Unit Label	City	First Name and last Name of the Head of the team	Brief description of the research performed by the team (3 lines)	5 to 10 main publications related to the proposed thematic scope	proposed thematic scope	supervision				Email	Web site	Comments	Comments ITMO
						Number of PhD	profile, expertise, training (1)	Numb er of Post.	profile, expertise, training (1)				
Avenir Inserm EA 3949	Strasbourg	**Hélène DOLLFUS**	Understanding the pathogenesis of cilia related clinical manifestations especially in Bardet-Biedl syndrome. Devellopng a gene therapy project to treat retinal degeneration in ciliopathies.	1. Stoetzel C, Muller J, Laurier V, Davis EE, Zaghloul NA, Vicaire S, Jacquelin C, Plewniak F, Leitch CC, Sarda P, Hamel C, de Ravel TJ, Lewis RA, Friederich E, Thibault C, Danse JM, Verloes A, Bonneau D, Katsanis N, Poch O, Mandel JL, Dollfus H. Identification of a novel BBS gene (BBS12) highlights the major role of a vertebrate-specific branch of chaperonin-related proteins in Bardet-Biedl syndrome. Am J Hum Genet. 2007;80(1):1-11. 2. Marion V, Stoetzel C, Schlicht D, Messaddeq N, Koch M, Flori E, Danse JM, Mandel JL, Dollfus H. Transient ciliogenesis involving Bardet-Biedl syndrome proteins is a fundamental characteristic of adipogenic differentiation. Proc Natl Acad Sci U S A. 2009 Feb 10;106(6):1820-5. 3. Marion V, Schlicht D, Mockel A, Caillard S, Imhoff O, Stoetzel C, van Dijk P, Brandt C, Moulin B, Dollfus H. Bardet-Biedl syndrome highlights the major role of the primary cilium in efficient water reabsorption. Kidney Int. 2011 4. Laugel V, Dalloz C, Durand M, Sauvanaud F, Kristensen U, Vincent MC, Pasquier L, Odent S, Cormier-Daire V, Gener B, Tobias ES, Tolmie JL, Martin-Coignard D, Drouin-Garraud V, Heron D, Journel H, Raffo E, Vigneron J, Lyonnet S, Murday V, Gubser-Mercati D, Funalot B, Brueton L, Sanchez Del Pozo J, Muñoz E, Gennery AR, Salih M, Noruzinia M, Prescott K, Ramos L, Stark Z, Fieggen K, Chabrol B, Sarda P, Edery P, Bloch-Zupan A, Fawcett H, Pham D, Egly JM, Lehmann AR, Sarasin A, Dollfus H. Mutation update for the CSB/ERCC6 and CSA/ERCC8 genes involved in Cockayne syndrome. Hum Mutat. 2010 Feb;31(2):113-26 5.Mockel A, Perdomo Y, Stutzmann F, Letsch J, Marion V, Dollfus H. Retinal dystrophy in Bardet-Biedl syndrome and related syndromic ciliopathies. Prog Retin Eye Res. 2011 Jul;30(4):258-74.	Study pathogenesis of obeisty in ciliopathies	1	Cell biologist, molecular biologist	1	Cell biologist, molecular biologist	dollfus@unistra.fr Helene.dollfus@chru-strasbourg.fr			**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
Avenir Inserm EA 3949	Strasbourg	**Hélène DOLLFUS**	Understanding the pathogenesis of cilia related clinical manifestations especially in Bardet-Biedl syndrome. Devellopng a gene therapy project to treat retinal degeneration in ciliopathies.	1. Stoetzel C, Muller J, Laurier V, Davis EE, Zaghloul NA, Vicaire S, Jacquelin C, Plewniak F, Leitch CC, Sarda P, Hamel C, de Ravel TJ, Lewis RA, Friederich E, Thibault C, Danse JM, Verloes A, Bonneau D, Katsanis N, Poch O, Mandel JL, Dollfus H. Identification of a novel BBS gene (BBS12) highlights the major role of a vertebrate-specific branch of chaperonin-related proteins in Bardet-Biedl syndrome. Am J Hum Genet. 2007;80(1):1-11. 2. Marion V, Stoetzel C, Schlicht D, Messaddeq N, Koch M, Flori E, Danse JM, Mandel JL, Dollfus H. Transient ciliogenesis involving Bardet-Biedl syndrome proteins is a fundamental characteristic of adipogenic differentiation. Proc Natl Acad Sci U S A. 2009 Feb 10;106(6):1820-5. 3. Marion V, Schlicht D, Mockel A, Caillard S, Imhoff O, Stoetzel C, van Dijk P, Brandt C, Moulin B, Dollfus H. Bardet-Biedl syndrome highlights the major role of the primary cilium in efficient water reabsorption. Kidney Int. 2011 4. Laugel V, Dalloz C, Durand M, Sauvanaud F, Kristensen U, Vincent MC, Pasquier L, Odent S, Cormier-Daire V, Gener B, Tobias ES, Tolmie JL, Martin-Coignard D, Drouin-Garraud V, Heron D, Journel H, Raffo E, Vigneron J, Lyonnet S, Murday V, Gubser-Mercati D, Funalot B, Brueton L, Sanchez Del Pozo J, Muñoz E, Gennery AR, Salih M, Noruzinia M, Prescott K, Ramos L, Stark Z, Fieggen K, Chabrol B, Sarda P, Edery P, Bloch-Zupan A, Fawcett H, Pham D, Egly JM, Lehmann AR, Sarasin A, Dollfus H. Mutation update for the CSB/ERCC6 and CSA/ERCC8 genes involved in Cockayne syndrome. Hum Mutat. 2010 Feb;31(2):113-26 5.Mockel A, Perdomo Y, Stutzmann F, Letsch J, Marion V, Dollfus H. Retinal dystrophy in Bardet-Biedl syndrome and related syndromic ciliopathies. Prog Retin Eye Res. 2011 Jul;30(4):258-74.	Developp preclinical studies with AAV8 for retinal degeneration in BBS KO mice			1	Cell biologist, pharmacologist	dollfus@unistra.fr Helene.dollfus@chru-strasbourg.fr			**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
U625	Rennes	**Michael Primig**	We work on reproductive genomics in yeast and mammals. This includes bioinformatics tool development.	1 Execution of the meiotic noncoding RNA expression program and the onset of gametogenesis in yeast require the conserved exosome subunit Rrp6. Lardenois A, Liu Y, Walther T, Chalmel F, Evrard B, Granovskaia M, Chu A, Davis RW, Steinmetz LM, Primig M. Proc Natl Acad Sci U S A. 2011 Jan 18;108(3):1058-63. Epub 2010 Dec 13. 2 GermOnline 4.0 is a genomics gateway for germline development, meiosis and the mitotic cell cycle. Lardenois A, Gattiker A, Collin O, Chalmel F, Primig M. Database (Oxford). 2010 Dec 11;2010:baq030. Print 2010. 3 MIMAS 3.0 is a Multiomics Information Management and Annotation System. Gattiker A, Hermida L, Liechti R, Xenarios I, Collin O, Rougemont J, Primig M. BMC Bioinformatics. 2009 May 18;10:151. 4 Genome-wide expression profiling, in vivo DNA binding analysis, and probabilistic motif prediction reveal novel Abf1 target genes during fermentation, respiration, and sporulation in yeast. Schlecht U, Erb I, Demougin P, Robine N, Borde V, van Nimwegen E, Nicolas A, Primig M. Mol Biol Cell. 2008 May;19(5):2193-207. Epub 2008 Feb 27. 5 The Annotation, Mapping, Expression and Network (AMEN) suite of tools for molecular systems biology. Chalmel F, Primig M. BMC Bioinformatics. 2008 Feb 6;9:86. 6 The conserved transcriptome in human and rodent male gametogenesis. Chalmel F, Rolland AD, Niederhauser-Wiederkehr C, Chung SS, Demougin P, Gattiker A, Moore J, Patard JJ, Wolgemuth DJ, Jégou B, Primig M. Proc Natl Acad Sci U S A. 2007 May 15;104(20):8346-51. Epub 2007 May 2. 7 Expression profiling of mammalian male meiosis and gametogenesis identifies novel candidate genes for roles in the regulation of fertility. Schlecht U, Demougin P, Koch R, Hermida L, Wiederkehr C, Descombes P, Pineau C, Jégou B, Primig M. Mol Biol Cell. 2004 Mar;15(3):1031-43. Epub 2004 Jan 12.	Reproductive genomics, regulatory networks in the germline, ncRNAs and exosome function in gametogenesis, CT genes, bioinformatics.		2 Biology, Biotechnology , Informatics	2	Moleclar Biology, Developmental biology, yeast cell biology	michael.primig@inserm.fr	http://www.irset.org/		
IGF U661 AVENIR INSERM Team	Montpellier	**Jean-Marc Lemaitre**	We are interested in the mechanisms involved in cell fate plasticity in physiological and pathological aging and rejuvenation	Cell 2005, Gene Dev 2008, EMBO 2008, MCB 2008, Nat Comm 2011, Genes Dev 2011	Reprogramming the cellular aging phenotype		1 Stem cell Biologist	1	Stem cell Biologist	Jean-Marc.Lemaitre@igf.cnrs.fr			
Inserm U661	Montpellier	**Frederic Bienvenu**	Cell Cycle Clock Genomics. We aim at deciphering the transcriptional impact of G1-Cyclins in cancer and in the nervous system. Our ultimate goal is to target Cyclin D1 activity to cure cancer and/or prevent from neurodegenerative diseases like Parkinson.	*Cyclin E Constrains Cdk5 Activity to Regulate Synaptic Plasticity and Memory Formation.* **Dev. Cell**: In Press, Manuscript Number: DEVELOPMENTAL-CELL-D-11-00560R2. *A function for cyclin D1 in DNA repair uncovered by protein interactome analyses in human cancers.* **Nature.** 2011 Jun 8;474(7350):230-4. *Transcriptional role of cyclin D1 in development revealed by a genetic-proteomic screen.* **Nature.** 2010 Jan 21;463(7279):374-8. *Transcriptional regulation by a DNA-Associated Form of Cyclin D1.***Mol Biol Cell**. 2005 Apr;16(4):1850-8.*Kaposi sarcoma-associated viral cyclin K overrides cell growth inhibition mediated by oncostatin M through STAT3 inhibition***Blood.** 2003 May 15;101(10):4070-7.*Functional Interaction of STAT3 Transcription Factor with the Coactivator Ncoa5/SRC1a.* **J. Biol. Chem.** 2002. 277 (10) : 8004-8011.*Direct Repression of STAT3 Transcriptional Activation by Cyclin D1 Through a Cdk4-Independent Mechanism.* **J Biol Chem.** 2001. 276(20):16840-16847	Analysis of super-order chromatin structure in the regulation of Cyclin D1 gene expression in physiological and pathological situations		3 Molecular or cellular biologists with knowledge in Genomics, proteomics, genetics, bioinformatics	2	Molecular or cellular biologists with knowledge in Genomics, proteomics, genetics, bioinformatics	Frederic.Bienvenu@igf.cnrs.fr	http://www.igf.cnrs.fr/spip.php?article390		
Inserm U740	Paris	**Elisabeth Tournier-Lasserve**	Topics: Rare diseases Identification of the genes and mechanisms of hereditary cerebrovascular malformations and Small Vessel Disease of the brain with a specific focus on Cerebral Cavernous Malformations, Moyamoya and CADASIL, using both HTP molecular technologies and characterization of transgenic neurovascular mouse models.	Cerebrovascular malformations topics : - Boulday G, Rudini N, Maddaluno L, Blécon A, Arnould M, Gaudric A, Chapon F, Adams RH, Dejana E, Tournier-Lasserve E. Developmental timing of CCM2 loss influences cerebral cavernous malformations in mice. J Exp Med. 2011 Aug 29;208(9):1835-47. - Miskinyte S, Butler MG, Hervé D, Sarret C, Nicolino M, Petralia JD, Bergametti F, Arnould M, Pham VN, Gore AV, Spengos K, Gazal S, Woimant F, Steinberg GK, Weinstein BM, Tournier-Lasserve E. Loss of BRCC3 deubiquitinating enzyme leads to abnormal angiogenesis and is associated with syndromic moyamoya. Am J Hum Genet. 2011 Jun 10;88(6):718-28. - Dejana E, Tournier-Lasserve E, Weinstein BM.The control of vascular integrity by endothelial cell junctions: molecular basis and pathological implications. Dev Cell. 2009 Feb;16(2):209-221. - Labauge, P., Denier, C., Bergametti, F., and Tournier-Lasserve, E. Genetics of cavernous angiomas. Lancet Neurol. 2007 6(3):237-44. - Boulday, G., Blécon, A., Petit, N., Chareyre, F., Garcia, L.A., Niwa-Kawakita, M., Giovannini, M., and Tournier-Lasserve E. Tissue-specific conditional CCM2 knockout mice establish the essential role of endothelial CCM2 in angiogenesis: implications for human cerebral cavernous malformations.Dis Model Mech. 2009 2(3-4):168-77.	