Dynamic Organization of Nuclear Function

Session 1 CHROMOSOME ORGANIZATION AND DNA REPLICATION

WEDNESDAY 9/27/2006, 7:30 PM

D. Gilbert

#	lname	Title	Talk Length
1	Gilbert	Dissecting global and fine-tuning replication timing determinants	25
2	Mechali	DNA replication and cell identity	12
3	Donaldson	Replication of yeast telomeres leads to their release from the nuclear periphery	12
4	Goerisch	Replication fork progression in the absence of processive DNA synthesis	12
5	Groth	Human Asf1—A histone surveillance factor	12
6	Kind	The role of nucleoporins in *Drosophila* dosage compensation	12
7	Cavalli	Polycomb group proteins and chromatin insulators	12
8	Huebner	Live cell analysis of human polycomb bodies	12
9	MAGDINIER	The D4Z4 subtelomeric element behaves as a CTCF-dependent insulator and allows the anchoring of telomeres to the nuclear periphery	12

Session 2 NUCLEAR BODIES

THURSDAY 9/28/2006, 9:00 AM

G. Matera

#	lname	Title	Talk Length
10	Matera	Nuclear bodies—Crucibles of macromolecular assembly or random aggregates of sticky proteins?	25
11	Meier	Human ribonucleoprotein assembly in vitro and at the site of H/ACA RNA transcription	12
12	Liu	The *Drosophila* cajal body	12
13	De Laurenzi	FLASH is an essential component of cajal bodies and is required for histone transcription and S-phase progression	12
14	Boisvert	Characterization of the nucleolar proteome during the cell cycle	12
15	Haeusler	Nucleolar localization of tRNA gene clusters requires microtubules	12
16	Kopp	The periucleolar compartment contains a novel RNA-protein complex	12
17	Pederson	The micro-RNA, miR-206, concentrates in ribosome-rich regions within the granular component of the nucleolus	12
18	Hemmerich	PML nuclear bodies are not sites of DNA damage repair	12

Session 3 POSTER SESSION I

THURSDAY 9/28/2006, 2:00 PM

#	lname	Title	Talk Length

19	Adam	Effects of HGPS mutant lamin A on the expression of the nuclear transport machinery
20	Iborra	Cellular energy status is an important factor in extrinsic noise in eukaryotic gene expression
21	Rogner	Epigenetic modification of gene expression by the nucleosome assembly protein 1 like 2 promotes neuronal differentiation
22	Ayala	Depletion of TDP43 results in CDK6 upregulation and nuclear membrane instability
23	Bantignies	Gene kissing by polycomb proteins
24	Batty	PML nuclear bodies and the spatial analysis of interphase mammalian nuclear cell architecture
25	Bennett	Mapping and tracking the position of DNA double-strand breaks in human cells using 4Pi microscopy
26	Boban	Inner nuclear membrane proteins Asi1, Asi2 and Asi3 maintain the latent properties of transcription factors Stp1 and Stp2
27	Campalans	Subnuclear redistribution of the DNA repair protein OGG1 after UVA irradiation
28	Campbell	Yeast nuclear envelope sub-domains with distinct abilities to resist membrane expansion
29	Zinn-Justin	Structural analysis of nuclear envelope proteins involved in genetic diseases
30	Carvalho	Intranuclear trafficking of splicing snRNPs
31	von Mikecz	Nanoparticle-induced protein aggregation models the subnuclear pathology of neurodegenerative disorders
32	Chen	Live cell dynamics of PML nuclear bodies upon entry into and exit from mitosis
33	Fornerod	Fractal organization of the *Drosophila* interphase genome as viewed from the nuclear lamina
34	Cohen	The nuclear envelope protein MAN1 regulates proliferation of endothelial cells through interactions with the TGFβ signaling pathway
35	Furger	A G-rich regulatory element located 440 nucleotides downstream of the core-poly(A) site of the intronless melanocortin receptor 1 gene is critical for efficient gene expression
36	Dechat	Properties of the mutant lamin A causing progeria—Impact on mitosis and cell cycle progression
37	Ching	PML nuclear bodies are dynamic sensors of DNA damage
38	Delmar	Topology of yeast NDC1—Predictions for the human NDC1 homologue
39	Denis	Establishing epigenetic marks during S-phase
40	Dinant	Activation of multiple DNA repair pathways by different sub-nuclear damage induction methods
41	Ding	Meiotic homologous chromos pairing—Recombination-independent centromere pairing in fission yeast
42	Dittmer	Characterization of an *Arabidopsis* coiled-coil protein family in nuclear development
43	Dultz	Systematic analysis of mitotic nuclear pore complex disassembly and reassembly in living cells

