Curriculum Vitae

Anne Brunet, PhD

Current position

Associate Professor of Genetics, Stanford University

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Education

1992	BS Biology, Ecole Normale Supérieure, Paris, France
1992–1997	PhD, Dr Jacques Pouysségur's laboratory, University of Nice, France
1998–2003	Post-doctoral training, Dr Michael Greenberg's laboratory, Harvard Medical School, MA

Professional Experience

09/1992–12/1997	Graduate student, Dr Jacques Pouysségur's laboratory, University of Nice, France
01/1998–12/2003	Post-doctoral fellow, Dr Michael Greenberg's laboratory, Harvard Medical School, MA
02/2004–02/2011	Assistant Professor of Genetics, Stanford University, CA
02/2011–present	Associate Professor of Genetics, Stanford University, CA
01/2011–present	Co-director of the Paul F. Glenn Laboratories for the Biology of Aging at Stanford

Honors and Awards

1992	BS *summa cum laude*
1993–1997	Pre-doctoral fellowship, Ecole Normale Supérieure
1993	EMBO Short-Term Fellowship
1997	EMBO Long-Term Post-Doctoral Fellowship
1998–2000	Human Frontier Science Program Post-Doctoral Fellowship
2000	Medical Foundation Post-Doctoral Fellowship
2000–2002	Goldenson-Berenberg Post-Doctoral Fellowship, Harvard Medical School
2003	Radcliffe Institute for Advanced Studies Fellowship
2003	Lacaze-Policart Lacassagne Prize (French Academy of Science)
2005	Pfizer/AFAR Innovation in Aging Research Award
2005	Klingenstein Award in the Neurosciences
2005	Ellison Medical Foundation New Scholar Award (awarded)
2005	Damon Runyon Scholar Award (awarded)
2006	Sloan Research Fellowship
2006	Brain Tumor Foundation Award
2007	Glenn Award for Research in Biological Mechanisms of Aging
2007	McCormick Award for Women in Science
2008	California Institute of Regenerative Medicine New Faculty Award
2009	NARSAD Young Investigator Award
2009	Ellison Medical Foundation Senior Scholar Award
2010	Mentoring Award from the Stanford University Post-doctoral Association

Invited Lectures

Talks at National or International Meetings

2004	Upstate Cell Signaling Symposium. Dundee, Scotland
2004	Cell Press Symposium, Aging and Human Disease Meeting. Italy
2005	Kavli Institute for Theoretical Physics Symposium, Networks in Growth, Death, and Aging. Santa Barbara, CA
2006	Cold Spring Harbor Meeting, PTEN pathways. Cold Spring Harbor, NY
2006	ASBMB meeting. San Francisco, CA
2006	CNIO Cancer Conference, PTEN and the AKT route. Madrid, Spain
2006	Gordon Conference, Phosphorylation and G-protein mediated signaling networks. Biddeford, Me
2006	20th IUBMB International Congress of Biochemistry and Molecular Biology and 11th FAOBMB Congress. Kyoto, Japan
2006	Steiner Foundation Meeting. Brunnen, Switzerland
2007	Keystone Symposium, Cell Signaling and Proteomics. Steamboat Spring, CA
2007	American Association for Cancer Research Annual Meeting. Los Angeles, CA
2007	Xth International Symposium on Insulin Receptors and Insulin Action. Stockholm, Sweden
2007	The New York Academy of Science, The PI3K-PTEN-AKT-TOR Signaling Pathway in Cancer, Metabolism, and Aging. New-York, NY
2007	FASEB Summer Research Conference, Obesity, Energy Balance and Disease. Indian Wells, CA
2007	The 4th Key Symposium, The Biology of Ageing. Stockholm, Sweden
2007	Buck Institute Symposium, Nutrient Signaling and Aging. Novato, CA
2008	Keystone Symposium, Metabolic Pathways of Longevity. Copper Mountain, CO
2008	American Diabetes Association. San Francisco, CA
2008	International Symposium on Olfaction and Taste. San Francisco, CA
2008	California Institute of Regenerative Medicine Annual Meeting. San Francisco, CA
2008	Cold Spring Harbor Meeting on the Genetics of Aging. Cold Spring Harbor, NY
2008	Harvard/California meeting on Stem Cell Biology. Los Angeles, CA
2008	San Antonio Nathan Shock Aging Center Conference on Aging. Bandera, TX
2009	Gordon Research Conference, Biology of Aging. Ventura, CA
2009	Gordon Research Conference, Signal Transduction within the Nucleus. Ventura, CA
2009	Keystone Symposium, PI3-kinase signaling in disease. Olympic Valley, CA
2009	Banbury Meeting, Molecular Biology of Sirtuins. The Banbury Center, NY
2009	Brown University '09 Colloquium. Brown University, RI
2009	American Aging Association, 38th Annual Meeting. Scottsdale, AZ
2009	CNIO Cancer Conference, The Energy of Cancer. Madrid, Spain
2009	Buck Institute Symposium, Systems Biology of Aging. Novato, CA
2010	Cellular Stress and Aging Symposium. University of North Carolina, NC
2010	Keystone Symposium, New Insights into Healthspan and Diseases of Aging. Tahoe City, CA

