

Molecular Genetics of Aging

Session 1 GENETICS (SIMPLE ORGANISMS)

WEDNESDAY 9/24/2008, 7:30 PM

H. Tissenbaum / S. Pletcher

#	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
1	Tissenbaum	Phosphatases that modulate the <i>C. elegans</i> insulin/IGF-1 signaling pathway	15
2	Budovskaya	Molecular aging driven by the ELT-3/ELT-5/ELT-6 GATA transcriptional circuit in <i>C. elegans</i>	8
3	Burtner	A molecular mechanism of chronological aging in yeast	8
4	Hansen	Autophagy genes affect the extension of lifespan by dietary restriction in <i>C. elegans</i>	8
5	Helfand	Long-lived Indy induces reduced mitochondrial ROS production and oxidative damage.	8
	Pletcher	No abstract	15
6	Lin	Identification of novel genetic mimics of calorie restriction in yeast <i>S. cerevisiae</i>	8
7	Ni	Two putative chromatin regulatory factors in <i>C. elegans</i> lifespan determination	8
8	Siebold	Mutations in polycomb group genes extend lifespan in <i>Drosophila</i>	8
9	Wollam	A hormone biosynthetic pathway that regulates life history in <i>C. elegans</i>	8

Session 2 GENOMIC STABILITY / DAMAGE / REPAIR / TELOMERES

THURSDAY 9/25/2008, 9:00 AM

J. Vijg / E. Blackburn

#	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
	Vijg	No abstract	15
10	Beausejour	Long-term accumulation of DNA lesions in irradiated tissues is immune independent and equivalent to the level observed in aged tissues	8
11	Johnson	Connections between G-quadruplexes and gene expression in senescent cells	8
12	Larsson	Random point mutations with major effects on protein coding genes drive premature aging in mtDNA mutator mice	8
13	Marciniak	In Werner syndrome the telomere genotoxic clock runs fast	8
14	Blackburn	Telomeres and telomerase—Their implications in human health and disease	15
15	Munoz-Najar	Telomere dysfunction-induced senescence and organismal aging in the mouse model	8
16	Oberdoerffer	DNA damage-induced redistribution of Sirt1 contributes to genomic integrity and age-related changes in gene expression	8
17	Page	Limited role for ROS-metabolism and DNA base excision repair in the stress resistance of Snell dwarf fibroblasts	8
18	Sild	The Werner syndrome protein is a transcriptional regulator and increases telomerase activity	8

Session 3 ORAL PRESENTATIONS FROM ABSTRACTS

THURSDAY 9/25/2008, 2:00 PM

S. Austad / J. Campisi / D. Sinclair

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
19	David	Proteomic study of age-related protein aggregation	8
20	He	Pot1b deletion and telomerase haploinsufficiency in mice result in phenotypes resembling dyskeratosis congenita	8
21	Kaerberlein	Translation, degradation, and aging	8
22	Kauffman	<i>C. elegans</i> learning and memory as measures of age-related neuronal decline	8
23	Korenblit	Ire-1 promotes the longevity of <i>c. elegans</i> insulin/IGF-1-receptor mutants by reducing the levels of insulin and ER stress	8
24	Luo	Dissecting the mechanisms by which the TGF- β Sma/Mab pathway regulates reproductive aging in <i>C. elegans</i>	8
25	Sage	The regulation of <i>Drosophila</i> lifespan by <i>falafel</i> and <i>forkhead</i>	8
26	Skorupa	Energy balance and catabolic programs determine <i>Drosophila</i> lifespan	8
27	Tatar	Juvenile hormone regulation of <i>Drosophila</i> aging	8
28	Walter	Mitochondria signal through key nuclear transcription factors to affect <i>C. elegans</i> lifespan	8

