RICHARD BENTON

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ORCID 0000-0003-4305-8301
Nationality British
Date of birth 27th September 1977
Family Married, 1 daughter (2007), 1 son (2010)

EDUCATION

1995-1998	Queens' College University of Cambridge	BA/MA (Honours) Natural Sciences *Part IA/IB/II*: Class I
1999-2003	The Wellcome Trust/Cancer Research UK Gurdon Institute University of Cambridge	PhD (Biology) Supervisor: Daniel St Johnston

Research internships: Cold Spring Harbor Laboratory (SUR programme, Rob Martienssen lab, July-Aug 1997), Department of Biochemistry, University of Cambridge (Part II project, Nancy Standart lab, Nov 1997-Mar 1998), Imperial Cancer Research Fund (Takashi Toda lab, July-Aug 1998), MRC Laboratory of Molecular Biology, Cambridge (Jonathan Hodgkin/Patricia Kuwabara labs, Sep 1998-Mar 1999), European Molecular Biology Laboratory, Heidelberg (Anne Ephrussi lab, Mar-Sep 1999)

RESEARCH POSITIONS

May 2003-July 2007	The Rockefeller University, New York Post-doctoral research in the laboratory of Leslie Vosshall
Sep 2007-July 2012	Center for Integrative Genomics, University of Lausanne Tenure-track Assistant Professor
Aug 2012-July 2018	Center for Integrative Genomics, University of Lausanne Associate Professor (with tenure)
Sep 2017-Feb 2018	MRC Laboratory of Molecular Biology, Cambridge Visiting Professor (sabbatical)
Aug 2018-	Center for Integrative Genomics, University of Lausanne Full Professor
Nov 2018-Oct 2021	HHMI Janelia Research Campus, Visiting Scientist

AWARDS

1996	Queens' College Prize
1997	Henry Mossieri Prize for Distinction in Biochemistry
1997	Queens' College Prize
1998	Queens' College Prize
2004	Annual *Drosophila* Research Conference Larry Sandler Award finalist
2005	European Symposium for Insect Taste and Olfaction Poster Prize
2009	Eppendorf and Science Prize for Neurobiology
2011	Junior Basic Science Award, Faculty of Biology and Medicine, UNIL
2012-2015	EMBO Young Investigator
2012	Friedrich Miescher Award (Swiss Society for Biochemistry)
2012	Association for Chemoreception Sciences Young Investigator Award for Research in Olfaction
2015	National Latsis Prize (Swiss National Science Foundation)
2016	"100 personnalités qui font la Suisse romande", L'Hebdo
2016	EMBO Gold Medal
2017	Outstanding Student's Guidance Award, Faculty of Biology and Medicine, UNIL
2019-	EMBO Member
2021-	Fellow of The Royal Society (United Kingdom)
2023	Jürg Tschopp Basic Life Sciences Award, Faculty of Biology and Medicine, UNIL

GRANTS

1998	Korner Travelling Fellowship
1999-2002	Wellcome Prize Studentship
1999-2002	Perse Scholarship for Research in Developmental Biology (Gonville and Caius College)
2003	Human Frontier Science Program Long Term Fellowship *(gratefully declined)*
2003-2005	European Molecular Biology Organisation Long Term Fellowship
2005-2007	Helen Hay Whitney Foundation Maclyn McCarty Fellowship
2008-2013	European Research Council Starting Independent Researcher Grant (EUR 1500k)
2008	Swiss National Science Foundation R'Equip Grant (co-recipient) (CHF 295k)
2008-2009	Roche Research Foundation Fellowship (CHF 30k)
2009-2012	Swiss National Science Foundation Project Grant (CHF 459k)
2009	European Science Foundation-EMBO Conference Grant (co-recipient)
2011-2014	Human Frontier Science Program Young Investigator Grant (EUR 250k*)
2012-2015	Swiss National Science Foundation Sinergia Grant (co-recipient) (CHF 380k*)
2012-2016	Swiss National Science Foundation Project Grant (CHF 624k)
2012-2013	Novartis Foundation (CHF 60k)
2013-2017	Swiss National Science Foundation Nanotera Grant (co-recipient) (CHF 398k*)
2014-2019	European Research Council Consolidator Grant (EUR 1990k)
2016-2019	Swiss National Science Foundation Project Grant (CHF 834k)
2018-2021	Janelia Visiting Scientist Program (host: David Stern)
2019-2024	European Research Council Advanced Grant (EUR 2328k)
2019-2020	Novartis Foundation (CHF 60k)
2019-2023	Swiss National Science Foundation Excellence Grant (CHF 699k)

**Financial award to own laboratory indicated for collaborative research funding*

PROFESSIONAL SERVICE

Meeting/seminar organisation

• 2007: Conference assistant, Keystone Symposium on "Chemical Senses: from Genes to Perception"
• 2008-: Founder and organiser, Lausanne *Drosophila* Meetings
• 2009: Organiser, Swiss *Drosophila* Meeting (120 attendees)
• 2009: Founder and organiser, Swiss Chemosensory Meeting
• 2009: Session organiser and chair: European *Drosophila* Research Conference
• 2010: Co-organiser, Center for Integrative Genomics Symposium: "Sensing the Environment" (~200 attendees)
• 2010: Co-organiser, ESF-EMBO Conference: "Functional Neurobiology In Minibrains: From Flies To Robots, And Back Again" (~100 attendees)
• 2010-: Committee member, Lausanne Neuroscience Seminar Series
• 2010-: Committee member, Center for Integrative Genomics Seminar Series, UNIL
• 2012: Co-organiser, Minisymposium on "Evolution of chemosensory systems" at the 16th International Symposium on Olfaction and Taste, Stockholm
• 2014: Chairperson, Life Sciences Switzerland (LS^2, formerly USGEB) Annual Meeting (~650 attendees)
• 2015: Co-organiser, Center for Integrative Genomics 10th Anniversary Symposium: "A Decade in Genomics" (~200 attendees)
• 2017: Organiser, EMBO/EMBL Symposium: "Neural Circuits in the Past, Present and Future" (~120 attendees)
• 2017: Organiser, Center for Integrative Genomics Symposium: "Innovations in Biology" (~160 attendees)
• 2019: Committee member, European *Drosophila* Research Conference, Lausanne (~750 attendees) and workshop organiser "Engineering *non-melanogaster* drosophilids"
• 2020: Committee member, Life Sciences Switzerland (LS^2) Annual Meeting
• 2020: Co-organiser, EMBO Conference, NCBS, India: "Senses: Development, Evolution and Connectivity" (*postponed due to COVID)*
• 2022 Organiser, Symposium on "Chemical Ecology and Reverse Chemical Ecology", International Congress of Entomology, Helsinki

Course organisation/management

Summer Undergraduate Research (SUR) Programme, UNIL
2010-2011: Vice-Director
2012-2018: Director

Master of Science in Molecular Life Sciences, UNIL
2018-: Head

Editorial service

2009-: Frontiers in Neurogenomics, Review Editor
2013-2015: PLOS Biology, Guest Academic Editor
2016-: PLOS Biology, Academic Editor
2017-: BMC Biology, Editorial Board
2017-2020: Royal Society Open Science, Editorial Board
2018-: eLife, Guest Editor
2018-: PLOS Genetics, Guest Academic Editor

Journal Reviewer

Science, Nature, Cell, Neuron, Nature Neuroscience, Nature Methods, Nature Communications, Science Advances, Genes and Development, PNAS, Current Biology, J Cell Biology, PLOS Biology, PLOS Genetics, PLOS Neglected Tropical Diseases, PLOS ONE, Journal of Experimental Biology, Journal of Neuroscience, Cell Reports, eLife, Journal of Neurophysiology, The FASEB Journal, Cell and Tissue Research, Journal of Insect Science, Chemical Senses, Proceedings of the Royal Society B, Journal of Comparative Neurology, Naturwissenschaften, Journal of Visualized Experiments, Journal of Experimental Marine Biology and Ecology, Insect Biochemistry and Molecular Biology, Insect Molecular Biology, Fly, Trends in Genetics, BMC Biology, Curr Op Insect Science