44	Engelhardt	Choreography for nucleosomes
45	Fahrenkrog	Dissecting the interaction between the nuclear pore complex and the nuclear lamina
46	Ferfoglia	Protein domains required for nuclear and sub-nuclear targeting of splicing factor SF3a
47	Ferguson	Evidence for the involvement of PML-NDs in the genotoxic stress response
48	Ferreira	Dynamics and role of human topoisomerases at nuclear sites of adenoviral replication
49	FUJITA	Regulation of p53-dependent transcription by a nucleolar protein
50	Fuller-Pace	The RNA helicase p68 as a transcriptional regulator—A novel role for a prototypic DEAD box protein
51	Funakoshi	Human POM121 is encoded by two different genetic loci—Expression analysis and functional characterization
52	Thuret	In vivo study of the Asf1 histone chaperone function
53	Askjaer	MEL-28, a novel nuclear envelope and kinetochore protein essential for zygotic nuclear envelope assembly
54	Geiger	Mutation of lamin Cdk1 phosphoacceptor sites from serine to aspartic acid leads to drastic changes in nuclear morphology
55	Gierman	Domain-wide regulation of gene expression in the human genome
56	Askjaer	*C. elegans* BAF and its kinase VRK participate directly in postmitotic nuclear envelope assembly
57	Andrulis	Dynamic form and function of exosome subunit complexes during mitosis and cytokinesis
58	Guelen	Identification of peripheral human genomic regions with DamID
59	Hadjur	Late sister chromatid separation at silent loci
60	Haque	SUN1 interactions at the nuclear envelope
61	Haraguchi	Live-cell and ultrastructural analyses of barrier-to-autointegration factor-dependent nuclear envelope assembly in human cells
62	Dubrana	Chromosome organization and repair after loss of a telomere
63	Hieda	Nuclear envelope targeting of cell-surface transmembrane growth factor, HB-EGF
64	Hirano	Biochemical analyses combined with single molecule mechanics reveal the nuclear membrane targeting mechanism to chromatin
65	Hood	RCC1 isoforms have different molecular interactions
66	Gerard	CAF-1 is essential for heterochromatin nuclear organization in pluripotent embryonic cells
67	Hurto	Novel connection between inorganic phosphate availability and transfer RNA nucleus-cytosol distribution
68	Osada	Man1, an inner nuclear membrane protein, regulates vascular remodeling by modulating transforming growth factor-β signaling
69	Jacobs	The DEAD box RNA helicase p68—Sumoylation and potential role in transcriptional regulation

70	Rippe	Dynamics of chromosome telomeres in a human cancer cell line and their interaction with PML bodies
71	Galy	Characterization of the dynamics of chromosomal loci during embryogenesis of *C. elegans*
72	Jiménez-García	Further observations of nucleolar material during interphase and mitosis by atomic force microscopy
73	Johnson	Global ICP27 mediated viral RNA export requires both RNA binding activity and interaction with the cellular TAP/NXF export receptor
74	Kahle	Nuclear myosin is ubiquitously expressed and evolutionarily conserved in vertebrates
75	Kajiro	The function of NuRD complex degradation in transcription regulation
76	Kalverda	Interactions between nucleoporins and the *Drosophila* genome
77	Katahira	Cytoplasmic role of NXF nuclear RNA export factor
78	kawabe	Characterization of NRDF, a novel ubiquitin ligase which is involved in transcription regulation, in mouse development
79	Kerr	The Mlp proteins at the nuclear basket of the nuclear pore interact with the SAGA complex and modulate *GAL* transcript levels
80	Kim	Characterization of GIGANTEA nuclear bodies in *Arabidopsis*
81	Guffanti	Biogenesis of intranuclear endoplasmic reticulum—Implications for human reproduction
82	Koehler	Targeted inactivation and mutation of the *AAAS* gene in mice—Absence of an essential role of the nucleoporin ALADIN for normal mouse development
83	Noteborn	Apoptin senses cell-type-dependent nuclear trafficking of the transforming protein SV40 LT
84	Krauss	Protein 4.1R functions are critical for normal nuclear assembly, nuclear architecture and cell cycle progression
85	Krumbholz	Mislocalization of the novel nucleoporin ALADIN and impairment of the interaction with other nuleoporins cause Triple A syndrome
86	Kumar	Role of p13K in G1-S transition
87	Kundu	Human transcriptional coativator PC4, a bonafide nonhistone component of chromatin
88	Georgieva	E(y)2 protein, the novel *Drosophila* transcription activator of RNA polymerase II is associated with the nuclear pore complex and plays an essential role in mRNA export
89	Kuvichkin	DNA-liposome complexes and nuclear pores assembly
90	Lanctot	Gene clustering in the nucleus—The case of mouse *Hox* genes
91	Corbett	Routes for protein entry into the nucleus
92	Langevin	Spatial reorganization of fibroblast nuclear actin in response to mechanical stretch in whole connective tissue
93	le Maire	The human KIN17 protein—RNA binding and histone recognition
94	Lindsay	Daxx—A novel mitotic regulator that determines taxane sensitivity