Session 4 POSTER SESSION I and WINE & CHEESE PARTY

THURSDAY 9/25/2008, 4:30 PM

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
29	Aamodt	Caste- and age-specific expression signatures of DNA repair and heat shock genes in honeybee wing muscle.	
30	ABDALLAH	A two model for senescence triggered by a single critically short telomere	
31	Aris	Autophagy and amino acid homeostasis promote chronological longevity in <i>S. cerevisiae</i>	
32	Aris	Calorie restriction affects mitochondrial structure and function during chronological aging in <i>S. cerevisiae</i>	
33	Baur	Resveratrol delays age-related deterioration and mimics transcriptional aspects of dietary restriction	
34	Bechard	Telomere Rapid Deletion (TRD) in the yeast <i>K. lactis</i>	
35	Beekman	Genetic and biomarker studies for human longevity	
36	Belancio	L1 element is an intrinsic DNA damaging factor likely contributing to mammalian aging	
37	Blagoev	An aging guard may be letting cells enter crisis	
38	Botta	Iron supplementation through multiple pathways leads to life span extension in <i>S. cerevisiae</i>	
39	Titorenko	A mechanism linking lipid dynamics and longevity	

40	Bradshaw	Autophagy modulates mitochondrial function in murine fibroblasts
41	Alic	Targeted reduction of a <i>Drosophila</i> insulin-like ligand separates a metabolic phenotype from lifespan and reveals redundancy and compensation between ligands
42	Brunkan	A nutrient-sensitive interaction between Sirt1 and Hnf-1 α regulates Crp expression in the liver
43	Carmona	The <i>C. elegans pnc-1</i> gene, encoding a nicotinamidase, increases stress resistance and extends lifespan
44	Carr	Gompertz initial mortality and rate of aging are dependent in <i>C. elegans</i>
45	Castro-Vega	Telomere instability and telomerase impact the microRNA expression
46	Chalkiadaki	Sirt1 function in adipose tissue metabolism
47	Chen	Sirt1—a key regulator of aging and calorie restriction
48	Chen	Rescue of telomere dysfunction and gastrointestinal pathology in a mouse premature aging model via transplant of wild type bone marrow
49	Chen	A second face of telomere in life span regulation
50	Chow	The timing of mammalian telomere end-processing in the cell cycle
51	Damle	Differential induction of telomerase activity by T-cell independent stimulation in leukemic cells from a subset of chronic lymphocytic leukemia patients—In vitro evidence for aggressive cellular behavior?
52	de Boer	A novel role for Sirt4 in lipid metabolism
53	Donmez	Analysis of the role of Sirt1 protein in Alzheimer's disease
54	Dvir-Ginzberg	The chromatin remodeling enzyme Sirt1—Role in human cartilage gene expression and disease
55	Edwards	The Werner syndrome protein (WRN) mediates proper alignment of repeated sequences during replication fork regression
56	Edwards	Changes in gene expression with age in human lung—Implications to idiopathic pulmonary fibrosis and the murine aging model
57	Erjavec	Effect of cell polarity on damage segregation
59	Fishlock	Numerous organ systems accumulate cells displaying dysfunctional telomeres with increasing animal age
60	Freund	Modulating the senescence associated secretory phenotype—The role of stress kinases
61	Fumagalli	Cellular senescence is associated with persistent DNA damage response signaling
62	Glorioso	Candidate longevity gene polymorphisms are associated with selective anticipation of age-related transcriptional changes in the human brain
63	Goh	Characterization of DNA damage repair and its link to aging in myogenic precursors
64	Titorenko	The spatiotemporal dynamics of a modular network that regulates longevity in yeast
65	Rudolph	Telomere shortening impairs adult neurogenesis but reduces Alzheimer disease progression in mice

- 66 Hirschey Sirt3 regulates mitochondrial fatty acid oxidation
- 67 Fridell Involvement of a K_{ATP} channel in the adult *Drosophila* insulin-producing neurons in insulin secretion and glucose homeostasis

Session 5 MITOCHONDRIA / METABOLISM

THURSDAY 9/25/2008, 7:30 PM

P. Rabinovitch / L. Guarente

#	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
68	Rabinovitch	Mitochondrial mouse genetics, sarcopenia, cardiac disease and cancer	15
69	Cohen	Improved fat and glucose homeostasis in mice overexpressing Sirt6	8
70	Hekimi	Energy metabolism, not mitochondrial oxidative stress, determines aging and sensitivity to age-dependent diseases in worms and mice	8
71	Herranz	Sirt1 protects from metabolic damage by nutrient overload	8
72	Imai	NAD world—A new systemic regulatory network for metabolism and aging in mice and humans	8
73	Guarente	Sirtuins, aging and disease	15
74	Kapahi	4E-BP modulates lifespan and mitochondrial translation upon dietary restriction in <i>Drosophila</i>	8
75	leiser	Metabolic differences in cells from long-lived mice	8
76	Lombard	Altered mitochondrial lysine acetylation with calorie restriction	8
77	Yang	UQ ₁₀ extends <i>C. elegans</i> lifespan by lowering oxidative damage but not mitochondrial activity	8

