



Healthy Life Style, Healthy Sperm, Healthy Children

**A Webinar Series Presented as Part of The Lundquist Institute
Summer Fellows Program for High School Juniors and Seniors 2020**



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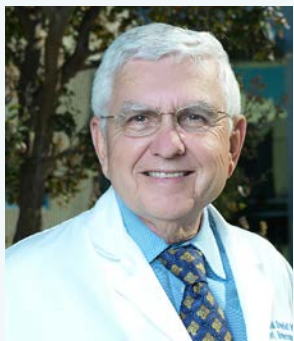
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About

Due to the COVID-19 health crisis, The Lundquist Institute Summer Fellows Program for High School Juniors and Seniors moved to a virtual format for Summer 2020. As part of this effort, the program included the Healthy Life Style, Healthy Sperm, Healthy Children Lecture Series, which was presented by investigator and community members of the National Center for Male Reproductive Epigenomics, one of the National Centers for Translational Research in Reproduction and Infertility funded by the National Institutes of Health (P50 HD098593).

The Lecture Series was conducted over a period of eight weeks, from June 17 through August 5, 2020.

Reproductive Function in Boys and Men



Instructors

Ronald Swerdloff, MD
with Kawen Young



Dr. Swerdloff's research includes basic investigations, clinical trials, and translational studies. His research interests involve many aspects of basic male reproductive physiology and clinical reproductive investigation. Ongoing work includes the regulation of spermatogenesis, regulation of the androgen receptor gene, neuroregulation of gonadotropin secretion, development of male contraceptive agents, pharmacology of androgen hormones, regulation of spermatogenesis, hormonal function in the testis, ethnic differences in the reproductive endocrine system, role of 5-alpha reduced androgens in the prevention and treatment of cognitive dysfunction, sexual dysfunction, impaired vitality, osteoporosis and frailty in elderly men, factors influencing male fertility, molecular basis of Klinefelter's Syndrome, and mutant mouse models in reproductive biology, stem cell transplantation in the testes. Studies on epigenetic modification of gene transcription and RNA translation. protection of normal tissue from the adverse effects of chemotherapy.

Kawen Young, BS, Executive Director for the Native Hawaiian and Pacific Islander Alliance (NHPI), a national nonprofit community based organization dedicated to advocacy, education, research and promotion of the health and well-being and other related services for Native Hawaiians and Pacific Islanders (NHPI) within the United States. She is a leader in the NHPI community and has extensive experience in community programs.

Sperm Maturation and Fertilization



Instructors

Christina Wang, MD
with Dominga Prado
and Peter Rivera



Dr. Wang has been involved in many funded basic and clinical research studies. Her current clinical research studies include androgen replacement therapy, hormonal male contraceptive development, androgen metabolism, aging in men, and environment effects on sperm quality. Her research spans from understanding the mechanisms of cellular action of hormones in the testis to physiological/ pharmacological studies in vivo in rodent models. She is a world leader in efforts to develop a safe, effective, and reversible hormonal male contraceptive. She has authored over 300 peer-reviewed publications, reviews and abstracts in endocrinology mainly on male reproductive biology including characterization of the pharmacokinetics and efficacy of androgens in men, trials of hormonal male contraceptive, regulation of germ cell apoptosis, and reproductive aging in the rat model. She is a recognized world leader on andrology and has been an invited keynote/ plenary/symposium speaker at many national and international conferences in andrology and endocrinology.

Dominga Pardo, AA, is the Director of the Robert F. Kennedy Institute (RFKI) since 2000 with extensive experience implementing nationwide projects and culturally-focused conferences, creating and overseeing Hispanic youth groups and parenting groups. She is a community advocate of the Hispanic community and has extensive experience conducting community outreach activities.

Peter Rivera, MD, executive director of the Robert F. Kennedy Institute have supervised physicians, trainees, medical students and volunteers in Hispanic community health projects. He assisted in implementing and directing a Lead Screening Project, which focused on families and children from under-served communities.