* PhD level: In most genetic diseases affecting brain and retina vessels, the genes, and mechanisms are unknown. The project is to identify the genes involved in one of these conditions using state-of-the-art high through put technologies (NGS sequencing, transcriptomics etc...), taking advantage of the large collections of clinically annotated families gathered in the the lab and our internationally recognized expertise in this field. * Post-doct level / Deciphering the mechanisms of 2 hereditary cerebrovascular malformations, cerebral cavernous angiomas and Moyamoya, using state of the art approaches in mouse models which are already available in the lab.	1-3	Molecular biology, Molecular genetics, Bioinformatics , Generation and charateritazio n of transgenic mouse neurovascular models (from embryo to adult mice), Omics	2-3	Molecular biology, Molecular genetics, Bioinformatics, Generation and charateritation of transgenic mouse neurovascular models (from embryo to adult mice), Omics	tournier-lasserve@univ-paris-diderot.fr	Under const	The surface of the lab is 450 square meters. Main equipments include : - Molecular biology: Luminometer (Berthold Lumat LB 9507), 10 PCR apparatus (Applied Biosystem Gene Amp PCR Syst 2700); Real time PCR apparatus (MyiQTM Single-Color Real-Time PCR detection system, BioradJHTP. In addition, UMR 740 has a daily access to two APPLIED 3130 capillary sequencing apparatus and a a novel 3500 XL machine will arrive within the next 2 months. In addition we have access to a shared HTP sequencing platform. - Radioactive Isotopes manipulation: 2 rooms accredited by the Research Ministry for the use of P32/P33/S35 and C14; Tricarb 1600- Packard scintillating counter - Culture room 2 rooms (Biosafety Level 2) fully equipped - Histology / Immunohistochemistry: Perfusion pump (MasterFlex), dissecting scopes (Wild/Heerbrugg ; Nikon); paraffin embedding station (Leica Eg1160); Microtome (Leica RM2125); Ultracut (OMU3, Reichert), Cryostat (Leica CM1850); Microscope (Leica DMR) ; Flurorescence microscope (Nikon Eclipse TE300); Cameras (Nikon Digital Still DXM1200) - Frozen tissue samples and frozen cells storage: Three large capacity –80 °C freezers / 10 liquid nitrogen 300l containers / 12 freezers –20°C / Biobank ADN, peripheral and EBV transformed cell lines > 10 000 samples from patients for whom clinical data are available in the lab) - Cerebrovascular reactivity, perfusion and cerebral metabolism measurement: Laser-Doppler flowmeter (Moor Instrument MBF3-Dual), 4-Multichannel recorder (Gould RS 3400), Blood gazes analysis (Ciba corning 248), PowerLab /8SP (AD Instruments), ventilation pump (SAR 830/AP, CWE), Non invasive blood pressure monitors for mouse with Powerlab ML866, Analytical Imaging station (MCID, Interfocus) Mouse activity: Actitrak (LE811 motor activity monitor, Panlab) - Computers and bioinformatics : a total of 25 computers, including 2 server machines are available in the lab. One informatician is taking care of our informatics facility . - Animal facility: Mice are housed in the animal facility located on the 4th floor of our building. It is accredited as a Research Animal Facility by the Veterinary Services Head Office of Paris for the Accreditation of Laboratory Animal Care and registered with Police Headquarter of Paris.		**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
UMR-S 757	Orsay	**Emmanuel Jacquemin** *(responsable d'équipe: Laurent Combettes)*	PFIC2 is an autosomal recessive liver disease caused by mutations in the ABCB11 gene (ATP-Binding Cassette B11) which codes for the bile salt export pump (BSEP). The onset of the disease arises at early neonate or in infancy with a progressive decrease in bile secretion leading to cirrhosis and liver failure. In most cases, liver transplantation is the only alternative. Many mutations in the ABCB11 gene have been identified. The objectives of our project are: i) the characterization of abnormal expression and function of mainly missense mutants, and ii) the development of specific pharmacological therapies aimed at correcting protein dysfunction in genotypically selected patients	1-Maggiore G, Gonzales E, Scheres M, Redon MJ, Grosse B, Stieger B, Davit-Spraul A, Fabre M, Jacquemin E. Relapsing features of bile salt export pump deficiency after liver transplantation in two patients with progressive familial intrahepatic cholestasis type 2. J Hepatol. 2010 Nov;53(5):981-6. 2-Gonzales E, Jacquemin E. Mutation specific drug therapy for progressive familial or benign recurrent intrahepatic cholestasis : a new tool in a near feature ? J Hepatol. 2010; 53(2):385-7. 3-Siebold L, Dick AAS, Thompson R, Maggiore G, Jacquemin E et al. Recurrent Low Gamma Glutamyl Transpeptidase Cholestasis following Liver Transplantation for BSEP Disease. Liver Transplantation 2010 Jul;16(7):856-63. 4-Davit-Spraul A, Gonzales E, Baussan C, Jacquemin E. The spectrum of liver diseases related to ABCB4 gene mutations: Pathophysiology and clinical aspects. Semin Liv Dis, 2010,30(2):134-46 5-Davit-Spraul A, Fabre M, Branchereau S, Baussan C, Gonzales E, Stieger B, Bernard O, Jacquemin E. ATP8B1 and ABCB11 analysis in 62 children with normal gamma-glutamyl transferase progressive familial intrahepatic cholestasis (PFIC): Phenotypic differences between PFIC1 and PFIC2 and natural history. Hepatology. 2010;51(5):1645-55 6-Gonzales E, Gerhardt MF, Fabre M, Setchell KD, Davit-Spraul A, Vincent I, Heubi JE, Bernard O, Jacquemin E. Oral Cholic Acid for Hereditary Defects of Primary Bile Acid Synthesis: A Safe and Effective Long-term Therapy. Gastroenterology. 2009 ;137(4):1310-1320.	BSEP mutations and Progressive Familial Intrahepatic Cholestasis (PFIC)	1	Cell biologist	1	Cell biologist	emmanuel.jacquemin@bct.aphp.fr	Association de Biologie Cellulaire du Grand Campus http://biocell.cnrs-gif.fr Publish in Biology of the Cell - http://www.biolcell.org		
INSERM U781	Paris	**MUNNICH Arnold and ROTIG Agnes**	We aim at retracing mitochondrial DNA segregation during human embryofetal development, by assessing the physiological consequences of a mtDNA mutation over mtDNA metabolism (mtDNA amount, mtDNA replication, mtDNA translation), in order to improve the predictive value of prenatal and preimplantation genetic diagnosis for mtDNA mutations.	1-Poor Correlations in the Levels of Pathogenic Mitochondrial DNA Mutations in Polar Bodies versus Oocytes and Blastomeres in Humans. Gigarel N, Hesters L, Samuels Dc, Monnot S, Burlet P, Kerbrat V, Lamazou F, Benachi A, Frydman R, Feingold J, Rotig A, Munnich A, Bonnefont JP, Frydman N, Steffann J. 2011 - Am J Hum Genet 88(4):494-8 2- Segregation of mtDNA Throughout Human Embryofetal Development: m.3243A>G as a Model System. Monnot S, Gigarel N, Samuels Dc, Burlet P, Hesters L, Frydman N, Frydman R, Kerbrat V, Funalot B, Martinovic J, Benachi A, Feingold J, Munnich A, Bonnefont JP, Steffann J. 2011 - Hum Mutat 32(1):116-25 3- Nuclear transfer to prevent mitochondrial DNA diseases: myth or reality? Steffann J,. Monnot S, Rotig A, Munnich A, Bonnefont JP. Med Sci. 2010 4- Stability of the m.8393T>G mtDNA mutation load during human embryofetal development has implications for the feasibility of prenatal diagnosis in NARP syndrome. Steffann J, Gigarel N, Corcos J, Bonniere-Darcy M, Echa-Razavi F, Sinico M, Prevot S, Dumez Y, Yamgnane A, Frydman R, Munnich A, Bonnefont JP. 2007 - J. Med. Genet. 44(10):664-669 5- Analysis of mtDNA variant segregation during early human embryonic development: a tool for successful NARP preimplantation diagnosis. Steffann J, Frydman N, Gigarel N, Burlet P, Ray PF, Fanchin R, Feyereisen E, Kerbrat V, Tachdjian G, Bonnefont JP, Frydman R, Munnich A. 2006 - J. Med. Genet. 43(3):244-247	Mitochondrial DNA metabolism in human mitochondrial DNA disorders		0 genetics, cell biology, embryology	1	genetics, cell biology, embryology	julie.steffann@inserm.fr	http://www.necker.fr/recherche/units/detail.php?id=8	we have a candidate who is experencied in the field and very interested by joining our team	
INSERM U781	PARIS	**Céline Colnot (ATIP-Avenir team)**	Origins and Functions of skeletal stem cells in bone development and bone regeneration	2. Colnot, C., de la Fuente, L., Huang, S., Hu, D., Lu, C., St-Jacques, B. and Helms, J. Indian Hedgehog synchronizes skeletal angiogenesis and perichondrial maturation with cartilage development. Development, 2005 March 132(5):1057-67. 3. Behonick D. J., Xing Z., Lieu S., Buckley J.M., Lotz J. C., Marcucio R. S., Werb Z., Miclau T. and Colnot C. Role of Matrix metalloproteinase 13 in both endochondral and intramembranous ossification during skeletal regeneration. PLoS ONE, 2007 Nov 7; 2(11):e1150. Martin I: Faculty of 1000, 20 Jan 2009. F1000.com/1144893. 4. Colnot, C. Skeletal cell fate decisions within periosteum and bone marrow during bone regeneration. Journal of Bone and Mineral Research, 2009; 24:274-282. 5. Yu, Y.Y., Lieu, S, Lu,C and Colnot, C. BMP2 stimulates endochondral ossification by regulating periosteal cell fate during fracture repair. Bone, 2010 Jul, 47:65-73, Epub 2010/03/30. 6. Lieu S, Hansen E, Dedini R, Behonick D, Werb Z, Miclau T, Marcucio R, Colnot C. Impaired remodeling phase of fracture repair in the absence of matrix metalloproteinase-2. Disease Models and Mechanisms. 2011 Mar;4(2):203-11.	The goals of our projects are (1) to better characterize the sources of skeletal stem cells that are required for bone regeneration, (2) establish how these cell populations are established during development and growth of the skeleton and (3) to understand how endogenous stem cells are recruited in vivo to participate in bone repair in the adult. We are investigating the role of potential stem cell populations within bone marrow and periosteum, and of other sources such as muscle, through functional and cell lineage analyses in mouse models of bone regeneration.	1	cell biology	1	cell biologist	celine.colnot@inserm.fr			

INSERM U781	PARIS	**ASMA SMAHI**	Study of molecular mechanisms underlying the inflammatory reaction in patients with generalised pustular psoriasis (von Zumbusch)	*Marrakchi S, Guigue P, Renshaw BR, Puel A, Pei XY, Fraitag S, Zribi J, Bal E, Cluzeau C, Chrabieh M, Towne JE, Douangpanya J, Pons C, Mansour S, Serre V, Makni H, Mahfoudh N, Fakhfakh F, Bodemer C, Feingold J, Hadj-Rabia S, Favre M, Genin E, Sahbatou M, Munnich A, Casanova JL, Sims JE, Turki H, Bachelez H and Smahi A. Interleukin-36-receptor antagonist deficiency and generalized pustular psoriasis. **N Engl J Med. 2011** Aug 18;365(7):620-8. *Viguier M, Guigue P, Pagès C, Smahi A and Bachelez H. Successful treatment of generalized pustular psoriasis with the interleukin-1-receptor antagonist Anakinra: lack of correlation with IL1RN mutations. **Ann Intern Med. 2010** Jul 6;153(1):66-7. *Zhang SY, Jouanguy E, Ugolini S, Smahi A, Elain G, Romero P, Segal D, Sancho-Shimizu V, Lorenzo L, Puel A, Picard C, Chappier A, Plancoulaine S, Titeux M, Cognet C, von Bernuth H, Ku CL, Casrouge A, Zhang XX, Barreiro L, Leonard J, Hamilton C, Lebon P, Héron B, Vallée L, Quintana-Murci L, Hovnanian A, Rozenberg F, Vivier E, Geissmann F, Tardieu M, Abel L and Casanova JL. TLR3 deficiency in patients with herpes simplex encephalitis. **Science. 2007 Sep** 14;317(5844):1522-7	Genetic and immunological characterization of autosomal recessive generalized pustular psoriasis in four multiplex consanguineous families.		molecular and cellular biologist		immunologist , cellular biologist	asma.smahi@inserm.fr			Important to support
Inserm U787	Paris	**Edgar GOMES**	In our lab we are interested in understanding how the cytoskeleton regulates nuclear positioning and what is the role of nuclear positioning during cell migration and myofiber formation. We are also curious to know how mutations in proteins associated with muscular dystrophies interfere with nuclear position during myofiber formation. We use different molecular and cellular approaches in combination with time-lapse imaging analysis to address these questions. More information in http://www.myologygroup.net/	Luxton GW*, Gomes ER*, Folker ES, Vintinner E, Gundersen GG. Linear arrays of nuclear envelope proteins harness retrograde actin flow for nuclear movement. Science. 2010 Aug 20;329(5994):956-9. *co-first author Kathryn J. Mitchell Alice Pannérec, Bruno Cadot, Ara Parlakian, Vanessa Besson, Edgar R. Gomes, Giovanna Marazzi, and David A. Sassoon, "Identification and characterisation of a non-satellite cell resident muscle progenitor during postnatal development", 2010, Nature Cell Biology, 2010 Mar;12(3):257-66 Cecilia Östlund, Eric S. Folker, Jason C. Choi, Edgar R. Gomes, Gregg G. Gundersen, Howard J. Worman, "Dynamics and Molecular Interactions of Linker of Nucleoskeleton and Cytoskeleton (LINC) Complex Proteins", Journal of Cell Science, 2009 ;122:4099-108. E.R. Gomes, S. Jani, G.G. Gundersen "Nuclear movement regulated by Cdc42, MRCK, myosin, and actin flow establishes MTOC polarization in migrating cells ", Cell, 2005, 121: 451-63 K.J. Evans, E.R. Gomes, S.M. Reisenweber, G.G. Gundersen, B.P. Lauring "Linking axonal degeneration to microtubule remodelling by Spastin-mediated microtubule severing", J. Cell Biology, 2005, 168: 599-606 D.L. Dujardin, L.E. Barnhart, S.A. Stehman, E.R. Gomes, G.G. Gundersen, R.V. Vallee "A role for cytoplasmic dynein and LIS1 in directed cell movement" J. Cell Biology, 2003, 22;163:1205-11	We have identified multiple unknown nuclear envelope proteins and we will understand how these proteins connect to the actin and microtubule cytoskeleton and how they are involved in nuclear positioning during cell migration	1	cell biology, molecular biology, microscopy, biochemistry	1	cell biology, molecular biology, microscopy, biochemistry	edgar.gomes@upmc.fr	http://nuclear.movement.googlepages.com/		
