

# 14<sup>th</sup> course on Epigenetics - March 7-14, 2018

## A Training Unit International Course - Open conferences in blue or orange

Wednesday, March 7 <sup>th</sup>		Chairs: Geneviève Almouzni and Guillermo Orsi	
09:00	<b>Training Unit</b> Institut Curie	Welcome: practical aspects and posters set-up	
09:30	<b>Geneviève Almouzni &amp; Nathalie Dostatni</b> Institut Curie, Paris - FR	Presentation of the module by the organizers & scientific committee	
09:45	<b>Brunch Committee</b>	Presentation of the brunch	
09:45 10:30	<b>Students presentation &amp; personal work</b>	Short presentation of background and research interest (1 mn each)	
10:30 11:00	<b>BREAK (BDD Hall)</b>		
11:00 11:45	<b>Geneviève Almouzni</b> Institut Curie, Paris - FR	<b>Chromatin assembly in the nucleus: the bricks and the architects</b>	
12:00 12:45	<b>Maria Elena Torres Padilla</b> Helmholtz Zentrum München - DE	<b>Epigenetic mechanisms in early mammalian development</b>	
13:00	<b>LUNCH</b>		<b>Green Cafe</b>
14:00	<b>ALUMNI SESSION</b>		
14:00 14:15	<b>Maud Borensztein</b> Cambridge University - UK	<b>Single cell profiling of X-chromosome dynamics during mouse embryonic development</b>	
14:20 14:35	<b>Aurèle Piazza</b> Institut Pasteur, Paris - FR	<b>The DNA gymnastic and its risks</b>	
14:45 17:45	<b>Epi-Event : Paul Harrison</b> University of Dundee, Dundee - UK	<b>Epigenetic Imagin(ing) workshop</b>	
18:00 19:00	<b>KEYNOTE LECTURE : Robert H. Singer</b> Albert Einstein College of Medicine, New-York - USA	<b>Following the life cycle of single mRNA's in living cells</b>	
19:30	<b>WELCOME RECEPTION</b>		<b>Green Cafe</b>

Amphithéâtre BDD  
11-13 rue Pierre & Marie  
Curie, 75005 Paris

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12 rue Lhomond,  
75005 Paris

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Thursday, March 8 <sup>th</sup>		Chairs: Ines Drinnenberg and Angela Taddei	
09:30 10:15	<b>Céline Vallot</b> Institut Curie, Paris - FR	<b>How data mining and integration can help us understand X chromosome inactivation in humans</b>	Amphithéâtre BDD 11-13 rue Pierre & Marie Curie, 75005 Paris
10:30 10:50	Article presentation by Federica Gervasoni & Pierre-Antoine Mauro	Nagano, Takashi, et al. "Single-cell Hi-C reveals cell-to-cell variability in chromosome structure." Nature 502.7469 (2013): 59.	
11:00	<b>BREAK and GROUP PHOTO</b>		
11:30 12:15	<b>Daniel Jost</b> Faculty of Medicine, La Tronche - FR	<b>Using (polymer) modeling to better understand chromosome organization and dynamics</b>	
12:30 12:50	Article presentation by Lauren Kane & Mathias Schwartz	Sanborn, Adrian L., et al. "Chromatin extrusion explains key features of loop and domain formation in wild-type and engineered genomes." Proceedings of the National Academy of Sciences 112.47 (2015): E6456-E6465/ Fudenberg, Geoffrey, et al. "Formation of chromosomal domains by loop extrusion." Cell reports 15.9 (2016): 2038-2049.	
13:00	<b>LUNCH</b>		Green Cafe
14:00 14:45	<b>Martin Howard</b> John Innes Center, Norwich - UK	<b>Using mathematical modelling and experiments to quantitatively dissect of Polycomb-based epigenetic memory</b>	Amphithéâtre BDD 11-13 rue Pierre & Marie Curie, 75005 Paris
15:00 15:20	Article presentation by Yike Huang & Ludmila Recoules	Dodd, Ian B., et al. "Theoretical analysis of epigenetic cell memory by nucleosome modification." Cell 129.4 (2007): 813-822.	
15:30 16:30	<b>Guided visit of the Curie museum</b>		Musée Curie
16:30 17:15	<b>Valerie Borde</b> Institut Curie, Paris - FR	<b>Histone H3K4 methylation shapes the meiotic recombination landscape</b>	Amphithéâtre BDD 11-13 rue Pierre & Marie Curie, 75005 Paris
17:30 17:50	Article presentation by Mathilde Biot & Quentin Hardy	Davies, Benjamin, et al. "Re-engineering the zinc fingers of PRDM9 reverses hybrid sterility in mice." Nature 530.7589 (2016): 171.	
18:00 18:45	<b>Michele Garfinkel</b> Science Policy Programme Manager, EMBO, Heidelberg - DE	<b>Transparency in Scientific Publishing and in Research Integrity</b>	

