the Adler Planetarium. At MSU, Woodruff promoted, supported, and protected the interests of the university and its mission of advancing knowledge and transforming lives.

ACADEMIC ACCOMPLISHMENTS: Teresa K. Woodruff, Ph.D. graduated *summa cum laude* from Olivet Nazarene University and was named the Maggie Sloan Crawford Graduate, the highest award given to a graduating senior. In 2012 and 2024, she delivered the Olivet graduation commencement address and in 2016 was awarded the highest honor to an alum, the "O" Award. She completed graduate work at Northwestern University, where she cloned and characterized inhibin and activin, the two most powerful gonadal peptide hormones of the reproductive axis. This work was recognized by the Endocrine Society Weitzman Award, given to a scientist of exceptional promise under the age of 40. She received the Distinguished Alumnae Award (2008) and Alumni Association Merit Award (2012), the two highest honors for Northwestern graduates. Her postdoctoral work was at Genentech, Inc. where she contributed to the early development of currently approved human recombinant drugs. She was recruited back to Northwestern as a faculty member where she remained for 25 years. Notable accomplishments from this period included live births in mice from *in vitro* grown ovarian follicles (named the most important breakthrough of the decade 1998-2008 by *Nature Medicine*); coined the term "oncofertility" to describe the application of this work toward the fertility needs of young cancer patients; and created the Oncofertility Consortium through a NIH Interdisciplinary Roadmap Grant. Oncofertility is now globally recognized medical discipline with insurance and reimbursement available to patients and providers in many states and countries. Three independent discoveries from her lab have been cited as 'Discoveries of the Year' by *Discovery Magazine* and one by the Chinese Academy of Medicine (*in vitro* follicle maturation; an *in vitro* multi-organ microdynamic system (EVATAR); and the 'zinc spark'). The latter discovery, with Tom O'Halloran, is the basis for the New York Times best-selling book, *A Spark of Light* by Jodi Picoult. Woodruff was elected to the National Academy of Medicine (2018) and the American Academy of Arts and Science (2020). In 2017, she was named a Guggenheim Fellow and bestowed the Transatlantic Medal by the Society for Endocrinology. She holds 20 patents, for which she was elected to the National Academy of Inventors (2017). Widely recognized for her commitment to teaching and mentoring, Woodruff was presented the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring by President Barack Obama in an Oval Office ceremony (2011), the Beacon Award from Frontiers in Reproduction (2013), as well as earning teaching awards from Northwestern University. She holds honorary degrees (D.Sc.) from Bates College, Lewiston, Maine (2010) and the University of Birmingham, School of Medicine, Birmingham, UK (2016). Her work on behalf of women in science is recognized by many awards including The Distinguished Woman in Medicine and Science Award (2009), the American Committee for the Weizmann Institute of Science Vision and Impact Award (2012), the American Women in Science (AWIS) Innovator Award (2008), and the American Medical Women Association (AMWA) Gender Equity Award (2009). In 2021 she was featured in the book *Wonder Women of Science: How 12 Geniuses Are Rocking Science, Technology, and the World.* For her work on behalf of oncofertility patients and sex inclusion in federal research, Woodruff was awarded the National Medal of Science by President Joe Biden (2024).

LEADERSHIP HIGHLIGHTS

Woodruff has provided leadership in higher education for over 25 years. She was selected by the Michigan State University (MSU) Board of Trustees to serve as interim president in November 2022. As chief executive of MSU, Woodruff focused on advancing the university's strategic initiatives, building trust, enabling excellence, and affirming transparency, clarity, and authenticity. She prioritized people and placemaking. Woodruff built strong partnerships/relationships both internally and externally, including with faculty, staff, students, alumni, state and federal legislators, campus partners, donors, and the university community *writ large*. She led four university strategic plans: MSU 2030: Empowering Excellence, Advancing Equity, and Expanding Impact; the Diversity, Equity, and Inclusion Report and Plan; the Relationship Violence and Sexual Misconduct Plan; and the University Facilities and Use Strategic Plan. Her vision shifted the admissions process from 'major' to 'mission' and she enhanced the financial aid processes including approval of the Spartan Tuition Advantage program, offering financial aid that covers the full cost of tuition for qualifying students (~6000) from the state of Michigan. She also led the most ambitious expansion of physical spaces at the institution in decades, including a new teaching and learning dairy, greenhouses, the MSU Museum, a new plant science building, a multi-dimensional a multicultural center, a student-focused health and wellness center and an engineering and digital innovation center (EDIC). MSU has also been recognized during Woodruff's term with its largest one-year leap in U.S. News and World Report rankings (17 places upward) and named a top 14 public institution by the Wall Street Journal. Woodruff has been recognized for her work by the American Council of Education (Michigan Chapter) with the Women's Distinguished Leader Award (2022); MSU Council of Graduate Students 'Above and Beyond Administrative Leadership Award' (2023), inducted into *Phi Kappa Phi* (MSU Chapter) and named Newsmaker of the year by Crains Detroit (2024). She is nationally active with leadership role including the National Academies' Action Collaborative on Preventing Sexual Harassment in Higher Education and on the National Academy of Medicine Climate Change and Health Interest Group.

Prior to serving as interim president, Woodruff was named provost and executive vice president for academic affairs at MSU in 2020. Excellence and equity defined her work as the chief academic officer of this founding public intuition. Woodruff was responsible for the academic progression of over 51,000 students, the professional development of over 5,600 faculty and academic staff, and a multi-billion-dollar budget. The interoperable values of great teaching and great research were forefront in her assessment of the policies and practices in the Office of the Provost. Working collaboratively with Academic Governance, she rewrote the traditional tenure process around 'the nature of faculty and philosophy of tenure.' Through the enrollment management group, she led work to make a MSU degree more accessible to a larger group of learners and more affordable. She partnered with the vice president of research on matters of faculty compliance and improvements related to data security. She developed a new University Laude/Individual Honorifics program to highlight the excellence at MSU and create opportunities to highlight those individuals, programs and colleges that have been underrecognized in the past. Additionally, she worked with the faculty, academic staff, deans, and the Board of Trustees to create a culture of respect and enable the goals of the university's relationship violence and sexual misconduct taskforce (RVSM) and new disciplinary policies in the case of egregious behavior by faculty. The latter was ratified by a unanimous vote of the Council of Deans, the Faculty Senate, and Board of Trustees.

Prior to MSU, Woodruff served in governance roles for multiple societies, including as president of the Endocrine Society and on the council of the Society for the Study of Reproduction. She has held multiple senior academic roles including as associate provost of graduate education and dean of the Graduate School at Northwestern University. Additional narrative on past leadership is provided later in this document.

NOTABLE LECTURES

2024 Commencement Address, Michigan State University, College of Human Medicine, East Lansing, MI
2024 Commencement Address, Olivet Nazarene University, Kankakee, IL
2023 Commencement Address, Cass Technical High School, Detroit, MI
2016 Commencement Address, University of Birmingham, School of Medicine, Birmingham, UK
2012 Commencement Address, Olivet Nazarene University, Kankakee, IL
2010 Commencement Address, Bates College, Lewiston, Maine
2006 Commencement Address Young Women's Leadership Charter School of Chicago

EXCEPTIONAL HONORS

2025 Laureate, National Medal of Science; Awarded by President Joe Biden
2020 Elected Fellow, American Academy of Arts and Sciences
2018 Elected Fellow, National Academy of Medicine
2017 Elected Fellow, National Academy of Inventors
2017 Elected Fellow, American Institute for Medical and Biological Engineering
2016 Honorary Scientiae Doctoris (D.Sc.) *honoris causa*; University of Birmingham, School of Medicine, Birmingham, UK
2011 Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring; Presented in the Oval Office by President Barack Obama
2010 Honorary Scientiae Doctoris (D.Sc.) *honoris causa*; Bates College, Lewiston, Maine

OTHER AWARDS AND HONORS

2025 Women's Health Visionary Award, Society for Women's Health Research (SWHR)
2025 Carl G. Hartman Award, Society for the Study of Reproduction
2024 Elected, The Honor Society of *Phi Kappa Phi*, Michigan State University
2024 Crain's Detroit Newsmaker of the Year
2023 Best Research Published in *Reproduction*, Society for Reproduction and Fertility
2023 Above and Beyond Administrative Excellence Award, Michigan State University Council of Graduate Students (COGS)
2022 Bradley-Bourbonnais Community High School (BBCHS) Academic Foundation Outstanding Alumni Achievement Award
2022 Distinguished Woman in Higher Education Leadership Award, American Council of Education (ACE) Michigan Chapter
2021 Gerald D. Aurbach Award for Outstanding Translational Research, Endocrine Society
2021 Elected Distinguished Fellow, Society for the Study of Reproduction (SSR)
2020 Elected Fellow, American Academy of Arts and Sciences
2019 Delbert A. Fisher Scholar Award, Endocrine Society
2018 Woman Pioneer in Health Sciences Award, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia; described as the 'Nobel Prize for Women'
2018 Inaugural "Heroes of Medicine" Halo Award, Chicago IL
2018 19th Royan International Research Award, Royan Institute, Tehran, Iran
2018 Distinguished Research Award, American Society for Reproductive Medicine (ASRM)
2018 Trainee Mentoring Award, Society for the Study of Reproduction
2017 Elected Fellow, John Simon Guggenheim Memorial Foundation
2017 Outstanding Achievement in Women's Health Research, 25th Anniversary, Academy of Women's Health
2017 Transatlantic Medal, Society for Endocrinology, UK
2017 Outstanding Leadership in Endocrinology Laureate Award, Endocrine Society
2017 Elected, American Institute for Medical and Biological Engineering, College of Fellows

2016 Lay "O" Award, Alumni Board of Olivet Nazarene University
2013 Visionary Leadership Award, University of San Francisco, California
2013 Beacon Award, Frontiers in Reproduction, Marine Biological Laboratories, Woods Hole, MA
2012 Visionary Award, Fertile Action (National Advocacy Organization)
2012 Vision and Impact Award Honoring Women Who Change Lives, American Committee, Weizmann Institute
2012 Alumni Association Merit Award, Northwestern University
2010 Tripartite Legacy Award, Feinberg School of Medicine, Northwestern University
2010 First Annual Girl Power Award, Young Women's Leadership Charter School of Chicago
2009 Mentor of the Year, Women Faculty Organization, Northwestern University
2009 Gender Equity Award, American Medical Women's Association (AMWA)
2009 Distinguished Woman in Medicine and Science, Feinberg School of Medicine, Northwestern
2008 Innovator Award, Association of Women in Science (AWIS)
2008 Alumnae Award, The Alumnae Association of Northwestern University
2007 Distinguished Service Award, Speaking of Women's Health
2006 Elected Fellow, American Association for the Advancement of Science (AAAS)
2000 Richard E. Weitzman Memorial Award, The Endocrine Society
2000 Distinguished Teaching Award, Northwestern University
1988 NRSA Training Award, National Institutes of Health
1988 Cornelia Post Channing Memorial Award, VII Ovarian Workshop, Seattle WA
1988 Elected Graduate Honor Society, *Sigma Xi,* Northwestern University
1987 Graduate Fellow Award, Abbott Laboratories, Chicago IL
1985 Outstanding Biochemistry Student Award, American Institute of Chemists
1985 Merit of Excellence Award, Associated Colleges of the Chicago Area
1985 Maggie Sloan Award (highest honor given to a graduating senior woman), Olivet Nazarene University
1985 Elected *Phi Delta Lambda* Undergraduate Honor Society

SERVICE/PROFESSIONAL SOCIETIES

2024-2025 Chair, International Panel for the 2025 FNRS (Belgian Research Funding Agency) Quinquennial Prize in Clinical Biomedical Sciences
2023-2024 Leadership Committee, Action Collaborative on Preventing Sexual Harassment in Higher Education, National Academies of Sciences, Engineering, and Medicine
2022-2024 Member, Big Ten Conference Council of Presidents and Chancellors
2022-Present Membership Panel, American Academy of Arts and Sciences Class II, Section 5 (Medical Sciences)
2022 Big Ten Academic Alliance (BTAA) Audit Committee
2018-2023 Interest Group 19, Climate Change and Health, National Academy of Medicine
2018-2019 Nomination Committee, American Association of University Women
2017-2020 Editor-in-Chief, *Endocrinology*
2015-2017 Focus Group Chair, Specialized Cooperative Centers Program in Reproduction and Infertility Research (SCCPIR)
2013-2014 President, Endocrine Society
2012-2017 Council, The Office of Research on Women's Health, Office of the Director, NIH
2012-2013 President-elect, Endocrine Society
2010-2011 Public Affairs Committee, Board Liaison, Society for the Study of Reproduction
2009-2011 Steering Committee Chair, SCCPIR
2009-2011 Focus Group Chair, SCCPIR
2009-2011 Nominating Committee, Women in Endocrinology
2009-2010 Outreach Committee, Board Liaison, Society for the Study of Reproduction