95	Hu	Regulation of ATF2 subcellular localization by the intramolecular interaction and the heterodimerization with Jun
96	Lu	Cell cycle regulation of major and minor satellite transcripts in mammalian cells and their potential implications
97	Luijsterburg	In vivo kinetics of chromatin-associated complex formation in nucleotide excision repair
98	Lymberopoulos	Characterization of nucleolar reorganization by HSV-1

Session 4 RNA PROCESSING AND EXPORT

THURSDAY 9/28/2006, 7:30 PM

J. Caceres

#	lname	Title	Talk Length
99	Caceres	Multiple roles of hnRNP A1 and SR proteins in RNA processing	25
100	Bellini	Splicing independent recruitment of small nuclear RNPs to active transcriptional units	12
101	Rino	Recruitment of splicing factors to transcription sites relies on stochastic mechanisms	12
102	KOTA	The cell biology of UAP56—Intranuclear mobility and complex formation	12
103	Chekanova	Genetic dissection of the links between genes, the nuclear periphery and post-transcriptional mRNP	12
104	Prasanth	MALAT-1—A nuclear retained non-coding RNA regulates synaptogenesis	12
105	Iglesias	The yeast mRNA export receptor Mex67 is recruited to transcribing genes via its UBA domain and contributes to nuclear pore complex gene anchoring	12
106	Wente	mRNA export requires spatial activation of the DEAD-box protein, Dbp5 by Gle1 and inositol hexakisphosphate (IP_6)	12
107	Hopper	Nuclear accumulation of cytoplasmic tRNAs in response to nutrient deprivation	12

Session 5 NUCLEAR STRUCTURE AND DISEASE

FRIDAY 9/29/2006, 9:00 AM

R. Goldman

#	lname	Title	Talk Length
108	Goldman	The remarkable relationship between nuclear lamins and a plethora of human diseases	25
109	Lammerding	Lamin mutations associated with specific laminopathies result in distinct defects in nuclear mechanics	12
110	Herrmann	Forced expression of lamins mutated in a highly conserved sequence motif of coil 1A induces dramatic changes in the nuclear morphology of cultured mammalian cells	12
111	Gruenbaum	Lamin binding proteins and laminopathic mutations interfere with the assembly of nuclear lamins	12
112	Willis	Lamin A/C is a marker for death in colorectal cancer	12
113	Nitta	A-type nuclear lamins are necessary for Ink4a-mediated cell cycle arrest by the stabilization of the retinoblatoma protein	12
114	Zhang	Nesprin-1 and -2 are involved in the pathogenesis of Emery-Dreifuss muscular dystrophy and are critical for maintaining nuclear integrity	12

115	Sengupta	Artificially introduced aneuploid chromosomes assume a conserved, non-random position in nuclei of colon cancer cells	12
116	Fontoura	The mRNA export machinery got the flu	12