Inserm U787	Paris	**Edgar GOMES**	In our lab we are interested in understanding how the cytoskeleton regulates nuclear positioning and what is the role of nuclear positioning during cell migration and myofiber formation. We are also curious to know how mutations in proteins associated with muscular dystrophies interfere with nuclear position during myofiber formation. We use different molecular and cellular approaches in combination with time-lapse imaging analysis to address these questions. More information in http://www.myologygroup.net/	Luxton GW*, Gomes ER*, Folker ES, Vintinner E, Gundersen GG. Linear arrays of nuclear envelope proteins harness retrograde actin flow for nuclear movement. Science. 2010 Aug 20;329(5994):956-9. *co-first author Kathryn J. Mitchell Alice Pannérec, Bruno Cadot, Ara Parlakian, Vanessa Besson, Edgar R. Gomes, Giovanna Marazzi, and David A. Sassoon, "Identification and characterisation of a non-satellite cell resident muscle progenitor during postnatal development", 2010, Nature Cell Biology, 2010 Mar;12(3):257-66 Cecilia Östlund, Eric S. Folker, Jason C. Choi, Edgar R. Gomes, Gregg G. Gundersen, Howard J. Worman, "Dynamics and Molecular Interactions of Linker of Nucleoskeleton and Cytoskeleton (LINC) Complex Proteins", Journal of Cell Science, 2009 ;122:4099-108. E.R. Gomes, S. Jani, G.G. Gundersen "Nuclear movement regulated by Cdc42, MRCK, myosin, and actin flow establishes MTOC polarization in migrating cells ", Cell, 2005, 121: 451-63 K.J. Evans, E.R. Gomes, S.M. Reisenweber, G.G. Gundersen, B.P. Lauring "Linking axonal degeneration to microtubule remodelling by Spastin-mediated microtubule severing", J. Cell Biology, 2005, 168: 599-606 D.L. Dujardin, L.E. Barnhart, S.A. Stehman, E.R. Gomes, G.G. Gundersen, R.V. Vallee "A role for cytoplasmic dynein and LIS1 in directed cell movement" J. Cell Biology, 2003, 22;163:1205-11	multiple muscle disorders originate mispositioned nuclei in skeletal muscle. We are studying how mutations associated with these disorders, in particular centronuclear myopathies, give rise to these phenotypes and how are these mutations associated with changes within the muscle fibers			1	cell biology, molecular biology, microscopy, biochemistry	edgar.gomes@upmc.fr	http://nuclear.movement.googlepages.com/		
Inserm U-788	Le Kremlin-Bicetre	**Judith MELKI**	Genetic basis of motor neuron diseases and arthrogryposis, the fetal expression of neuromuscular diseases. Based on a national cohort of patients, we are applying new genomic technologies to identify new genes having a critical function on the development and maintenance of the neuromuscular system.	LEFEBVRE S., BÜRGLEN L, REBOULLET S, CLERMONT O., BURLET P., VIOLLET L., BENICHOU B., CRUAUD C., MILLASSEAU P., ZEVIANI M., LE PASLIER D., FRÉZAL J., COHEN D, WEISSENBACH J, MUNNICH A. and MELKI J. Identification and characterization of a spinal muscular atrophy determining gene. Cell 1995; 80; 155-165 BÜRGLEN L, AMIEL J., VIOLLET L., LEFEBVRE S., BURLET P., CLERMONT O, RACLIN V, LANDRIEU P., VERLOES A, MUNNICH A. and MELKI J. SMN gene deletion in the arthrogryposis multiplex congenita-spinal muscular atrophy association. J. Cli. Invest. 1996; 98: 1130-1132 LEFEBVRE S, BURLET P, LIU Q, BERTRANDY S, CLERMONT O, MUNNICH A, DREYFUSS G and MELKI J. Correlation of severity with the SMN protein level in spinal muscular atrophy. Nature Genetics, 1997 16, 265-269 CIFUENTES-DIAZ C., FRUGIER T, TIZIANO FD, LACENE E, ROBLOT N, JOSHI V, MOREAU MH, MELKI J. Deletion of murine SMN exon 7 directed to skeletal muscle leads to severe muscular dystrophy. J. Cell Biol. 2001 152: 1107-1114 CIFUENTES-DIAZ C, NICOLE S, VELASCO ME, BORRA-CEBRIAN C, PANOZZO C, FRUGIER T, MILLET G, ROBLOT N, JOSHI V, MELKI J. Neurofilament accumulation at the motor endplate and lack of axonal sprouting in a spinal muscular atrophy mouse model. Hum Mol Genet. 2002 11:1439-47. NICOLE S, DESFORGES B, MILLET G, LESBORDES J, CIFUENTES-DIAZ C, VERTES D, CAO ML, DE BACKER F, LANGUILLE L, ROBLOT N, JOSHI V, GILLIS JM and MELKI J. Intact satellite cells lead to remarkable protection against Smn gene defect in differentiated skeletal muscle J Cell Biol. 2003; 161:571-82. TARRADE A, FASSIER C, COURAGEOT S, CHARVIN D, VITTE J, PERIS L, THOREL A, MOUISEL E, FONKNECHTEN N, ROBLOT N, SEILHEAN D, DIÉRICH A, HAUW JJ and MELKI J. A mutation of spastin is responsible for swellings and impairment of transport in a region of axon characterized by changes in microtubule composition. Hum Mol Genet. 2006 15:3544-58. VITTE J, FASSIER C, TIZIANO FD, DALARD C, SOAVE S, ROBLOT N, BRAHE C, SAUGIER-VEBER P, BONNEFONT JP, MELKI J. Refined characterization of the expression and stability of the SMN gene products. Am J Pathol. 2007 171:1269-80. LANDERS JE, MELKI J, MEININGER V, et al. Reduced expression of the Kinesin-Associated Protein 3 (KIFAP3) gene increases survival in sporadic amyotrophic lateral sclerosis. Proc Natl Acad Sci U S A. 2009 106:9004-9. ATTALI R, WARWAR N, ISRAEL A, GURT I, MCNALLY E, PLICKELWARTZ M, GLICK B, NEVO Y, BEN-NERIAH Z, MELKI J. Mutation of SYNE-1, encoding an essential component of the nuclear lamina, is responsible for autosomal recessive arthrogryposis. Hum Mol Genet. 2009 18:3462-9.	Genetic investigation of arthrogryposis multiplex congenita of neuromuscular origin		Molecular genetics; molecular biologist	1	molecular biologist	judith.melki@inserm.fr			**To support in priority , in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
INSERM U823	Grenoble	**Stefan DIMITROV**	Our research is focused on chromatin and epigenetics. We are interested in the epigenetic roles of histone postranslational modifications, chromatin remodeling machines and histone variants under normal and pathological conditions.	*1. Angelov, D. et al.(2003) Molecular Cell 11, 1033-1041 2. Vincent et al. (2004) Molecular Cell, 16(3), 439-452(3. Angelov, D. et al.(2004) The EMBO J, 23, 3815-3824 4. Angelov et al. (2006) The EMBO J, 25, 1669-1679 5. Doyen et al. (2006) The EMBO J 25, 4234-4244" 6. Ouarahni et al. (2006) Genes&Dev. 20 (23), 3324-3336 7. Mietton et al. (2009) Mol. Cell. Biol. 29:150-156 8. Shukla et al. (2010) Proc. Natl. Acad. Sci. USA 107(5):1936-41 9. Shuaib et. al. (2010) Proc. Natl. Acad. Sci. USA 107(4):1349-54 10. Syed et al. (2010) Proc. Natl. Acad. Sci. USA 107, 9620-9625	Epigenetic roles of histone postranslational modifications, chromatin remodeling machines and histone variants under normal and pathological conditions.	2 Ph.D. students	(1) Chromatin biology (2) Cell biology (3) Molecular biology	2 Post-docs	(1) Chromatin biology (2) Cell biology (3) Molecular biology	dimitrov@ujf-grenoble.fr			
INSERM U823	Grenoble	**Saadi Khochbin**	This team develops highly interconnected basic and translational reseach programs in the field of male genome programming and somatic cancers	1 - Tan et al., Identification of 67 histone marks and histone lysine crotonylation as a new type of histone modification. 2011, Cell, 2011 Sep 16;146(6):1016-28 2 - Reynoird et al., Oncogenesis by sequestration of CBP/p300 in transcriptionally inactive hyperacetylated chromatin domains. EMBO J. 2010 Sep 1;29(17):2943-52. 3 - Govin et al., Systematic screen reveals new functional dynamics of histones H3 and H4 during gametogenesis. Genes Dev. 2010 Aug 15;24(16):1772-86. 4 - Morinière et al., Cooperative binding of two acetylation marks on a histone tail by a single bromodomain. Nature. 2009 Oct 1;461(7264):664-8. 5 -Sasaki et al., Real-time imaging of histone H4 hyperacetylation in living cells. Proc Natl Acad Sci U S A. 2009 Sep 22;106(38):16257-62. 6 - Boyault et al., HDAC6 controls major cell response pathways to cytotoxic accumulation of protein aggregates. Genes Dev. 2007 Sep 1;21(17):2172-81 7 - Delaval et al., Differential histone modifications mark mouse imprinting control regions during spermatogenesis. EMBO J. 2007 Feb 7;26(3):720-9. 8 - Govin et al., Pericentric heterochromatin reprogramming by new histone variants during mouse spermiogenesis. J Cell Biol. 2007 Jan 29;176(3):283-94. 9 - Boyault et al., HDAC6-p97/VCP controlled polyubiquitin chain turnover. EMBO J. 2006 Jul 26;25(14):3357-66 10 - Col et al., HIV-1 Tat targets Tip60 to impair the apoptotic cell response to genotoxic stresses.EMBO J. 2005 Jul 20;24(14):2634-45 1 - Tan et al., Identification of 67 histone marks and histone lysine crotonylation as a new type of histone modification. 2011, Cell, 2011 Sep 16;146(6):1016-28 2 - Reynoird et al., Oncogenesis by sequestration of CBP/p300 in transcriptionally inactive hyperacetylated chromatin domains. EMBO J. 2010 Sep 1;29(17):2943-52. 3 - Govin et al., Systematic screen reveals new functional dynamics of histones H3 and H4 during gametogenesis, Genes Dev. 2010 Aug 15;24(16):1772-86. 4 - Morinière et al., Cooperative binding of two acetylation marks on a histone tail by a single bromodomain. Nature. 2009 Oct 1;461(7264):664-8. 5 -Sasaki et al., Real-time imaging of histone H4 hyperacetylation in living cells. Proc Natl Acad Sci U S A. 2009 Sep 22;106(38):16257-62. 6 - Boyault et al., HDAC6 controls major cell response pathways to cytotoxic accumulation of protein aggregates. Genes Dev. 2007 Sep 1;21(17):2172-81 7 - Delaval et al., Differential histone modifications mark mouse imprinting control regions during spermatogenesis. EMBO J. 2007 Feb 7;26(3):720-9. 8 - Govin et al., Pericentric heterochromatin reprogramming by new histone variants during mouse spermiogenesis. J Cell Biol. 2007 Jan 29;176(3):283-94. 9 - Boyault et al., HDAC6-p97/VCP controlled polyubiquitin chain turnover. EMBO J. 2006 Jul 26;25(14):3357-66 10 - Col et al., HIV-1 Tat targets Tip60 to impair the apoptotic cell response to genotoxic stresses.EMBO J. 2005 Jul 20;24(14):2634-45	The candidate will work on specific strategies to use our knowledge of male-specific epigenetic factors, which are aberrantly expressed in somatic cancers, as a mean to specifically target the malignant cells.	3	Molecular and cell biology with a knowledge of chromatin and epigenetic processes	0	Chromatin biology, acetylation biology, molecular and cellular biology and bio-informatics	khochbin@ujf-grenoble.fr			
