



Curriculum Vitae Professor Dr José Alain Sahel



Image: Markus Scholz | Leopoldina

Name: José Alain Sahel

Research Priorities: Cellular and molecular mechanisms of retinal degeneration, pharmacological treatments, stem cell therapy and implants, retinal prostheses

José-Alain Sahel is a French ophthalmologist and clinician scientist. His research focuses on the cellular and molecular mechanisms of retinal degeneration. He develops new treatment approaches for retinal diseases that were previously untreatable, such as vascular eye diseases, and is considered a pioneer in the area of retinal prostheses.

Academic and Professional Career

- since 2023 Professor Emeritus, Sorbonne Université, Paris, France
- since 2016 Professor and Head, Department of Ophthalmology, University of Pittsburgh School of Medicine, Pittsburgh, USA
- since 2016 Director, Eye Center, University of Pittsburgh Medical Center (UPMC), Pittsburgh, USA
- since 2016 Endowed Chair of Ophthalmology, Eye and Ear Foundation, University of Pittsburgh School of Medicine, Pittsburgh, USA
- 2005 - 2019 Director, National Reference Centre for Inherited Retinal Dystrophies, Centre hospitalier national ophtalmologic des Quinze-Vingts, Paris, France
- 2005 - 2019 Head, Clinical Investigation Center (CIC), Centre hospitalier national d'ophtalmologie des Quinze-Vingts, Paris, France
- 2002 - 2023 Professor of Ophthalmology, Sorbonne Université (until 2018: Université Pierre et Marie Curie), Paris, France

- 2001 - 2020 Head, Département d'ophtalmologie, Centre hospitalier national d'ophtalmologie des Quinze-Vingts and Head, Service d'ophtalmologie et des maladies vitréorétiniennes, Hôpital Fondation Adolphe de Rothschild, Paris, France
- 2001 - 2017 Professor of Biomedical Sciences, Institute of Ophthalmology, University College London (UCL), London, UK
- 2001 - 2017 Honorary Professor, Institute of Ophthalmology, UCL, London, UK
- 1994 - 2001 Head, Functional Unit "Segment postérieur et Oncologie", Ophthalmology Department, Strasbourg University Hospital, Strasbourg, France
- 1993 - 1995 Visiting Professor, Department of Ophthalmology and Visual Sciences, School of Medicine and Public Health, University of Wisconsin, Madison, USA
- 1988 - 2002 Director, Laboratoire de pathologie oculaire, Université Louis Pasteur, Strasbourg, France
- 1988 - 2002 Professor of Ophthalmology, Université Louis Pasteur, Strasbourg, France
- 1988 - 2001 Practising Doctor, Ophthalmology Department, Strasbourg University Hospital, Strasbourg, France
- 1987 - 1992 Visiting Lecturer, Department of Ophthalmology, Harvard Medical School, Boston, USA
- 1986 - 1987 Research Fellow, Massachusetts Eye and Ear Infirmary, Boston, and Guest Fellow, Department of Molecular and Cellular Biology, Harvard Medical School, Boston, USA
- 1984 - 1988 Senior Physician, Strasbourg University Hospital, Strasbourg, France
- 1984 - 1988 Assistant, Ophthalmology Department, Strasbourg University Hospital, Strasbourg, France
- 1984 Medical Specialist in Ophthalmology
- 1980 - 1984 Assistant, Strasbourg University Hospital, Strasbourg, France
- 1980 Doctorate
- 1979 - 1980 Degree in Ophthalmology, Hôpital Fondation Adolphe de Rothschild, Paris, France

Functions in Scientific Societies and Committees

- since 2011 Director, Laboratory of Excellence "Lifesenses: senses for a lifetime", Institut de la Vision, Paris, France
- since 2010 Member, Conseil scientifique, Association Française de l'Eclairage (AFE), Paris, France
- since 2010 Member, Conseil scientifique, Alliance pour la Recherche et l'Innovation, Industries de Santé (ARIIS), Paris, France