Session 6 POSTER SESSION II

FRIDAY 9/29/2006, 2:00 PM

#	lname	Title	Talk Length
117	Ma	Nucleostemin, a stem cell-expressed protein, localizes with the tumor suppressor ARF in the nucleolus and modulates p53 in the nucleoplasm	
118	Mahoney	Regulation of regulator of G-protein singaling-5 (RGS-5) activity in the vasculature	
119	Margalit	The lamin and LEM-domain-binding protein barrier-to-autointegration factor (BAF) is required for maintaining adult muscle integrity in *C. elegans*	
120	Mazumdar	Tumor formation via loss of a molecular motor	
121	McCune	Microscopy-based correlative analysis of condensed eukaryotic chromosome structure	
122	Meier	Mutants of *Arabidopsis* Tpr/MLP have defects in mRNA export, SUMO homeostasis and flowering time	
123	Mellad	Nesprins form a novel link between the nucleolus, cytoplasmic processing bodies and stress granules	
124	Miki	Staufen2-Upf1 complex regulates the fate of mRNA	
125	Mohd Sarip	Architecture of a polycomb nucleoprotein complex	
126	Yoshihisa	tRNA ligase Rlg1p has dual functions on unfolded protein response through Hac1p expression	
127	Mou	HSV-1 Us3 kinase phosphorylates lamin A/C to promote egress of nuclear capsids	
128	Clemson	Novel non-coding RNAs in nuclear structure	
129	Nagai	Perinuclear anchoring promotes mitotic segregation of plasmids in budding yeast	
130	Kawamoto	Diverse isoforms of RNA-binding protein Fox-2 and their splicing activities	
131	Nakano	Production of a human artificial chromosome with a conditional centromere	
132	Neimanis	Nuclear transport of DNA fragmentation factor (DFF)	
133	Ocampo-Hafalla	In vivo analysis of the cohesin relocation along *S. cerevisiae* chromosomes	
134	Ogawa	Importin α recycling through the nuclear pores and Npap60/Nup153	
135	Ohzeki	Transcriptional cassettes nucleate the heterochromatic domains as well as euchromatins on human artificial chromosomes	
136	Oktaba	Searching for novel polycomb target genes in *D. melanogaster*	
137	Osborne	Dynamic spatial organization of transcription and its impact in oncogenesis	
138	Ottaviani	DNA-protein interactions that contribute to the structure and function of the MHC	

139	Pageau	The tumor suppressor BRCA1 preferentially interacts with pericentric heterochromatin in a manner linked to its replication
140	Papp	Histone tri-methylation and the maintenance of transcriptional on and off states by trithorax group and polycomb group proteins
141	Cote	SMN required for functional reorganization of methylated nucleolar proteins during skeletal muscle differentiation
142	Paulillo	Changes in nucleoporin Nup214 domain topology in response to chemical effectors
143	Pekovic	Nucleoplasmic LAP2α-lamin A/C complexes regulate retinoblastoma protein distribution and are required to maintain a proliferative state in human fibroblasts
144	Yoda	Rsf complex is required for CENP-A chromatin remodeling
145	Pessa	Localization of U4atac and U6atac snRNAs in mouse cell lines
146	Prasanth	7SK RNA is a riboregulator facilitating the dissociation of the pTEF-B complex from transcription sites
147	Probst	Dynamic reorganization of centromeric and pericentromeric satellite repeats in the one-cell embryo
148	Rasala	A novel nuclear pore/kinetochore protein required for correct nuclear pore assembly
149	Roure	Functional analysis of polycomb and trithorax bodies
150	Roux	Beyond the LINC—Alternative roles of the Sun proteins at the nuclear envelope
151	Rowat	Tracking changes in gene expression under environmental stress—A drop-based microfluidic approach for single cell studies
152	Rowat	Loss of emerin alters nuclear envelope mechanics
153	Rowat	Structure and mechanics of the cell nucleus by micropipette aspiration
154	Adams	Statistical inference for the spatial distribution of interphase nuclear compartments
155	Sakura	The identification and characterization of a novel silencing complex of rDNA transcription
156	Salpingidou	A role for emerin in the attachment of the centrosome to the nucleus
157	Sanderson	The effects of RCC1 knockdown on mitotic spindle formation in human cells
158	Gilbert	A G1-phase inhibitor of mammalian pre-RC assembly that precedes geminin and the restriction point
159	Schober	Subnuclear localization of telomeres or telomerase may affect telomere length maintenance
160	Senger	Preliminary characterization of *she-1/nup-44A* alleles in *D. melanogaster*
161	Shaman	Mammalian spermatozoa may regulate apoptosis by separating two potential critical components, providing an important model for eukaryotic chromatin degradation
162	Shiomi	Functional interaction of the chromosome cohesion PCNA-loader Ctf18-RFC and DNA polymerase ε
163	Shopland	Folding and organization of a chromosomal region according to the gene distribution pattern in the primary sequence