2008-2011 Society for the Study of Reproduction, Board of Directors
2008-2011 Publications Core Committee Council Liaison, Endocrine Society,
2008-2011 Endocrine Society Council, Endocrine Society
2007-2011 Research Committee, American Society for Reproductive Medicine (ASRM)
2006-2007 Scientific and Educational Programs Core Committee, Endocrine Society
2006 Basic Science Taskforce Chair, Endocrine Society
2005 Basic Science Taskforce, Endocrine Society,
2004 Chairman, Ovarian Workshop
2003-2006 Annual Meeting Steering Committee, Endocrine Society
2003-2005 Program Committee, Society for the Study of Reproduction,
2003 Awards Committee, Women in Endocrinology
2002, 2007 Chairman, Ovarian Workshop
2002 Clinical Outreach Committee Chair, Society for the Study of Reproduction
2001-2003 Clinical Outreach Committee, Society for the Study of Reproduction
2000-2006 Nominations Committee, Ovarian Workshop
2000-2002 Membership Committee, Endocrine Society
2000 Nominations Committee, Society for the Study of Reproduction
1998-2003 Executive Committee, Women in Endocrinology,
1994-1998 World Health Organization Designated Laboratory

SOCIETY MEMBERSHIPS (by originating dates)
2005 Gynecologic Investigation nee Society for Reproductive Investigation
2002 American Society of Reproductive Medicine
2002 American Association of University Women
1995 Society for the Study of Reproduction
1988 Endocrine Society
1985 American Chemical Society (student membership after winning award)

TEACHING ACTIVITIES (selected)
Undergraduate Teaching (Northwestern University, Evanston, IL)
2008-2009 Medill School of Journalism: Reporting on Breakthroughs in Science
2008-2009 Global Health Studies 310 "Oncofertility: A Global Perspective"
2007-2008 Religion, Ethics and Oncofertility (Co-taught with Laurie Zoloth)
2006-2007 Global Health Studies 310: 'Contraceptive Use and Need in the Developing World'
2005-2007 Systems Physiology (Biol Sci 210)
1999-2002 Women's Residential College
1999-2002 Freshman Advising
1998-2003 Systems Physiology (Biol Sci 325)
1998 Freshman Seminar/Advising: Implications of the Genetic Revolution to Human Endeavors

Graduate Teaching (Northwestern University, Chicago, IL)
2017 Created and directed Masters in Reproductive Science and Medicine (MS-RSM)
2018 Created and directed Assisted Reproductive Technologies tract in the MS-RSM
2019 Created and directed the Oncofertility tract in the MS-RSM

Non-Institutional teaching
2015-Present Introduction to Reproduction – an online certificate curriculum (MOOC) through Coursera
2009 Junior Science Café: Making Me! Eggs and Sperm, Oh My!

2007-2020 Mentor, Oncofertility Saturday Academy
2007-2009 Mentor, Illinois Math and Science Academy
2001-2003 Director, Frontiers in Reproduction, Marine Biological Laboratories, Woods Hole, MA
1999-2004 Lecturer, Frontiers in Reproduction, Marine Biological Laboratories, Woods Hole, MA

NORTHWESTERN UNIVERSITY COMMITTEES AND BOARDS (selected)

2019-2020 Faculty Co-Chair, One Book One Northwestern
2016-2018 Steering Committee, Institute for Sexual and Gender Minority Health and Wellbeing
2016-2020 Committee on Faculty Diversity and Excellence - Provost Committee
2016-2020 Provost's Advisory Council on Women Faculty
2016-2017 Director, Developmental Therapeutics and PDX Core Facility
2015- 2020 Faculty Executive Committee, Chemistry of Life Processes Institute
2014- 2020 Executive Committee, Skin Disease Research, Department of Dermatology
2014-2018 Advisory Board, Center for Interdisciplinary Exploration and Research in Astrophysics
2012-2020 Council of One Hundred (C100) - Northwestern University Mentoring and Diversity Board
2009-2011 Northwestern University Strategic Plan Committee – Provost Committee
2008-2010 Internal Advisory Council, Cardiovascular Research Institute
2007-2015 Executive Board, Center for Genetic Medicine
2007-2020 Tenure Committee, Department of Obstetrics and Gynecology
2007-2017 Executive Board, Cells to Society
2006-2009 Advisory Board, Institute for Bionanotechnology in Medicine
2006-2010 Science Outreach Web Portal Committee, Office of Vice President for Research
2006-2008 Northwestern University Research Council, Feinberg School of Medicine
2006-2007 Highest Order of Excellence II Committee – Provost Strategic Planning Committee
2006-2007 Shared Facilities Advisory Committee, Office of Sponsored Research
2005-2008 Advisory Committee, Vice President for Research
2005-2008 Life Science Council, Weinberg College of Arts and Sciences
2005-2007 Science and Engineering Committee on Multicultural Affairs
2004 Research Systems Planning Advisory Committee - Central Administration
2002-2008 Associate Director for Basic Research, Robert H. Lurie Comprehensive Cancer Center
2002-2008 Executive Committee, Robert H. Lurie Comprehensive Cancer Center
2002-2004 Committee on Women in the Academic Community - Provost Committee
2002-2004 Executive Committee, Medical Scientist Training Program
2002 Northwestern University Biotechnology (NUBL) Steering Committee
2001-2002 Chemical and Biological Safety Committee
2000-2002 Director, Hormone Action and Signal Transduction in Cancer Program, Robert H. Lurie Comprehensive Cancer Center
1998-2000 Co-Director, Immunoassay Facility, Robert H. Lurie Comprehensive Cancer Center
1996-1998 University Animal Care and Use Committee

COMMUNITY SERVICE AND PUBLIC OUTREACH (selected)

2018-2020 Board of Trustees, Adler Planetarium
2018-2023 Research Centers for Minority Institutions Advisory Committee, Morehouse School of Medicine
2018 Science Panel, Nerdette Podcast, National Public Radio (NPR)
2017-2018 Treasurer, Les Cheneaux Island Association (elected)
2016-2018 Little Traverse Trail Steward and Monitor, Cedarville Nature Preserve
2015-Present The Economic Club of Chicago – member: Reception Committee, Membership Committee
2013-2015 FDA Cellular, Tissue and Gene Therapies, Advisory Committee Member

2008-2012 School Board Member, Young Women's Leadership Charter School
2006-2007 Executive Board Member, Beyond Media
1996-1998 Volunteer, Partners in Education, Fourth Presbyterian Church
1996 Volunteer, Prison Education Ministry, City of Chicago

EDITORIAL ACTIVITIES
2017-2020 Editor-in-Chief, *Endocrinology*
2010-2020 Founding Editorial Board, *Journal of Adolescent and Young Adult Cancer*
2008-2009 Associate Editor, *Fertility and Sterility*
2006-2009 Editorial Board, *Endocrine Reviews*
2004-2006 Review Editor, *Molecular and Cellular Endocrinology*
2002-2004 Editorial Board, *Molecular Endocrinology*
2000-2003 Editorial Board, *Journal of Clinical Endocrinology and Metabolism*
1999-2003 Editorial Board, *Gynecologic Endocrinology*
1998-2002 Editorial Board, *Endocrinology*

COMPLETED RESEARCH SUPPORT (Grants since 2010; 1995-2010 available upon request)

NSF Woodruff (PI) 10/15/2023 – 09/30/2028
2305598 $471,774
ADVANCE PARTNERSHIP: STEM Intersectional Equity in Departments (SIEDS): A Partnership for Inclusive Work Cultures: The purpose of this partnership is to build inclusive and equitable work cultures that attract, retain, and advance women in STEM disciplines, focusing especially on under-represented racial and ethnic minority (UREM) women and LGBTQAI+ and gender expansive/nonbinary faculty who are at higher risk of leaving academic STEM departments. ** This grant will be transferred to Dr. Teresa Mastin, Vice Provost for Faculty and Academic Staff Affairs, MSU.

Bill & Melinda Gates Foundation Woodruff (PI) 11/5/18-10/31/20
OPP1203053 $1,000,000
High-throughput Ovulation Screening Assay for Contraception Discovery Applications
This project aims to develop new technologies to address the current shortcomings of contraceptive discovery. The toolkit available for development of new contraceptives does not meet the needs of the human population in the 21st century, specifically for those in developing countries. Through the development of a high-throughput screening assay and an advanced microfluidic culture platform we will transform the process of contraceptive discovery, increasing both its speed and throughput. **This grant was renewed before I transitioned to MSU (July 1, 2020) for 4 years/$8M and transferred to my former student Dr. Francesca Duncan at Northwestern University.

NIH/NICHD Woodruff (PI) 02/23/10 – 03/31/23
R13HD063248 $178,000
Oncofertility Consortium Annual Conference
The Oncofertility Consortium hosts the Oncofertility Consortium Annual Conference which attracts an international audience of the oncofertility community and is a place where new ideas for research projects develop, networks of clinical care converge, and the interdisciplinary community of oncologists, reproductive endocrinologists, research scientists, allied health professionals, humanities scholars, students, advocates, and patients participate in this cutting-edge field. **This grant was transferred to Dr. Francesca Duncan at Northwestern University.

NIH/NIGMS O'Halloran (PI) 07/01/15-04/30/20
R01GM115848 $155,333
Regulatory Roles of Zinc Fluxes in Metalloprotein Occupancy and Cell Cycle Progression
These studies will identify metal trafficking pathways, mechanisms and zinc-receptor proteins that mediate these essential regulatory zinc fluxes and furthermore establish how and when key metalloregulatory proteins undergo changes in zinc occupancy in this emerging signal transduction pathway. Role: Co-PI

NIH/NIEHS Woodruff (PI) 09/15/19-08/31/22
UH3ES029073 $2,559,558
PCOS and androgen-related disease modeling and drug testing in Multi-organ Integrated Microfluidic Reproductive Platform
For this UG3-UH3 transition we plan to maintain our original milestones as originally proposed. These proposed milestones will aim to develop next-generation technologies that will be used to create a transformative model of polycystic ovary syndrome as well as novel screening tool for identifying chemicals and compounds for endocrine disruption. **This grant was transferred to my colleague and collaborator Dr. Julie Kim at Northwestern.

NIH/NICHD Woodruff (PI) 05/15/19-04/30/24
T32HD094699 $861,791
Northwestern Center for Reproductive Science Predoctoral Training Program in Reproductive Science, Medicine, and Technology
The Northwestern Center for Reproductive Science Predoctoral Training Program in Reproductive Science, Medicine, and Technology (CRS Training Program) seeks to generate and grow a sophisticated workforce in reproductive science and medicine who will make the discoveries necessary to enable a healthy future for all people. It aims to do this by combining rigorous didactics and bench research with training opportunities in the technologies of the future, generating a new kind of scholar who can succeed in a fast-paced, competitive scientific environment. *This grant was transferred to Dr. Francesca Duncan at Northwestern University.

Bill & Melinda Gates Foundation Woodruff (PI) 11/10/18-10/31/20
OPP1200269 $500,216
Novel Genes Involved in Follicle Autonomous Activation and Ovulation
The goal of this project is to study both the beginning and the end of the spectrum of folliculogenesis to identify new gene pathways relevant to non-hormonal birth control.

NIH/NCATS Lloyd-Jones (PI) 4/1/16-7/14/19
UL1TR001422 $242,090 (Total Costs)
Northwestern University Clinical and Translational Science Institute (NUCATS) This module of the CTSA grant at Northwestern is to advance sex inclusion clinical and translational work across the NUecosystem.
Role: Module Director

NIH/NIEHS/NCATS Woodruff (PI) 07/01/12–12/31/17
UH2ES022920/UH3TR001207 $4,756,222
Ex Vivo Female Reproductive Tract Integration In a 3D Microphysiologic System
Establish independent in vitro culture systems for human follicle, fallopian tube, uterus, and vagina using the 3DKUBE platform (UH2), 2) Develop PK models for drug delivery and hormone diffusion in perfused in vitro 3DKUBE cultures of reproductive tract tissues (UH2), and 3) Link the OvaryKUBE, TubeKUBE, UteroKUBE,

and VagiKUBE into an integrated system FemKUBE that recapitulates the physiologic function of the human reproductive tract (UH3) and responds to known agonists and antagonists.

Bill & Melinda Gates Foundation Woodruff (PI) 11/01/16-04/30/18
OPP1161206 $100,000
An innovative in vitro ovulation assay has been invented that will be used to identify new contraceptive agents. The system is amenable to high throughput platforms that can be used in large drug screens. The goal is to identify non-steroidal agents and thereby reducing the need for daily contraceptive management.