2010 Cold Spring Harbor Meeting, PTEN Pathways and Targets. Cold Spring Harbor, NY
2010 Signaling and Cellular Regulation Symposium, University of Boulder, CO
2010 Paul Glenn Symposium, Biology of Aging, Santa Barbara, CA
2010 Keynote Speaker, Signaling Quebec 2010, Canada
2010 Ellison Medical Foundation Annual Meeting, Woods Hole, MA
2010 Gordon Conference on Aging, Les Diablerets, Switzerland
2010 AMPK: Central Regulatory System in Metabolism & Growth, FASEB conference, Kyoto, Japan
2010 Cancer Metabolism, Barcelona Biomed Conference, Spain
2010 Symposium Nijmejen, The Netherlands
2010 Glenn Symposium, Salk Institute
2011 Genome, Cancer & Ageing Symposium, 3rd Monaco Age Oncology
2011 The forefront of therapeutic approaches to Neurodegeneration: Age modifiers, proteostasis, and stem cells, The Bahamas
2011 Gordon Conference, Oxidative Stress & Disease, Ventura, CA
2011 Gordon Conference, Signal Transduction within the nucleus, Ventura, CA
2011 Keynote Speaker at the Retreat for MD Anderson, TX
2011 French American Biotechnology Symposium, Approaches of Aging, San Francisco, CA
2011 3rd Else Kröner-Fresenius Symposium on Molecular Mechanisms of Stem Cell Aging, Germany
2011 The 24th Sigrid Juselius Symposium on post-translational modification networks as survival determinant, Espoo, Finland
2011 The Paul F. Glenn Symposium on Aging, Boston, MA
2011 FASEB Summer Research Conference, Epigenetics, Chromatin & Transcription, Snowmass, CO
2011 Gordon Conference, Epigenetics, Easton, MA

Invited Talks at Institutes or Universities

2004 Stowers Institute for Medical Research. Kansas City, MO
2005 University of Texas South Western. Dallas, TX
2006 Cold Spring Harbor Laboratory. Cold Spring Harbor, NY
2006 University of California Irvine. Irvine, CA
2006 University of California, San Diego. San Diego, CA
2008 University of Utah. Salt Lake City, UT
2008 Buck Institute for Age Research. Novato, CA
2008 Massachusetts General Hospital, Harvard Medical School. Boston, MA
2008 Rockefeller Institute. New-York City, NY
2009 Gladstone Institute. San Francisco, CA
2009 Harvard Medical School, Department of Pathology. Boston, MA
2009 Duke University. Durham, NC
2009 University of Cologne, Germany
2010 University of Strasbourg, France
2010 University of Utrecht, The Netherlands
2010 National Cancer Institute. Amsterdam, The Netherlands
2010 UC Irvine, CA
2010 Burnham Institute, CA
2010 Curie Institute, Paris, France
2010 University of Pennsylvania, Philadelphia, PA