Inserm U 827	Montpellier	**Mireille Claustres**	Our team investigates molecular mechanisms responsible for rare genetic diseases (i.e. Abnormal splicing or transcription, micro RNAs, epigenetic marks); it also develops dedicated bioinformatic tools and locus specific databases.	1. Functional analysis of a promoter variant identified in the CFTR gene in cis of a frameshift mutation.Viart V, et al. Eur J Hum Genet. [Epub ahead of print] (2011) 2. Pure intronic rearrangements leading to aberrant pseudoexon inclusion in dystrophinopathy: a new class of mutations? Khelifi MM, et al., Hum Mutat.32(4):467-75. (2011) 3. Heterochromatic genes undergo epigenetic changes and escape silencing in (ICF) syndrome. Brun ME, et al. PLoS One. 29;6(4):e19464. (2011) 4. Variants in CFTR untranslated regions are associated with congenital bilateral absence of the vas deferens. Lopez E, et al., J Med Genet. 48(3):152-9. (2011) 5. Nasal epithelial cells are a reliable source to study splicing variants in Usher syndrome. Vaché C, et al., Hum Mutat. 31(6):734-41.(2010) 6. NF-E2-related factor 2, a key inducer of antioxidant defenses, negatively regulates the CFTR transcription. René C, et al., Cell Mol Life Sci. 67(13):2297-309. (2010) 7. The USH2A c.2299delG mutation: dating its common origin in a Southern European population. Aller E, et al., Eur J Hum Genet. 18(7):788-93. (2010) 8. Ex vivo splicing assays of mutations at noncanonical positions of splice sites in USHER genes. Le Guédard-Méreuse S, et al., Hum Mutat. 31(3):347-55. (2010)	To develop high throughput approaches based on next generation sequencing technologies for gene expression profiling (transcriptome, splicing isoforms, microRNAs, epigenetics) or identification of disease genes (targeted exome sequencing).	1	Molecular biology, cell biology, human genetics	2	Molecular biology, cell biology, human genetics, skills in bioinformatics	mireille.claustres@inserm.fr		Invited by Brazilian collegues to present their research in the Genetics Congress in Brazil in 2012	Important to support
INSERM U839	Paris	**René-Marc MEGE**	The general scope of the team is the study of the molecular mechanisms of cadherin based cell adhesion and associated cytoskeletal dynamics regulating neuro-epithelial and neuronal cell migration. A particular interest is given to acto-myosin and microtubule related mechanisms allowing mechano-transduction and mechanosensing at cell cell contacts as well as cell polarization. This implication of these regulations in neuronal cell and neurites migration is central.	Gavard J.; Lambert M.; Grosheva I.; Marthiens V.; Irinopoulou T.; Riou J-F.; Bershadsky A. et Mège R.M. Lamellipodium extension and cadherin adhesion: two cell responses to cadherin activation relying on distinct signalling pathways. J.Cell Sci. 2004, 117: 257-270. Marthiens V.; Gavard J.; Padilla F.; Monnet C.; Castellani V.; Lambert M. et Mège R.M. Functional properties of cadherin-11, a cell adhesion receptor involved in motor axon elongation and fasciculation. Mol. Cell. Neurosci 2005, 28: 715-726. Thoumine O.; Lambert M.; Mège R.M. et Choquet D. Regulation of N-cadherin dynamics at neuronal contacts through ligand binding and cytoskeletal coupling Mol.Biol.Cell 2006 17: 862-875. Mège R.M., Gavard J. et Lambert M. Regulation of cell-cell junctions by the cytoskeleton. Curr.Opin.Cell Biol. 2006 18:541-548. Lambert M.; Thoumine O; Brévier J.; Riveline D.; Choquet D. et Mège RM. Formation and dynamics of cadherin adhesions. Exp. Cell Res. 2007, 313: 4025-4040. Boscher C. et Mège RM. Cadherin-11 interacts with the FGF receptor and induces neurites outgrowth through associated downstream pathways. Cell. Signal. 2008, 20: 1061-1072. Bard L.; Boscher C.; Lambert M.; Mège R.M.; Choquet D. et Thoumine O. A molecular clutch between the actin flow and N-cadherin adhesions drives growth cone migration. J. Neurosci. 2008, 28:5879-90. Giannone G.; Mège R.M. et Thoumine O. Multi-level Clutches in motile cell processes. Trends Cell Biol. 2009 19:475-486. Ladoux B., Anon E., Lambert M., Rabodzey A., Hersen P., Buguin A., Silberzan P., et Mège R.M. Strength dependence of cadherin-mediated adhesions. Biophysical J. 2010. 98 : 534-542.	Molecular biology of intercellular adhesion, mechano-transduction at cell-cell contacts	5	Cell biologist or Biochemist	1	Cell biologist	rene-marc.mege@inserm.fr	http://www.u839.idf.inserm.fr/		
CECS/Istem	Evry	**Alexandra BENCHOUA**	Our team used human pluripotent stem cells to study pathologies affecting brain development	1: Claire Boissart, Xavier Nissan, Karine Giraud-Triboult, Marc Peschanski, Alexandra Benchoua. MiR 125 potentiates early neural specification of human embryonic stem cells, 2012 Development. Apr.;139(7):1247-57. 2: Alexandra Benchoua and Brigitte Onteniente Intracerebral transplantation for neurological disorders. Lessons from developmental, experimental and clinical studies, Frontiers in Cellular Neuroscience. 2012 Jan 27(6) doi: 10.3389/fncel.2012.00002 3: Benchoua A, Trioulier Y, Diguet E, Malgorn C, Gaillard MC, Dufour N, Elalouf JM, Krajewski S, Hantraye P, Déglon N, Brouillet E. Dopamine determines the vulnerability of striatal neurons to the N-terminal fragment of mutant huntingtin through the regulation of mitochondrial complex II. Hum Mol Genet. 2008 May 15;17(10):1446-56. Epub 2008 Feb 11. PubMed PMID: 18267960; PubMed Central PMCID: PMC2367694. 4: Lowell S, Benchoua A, Heavey B, Smith AG. Notch promotes neural lineage entry by pluripotent embryonic stem cells. PLoS Biol. 2006 May;4(5):e121. Epub 2006 Apr11. PubMed PMID: 16594731; PubMed Central PMCID: PMC1431581. 5: Benchoua A, Trioulier Y, Zala D, Gaillard MC, Lefort N, Dufour N, Saudou F, Elalouf JM, Hirsch E, Hantraye P, Déglon N, Brouillet E. Involvement of mitochondrial complex II defects in neuronal death produced byN-terminus fragment of mutated huntingtin. Mol Biol Cell. 2006 Apr;17(4):1652-63. Epub 2006 Feb 1.	Autism spectrum disorders	1	cell biologist	0		abenchoua@istem.fr			**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
Istem.CECS	Evry	**Christian Pinset**	The objectives of the muscular disease team are to explore and validate the potential of human and dog pluripotent stem cells - human Embryonic Stem (hES) cells and induced Pluripotent Stem (iPS) cells - and their differentiated progenies to design new therapeutic strategies for muscles diseases such as duchenne muscular dystrophy	1) Intrasphincteric injections of autologous muscular cells in women with refractory stress urinary incontinence: a prospective study.Sèbe P, Doucet C, Cornu JN, Ciofu C, Costa P, de Medina SG, Pinset C, Haab F. Int Urogynecol J. 2011 Feb;22(2):183-9. 2) Real-time monitoring of cell transplantation in mouse dystrophic muscles by a secreted alkaline phosphatase reporter gene.Gerard X, Vignaud L, Charles S, Pinset C, Scherman D, Kichler A, Israeli D.Gene Ther. 2009 Jun;16(6):815-9. 3) Cell density-dependent induction of endogenous myogenin (myf4) gene expression by Myf5.Lindon C, Albagli O, Pinset C, Montarras D.Dev Biol. 2001 Dec 15;240(2):574-84. 4) Cell cycle-regulated expression of the muscle determination factor Myf5 in proliferating myoblasts.Lindon C, Montarras D, Pinset C J Cell Biol. 1998 Jan 5) Quantitative estimation of minor mRNAs by cDNA-polymerase chain reaction. Application to dystrophin mRNA in cultured myogenic and brain cells.Chelly J, Montarras D, Pinset C, Berwald-Netter Y, Kaplan JC, Kahn A.Eur J Biochem. 1990 Feb 14;187(3):691-8 Patents Culture medium composition, culture method, and myoblast obtained and their uses. Christian Pinset 2004 PCT/ WO 2004/055174 A1 Automating analysis of cellular samples Christian Pinset 2005 PCT/WO 2005/047896 A2 Method for extracting and selecting cells Christian Pinset 2008 PCT/WO 2008/031957 A2 Method for selecting modulators of the synthesis of mevalonate using cells derived from human pluripotent cells Christian Pinset 2010	The objective is to derive skeletal muscle precursors cells from hES and iPS from healty and DMD patients. Many protocols were described to derive cardiac and smooth muscle cells from human pluripotent stem cells (hES and iPS) . On the opposite, until now no team could isolate in convincing manner muscle striated precursor cells from human pluripotent stem cells. Many cumulated data indicate that the various stages of cellular specification are under the dependence of a limited number of factors of which some are implicated in cell signalling, a critical issue in development. For muscle specification, a series of proteins, hormones as well as small molecules have been proposed. It is very probable that these molecules act in combination to generate a specific signal. The number of combinations to test requires the use of an automated process. The number of elements in the matrix. The target cell population as well as tissue culture conditions HTC technologies to follow the readout of differentiation.	5	Cell biologist, cell therapy	No but 2 engineers	Reprogramation,Tissue culture, expression analysis,animal models	cpinset@istem.fr	www.istem.eu	Muscle disease group is a new team inside Istem a Institute dedicated tothe development of treatments intended for monogenic diseases, founded on the strong potential of stem cells for substitutive and regenerative therapies and for screening compounds libraries in order to discover new potential drugs.	**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**

INSERM U-861, I-STEM, AFM, Institute for Stem cell Therapy and Exploration of Monogenic Diseases	Evry	**Xavier Nissan**	Progeria, also known as Hutchinson-Gilford Progeria Syndrome (HGPS), is a rare, fatal genetic disease characterized by an appearance of accelerated aging in children. The principal objective of our team is to use pluripotent stem cells to set up an in vitro pharmacological model of HGPS suitable for drug discovery and pharmacological studies.	In vitro pathological modeling using patients-specific induced pluripotent stem cells: the case of progeria. Nissan X, Blondel S, Peschanski M. Biochem Soc Trans. 2011 Dec;39(6):1775-9. Review. miR-125 potentiates early neural specification of human embryonic stem cells. Claire Boissart, Xavier Nissan, Karine Giraud-Triboult, Marc Peschanski, Alexandra Benchoua. Development. 2012 Apr;139(7):1247-57. Functional melanocytes derived from human pluripotent stem cells engraft into pluristratified epidermis. Xavier Nissan, Lionel Larribere, Manoubia Saidani, Ilse Hurbain, Cedric Delevoye, Jessica Feteira, Gilles Lemaitre, Marc Peschanski, Christine Baldeschi. Proc Natl Acad Sci U S A. 2011 Sep 6;108(36):14861-6. MiR-203 modulates epithelial differentiation of human embryonic stem cells towards epidermal stratification. Xavier Nissan, Jérôme Denis, Manoubia Saidani, Gilles Lemaitre, Marc Peschanski, Christine Baldeschi. Dev Biol. 2011 Aug 15;356(2):506-15. Human embryonic stem-cell derivatives for full reconstruction of the pluristratified epidermis: a preclinical study. Hind Guenou, Xavier Nissan, Fernando Larcher, Jessica Feteira, Gilles Lemaitre, Manoubia Saidani, Marcella Del Rio, Christine Barrault, François-Xavier Bernard Marc Peschanski, Gilles Waksman and Christine Baldeschi. The Lancet. 2009 Nov 21;374(9703):1745-53.	Health, stem cells, pharmacology, progeria	1	Cell biologist	1	Cell biologist	xnissan@istem.fr,	www.istem.eu		**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
INSERM U861	Evry	**Christine Baldeschi**	Modeling pigmentary defects of the neurofibromatosis type I using pluripotent stem cells	1) Functional melanocytes derived from human pluripotent stem cells engraft into pluristratified epidermis. Nissan X et al . Proc Natl Acad Sci U S A. 2011. 2) miR-203 modulates epithelial differentiation from human embryonic stem cells towards epidermal stratification.Nissan et al. Dev Biol. 2011. 3) Human embryonic stem-cell derivatives for full reconstruction of the pluristratified epidermis: a preclinical study. Guenou H et al. Lancet 2009.4)CD98hc (SLC3A2) is a key regulator of keratinocyte adhesion. Lemaître G et al. J Dermatol Sci. 2011.	pluripotent stem cells/ melanocytes/ genodermoteses			1	cell culture of plripotents stem cells and epdermis cells. Molecualr biology	cbaldeschi@istem.fr			**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