NIH/NICHD Woodruff (PI) 04/01/16 – 03/31/19
P50 HD076188 $2,942,166
Center for Reproductive Health After Disease
The major goal of this application is to address the basic science need to understand human follicle and egg biology, and pursue cutting-edge options for preserving reproductive health, while providing physicians, patients, their families, and the public with information about the risks posed by diseases and treatments to reproductive health that will lead to informed dialogue about options for preserving reproductive function. Roles: Director (Admin Core, Education Core), PI (Project 1), Co-I (Project 2, Project 3)

NIH/NIEHS
UG3ES029073 Woodruff (PI) 09/01/17-08/31/19
3UG3ES029073-02S1 Woodruff (PI) 09/01/18-08/31/19
$3,024,749
PCOS and androgen-related disease modeling and drug testing in Multi-organ Integrated Microfluidic Reproductive Platform The goal of this project is to implement a next generation microfluidic system that has been created for the express purpose of a high throughput robotics for drug testing of integrated organ systems.

Ferring Pharmaceuticals Woodruff (PI) 02/02/16 - 02/02/18
Agmt 01/11/2016 $400,000
Non-invasive test of egg developmental potential
These studies will test the hypothesis that the quantity of Zn released at fertilization can be used to predict embryo quality and develop methods for quantitative assessment of this Zn release using proprietary non-invasive methods that are compatible with clinical IVF practices.

NIH/NIA Woodruff (PI) 07/06/11 – 07/05/15
F30AG040916 $81,030
Mechanical Regulation of Luteal Cell Function in a Tissue-Engineered Model of Ovarian Aging: The goal of this project is to understand how age-related ovarian fibrosis alters hormone production.

NIH/NICHD Mayo (PI) 09/30/09 - 08/31/14
P01 HD021921 $6,830,650
Signaling Pathways Regulating Ovarian Follicle Formation: The goal of this program grant is to investigate signaling pathways by which hormones or other regulatory factors act on the ovary to promote steroidogenesis and the maturation of follicle and germ cells necessary to sustain female fertility. Project III Woodruff (PI) - Transition metal regulation of oocyte maturation Core B Woodruff (PI) - Ovarian Histology.

NIH/NICHD Woodruff (PI/Center Director) 04/23/03 - 3/31/13
5U54 HD041857 $6,456,973
Center for Reproductive Research at Northwestern University

The goal of this grant is to understand the structure-function relationships between molecules important to the reproductive axis. Administrative Core Woodruff (PI) - Structure-Function Relationship in Reproductive Biology Project I Woodruff (Co-PI) - Follicle Development in Aneuploidy and Aging: 3D Culture Model Project IV Woodruff (PI) - The In-vitro Models of Human Ovarian Follicle-Health and Disease.

NIH/NICHD Woodruff (PI/mentor) 04/01/11 - 03/31/13
3U54 HD041857-09S1 $163,197
Center for Reproductive Research at Northwestern University – Diversity Supplement.

NIH Woodruff (PI) 10/01/07 - 06/30/13
1U54 RR024347, 5UL1DE019587, 5RL1HD058295
$6,512,494
U54: The Oncofertility Consortium: Fertility Preservation for Women; R01C: Preservation and Growth of Human Follicles: The goal of this grant is to focus on the fertility threat posed by cancer treatment and to serve as an authoritative voice for research, clinical practice, and training.

W.M. Keck Foundation O'Halloran and Woodruff (Co-PIs) 2013-2015
$1,668,665
The Inorganic Structure of Life: Signaling Pathways in the Mammalian Oocyte
The purpose of this grant is to develop new technologies that permit examination of inorganic metals in the regulation of oocyte dynamics.

Ferring Pharmaceuticals Woodruff (PI) 07/01/12 - 06/30/13
INF_0088 $84,000
Virtual Grand Rounds at the Oncofertility Consortium
The goal of this award is to support virtual grand rounds, a live conference feed, and CME credits in conjunction with the Oncofertility Consortium's efforts.

NMF/Evergreen Invitational Woodruff (PI) 09/01/11 - 08/31/13
Agmt 8/29/12 $39,161
Innovative Educational Approaches to Help Women Navigate the Menopause Management Maze
The goal of this award is to develop a decision aid for women facing the complexity of health care options related to managing menopause.

Univ. of Pennsylvania/NCI Woodruff (PI/mentor) 07/01/11 - 06/26/13
TL1CA133837 $56,097
Fertility Preservation in Newly Diagnosed Female Cancer Patients
The goal of this grant is to support fellow Sara Barnato, MD, in research related to preserving fertility options for newly diagnosed female cancer patients.

NIH Dunaif (PI) Woodruff (co-director) 09/27/07 - 07/31/12
K12 HD055884 $2,500,000 *Career Development in Women's Health*

NIH/NICHD Woodruff (PI) 09/30/09 - 09/29/11
3U54 HD041857-07S1 $220,679
Center for Reproductive Research at Northwestern University – ARRA Administrative Supplement
The goal of this award was to provide resources to accelerate the pace of research of the Center for Reproductive Research at Northwestern University including additional staff assistance and equipment.

Regional Offices of Women's Health — Woodruff (PI) — 01/01/11 - 06/30/11
DHHS — $1,950
Fit Your Fitness to You: Interactive forum on selecting the right exercise for your personal needs.

Alumnae of Northwestern University — Woodruff (PI) — 09/01/10 - 08/31/11
Alumnae Grant — $12,900
Oncofertility Summer Academy: The goal of this grant is to support the Oncofertility Summer Academy.

Baxter Healthcare Corporation — Shea (PI) Woodruff (Co-PI) — 09/01/09 – 08/31/11
$110,000
Biomaterials and Growth Factors Combination to Facilitate Ovarian Grafts Revascularization and Increase Follicle Survival. The goal of this grant is to use biomaterials to increase follicle survival.

NIH/NICHD — Levine (PI) Woodruff (Co-I) — 05/01/04 – 04/30/10
5T32HD007068-30 — $1,481,389
Training Program in Reproductive Biology: The purpose of this program is to train five predoctoral and three postdoctoral fellows in specific areas of reproductive biology, with the framework of an integrated, multidisciplinary program offering a uniquely broad perspective of the reproductive sciences.

NIH/NICHD — Woodruff (PI) — 02/01/04 – 01/31/10
5R01HD044464 — $1,529,744. *Regulation of Reproductive Function by Activin*
The objective of this research is to understand the role of activin in the control of pituitary FSH synthesis.

NIH/NICHD — Woodruff (PI) — 07/05/04 – 06/30/10
5R01HD037096-10 — $1,449,331 *Inhibin Actions on Reproductive Target Tissues*
The objective of this research proposal is to understand the biosynthetic pathways leading to inhibin secretion.

NIH/NIDCR — Woodruff (PI) — 07/01/09 – 06/30/10
3ULDE019587-03 — $40,000
The Effects of GDF9 Levels on TZP Reorganization and Oocyte Competence in Follicles Cultured Alginate
The goals of this pilot study are to evaluate the organization and maintenance of TZPs in growing follicles cultured in our 3D alginate system in mice, primates, and humans.

INTELLECTUAL PROPERTY (Issued U.S. or worldwide patents; enforced and expired)

12, 259,325 Zinc-Responsive Fluorophores. Seth A. Garwin, Emily L. Que, Thomas V. O'Halloran, Teresa K. Woodruff

12,252,675 Tissue culture platform having multiple well chambers fluidically coupled via microfluidic channels and selector valves. Hunter B. Rogers, Teresa K. Woodruff, Ji-Yong Julie Kim, Hannes Marcus Campo.

11,953,435 Zinc-Responsive Fluorophores. Thomas V. O'Halloran, Emily L. Que, Seth A. Garwin, Teresa K. Woodruff.

11,926,814 Multi-Chamber Fluidic Platform. Hunter Bradley Rogers, Teresa K. Woodruff

11,442,475 3D Microphysiologic System. Joanna Burdette, Ji-Yong Kim, Teresa K. Woodruff, Yuanming Xu, Sevim Yildiz Arslan, Yanni Yu, Jie Zhu

11,448,644 Zinc-Responsive Fluorophores. Teresa K. Woodruff, Thomas V. O'Halloran. Seth Garwin, Bong Jin Hong.

11,125,741 Compositions and methods for the detection of Zinc. Emily L. Que, Thomas V. O'Halloran, Teresa K. Woodruff.

10,526,578 3D Microphysiologic System. Joanna Burdette, Ji-Yong Kim, Teresa K. Woodruff, Yuanming Xu, Sevim Yildiz Arslan, Yanni Yu, Jie Zhu.

10,479,980 Artificial Ovary. Monica M. Laronda, Alexandra L. Rutz, Ramille N. Shah, Teresa K. Woodruff

10,352,925 Composition and methods for the detection of zinc. Emily L. Que, Thomas V. O'Halloran, Teresa K. Woodruff, Alison M. Kim, Betty Kong, Miranda Bernhardt.

9,897,595 Compositions and Methods for the Detection of Zinc. Thomas V. O'Halloran, Emily L. Que, Teresa K. Woodruff.

9,695,399 3D Microphysiologic System. Joanna Burdette, Ji-Yong Kim, Teresa K. Woodruff, Yuanming Xu, Sevim Yildiz Arslan, Yanni Yu, Jie Zhu.

9,427,161 Curved Passive Acoustic Driver for Magnetic Resonance Elastography. Samantha By; Timothy Carroll; Gaurav Gadodia; Sumeeth Jonathan; Frank Miller; Mayank Vijayvergia; Teresa K. Woodruff.

8,772,029 Modulation of oocyte meiotic progression and oocyte activation. Miranda Bernhardt; Alison M. Kim; Betty Kong; Thomas V. O'Halloran; Emily Que; Teresa K. Woodruff.

8,580,231 Compositions and methods comprising magnetic resonance contrast agents. Jiyoun Lee: Thomas J. Meade; Preeti A. Sukerkar; Teresa K. Woodruff.

6,455,262 Receptor polypeptides and their production and uses. Edward T. Fox; Jennie P. Mather; Mary B. Sliwkowski; Teresa K. Woodruff.

5,693,534 Enhancement of fertilization capability of oocytes. Baha M. Alak; Richard L. Stouffer; Don P. Wolf; Teresa K. Woodruff.

5,563,059 Use of human inhibin and human activin to increase the number of mature primate oocytes. Baha M. Alak; Richard L. Stouffer; Don P. Wolf; Teresa K. Woodruff.

5,545,616 Method for predicting and/or preventing preterm labor. Teresa K. Woodruff.

5,286,654 Detection and purification of activin polypeptide. Edward T. Fox; Jennie P. Mather; Mary B. Sliwkowski; Teresa K. Woodruff.

5,216,126 Receptor polypeptides and their production and uses. Edward T. Fox; Jennie P. Mather; Mary B. Sliwkowski; Teresa K. Woodruff.

5,102,868 Method for inhibiting follicular maturation. Teresa K. Woodruff; Jennie P. Mather.

ACADEMIC AND RESEARCH ADVISING

Postdoctoral Fellows (And Current Positions)

2015-2021 Hoi Chang Lee, Ph.D. Northwestern University, Research Assistant Professor
2018-2020 Hunter B. Rogers, Ph.D., Principal, Cleveland Clinic Ventures
2016-2018 Yuriko Iwahata, M.D. Assistant Professor, St. Marianna University
2016-2018 Hideyuki Iwahata, Ph.D., Assistant Professor, St. Marianna University
2016-2018 Jaewang Lee, Ph.D., Assistant Prof, Dept Biomed Lab Sciences, Eulji University, S. Korea
2014-2016 Nan Zhang, Ph.D., Sr. Embryologist, IVI RMA Global, San Francisco, CA
2013-2016 Shuo Xiao, Ph.D., Associate Professor, Rutgers University
2013-2015 Ru (Ru Ya) Smith, Ph.D., Sr. Embryologist, Fertility Center of Illinois
2013-2016 Monica Laronda, Ph.D., Assistant Professor, Northwestern University
2010-2011 Sarah Rodriguez, Ph.D. Lecturer, Northwestern University
2010-2013 Zexu Jiao, Ph.D. IVF Lab Director/Assistant Professor, UT Southwestern Medical Center
2010-2011 Miranda Bernhardt, Ph.D., Assistant Research Professor & Animal Production Core Director, Washington State University
2009-2014 Francesca Duncan, Ph.D., Thomas J. Watkins Professor, Dept. OB/GYN, Northwestern University
2009-2010 Lisa Campo-Engelstein, Ph.D., Director, Institute for Bioethics & Health Humanities, The University of Texas Medical Branch
2009-2014 Jessica Hornick, Ph.D., Clinical Genomics Scientist, Myriad Genetics
2009-2011 Eugene Galdones, Ph.D. Eugene Galdones Photography
2008-2018 So-Youn Kim, Ph.D., Associate Professor, University of Nebraska Medical Center
2007-2012 Min Xu, MD., Ph.D., Clinical Assistant Professor, University of Michigan
2007-2011 Ariella Shikanov, Ph.D., Professor, University of Michigan
2010-2011 Alison M. Kim, Ph.D., Vice President, Clinical and Scientific Affairs, American Gastroenterological Association
2008-2010 Jennifer Hirshfeld-Cytron, M.D., Vice President and Medical Director, Fertility Centers of Illinois
2007-2017 Jie Zhu, M.D. Lab Manager, Soleimanpour Lab, University of Michigan
2007-2010 Susan Barrett, Ph.D., Senior Research Imaging Specialist, Evident Life Science
2006-2009 Shiying Jin, Ph.D., Associate Research Professor, University of Missouri
2006-2009 Lei Lei, Ph.D., Associate Professor, University of Missouri
2006-2008 Laxmi Kondapalli, M.D., Physician, Colorado Center for Reproductive Medicine
2006-2007 Sarah Bristol-Gould, Ph.D., Medical Science Liaison, Director – Hemotology Portfolio, Novartis Oncology
2005-2008 Fujio Migishima, Ph.D., Kitasato University School of Medicine, Japan
2004-2008 Niti Jetly, Ph.D., Chembiotech, India
2004-2007 Thuy-Vy Do, Ph.D., Associate Director, Patient-Centered Outcomes Research Institute (PCORI)
2003-2009 Monica Antenos, Ph.D., Research Scientist/Lab Manager, University of Guelph
2003-2008 Joanna Burdette, Ph.D., Professor, Associate Dean for Research, University of Illinois at Chicago
2003-2005 Jaesook Roh, Ph.D., Professor, University of Hanyang, South Korea
2003 Suleena Kalra, M.D., Associate Professor, University of Pennsylvania
2000-2005 Thomas Thompson, Ph.D., Professor, University of Cincinnati
1999-2001 Daniel Bernard, Ph.D., Professor, McGill University, Ontario, Canada