2011	Gladstone, UCSF, San Francisco, CA
2011	Stowers Institute for Medical Research, Kansas City, MO
2011	Washington University, St-Louis, MO
2011	University of Washington, Seattle, WA
2011	Harvard Medical School, Childrens Hospital, Boston, MA

Research Support

Current Research Support

2008-2013
California Institute of Regenerative Medicine New Faculty Award
Sponsor: CIRM
Title: Molecular mechanisms involved in adult neural stem cell maintenance
Role: PI

2009-2014
NIH R01 AG031198
Sponsor: NIH (NIA)
Title: Molecular mechanisms underlying lifespan extension by dietary restriction
Role: PI

2009-2013
Ellison Senior Scholar Award
Sponsor: Ellison Medical Foundation
Title: Role of Longevity Genes in Reprogramming Somatic Cells into Pluripotent Stem Cells
Role: PI

2011-2016
NIH P01
Sponsor: NIH (NIA)
Title of project: Mechanisms of neural stem cell regulation during aging
Title of core: Genomics and ultra high throughput sequencing
Role: PL (PI: Tom Rando)

2011-2016
NIH P01
Sponsor: NIH
Title: Effect of age and longevity genes on epigenomic mechanisms of reprogramming
Role: co-PL with Joseph Wu (PI: Mike Snyder)

Past Research Support

2005-2007
Pfizer/AFAR Innovation in Aging Research Award
Sponsor: Pfizer/American Foundation for Aging Research
Title: Role of FOXO Transcription Factors In Mammalian Longevity
Role: PI

2005-2008
Klingenstein Fellowship Award in Neuroscience
Sponsor: Klingenstein Fund
Title: Role of the FOXO Family of Forkhead Transcription Factors In the Nervous System
Role: PI

2006-2008
Fellowship Award Brain Tumor Society
Sponsor: Brain Tumor Society
Title: Defining the role of Foxo transcription factors and Sirt1 deacetylase

	in suppressing glioblastoma Role: PI
2006-2008	Sloan Research Fellowship Sponsor: Alfred P. Sloan Foundation Title: Does the Nervous System Regulate Overall Longevity? Role: PI
2006-2008	Investigator-initiated Research Grant Sponsor: American Institute for Cancer Research Title: AMPK: a mediator of caloric restriction's ability to suppress cancer Role: PI
2007-2009	Paul Glenn Foundation Award Sponsor: Paul Glenn Foundation Role: PI
2007-2009	McCormick Award Sponsor: McCormick Foundation Title: Defining the interaction between FOXO and the tumor suppressor p53 in cells and in mice Role: PI
2008-2010	NIH R21 AG030464 Sponsor: NIH (NIA) Title: An unbiased search for genes underlying longevity in a short-lived fish model Role: PI
2005-2010	NIH R01 AG026648 Sponsor: NIH (NIA) Title: Forkhead transcription factors in the stress response Role: PI
2009-2011	Investigator Award Sponsor: NARSAD Title: Role of FOXO6 in cognitive function and mood regulation during aging Role: PI

Publications (Total: 54)

Peer-Reviewed Journal Articles (Total: 33)

Lenormand P, Sardet C, Pagès G, L'Allemain G, Brunet A and Pouysségur J (1994) Growth factors induce nuclear translocation of MAP kinases (p42mapk and p44mapk) but not their activator MAP kinase kinase (p45mapkk) in fibroblasts. **J Cell Biol,** 122: 1079-1088.

Pagès G*, Brunet A*, L'Allemain G and Pouysségur J (1994) Constitutive mutant and putative regulatory serine phosphorylation site of mammalian MAP kinase kinase (MEK1). **EMBO J,** 13: 3003-3010. *: both authors have contributed equally to the work.

Brunet A, Pagès G and Pouysségur J (1994) Constitutively active mutants of MAP kinase kinase (MEK1) induce growth factor-relaxation and oncogenicity when expressed in fibroblasts. **Oncogene,** 9: 3379-3387.

Brunet A*, Pagès G* and Pouysségur J (1994) Growth factor-stimulated MAP kinase induces rapid retrophosphorylation and inhibition of MAP kinase kinase (MEK1). **FEBS Lett,** 346: 299-303. *: both authors have contributed equally to the work.