Session 6 CELLULAR RESPONSES—SENESCENCE / APOPTOSIS / STRESS

FRIDAY 9/26/2008, 9:00 AM

J. Sedivy / N. Sharpless

#	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
	Sedivy	Title only: Evidence for in vivo replicative cellular senescence in mammals	15
78	Baker	The p53 pathway acts to delay in vivo senescence and aging	8
79	Bazarov	p16 ^{INK4A} causes irreversible senescence in breast cancer cells by triggering stable epigenetic changes	8
80	Bischof	A role for noncoding RNA in the execution of cellular senescence	8
81	Cao	Lamin A and telomerase—A <i>pas de deux</i> of cell senescence?	8
	Sharpless	No abstract	15
82	Gorbunova	Distinct tumor suppressor mechanisms evolve in rodent species that differ in size and lifespan	8
83	Kishi	The identification of zebrafish mutants showing alterations in senescence-associated biomarkers	8
84	Krizhanovsky	Immune clearance of senescent activated stellate cells limits liver fibrosis	8
85	Rodier	Signaling from a compromised genome—ATM connects chromatin lesions to inflammatory secretion during senescence	8

Session 7 STEM CELLS

FRIDAY 9/26/2008, 2:00 PM

I. Conboy / K.L. Rudolph

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
86	Conboy	Molecular aging of stem cell niches and self-imposed inhibition of tissue repair	15
87	Scrable	Embryonic stem cells from early aging mice exhibit premature aging in culture	8
88	Chen	mTOR pathway regulates the aging of hematopoietic stem cells	8
89	Curran	A soma-to-germline transformation phenotype in long-lived endocrine signaling mutants	8
90	Jasper	Jnk activity in somatic stem cells causes loss of tissue homeostasis in the aging <i>Drosophila</i> gut	8
91	Rudolph	DNA damage checkpoints limit the maintenance and function of adult stem cells in response to telomere dysfunction	15
92	Jones	Insulin signaling-mediated regulation of stem cell maintenance	8
93	Murphy	The <i>C. elegans</i> TGF- β Sma/Mab pathway uncouples reproductive aging from somatic aging	8
94	Verdin	Regulation of Sirt1 expression by microRNA during embryonic stem cell differentiation	8
95	Xie	The spindle checkpoint kinase Mps1 and its role in chromosomal instability, tumorigenesis and hematopoietic stem cell aging	8

Session 8 POSTER SESSION II

FRIDAY 9/26/2008, 7:30 PM

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
96	Adami	Modification of the ATM/ATR directed DNA damage response state in hepatocytes with aging in vivo	
97	Jeyapalan	Spontaneous upregulation of telomere-independent senescence in normal cells	
98	Johnson	Selective gene regulation in human cells by G-quadruplex-interacting molecules and the Werner and Bloom syndrome proteins	
99	Kabil	The role of the transsulfuration in <i>Drosophila</i> dietary restriction	
100	Kanfi	Sirt6 as a mediator of the calorie restriction response.	
101	Kang	Nicotinamide regulates selective mitophagy via GAPDH and Sirt1-dependent mechanisms	
102	Kappeler	The development of the somatotropic axis, a major regulator of mammalian aging, is controlled by early postnatal diet	
103	Kleemann	Using recombinant inbred lines and a high throughput assay to assess the basis of differences in longevity between a lab-adapted and a wild strain of <i>C. elegans</i>	
104	Kozak	Extension of yeast replicative lifespan via <i>sas2</i> deletion	
105	Kuhlbrodt	The ubiquitin-selective chaperone CDC-48/p97 modulates ubiquitin chain length to regulate life span	

