

## Biosketch Eileen Hoffman, M.D.

Dr Hoffman is a Clinical Associate Professor of Medicine at the NYU School of Medicine. After completing a residency at Bellevue Hospital, Dr Hoffman was a post-doctoral fellow at the Rockefeller University studying immunoregulation. Returning to clinical practice, she brought her academic interest in complex systems to the problems facing women's health care: fragmentation of services and reductionist approaches not grounded in sex- and gender-based science. She had been the Associate Director for Education at the Mt. Sinai Women's Health Program before returning to NYU. In that role she organized a women's health journal club, a senior elective in women's health, a mentoring program for residents using concept mapping, and City-Wide Women's Health Grand Rounds. Dr. Hoffman has published widely on women's health, consulted to government and the healthcare industry and been a visiting professor in women's health, nationally and internationally.

Her academic and clinical career has focused on learning how to care for the whole woman -- appreciating the interplay between reproduction, medicine and mental health from a sex- and gender-based science perspective over the life span. A new science of women's health is needed to deliver quality healthcare to women, and complexity science will provide its foundation. The American College of Women's Health Physicians was organized to advance this goal.

Women are the clearest models for demonstrating the clinical applications of complexity science. Females have the ability to adapt to the pregnant state -- more plasticity built into the "software." This plasticity is characterized by higher heart rate variability than men, which continues with age, whether or not they ever get pregnant. On the other hand, failures to complexify, or maladaptations to the pregnant state, are wonderful windows into diseases that affect both women and men, i.e., gestational diabetes and pre-eclampsia which can lead to diabetes and hypertension. Polycystic ovarian syndrome, a cause of irregular menses and infertility is caused by a dysrhythmia of LH/FSH pulsatile secretion. This is associated with insulin resistance and future development of diabetes and cardiovascular disease. Maternal vitamin D deficiency in utero affects the developing immune system (and more), leading to a hyper-immune response in the offspring later in life and subsequent autoimmune disease, most of whom are seen in women.

When not caring for patients or learning complexity science and sex- and gender-based medicine, Dr. Hoffman plays scrabble with her husband, practices yoga, relaxes in Sag Harbor, New York and tries to stay out of the way of her two sons as they grow into young adults!