Papin C, Eychène A, Brunet A, Pagès G, Pouysségur J, Calothy G and Barnier JV (1995) B-Raf protein isoforms interact with and phosphorylate MEK-1 on serine residues 218 and 222. **Oncogene,** 10: 1647-1651.

Pagès G, Stanley ER, Le Gall M, Brunet A and Pouysségur J (1995) The mouse p44 mitogen-activated protein kinase (extracellular signal-regulated kinase 1) gene. **J Biol Chem,** 270: 26986-26992.

Brunet A and Pouysségur J (1996) Identification of MAP kinase domains by re-directing stress signals into growth factor responses. **Science,** 272: 1652-1655.

Lavoie JN, L'Allemain G, Brunet A, Müller R and Pouysségur J (1996) Cyclin D1 expression is regulated positively by the p42/p44MAPK and negatively by the p38/HOG MAPK pathway. **J Biol Chem,** 271: 20608-20616.

Brondello JM, Brunet A, Pouysségur J and McKenzie FR (1997) The dual specificity Mitogen-activated protein kinase phosphatase-1 and-2 are induced by the p42/p44MAPK cascade. **J Biol Chem,** 272: 1368-1376.

Briant L, Robert-Hebmann V, Sivan V, Brunet A, Pouysségur J and Devaux C (1998) Involvement of extracellular signal-regulated kinase module in HIV-mediated CD4 signals controlling activation of nuclear factor-kappa B and AP-1 transcription factors. **J Immunol** 160: 1875-1885.

Englaro W, Bertolotto C, Busca R, Brunet A, Pagès G, Ortonne J-P and Ballotti R (1998) Inhibition of the mitogen-activated protein kinase pathway triggers B16 melanoma cell differentiation. **J Biol Chem,** 273: 9966-9970.

Lenormand P, Brondello J-M, Brunet A and Pouysségur J (1998) Growth factor-induced p42/p44 MAPK nuclear translocation and retention requires both MAPK activation and neosynthesis of nuclear anchored proteins. **J Cell Biol,** 142: 625-633.

Brunet A, Roux D, Lenormand P, Dowd S, Keyse S and Pouysségur J (1999) Nuclear translocation of p42/p44 mitogen-activated protein kinase is required for growth factor-induced gene expression and cell cycle entry. **EMBO J,** 18: 664-674.

Brunet A, Bonni A, Zigmond MJ, Lin MZ, Juo P, Hu LS, Anderson MJ, Arden KC, Blenis J, Greenberg ME (1999) Akt promotes cell survival by phosphorylating and inhibiting a Forkhead transcription factor. **Cell,** 96: 857-868.

Bonni A, Brunet A, West AE, Datta SR, Takasu MA, Greenberg ME (1999) Cell survival promoted by the Ras-MAPK signaling pathway by transcription-dependent and transcription-independent mechanisms. **Science**, 286: 1358-1362.

Nichols A, Camps M, Gillieron C, Chabert C, Brunet A, Wilsbacher J, Cobb M, Pouysségur J, Shaw JP, Arkinstall S (2000) Substrate recognition domains within extracellular signal-regulated kinase mediate binding and catalytic activation of mitogen-activated protein kinase phosphatase-3. **J Biol Chem,** 275: 24613-24621.

Brunet A, Park J, Tran H, Hu LS, Hemmings BA, Greenberg ME (2001) The protein kinase SGK mediates survival signals by phosphorylating the Forkhead transcription factor FKHRL1/FOXO3a. **Mol Cell Biol,** 21: 952-965.

Shin I, Bakin, AV, Rodeck, U, Brunet A, Arteaga CL (2001) Transforming growth factor beta enhances epithelial cell survival via Akt-dependent regulation of FKHRL1. **Mol Biol Cell,** 12: 3328-3339.

Brunet A*, Kanai F*, Stehn J, Xu J, Sarbassova D, Frangioni D, Dala JV, DeCaprio JA, Greenberg ME and Yaffe MB (2002) 14-3-3 Transits to the Nucleus and Actively

Participates in Dynamic Nucleo-Cytoplasmic Transport. **J Cell Biol,** 156: 817-828 *: both authors have contributed equally to the work.