106	Kuningas	Adverse environmental conditions favor selection for pro-inflammatory responses in human populations
107	Lapointe	Early mitochondrial dysfunction and long lifespan—Old <i>Mclk1</i> +/- mice challenge an old theory of aging
108	Leach	Repair of oxidative dna damage is defective in primary skin fibroblasts from Cockayne syndrome but normal in atypical patients with mild symptoms of accelerated aging and neurodegeneration
109	Ahmed	Repression of replicative aging and germ cell tumor formation in <i>C. elegans</i>
110	Hande	Genomic instability in cells lacking nucleotide excision repair factors under oxidative stress
111	Lu	Studying the role of NAD ⁺ metabolism in life span regulation in yeast <i>S. cerevisiae</i>
112	Machin	Untimely Cdc14 activation leads to failure in ribosomal DNA segregation and irreversible activation of DNA damage responses
113	Medrano	Neural stem cell senescence in the aging hypothalamus
114	Rebbaa	Cathepsin D regulates Sirt7 in a calorie restriction-dependent manner
115	Rebbaa	Dual targeting of the pro- and anti-longevity genes Sirt1 and TXNIP as a test to evaluate the efficacy of anti-aging interventions
116	Schneider	Cell size modulates proliferation rate and lifespan
117	Duttaroy	SOD2, a mitochondrial antioxidant enzyme is essential for adult health, not for development
118	Mukhopadhyay	Ionizing radiation promotes the ability of human mammary epithelial cells to overcome a p16 ^{INK4a} mediated senescence barrier
119	NAKAGAWA	Molecular function of Sirt5 in metabolism and aging
120	Ni	EMB-5 modulates <i>C. elegans</i> lifespan through a mechanism distinct from <i>glp-1</i>
121	Nyunoya	Cigarette smoke induces cellular senescence via Werner's syndrome protein downregulation
122	Orjalo	Manganese superoxide dismutase sustains interleukin-6 expression in senescent human fibroblasts
123	Patil	Little old things—micro-RNAs in cellular senescence
124	Ozer	A role for PHF10 in cellular senescence
125	Harkness	Fkh1p, Fkh2p and the anaphase promoting complex partner in controlling chronological lifespan in <i>S. cerevisiae</i>
126	Radyuk	Differential effects of <i>Drosophila</i> peroxiredoxin 5 on survivorship under normoxia and stress conditions
127	Rahmani	Genome-wide scan for healthy aging
128	Finkel	Identifying new targets for Sirt1
129	Aris	The ParCAE—The fates of young cells depend on the replicative age of mother cells in <i>S. cerevisiae</i>
130	Rizki	<i>C. elegans</i> HCF-1 functions in longevity maintenance as a DAF-16 regulator

131	Kapahi	Translational repression via eIF-4G RNAi enhances lifespan by posttranscriptionally upregulating genes that control response to stress and aging
132	Rogina	Effect of <i>mle</i> ^{naps} mutation on development and longevity of <i>D. melanogaster</i>
133	Rottenberg	Longevity and the mitochondrial bc1 complex
134	Roux	Glucose signaling, and not glucose metabolism, is the main aging-promoting pathway in yeast
135	Ruan	Telomere dysfunction independent of the "end replication problem"
136	Ruzankina	A role for <i>p53</i> in suppressing premature aging and tissue regeneration failures in <i>ATR</i> ^{mkO} mice
137	Schwer	The role of Sirt6 in development, homeostasis and aging of the central nervous system
138	Gorbunova	Fibroblasts of a long-lived rodent, naked mole-rat, display hypersensitivity to contact inhibition mediated by p16 ^{Ink4a}
139	Siddiqi	Telomeres are fragile sites
140	Gerhard	An in vivo zebrafish screen for scavengers of reactive oxygen species (ROS) identifies novel antioxidant compounds
141	Smith	A role for G-quadruplexes in telomere capping
142	Someya	The role of Bak in the pathogenesis of age-related hearing loss
143	Steffen	Yeast replicative lifespan is modulated by translational regulation of Gcn4
144	Stout	p53 mediates epidermal stem cell dysfunction and cancer protection in <i>K5TRF2</i> mice
145	van de Ven	Effects of compound heterozygosity at the <i>XPD</i> locus on cancer and aging
146	Verim	The effect of the aged niche on HSC
147	Villa-Cuesta	Regulation of <i>dFOXO</i> translation under nutrient stress
148	Wang	The 14-3-3 protein Bmh1 functions in calorie restriction and nutrient-sensing pathways to regulate longevity
149	Wang	Reduction in MCLK1 expression slows down tumor growth and increases resistance to cancer-induced cachexia
150	Wang	Sirt1 and Sirt2 promote FOXO3a ubiquitination and subsequent proteasomal degradation through E3 ubiquitin ligase Skp2
151	Wang	Understanding the interrelationship among fat metabolism, reproduction and aging in <i>C. elegans</i>
152	Wilkinson	A link between aerobic capacity and longevity
153	Wood	Characterization of dSirt4, a mitochondrial sirtuin in <i>Drosophila</i>
154	Yang	Reduced oxidative damage is not the cause of the increased longevity of mitochondrial mutants of <i>C. elegans</i>
155	Yang	NAD ⁺ -dependent deacetylase, Sirt3, regulates mitochondrial protein synthesis by deacetylating mitochondrial ribosomal protein L10 (MRP-L10)