Genetics: Congenital Birth Defects and Genetic Diseases



Instructors

Wei Yan, MD, PhD
with Audry Alo



As a principal investigator, Dr. Yan has been awarded a total of 14 grants with a total of ~\$13 million in direct cost over the past 16 years. Dr. Yan has so far published >135 peer-reviewed research articles and book chapters in high-impact journals with >8,500 citations. Dr. Yan has received numerous academic awards, including the 2009 Society for the Study of Reproduction (SSR) Young Investigator Award, the 2012 American Society of Andrology (ASA) Young Andrologist Award, the 2013 Nevada Healthcare Hero Award for Research and Technology, the 2017 University of Nevada, Reno Outstanding Researcher Award, the 2018 SSR Research Award and the 2020 Nevada System of Higher Education Research Award. In May 2016, I was named the University of Nevada Reno Foundation Professor, the highest honor the University bestows upon its faculty. He was elected Fellow of the American Association for the Advancement of Science (AAAS) in 2017. Dr. Yan recently joined The Lundquist Institute to direct the recently established National Center for Male Reproductive Epigenomics. Dr. Yan is serving as Editor-in-Chief of Biology of Reproduction, the official journal of the SSR. For more information please visit the Yan lab website: www.weiyanlab.com.

Audrey Alo, BS, MPA, a Native Hawaiian and Pacific Islander community advocate, educator, and navigator. Ms. Alo has more than fifteen years' experience with volunteer community engagement; working with community based organizations and grass root organizations through health education, advocacy, and navigating resource systems.

Epigenetics: What Is It and Why Is It Important



Instructors

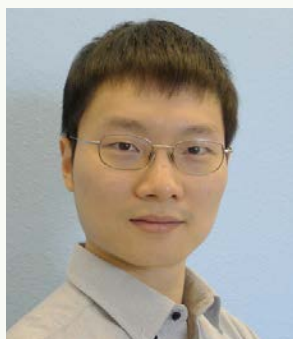
John R. McCarrey, PhD
with Felica Jones



Dr. McCarrey's research interests focus on the development, differentiation and function of mammalian germ cells and stem cells. He discovered the first example of a functional, germ-cell-specific retroposon in the human genome. He has published several papers on mechanisms that regulate germ-cell-specific gene expression in mammals. He has also published several papers on mechanisms of epigenetic programming that function during germ cell development and gametogenesis, and in stem cells. Additional research interests include mechanisms governing X-chromosome activity in germ cells and early embryos, mechanisms governing genetic integrity in germ cells and stem cells, the effects of cloning and assisted reproductive technologies on genetic integrity, and the development of nonhuman primate model systems for studies of stem cell research and regenerative medicine. Recently he has focused on mechanisms involved in the induction of epimutations by environmental disruptions including the use of assisted reproductive technologies, or effects of diet and exercise on the sperm epigenome. His newest interest is in the specification of spermatogonial stem cells in the mammalian testis.

Felica Jones Formerly the Director of Programs at Healthy African American Families II (HAAF), Felica Jones is now the new Executive Director. As the Executive Director at HAAF, she is committed to decreasing health disparities in Los Angeles County by addressing the Social Determinants of Health in South Los Angeles and the surrounding communities. Over the past 20 years, Ms. Jones has worked on numerous research projects in various roles from Community Researcher to Co-Investigator, including projects funded by the NIH and PCORI.

Epigenetic Inheritance



Instructors

Qi Chen, MD, PhD
with Dominga Prado
and Peter Rivera



After I got my M.D. at Chongqing Medical University, I began my research with a project studying mouse embryo implantation at Institute of Zoology, Chinese Academy of Sciences, where I grow an interest in the molecular & biomechanical mechanisms to control intrauterine embryo localization and embryo orientation. After a twisted and exciting journey of discovery, I ended up to study water channels (aquaporins, AQPs) in reproductive system, discovering AQP3's role in sperm osmoadaptation, which turned out to be my Ph.D thesis. After the experience of working on sperm, I moved on to study small RNAs in sperm, and serendipitously found a novel class of tRNA-derived small RNAs (tsRNAs), also known as tRFs (tRNA fragments) that are highly enriched in mature sperm. The function of sperm tsRNAs as paternal epigenetic information carrier and related regulation mechanisms, such as those regulated by RNA modifications and related enzymes are the focuses of my current research. I also developed a keen interest on the origin (molecular and cellular) of early mammalian embryo symmetry-breaking before blastocyst formation, for which we are now combining the power of single-cell technology and mathematical modeling to study with.