164	Shumaker	Insights into the role of nuclear lamins in DNA replication—Lamin interactions with PCNA
165	Balasundaram	Conserved domains of the fission yeast nucleoporin Nup124p and its orthologs Nup1p and Nup153 are critical for nuclear import and activity of the Tf1 retrotransposon
166	Sivaramakrishnan	TRIM22 is localized as distinct nuclear bodies
167	Souki	Protein-arginine methylation modulates the import and export dynamics of Hsv-1 ICP27
168	Stoepel	Role of Ctf8 and Dcc1 in recruitment of the Ctf18-RLC to chromatin
169	Swiss	The transcriptional functions of Msx1 are dependent upon its localization to the nuclear periphery
170	Syrjäkari	Nucleolar proteins as sensitive and specific stress and damage response markers
171	Szabo	Regularly spaced nicks delimit chromatin loops
172	Imamoto	Importin α/β and small GTPase RAN coordinate of human kinesin-like DNA binding protein (hKID) in mitosis, by regulating loading it onto spindle microtubules and chromosome arms
173	Inoue	Structural characterization of MORC3-ATPase involved in protein recruitment from nucleoplasm to PML-nuclear body
174	Takahashi	Degree of SUMO modification as a differential tag for targeting to specific chromosomal domains
175	Takemoto	Negative regulation of condensin by interphase phosphorylation
176	Takizawa	Allele-specific gene regulation and nuclear locus positioning during astrocytogenesis
177	Novatt	Studying the nature of interactions between karyopherins, cargo, and the NPC
178	Therizols	Functional organization of chromosomes extremities in *S. cerevisiae*
179	Thomae	Targeting ORC to specify origins of replication
180	Wiebe	VRK1 phosphorylates the N'-terminus of BAF, regulating its biochemical and biological properties
181	Tzur	Matefin/SUN-1 is a nuclear envelope receptor for CED-4
182	Varela	Lte1 promotes chromatin decompaction at the end of mitosis
183	Vecchio	Proteasome and exosome distribution in the nucleus
184	Veenhoff	Membrane proteome of the yeast nuclear envelope
185	Verstraeten	The FPLD-associated R439C *LMNA* mutation causes lamin oligomerization that interferes with DNA binding
186	Kerppola	Visualization of chromatin binding and dynamics of epigenetic regulatory complexes in living cells
187	Vlasakova	Histone deacetylase inhibitors suppress IFNα-induced up-regulation of promyelocytic leukemia protein
188	Voss	Single cell analysis of glucocorticoid receptor function reveals a stochastic mechanism for GR action—Implications for the evolution of altered activity promoter states
189	Warren	Novel roles for nesprin-2 in signaling between focal adhesions and the nucleus

190	Weidtkamp-Peters	Centromere assembly through highly immobile and some mobile foundation kinetochore proteins
191	Wilkie	Nuclear envelope proteome variation between liver, muscle and blood cells
192	Xu	A novel transmembrane nucleoporin that anchors RanGAP1 to the nuclear envelope in plants
193	Yasuhara	Importin-α and neural differentiation
194	Zeitlinger	Activated signal transduction kinases frequently occupy target genes
195	Zhang	The telomere-associated protein TRF-2 regulates neuronal differentiation by relieving REST-mediated gene silencing
196	Adams	HP1 proteins are dynamically recruited to sites of defective heterochromatin structure to rescue chromatin function
197	Zwerger	Characterization of lamin B receptor mutants in human osteosarcoma cells