- since 2010 Member, Conseil scientifique, Fondation pour la Recherche Médicale (FRM), Paris, France
- since 2010 Member, Conseil scientifique, Faculty of Medicine, Sorbonne Université (until 2018: Université Pierre et Marie Curie), Paris, France
- 2010 Chairperson, Conseil Scientifique, Ophtimalia, Colombelles, France
- since 2009 Member, Conseil scientifique et médical, Mutualité Française (FNMF), Paris, France
- since 2009 Member, Conseil scientifique, Fondation d'entreprise Optic 2000 - Lissac - Audio 2000, Clamart, France
- since 2009 Member, Scientific Advisory Board, Collectis, Paris, France
- since 2008 Member, Scientific Advisory Board, European Society of Retina Specialists (EURETINA)
- since 2008 Member, Conseil scientifique, Ville de Paris, Paris, France
- 2008 - 2021 Founder and Director, Research Centre Vision Institute, Institut national de la Santé et de la Recherche médicale (INSERM), Université Pierre et Marie Curie and Centre National de la Recherche Scientifique (CNRS), Paris, France
- 2008 - 2011 Member, Scientific Advisory Board, Alcon Research Institute, Geneva, Switzerland
- 2007 - 2012 Coordinator, Paris Research Centre, Foundation Fighting Blindness, Columbia, USA
- since 2007 Coordinator, Expert Committee "Retina", European Vision Institute EVI (EEIG), Brussels, Belgium
- since 2007 Head of Neurosciences, Pôle de compétitivité Medicen, Île-de-France, France
- since 2007 Chairperson, Conseil scientifique, Fédération des Aveugles et Handicapés Visuels de France (FAF), France
- since 2006 Chairperson, Scientific Advisory Board, Gene Signal International, Epalinges, Switzerland
- since 2006 Director, Institut Voir & Entendre, Paris, France
- 2005 - 2008 Scientific Director, Institut de la Vision, Centre hospitalier national ophtalmologic des Quinze-Vingts, Paris, France
- since 2005 Coordinator, National Clinical Research Hospital Program, France
- since 2005 Chairperson, Scientific Advisory Board, Fovea Pharmaceuticals, Sanofi, Paris, France
- since 2004 Member, Senior Advisory Board, European Vision Institute, Brussels, Belgium
- since 2004 Ad-hoc Consultant, Alcon, Freiburg, Switzerland; Sanofi, Paris, France; Novartis, Basel, Switzerland and Pfizer, New York City, USA
- 2004 - 2007 Member, Conseil Scientifique, AGF Athena, Paris, France

- 2003 Co-Founder, EEIG, Brussels, Belgium
- 2003 - 2007 Member, Conseil Scientifique, Assistance Publique – Hôpital de Paris (AP-HP), Paris, France
- 2003 - 2007 Member, Conseil Scientifique, Genopole, Évry-Courcouronnes, France
- since 2002 Member, Conseil Scientifique, FAF, France
- since 2000 Member, Scientific Advisory Board, Foundation Fighting Blindness (FFB), Columbia, USA
- 1999 - 2003 Vice-Chairperson, Neuroscience Commission, INSERM and Visuels de France (FAF), Paris, France

Project Coordination, Membership in Collaborative Research Projects

- 2014 - 2020 Principal Investigator, Synergy Grant “Holistic evaluation of light and multiwave applications to high resolution imaging in ophthalmic translational research revisiting the helmholtzian synergies (HELMHOLTZ)”, European Research Council (ERC)
- 2010 - 2014 Deputy Coordinator, Project “Fighting blindness of Usher syndrome: diagnosis, pathogenesis and retinal treatment (TreatRetUsher)”, European Commission (EC)
- 2010 - 2013 Coordinator, Project, “RDCVF Rod-derived Cone Viability Factor”, EC
- 2005 - 2009 Coordinator, Project, “EVI-GENORET Functional genomics of the retina in health and disease”, EC
- 2002 - 2004 Coordinator, Project, “PRO-AGE-RET Protection against ageing in the retina”, EC
- 2001 - 2004 Coordinator, “Neuroprotection in the retina”, EC
- since 2002 Principal Investigator, Research Group 592 “Cellular and Molecular Physiopathology of the retina”, INSERM and UPMC, Paris, France
- 1999 - 2002 Principal Investigator, Research Group „Cellular and Molecular Physiopathology of the retina“, INSERM, Paris, France