INSERM UMR_S 910	Marseille	**NICOLAS LEVY**	Role of nuclear lamins and molecular partners in premature aging inherited diseases and acquired diseases.	**(1)** Splicing-directed therapy in a new mouse model of human accelerated aging. Osorio etal., Sci Transl Med. 2011 Oct 26;3(106):106ra107. **(2)** Type B mandibuloacral dysplasia with congenital myopathy due to homozygous ZMPSTE24 missense mutation. Ben Yaou et al., Eur J Hum Genet. 2011 Jan 26. **(3)** Novel Frameshifting Mutations of the ZMPSTE24 Gene in Two Siblings Affected With Restrictive Dermopathy and Review of the Mutations Described in the Literature. Smigiel R et al., Am J Med Genet A, 2010 Feb;152A:447-52. **(4)** Novel LMNA mutation in a familial case of atypical Werner syndrome presenting with severe atherosclerosis and acute ischemic disease. Renard et al., Stroke 2009;40:e11-14. **(5)** HGPS and related premature aging disorders: from genomic identification to the first therapeutic approaches. Pereira et al., Mechanisms of Aging and Development, 2008;129:449-459. **(6)** An association of Hutchinson-Gilford Progeria and malignancy. Shalev et al., Am. J. Med. Genet. 2007;143:1821-1826. **(7)** - Loss of ZMPSTE24 (FACE-1) causes autosomal recessive restrictive dermopathy and accumulation of Lamin A precursors. Navarro et al., Hum Mol Genet. 2005;14:1503-13. Epub 2005 Apr 20. **(8)** Lamin A and ZMPSTE24 (FACE-1) defects cause nuclear disorganisation and identify Restrictive Dermopathy as a lethal neonatal laminopathy. Claire Navarro*, et al., Human Molecular Genetics, 2004;13:2493-503. **(9)** Lamin A truncation in Hutchinson-Gilford Progeria. De Sandre-Giovannoli et al., Science. 2003 Jun 27;300(5628):2055. Epub 2003 Apr 17. **(10)** Homozygous defects in LMNA, encoding lamin A/C nuclear envelope proteins, cause autosomal recessive axonal neuropathy in human (Charcot-Marie-Tooth disorder type 2) and mouse. De Sandre-Giovannoli et al., Am J Hum Genet. 2002; 70: 726-736.	further characterisation of the molecular mechanisms underlying lamin-linked premature aging diseases on patients cell lines and mouse models ; identification of novel therapeutic targets and approaches.	1	cell biology, molecular biology, genetics, gene therapy; additionally, several team members are MDs/PhDs with clinical or laboratory skills and activities; one bioinformatician is permanently recruited in the research unit	1	cell biology, molecular biology, genetics, gene therapy; additionally, several team members are MDs/PhDs with clinical or laboratory skills and activities; one bioinformatician is permanently recruited in the research unit	nicolas.levy@univ-amu.fr	http://umr910.timone.univmed.fr/	**The U910 scientific environement is highly dynamic and involves frequent and stimulating interactions between clinicians and fundamental researchers, representing a fertile ground for translational research and applications. (Two clinical trials have already been started in the recent years, based on preclinical results issued from U910 teams, one of which on Hutchinson-Gilford Progeria).**	**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
Inserm U910	Marseille	**Bernard Binétruy**	Molecular mechanisms of differentitation of ES and iPS cells Isolation, validation and characterization of human iPSC lines from patients suffering monogeneitc diseases	1- F. Bost, M. Aouadi, L. Caron, P. C. Even, N. Belmonte, M. Prot, C. Dani, P. Hofman, G. Pages, J. Pouysségur, Y. Le Marchand and B. Binetruy, The erk1 isoform is specifically required for in vitro and in vivo adipogenesis, Diabetes, 2005, 54, 402-411. 2- Bost F., Aouadi M., Caron L. & Binétruy B. The role of MAPKs in adipocyte differentiation and obesity. Biochimie, 2005, 87, 51-56. 3- L. Caron, M. Prot, M. Rouleau, M. Rolando, F. Bost and B. Binétruy. The lac repressor provides a reversible gene expression system in undifferentiated and differentiated embryonic stem cells. Cellular and Molecular Life Sciences, 2005, 62(14):1605-12. 4- L. Caron, F. Bost, M. Prot, P. Hofman & B. Binétruy. A new role for the oncogenic High Mobility Group A2 transcription factor in myogenesis of embryonic stem cells. Oncogene, 2005, 24(41):6281-91. 5- M. Aouadi, K. Laurent, M. Prot, Y. Le Marchand-Brustel, B. Binétruy* and F. Bost*. Inhibition of p38MAPK increases adipogenesis from embryonic to adult stages. Diabetes, 2006 Feb;55(2):281-9 *co-last authors. 6- M. Aouadi, F. Bost, L. Caron, K. Laurent, Y. Le Marchand-Brustel and B. Binétruy. P38MAPK constitutes an early switch in embryonic stem cells commitment into neurogenesis versus cardiomyogenesis. Stem Cells, 2006, 2006 May;24(5):1399-406. 7- Aouadi M, Binetruy B, Caron L, Le Marchand-Brustel Y, Bost F. Role of MAPKs in development and differentiation: lessons from knockout mice. Biochimie. 2006 Sep;88(9):1091-8. 8- Binétruy B, Heasley L, Bost F, Caron L, Aouadi M. Concise review: regulation of embryonic stem cell lineage commitment by mitogen-activated protein kinases. Stem Cells. 2007 May;25(5):1090-5. 9- Aouadi M, Jager J, Laurent K, Gonzalez T, Cormont M, Binétruy B, Le Marchand-Brustel Y, Tanti JF, Bost F. p38MAP Kinase activity is required for human primary adipocyte differentiation. FEBS Lett. 2007 Dec 11;581(29):5591-6. Epub 2007 Nov 13. 10- E. Barruet, O. Hadadeh, F. Peiretti, V. M. Renault, J. Hadjal, D. Bernot, R. Tournaire, D. Negre, I. Juhan-Vague, M.-C. Alessi & B. Binétruy. p38MAPK Controls Two Successive Steps During the Early Mesodermal Commitment of Embryonic Stem Cells. Stem Cells & Development, 2010 Nov 24. [Epub ahead of print]; 2011, 20(7): 1233-1246.	Isolation, validation and characterization of human iPSC lines from patients suffering monogeneitc diseases	1	Cell biologist	1	Cell Biologist	Bernard.Binetruy@univ-amu.fr		**The U910 scientific environement is highly dynamic and involves frequent and stimulating interactions between clinicians and fundamental researchers, representing a fertile ground for translational research and applications. (Two clinical trials have already been started in the recent years, based on preclinical results issued from U910 teams, one of which on Hutchinson-Gilford Progeria).**	**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
INSERM U933	Paris 75012	**Serge Amselem**	Research programs dedicated to the study of the molecular and celular bases of several human genetic disorders (Rares diseases)	1. Merveille AC*, Davis EE*, Becker-Heck A*, Legendre M*…., Georges M, Lequarré AS*, Katsanis N*, Omran H*, Amselem S*. CCDC39 is required for assembly of inner dynein arms and the dynein regulatory complex as well as normal ciliary motility in humans and dogs. Nature Genet (accepted for publication); *(co-first authors and co-supervisors) 2. Duquesnoy P, Escudier E, Vincensini L,... Clément A, Escalier D, Bastin P, Mitchell DR, Amselem S. Loss-of-function mutations in the human ortholog of Chlamydomonas reinhardtii ODA7 disrupt dynein arm assembly and cause primary ciliary dyskinesia. Am J Hum Genet. 2009;85(6):890-6. 3. Jéru I, Duquesnoy P, Fernandes-Alnemri T, .. Grateau G, Alnemri ES, Amselem S. Mutations in NALP12 cause hereditary periodic fever syndromes. Proc Natl Acad Sci U S A. 2008 5;105(5):1614-9. 4. Duriez B*, Duquesnoy P*, Escudier E, ... Bercher JF, Amselem S. A common variant in combination with a nonsense mutation in a member of the thioredoxin family causes primary ciliary dyskinesia. Proc Natl Acad Sci U S A. 2007;104(9):3336-41. *(co-first authors) 5. Pantel J*, Legendre M*, ...Epelbaum J, Le Bouc Y, Amselem S Loss of constitutive activity of the growth hormone secretagogue receptor in familial short stature. J Clin Invest. 2006;116(3):760-8.*(co-first authors) 6. Borenstajn K, Sobrier ML, Duquesnoy P, Escudier E, ... Bercher JF, Amselem S. A common variant in combination with a nonsense mutation in a member of the thioredoxin family causes primary ciliary dyskinesia. Proc Natl Acad Sci U S A. 2006 Sep 12;0) 7. Machinis K., Pantel J.,..Abitbol M., Czernichow P., Amselem S. Syndromic short stature in patients with a germline mutation in the LIM homeobox LHX4. Am. J. Hum. Genet., 2001, 69 : 961-968. 8. Netchine I., Sobrier ML, Krude H.…Grüters A., Amselem S. Mutations in the LIM-homeodomain LHX3 gene result in a new syndrome revealed by combined pituitary hormone deficiency. Nature Genet, 2000, 25(2):182-6. 9. Papin S., Duquesnoy P., Cazeneuve C., Pantel J., Coppey-Moisan M., Dargemont C., Amselem S. Alternative splicing at the MEFV locus involved in familial Mediterranean fever regulates translocation of the marenostrin/pyrin protein to the nucleus. Hum Mol Genet, 2000, 9(20):3001-9. 10. Cazeneuve C., Arapetyan H., Papin S.,... Grateau G., Sarkisian T., Amselem S. Identification of MEFV-independent modifying genetic factors for familial Mediterranean fever. Am J Hum Genet, 2000,67(15):1136-43.	3 main themes: 1/ Primary ciliary dyskinesia and related disorders of the axoneme (ciliopathies), 2/ Auto inflammatory syndromes, 3/ Growth disorders of endocrine origin (abnormal pituitary development and somatotropic axis)	1	cell biology in priority (and genetics if possible)	2	cell biology in priority (and genetics if possible)	serge.amselem@inserm.fr			**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
INSERM U964	Illkirch-Strasbourg	**Jocelyn Laporte**	We study rare and severe neuromuscular disorders caused by mutations in proteins affecting organelles and membrane trafficking. While focusing on these genetic diseases, our approaches are multidisciplinary and encompass the identification of the implicated genes by next generation sequencing, the study of the molecular and cellular functions of these proteins in cells and animal models, and the use of viral vectors for pathophysiology studies and preclinical therapeutic trials. In parallel, we study the function of these proteins in skeletal muscle under normal and pathological conditions through the development of novel imaging methods.	1) Al-Qusairi and Laporte. T-tubule biogenesis and triad formation in skeletal muscle and implication in human diseases. Skelet Muscle. 2011 Jul 13;1(1):26; 2) Nicot and Laporte. Endosomal phosphoinositides and human diseases. Traffic. 2008 Aug;9(8):1240-9; 3) Fugier et al. Misregulated alternative splicing of BIN1 is associated with T tubule alterations and muscle weakness in myotonic dystrophy. Nat Med. 2011 Jun;17(6):720-5; 4) Cowling et al. Increased expression of wild-type or a centronuclear myopathy mutant of dynamin 2 in skeletal muscle of adult wild-type mice leads to structural defects and muscle weakness. Am J Pathol. 2011 May;178(5):2224-35; 5) Toussaint et al. Defects in Amphiphysin 2 (BIN1) and triads in several forms of centronuclear myopathies. Acta Neuropathol. 2011 Feb; 121(2):253-266; 6) Hnia et al. Myotubularin controls desmin intermediate filament architecture and mitochondrial dynamics in human and mouse skeletal muscle. J Clin Invest. 2011 Jan 4;121(1):70-85; 7) Spiegelhalter et al. From dynamic live cell imaging to 3D ultrastructure: integrated methods for high pressure freezing and correlative light-electron microscopy. PLoS One. 2010 Feb 3;5(2):e9014; 8) Nicot et al. Mutations in amphiphysin 2 (BIN1) disrupt interaction with dynamin 2 and cause autosomal recessive centronuclear myopathy. Nat Genet. 2007 Sep;39(9):1134-9.	Genetic basis of neuromuscular diseases, and Regulation of membrane and organelle trafficking in skeletal muscle under healthy and pathological conditions	1	bioinformatician or geneticist	1	cell biologist	jocelyn@igbmc.fr	http://www.igbmc.fr/Laporte		**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