Tran H*, Brunet A*, Grenier JM, Datta SR, Fornace Jr AJ, DiStefano PS, Chiang LW and Greenberg ME (2002). DNA repair pathway stimulated by the Forkhead transcription factor FOXO3a (FKHRL1) through the GADD45 protein. **Science,** 296: 530-534. *both authors have contributed equally to the work.

Chou FL, Hill JM, Hsieh JC, Pouysségur J, Brunet A, Glading A, Uberall F, Ramos JW, Werner MH and Ginsberg MH (2003) PEA-15 binding to ERK1/2 MAP kinases is required for its modulation of integrin activation. **J Biol Chem,** 278: 52587-52597.

Brunet A, Sweeney LB, Sturgill FJ, Chua KF, Greer PL, Lin Y, Tran H, Ross SE, Mostoslavsky R, Cohen H, Hu LS, Cheng H-L, Jedrychowsky M, Gygi SP, Sinclair DA, Alt FW, Greenberg ME (2004) Stress-Dependent Regulation of FOXO transcription factors by the SIRT1 Deacetylase. **Science,** 303: 2011-2015.

Greer EL, Dowlatshahi D, Banko MR, Hoang K, Blanchard D, and Brunet A (2007) An AMPK FOXO pathway mediates the extension of lifespan induced by a novel method of dietary restriction in *C. elegans.* **Curr Biol,** 17: 1646-1656.

Greer EL, Oskoui PR Banko MR, Maniar JM, Gygi MP, Gygi SP, and Brunet A (2007) The energy sensor AMP-activated protein kinase directly regulates the mammalian FOXO3 transcription factor. **J Biol Chem,** 282: 30107-30119**.**

Greer EL and Brunet A (2009) Different dietary restriction regimens extend lifespan by both independent and overlapping genetic pathways in *C. elegans.* **Aging Cell,** 8: 113-127.

Renault VM, Rafalski VA, Morgan AA, Salih DAM, Brett JO, Webb AE, Villeda SA, Thekkat PU, Guillerey C, Denko NC, Palmer TD, Butte AJ, and Brunet A (2009) FoxO3 regulates neural stem cell homeostasis. **Cell Stem Cell,** 5: 527-539.

Valenzano DR, Kirschner J, Kamber RA, Zhang E, Weber D, Cellerino A, Englert C, Platzer M, Reichwald K and Brunet A (2009) Mapping loci associated with tail color and sex determination in the short-lived fish *Nothobranchius furzeri*. **Genetics**, 183: 1385-1395.

de la Torre-Ubieta L, Gaudillière B, Yang Y, Ikeuchi Y, Yamada T, DiBacco S, Stegmüller J, Schüller U, Salih DA, Rowitch D, Brunet A and Bonni A (2010) A FOXO-Pak1 transcriptional pathway controls neuronal polarity. **Genes Dev,** 8: 799-813.

Greer EL, Maures TJ, Hauswirth AG, Green EM, Leeman DS, Maro, GS, Han S, Banko MR, Gozani O and Brunet A (2010) Members of the H3K4 trimethylation complex regulate lifespan in a germline-dependent manner in *C. elegans.* **Nature**, 466: 383-387.

Renault VM, Thekkat PU, Hoang KL, White JL, Brady CA, Kenzelmann Broz D, Venturelli OS, Johnson TM, Oskoui PR, Xuan Z, Santo EE, Zhang MQ, Vogel H, Attardi LD, Brunet A (2011) The pro-longevity gene FoxO3 is a target of the p53 tumor suppressor. **Oncogene** (Epub ahead of print).

Brett JO, Renault VM, Rafalski VA, Webb AE and Brunet A (2011) The microRNA cluster miR-106b~25 regulates adult neural stem and progenitor cell proliferation and neuronal differentiation. **Aging,** 3: 108-124.