Grant Reviewer

European Research Council, Human Frontier Science Program, European Molecular Biology Organisation, Swiss National Science Foundation, The Wellcome Trust, Biotechnology and Biological Sciences Research Council (UK), German Research Foundation (DFG), Boehringer Ingelheim Fonds, Knut and Alice Wallenberg Foundation (Sweden), French National Research Agency, ATIP-AVENIR Program (France), Marsden Fund (New Zealand), Czech Science Foundation, FWO (Netherlands), Aarhus Institute of Advanced Studies/COFUND (Marie Curie), Gutenberg Research College, Global Talent Visa (UK Government), Whitehall Foundation Inc. (USA)

International/National Committee Participation

2020-: Swiss National Science Foundation, Ambizione Grant Evaluation Committee
2021-2024: The Royal Society – Sectional Committee 8 (Multicellular Organisms)
2022-: European *Drosophila Society* – non-profit Association member

International Scientific Advisory Board Membership

2012-2022: Max Planck Institute for Chemical Ecology, Jena

Institutional Committee Participation

Faculty recruitment and tenure evaluation
- 2012: Associate Professorship Search Committee, Department of Fundamental Neurosciences, UNIL
- 2013: Full Professorship/Director Search Committee, Department of Fundamental Neurosciences, UNIL
- 2013: Tenure Evaluation Committee for Prof. Anita Lüthi, Department of Fundamental Neurosciences, UNIL
- 2013: Tenure-track Assistant Professorship Search Committee, Department of Ecology and Evolution, UNIL
- 2014: *Ad hoc* Search Committee, Associate Professorship, Brain Mind Institute, EPFL

• 2014: Full Professorship/Director Search Committee, Department of Fundamental Neurosciences, UNIL
• 2015: President, Tenure track Assistant & Associate Professorships Search Committee, Department of Fundamental Neurosciences, UNIL
• 2020: President, Tenure track Assistant Professorship Search Committee, Department of Computational Biology/NCCR-Microbiomes, UNIL
• 2022: Tenure Evaluation Committee for Prof. Marlen Knobloch, Department of Biomedical Sciences, UNIL
• 2023-: Commission consultative pour les promotions (CCP), Faculty of Biology and Medicine, UNIL

Other
• 2013-2017: Research Council (Commission de la Recherche), Faculty of Biology and Medicine, UNIL
• 2013: Working group (Groupe de travail): new department of the Faculty of Biology and Medicine, UNIL
• 2018-2023: Conseil de l'Ecole Doctorale, Faculty of Biology and Medicine, UNIL
• 2018: Prix Guénin Selection committee, UNIL
• 2019-: Commission de sélection pour les Prix de Faculté
• 2021: Working group of the rectorate: Plans d'intentions de l'UNIL - Recherche
• 2023: Commission: recherche intégrité de la FBM
• 2023-: Fondation du Dr Rub Grants Committee
• 2023-: Comité égalité, Center for Integrative Genomics

Tenure/Promotion Review

Tenure/research evaluation of 15 Principal Investigators in the USA, UK, Germany and Switzerland

Doctoral Thesis committee expert

2008: Aidan Kiely (Newcomb group, University of Auckland)
2010: Kai Feng (Dickson group, Institute of Molecular Pathology, Vienna)
2011: Aitana Morton de Lachapelle (Bergmann group, UNIL)
2011: Stéphane Dorsaz (Tafti group, University of Lausanne)
2012: Sveta Chakrabarti (Lemaitre group, EPFL)
2013: Colm Carraher (Newcomb group, University of Auckland)
2014: María Luisa Martínez (co-referee) (Moreno group, University of Bern)
2014: Christine Missbach (Hansson group, MPI of Chemical Ecology, Jena)
2014: Alfred Chng (Lemaitre group, EPFL)
2015: David Bovard (Broillet group, UNIL)
2015: Ximena Ibarra Soria (Logan group, Sanger Institute, University of Cambridge)
2016: Francesco Carelli (Kaessmann group, UNIL)
2016: Paavo Huoviala (Jefferis group, MRC-LMB)
2017: Oleksii Bilousov (Katanaev group, UNIL)
2017: Luca Charles Stickley (Nagoshi group, UNIGE)
2018: Olga Klipa (co-director) (Hamaratoglu group, UNIL)
2018-2019: Isa Özdemir (co-director) (Gambetta group, UNIL)
2019-: Maria Paglione (co-director) (Neukomm group, UNIL)
2020: Xiaoqing Ho (Christer Löfstedt group, Lund University)
2020-2022: Bihan Wang (co-director) (Gambetta group, UNIL)
2020-: Tane Kafle (Arguello group, UNIL)
2021-: Michael Stock (Roignant group, UNIL)
2021-2022: Dwayne Evans (Extavour group, Harvard University)
2022-: Cynthia Gutierrez de Velazco (Bagni group, UNIL)

Master Thesis committee expert

2011: Véronique Vocat (Lashuel group, EPFL)
2016: Alicia Borgeaud (Dion group, UNIL)
2018: Axelle Vandenbroucque (Bagni group, UNIL)
2020: Asya Dolgikh (Lemaître group, EPFL)
2022: Daniel Rodriguez (Gambetta group, UNIL)
2023: Camille Schmidt (van Leeuven group, UNIL)

Thesis committee president

2015: Paris Jafari (Braissant group, CHUV)
2015: Alexandre Pfister (Geldner group, UNIL)
2016: Nicee Srivastava (Fasshauer group, UNIL)
2017: Amaranta Fontcuberta (Chapuisat group, UNIL)
2018: Andra-Octavia Roman (Santiago Cuellar group, UNIL)
2019: Tsu-Hao Yang (Farmer group, UNIL)
2020: Hammam Antar (Gruber group, UNIL)
2020: Hugo Palejowski (Wedekind group, UNIL)
2021: Jessica Burnier (Veening group, UNIL)
2023: Marion Brechet (P. Reymond Group, UNIL)

Mentor (Center for Integrative Genomics PhD Programme, UNIL)

2008-2011: Alexandra Laverrière (Thorens group)
2010-2016: Sha Li (Vassali group)
2011-2016: Leonor Rib (Herr group)
2011-2012: Sarah Keim (Fankhauser group)
2012-2017: Paolo Schumacher (Fankhauser group)
2014: Jelena Tosic (Herr group)
2014-2018: Olga Klipa (Hamaratoglu group)
2016-2020: Gustavo A. Ruiz Buendia (Dion group)
2018-: Ana Lopez Vazquez (Fankhauser group)
2018-2019: Andreia Dos Santos Lopes (van Leuuwen group)
2019-: Uyen Linh Ho (van Leuuwen group)
2021-: Shivali Dongre (Vastenhouw group)
2021-: Carlos Martinez Gamero (Roignant group)

Faculty mentor

2016-2021: Christophe Dessimoz (SNF Assistant Professor, CIG/DBC, UNIL)
2017-2023: Maria Cristina Gambetta (Tenure Track Assistant Professor, CIG, UNIL)
2021-: Nikolaus Konstantinides (Institut Jacques Monod, Paris)

INVITED SEMINARS/CONFERENCE PRESENTATIONS

2003
- Cambridge University *Drosophila* Seminar Series

2004
- Society for Neuroscience Annual Meeting, San Diego

2005
- Friedrich Miescher Institute, Basel
- Institute of Biochemistry, ETH, Zurich
- Institute of Zoology, University of Fribourg
- The Rockefeller University Neuroscience Retreat, New York

2006
- Centre for Neuroscience, University of Edinburgh
- Department of Zoology and Animal Biology, University of Geneva
- Center for Integrative Genomics, University of Lausanne
- Department of Zoology, University of Cambridge
- European Chemoreception Research Organisation Conference, Granada
- Brain Mind Institute, EPFL, Lausanne