IGBMC - U964	ILLKIRCH	**Daniel Metzger**	Characterisation of the physiological and pathophysiological function of nuclear receptors in mouse skeletal muscles. Identification of new targets to fight myopathies and metabolic diseases	M. Schuler, F. Ali, C. Chambon, D. Duteil, J-M Bornert, A. Tardivel, B. Desvergne, W. Wahli, P. Chambon and D. Metzger (2006) PGC1a expression is controlled in skeletal muscles by PPARb, whose ablation results in fiber type switching, obesity and type 2 diabetes. Cell Metabolism 4, 407-414. C. Chambon, D. Duteil, A. Vignaud, A. Ferry, N. Messaddeq, R. Malivindi, S. Kato, P. Chambon & D. Metzger (2010). Myocytic androgen receptor controls the strength, but not the mass of limb muscles. Proc. Natl. Acad. Sci. (USA) 107 : 14327 - 14332. D. Duteil, C. Chambon, F. Ali, J. Zoll, R. Malivindi, B. Geny, P. Chambon and D. Metzger (2010) The transcriptional co-regulator TIF2 regulates energy homeostasis by controlling mitochondrial respiration in skeletal muscles. Cell. Metabolism, 12 : 496-508. Masiero E, Agatea L, Mammucari C, Blaauw B, Loro E, Komatsu M, Metzger D, Reggiani C, Schiaffino S, Sandri M. (2009) Autophagy is required to maintain muscle mass. Cell Metabolism, 10 : 507-515. M. Surjit, K. Priya Ganti, A. Mukherji, T. Ye, G. Hua, D. Metzger, M. Li, and P. Chambon (2011). Widespread negative response elements mediate direct transrepression by agonist-liganded glucocorticoid receptor. Cell, 145 : 224-241.	Characterisation of androgen and glucocorticoid signalling in mouse skeletal muscles	1	Molecular biologist with experise in mouse physiology or bioinformatics	1	Molecular biologist with experise in mouse physiology or bioinformatics	metzger@igbmc.u-strasbg.fr metzger@igbmc.fr			
INSERM U964	ILLKIRCH	**Nicolas CHARLET-BERGUERAND**	We are studying how expanded non-coding RNA repeats cause RNA gain-of-function diseases (Myotonic Dystrophies, Cerebellar Ataxia 10, Fragile X-Associated Tremor/Ataxia Syndrome, etc). These autosomal dominant genetic diseases are caused by expanded tri-, tetra- or penta-nucleotide repeats that are transcribed but are not exported, and accumulate in pathogenic nuclear RNA aggregates that sequester specific RNA-binding proteins, leading to molecular changes ultimately resulting in the pathological symptoms. Our goal is to elucidate the molecular causes of these diseases and to identify drugs able to restore a normal function in patient models.	Fugier C, Klein A, Hammer C, Vassilopoulos S, Ivarsson Y, Toussaint A, Tosch V, Vignaud A, Ferry A, Messaddeq N, Kokunai Y, Tsuburaya R, de la Grange P, Dembele D, Francois V, Precigout G, Boulade-Ladame C, Hummel MC, Lopez de Munain A, Sergeant N, Laquerrière A, Thibault C, Deryckere F, Auboeuf D, Garcia L, Zimmermann P, Udd B, Schoser B, Takahashi M, Nishino I, Bassez G, Laporte J, Furling D, Charlet-B N. Mis-regulation of the alternative splicing of BIN1 is associated with T-tubule alterations and muscle weakness in Myotonic Dystrophy. Nature Medicine. 2011. 17(6):720-5. Rau F, Freyermuth F, Fugier C, Villemin JP, Jost B, Dembele D, Gourdon G, Nicole A, Duboc D, Wahbi K, Day JW, Fujimura H, Takahashi MP, Auboeuf D, Dreumont N, Furling D, Charlet-B N. Mis-regulation of miR-1 processing is associated with heart defects in Myotonic Dystrophy. Nature Structural and Molecular Biology. 2011. Jun 19. doi: 10.1038 Sellier C., Rau F., Liu Y., Tassone F., Hukema RK., Gattoni R., Schneider A., Richard S., Willemsen R., Elliott DJ., Hagerman PJ.,Charlet-B N. Sam68 sequestration and partial loss of function are associated with splicing alterations in FXTAS patients. EMBO. J. 2010. 29(7):1248-61.	To study the molecular and cellular causes of human genetic diseases due to long non-coding RNA (FXTAS due to expanded CGG repeats, Myotonic Dystrophies due to CUG expanded repeats, ALS-FTD due to expanded CCGGGG repeats).	1	Molecular biology, Cell biology,	1	Molecular biology, Cell biolofy, Mouse	ncharlet@igbmc.u-strasbg.fr			Important to support
INSERM U964	Illkirch (CU Strasbourg)	**Cécile Rochette-Egly**	Crosstalk between Retinoic acid and Signaling pathways: molecular mechanism and deregulation in cancers	Samarut E, Rochette-Egly C (2011) Nuclear Retinoic Acid Receptors: Conductors of the Retinoic Acid Symphony during development. Molecular and cellular endocrinology Apr 8. [Epub ahead of print]. Lalevée S, Anno YN, Chatagnon A, Samarut E, Poch O, Laudet V, Benoit G, Lecompte O, Rochette-Egly C (2011) Genome-wide in Silico Identification of New Conserved and Functional Retinoic Acid Receptor Response Elements (Direct Repeats Separated by 5 bp). J Biol Chem. 286(38):33322-34. Samarut E, Amal I, Markov GV, Stote R, Dejaegere A, Laudet V and Rochette-Egly C (2011) Evolution of nuclear retinoic acid receptor alpha (RARa) phosphorylation sites. Serine gain provides fine-tuned regulation. Mol. Biol. Evol. 28(7):2125-2137. Duong V, Rochette-Egly C (2011) The molecular physiology of nuclear retinoic acid receptors. From health to disease. Biochim Biophys Acta. 1812(8):1023-1032 Lalevée S, Ferry C, Rochette-Egly C (2010) Phosphorylation control of nuclear receptors. Methods Mol Biol. 2010;647:251-67 Lalevée S, Bour G, Quintenet M, Samarut E, Kessler P, Vitorino M, Bruck N, Delsuc MA, Vonesch JL, Kieffer B, Rochette-Egly C Vinexin8, an atypical "sensor" of retinoic acid receptor gamma signaling: union and sequestration, separation, and phosphorylation. FASEB J. 2010;24:4523-35 Bour G, Lalevée S, Rochette-Egly C. Protein kinases and the proteasome join in the combinatorial control of transcription by nuclear retinoic acid receptors. Trends Cell Biol. 2007;17:302-10	New unconventional roles of the nuclear retinoic acid receptor alpha in tumor invasion	1	cell biologist	1	cell biologist	cegly@igbmc.u-strasbg.fr			
IGBMC	Illkirch	**Yann Herault**	Our main interest is directed towards the identification of genes sensitive to dosage effect which contributes to Down syndrome. We developed new mouse models with genetic bases similar to the trisomy and monosomy 21 in order to: 1) Address the phenotype–genotype relationship by filling the gap with new mouse models 2) Better understand the origins and the physiopathology of Down syndrome 3) Identify pathways involving dosage sensitive genes 4) Validate and assess the risk of pharmacological intervention in order to treat intellectual disabilities in DS.	1. Dalloneau E., Lopes Pereira P., Brault V., Nabel E.G. and Hérault Y. The protein arginine N-methyltransferase 2, Prmt2, regulates the lipopolysaccharide-induced responses in lungs and macrophages. J. Immunol. (in Press) 2. Duchon A., Raveau M., Chevalier C., Nalesso V., Sharp J. A., and Herault Y., Identification of the translocation breakpoints in the Ts65Dn and Ts1Cje mouse lines: relevance for modeling Down syndrome. Mammalian Genome (in Press) 3. Braudeau J., Dauphinot L., Duchon A., Loistron A., Dodd R.H., Hérault Y., Delatour B., Potier MC. (2011) Chronic treatment with a promnesiant GABA-A α5 selective inverse agonist increases immediate early genes expression during memory processing in mice and rectifies their expression levels in a Down syndrome mouse model. Adv. Pharm. Sci. (in Press). 4. Braudeau J. , Delatour B., Duchon A., Lopes Pereira P., Dauphinot L., De Chaumont F., Olivo-Marin J-C., Dodd R., Hérault Y. , Potier, MC. (2011) A non convulsant α5-selective GABAA receptor inverse agonist restores cognitive deficits in a mouse model of Down syndrome. J. Psychopharmacology 25, 1030-1042 5. Duchon A., Pothion S., Brault V., Sharp A., Tybulewicz V., Fisher E.M. and Herault Y. (2011) The telomeric part of the human chromosome 21 from Cstb to Prmt2 is not necessary for the locomotor and short-term memory deficits observed in the Tc1 mouse models of Down syndrome. Beh. Brain Res 217, 271-281. 6. Cocquempot, O., Brault, V., Babinet, C., and Herault Y. (2009 Amplification of poly-alanine tract through Fostes mechanism in the Dyc mutant affecting Hoxd13 in a new murine model of Synpolydactly. Genetics, 183, 23-30. 7. Lopes Pereira, P., Magnol, L., Sahün Abizanda, I., Brault, V., Duchon, A., Prandini, P., Gruart, A., Bizot, J-C, Chadefaux-Vekemans, B., Deutsch, S., Trovero, F., María Delgado-García, J., Antonarakis, S.E., Dierssen, M. and Herault Y. (2009)A new mouse model for the trisomy of the Abcg1-U2af1 region reveals the complexity of the combinatorial genetic coded of Down syndrome. Hum. Mol. Genet., 18, 4756-4769 8. Duchon, A., Besson, V., Lopes Pereira, P., Magnol, L., and Hérault, Y. (2008) Inducing segmental aneuploid mosaicism in the mouse through Targeted Asymmetric Sister Chromatid Event of Recombination (TASCER). Genetics, 180, 51-59. 9. Besson, V., Brault, V., Duchon, A., Togbe, D., Bizot, J. C., Quesniaux, V. F., Ryffel, B., and Herault, Y. (2007). Modeling the monosomy for the telomeric part of human chromosome 21 reveals haploinsufficient genes modulating the inflammatory and airway responses. Hum Mol Genet 16, 2040-2052.	We contributed to the identification of two targets, in preclinical models and we plan to test drugs to circumvent their change in DS. Focus will be on target involved in cognition, cardiovascular and lung functions	1	geneticist, neuroscienciest, physiologist	1	bioinformatics, geneticist,physiologist, neuroscientist	herault@igbmc.fr			

INSERM U964	Illkirch	**Michel Labouesse**	Forces and signals in tissue morphogenesis	1) Zhang H, Landmann F, Zahreddine H, Rodriguez D, Koch M, Labouesse M (2011) A tension-induced mechanotransduction pathway promotes epithelial morphogenesis. Nature, 471: 99-103. 2) Gally C, Wissler F, Zahreddine H, Quintin S, Landmann F, Labouesse M (2009) Myosin II regulation during C. elegans embryonic elongation: LET-502/ROCK, MRCK-1 and PAK-1, three kinases with different roles. Development 136(18): 3109-3119. 3) Zahreddine H*, Zhang H*, Diogon M, Nagamatsu Y, Labouesse M (2010) CRT-1/calreticulin and the E3 ligase EEL-1/HUWE1 control hemidesmosome maturation in C. elegans development. Curr Biol 20(4): 322-327. 4) Labouesse M (2011) Forces and Tension in Development. Curr Top Dev Biol vol. 95. 5) Zhang H, Gally C, Labouesse M (2010) Tissue morphogenesis: how multiple cells cooperate to generate a tissue. Curr Opin Cell Biol 22(5): 575-582.	Cellular, genetic and mechanical analysis of the forces involved in generating organ shape. Experiments will involved biophysical approaches		1	cell biologist/ biophysicist		3	cell biologist and developmental biologist	tmichel@igbmc.fr		
UMR 7104/U 964	Illkirch-Graffenstaden	**Romeo Ricci**	My laboratory addresses **signal transduction pathways** underlying different cellular path	1. Sumara, G., Formentini, I., Collins, S., Sumara, I., Musialek, R., Ramracheya, R., Caille, D., Jiang, H., Platt, K.A., Meda, P., Rorsman, P. and Ricci, R. Regulation of PKD by the MAPK p38delta in insulin secretion and glucose homeostasis. Cell 23; 136(2): 235-48. 2. Stepniak, E.#, Ricci, R.#, Eferl, R.#, Sumara, G., Sumara, I., Rath, M., Hui, L., and Wagner, E.F. (2006). c-Jun/AP-1 controls liver regeneration by repressing p53/p21 and p38 MAPK activity. Genes Dev 20, 2306-2314. #equal contribution 3. Yoshimura, K., Aoki, H., Ikeda, Y., Fujii, K., Akiyama, N., Furutani, A., Hoshii, Y., Tanaka, N., Ricci, R., Ishihara, T., et al. (2005). Regression of abdominal aortic aneurysm by inhibition of c-Jun N-terminal kinase. Nat Med 11, 1330-1338. 4. Ricci, R., Eriksson, U., Oudit, G.Y., Eferl, R., Akhmedov, A., Sumara, I., Sumara, G., Kassiri, Z., David, J.P., Bakiri, L., et al. (2005). Distinct functions of junD in cardiac hypertrophy and heart failure. Genes Dev 19, 208-213. 5. Ricci, R., Sumara, G., Sumara, I., Rozenberg, I., Kurrer, M., Akhmedov, A., Hersberger, M., Eriksson, U., Eberli, F.R., Becher, B., et al. (2004). Requirement of JNK2 for scavenger receptor A-mediated foam cell formation in atherogenesis. Science 306, 1558-1561.	Uncovering ubiquitylation pathways in liver metabolism by a systems proteomic approach.		1 (Helena de Fatima Magliarelli)	biochemist, physiologist			Romeo.RICCI@igbmc.fr		