1997-2000 Eileen Wang, M.D., Professor, University of Pennsylvania

Visiting Scholars

2017-2018 Geum Joon Cho, Korea University, South Korea
2016-2017 Eunjung Kim, Seoul National University, South Korea
2011-2015 Yogesh Makanji, Ph.D., Regional Associate Medical Director - Asia Pacific, Johnson & Johnson
2013 Marie Lebbe, Ph.D., University of Birmingham, UK
2011-2012 Shenming Zeng, Ph.D., College of Animal Science and Technology, China Agricultural University
2005-2006 Fugio Migishima, Kitasato University School of Medicine, Japan

Graduate Students (And Current Positions)

2016-2022 Yu-Ying Chen, Ph.D., Postdoctoral Fellow, National Institute of Environmental Health Sciences (NIEHS)
2016-2020 Emma Gargus (MSTP), OB/GYN resident, Case Western Reserve University
2015-2021 Jiyang Zhang, Postdoctoral Fellow, Rutgers
2015-2020 Maxwell Edmonds (MSTP), OB/GYN resident, University of North Carolina
2014-2018 Hunter B. Rogers, Ph.D., Principal, Cleveland Clinic Ventures
2014-2018 Kelly McKinnon, Ph.D., Director, Scientific Affairs at PRIME Education
2014-2016 Peter Rios, Ph.D., Chief Scientific Officer, CellTrans, Inc. (co-mentored with Lonnie Shea)
2010-2014 Marilia Cordeiro, Ph.D., Postdoctoral Fellow, University of Dundee, UK
2010-2013 Robin Skory, M.D. Ph.D., (MSTP) Fellow, Assistant Prof. University of Pennsylvania
2009-2013 Betty Kong, M.D. Ph.D., (MSTP) Clinical Faculty, Northwestern University
2008-2013 Anaar Eastoak-Siletz, Ph.D., General Surgery Resident, UCLA (co-mentored with Lonnie Shea)
2009-2013 Beatriz Penalver Bernabé, Ph.D., Assistant Professor, UIC (co-mentored with Lonnie Shea)
2008-2013 David Tagler, Ph.D., Senior Data Scientist, Microsoft
2008-2011 Miranda Bernhardt, Ph.D., NIEHS, Raleigh-Durham, North Carolina
2006-2008 Elizabeth Parrish, Ph.D., Regulatory Program Manager, Genentech, Inc.
2006-2010 Alison Kim, Ph.D., Senior Director, Research and Innovation, Amer Gastroenterol. Association
2006-2010 Candace Tingen, Ph.D., Program Officer, NIH, Bethesda, Maryland
2005-2010 Shou-Yen Jack Lin, Ph.D., Scientist, CytomX Therapeutics
2003-2008 Erin West Farrell, Ph.D., Director, Toxins Strategic Projects, Operations PDS&T, AbbVie (co-mentored with Lonnie Shea)
2003-2007 Thomas Lerch, Ph.D., Principal Scientist, Pfizer
2002-2008 Pamela Kreeger, Ph.D., Professor, University of Wisconsin (co-mentored with Lonnie Shea)
2002-2005 Robert Cook, Ph.D., Kelsey-Seybold Clinic
2001-2003 Jacqueline Jeruss, M.D. Ph.D., Professor, University of Michigan
1999-2002 Stephanie Pangas, Ph.D., Associate Professor, Baylor College of Medicine
1999-2005 Hilary Kenny, Ph.D., Research Associate Professor, University of Chicago
1999-2005 Magdalena Suszko, Ph.D., Principal Scientist, Abbott Laboratories
1998-2003 Jose Santiago, Ph.D., Clinical & Scientific Affairs Lead - Americas, AliveDx
1998-2003 Stacey Chapman Tobin, Ph.D., Biomedical Writer and Editor, The Tobin Touch, Inc.

Master's Students

2018-2020 Emily Hayes, MS-RSM
2017-2019 Julia Balough, MS-RSM
2016-2018 Megan Runge, MS-RSM
2016-2018 Yi Luan, MS-RSM
2016-2017 Yaqi Zhang, MS Biotechnology
2016-2017 Rhitwika Sensharma, MS Biotechnology
2016-2017 Mingjun Liu
2015-2016 Jiyang Zhang, MS Biotechnology
2014-2015 Kuan-Wei Chen

2013-2015	Mingyang Jiang, MS Biotechnology
2013-2015	Catherine Nguyen, MS Biotechnology
2012-2014	Yuanming Xu, MS Biotechnology
2011-2012	Lu Bai, MS Communication
1999-2003	Jolee Gitch, MS

*Undergraduate Students (*Graduated with Honors)*

2017-2019	Emily Zaniker*
2012-2013	Chloe Harrington
2011-2013	Jared Cho
2011-2013	Raymond Lee
2009-2013	Jessina Thomas*
2010-2011	Lidia Spaho*
2010	Kiran Sreenivas
2009-2011	Cristina Thomas*
2009	Andrew Russell*
2009	Katarzyna Kadela*
2008	Margaret Nevrivy*
2006-2008	Anna Banc *
2006-2007	Cory Waxman*
2006	Rachel Oliver
2005-2007	Victoria Ulyanov*
2005-2007	Supreeti Behuria*
2005-2007	Monica Gomberg*
2005-2007	Nimarta Singh*
2005	Quantez Freeman
2004-2006	Carrie Nieman*
2004-2006	Anjali Malipatil*
2003-2005	Sarah Kurley*
2002-2004	Daniel Balkin*
2002-2003	Sudhi Kurup*
2000-2001	Jennifer Chuy*
2000-2002	Cathy Randall*
2000-2002	Denise Lo*
1999-2001	Eva Ma*
1999-2000	Wei-Woon*
1997-1999	Diego Abdelnur
1995-1997	Elbert Lee

Research Technicians

2019-2021	Camille Mulcahy
2017-2021	Kristine Moss
2017-2021	Sarah Wagner
2019-2020	Leah Simon, MS
2018-2019	Allison Grover
2013-2019	Keisha Barreto
2016-2017	Christine Will
2016-2017	Nikolina Madjer
2014-2017	Danijela Dokic, MD
2014-2017	Alexandra Rashedi
2015-2017	Chanel Murray
2005-2010	Tyler Wellington
2007	Rika Migishima
2005-2006	Samantha Thaver
2001-2003	Jaroslav Jelen
1996-1999	Huira Chong
2012-2017	Megan Romero
2013-2014	Alexander Gunn
2012-2016	Kelly Whelan
2011-2014	Katy Ebbert
2011-2014	Jennifer Pahnke
2010-2012	Lizbeth Gutierrez
2010-2012	Dragan Mackovic
2006-2011	Sarah Kiesewetter
2007-2010	Jennifer Jozefik
2005-2010	Lara Hildebrand
2008-2010	Erin Jackson
2005-2006	Michelle Harwerth
2003-2005	Andrew Lisowski
2002-2005	Christina Hutten
2001-2002	Maura Lane
1995-1999	Brad Draper

PUBLICATIONS *(h-index: 113)*

1. Adam SA, Nakagawa T, Swanson MS, **Woodruff TK**, Dreyfuss G. mRNA polyadenylate-binding protein: gene isolation and sequencing and identification of a ribonucleoprotein consensus sequence. **Mol Cell Biol**. 1986;6(8):2932-43. PubMed PMID: 3537727; PMCID: PMC367862.

2. **Woodruff TK**, Meunier H, Jones PB, Hsueh AJ, Mayo KE. Rat inhibin: molecular cloning of alpha- and beta-subunit complementary deoxyribonucleic acids and expression in the ovary. **Mol Endocrinol**. 1987;1(8):561-8. doi: 10.1210/mend-1-8-561. PubMed PMID: 3153478.

3. **Woodruff TK**, D'Agostino J, Schwartz NB, Mayo KE. Dynamic changes in inhibin messenger RNAs in rat ovarian follicles during the reproductive cycle. **Science**. 1988;239(4845):1296-9. PubMed PMID: 3125611.

4. D'Agostino J, **Woodruff TK**, Mayo KE, Schwartz NB. Unilateral ovariectomy increases inhibin messenger ribonucleic acid levels in newly recruited follicles. **Endocrinology**. 1989;124(1):310-7. doi: 10.1210/endo-124-1-310. PubMed PMID: 2491806.

5. **Woodruff TK**, D'Agostino J, Schwartz NB, Mayo KE. Decreased inhibin gene expression in preovulatory follicles requires primary gonadotropin surges. **Endocrinology**. 1989;124(5):2193-9. doi: 10.1210/endo-124-5-2193. PubMed PMID: 2495926.

6. **Woodruff TK**, D'Agostino J, Schwartz NB, Mayo KE. Modulation of rat inhibin mRNAs in preovulatory and atretic follicles. In: Hirshfield AN, editor. **Growth Factors and the Ovary**. Boston, MA: Springer US; 1989. p. 291-5.

7. Mather JP, Attie KM, **Woodruff TK**, Rice GC, Phillips DM. Activin stimulates spermatogonial proliferation in germ-Sertoli cell cocultures from immature rat testis. **Endocrinology**. 1990;127(6):3206-14. doi: 10.1210/endo-127-6-3206. PubMed PMID: 2249646.

8. **Woodruff TK**, Lyon RJ, Hansen SE, Rice GC, Mather JP. Inhibin and activin locally regulate rat ovarian folliculogenesis. **Endocrinology**. 1990;127(6):3196-205. doi: 10.1210/endo-127-6-3196. PubMed PMID: 2123449.

9. **Woodruff TK**, Mayo KE. Regulation of inhibin synthesis in the rat ovary. **Annu Rev Physiol**. 1990; 52:807-21. doi: 10.1146/annurev.ph.52.030190.004111. PubMed PMID: 2184777.

10. **Woodruff TK**, Mather JP. Inhibin and activin are follicular maturation regulators. In: Adashi EY, Mancuso S 9eds). **Major Advances in Human Female Reproduction**. New York: Raven Press; 1990. v.73; p.123-129.

11. **Woodruff TK**, Ackland J, Rahal JO, Schwartz NB, Mayo KE. Expression of ovarian inhibin during pregnancy in the rat. **Endocrinology**. 1991;128(3):1647-54. doi: 10.1210/endo-128-3-1647. PubMed PMID: 1900234.

12. **Woodruff TK**, Battaglia J, Borree J, Rice GC, Mather JP. Labeling inhibin and identifying inhibin binding to cell surface receptors. **Methods Enzymol**. 1991; 198:347-58. PubMed PMID: 1649953.

13. Brannian JD, **Woodruff TK**, Mather JP, Stouffer RL. Activin-A inhibits progesterone production by macaque luteal cells in culture. **J Clin Endocrinol Metab**. 1992;75(3):756-61. doi: 10.1210/jcem.75.3.1517365. PubMed PMID: 1517365.

14. Mather JP, **Woodruff TK**, Krummen LA. Paracrine regulation of reproductive function by inhibin and activin. **Proc Soc Exp Biol Med**. 1992;201(1):1-15. PubMed PMID: 1326766.