2007
- Keystone Symposium on “Chemical Senses”, Snowbird
- Helen Hay Whitney Foundation Annual Meeting, MIT
- Transbugnon Seminar, Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne

2008
- “D.Day 2008”, PhD Research Day, University of Lausanne
- Institut de Biologie du Développement de Marseille-Luminy
- 6th Würzburg “Brain and Behavior Days” (plenary speaker)
- Annual Swiss *Drosophila* Meeting, Bern
- "Neurobiology of Sensory Systems" Symposium, XXIII International Congress of Entomology, Durban, South Africa *(gratefully declined)*
- Department of Biology, University of Konstanz
- International Symposium on Olfaction and Taste, San Francisco

- European Molecular Biology Laboratory, Heidelberg
- "Friedrich Miescher Lecture", Friedrich Miescher Institute, Basel

2009
- Department of Fundamental Neuroscience, University of Geneva
- Keystone Symposium on "Chemical Senses", Lake Tahoe
- German Neuroscience Society Annual Meeting, Göttingen
- Cold Spring Harbor Laboratory, New York
- European Symposium for Insect Taste and Olfaction, Sardinia
- Swiss Neurofly Meeting, University of Fribourg
- European *Drosophila* Research Conference, Nice (Session Chair)
- AgroParisTech, INRA, Versailles

2010
- EPFL Laboratory of Physical Chemistry of Polymers and Membranes Winterschool, Adelboden
- Department of Genetic Medicine and Development, University of Geneva
- "Nutritional Homeostasis in Insects" Workshop, University of Bonn *(gratefully declined)*
- Center for Integrative Genomics, University of Lausanne
- Institute for Molecular Pathology, Vienna
- Eppendorf Headquarters, Hamburg
- ESF-EMBO Conference: "Functional Neurobiology In Minibrains: From Flies To Robots, And Back Again", Sant Feliu
- Basel Neuroscience Seminar Series, Biozentrum
- Division of Biology, University of California-San Diego
- Division of Biology, Caltech

2011
- Max Planck Institute of Chemical Ecology, Jena
- Max Planck Institute of Neurobiology, Martinsried
- BCN-CDB Symposium: "Frontiers in Biology", Barcelona
- 103rd International Titisee Conference on "Genetic analysis of neural circuits"
- French National Neuroscience Meeting, Marseille *(gratefully declined)*
- EPFL Life Science Seminar Series, Lausanne
- Princeton Neuroscience Institute
- XXIth ECRO meeting, Manchester *(gratefully declined)*
- Junior European *Drosophila* Investigators Meeting, Leysin
- 6th International Symposium on Molecular Insect Science, Amsterdam
- University of Geneva International PhD program Annual Retreat
- BIG (Biology and Integrative Genomics) seminar, UNIL
- ALPS (Arc Lémanique Plant Science) Symposium, St-Cergue

2012
- Institute of Science and Technology, Austria
- CNRS-Université de Bourgogne, Dijon
- MRC Laboratory of Molecular Biology, Cambridge
- School of Biological and Chemical Sciences, University of London
- London Fly Meeting
- EMBO Young Investigator Meeting, Lisbon
- Departments of Biology and Medicine, University of Fribourg
- Minisymposium "Evolution of chemosensory systems" at the 16th International Symposium on Olfaction and Taste, Stockholm
- John Hildebrand's 70th Birthday Symposium, Wurzburg
- EMBO Young Scientist Forum, Istanbul *(gratefully declined)*
- International Congress of Entomology, South Korea *(gratefully declined)*
- Third Leibniz Symposium on "Translating synaptic activity into neuronal plasticity" *(gratefully declined)*
- 16th Evolutionary Biology Meeting, Marseille *(gratefully declined)*
- Cellular Mechanisms of Sensory Processing Conference, MPI-Gottingen *(gratefully declined)*
- Wellcome Trust/Cancer Research UK Gurdon Institute, Cambridge

2013
- Sensory Signaling in Model Organisms, HHMI/Janelia Farm Research Campus
- 2nd Cold Spring Harbor Asia Francis Crick Symposium on Neuroscience, 'The Changing Brain'; Suzhou, China
- London Fly Meeting *(gratefully declined)*
- European Symposium for Insect Taste and Olfaction, Sardinia
- Centro Andaluz de Biología del Desarrollo, Seville

- Human Brain Seminar Series, CHUV, Lausanne
- "Neuroclub", University of Geneva

2014
- Molecular Neuroscience Forum, Weizmann Institute, Israel
- European Science Foundation Workshop: "The Development and Function of Neural Systems", Istanbul
- Life in the Aggregate: Mechanisms and Features of Social Dynamics, HHMI/Janelia Farm Research Campus
- ESF-EMBO Conference: "Flies, Worms and Robots: Combining Perspectives on Minibrains and Behaviour", Sant Feliu
- European Neurofly Meeting, Crete *(gratefully declined)*
- European Congress of Entomology, York *(gratefully declined)*
- XXIVth European Chemoreception Research Organization Conference *(gratefully declined)*

2015
- Center for Neural Circuits and Behavior, University of Oxford
- EMBO/Arolla Workshop: "Cell and Developmental Systems"
- European Symposium for Insect Taste and Olfaction, Sardinia
- MRC Clinical Sciences Centre, Imperial College London
- The Genetics Society: "Building the brain: from genes to circuits and cognition", London

2016
- International Congress of Entomology (ICE), Orlando *(gratefully declined)*
- International Congress of Neuroethology (ICN), Montevideo (plenary lecture)
- Telluride Workshop on Molecular Recognition and the Chemical Senses, Colorado *(gratefully declined)*
- Symposium on "Evolution of the Brain", Department of Fundamental Neurosciences, UNIL
- International Symposium on Olfaction and Taste Satellite Meeting, University of Tokyo
- EMBO Meeting, Mannheim
- Department of Biology, Lund University, Sweden

2017
- Department of Pharmacology and Toxicology, UNIL
- Institute of Biology, University of Neuchâtel
- Schram Foundation Symposium, Germany (keynote lecture) *(gratefully declined)*
- Department of Biology, Brandeis University
- Department of Genetics, Harvard Medical School
- The Rockefeller University
- EMBO/EMBL Symposium: "Neural Circuits in the Past, Present and Future"
- DKFZ-ZMBH Alliance Colloquium, Heidelberg
- Club de Neurobiology des Invertébrés, French Society of Neurosciences, CNRS-Dijon (plenary lecture)
- Society of Neuroscientists of Africa 13th International Meeting, Kampala-Uganda (plenary lecture) *(gratefully declined)*
- ECRO XXVII (plenary lecture), Cambridge
- European Symposium for Insect Taste and Olfaction, Sardinia (invited speaker)
- MRC Laboratory of Molecular Biology, Cambridge
- 31st French *Drosophila* Meeting *(gratefully declined)*
- Department of Physiology, Development and Neuroscience, University of Cambridge

2018
- Champalimaud Centre for the Unknown, Lisbon
- Lyon Neuroscience Research Center
- EMBO Workshop on the Molecular and Developmental Biology of *Drosophila*, Crete
- EMBO/Arolla Workshop: "Cell and Developmental Systems"
- XI European Congress of Entomology *(gratefully declined)*
- McGovern Institute for Brain Research and Center for Quantitative Biology Workshop, Peking University: "Neuroscience and AI" *(gratefully declined)*
- Centre for Developmental Neurobiology at King's College London
- "*Flying Senses"* Symposium, European Neuroscience Institute, Göttingen *(gratefully declined)*

2019
- Columbia Workshop on Brain Circuits, Memory and Computation, New York
- Janelia Research Campus
- "Nutritional Homeostasis in Insects" Workshop, University of Bonn
- Kavli Workshop on Neural Circuits and Behavior of *Drosophila*, Crete
- European Symposium for Insect Taste and Olfaction, Sardinia (invited speaker) *(gratefully declined)*
- EMBO Members Meeting, EMBL-Heidelberg
- Institute for Functional Genomics, University of Montpellier

