

Foreword

The decision to focus the 82nd Symposium on Chromosome Segregation and Structure reflects the enormous progress in our understanding of segregation, dynamics, and stability of chromosomes, the essential packaging for the organism's hereditary material. Many previous Cold Spring Harbor Symposia have been devoted to chromosome biology, notably *Genes and Chromosomes: Structure and Organization* (1941); *Genetic Mechanisms: Structure and Function* (1956); *Chromosome Structure and Function* (1973); *Chromatin* (1977); *Structures of DNA* (1982); *DNA and Chromosomes* (1993); *Epigenetics* (2004); and *Nuclear Organization and Function* (2010). Every decade has seen important advances in the field, so it is unsurprising that past Symposia have shed light from many angles on the structure and function of chromosomes. Current research in chromosome biology and dynamics includes many different fields, models, and approaches, and this Symposium offered the timely opportunity to bring together researchers using a multitude of advanced tools and techniques to investigate key chromosomal mechanisms and their aberrant function in disease. The scope of the meeting included the structure, division, and segregation of chromosomes in germ cell and somatic lineages in a variety of organisms.

Topics addressed at the 2017 Symposium included meiosis; mitosis; chromosome segregation; centrosomes and centrioles, ploidy, chromosome segregation errors, and disease; asymmetric cell division; nuclear architecture; chromosome structure and condensation; sister chromatid cohesion; genome stability; and germ cells. The Symposium attracted more than 280 participants and provided an extraordinary five-day synthesis of current understanding in the field. Opening night talks setting the scene for later sessions included Steven Henikoff on the inner kinetochore complex, Angelika Amon on cell nonautonomous regulation of chromosome segregation, Scott Keeney on DNA dynamics during meiosis, and Mónica Bettencourt-Dias on centrosome biogenesis. David Page delivered a fascinating Dorcas Cummings lecture on "Sex and Disease—Do Males and Females Read Their Genomes Differently?" for the Laboratory's friends and neighbors. Rising to the challenging task of condensing more than 50 talks over the prior five days, David Pellman provided a masterly summary of the state of the field at the conclusion of the Symposium. Interviews with leading scientists by participating editors, including Kim Baumann, Beth Moorefield, Richard Sever, Lara Szewczak, and Jan Witkowski, were conducted throughout the Symposium to provide a snapshot of the state of current research and are available on the CSHL Leading Strand YouTube channel (<https://www.youtube.com/user/LeadingStrand>). Transcripts of these Symposium conversations are provided here.

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