15. Petraglia F, **Woodruff TK**, Botticelli G, Botticelli A, Genazzani AR, Mayo KE, Vale W. Gonadotropin-releasing hormone, inhibin, and activin in human placenta: evidence for a common cellular localization. **J Clin Endocrinol Metab**. 1992;74(5):1184-8. doi: 10.1210/jcem.74.5.1569165. PubMed PMID: 1569165.

16. **Woodruff TK**, Borree J, Attie KM, Cox ET, Rice GC, Mather JP. Stage-specific binding of inhibin and activin to subpopulations of rat germ cells. **Endocrinology**. 1992;130(2):871-81. doi: 10.1210/endo.130.2.1310280. PubMed PMID: 1310280.

17. Jakeman L, Mather J, **Woodruff T**. In vitro ligand binding of ^{125}I-recombinant human activin A to the female rat brain. **Endocrinology**. 1992;131(6):3117-9. Epub 1992/12/01. doi: 10.1210/endo.131.6.1446646. PubMed PMID: 1446646.

18. **Woodruff TK**, Lyon R, Hansen S, Mather JP. ^{125}I-recombinant human activin A accumulates in the ovary of the immature female rat following intravenous injection. In: Bouchard P, Caraty A, Bennink HJTC, and Pavlou SN (Eds). **GnRH, GnRH Analogs, Gonadotropins and Gonadal Peptides**. CRC Press; 1993. p. 529-534.

19. **Woodruff TK**, Battaglia J, Mather JP. Regulation of human granulosa cells by recombinant human activin A and recombinant human inhibin A. In: Mornex R, Jaffiol C, Leclere J (Eds). **Progress in Endocrinology: The Proceedings of the Ninth International Congress on Endocrinology**, Nice 1992. 1992. The Parthenon Publishing Group: p. 605- 607.

20. Mather JP, Krummen LA, **Woodruff TK**. Activin, inhibin and follistatin: Paracrine regulators of testicular function. In: Mornex R, Jaffiol C, Leclere J (Eds). **Progress in Endocrinology: The Proceedings of the Ninth International Congress on Endocrinology**, Nice 1992. 1992. The Parthenon Publishing Group: p.1-5.

21. Baly DL, Allison DE, Krummen LA, **Woodruff TK**, Soules MR, Chen SA, Fendly BM, Bald LN, Mathers JP, Lucas C. Development of a specific and sensitive two-site enzyme-linked immunosorbent assay for measurement of inhibin-A in serum. **Endocrinology**. 1993;132(5):2099-108. doi: 10.1210/endo.132.5.8477659. PubMed PMID: 8477659.

22. Cataldo NA, **Woodruff TK**, Giudice LC. Regulation of insulin-like growth factor binding protein production by human luteinizing granulosa cells cultured in defined medium. **J Clin Endocrinol Metab**. 1993;76(1):207-15. doi: 10.1210/jcem.76.1.7678423. PubMed PMID: 7678423.

23. Krummen LA, **Woodruff TK**, DeGuzman G, Cox ET, Baly DL, Mann E, Garg S, Wong WL, Cossum P, Mather JP. Identification and characterization of binding proteins for inhibin and activin in human serum and follicular fluids. **Endocrinology**. 1993;132(1):431-43. doi: 10.1210/endo.132.1.7678220. PubMed PMID: 7678220.

24. Stouffer RL, **Woodruff TK**, Dahl KD, Hess DL, Mather JP, Molskness TA. Human recombinant activin-A alters pituitary luteinizing hormone and follicle-stimulating hormone secretion, follicular development, and steroidogenesis, during the menstrual cycle in rhesus monkeys. **J Clin Endocrinol Metab**. 1993;77(1):241-8. doi: 10.1210/jcem.77.1.8325947. PMID: 8325947.

25. **Woodruff TK**, Battaglia J, Bowdidge A, Molskness TA, Stouffer RL, Cataldo NA, Giudice LC, Orly J, Mather JP. Comparison of functional response of rat, macaque, and human ovarian cells in hormonally defined medium. **Biol Reprod**. 1993;48(1):68-76. PubMed PMID: 8418917.

26. Wong WL, Garg SJ, **Woodruff TK**, Bald L, Fendly B, Lofgren JA. Monoclonal antibody based ELISAs for measurement of activins in biological fluids. **J Immunol Methods**. 1993;165(1):1-10. Epub 1993/09/27. PubMed PMID: 8409460.

27. **Woodruff TK**, Krummen L, Chen SA, Lyon R, Hansen SE, DeGuzman G, Covello R, Mather J, Cossum P. Pharmacokinetic profile of recombinant human (rh) inhibin A and activin A in the immature rat. II. Tissue distribution of [1^{25}I] rh-inhibin A and [^{125}I] rh-activin A in immature female and male rats. **Endocrinology**. 1993;132(2):725-34. doi: 10.1210/endo.132.2.8425491. PubMed PMID: 8425491.

28. **Woodruff TK**, Krummen L, McCray G, Mather JP. In situ ligand binding of recombinant human [^{125}I] activin-A and recombinant human [^{125}I] inhibin-A to the adult rat ovary. **Endocrinology**. 1993;133(6):2998-3006. doi: 10.1210/endo.133.6.8243328. PubMed PMID: 8243328.

29. **Woodruff TK**, Krummen LA, Chen S, DeGuzman G, Lyon R, Baly DL, Allison DE, Garg S, Wong WL, Hebert N, et al. Pharmacokinetic profile of recombinant human (rh) inhibin A and activin A in the immature rat. I. Serum profile of rh- inhibin A and rh-activin A in the immature female rat. **Endocrinology**. 1993;132(2):715-24. doi: 10.1210/endo.132.2.8425490. PubMed PMID: 8425490.

30. **Woodruff TK**, Krummen LA, Lyon RJ, Stocks DL, Mather JP. Recombinant human inhibin A and recombinant human activin A regulate pituitary and ovarian function in the adult female rat. **Endocrinology**. 1993;132(6):2332-41. doi: 10.1210/endo.132.6.8504739. PubMed PMID: 8504739.

31. **Woodruff TK**, Krummen L, Baly D, Garg S, Allison D, Sadick M, Wong W, Mather J, Soules M. Quantitative two-site enzyme-linked immunosorbent assays for inhibin A, activin A and activin B. **Hum Reprod**. 1993;8 Suppl 2:133-7. Epub 1993/11/01. PubMed PMID: 8276947.

32. Petraglia F, Garg S, Florio P, Sadick M, Gallinelli A, Wong WL, Krummen L, Comitini G, Mather JP, **Woodruff TK**. Activin A and activin B measured in maternal serum, cord blood serum and amniotic fluid during human pregnancy. **Endocr J** 1993. 1:323-327.

33. Mather JP, Krummen L, Roberts P, Baly D, **Woodruff TK**. Inhibin, activin and their binding proteins: Paracrine regulators of testicular function. In: Whitcomb R (Eds). Understanding Male Infertility: Basic and Clinical Approaches. 1993. Raven Press: p. 67-80.

34. **Woodruff TK**, Krummen L, Baly D, Wong WL, Garg S, Sadick M, Davis G, Soules MR, Mather JP. Quantitative two-site enzyme-linked immunosorbent assays for inhibin A, activin A and activin B. **Human Reprod.** 1993. Oxford; Washington, DC.

35. Krummen LA, Moore A, **Woodruff TK**, Covello R, Taylor R, Working P, Mather JP. Localization of inhibin and activin binding sites in the testis during development by in situ ligand binding. **Biol Reprod**. 1994;50(4):734-44. PubMed PMID: 8199254.

36. Stouffer RL, Dahl KD, Hess DL, **Woodruff TK**, Mather JP, Molskness TA. Systemic and intraluteal infusion of inhibin A or activin A in rhesus monkeys during the luteal phase of the menstrual cycle. **Biol Reprod**. 1994;50(4):888-95. PubMed PMID: 8199268.

37. **Woodruff TK**, Molkness TA, Dahl KD, Mather JP, Stouffer RL. The effect of exogenous recombinant human activin A on pituitary and ovarian hormone secretion and ovarian folliculogenesis in female rats and monkeys. In: Filicori M, Flamigni C (Eds). **Ovulation Induction: Basic Science and Clinical Advances**. 1994. Elsevier Science: BV p. 57-63

38. Gallinelli A, DeVita D, Aguzzoli L, Forio P, Ferrari AR, Genazzani AD, Sgherzi MR, DiCarlo C, **Woodruff TK**, Petraglia F. Placental activin and inhibin: new hormones in human pregnancy. In: Cosmi EV, Di Renzo (Eds). **Current Progress in Perinatal Medicine; The Proceedings of the 2nd World Congress of Perinatal Medicine, Rome and Florence**, 19-24 September 1993. 1994. The Parthenon Publishing Group: p.469-477.

39. Petraglia F, De Vita D, Gallinelli A, Aguzzoli L, Genazzani AR, Romero R, **Woodruff TK**. Abnormal concentration of maternal serum activin-A in gestational diseases. **J Clin Endocrinol Metab**. 1995;80(2):558-61. doi: 10.1210/jcem.80.2.7852520. PubMed PMID: 7852520.

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EDITORIALS (2023 – Present):

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2. **Woodruff, TK**, MSU responds: 'Sale of Morris' farmland to benefit generations of Michigan growers'. Michigan Farm News [Internet] (Lansing, MI). 2023 January 31; [cited 2023 December 13]. Available from: https://www.michiganfarmnews.com/MSU-responds-sale-of-morris-farmland-to-benefit-generations-of-michigan-growers

3. **Woodruff, TK,** Michigan State University Interim President: MSU believes in community. Lansing State Journal [Internet] (Lansing, MI). 2023 June 22; [cited 2023 December 13]. Available from: https://www.lansingstatejournal.com/story/opinion/contributors/2023/06/22/michigan-state-teresa-woodruff-interim-president-community-opinion/70346388007/

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6. **Woodruff, TK**, Perspective: White House announces initiative to improve women's health research. Healio [Internet] (Thorofare, NJ). 2023 November 20; [cited 2023 December 13]. Available from: https://www.healio.com/news/womens-health-ob-gyn/20231117/white-house-announces-initiative-to-improve-womens-health-research

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LECTURES *(Forthcoming and Selected)*

2025 Keynote Speaker, 42nd Michigan Annual Endocrinology Symposium, Michigan State University, East Lansing, MI *(forthcoming)*
2025 Invited Speaker, 10th International Symposium in Metallomics, Ecole normale supérieure ENS-PSL, Paris, France *(forthcoming)*
2025 Keynote Speaker, 15th Annual Michigan Alliance for Reproductive Technologies and Sciences (MARTS), Wayne State University, Detroit, MI *(forthcoming)*
2025 Invited Lecturer, Billie Field Seminar, University of Illinois, Urbana-Champaign, IL *(forthcoming)*
2025 Invited Lecturer, Luigi Mastroianni Memorial Lecture, Frontiers in Reproduction Symposium, Woods Hole, MA
2025 Keystone Symposium on Regenerative Biology of the Female Reproductive System, Beverly, MA
2025 Invited Speaker, Executive's Association of Houston, Houston, TX
2025 Invited Speaker, Public Research Universities Futures Project Symposium, East Lansing, MI
2025 Invited Speaker, Journeys in Science Seminar, Genentech, South San Francisco, CA
2024 Keynote Speaker, 4th Annual Henry Ford + MSU Cancer Research Symposium, Detroit, MI
2024 Invited Speaker, Science Summit, 79th United Nations General Assembly, New York, NY
2024 Plenary Mammalian Reproduction Gordon Research Conference, Castelldefels, Barcelona, Spain
2024 Lipsett Lecturer, NIH Endocrinology Grand Rounds, Bethesda, MD