2020	*All scientific conference/seminar engagements postponed due to the COVID-19 pandemic*
2021	• Institute for the Diversity, Ecology and Evolution of the Living World, Université Paris-Saclay (Webinar; PhD student invitation)
	• Brain Awareness Week, Regional Centre for Biotechnology, NCR Biotech Science Cluster Haryana (NCR Delhi) (Webinar)
	• "Around the globe in 24 hours virtual symposium on Insect Olfaction and Taste" (Webinar)
	• Swiss *Drosophila* Meeting, Walter Gehring Keynote Lecture, U. Zurich
2022	• Instituto de Neurociencias, Alicante
	• next Generation Insect Chemical Ecology (nGICE), Max Planck Center (Webinar)
	• International Congress of Entomology, Helsinki, Finland
	• Georgia State University, Brains and Behavior Distinguished Lecture Series (Webinar)
2023	• School of Biosciences, University of Cardiff
	• "Neuro-Evo: A Comparative Approach to Cracking Circuit Function III" Janelia Research Campus (*postponed from 2020; gratefully declined)*
	• Workshop on Neural Circuits and Behavior of *Drosophila*, Crete
	• European Symposium for Insect Taste and Olfaction, Sardinia (invited speaker)
	• Symposium on "Multifaceted Brain Communication", Department of Fundamental Neurosciences, UNIL
2024	• Crick Lecture, The Francis Crick Institute, London
	• Institut Jacques Monod, Paris

TEACHING

Undergraduate

2008-2019	Génétique des modèles eucaryotes (BSc2, UNIL) (4h lectures)
2009-2019	Génétique des modèles eucaryotes (Travaux Pratiques, BSc2, UNIL) (2x3h)
2009-	Third year Experimental Design Course host laboratory
2010-	Advanced Molecular, Cellular and Development Biology: Body patterning (BSc3, UNIL) (14h lectures + Understanding/Interpretation of Scientific Literature 8h + Introduction to scientific paper reading and communication 1h (until 2019))
2011-	Dynamic cell module: Cilia, cellular antennae in health and disease (BSc3, UNIL) (5h lectures) and Introduction to scientific writing (1h lecture (until 2019))
2013-	Chemosensory perception in minibrains: from genes to behaviour (BSc3, UNIL) (4h lectures, 6h practical classes, 6h paper reading)

Post-graduate

2008	"Animals models in brain research" seminar for Master/PhD course in neurobiology, University of Fribourg (1h lecture)
2008-2011	"Olfactory physiology": lecturer, Cold Spring Harbor Laboratory Neurobiology of *Drosophila* course (3h lectures; 6h practical training)
2009-2013	"Invertebrate Olfaction" Master Programme, University of Geneva (2h lectures)
2010-	"Molecular mechanisms of evolution" (Master in Molecular Life Sciences, UNIL) (2h lectures + 6h research article discussions)
2011-2018	"Write-a-review" course tutor; Master in Molecular Life Sciences, UNIL (~16h)
2012-	"How to communicate your science" Master in Molecular Life Sciences, UNIL (1h lecture)
2015	PhD Course in Insect Chemical Ecology, Alnarp, Sweden (2h lecture)
2018-	Various teaching roles as Head of the Master in Molecular Life Sciences, UNIL (e.g., organisation/chairing of annual retreat (2 days), management/evaluation of "First step" projects, Write a Review & Fellowship courses (several days cumulatively annually))

Other

2008	"Models in biology: *Drosophila*" seminar for joint Center for Integrative Genomics and Department of Medical Genetics-UNIL meeting (1h lecture)
2009	CAOS Post-doc/Student Meeting "How to give a scientific presentation" (1h lecture)
2009	Euresearch and EPFL, Postgraduate Course "European Funding" (1h lecture)

2010	EPFL Laboratory of Physical Chemistry of Polymers and Membranes Winterschool, Adelboden (1h lecture)
2010-2013	UNIL/EPFL Summer Undergraduate Research Programmes: "How to communicate your science" (1h lecture)
2012-2014	"Science^2" laboratory visit (1h lecture)
2014	EPFL/UNIL Life Sciences Postdoctoral Association: "How to manage a lab and staff"
2016	"Speed-dating" workshop on career & family, NCCR Chemical Biology/University of Geneva

Public outreach

2008-	"Les Mystères de l'UNIL" - journées portes ouvertes (2 days annually)
2015	Préverenges school class lab visit – "La drosophile" (4h)
2016	CQFD, RTS1: "La drosophile"
2016	Préverenges school class demonstration – "Les microbes" (2h)
2017	CQFD, RTS1: Rencontre avec Richard Benton, "le grand invité de la semaine"
2017	Article dans Echos du vivant – éclairage – "Dans la tête d'une mouche"
2017	Article dans "La Salamandre"
2018	Conférence de la Cérémonie de remise des Masters en biologie
2018	Article dans Migros-Magazine
2018	Portrait dans TierWelt
2018	Journées découverte – visite de laboratoire
2019	Consultant, Musée de la Main – exposition sur l'odorat
2019	Leçon Inaugurale (public lecture): "*Chacun son cerveau: l'évolution de la perception sensorielle*"
2021	Article dans Echos du vivant – "L'odorat et le goût"
2022	Discussion with Cesla Amarelle (Conseillère d'Etat) regarding participation of Switzerland in Horizon-Europe
2022	Consultant on exhibition on "post-natural history" Pénitencier-Musée de la Nature, Sion
2022	Interviewed for The Royal Society's "Disruptive Technology for Research" project
2022	Journées découverte – visite de laboratoire
2023	"Brouhaha" (émission pour enfants), RTS1: "Les mouches"
2024	"Connaissance 3" visit (l'Université des seniors du canton de Vaud) - *TBC*

TRAINEES

Post-doctoral fellows

- Yael Grosjean (Oct 2007-Dec 2009)
  (currently: CNRS Research Director, Dijon)
- Michael Reid (Jun 2008-May 2009)
- Ana Florencia Silbering (Aug 2008-Nov 2018)
  (currently: Chargée de Projet at the Medical Education Unit, UNIL)
- Carolina Gomez-Diaz (Jul 2009-Jul 2014) (Asturian Government Fellowship)
  (currently: Associate Professor, University of Oviedo)
- Michael Saina (Aug 2009-Aug 2014)
  (currently: Senior Consultant at advisca)
- Pavan Ramdya (Aug 2009-Feb 2015) (HFSP Long-term Fellowship)
  (currently: Assistant Professor Tenure Track position at the EPFL Brain Mind Institute/Interfaculty Institute of Bioengineering)
- Benoîte Bargeton (Sep 2010-Feb 2011, and Sep 2012-Aug 2017)
  (*currently: Regional Study Coordinator, Labcorp Drug Development)*
- Adria Le Boeuf (Jun 2011-Nov 2016)
  (currently: PRIMA Group Leader, Department of Biology, University of Fribourg; accepted Lectureship at Department of Zoology, University of Cambridge)
- Lucia Prieto-Godino (Feb 2012-Oct 2017) (FEBS Long-term Fellowship; FENS European Journal of Neuroscience Young Investigator Award)
  (currently: Group Leader, The Francis Crick Institute, London)
- Juan Antonio Sánchez-Alcañiz (Aug 2012-June 2018) (FEBS, EMBO and HFSP Long-term Fellowships)
  (currently: Group Leader at the Instituto de Neurociencias, Alicante)
- J. Roman Arguello (Jan 2013-June 2018) (Novartis Foundation Grant)