Session 7 CHROMOSOMES AND THE CELL CYCLE

FRIDAY 9/29/2006, 7:30 PM

W. Earnshaw

#	lname	Title	Talk Length
198	Earnshaw	Condensin and Repo-Man/PP1 cooperate in the regulation of chromosome architecture during mitosis	25
199	Xu	The prolyl isomerase Pin1 regulates condensation of mitotic chromosomes	12
200	Agostinho	Dynamics of topoisomerase 2α conjugation with SUMO-1 and SUMO-2/3 during interphase and mitosis	12
201	Masumoto	Dual function of CENP-B for de novo incorporation of CENP-A or the tri-methyl histone H3K9 on α-satellite DNA	12
202	Diekmann	In vivo FRET studies of human inner kinetochore proteins	12
203	LOMONTE	Centromeric targeting of the Cajal bodies-associated protein coilin as a specific cellular response to damaged centromeres	12
204	Soutoglou	Dynamics of single double strand breaks in living mammalian cells	12
205	Hiraoka	A mechanism for moving chromosomes by cytoskeletal driving forces across the nuclear envelope	12
206	Naetar	LAP2α-interacting protein LINT-25 is a novel chromatin-associated protein involved in cell cycle exit	12

Session 8 EMERGING TECHNOLOGIES TO ACCESS NUCLEAR ORGANIZATION

SATURDAY 9/30/2006, 9:00 AM

J. Ellenberg

#	lname	Title	Talk Length
207	Ellenberg	4D imaging reveals that maximal chromosome compaction occurs by axial shortening in anaphase and depends on Aurora kinase	25
208	Anderson	A novel imaging assay for nuclear envelope formation	12
209	Zenklusen	Dissecting gene expression using single transcript analysis	12

210	Carrero	Virtual photo-activated fluorescence (VPAF)—Obtaining PAF data from FRAP experiments	12
211	Hemmerich	Assessing the mobility of nuclear proteins using fluorescence correlation spectroscopy	12
212	Trinkle-Mulcahy	Quantitative proteomic mapping of nuclear complexes	12
213	Dekker	Regulation of gene expression through chromatin interaction networks	12
214	Van Steensel	Genome-wide mapping of nuclear lamina-chromatin interactions	12
215	Bouchet-Marquis	Nuclear architecture revealed by cyro electron microscopy and tomography of vitreous sections	12

Session 9 THE NUCLEAR PERIPHERY

SATURDAY 9/30/2006, 2:00 PM

D. Forbes

#	lname	Title	Talk Length
216	Forbes	The Nup107-160 nucleoporin complex is required for mitotic spindle assembly	25
217	Doye	Targeting and function of the Nup107-160 complex at kinetochores	12
218	D'Angelo	Nuclear pores form de novo from both sides of the nuclear envelope	12
219	Mansfeld	Cell cycle-dependent phosphorylation of NDC1—A conserved transmembrane nucleoporin involved in nuclear pore complex assembly	12
220	Galy	The transmembrane nucleoporin gp210 controls an early step of nuclear envelope breakdown	12
221	Terry	Distinct combinations of nucleoporin FG-repeat domains mediate export of mRNA and the 60S ribosomal subunit in *S. cerevisiae*	12
222	King	Karyopherin-mediated import of integral inner nuclear membrane proteins	12
223	Malik	Nuclear envelope transmembrane proteins influence global chromatin organization	12
224	Huber	Potential role for nuclear envelope transmembrane proteins in cell signaling and development	12

Session 10 TRANSCRIPTION AND GENOME FUNCTION

SUNDAY 10/1/2006, 9:00 AM

M. Carmo-Fonseca

#	lname	Title	Talk Length
225	Carmo-Fonseca	Connections between pre-mRNA splicing, Pol II transcription and mRNA release	25
226	Brickner	Gene recruitment to the nuclear periphery confers memory of past transcription	12
227	Mitchell	Stable transcription factories exist in the absence of transcription	12
228	Buckle	Genes upregulated during erythroid differentiation occupy common regions of the nucleus which involve multiple transcription factories	12
229	Cabal	Live-mapping the positional landscape of multiple genes in yeast	12
230	Hiratani	Dynamic epigenetic regulation during neural differentiation of mouse embryonic stem cells—Replication timing changes and transcriptional regulation	12
231	Christova	Large-scale chromatin remodeling during transcriptional activation of human MHC locus	12

232	Stavreva	Dynamics of Pol II transcription-associated factors at the MMTV promoter in vivo	12
233	Eskiw	Size, protein and nucleic acid content of transcription factories	12