2023 Earl Bakken Lecture, American Institute for Medical and Biological Engineering (AIMBE)
2020 Plenary Speaker, Universal Egyptian Assisted Reproductive Technology Summit
2020 Plenary Speaker, The International Embryo Technology Society, New York, NY
2019 Invited Speaker, Society for the Study of Reproduction, San Jose, CA
2019 Invited Speaker, ESHRE, Vienna, Austria
2019 Invited Speaker, Endocrinology Division, Mayo Clinic, Rochester, MN
2019 Plenary Speaker, OSU Regional Oncofertility Conference, Columbus, OH
2019 Dr. Kelle H. Moley Lecture, Washington University, St. Louis, MO
2019 Keynote Speaker, Frontiers in Biomedical Sciences Seminar, Fort Collins, CO
2019 Invited Speaker, South African Society for Reproductive Medicine, Cape Town, South Africa
2019 Clark T. Sawin Memorial History of Endocrinology Lecture, Endocrine Society New Orleans, LA
2019 Invited Speaker, WIN Women's History Month, The Federal Reserve Board, Chicago, IL
2019 Grand Rounds, Department of Laboratory Medicine, Memorial Sloan Kettering, New York, NY
2019 Invited Speaker, Dittmar Dinner, Northwestern University, Evanston, IL
2019 Keynote Speaker, Society for Laboratory Automation and Screening Inter. Conference, Washington, D.C.
2019 Invited Speaker, The Contemporary Club, Chicago, IL
2018 Plenary Lecture, European Society for Pediatric Endocrinology Meeting, Athens, Greece
2018 Invited Lecturer, NIEHS Council Meeting, Research Triangle Park, NC
2018 Invited Lecturer, Edwards, Steptoe and Kershaw Symposium: 40th Anniversary of IVF, Manchester, UK
2018 Grand Rounds, The Mayo Clinic, Rochester, MN
2018 Lipsett Lecturer, Endocrine Fellowship Graduation, National Institutes of Health, Bethesda, MD
2018 Trainee Mentoring Award Lecture, Society for the Study of Reproduction, New Orleans, LA
2017 Transatlantic Medal Lecture, Society for Endocrinology, Harrogate, UK
2017 Keynote Speaker, American Association for Laboratory Science National Meeting, Austin, TX
2017 Keynote Speaker, Drexel Discovery, Philadelphia, PA
2017 Speaker, Bill & Melinda Gates Grand Challenges Annual Meeting, Washington, DC
2017 Grand Rounds Speaker, Northwestern University Department of Obstetrics and Gynecology, Chicago, IL
2017 Keynote Speaker, American Society for Reproductive Immunology, Chicago, IL
2017 Speaker, 2017 AACC Annual Meeting & Clinical Laboratory Exposition, San Diego, CA
2017 Speaker, SSR 50th Anniversary Meeting, Washington, DC
2017 Guest Speaker, Korean Society for Fertility Preservation, Seoul National University Hospital
2017 Keynote Speaker, "A Celebration of Life" Magee-Women's Research Day Pittsburgh, Pittsburgh, PA
2017 Vivian Pinn Research Keynote Speaker, 25th Anniversary Women's Health Congress, Washington, DC
2017 Plenary, University of Michigan Contemporary Issues in Multidisciplinary Breast Cancer
2017 Keynote Address, University of Kentucky, Resident Research Day, Lexington, KY
2017 The Inaugural Brommel-Hahs Lectureship, Northeastern Illinois University, Chicago, IL
2017 Grand Rounds, University of Toronto, St. Michael's Hospital, Toronto, Ontario, Canada
2017 Grand Rounds, The University of Oklahoma College of Medicine, Norman, OK
2017 The MacLean Lecture, Reproductive Ethics, The University of Chicago, Chicago, IL
2016 Keynote Speaker, Japan Society for Fertility Preservation, Tokyo, Japan
2016 Honorary Doctor of Science Scientific Lecture, University of Birmingham, UK
2016 Speaker, American Society for Reproductive Medicine (ASRM) Salt Lake City, Utah
2016 Speaker, American College of Surgeons Clinical Congress 2016, Washington, D.C.
2016 Speaker, Molecular and Cellular Sciences Seminar Series, Rosalind Franklin University, IL
2016 Keynote Speaker, Amer. Assoc. of Med. Colleges (AAMC) GREAT/GRAND Lecture, Washington, DC
2016 Plenary Speaker, VI International Congress of Gynecologic Oncology, Lima, Peru
2016 Guest Speaker, Dermatology Grand Rounds, Feinberg School of Medicine, Northwestern University
2016 Plenary, National Conference: Hot Topics in Gynecologic Oncology, Krakow, Poland

2016 Speaker, 17th International Congress of Endocrinology/15th Annual Meeting of the Chinese Society of Endocrinology (ICE/CSE 2016), Beijing, China
2016 Keynote Speaker, Conference of the Indian Fertility Preservation Society, Bengaluru, India
2016 Guest Lecturer, West Region CME Committee Presentation, Central DuPage Hospital, IL
2016 Plenary, Biennial Cancer Survivorship Research Conference, Washington, DC
2016 Guest Lecturer, Canadian National Oncofertility Workshop, Toronto, Canada
2016 Guest Speaker, Skender Foundation Conversation with the Doctor, Chicago, IL
2016 Guest Speaker, UW School of Medicine Annual Pregnancy and Cancer Retreat, Seattle, WA
2016 Keynote Address, University of Illinois at Chicago Women's Health Research Day, Chicago, IL
2016 Plenary Lecturer, Endocrine Society, Boston, MA
2016 Keynote Address, Obstetrical Society of Philadelphia, and The Philadelphia Perinatal Society,
2016 Keynote Speaker, 5th Annual Presidential Career Symposium (APCS) for the Texas Medical Center (TMC), Baylor College of Medicine, Houston, TX
2015 Keynote, 53rd Annual Meeting of Japan Society of Clinical Oncology, Kyoto, Japan
2015 Plenary Speaker, Queen's University, Kingston, ON, Canada
2015 Keynote, Puerto Rico Breast Cancer Conference, San Juan, Puerto Rico
2015 Keynote, National Institute Medical Sciences and Nutrition, Mexico City, Mexico
2015 Invited Speaker, Gordon Research Conferences, Holderness School, Holderness, NH
2015 Plenary Speaker, North American Society for Pediatric and Adolescent Society, Orlando, FL
2015 Donald C. Johnson Lecture in Reproduction, University of Kansas Medical Center, Lawrence, KS
2015 Speaker, Mini Symposium on Gonadal Peptides, Cochin Hospital, Paris, France
2015 "Sex in Three Cities" Lecture Series, Society for Reproduction and Fertility, Edinburgh Scotland; London, England; Nottingham, England
2015 Grand Rounds Speaker, Cincinnati Children's Hospital Medical Center, Cincinnati, OH
2014 Seminar Speaker, Texas A&M University, College Station, TX
2014 Luigi Mastroianni, Jr., M.D. Memorial Lecture Speaker, University of Pennsylvania, PA
2014 Speaker, NIH/ORWH Methods and Techniques Workshop, Bethesda, MD
2014 Speaker, ACRWH Office of Research on Women's Health Meeting, Bethesda, MD
2014 Lecturer, Stanford University Gender Innovation Workshop, Stanford, CA
2014 Presidential Address, Endocrine Society/International Congress of Endo Annual Meeting, Chicago, IL
2014 Invited Speaker, Gordon Research Conferences, Stonehill College, Easton, MA
2014 Speaker, American Association for Clinical Oncology (ASCO), Chicago, IL
2013 Scientific Writers Conference, Guest Lecturer, New York City, NY
2013 Sociedad Mexicana de Nutrición y Endocrinología (SMNE), Cancún, México
2013 Speaker, Michigan Society for Reproductive Endocrinology and Infertility, Birmingham, MI
2013 Keynote Speaker: Sociedade Portuguesa de Medicina de Reprodução, Coimbra, Portugal
2013 Keynote Speaker, National Women's Survivors Convention, Nashville, TN
2013 Beacon Lecture, Frontiers in Reproduction, Woods Hole, MA
2013 Ob/Gyn-Endocrinology Grand Rounds, University of Colorado, Denver, CO
2013 Speaker, Banner MD Anderson Cancer Center Oncology Grand Rounds, Gilbert, AZ
2013 Speaker, Pró-Criar Annual Symposium, Belo Horizonte, Brazil
2013 Lecturer, Center for Reproductive Research, University of Virginia, Charlottesville, VA
2013 Barron Guest Lecturer, University of Florida, Gainesville, FL
2013 Speaker, Conference on Preservation of Fertility in Cancer Patients, Hong Kong
2012 Speaker, International Congress on Reproductive Medicine, Moscow, Russian Federation
2012 Invited Speaker, Koch Institute for Integrative Cancer Research at MIT, Boston, MA
2012 Plenary Speaker, NICHD 50th Anniversary, Bethesda, MD
2012 Speaker, National Academies Innovation Conference, Chicago, IL

2012 NUMATS Awards Ceremony, Keynote Speaker, Evanston, IL
2012 Best Practices Forum, Northwestern University, Chicago, IL
2012 Plenary Talk, Women in Science Symposium, Chicago, IL
2012 5th Annual Women's Cardiovascular Health Symposium Talk, Chicago, IL
2011 Keynote Address, Annual Paul Harding Research Day, London, Ontario, Canada
2011 Invited Speaker, 58th Annual Society for Gynecologic Investigation Meeting, Miami, FL
2011 Invited Speaker, Breast Cancer Survivorship Research Workshop, Chapel Hill, NC
2010 Inaugural Address of Amsterdam Reproductive Science Center, Amsterdam, The Netherlands
2010 Invited Speaker, International Symposium Female Fertility Preservation, São Paulo, Brazil
2010 Keynote Address, Fertility Society of Australia, Adelaide, Australia
2010 Invited Speaker, Women's Health Special Interest Group, Bethesda, MD
2010 Address to the Congressional Caucus on Women's Health and the NIH, US Congress, Washington, D.C.
2010 Session Speaker, Society for the Study of Reproduction: Annual Meeting, Milwaukee, WI
2010 Speaker, Conférence des les Peptides Gonadiques, Paris, France
2010 Speaker, Gordon Research Conference, Les Diablerets, Switzerland
2010 Speaker, McGill Research Day, McGill University, Toronto, ON
2010 John I. Brewer Lecture, American Congress of Obstetricians and Gynecologists, San Francisco, CA
2010 Grand Rounds, Department of Physiology, University of Iowa, Iowa City, IA
2010 Grand Rounds, Department of Obstetrics and Gynecology, University of Iowa, Iowa City, IA
2010 Speaker, Praxis of Team Science, Chicago, IL
2010 Speaker, Michigan Registered Nurses Association Annual Meeting, Ypsilanti, MI
2010 Speaker, York University Association of Graduate Students in the Biological Sciences, York University, Montreal, Canada
2010 Whitney Memorial Lecture, Arkansas University for Medicine, Little Rock, AR
2010 Deans Grand Challenge Lecture, McCormick School of Engineering, Northwestern University
2009 Changing the Face of Medicine: Celebrating America's Women Physicians, Northwestern University
2009 Invited Speaker, Genentech, South San Francisco, CA
2009 Jacob Probstein Memorial Lecture, Washington University, St. Louis, MO
2009 Keynote Address, Northwestern Memorial Hospital Women's Leadership Group, Chicago, IL
2009 Annual American Gynecological Club Conference, Chicago, IL
2009 Speaker, Society for the Study of Reproduction: Annual Meeting, Pittsburgh, PA
2009 Speaker, Endocrine Society Annual Meeting, Washington, DC
2009 Speaker, Chimisee Gordon Conference, Bavaria, Germany
2009 Plenary Speaker, 15th World Congress on IVG, Geneva, Switzerland
2009 Inaugural Seminar, Laura Bush Women's Health Center, Texas Tech University, Lubbock, TX
2009 Seminar Speaker, University of Texas-Southwest, Dallas, TX
2009 Invited Speaker, Pri-Med Midwest, Current Issues in Primary Care, Rosemont, IL
2009 Invited Speaker, Oregon National Primate Research Center, Portland, OR
2009 Speaker, Society of Gynecologic Oncologists Annual Meeting, San Antonio, TX
2009 Speaker, European Society of Human Reproduction and Embryology, Brussels, Belgium
2008 Plenary Lecture, First World Congress on Reproductive Biology, Kailua-Kona, HI
2008 Speaker, Realizing the Promise of Healthcare IT, Scottsdale Institute, Scottsdale, AZ
2008 Speaker, Second World Congress on Mild Approaches in Assisted Reproduction, London, UK
2008 Gabriel Bialy Lecture in Reproductive Biology, Southern Illinois University, Carbondale, IL
2007 9th Annual Lynn Sage Breast Cancer Symposium, Chicago, IL
2007 Distinguished Speaker Seminar Series, Abbott Laboratories, Abbott Park, IL
2007 Smithsonian National Zoo, Park, Conservation and Research Center, Front Royal, VA
2007 16th Ovarian Workshop, San Antonio, TX