(currently: SNSF Professor, Department of Ecology and Evolution, UNIL)
• Phing Chian Chai (April 2014-Mar 2019)
(currently: Forensic Scientist (DNA DatabaseLab) with the Health Science Authority, Singapore)
• Thomas Auer (April 2015-) (HFSP Long-term Fellowship)
(currently SNSF Ambizione Grant Group Leader, Center for Integrative Genomics, UNIL; accepted SNSF Professor position, Department of Biology, University of Fribourg)
• Sean McKenzie (Jan-Aug 2018)
(*currently: Lecturer in Biology, Gonzaga University*, *USA)*
• Jérôme Mermet (April 2019-)
• Hayden Schmidt (July 2019-Feb 2021) (EMBO Long-Term and Helen Hay Whitney Foundation Post-doctoral Fellowships)
(currently: Scientist I position, International Aids Vaccine Initiative, California)
• Suguru Takagi (Sep 2019-) (Marie Curie, EMBO Long-Term and JSPS Fellowships)
• Michael Shahandeh (Feb 2020-)
• Daehan Lee (July 2020-Aug 2022)
(currently tenure-track Assistant Professor, Department of Biological Sciences, Sungkyunkwan University, South Korea)
• Michele Marconcini (Oct 2020-)
• Ambra Masuzzo (Aug 2021-) (EMBO Long-term Fellowship)
• Nathaniel Himmel (Feb 2022-) (HFSP Long-term Fellowship)
• Divyansh Mittal (Nov 2022-)
• Llilians Calvo Gonzalez (Mar 2023-)

PhD students

• Raphael Rytz (May 2008-June 2013) (Roche Research Foundation Fellowship)
(currently: Research Associate at the Federal Office of Public Health, Bern)
• Vincent Croset (Feb 2009-June 2013) (Boehringer Ingelheim Fellowship)
(currently: Assistant Professor, Durham University, UK)
• Rati Bell (Aug 2008-Oct 2013) (Boehringer Ingelheim Fellowship)
(currently: The Food and Environment Research Agency, York)
• Anantha Krishna Sivasubramaniam (Dec 2009-July 2014)
(currently: PhD student, University of Reading, Malaysia)
• Jan Armida (Jun 2013-May 2018)
(currently: Swiss Institute for Bioinformatics)
• Marta Scalzotto (Sep 2014-August 2019)
(currently: Clinical Trial Data Analyst at Labcorp)
• Kaan Mika (Dec 2015-Feb 2021) (Guénin Prize 2022)
(currently: post-doctoral researcher with Consuelo De Moraes, ETH)
• Raquel Álvarez-Ocaña (Mar 2017-July 2023)
• Asfa Sabrin Borbora (Dec 2021-)

Master students

• Deborah Widmer (Masters in Behaviour, Evolution and Conservation "First steps" project, 2008)
• Vincent Croset (Masters in Genomics and Experimental Biology project, 2008) (Prix de Faculté)
• Cristina Leoni (Masters in Genomics and Experimental Biology "First steps" project, 2009)
• Jan Armida (Masters in Medical Biology "First steps" project, 2011)
• Flavio Angei (Masters in Medical Biology Masters project, 2012)
• Jane Yi (Masters in Medical Biology "First steps" project, 2013)
• Sabine Mentha (Masters in Molecular Life Sciences Masters project, 2014)
• Raquel Álvarez-Ocaña (Masters in Medical Biology Masters project, 2016)
• Andrea Coti (Masters in Behaviour, Evolution and Conservation "First steps" project, 2017)
• Lou Lescuyer de Decker (Masters in Behaviour, Evolution and Conservation "First steps" project, 2020)
• Artemiy Saukin (Masters in Molecular Life Sciences "First steps" project, 2020)
• James Tan (Masters in Molecular Life Sciences Masters project, 2021)
• Julien Cergneux (Masters in Molecular Life Sciences "First steps" project, 2021)
• Bruna Fornasari (Masters in Behaviour, Evolution and Conservation "First steps" project, 2022)

Undergraduate students

• Alexandre Wicky (Summer student, 2009)
• Jeanne De Lavallaz (Summer student, 2010)
• Ruichen Sun (UNIL Summer Undergraduate Research (SUR) Programme student, 2010, and intern, 2011)
• Jovana Plavsa (UNIL SUR Programme student, 2011)
• Yueying Wang (UNIL SUR Programme student, 2012)
• Rachel Crosby (UNIL SUR Programme student, 2014)
• Pedro Tan (UNIL SUR Programme student, 2018)
• Eleni Lamprou (UNIL SUR Programme student, 2019)
• Camille Guérin (Spring internship student, 2022)
• Caroline Frangière (Summer student, 2023)

Technicians

• Liliane Abuin (Oct 2007-)
• Jaime Humberto Copete Reina (Feb 2010-Apr 2013)
• Steeve Cruchet (Feb 2011-)
• Giovanna Zappia (Oct 2013-)

Technical assistants

• Marion Graf (Apr-Dec 2009) (stagiaire)
• Jérôme Blanc (Sep 2010-June 2011) (stagiaire)
• Romain Groux (Oct 2011-May 2012) (undergraduate helper)
• Lisa Haerri (Mar-Aug 2016) (stagiare)
• Adrian Herrera (Sep 2017-Jan 2018) (civilist)
• Alexandre Cergneux (July-Aug 2018) (stagiaire)
• Jonas Barraud (Jan-Sep 2020) (stagiare)
• Louis Currat (Jan-Apr 2022) (stagiare)

High-school students (Travail de maturité)

• Narjes Sayah (2018)
• Gilles Courvoisier (2022)

Visiting scientists

• Vladimir Panin (Aug 2013-Jan 2014) (sabbatical visitor from Texas A&M University, USA)
• Naoko Toshima (Jan-May 2015) (visiting PhD student, Tanimura group, Kyushu University, Japan)
• Kaan Mika (Jan-Nov 2015) (visiting research assistant)
• Alberto Cattaneo (Jan 2020-Mar 2021; visiting fellow, Lund University; funded by Formas Grant)

PUBLICATIONS

Bibliometric data from Google Scholar: https://scholar.google.ch/citations?user=PlPUMesAAAAJ&hl=en

Shulman JM, Benton R and St Johnston D. The *Drosophila* homolog of *C. elegans* PAR-1 organizes the oocyte cytoskeleton and directs *oskar* mRNA localization to the posterior pole. **Cell** (2000) 101(4):377-388

Huynh JR, Shulman JM, Benton R and St Johnston D. PAR-1 is required for the maintenance of oocyte fate in *Drosophila*. **Development** (2001) 128(7):1201-1209

Benton R and St Johnston D. Cell Polarity: Posterior Par-1 Prevents Proteolysis. **Current Biology** (2002) 12(14):R479-R481

Benton R, Palacios IM and St Johnston D. *Drosophila* 14-3-3/PAR-5 is an essential mediator of PAR-1 function in axis formation. **Developmental Cell** (2002) 3(5):659-671

Benton R and St Johnston D. A conserved oligomerization domain in *Drosophila* Bazooka/PAR-3 is important for apical localization and epithelial polarity. **Current Biology** (2003) 13(15):1330-1334

Doerflinger H, Benton R, Shulman JM and St Johnston D. The role of PAR-1 in regulating the polarised microtubule cytoskeleton in the *Drosophila* follicular epithelium. **Development** (2003) 130(17):3965-3975

Benton R and St Johnston D. *Drosophila* PAR-1 and 14-3-3 Inhibit Bazooka/PAR-3 to Establish Complementary Cortical Domains in Polarized Cells. **Cell** (2003) 115(6):691-704

Benton R. The molecular function of the *Drosophila* PAR-1 kinase in establishing cell polarity. PhD Thesis, The University of Cambridge (2003)

Benton R, Sachse S, Michnick SW and Vosshall LB. Atypical membrane topology and heteromeric function of *Drosophila* odorant receptors *in vivo.* **PLOS Biology** (2006) 4(2):e20

Benton R. On the ORigin of Smell: odorant receptors in insects. **Cellular and Molecular Life Sciences** (2006) 63(14):1579-85

Doerflinger H, Benton R, Torres IL, Zwart MF and St Johnston D. *Drosophila* Anterior-Posterior Polarity Requires Actin-Dependent PAR-1 Recruitment to the Oocyte Posterior. **Current Biology** (2006) 16(11):1090-1095

Asahina K and Benton R. Smell and taste on a high - Meeting Report of Keystone Symposium "Chemical Senses: from Genes to Perception" **EMBO Reports** (2007) 8(7):634-8