INSERM U964	Illkirch	**Bertrand Séraphin**	Analysis og gene regulation through RNA decay/RNA Quality Control mechanisms/Protein complex characterization	Andersen CB, Ballut L, Johansen JS, Chamieh H, Nielsen KH, Oliveira CL, Pedersen JS, Seraphin B, Le Hir H, Andersen GR (2006) Science 313(5795): 1968-1972 Cougot N, Babajko S, Seraphin B (2004) J Cell Biol 165(1): 31-40 Dziembowski A, Lorentzen E, Conti E, Seraphin B (2007) Nat Struct Mol Biol 14(1): 15-22 Gavin AC, et al. (2002) Nature 415(6868): 141-147 - Lebreton A, Tomecki R, Dziembowski A, Seraphin B (2008) . Nature 456(7224): 993-996 - Mauxion F, Faux C, Seraphin B (2008) EMBO J 27(7): 1039-1048 - Puig O, Caspary F, Rigaut G, Rutz B, Bouveret E, Bragado-Nilsson E, Wilm M, Seraphin B (2001) Methods 24(3): 218-229 - van den Elzen AM, Henri J, Lazar N, Gas ME, Durand D, Lacroute F, Nicaise M, van Tilbeurgh H, Seraphin B, Graille M (2010) . Nat Struct Mol Biol 17(12): 1446-1452 - Wyers F, Rougemaille M, Badis G, Rousselle JC, Dufour ME, Boulay J, Regnault B, Devaux F, Namane A, Seraphin B, Libri D, Jacquier A (2005) Cell 121(5): 725-737	Analysis of the role of RNA decay factor in cancer		2	molecular biology, genetics, cell biology	3	molecular biology, cell biology, molecular medicine	bertrand.seraphin@igbmc.fr		
INSERM U964	Strasbourg	**Julien Vermot**	The focus of the lab is to address the cellular mechanodetection involved in response to biological flows during embryogenesis using genetics advanced light imaging, mathematical modeling and electron microscopy	When multiphoton microscopy sees near infrared. Mojzisova H, Vermot J. Curr Opin Genet Dev. 2011 Sep 14. Modeling new conceptual interpretations of development. Vermot J, Affolter M. Development. 2011 Oct;138(19):4111-5. From cilia hydrodynamics to zebrafish embryonic development. Supatto W, Vermot J. Curr Top Dev Biol. 2011;95:33-66. Review. Mechanistic basis of otolith formation during teleost inner ear development. Wu D, Freund JB, Fraser SE, Vermot J. Dev Cell. 2011 Feb 15;20(2):271-8. Reversing blood flows act through klf2a to ensure normal valvulogenesis in the developing heart. Vermot J, Forouhar AS, Liebling M, Wu D, Plummer D, Gharib M, Fraser SE. PLoS Biol. 2009 Nov;7(11):e1000246. The dynein regulatory complex is required for ciliary motility and otolith biogenesis in the inner ear. Vermot J, Colantonio JR, Wu D, Langenbacher AD, Fraser S, Chen JN, Hill KL. Nature. 2009 Jan 8;457(7226):205-9. Epub 2008 Nov 30. An all-optical approach for probing microscopic flows in living embryos. Supatto W, Fraser SE, Vermot J. Biophys J. 2008 Aug;95(4):L29-31. Epub 2008 Jun 13.	The aim of the project will be to characterize mechanotransdution pathways involved in the vascular development using zebrafish as a model organism. The project is centered around the use of advanced imaging, zebrafish genetics and biophysics techniques. Basic knowledge in modeling will be helpfull.		2	molecular biology	2	cell biollogy/biophysics	Julien.Vermot@igbmc.fr		
U964 (UMR7104)	Strasbourg / Illkirch	**Pascal Dollé**	Using mice models we investigate role of retinoid receptor signalling pathways in development and functions of central nervous system. To validate relevance of such findings for neuropsychiatric disorders we use animal models of CNS disorders and if relevant also clinical approaches	1) Wietrzych-Schindler et al., Biol Psych. 2011 Apr 15;69(8):788-94 2) Rhinn et al., Proc Natl Acad Sci U S A. 2011 Oct 4;108(40):16687-92 3) Krzyzosiak et al., Neuron. 2010 Jun 24;66(6):908-20. 4) Ribes et al., Development. 2009 Feb;136(4):665-76 5) Niederreither and Dolle, Nat Rev Genet. 2008 Jul;9(7):541-53. 6) Wietrzych et al., Learn Mem. 2005 May-Jun;12(3):318-26 7) Vermot et al., Science. 2005 Apr 22;308(5721):563-6 8) Krezel et al., Proc Natl Acad Sci U S A. 2001 Oct 9;98(21):12278-82 9) Krezel et al., Science. 1998 Feb 6;279(5352):863-7	1) study of the role of retinoid signalling in etiology and physiopathology of stress related disorders; 2) role of retinoid signalling in development and functions of dopaminergic signalling	one	background in neuroscience with some trainnig in: 1) electrophysiology on acute slices, OR 2) rodent behavior and stereotaxic injections and/or stimualtions, OR 3)	two	Welcome would be post-doc with background in neuroscience with trainnig and expertise in: 1) electrophysiology on acute slices, OR 2) rodent behavior and stereotaxic injections and/or stimualtions, OR 3) molecular or	dolle@igbmc.fr		
UMR7104	Strasbourg	**Norbert Ghyselinck**	The seminiferous epithelium of the testis represents the most remarkable paradigm to investigate the pleiotropic effects of retinoic acid in vivo, as it integrates the problematic of stem cell renewal, cell proliferation, switching from mitotic to meiotic cell division, programmed cell death and paracrine signaling. Using a combination of innovative genetic, pharmacological and molecular approaches in the mouse, we are studying the cellular and molecular mechanisms that underlie the capabilities of retinoic acid to promote spermatogonia differentiation and beyond the differentiation of normal stem cells in vivo.	Mascrez B, Ghyselinck NB, Chambon P, Mark M. A transcriptionally silent RXRalpha supports early embryonic morphogenesis and heart development. Proc. Natl. Acad. Sci. USA. 106:4272-4277. (2009). Mark M, Jacobs H, Oulad-Abdelghani M, Dennefeld C, Feret B, Vernet N, Codreanu CA, Chambon P, Ghyselinck NB. STRA8-deficient spermatocytes initiate, but fail to complete, meiosis and undergo premature chromosome condensation. J. Cell Sci. 121:3233-3242. (2008). Vernet N, Dennefeld C, Guillou F, Chambon P, Ghyselinck NB, Mark M. Prepubertal testis development relies on retinoic acid but not rexinoid receptors in Sertoli cells. EMBO J. 25:5816-5825. (2006). Mark M, Ghyselinck NB, Chambon P. Function of retinoid nuclear receptors: lessons from genetic and pharmacological dissections of the retinoic acid signaling pathway during mouse embryogenesis. Annu. Rev. Pharmacol.Toxicol. 46:451-480. (2006).	Stem cells		1	cell biologist	1	cell biologist	norbert@igbmc.u-strasbg.fr		
IGBMC: INSERM U964, CNURS UMR7104, UdS	Illkirch CU STRASBOURG	**Sophie JARRIAULT**	Our group is interested in deciphering the cellular and molecular mechanisms that underlie the ability of a differentiated cell to change its identity. This cellular plasticity, called direct reprogramming or transdifferentiation, has important implications ranging from regenerative medicine to cancer. We have established a new powerful *in vivo* model that allows the detailed analysis of the molecular networks involved at single cell level.	• Hajduskova M., Daniele T., Ahier A. & **Jarriault S**. Cellular plasticity in *Caenorhabditis elegans* : from induced to natural reprogramming. Invited review. ***Genesis*** *, in press* . ** ***Cover*** *of the issue* ** • Richard J., Zuryn S., Fischer N., Pavet V., Vaucamps N. and **Jarriault S**. (2011) Direct in vivo reprogramming involves transition through discrete, non-pluripotent steps, ***Development*** 138(8) : 1483-92. Epub March 9, 2011. ** *Cited « **Recommended** » by Faculty 1000* ** - Highlight in the "Focus" page of the issue. • Zuryn S., Le Gras S., Jamet K. and **Jarriault S**. (2010) Deep Mapping: A strategy for direct mapping and identification of mutations by whole-genome sequencing, ***Genetics*** 186(1):427-30. Epub 2010 Jul 6. ** ***Cover*** *of the issue* **. • **Jarriault S**. (2009) LIN-12/Notch signaling: Induction, lateral specification and interaction with the EGF/Ras pathway. Handbook of Cell Signaling 2nd Edition (Eds. R.A. Bradshaw and E.A. Dennis), Oxford: Academic Press, 2009, pp. 1891-1896. • **Jarriault S**., Schwab Y. & Greenwald I. (2008) A C. elegans model for epithelial-neuronal transdifferentiation. ***PNAS*** 105(10) : 3790-5. ** *March 5th 2008 : Cited « **Must Read** » and ranked in the « Top 10 Developmental Biology Papers » by Faculty 1000.* **	We have launched successful genetic screens and have identified key factors involved in the *in vivo* direct reprogramming of a differentiated cell. We propose to elucidate how these factors cooperate in the nucleus with epigenetic activities to control each step of the process, in a physiological setting. We anticipate that our results will be key for the assessement of potential risks in using direct reprogramming strategies for regenerativemedicine purposes, as well as for the implementation of efficient procedures.	Current: 2 To be recruted : 1	The applicant will have an excellent undergraduate track record in Biology, preferably as a Developmental Biology and/or Genetic major. The applicant will have successfully obtained a Master in Science degree. Having experienced	Curren t: 3 (1 postd oc is finishi ng up) To be recrut ed : 1	The applicant will have an excellent track record in Biology, preferably in Developmental Biology and/or Genetic. The successful candidate should be highly motivated and experienced in the use of molecular biology and genetic techniques. A preliminary practical experience using	sophie.jarriault@igbmc.fr sophie@igbmc.u-strasbg.fr	http://igbmc.fr/jarriault	
UM76 UPMC - U974 Inserm - UMR7215 CNRS - AIM	Paris	**Gisèle Bonne**	Genetics and Phatophysiology of Neuromuscular Disorders	1- Arimura et al, ***Hum Mol Genet,*** *2005, 14:155*-169. 2- Bitoun et al, ***Nat Genet,*** *2005,* 37:1207-1209. 3- Bonne et al, ***Nat Genet,*** 1999, 21:285-288. 4- Brifas et al, ***Ann Neurol,*** 2010, 68(4):511-20. 5- Durieux et al, ***Hum Mol Genet,*** 2010, 19(24): 4820-4836. 6- Granger et al, ***Hum Genetic*** , 2011, 129(2):149-59. 7- Gueneau et al, ***Am J Hum Genet,*** 2009, 85:338-353. 8- Schussler et al, ***Nat Clin Pract Cardiovasc Med,*** 2008, 6:240-249.	- Genetics, Pathophysiology a Therapeutical approach of striated muscle Laminopathies & related disorders, - Genetics, Pathophysiology a Therapeutical approach of Collagen-6 related myopathies - Genetics, Pathophysiology a Therapeutical approach of centronuclear myopathies - Pathophysiology of contractile dysfunction & mechanotranduction using 3D culture systems.		2	molecular genetics, cell biology, molecular biology, muscle physiology	2	molecular genetics, cell biology, molecular biology, muscle physiology	g.bonne@institut-myologie.org	http://www.institut-myologie.org/	**To support in priority, in the frame of the Network Brazil-France "stem cells and Rare Diseases"**
INSERM U1016	Paris	**Daniel Vaiman**	Genomics and Epigeneticsof human reproductive diseases details at http://cochin.inserm.fr/la_recherche/departements/gd/equipe-vaiman	1.Vaiman, D., Gascoin-Lachambre, G., Boubred, F., Mondon, F., Feuerstein, J.M., Ligi, I., Grandvuillemin, I., Barbaux, S., Ghigo, E., Achard, V., et al. 2011. The Intensity of IUGR-Induced Transcriptome Deregulations Is Inversely Correlated with the Onset of Organ Function in a Rat Model. PLoS One 6:e21222. 2.Chelbi, S.T., Doridot, L., Mondon, F., Dussour, C., Reboureet, R., Busato, F., Gascoin-Lachambre, G., Barbaux, S., Rigourd, V., Mignot, T.M., et al. 2011. Combination of promoter hypomethylation and PDX1 overexpression leads to TBX15 decrease in vascular IUGR placentas. Epigenetics 6:247-255. 3.Gascoin-Lachambre, G., Buffat, C., Rebourcet, R., Chelbi, S.T., Rigourd, V., Mondon, F., Mignot, T.M., Legras, E., Simeoni, U., Vaiman, D., et al. 2010. Cullins in human intra-uterine growth restriction: expressional and epigenetic alterations. Placenta 31:151-157. 4.Fauque, P., Ripoche, M.A., Tost, J., Journot, L., Gabory, A., Busato, F., Le Digarcher, A., Mondon, F., Gut, I., Jouannet, P., et al. 2010. Modulation of imprinted gene network in placenta results in normal development of in vitro manipulated mouse embryos. Hum Mol Genet 19:1779-1790. 5.Fauque, P., Mondon, F., Letourneur, F., Ripoche, M.A., Journot, L., Barbaux, S., Dandolo, L., Patrat, C., Wolf, J.P., Jouannet, P., et al. 2010. In vitro fertilization and embryo culture strongly impact the placental transcriptome in the mouse model. PLoS One 5:e9218. 6.Auer, J., Camoin, L., Guillonneau, F., Rigourd, V., Chelbi, S.T., Leduc, M., Laparre, J., Mignot, T.M., and Vaiman, D. 2010. Serum profile in preeclampsia and intra-uterine growth restriction revealed by iTRAQ technology. J Proteomics 73:1004-1017. 7.Rigourd, V., Chelbi, S., Chauvet, C., Rebourcet, R., Barbaux, S., Bessieres, B., Mondon, F., Mignot, T.M., Danan, J.L., and Vaiman, D. 2009. Re-evaluation of the role of STOX1 transcription factor in placental development and preeclampsia. J Reprod Immunol. 8.Rigourd, V., Chauvet, C., Chelbi, S.T., Rebourcet, R., Mondon, F., Letourneur, F., Mignot, T.M., Barbaux, S., and Vaiman, D. 2008. STOX1 overexpression in choriocarcinoma cells mimics transcriptional alterations observed in preeclamptic placentas. PLoS ONE 3:e3905. 9.Chelbi, S.T., and Vaiman, D. 2008. Genetic and epigenetic factors contribute to the onset of preeclampsia. Mol Cell Endocrinol 282:120-129. 10.Fauque, P., Jouannet, P., Lesaffre, C., Ripoche, M.A., Dandolo, L., Vaiman, D., and Jammes, H. 2007. Assisted Reproductive Technology affects developmental kinetics, H19 Imprinting Control Region methylation and H19 gene expression in individual mouse embryos. BMC Dev Biol 7:116.	Genetics of preeclampsia and fetal growth restriction		1	Cell and Molecular Biologists			daniel.vaiman@inserm.fr		