Arnold CP, Tan R, Zhou B, Yue SB, Schaffert S, Biggs JR, Doyonnas R, Lo MC, Perry JM, Renault VM, Sacco A, Somervaille T, Viatour P, Brunet A, Cleary ML, Li L, Sage J, Zhang DE, Blau HM, Chen C, and Chen CZ. (2011) MicroRNA programs in normal and aberrant stem and progenitor cells. **Genome Res**, 21: 798-810.

Maures TJ, Greer EL, Hauswirth AG, and Brunet A (2011). H3K27 demethylase UTX-1 regulates *C. elegans* lifespan in a germline-independent, insulin-dependent, manner. **Aging Cell.** Epub ahead of print.

Invited Reviews and Commentaries (Total: 18)

Brunet A, Brondello JM, L'Allemain G, Lenormand P, McKenzie F, Pagès G and Pouysségur J (1995) MAP kinase module: role in the control of cell proliferation **C R Seances Soc Biol,** 189: 43-57

Brunet A (1998) Signal transduction from membrane to the nucleus: variation on common themes. **Bull Cancer,** 85: 527-537

Datta SR, Brunet A and Greenberg ME (1999) Cellular survival: a play in three Akts. **Genes Dev,** 13: 2905-2927.

Brunet A, Datta SR and Greenberg ME (2001) Transcription-dependent and -independent control of neuronal survival by the PI3K-Akt signaling pathway. **Curr Opin Neurobiol,** 11: 297-305.

Tran H, Brunet A, Griffith E, and Greenberg ME (2003) The Many Forks in FOXO's Road. **Sci STKE,** 172: RE5.

Greer EL, and Brunet A (2005) FOXO transcription factors at the interface between longevity and tumor suppression. **Oncogene,** 24:7410-7425.

Carter, ME, and Brunet A (2007) FOXO transcription factors. **Curr Biol,** 7: R113-114.

Brunet A and Rando T (2007) Aging: From stem to stern. **Nature,** 449: 288-289.

Brunet A (2007) Aging and cancer: killing two birds with one worm. **Nature Genetics,** 39: 1306-1307.

Greer EL and Brunet A (2008) FOXO transcription factors in ageing and cancer. **Acta Physiol,** 192: 19-28.

Greer EL and Brunet A (2008) Signaling networks in aging. **J Cell Sci,** 121: 407-412.

Calnan DR and Brunet A (2008) The FoxO code. **Oncogene,** 27: 2276-2288.

Salih DAM and Brunet A (2008) FoxO transcription factors in the maintenance of cellular homeostasis during aging. **Curr Opin Cell Biol,** 20: 126-136.

Greer EL, Banko MR and Brunet A (2009) AMP-activated protein kinase and FoxO transcription factors in dietary restriction-induced longevity. **Ann NY Acad Sci,** 1170: 688-692.

Brunet A (2009) Cancer: When restriction is good. **Nature,** 458: 713-714.

Rafalski V and Brunet A (2011) Energy metabolism in adult neural stem cell fate. **Prog Neurobiol**, 93: 182-203

Pollina EA and Brunet A (2011) Epigenetic regulation of aging stem cells **Oncogene (Epub ahead of print).**

Brunet A (2011) A CRTCal link between energy and life span. **Cell Metab**,13: 358-360.

Book Chapters (Total: 3)

Brunet A and Pouysségur J (1997) Mammalian MAP kinase modules: how to transduce specific signals. **Essays Biochem,** 32: 1-16.

Brunet A, Tran H and Greenberg ME (2003) The FOXO family of transcription factors: key targets of the PI3K-Akt pathway that regulate cell proliferation, survival and organismal aging. **Handbook of Cellular Signaling**. 3: 251.

Greer EL and Brunet A (2010) The genetic network of lifespan extension by caloric restriction. **Handbook on the Biology of Aging** (in press).

Commentaries on our Research (Total: 2)

Chen E and Finkel T (2009) Preview. The Tortoise, the hare, and the FoxO. **Cell Stem Cell**, 5: 451-452.

Suh Y. and Vijg J (2010) Preview. The Long and Short of Fertility and Longevity
Cell Metabolism, 12: 209-210