Benton R. Sensitivity and specificity in *Drosophila* pheromone perception. **Trends in Neurosciences** (2007) 30(10):512-519

Benton R, Vannice K and Vosshall LB. An essential role for a CD36 receptor in pheromone detection in *Drosophila*. **Nature** (2007) 450(7167):289-93

Louis M, Huber T, Benton R, Sakmar TP and Vosshall LB. Bilateral olfactory sensory input enhances chemotactic navigation. **Nature Neuroscience** (2008) 11(2):187-99

Benton R. Chemical sensing in *Drosophila.* **Current Opinion in Neurobiology** (2008) 18(4):357-63

Benton R, Vannice KS, Gomez-Diaz C and Vosshall LB. Variant ionotropic glutamate receptors as chemosensory receptors in *Drosophila*. **Cell** (2009) 136(1):149-162

Benton R. Molecular biology of *Drosophila* olfaction. **Annals of the New York Academy of Sciences** (2009) 1170: 478–481

Benton R. Evolution and revolution in odor detection. **Science** (2009) 326:382-383

Silbering AF and Benton R. Ionotropic and metabotropic mechanisms in chemoreception: "chance or design"? **EMBO Reports** (2010) 11(3):173-9

Benton R and Dahanukar A. Chemosensory coding in single sensilla (in "*Drosophila* Neurobiology: A Laboratory Manual", **Cold Spring Harbor Laboratory Press**) (2010)

Ramdya P and Benton R. Evolving olfactory systems on the fly. **Trends in Genetics** (2010) 26(7):307-1

Croset V*, Rytz R*, Cummins SF, Budd A, Brawand D, Kaessmann H, Gibson TJ and Benton R. Ancient protostome origin of chemosensory ionotropic glutamate receptors and the evolution of insect taste and olfaction. **PLoS Genetics** (2010) 6(8): e1001064 (*equal contribution)

Benton R. Chemosensory Ecology: Deceiving *Drosophila*. **Current Biology** (2010) 20(20):R891-3

Ai M, Min S, Grosjean Y, Leblanc C, Bell R, Benton R, Suh, GSB. Acid sensing by the *Drosophila* olfactory system. **Nature** (2010) 468(7324):691-5

Benton R. Sexy circuits. **Nature** (2010) 468(7324):638-40

Abuin L, Bargeton B, Ulbrich MH, Isacoff EY, Kellenberger S and Benton R. Functional architecture of olfactory ionotropic glutamate receptors. **Neuron** (2011) 69(1):44-60

Smith CR, Smith CD, Robertson HM, Helmkampf M, Zimin A, Yandell M, Holt C, Hu H, Abouheif E, Benton R, Cash E, Croset V, Currie CR, Elhaik E, Elsik CG, Fave MJ, Fernandes V, Gibson JD, Graur D, Gronenberg W, Grubbs KJ, Hagen DE, Viniegra AS, Johnson BR, Johnson RM, Khila A, Kim JW, Mathis KA, Munoz-Torres MC, Murphy MC, Mustard JA, Nakamura R, Niehuis O, Nigam S, Overson RP, Placek JE, Rajakumar R, Reese JT, Suen G, Tao S, Torres CW, Tsutsui ND, Viljakainen L, Wolschin F, Gadau J. A draft genome of the red harvester ant, *Pogonomyrmex barbatus*: a model for reproductive division of labor and social complexity. **Proc Natl Acad Sci USA** (2011) 108(14):5667-72

Smith CD, Zimin A, Holt C, Abouheif E, Benton R, Cash E, Croset V, Currie CR, Elhaik E, Elsik CG, Fave MJ, Fernandes V, Gadau J, Gibson JD, Graur D, Grubbs KJ, Hagen DE, Helmkampf M, Holley JA, Hu H, Viniegra AS, Johnson BR, Johnson RM, Khila A, Kim JW, Laird J, Mathis KA, Moeller JA, Munoz-Torres MC, Murphy MC, Nakamura R, Nigam S, Overson RP, Placek JE, Rajakumar R, Reese JT, Robertson HM, Smith CR, Suarez AV, Suen G, Suhr EL, Tao S, Torres CW, van Wilgenburg E, Viljakainen L, Walden KK, Wild AL, Yandell M, Yorke JA, Tsutsui ND. The Draft Genome of the Globally Widespread and Invasive Argentine ant (*Linepithema humile*). **Proc Natl Acad Sci USA** (2011) 108(14):5673-78

Benton R. Decision making: singin' in the brain. **Neuron** (2011) 69(3):399-401

Benton R and Dahanukar A. Electrophysiological recording from *Drosophila* olfactory sensilla. **Cold Spring Harbor Protocols** (2011) doi: 10.1101/pdb.prot5630

Benton R and Dahanukar A. Electrophysiological recording from *Drosophila* taste sensilla. **Cold Spring Harbor Protocols** (2011) doi: 10.1101/pdb.prot5631

Silbering AF*, Rytz R*, Grosjean Y*, Abuin L, Ramdya P, Jefferis GSXE and Benton R. Complementary function and integrated wiring of the evolutionarily distinct *Drosophila* olfactory subsystems. **The Journal of Neuroscience** (2011) 31(38):13357-13375 (*equal contribution)

Grosjean Y, Rytz R, Farine JP, Abuin L, Cortot J, Jefferis GSXE and Benton R. An olfactory receptor for food-derived odours promotes male courtship in *Drosophila*. **Nature** (2011) 478(7368), 236-40

Silbering AF, Bell R, Galizia CG, Benton R. Calcium imaging in the *Drosophila* antennal lobe. **Journal of Visualized Experiments** (2012) e2976, DOI: 10.3791/2976

Benton R. Sensing the long and the short of it. **Nature Neuroscience** (2012) 15:501-503

Ramdya P, Schaffter T, Floreano D, and Benton R. Fluorescence Behavioral Imaging (FBI) tracks genetic identity in heterogeneous groups of *Drosophila*. **PLOS ONE** (2012) 7(11):e48381

Prieto-Godino LL and Benton R. Chemical Neuroecology: A Fly's Bug Detector. **Current Biology** (2013) 23(1):R20-R22

LeBoeuf AC, Benton R* and Keller L*. The molecular basis of social behavior: models, methods and advances. **Current Opinion in Neurobiology** (2013) 23(1):3-10 (*co-corresponding authors)

Saina M and Benton R. Visualizing olfactory receptor expression and localization in *Drosophila*. **Methods in Molecular Biology** (in Vol. 1003 "Olfactory Receptors – Methods and Protocols") (2013)

Rytz R*, Croset V* and Benton R. Ionotropic Receptors (IRs): Chemosensory Ionotropic Glutamate Receptors in *Drosophila* and beyond. **Insect Biochemistry and Molecular Biology** (2013) 43(9):888-97 (*equal contribution)

Gomez-Diaz C, Reina JH, Cambillau C, and Benton R. Ligands for pheromone-sensing neurons are not conformationally-activated odorant binding proteins. **PLOS Biology** (2013) 11(4): e1001546

Gomez-Diaz C and Benton R. The joy of sex pheromones. **EMBO Reports** (2013) (2013) 14(10):874-83

Ramdya P, Lichocki P, Cruchet S, Frisch L, Tse W, Floreano D and Benton R. Mechanosensory Interactions Drive Collective Behaviour in *Drosophila*. **Nature** (2015) 519(7542):233-6

Hopf TA, Morinaga S, Ihara S, Touhara K, Marks DS and Benton R. Amino acid coevolution reveals three-dimensional structure and functional domains of insect odorant receptors. **Nature Communications** (2015) 6:6077

Saina M, Busengdal H, Sinigaglia C, Petrone L, Oliveri P, Rentzsch F and Benton R. A cnidarian homologue of an insect gustatory receptor functions in developmental body patterning. **Nature Communications** (2015) 6:6243