- 156 Yoshida Polymorphic *NBN* and *EGFR* genes affect cancer development among atomic-bomb survivors in Hiroshima and Nagasaki
- 157 Zhang GATA transcription factors are required for gene expression and lifespan extension in *C. elegans* insulin/IGF-1 mutants

Session 9 PROLIFERATIVE HOMEOSTASIS

SATURDAY 9/27/2008, 9:00 AM

P. Hasty / R. Bodmer

#	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
158	Hasty	Ku80-deletion causes early aging and suppresses cancer	15
159	Armanios	Short telomeres are a risk factor for idiopathic pulmonary fibrosis	8
160	Brodsky	Ribosomal protein gene haploinsufficiency eliminates aneuploid cells following DNA damage	8
161	Enikolopov	Age-related decrease in hippocampal neurogenesis is driven by division-coupled astrocytic differentiation of neural stem cells	8
162	Hänzi	Role of Memo in premature aging and cancer	8
163	Bodmer	Functional aging of the <i>Drosophila</i> heart	15
164	Libert	Dietary restriction and Sirt1 decreases the number and activity of neuronal stem cells in the brain of C57BL/6J mice	8
165	Liu	Expression of <i>p16^{INK4a}</i> in peripheral blood T lymphocytes is a biomarker of human aging	8
166	North	Regulating BubR1 protein stability by sirtuin mediated deacetylation	8
167	Schumacher	Persistent transcription-blocking DNA lesions trigger somatic growth attenuation associated with longevity	8

Session 10 ENVIRONMENT / INTERVENTIONS

SATURDAY 9/27/2008, 2:00 PM

R. Miller / S. Spindler

#	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
	Miller	No abstract	15
168	Aguilaniu	DRM-5 mediates the reversibility of diet induced longevity	8
169	Blander	Modeling the caloric restriction causal network	8
170	Cohen	Investigating Sirt1 as a therapeutic target for Huntington's disease	8
171	Greer	Different methods of dietary restriction evoke independent, but overlapping, genetic pathways in <i>C. elegans</i>	8
	Spindler	No abstract	15
172	Maier	A putative neuropeptide receptor is involved in sensing food types to inhibit <i>C. elegans</i> longevity	8
173	Pearson	Maternal dietary effects on offspring	8
174	Piper	Long-lived insulin-mutant flies display transcriptional and phenotypic evidence that enhanced xenobiotic detoxification systems mediate lifespan extension	8
175	Robb	Resveratrol affects mitochondrial oxidative and reactive oxygen species metabolism	8

A. Brunet / J. Hoeijmakers

#	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
	Brunet	No abstract	15
176	Kondratov	Circadian clock in the control of oxidative stress response, senescence and aging	8
177	Lamming	mTOR signaling in mammalian health and longevity	8
178	Mitchell	Mechanistic overlap between fasting and long-term dietary restriction against acute stress in mice	8
179	Scharffetter-Kochanek	Prooxidant changes to the matrix drive aging	8
	Hoeijmakers	No abstract	15
180	Suh	IGF-1 signaling and human longevity	8
181	Cellerino	Effects of dietary restriction on mortality and age-related dysfunctions in the short-lived fish <i>N. furzeri</i> —Evidence for hormesis?	8
182	van Heemst	Endocrine regulation of familial longevity	8
183	Zainabadi	Sirt1 regulates bone homeostasis in vivo through regulation of osteoblast and osteoclast differentiation	8