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Friday, March 9 <sup>th</sup>		Chairs: Edith Heard and Céline Vallot	
09:30 10:15	<b>Edith Heard</b> Institut Curie, Paris - FR	<b>X inactivation</b>	Amphithéâtre BDD 11-13 rue Pierre & Marie Curie, 75005 Paris
10:30 10:50	Article presentation by Adrian Janiszewski & Anastasia Kovina	Tukiainen, Taru et al. "Landscape of X chromosome inactivation across human tissues". <i>Nature</i> 550.7675 (2017): 244.	
11:00 11:30	<b>BREAK</b>		
11:30 12:15	<b>Antoine Coulon</b> Institut Curie, Paris - FR	<b>Transcriptional Regulation of the 4D genome, an interdisciplinary approach</b>	
12:30 12:50	Article presentation by Antoine Canat & Héloïse Grunchev	Chen, Hongtao, Miki Fujioka, and Thomas Gregor. "Direct visualization of transcriptional activation by physical enhancer-promoter proximity." <i>BioRxiv</i> (2017): 099523.	Green Cafe
13:00	<b>LUNCH</b>		
14:00 14:45	<b>Vincent Colot</b> ENS, Paris - FR	<b>Transposable elements, DNA methylation and transgenerational epigenetics: lessons from plants</b>	Amphithéâtre BDD 11-13 rue Pierre & Marie Curie, 75005 Paris
15:00 15:20	Article presentation by Lin Hedehus & Kalina Timcheva	Williams, Ben P., and Mary Gehring. "Stable transgenerational epigenetic inheritance requires a DNA methylation-sensing circuit." <i>Nature communications</i> 8.1 (2017): 2124.	
15:30	<b>BREAK</b>		
16:00 16:45	<b>Daniele Fachinetti</b> Institut Curie, Paris - FR	<b>The centromere paradox: genetic vs epigenetic, a battle for centromere specification?</b>	
17:00 17:20	Article presentation by Manon Tanguy & Ai Vu Hong	Iwata-Otsubo, Aiko, et al. "Expanded satellite repeats amplify a discrete CENP-A nucleosome assembly site on chromosomes that drive in female meiosis." <i>Current Biology</i> 27.15 (2017): 2365-2373.	
17:30 18:15	<b>Epitalk: Andrew Moore</b> Bioessays, Weinheim - DE	<b>Losing a dimension without losing readers: How to optimize online research articles</b>	Annexes BDD
18:30 20:30	<b>POSTER SESSION 1</b>		

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Saturday, March 10 <sup>th</sup>			
11:00	CAREER DEVELOPMENT WORKSHOP		Cafeteria Institut Curie 25 rue d'Ulm, 1st floor, 75005 Paris
	Organizer: Julia Torne		
		<p><u>Biotech:</u> Giacomo Bastianelli, MeioGenix Kalina Raskin, Ceebios</p> <p><u>Tech transfer:</u> Shauna Katz, Institut Curie</p> <p><u>Science communication and management:</u> Nuno Moreno, IGC Portugal Ioannis Legouras, MDC Berlin</p> <p><u>Industry:</u> Ariane Dimitriov, L'Oréal Johan Le Men, BCG Elisabetta Leo, Astra Zeneca UK</p>	
14:00	<u>FREE AFTERNOON</u>		

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Monday, March 12th		Chairs: Daniele Fachinetti and Iva Simeonova	
09:30 10:15	<b>Ines Drinnenberg</b> Institut Curie, Paris - FR	<b>Evolution of centromeres: Diverse architectures, yet conserved function</b>	Amphithéâtre BDD 11-13 rue Pierre & Marie Curie, 75005 Paris
10:30 10:50	Article presentation by Helene Bordelet & Hayley Porter	Marques, André, et al. "Holocentromeres in Rhynchospora are associated with genome-wide centromere-specific repeat arrays interspersed among euchromatin." Proceedings of the National Academy of Sciences 112.44 (2015): 13633-13638.	
11:00	<b>BREAK</b>		
11:30 12:15	<b>Sylvia Erhardt</b> ZMBH, Heidelberg - DE	<b>Epigenetic centromere regulation: a balancing act to maintain genome stability</b>	
12:30 12:50	Article presentation by Daniela Torres Campana & Tina Uroda	Stankovic, Ana, et al. "A dual inhibitory mechanism sufficient to maintain cell-cycle-restricted CENP-A assembly." Molecular cell 65.2 (2017): 231-246.	Green Cafe
13:00	<b>LUNCH</b>		
14:00 14:45	<b>Saadi Khochbin</b> Institut Albert Bonniot, Grenoble - FR	<b>Molecular basis of post-meiotic male germ cell genome programming</b>	
15:00 15:20	Article presentation by Clement Bonnet & Mariana Schulte-Sasse	Ueda, Jun, et al. "Testis-specific Histone variant H3t Gene is essential for entry into spermatogenesis." Cell reports 18.3 (2017): 593-600.	
15:30	<b>BREAK</b>		Amphithéâtre BDD 11-13 rue Pierre & Marie Curie, 75005 Paris
16:00	<b>Film projection: "La Saga des Nobel"</b>		
16:30 17:15	<b>Amos Tanay</b> Weizmann Institute, Rehovot - IL	<b>Single Cell epigenomics and cellular memory</b>	
17:30 17:50	Article presentation by Laura Moniot-Perron & Marie Villares	Andrey, Guillaume, et al. "A switch between topological domains underlies HoxD genes collinearity in mouse limbs." Science 340.6137 (2013): 1234167.	
18:00 20:00	<b>POSTER SESSION 2</b>		Annexes BDD