Benton R. Neural circuits: male mating motifs. **Neuron** (2015) 87(5):912-4

Benton R. Multigene family evolution: perspectives from insect chemoreceptors. **Trends in Ecology and Evolution** (2015) 30(10):590-600

Maesani A*, Ramdya P*, Cruchet S, Gustafson K, Benton R** and Floreano D**. Fluctuation-driven neural dynamics reproduce *Drosophila* locomotor patterns. **PLOS Computational Biology** (2015) 11(11):e1004577 (*equal contribution; **joint senior authors)

Chen C*, Buhl E*, Xu M, Croset V, Rees J, Lilley KS, Benton R, Hodge JJL and Stanewsky R. *Drosophila* Ionotropic Receptor 25a mediates circadian clock resetting by temperature. **Nature** (2015) 527(7579):516-20 (*equal contribution)

Gulia-Nuss M, Nuss AB, Meyer JM, Sonenshine DE, Roe RM, Waterhouse RM, Sattelle DB, de la Fuente J, Ribeiro JM, Megy K, Thimmapuram J, Miller JR, Walenz BP, Koren S, Hostetler JB, Thiagarajan M, Joardar VA, Hannick LI, Bidwell S, Hammond MP, Young S, Zeng Q, Abrudan JL, Almeida FC, Ayllón N, Bhide K, Bissinger BW, Bonzon-Kulichenko E, Buckingham SD, Caffrey DR, Caimano MJ, Croset V, Driscoll T, Gilbert D, Gillespie JJ, Giraldo-Calderón GI, Grabowski JM, Jiang D, Khalil SMS, Kim D, Kocan KM, Koči J, Kuhn RJ, Kurtti TJ, Lees K, Lang EG, Kennedy RC, Kwon H, Perera R, Qi Y, Radolf JD, Sakamoto JM, Sánchez-Gracia A, Severo MS, Silverman N, Šimo L, Tojo M, Tornador C, Van Zee JP, Vázquez J, Vieira FG, Villar M, Wespiser AR, Yang Y, Zhu J, Arensburger P, Pietrantonio PV, Barker SC, Shao R, Zdobnov EM, Hauser F, Grimmelikhuijzen CJP, Park Y, Rozas J, Benton R, Pedra JHF, Nelson DR, Unger MF, Tubio JMC, Tu Z, Robertson HM, Shumway M, Sutton G, Wortman JR, Lawson D, Wikel SK,Nene VM, Fraser CM, Collins FH, Birren B, Nelson KE, Caler E and Hill CA. Genomic clues to a unique parasitic lifestyle in the Lyme disease tick, *Ixodes scapularis*. **Nature Communications** (2016) 7:10507

van Giesen L, Hernandez-Nunez L, Delasoie-Baranek S, Colombo M, Renaud P, Bruggmann R, Benton R,

Samuel ADT and Sprecher SG. Multimodal stimulus coding by a gustatory sensory neuron in *Drosophila* larvae. **Nature Communications** (2016) 7:10687

Auer, TO and Benton R. Sexual circuitry in *Drosophila*. **Current Opinion in Neuro** (2016) 38:18-26

Ni L*, Klein M*, Svec K, Budelli G, Chang EC, Kaplan A, Ferrer AJ, Benton R, Samuel ADT and Garrity PA. The Ionotropic Receptors IR21a and IR25a mediate cool sensing in *Drosophila*. **eLife** (2016), e13254 *(*equal contribution)*

Arguello JR, Cardoso-Moreira M, Grenier JK, Gottipati S, Clark AG and Benton R. Extensive local adaptation within the chemosensory system following *Drosophila melanogaster*'s global expansion. **Nature Communications** (2016) 7:11855

Gomez-Diaz C, Bargeton B*, Abuin L*, Bukar N, Reina J, Bartoi T, Graf M, Ong H, Ulbrich MH, Masson JF and Benton R. A CD36 ectodomain mediates insect pheromone detection via a putative tunnelling mechanism. **Nature Communications** (2016) 7:11866 (*equal contribution)

Silbering AF, Bell R, Münch D, Cruchet S, Gomez-Diaz C, Laudes T, Galizia CG and Benton R. Ir40a neurons are not DEET detectors. **Nature** (2016) 534:E5–E7

Knecht ZA*, Silbering AF*, Ni L*, Klein M*, Budelli G, Bell R, Abuin L, Ferrer AJ, Samuel ADT**, Benton R** and Garrity PA**. Distinct combinations of variant ionotropic glutamate receptors mediate thermosensation and hygrosensation in *Drosophila.* **eLife** (2016) pii: e17879. (*co-first authors; **co-corresponding authors).

Prieto-Godino LL, Rytz R, Bargeton B, Abuin L, Arguello JR, Dal Peraro M and Benton R. Olfactory receptor pseudo-pseudogenes. **Nature** (2016) 539(7627):93-97

LeBoeuf AC*, Waridel P, Brent CS, Gonçalves AN, Menin L, Ortiz D, Riba-Grognuz O, Koto A, Soares ZG, Privman E, Miska EA, Benton R* and Keller L*. Oral transfer of chemical cues, growth proteins and hormones in social insects. **eLife** (2016) pii: e20375 (*co-corresponding authors)

Croset V, Schleyer M, Arguello JR, Gerber B and Benton R. A molecular and neuronal basis for amino acid sensing in the *Drosophila* larva. **Scientific Reports** (2016) 6:34871. doi: 10.1038/srep34871

Prieto-Godino LL, Rytz R, Cruchet S, Bargeton B, Abuin L, Silbering AF, Ruta V, Dal Peraro M and Benton R. Evolution of acid-sensing olfactory circuits in drosophilids. **Neuron** (2017) 93(3):661-676. doi: 10.1016/j.neuron.2016.12.024

Sánchez-Alcañiz JA, Zappia G, Marion-Poll F and Benton R. A mechanosensory receptor required for food texture detection in *Drosophila*. **Nature Communications** (2017) 8:14192. doi: 10.1038/ncomms14192

Ramdya P, Thandiackal R, Cherney R, Asselborn T, Benton R, Ijspeert AJ and Floreano D. Climbing favors the tripod gait over alternative faster insect gaits. **Nature Communications** (2017), 8:14494. doi: 10.1038/ncomms14494

Sutcliffe B*, Ng J, Auer TO, Pasche M, Benton R, Jefferis GSXE and Cachero S*. Second Generation Chemical Tags: Sensitivity, Versatility and Speed. **Genetics** (2017) doi: 10.1534/genetics.116.199281 (*equal contribution)

Benton R. The neurobiology of gustation in insect disease vectors: progress and potential. **Current Opinion in Insect Science** (2017) 20:19–27

Arguello JR and Benton R. Open Questions – Tackling Darwin's "instincts": the genetic basis of behavioral evolution. **BMC Biology** (2017) 15(1):26. doi: 10.1186/s12915-017-0369-3

Uhlmann V*, Ramdya P*, Delgado-Gonzalo R, Benton R and Unser M. FlyLimbTracker: an active contour based approach for leg segment tracking in unmarked, freely behaving *Drosophila*. **PLOS ONE** (2017) 12(4):e0173433. doi: 10.1371/journal.pone.0173433 (*equal contribution)

Sánchez-Alcañiz JA and Benton R. Multisensory neural integration of chemical and mechanical signals. **Bioessays** (2017) doi: 10.1002/bies.201700060

Knecht ZA, Silbering AF, Cruz J, Yang L, Croset V, Benton R* and Garrity PA*. Ionotropic Receptor-dependent moist and dry cells control hygrosensation in *Drosophila*. **eLife** (2017) 6:e26654 (*co-corresponding authors)

Sánchez-Alcañiz JA, Silbering AF*, Croset V*, Zappia G*, Sivasubramaniam AK, Abuin L, Sahai SY, Münch D, Steck K, Auer TO, Cruchet S, Neagu-Maier GL, Sprecher SG, Ribeiro C, Yapici N and Benton R. An expression atlas of variant ionotropic glutamate receptors identifies a molecular basis of carbonation sensing. **Nature Communications** (2018) 9:4252 (*equal contributions)