2007 Plenary Endocrine Society 89th Annual Meeting, Toronto, Ontario, Canada
2007 15th Annual Medical Science Graduate Student's Association Symposium, Calgary, Canada
2007 Speaker, Summit on Hormones and the Environment, San Francisco, CA
2006 A.V. Nalbandov Lecture, University of Illinois, Chicago, IL
2006 Speaker, Oncology Nursing Conference, Chicago, IL
2006 Designated Fertile Hope Center of Excellence, Chicago, IL
2006 Speaker Conference on the Extracellular Matrix of the Female Reproductive Tract, Maui, HI
2006 Speaker, European Society for Human Reproduction and Embryology, Siena, Italy
2006 Speaker, Perinatal Research Society, Lake Arrowhead, CA
2006 Speaker, 2nd Annual Chicago Supporting Oncology Conference, Chicago, IL
2006 Speaker, The Economic Club of Chicago, Chicago, IL
2005 Speaker, 7th Annual Illinois Women's Health Conference, Rosemont, IL
2004 Speaker, Developments in Gonadotropin Control, Paris, France
2003 Speaker, Updates in Infertility Treatment, Marco Island, FL
2003 Speaker, 5th World Workshop on Inhibin, Activin and Follistatin, Siena, Italy
2003 Klotz Lecture, Société Française d'Endocrinologie, Paris, France
2003 Speaker, National Institute for Research in Reproductive Health (NIRRH), Mumbai, India
2003 Speaker, Mumbai Obstetrics and Gynecology Association, Mumbai, India
2003 Speaker, All India Institute for Medical Science, New Delhi, India
2002 Keynote, French Endocrine Society Meeting, Tours, France
2002 Speaker, XIVth Ovarian Workshop, Baltimore, MD
2002 Speaker, Conference on Mammalian Gametogenesis and Embryogenesis, New London, CT
2001 Speaker, Society for the Study of Reproduction, Ottawa, Ontario, Canada
2000 Speaker, Inhibin/Activin Meeting, Melbourne, Australia
2000 Speaker, Endocrine Society Meeting, Toronto, Ontario, Canada
2000 Speaker, Midwestern ADSA Annual Meeting, Des Moines, IA
1999 Speaker, The American College of Pathologists, Annual Meeting, Chicago, IL
1999 Endocrine Society: Hot Topic Talk, San Diego, CA
1999 Organizer, North American Inhibin and Activin Congress, Evanston, IL
1998 Speaker, Reproductive Tract Biology Gordon Conference, Plymouth, NH
1997 Speaker, Endocrine Society Meeting, Minneapolis, MN
1996 Speaker, Ovarian Workshop, London, Ontario, Canada
1996 Speaker, American Society of Andrology, Minneapolis, MN
1994 Speaker, Symposium on Ovulation Induction, Siena, Italy
1993 Speaker, Montreal Fertility Meeting, Montreal, Canada
1993 Speaker, International Symposium of Inhibin and Inhibin-Related Proteins, Siena, Italy
1993 Speaker, Central Control of Gonadal Function, Rheingau, Germany
1992 Speaker, International Symposium of Inhibin and Inhibin-Related Proteins, Paris, France
1992 Speaker, Ninth International Congress on Endocrinology, Nice, France
1992 Speaker, Society of Gynecological Investigation, San Antonio, TX
1991 Speaker, The Weitzman Institute of Science, Rehovot, Israel
1991 Speaker, Israel Fertility Society Meeting, Tel Aviv, Israel
1991 Speaker and Instructor Chinese Academy of Sciences, Beijing, China

WEB PROPERTIES Lab Website: https://www.woodrufflab.org; Oncofertility Website: http://oncofertility.msu.edu; Oncofertility Patient Websites (English and Spanish): myoncofertility.org and es.myoncofertility.org (retired); Oncofertility Microsite for Providers: http://www.savemyfertility.orgisave (retired); Women's Health Research Institute Website: http://womenshealth.obgyn.msu.edu; Sex Inclusion

Policy and Implementation Toolbox: https://womenshealth.obgyn.msu.edu/sex-inclusion; Illinois Women's Health Registry: http://www.womenshealth.northwestern.edu/programs/illinois-womens-health-registry; Illinois Men's Health Registry: http://www.womenshealth.northwestern.edu/programs/illinois-mens-health-registry; Women's Health Science Programs (Oncofertility Saturday Academy, Cardiovascular Summer Academy, Infectious Diseases Summer Academy, Physical Science Weekend Academy); https://womenshealth.obgyn.msu.edu/programs/womens-health-science-programCenter for Reproductive Science Website: http://www.crs.northwestern.edu; Repropedia: A lexicon of reproductive terms written for the public and API that can link our terms to your website: https://www.repropedia.org; REPROTOPIA: Reproductive health education resources across the entire life spectrum: https://reprotopia.msu.edu/; Hidden *No More: Women in Higher Education at Northwestern:* https://www.northwestern.edu/hidden-no-more/
Blogs, apps, and social media: Woodruff Lab Blog: https://www.woodrufflab.org/blog ; Oncofertility Blog: https://oncofertility.msu.edu/blog; Women's Health Blog: https://womenshealth.obgyn.msu.edu/blog; LinkedIn: https://www.linkedin.com/in/teresa-woodruff/; Woodruff Lab Facebook: https://www.facebook.com/woodrufflab/; Center for Reproductive Science Facebook: https://www.facebook.com/NUCenterforReproSci/; iSaveFertility App for iPhone (retired); ***MOOC:*** Introduction to Reproduction: https://www.coursera.org/learn/reproductive-health; ***MOOC***: The Emergence of Oncofertility (Past, Present & Future) https://www.coursera.org/learn/oncofertility-overview

SUMMARY OF RESEARCH, POLICY, EDUCATION, AND LEADERSHIP ACCOMPLISHMENTS

RESEARCH

Cloned and structurally characterized the peptide hormones controlling mammalian reproduction: Dr. Woodruff's scientific successes started early in her career—in 1986, as a graduate student in the laboratory of Dr. Kelly Mayo at Northwestern University, she cloned the subunits that form the peptide hormones inhibin and activin, placing her at the forefront of modern reproductive molecular biology (**Mol Endocrinol**. 1987). She thrived within the strong collaborative environment of the Mayo and Schwartz labs, allowing her to rapidly describe inhibin subunit regulation during the rat estrus cycle, publishing her results in **Science** in 1988. These peptide hormones are powerful, without which individuals are sterile. After completing her doctorate in 1989, Dr. Woodruff continued her work on inhibin at Genentech in South San Francisco, where she applied her expertise to the development of inhibin and activin assays (**Hum Reprod**. 1993; **Endocrinology** 1993), technologies that are still in use today for the diagnosis of Down's syndrome pregnancies and assessing the ovarian reserve. She is named as inventor on five patents based on her work at Genentech. Dr. Woodruff continued her research into the physiology of inhibin and activin in pituitary and ovarian function in rodents and was the first to evaluate the effects of recombinant human ligands as drugs in primate models (**J Clin Endocrinol Metab**. 1993). Dr. Woodruff returned to Northwestern University in 1995 and focused her lab's efforts on understanding inhibin and activin actions and interactions within the pituitary-gonadal axis, specifically characterizing the regulation of subunit assembly and ligand processing in the ovary, the ligands' role in paracrine regulation of folliculogenesis, and their signal transduction pathways in the regulation of follicle-stimulating hormone. More recently, she detailed the structure of activin in a productive collaboration with Theodore Jardetzky, now at Stanford University. Together they solved the crystal structures of activin with its receptor (**EMBO J.** 2003) and with its bioneutralizing binding protein follistatin (**Dev. Cell**, 2005). These structures not only revealed important clues about ligand function but have also provided invaluable tools for designing therapeutics and diagnostics that are being applied to inhibin/activin-dependent diseases. Recent work includes the use of *in silico* designed activin antagonists based on the structure of activin bound to its receptor, with potential applications in treatment of cancer-related cachexia (**J. Med Chem.** 2015). Dr. Woodruff's lab continues to dissect the mechanisms controlling inhibin biosynthesis, assembly, and secretion, and to characterize the activin signal transduction pathways.

Co-discovered inorganic signals controlling oocyte maturation and fertilization: One of the key questions in reproductive science is "what makes a good egg?" With inorganic chemist Dr. Tom O'Halloran, Dr. Woodruff discovered a novel role of inorganic metals, specifically zinc, in the regulation of oocyte maturation (**Nature Chem Biol.** 2010) and at the moment of fertilization (**ACS Chem Biol.** 2011). These studies (which were originally funded by a Keck Foundation grant) led to an entirely new area of biology that provides an extracellular clue ('zinc spark') about the health of the oocyte that may be useful for IVF clinics. The first indication that zinc directly regulates mammalian oocyte maturation used single-cell elemental analytical methods at the Argonne National Laboratory and allowed a precise determination of changes in total zinc concentrations in individual eggs across the last 12-14 hours of oocyte maturation. The studies established that zinc is the most abundant transition metal in the fully-grown mouse oocyte, egg, and early embryo, and that its concentration is nearly ten-fold higher than that of iron or copper. Next, they showed that the oocyte accumulates zinc by over 50% during the 12-16 hours required for the maturation to the terminal stage of development before fertilization (MII stage). Second, they showed that this massive increase in the zinc quota during meiotic maturation is necessary to drive meiosis I exit and to establish MII arrest in the mouse egg. Woodruff and O'Halloran demonstrated this in a number of ways, including induction of zinc insufficiency in maturing oocytes via small molecule chelators. These treatments prevent maturation and result in premature meiotic arrest at telophase I. They next showed the zinc transporters Zip6 and Zip10 are key in the zinc uptake phase and that transcriptional control of the normal zinc homeostasis pathways by the zinc-specific metalloregulatory protein MTF-1 is down regulated as the oocyte matures. These mechanistic studies explain how the influx of over 20 billion zinc ions is accomplished in a short period of time. Third, Woodruff and O'Halloran discovered the phenomenon of the 'zinc spark' and established the molecular origin and physiological mechanism of these zinc release events. Using single cell x-ray fluorescence, they showed that 10 billion zinc ions are released from the egg during these 'zinc spark' events. In experiments published in **Nature Chemistry** (2015), Woodruff and O'Halloran developed a series of novel chemical probes, multi-dimensional confocal fluorescence microscopy experiments, Scanning Transmission Electron Microscope, and synchrotron-based x-ray bionanoprobe measurements to create quantitative maps of zinc distribution at the subcellular level. These results reveal that the zinc sparks arise from vesicular fusion of thousands of compartments. In an imaging *tour de force*, they published an image of the 'zinc spark' at the precise moment that the sperm enters the egg. This unprecedented real-time imaging demonstrated that the zinc spark occurs within micro-seconds of sperm entry and thus represents the earliest external marker of embryo quality (**Sci Rep.** 2016). The discoveries have led to new, evolutionarily conserved concepts in biology, including that zinc is a master switch necessary to the completion of meiosis and required for the meiotic to mitotic transition. The zinc spark discovery has transcended formal science and is the predicate for a New York Times bestselling novel 'A Spark of Light' by Jodi Picoult.

Developed the field of oncofertility, changing medical practice to preserve fertility before life-preserving but fertility-threatening interventions: Dr. Woodruff's interdisciplinary research efforts in three-dimensional ovarian follicle culture led her to think about potential applications of the technology—specifically, how it could be used to help young women with fertility-threatening conditions or undergoing gonadotoxic treatments (**NEJM** 2009; **Nature Rev Clin Oncol**. 2010; **Lancet** 2014). Advances in cancer treatment have significantly increased the rate of survival among pediatric cancer patients, which has brought issues of survivorship—including the ability to have a family— to the forefront. In the early 2000s, options for preserving fertility for young women diagnosed with cancer were limited to emergency IVF, which requires a delay in cancer treatment for hormone stimulation and egg retrieval. Yet many young cancer patients may not have a partner or may have moral objections that preclude embryo creation, and very young patients are unable to undergo hormone stimulation to produce eggs for freezing. Other women may have aggressive disease that requires immediate treatment for hormone-responsive cancers. Around 2005, other groups were reporting the retrieval and heterotopic transplantation of ovarian tissue as treatment for infertility—Dr. Woodruff asked whether ovarian follicle or tissue culture methods being developed in her lab might fill an unmet need in fertility preservation for young women

with cancer. She recognized a significant gap in knowledge and communication between patients and providers regarding fertility preservation for cancer patients. In 2007, Dr. Woodruff was awarded a prestigious NIH Roadmap Grant to form the Oncofertility Consortium, an interdisciplinary team of oncologists, fertility specialists, social scientists, educators, and policy makers dedicated to the clinical care of women at risk of losing their fertility because of cancer treatment. To describe this effort, she coined the term oncofertility, a word that is now officially recognized in the English language. Since the formation of the Consortium, Dr. Woodruff and her colleagues have literally written the book on oncofertility, with six volumes describing the progress in basic science research, medical practice considerations, perspectives from the humanities and the law, and communication methods that impact the care of cancer patients facing iatrogenic infertility. True to her collaborative style, Dr. Woodruff extended her work beyond the disciplinary borders of reproductive biology to work with a range of experts to effectively translate bench research to bedside patient care. As part of the Oncofertility Consortium, Dr. Woodruff established the National Physicians Cooperative (NPC) to facilitate sharing of fertility preservation protocols and techniques between reproductive endocrinology practices and ensure that clinicians and patients receive the most accurate and up-to-date information about available treatment options, even as the technologies continue to evolve. She also established a patient navigation system to help connect oncologists to fertility specialists, providing a more efficient system for referring cancer patients who are interested in fertility preservation. She worked with humanities scholars to better understand patient and provider perspectives and challenges, to identify gaps in knowledge about the available fertility preservation options for cancer patients, and to develop new tools to improve communication between providers and patients. Dr. Woodruff examined the ethical considerations of fertility management paradigms for young cancer patients with Professor Laurie Zoloth (**Am J Bioeth** 2008) as well as legal perspectives of oncofertility with Professor Dorothy Roberts (**Santa Clara Law Review** 2009). Her collaboration with education scientist Kemi Jona led to the creation of the patient-directed website myoncofertility.org. The global, transdisciplinary Oncofertility Consortium has been upheld as an example of successful inter-institutional team science in practice and has been used as a test case for research and education in the science of team science field (**J Assist Reprod Genet**. 2010). Dr. Woodruff designed the Oncofertility Consortium logo, a trademarked advocacy ribbon that reflects the growing concern for the reproductive future of cancer patients. The intertwining spring green and hearty purple represents blossoming hope and uncompromised dedication to improving fertility preservation options for cancer patients. The lower tip of the ribbon emerges showing an emergence of eggs or embryos, as well as sperm, welcoming the translation of current research to the improvement of fertility options for all cancer patients. The ribbon has a slightly bowed shape, providing subliminal imagery of a fertile state. Oncofertility is now a recognized medical discipline around the globe. This work has been featured in many public venues, including the television show The Young and the Restless.