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Tuesday, March 13 <sup>th</sup>		Chairs: Antoine Coulon and Valérie Borde	
09:30 10:15	<b>Judith Mine-Hattab</b> Institut Curie, Paris - FR	<b>Break time: Imaging chromatin and DNA repair proteins using advanced microscopy</b>	
10:30 10:50	Article presentation by Duygu Yilmaz & Marijne Schijns	Thrall, Elizabeth S., et al. "Single-molecule imaging reveals multiple pathways for the recruitment of translesion polymerases after DNA damage." <i>Nature communications</i> 8.1 (2017): 2170.	
11:00	<b>BREAK</b>		<b>Amphithéâtre BDD</b> 11-13 rue Pierre & Marie Curie, 75005 Paris
11:30 12:15	<b>Angela Taddei</b> Institut Curie, Paris - FR	<b>The heterochromatin factor Sir3 whips the yeast genome into shape</b>	
12:30 12:50	Article presentation by Manuel Guthmann & Sandra Nitsch	Strom, Amy R., et al. "Phase separation drives heterochromatin domain formation." <i>Nature</i> 547.7662 (2017): 241/ Larson, Adam G., et al. "Liquid droplet formation by HP1α suggests a role for phase separation in heterochromatin." <i>Nature</i> 547.7662 (2017): 236.	
13:00	<b>LUNCH</b>		<b>Green Cafe</b>
14:00 14:45	<b>Danny Reinberg</b> NYU Med School, New-York - USA	<b>One Genome, Multiple Phenotypes, How is this possible?</b>	
15:00 15:20	Article presentation by Seynabou Diop & Xue Zhao	Liefke, Robert, Violetta Karwacki-Neisius, and Yang Shi. "EPOP interacts with Elongin BC and USP7 to modulate the chromatin landscape." <i>Molecular cell</i> 64.4 (2016): 659-672/ Beringer, Malte, et al. "EPOP functionally links Elongin and Polycomb in pluripotent stem cells." <i>Molecular cell</i> 64.4 (2016): 645-658.	
15:30	<b>BREAK</b>		<b>Amphithéâtre BDD</b> 11-13 rue Pierre & Marie Curie, 75005 Paris
16:00 16:45	<b>Nathalie Dostatni</b> Institut Curie, Paris - FR	<b>Transcription Dynamics in living embryos</b>	
17:00 17:20	Article presentation by Sébastien Bastide & Marco Pregolato	Tsai, Albert, et al. "Nuclear microenvironments modulate transcription from low-affinity enhancers." <i>eLife</i> 6 (2017).	
17:30 18:15	<b>Patricia Le Baccon &amp; Aurelien Dauphin</b> Institut Curie, Paris - FR	<b>Advanced microscopy to image the nucleus</b>	
18:30	<b>NIKON IMAGING CENTER VISIT / OMX</b> with Patricia Le Baccon, Tristan Piolot & Olivier Renaud		<b>NIKON Imaging Center</b>
19:30	<b>FAREWELL COCKTAIL &amp; POSTER PRIZE CELEBRATION - BUFFET DINNER</b>		<b>Chez Marie</b>

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Wednesday, March 14 <sup>th</sup>		Chairs: Nathalie Dostatni and Judith Mine-Hattab	
09:30	<b>Debriefing of the course</b>		Amphithéâtre BDD 11-13 rue Pierre & Marie Curie, 75005 Paris
10:00 10:45	<b>Joshua Waterfall</b> Institut Curie, Paris - FR	Learning from rare tumors: genetic mechanisms of oncogenesis	
11:00	<b>BREAK</b>		
11:30 12:30	<b>KEYNOTE LECTURE : Chao-Ting Wu</b> Harvard Med School, Boston - USA	Looking at chromosomes via Hi-C, imaging, and ultraconservation	Amphithéâtre Burg 12 rue Lhomond, 75005 Paris
12:30	<b>LUNCH</b>		Green Cafe
	<b>FAREWELL &amp; DEPARTURE</b>		