LeBoeuf AC, Cohanim A, Stoffel C, Brent CS, Waridel P, Privman E*, Keller L*, Benton R*. Molecular evolution of juvenile hormone esterase-like proteins in a socially exchanged fluid. **Scientific Reports** (2018) 8(1):17830 (*co-senior authors)

Beaulieu D, Benton R, Bodiou L, Boisserie B, Bouasse S, Broillet M-C, Clouet C, Coppin G, Delplanque S, Doré J, Ferdenzi C, Jaquet C, Le Breton D, Muchembled R, Muller C, Ostorero M, Raboud- Schüle I, Roch M, Rodriguez I, Schaal B, Soquet S. NEZ EDITIONS (2019) *Smell, feel. Perfumers, odors, and emotions.* (ISBN: 9782370630797)

Chai PC, Cruchet S, Wigger L and Benton R. Sensory neuron lineage mapping and manipulation in the *Drosophila* olfactory system. **Nature Communications** (2019) 10(1):643

Budelli G, Ni L, Berciu C, van Giesen L, Chang E, Kaminski B, Silbering AF, Samuel A, Klein M, Benton R, Nicastro D, Garrity PA. Ionotropic Receptors specify the morphogenesis of phasic sensors controlling rapid thermal preference in *Drosophila*. **Neuron** (2019) S0896-6273(18)31122-X.

Abuin L, Prieto-Godino LL, Pan H, Gutierrez C, Huang L, Jin R, Benton R. *In vivo* assembly and trafficking of olfactory Ionotropic Receptors. **BMC Biology** (2019) 17(1):34

Nedoluzhko AV, Sharko FS, Lê BM, Tsygankova SV, Boulygina ES, Rastorguev SM, Sokolov AS, Rodriguez F, Mazur AM, Polilov AA, Benton R, Evgenev MB, Arkhipova IR, Prokhortchouk EB, Skryabin KG. A partial genome assembly of the miniature parasitoid wasp, *Megaphragma amalphitanum.* **PLOS ONE** (2019) 14(12): e0226485. doi.org/10.1371/journal.pone.0226485

Auer TO, Khallaf MA, Silbering AF, Zappia G, Ellis K, Álvarez-Ocaña R, Arguello JR, Hansson BS, Jefferis GSXE, Caron SJC, Knaden M, and Benton R. Olfactory receptor and circuit evolution promote host specialization. **Nature** (2020) 579(7799):402-408 doi.org/10.1038/s41586-020-2073-7

Prieto-Godino LL*, Silbering A*, Khallaf MA**, Cruchet S**, Bojkowska K, Pradervand S, Hansson BS, Knaden M and Benton R. Functional integration of "undead" neurons in the olfactory system. **Science Advances** (2020) 6(11):eaaz7238. doi:10.1126/sciadv.aaz7238 (*equal contribution; **equal contribution)

Takagi S and Benton R. Animal behavior: a neural basis of individuality. **Curr Biol** (2020) 30(12):R710-R712

Khallaf MA, Auer TO, Grabe V, Depetris-Chauvin A, Ammagarahalli B, Zhang D-D, Lavista-Llanos S, Kaftan F, Weißflog J, Matzkin LM, Rollmann SM, Löfstedt C, Svatos A, Dweck HKM, Sachse S, Benton R, Hansson BS and Knaden M. Mate discrimination among subspecies through a conserved olfactory pathway. **Science Advances** (2020) 6(25):eaba5279. doi:10.1126/sciadv.aba5279

Schmidt HR and Benton R. Molecular mechanisms of olfactory detection in insects: beyond receptors. **Open Biology** (2020) 10(10):200252. doi:10.1098/rsob.200252

Fukabori R, Iguchi Y, Kato S, Takahashi K, Eifuku S, Tsuji S, Hazama A, Uchigashima M, Watanabe M, Mizuma H, Cui Y, Onoe H, Hikishima K, Yasoshima Y, Osanai M, Inagaki R, Fukunaga K, Nishijo T, Momiyama T, Benton R, Kobayashi K. Enhanced retrieval of emotional memory by chemogenetic activation of locus coeruleus norepinephrine neurons. **Journal of Neuroscience** (2020) 40(43):8367-8385 doi:10.1523/JNEUROSCI.1720-20.2020

Benton R, Dessimoz C and Moi D. A putative origin of the insect chemosensory receptor superfamily in the last common eukaryotic ancestor. **eLife** (2020) doi: 10.7554/eLife.62507

Arguello JR[#], Abuin L[#], Armida J[&], Mika K[&], Chai PC and Benton R. Targeted molecular profiling of rare cell populations identifies olfactory sensory neuron fate and wiring determinants. **eLife** (2021) 10:e63036. doi:10.7554/eLife.63036

Mika K, Cruchet S, Chai PC, Prieto-Godino LL, Auer TO, Pradervand S and Benton R. Olfactory receptor-dependent receptor repression in *Drosophila*. **Science Advances** (2021) 7(32):eabe3745. doi: 10.1126/sciadv.abe3745

Auer TO*, Shahandeh MP* and Benton R. *Drosophila sechellia*: A Genetic Model for Behavioral Evolution and Neuroecology. **Annual Review of Genetics** (2021) doi:10.1146/annurev-genet-071719-020719 *(*equal contribution)*

Mika K and Benton R. Olfactory receptor gene regulation in insects: multiple mechanisms for singular expression. **Frontiers in Neuroscience** (2021) doi:10.3389/fnins.2021.738088

Prieto-Godino LL, Schmidt HR and Benton R. Molecular reconstruction of recurrent evolutionary switching in olfactory receptor specificity. **eLife** (2021) doi:10.7554/eLife.69732

Auer TO*, Álvarez-Ocaña R*, Cruchet S, Benton R, Arguello JR. Copy number changes in co-expressed odorant receptor genes enables selection for sensory differences in drosophilid species. **Nature Ecology and Evolution** (2022) 6, 1343–1353 doi:10.1038/s41559-022-01830-y *(*equal contribution)*

Himmel NJ and Benton R. Sweet sensors support stressed cell survival. **PLOS Biology** (2022) 20(7):e3001705 doi:10.1371/journal.pbio.3001705

Scalzotto M*, Ng R*, Cruchet S, Saina M, Armida J, Su C-Y, Benton R. Pheromone sensing in *Drosophila* requires support cell-expressed Osiris 8. **BMC Biology** (2022) 20(1):230 doi:10.1186/s12915-022-01425-w *(*equal contribution)*

Benton R and Dahanukar A. Chemosensory coding in single sensilla. **Cold Spring Harbor Protocols** (2022) doi:10.1101/pdb.top107803

Benton R and Dahanukar A. Recording from fly olfactory sensilla. **Cold Spring Harbor Protocols** (2022) doi:10.1101/pdb.prot108063

Dahanukar A and Benton R. Recording from fly taste sensilla. **Cold Spring Harbor Protocols** (2022) doi: 10.1101/pdb.prot108064

Benton R. *Drosophila* olfaction: past, present and future. **Proc. Royal Soc. B** (2022) *(invited perspective).* 289:20222054 doi:10.1098/rspb.2022.2054

Benton R* and Himmel NJ*. Structural screens identify candidate human homologs of insect chemoreceptors and cryptic *Drosophila* gustatory receptor-like proteins. **eLife** (2023) doi:10.7554/eLife.85537 *(*equal contribution)*

Álvarez-Ocaña R, Shahandeh MP*, Ray V*, Auer TO, Gompel N, and Benton R. Odor-regulated oviposition behavior in an ecological specialist. **Nature Communications** (2023) 14:e3041 doi:10.1038/s41467-023-38722-z *(*equal contribution)*

Ellis KE, Smihula H, Ganguly I, Vigato E, Bervoets S, Auer TO, Benton R, Litwin-Kumar A and Caron SJC. Evolution of connectivity architecture in the *Drosophila* mushroom body. *In review* (bioRxiv (2023) doi: 10.1101/2023.02.10.528036)