Engineering Reproductive Solutions: A hallmark of the work done by Woodruff is the inclusion of bioengineering to solve specific biological problems. Many of the biological questions are also linked to unmet human need. The structure-function relationships between inhibins, activins and their receptor/binding proteins and the use of hydrogels to support individual follicle growth are two examples described above. More recently, she has used the encapsulated *in vitro* follicle growth assay (eIVFG) to invent and test a microfluidic system that supports 28-day reproductive cycles in an *ex vivo* setting. The ovarian follicles or intact ovaries (mouse) are interconnected to human explants from fallopian tubes, uterus, and cervix with liver organoids to provide a metabolic management tissue (**Nat. Commun.** 2017). This “menstrual cycle in a dish” is described as an EVATAR and male versions of the system are under development. Further, Woodruff and team created decellularized and 3D printed ovarian bioprosthetics that are the first-generation replacement organs for women who lose gonadal function (**Nat. Commun**. 2017b).

ADVOCACY AND POLICY

Dr. Woodruff is a national advocate for women's health research and mentor in science education. In 2006, Dr. Woodruff was named director of the newly formed Women's Health Research Institute at Northwestern University. In this role, she was able to spearhead initiatives that would address challenges in women's health research—including the lack of sex equity in biomedical research, the attrition of women from STEM fields, and the need for greater knowledge of basic science concepts among patients that impact women's health and well-being (**Biol Reprod**. 2016). A large part of Dr. Woodruff's work within the Institute has been to raise awareness of the need for sex-based clinical research to improve healthcare for women. Treatment guidelines are largely based on evidence from trials conducted in large populations of male patients, and drug development programs often exclude female participants from clinical trials, even if a treatment will be offered to both men and women. Investigators may not routinely examine clinical outcomes by sex, age, or stage of menstrual cycle due to the cost of duplicating the study in both sexes, the 'complication' introduced by the menstrual cycle, or the presumption that males are a reasonable model for females. Dr. Woodruff's passion for improving women's health research led to high-profile editorials on the need for sex-based equity science and medicine (**Nature**. 2010:465:688-689; **Proc Natl Acad Sci USA**. 2014; 111:5063-5064; **Endocrinology.** 2014; 155:1181-1183) and the need to relieve restrictions on work with human eggs (**Science.** 2010; 330:453). Dr. Woodruff's efforts to highlight the issue of sex-based clinical research received greater exposure when Leslie Stahl interviewed her on 60 Minutes and Steven Colbert featured that 60 Minutes report in his opening monologue. Most importantly, on January 25, 2016, the NIH announced their new sex inclusion policy that mandates males and females be considered as part of basic science research. This is a fundamental change that was led, in part, by the efforts of Dr. Woodruff to provide evidence that the absence of sex as a biological variable is harmful to science and ultimately to human health.

EDUCATION

Dr. Woodruff has worked to find novel ways to reduce attrition of women from the STEM fields. She created the Women's Health Science Program (WHSP) for High School Girls & Beyond to provide science education programs to 9th -12th grade female students in Chicago Public Schools (**Cancer Treat Res**. 2010; 16:321-344). WHSP intervenes earlier in the educational pipeline, targeting young women who are considering careers in science and medicine and preparing them with valuable knowledge and skills to successfully become the next generation of women science leaders. WHSP also provides personal and social support during a time when girls make important decisions about their future educational and career trajectories. WHSP runs four academies: the Oncofertility Saturday Academy (OSA), Cardiology Summer Academy (CSA), Infectious Disease Summer Academy (IDSA), and Physical Science Weekend Academy (PSWA). Underscoring her understanding of the importance of building connections, Dr. Woodruff designed the program such that the students build relationships amongst each other that persist beyond their time in the program, which they call the 'science sisterhood,' as well as with the scientists, clinicians, and other professionals associated with WHSP. In addition, parents are encouraged to play an active role in WHSP to support their daughters' interests and pursuits in science. In this way, parents, as members of the public, are educated along with their daughters about the scientific process and how it translates to human health. The WHSP program has been disseminated nationally, and four additional universities now offer the Oncofertility Saturday Academy curriculum (**Biol Reprod**. 2016;95(1):28.). For this work, Dr. Woodruff was awarded the Presidential Award for Excellence in Science Mentoring in an Oval Office ceremony in 2011. Dr. Woodruff has been widely recognized for her extensive work on behalf of women in science and research, receiving The Distinguished Woman in Medicine and Science Award (2009), the Distinguished Alumnae Award (2008) and Alumni Association Merit Award (2012) from Northwestern University. She has also been honored nationally with awards from the Weizmann Institute and Women in Science (2012) and has received the American Women in Science (AWIS) Innovator Award (2008), the American Medical Women Association (AMWA) Gender Equity Award (2009), and the "Speaking of Women's Health" Distinguished Service Award (2007) and the Academy of Women's Health Research Award (2017).

PAST LEADERSHIP

As dean of The Graduate School (TGS) and the associate provost for graduate education at Northwestern University, Woodruff developed and implemented a strategic plan (Vision 2025) including evaluation of the organizational model for graduate support. She streamlined the organizational chart to fit mission and created buy-in from stakeholders to ensure smooth transitions and operational transparency. She created a new communication unit to coordinate external and internal communications and was the co-lead on a public-private partnership to develop a campus-wide master plan for graduate housing, graduate student wrap-around services, and graduate administrative offices. Recognizing the need for better coordination between faculty and TGS, she created the first ever venue for the graduate faculty assembly (via Northwestern's Faculty Senate) and updated nomenclature for graduate faculty within the Faculty Handbook. To ensure a broad and equitable environment for the pursuit of advanced degrees, Dr. Woodruff and team instituted the first Diversity and Inclusion Advisory Council and created the first Graduate Alumni Homecoming Gathering, an annual alumni engagement event. Under Woodruff's leadership, TGS achieved all major fundraising milestones for graduate education. Woodruff held fiduciary responsibility for TGS totaling more than $170M. She partnered with graduate deans across the Association of American Universities (AAU), the Council of Graduate Schools (CGS), and Big Ten universities and associated organizations. Her role on equity matters (Title IX), conflict of interest, and research integrity involved partnership across the University to enable faculty, student, and staff success. Woodruff served on strategic planning councils under two Northwestern presidents. She served on the President's Program Review Council that evaluates all academic and administrative units within the University to enable continuous improvement and a culture of self-assessment, transparency, vertical integration, and change management opportunity. During her time at Northwestern, Woodruff was frequently asked to serve on search committees, most recently the Executive Vice President for Research. She served on the Weinberg College of Arts and Sciences Undergraduate Curriculum Review Committee and holds undergraduate teaching awards. She was a steering committee member for the precursor organization to the program in Biological Sciences, which instituted common curricular requirements across biological sciences. As the associate director for the Lurie Cancer Center, she directed a philanthropic gift portfolio of $10M and created cross-campus programs in engineering, chemistry, and general life sciences. As vice chair for research in Obstetrics and Gynecology, Woodruff set the scientific agenda for a $15M award portfolio. In her time as vice chair, the Obstetrics and Gynecology department rose in the NIH funding to number two in the nation, and it is ranked number seven in US News and World Report. As founding director of multiple centers, institutes, and global organizations, Woodruff has been at the forefront of academic science and institutional leadership. Her leadership roles include the director for the Center of Reproductive Science, founder and director of the Women's Health Research Institute, founder and director of the Oncofertility Consortium, and president of the Endocrine Society. She is well known in the city of Chicago for her civic leadership and served as a board member of the Young Women's Leadership Charter School from 2008-2011. Woodruff is a past member of the Adler Planetarium Board of Trustees and is an active member of the Economic Club of Chicago and The Chicago Network.

Overall Career Metric Summary *Major Scientific Discoveries (h-index: 113)*

1. Cloning of inhibin and establishment of the peptide hormone control of reproduction **Science** 1988 Mar 11;239(4845):1296-9.
2. Structural basis of activin interaction with its receptor and binding ligand **EMBO J.** 2003 Apr 1;22(7):1555-66; **Dev Cell**. 2005 Oct;9(4):535-43; **Proc Natl Acad Sci U S A**. 2011 Mar 29;108(13):5232-6
3. First human MII egg from *in vitro* grown ovarian follicle **Sci Rep**. 2015 Nov 27; 5:17323; **Tiss Eng** 2006 12; 10:2739- 2746 (Named top paper in reproductive science by Nature Medicine and is in the top 1% of all Engineering articles of the same age – Scopus).

4. Discovery of inorganic zinc signal that controls maturation of the oocyte and transition from meiosis to mitosis at fertilization; discovery of the 'zinc spark' at fertilization in mouse and human **Nat Chem.** 2015 Feb;7(2):130-9; **Nat Chem Biol**. 2010 Sep;6(9):674-81; **Sci Rep.** 2016 6:24737 (Named top 100 discoveries of 2016 by Discover Magazine).
5. Founding of oncofertility as a new medical discipline **NEJM**. 2009; 360:902-911 (in top 2% of all Medicine articles of same age – Scopus); **Lancet.** 2014 Oct 4;384(9950):1302-10.
6. Creation of a microfluidic ovarian reproductive tract 'menstrual cycle in a dish' and the first functional soft organ bioprosthetic, and ovarian bioprosthetic (Altmetric for each paper is >1000) **Nat Commun**. 2017:8:14584: **Nat Commun.** 2017. (Both discoveries named top 100 discoveries of 2017 by Discover Magazine; The ovarian bioprosthetic was named to the top 5 medical discoveries of 2017 by the Chinese Academy of Medicine).
7. Advocate for inclusion of females in clinical research and sex as a biological variable in fundamental science, **Nature**. 2010465:688-689; **Proc Natl Acad Sci USA**. 2014; 111:5063-5064; **Science**. 2010; 330:453

Evidence of Mentorship: Trained >24 Graduate Students, >27 Postdoctoral Fellows; Founded the Oncofertility Saturday Academy and NUBIO high school curriculum*;* Founded the Women's Health Science Academy; Co-directed Frontiers in Reproduction; Woods Hole, MA*;* Founded the Masters in Reproductive Science and Medicine Program, Northwestern University

Evidence of Academic Leadership: President, Endocrine Society*;* Founder and director, Women's Health Research Institute*;* Founder and director, Oncofertility Consortium (98 adult/19 pediatric centers, 25 global center*;* Director, Center for Reproductive Science*;* Vice Chair for Research, Dept OB/GYN*;* Founding Editorial Board, Journal Adolescent Young Adult Oncology*;* Dean, The Graduate School and Associate Provost for Graduate Education, Northwestern University*;* Advocated for inclusion of females in basic science (leading to new NIH policy, 2015); Office Research Women's Health Council, NIH/OD*;* Provost and Interim President, Michigan State University

Evidence of National/Global Recognition: Presidential Award for Math Science Engineering Mentoring (2011); The Society for Endocrinology Transatlantic Medal (2017); National Medal of Science (2024)

Honorary Degree and Commencement Addresses: Commencement Address, Cass Technical High School, Detroit, MI (2023)*;* Honorary Scientiae Doctoris (D.Sc.) *honoris causa* and commencement address, University of Birmingham (2016)*;* Commencement Address, Olivet Nazarene University (Alma Mater) (2012/2024)*;* Honorary Scientiae Doctoris (D.Sc.) *honoris causa* and commencement address (2010) Bates College, Lewiston Maine*;* Graduation Address, Young Women's Leadership Charter School, Chicago Public Schools (2006)

Evidence of Civic Engagement: Co-Founder, Bringing Excellence to Lansing through Investment, Empowerment, Vision, and Energy (BELIEVE) (2023-2024)*;* Elected member, The Chicago Network (2019-Present); Board of Trustees, Adler Planetarium (2018-2020); Elected member, Economic Club of Chicago (2015-Present); School Board Young Women's Leadership Charter School, Chicago Public Schools (2008-2011)