Honours and Awarded Memberships (selection)

- 2023 International Prize for Translational Neuroscience, Gertrud Reemtsma Foundation, Max Planck Society for the Advancement of Science, Hamburg/Munich, Germany
- since 2014 Member, German National Academy of Sciences Leopoldina, Germany
- 2012 Coscas Medal, Retina 2012, Rome, Italy
- 2012 Jules Gonin Lecture, Retina Research Foundation, Houston, USA
- 2012 Medal of Innovation, CNRS, Paris, France

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- 2010 Honorary Doctorate, University of Geneva, Geneva, Switzerland
- since 2008 Honorary Member, German Society of Ophthalmology (DOG), Germany
- 2008 Gold Medal, Université Pierre et Marie Curie, Paris, France
- 2008 Member, Legion of Honor, France
- 2007 Innovation Award, Altran Foundation, Paris, France
- 2007 Quebec Vision Research Network's Prize, Quebec, Canada
- since 2007 Member, Academia Ophthalmologia Internationalis (AOI), Ann Arbor, USA
- since 2007 Member, Académie des sciences, Paris, France
- 2006 Grand Prix scientifique, Fondation NRJ, Paris, France
- 2006 Alumni Award for Excellence in Vision Research, Alcon Research Institute, Geneva, Switzerland
- since 2006 Member, European Academy of Ophthalmology (EAO)
- 2005 Trustee Award, Foundation Fighting Blindness (FFB), Columbia, USA
- 2005 Emilia Valori Grand Prix, Académie des sciences, Paris, France
- 2003 Member, National Order of Merit, France
- 2002 Coups d'élan pour la Recherche Française Prize, Fondation Bettencourt Schueller, Neuilly-sur-Seine, France
- 2001 Mérite Typhlophile, Gold Medal, French Federation of the Blind, France
- 1998 Ophthalmologist of the Year 1998, Abstract Ophthalmo, Paris, France
- 1994 Prix de parrainage, Fondation Alsace, Strasbourg, France
- 1990 Prix de recherche, Société Française d'Ophtalmologie (SFO), Paris, France
- 1990 International Scholar Award, Research to Prevent Blindness (RPB), New York City, USA
- 1985 International Prize, IPSEN Fondation, Paris, France

Research Priorities

José-Alain Sahel is a French ophthalmologist and clinician scientist. His research focuses on the cellular and molecular mechanisms of retinal degeneration. He develops new treatment approaches for retinal diseases that were previously untreatable, such as vascular eye diseases. He is considered a pioneer in the area of retinal prostheses.

A retinal degeneration occurs when the light-sensitive cells of the retina gradually die. Age-related macular degeneration (AMD) usually leads to severe vision impairment, while inherited diseases

such as Retinitis pigmentosa (RP) can lead to blindness. Retinal degeneration cannot be cured. José-Alain Sahel and his team have developed a high-tech implant, a retinal prosthesis, with which he made it possible for blind patients to see initial light-dark images again. Electrodes are placed on the surface of the retina, and goggles fitted with an integrated camera transmit the image information to the electrodes. The information is then processed by a software and the signals are forwarded to the brain via the optical nerve, where they are converted into black and white images. However, patients need training to interpret these perceptions. The neuronal connections have to be reactivated. With time, however, patients should be able to recognise objects again.

José-Alain Sahel is working on the implant's further development. He would like to place it under the retina and equip it with several thousand electrodes. Patients should be able to recognise more due to the higher image resolution. In order to drive his research forward, he co-founded a research centre. He simulates everyday situations in a "Street Lab" so as to realistically record the impacts of eye conditions. He develops new concepts of basic research and transfers these into a clinical perspective. In experimental studies José-Alain Sahel also uses gene therapies for cases of significant retinal degeneration. The objective of his research is the development of innovative therapies to give blind patients some of their independence back.