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Effects of Nutrition on Epigenome and Genome



Instructors

Rachelle Bross, PhD with Pluscedia Williams

Rachelle Bross is the Nutrition Core director at the UCLA Clinical and Translational Science Institute, Harbor-UCLA Medical Center and Lundquist Institute. Rachelle is a registered dietitian/nutritionist with a PhD in Nutrition from the University of Toronto (Toronto, Canada).



Rachelle is responsible for the functioning of the Clinical and Translation Research Center Nutrition program, including personnel, research projects, food production and community engagement. The Nutrition unit provides services to inpatient, outpatient and community-based studies. These services include the preparation of nutrient controlled meals, nutritional status assessment and diet assessment. Rachelle participates in the Community Engagement and Research Program. She serve as co-investigator to the UCLA Community Engagement and Research Core, which facilitates research collaborations between academics and >45 community partner organizations. She also provides training in nutrition research methodology to research fellows and other students.

Pluscedia Williams, BA, is an African American community representative and has extensive experience in community partnered participatory research and serves as community member of institutional review boards. She is past president of the National Community-Based Organization Network and has contributed to the Lundquist Insititute's CTSI significantly by imparting knowledge of how to work with communities.

Effects of Physical Activities on Epigenome and Genome



Instructors

Harry Rossiter, PhD
with Pluscedia Williams

Harry Rossiter is a Professor at the David Geffen School of Medicine at UCLA and Investigator at The Lundquist Institute for Biomedical Innovation at Harbor-UCLA Medical Center, in Torrance, CA.



Harry received a PhD in physiology from the University of London and completed postdoctoral training in respiratory physiology and medicine at the University of California, San Diego.

His research focuses on improving the lives of patients where exercise intolerance is a major symptom, especially in patients with lung disease. He has authored over 110 peer-reviewed research papers and 5 book chapters, focusing on oxygen transport, muscle and mitochondrial function, fatigue, and exercise. His research works have been cited more than 7,000 times.

Pluscedia Williams, BA, is an African American community representative and has extensive experience in community partnered participatory research and serves as community member of institutional review boards. She is past president of the National Community-Based Organization Network and has contributed to the Lundquist Insitute's CTSI significantly by imparting knowledge of how to work with communities.

Computational Analyses of Genomic and Epigenomic Data



Instructors

Tong Zhou, PhD
with Kawen Young

Dr. Tong Zhou obtained his Ph.D. from Southeast University, China in 2006. After postdoc training at the Center for Computational Biology and Bioinformatics, the University of Texas at Austin (mentored by Dr. Claus O. Wilke), Dr. Zhou joined Dr. Joe "Skip" Garcia's group as a bioinformatician, where he grew his interest in translational medicine. Dr. Zhou's broad research background and training has been rooted in computational biology, with experience in genomics, genetics, biostatistics, and molecular evolution. While Dr. Zhou's lab is purely computational, he frequently collaborates with experimental and clinical researchers to understand the massive amount of information derived from the omic techniques.



Kawen Young, BS, Executive Director for the Native Hawaiian and Pacific Islander Alliance (NHPI), a national nonprofit community based organization dedicated to advocacy, education, research and promotion of the health and well-being and other related services for Native Hawaiians and Pacific Islanders (NHPI) within the United States. She is a leader in the NHPI community and has extensive experience in community programs.

Thank You to our Summer Fellows Program Lecturers

Rachelle Bross, PhD

Qi Chen, MD, PhD

Mina Desai, PhD

Selvi Ersoy, PhD

Fawzia Gorce, PhD

Keith Hoffman, PhD

Michelina Iacovino, PhD

Alex Kramer

Peter Liu, MD, PhD

Quim Madrenas, MD, PhD

Thomas R. Magee, PhD

Paul Mathews, PhD

John R. McCarrey, PhD

David I. Meyer, PhD

Michael Ross, MD

Harry Rossiter, PhD

Matthew L. Salomon

Shakti Singh, PhD

Ronald Swerdloff, MD

Joseph Thomas, MD

Priya Uppuluri, PhD

Christina Wang, MD

Matthew Wright, PhD

Wei Yan, MD, PhD

Michael Yeaman, PhD

Jennifer Yee, MD

Kawen T. Young

Huili Zheng, MD, PhD

Tong Zhou, PhD

Audrey Alo, BS, MPA

Felica Jones

Dominga Pardo

Peter Rivera, MD

Pluscedia Williams, BA

Kawen Young, BS



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