INSERM U1016	Paris	**Pascal Maire**	Our team, "**Genetics and Development of Skeletal Muscles**", explores the functions of transcription factors (Six, SRF, Gli) and signaling pathways (Wnt, Hh, BMP) active during development, muscle regeneration, atrophy/hypertrophy, and in rhabdomyosarcomas.	1 Rouault H, Mazouni K, Couturier L, Hakim V, Schweisguth F (2010) Genome-wide identification of cis-regulatory motifs and modules underlying gene coregulation using statistics and phylogeny. Proceedings of the National Academy of Sciences of the United States of America 107: 14615-14620. 2 Chakkalakal JV, Harrison MA, Carbonetto S, Chin E, Michel RN, et al. (2004) Stimulation of calcineurin signaling attenuates the dystrophic pathology in mdx mice. Human molecular genetics 13: 379-388. 3 Acharyya S, Butchbach ME, Sahenk Z, Wang H, Saji M, et al. (2005) Dystrophin glycoprotein complex dysfunction: a regulatory link between muscular dystrophy and cancer cachexia. Cancer cell 8: 421-432. 4 Cao Y, Yao Z, Sarkar D, Lawrence M, Sanchez G, et al. (2010) Genome-wide MyoD binding in skeletal muscle cells: a potential for broad cellular reprogramming. Dev Cell 18: 662-674. 5 Brack AS, Conboy IM, Conboy MJ, Shen J, Rando TA (2008) A temporal switch from notch to Wnt signaling in muscle stem cells is necessary for normal adult myogenesis. Cell Stem Cell 2: 50-59. 6 Le Grand F, Jones AE, Seale V, Scime A, Rudnicki MA (2009) Wnt7a activates the planar cell polarity pathway to drive the symmetric expansion of satellite stem cells. Cell stem cell 4: 535-547. 7 Relaix F, Rocancourt D, Mansouri A, Buckingham M (2005) A Pax3/Pax7-dependent population of skeletal muscle progenitor cells. Nature 435: 948-953. 8 Lepper C, Conway S, Fan C (2009) Adult satellite cells and embryonic muscle progenitors have distinct genetic requirements. Nature 460: 627-631. 9 Grifone R, Demignon J, Houbron C, Souil E, Niro C, et al. (2005) Six1 and Six4 homeoproteins are required for Pax3 and MRF expression during myogenesis in the mouse embryo. Development 132: 2235-2249. 10 Giordani J, Bajard L, Demignon J, Daubas P, Buckingham M, et al. (2007) Six proteins regulate the activation of Myf5 expression in embryonic mouse limbs. Proc Natl Acad Sci U S A 104: 11310-11315.	1- Involvement of Six homeoproteins and their cofactors in adult myogenic stem cells homeostasis. 2- Involvement of SRF during adult muscle regeneration and hypertrophy.		1	Biologist interested by myogenic stem cells, able to work with mice.	2	Biologist interested by myogenic stem cells, able to work with mice. Experience with immunocytochemistry and imaging, and bioinformatician experienced with ChIPseq and RNAseq data.	pascal.maire@inserm.fr		

Inserm U1024	PARIS	**Nathalie SPASSKY**	We are studying the mechanisms regulationg the biology of neural stem cells by using the mouse brain as a model.	1- Spassky et al., 2005, J Neurosci 25(1):10-18; 2- Sawamoto et al., 2006, Science, 311(5761):629-32; 3- Spassky et al., 2008, Dev Biol, 317(1):246-59; 4- Han et al., 2008, Nat Neuro, 11(3):277-84; 5- Guirao et al., 2010, Nat Cell Biol, 12(4):341-50.	Cell Biology, Developmental neurobiology	1	Cell Biologist	2	Cell Biologist, Neurobiologist	spassky@biologie.ens.fr			
INSERM U1024 CNRS UMR8197	Paris	**Vincent COLOT**	Plant Epigenetics and Epigenomics. Trasngenerational inheritance of epigenetic variation. RNA-directed DNA methylation. RNA interference.	- Ahmed I, Sarazin A, Bowler C, Colot V, Quesneville H. Genome-wide evidence for local DNA methylation spreading from small RNA-targeted sequences in Arabidopsis. Nucleic Acids Res. 2011 Sep 1;39(16):6919-31. - Roudier F, Ahmed I, Bérard C, Sarazin A, Mary-Huard T, Cortijo S, Bouyer D, Caillieux E, Duvernois-Berthet E, Al-Shikhley L, Giraut L, Després B, Drevensek S, Barneche F, Dérozier S, Brunaud V, Aubourg S, Schnittger A, Bowler C, Martin-Magniette ML, Robin S, Caboche M, Colot V. Integrative epigenomic mapping defines four main chromatin states in Arabidopsis. EMBO J. 2011 May 18;30(10):1928-38. - Bouyer D, Roudier F, Heese M, Andersen ED, Gey D, Nowack MK, Goodrich J, Renou JP, Grini PE, Colot V, Schnittger A. Polycomb repressive complex 2 controls the embryo-to-seedling phase transition. PLoS Genet. 2011 Mar;7(3):e1002014 - Teixeira FK, Colot V. Repeat elements and the Arabidopsis DNA methylation landscape. Heredity. 2010 Jul;105(1):14-23. - Roudier F, Teixeira FK, Colot V. Chromatin indexing in Arabidopsis: an epigenomic tale of tails and more. Trends Genet. 2009 Nov;25(11):511-7. - Johannes F, Porcher E, Teixeira FK, Saliba-Colombani V, Simon M, Agier N, Bulski A, Albuisson J, Heredia F, Audigier P, Bouchez D, Dillmann C, Guerche P, Hospital F, Colot V. Assessing the impact of transgenerational epigenetic variation on complex traits. PLoS Genet. 2009 Jun;5(6):e1000530. - Teixeira FK, Colot V. Gene body DNA methylation in plants: a means to an end or an end to a means? EMBO J. 2009 Apr 22;28(8):997-8. PubMed PMID: 19384348; PubMed Central PMCID: PMC2683714. 13: Teixeira FK, Heredia F, Sarazin A, Roudier F, Boccara M, Claudo C, Cruaud C, Poulain J, Berdasco M, Fraga MF, Voinnet O, Wincker P, Esteller M, Colot V. A role for RNAi in the selective correction of DNA methylation defects. Science. 2009 Mar 20;323(5921):1600-4. - Johannes F, Colot V, Jansen RC. Epigenome dynamics: a quantitative genetics perspective. Nat Rev Genet. 2008 Nov;9(11):883-90. PubMed PMID: 18927581. - Turck F, Roudier F, Farrona S, Martin-Magniette ML, Guillaume E, Buisine N, Gagnot S, Martienssen RA, Coupland G, Colot V. Arabidopsis TFL2/LHP1 specifically associates with genes marked by trimethylation of histone H3 lysine 27. PLoS Genet. 2007 Jun;3(6):e86. - Lippman Z, Gendrel AV, Colot V, Martienssen R. Profiling DNA methylation patterns using genomic tiling microarrays. Nat Methods. 2005 Mar;2(3):219-24. PubMed PMID: 16163803. - Gendrel AV, Lippman Z, Martienssen R, Colot V. Profiling histone modification patterns in plants using genomic tiling microarrays. Nat Methods. 2005 Mar;2(3):213-8. PubMed PMID: 16163802.	Genomic, genetic and phenotypic consequences of epigenetic variation			2	1 molecular geneticist, 1 bioinformatician	colot@biologie.ens.fr	http://www.ibens.ens.fr/spip.php?article87	
U1091 (U636)	Nice	**Minoo Rassoulzadegan**	Our laboratory established the first mouse models of an epigenetic heredity distinct from the Mendelian rules Small noncoding (snc) RNA molecules with sequence homology to the transcript were shown to act as transgenerational signals leading to the establishment of the modified phenotypes. We are also exploring the possibility of RNA-signalling and transgeneralional maintenance of other phenotypes including comportmental variations for which evidence of paternal inheritance has been established.	Rassoulzadegan, M. et al., *Nature* 441, 469-474 (2006). Wagner, K.D. et al., *Dev Cell* 14, 962-969 (2008). Grandjean, V. et al., *Development* 136, 3647-3655 (2009). Cuzin F, Rassoulzadegan M. *Essays Biochem.* 2010 Sep 20;48(1):101-6. Rassoulzadegan M, Cuzin F. *Organogenesis.* 2010 Jan;6(1):33-6.	Epigenetic heredity	2	Geneticist, developmenal Biology	2	Molecular Biology, mammalian Genetic and embryology	minood@unice.fr		
U1091 (U636)	Nice	**Andreas Schedl**	**Kidneys** and **adrenal glands** have central roles in controlling the cardiovascular system and the homeostasis of the human body. The major aims of my research team are to unravel the molecular mechanisms underlying normal **development,** identify the genetic factors involved in **congenital disease** and elucidate mechanisms that contribute to **organ maintenance** (stem cell activation) and the development of **cancer** within these organs.	Reginensi et al., (2011) *Hum. Mol. Genet* 20:1143-53. Bradford ST, et al., (2009) *Hum. Mol. Genet.* 8:3429-38. Schedl A. (2007) *Nat Rev Genet.* 8:791-802. Parma et al (2006) *Nat Genet*. 38:1304-1309. Wagner et al. (2006). *Curr. Biol.* 16:793-800 Wagner et al. (2005) *Genes & Dev.* 19:2631-42. Vidal et al. (2005) *Curr. Biol.* 15:1340-51. Wagner et al. (2005) *Development* 132:1327-1336 Vidal et al. (2001) *Nature Genet*. 28: 216-7. Hammes et al. (2001) *Cell* 106: 319-329	Congenital diseases of the kidney Molecular analysis of renal development and disease Signaling pathways is organ maintenance and cancer	2	Geneticist, developmenal biologist, molecular biologist	4	Geneticist, developmenal biologist, molecular biologist, bioinformatician	schedl@unice.fr		
U1091 (U636)	Nice	**Marie-Christine Chaboissier**	The incidence of disorders of sexual development (DSD) has increased in the last 50 years with, for example, the doubling of cases of cryptorchidism and an increase in testicular cancer, the most common cancer in young men. Many cases of DSD and testicular cancers are caused by genetic defects during embryogenesis. In the laboratory, we work on the identification and the analysis of the mechanisms of action of genetic factors responsible for these pathologies.	Vidal VPI*, Chaboissier MC* et al.(2001). *Nat Genet* 28, 216-217. Equal contribution. Chaboissier MC et al.(2004). *Development* 131, 1891-1901. FACULTY 1000 Parma P.. et al.(2006). *Nat. Genet.* 38, 1304-09. FACULTY 1000 Chassot AA.. et al.(2008). *Hum Mol Genet* 17, 1264-77. FACULTY 1000 Gregoire E.. et al.(2011). *Dev. Biol.* 349 (1), 65-77 Lavery R. et al.(2011). *Dev. Biol*. 354(1), 111-122. FACULTY 1000 Chassot AA. et al.(2011). *PLoS ONE* . In press Auguste A. et al.(2011). *Sex Dev*. In press	Genetics of disorders of sexual differentiation	1	Geneticist, Developmental Biologist	2	Geneticist, Developmental Biologist	chaboiss@unice.fr		
U1091 (U636)	Nice	**Michèle STUDER**	Molecular mechanisms of brain development with particular emphasis on cortical cell-specification and neural stem cells	Alfano et. Al., *Development*, in press. Lodato et al., *J. of Neuroscience* 2011; 4650-4662 Lodato et al *Neuron, 2011, 69: 1-17* Tomassy Srubek et al. *PNAS,* 2010, 107(8): 3576-81. Faedo et al., . *Cerebral Cortex*, 2008, 9, 2117-31. Armentano et al. *Nature Neuroscience*, 10, 2007, 1277-1286(with cover) Armentano et al., *Development* 133, 2006, 4151-4162. Ferrante et al., *Nature Genetics* 38, 2006, 112-7. Coppola et al., *EMBO Journal* 24, 2005, 4392-403. Tripodi et al. *Development* 131, 2004, 6119-29.	Molecular Neurobiology	3	Molecular biologist,, developmental biologist, neurobiologist	2	cell biologist, neurobiologist	Michele.STUDER@unice.fr		