

John Vontas - CURRICULUM VITAE

- Director IMBB-FORTH
- Professor Agr Pharmacology Agricultural University of Athens

Date/Place of Birth:	20 July 1968, Athens
Nationality:	Greek
Marital status:	Married, 2 sons
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BIOSKETCH

John Vontas received his PhD in Insect Genetics from the Agricultural University of Athens (AUA) (1997). Subsequently **Marie Curie** TMR and Return fellowships allowed him to work at **Cardiff** University (1998-2001), **Liverpool** School of Tropical Medicine (2001-02) and the Institute of Molecular Biology and Biotechnology (IMBB-FORTH) (2002-04), as a postdoctoral researcher. He was appointed Lecturer at AUA (2004-08) and Associate Prof Department **Biology University of Crete** (2008-2013). He worked at the Innovative Vector Control Consortium (**IVCC, funded by Bill Gates Foundation**) in 2013-2014, to develop the funding framework for vector control - malaria research. He return to Greece in 2014, as Professor AUA (2014-today) and join Researcher at IMBB, and he is the **Director of IMBB since 2021**. His research focus on (**green**) **Biotechnology** based approaches for the control of mosquito disease vectors and agricultural pests, with emphasis on the analysis of mechanisms by which insects develop resistance to insecticides and the identification of novel insecticide targets. He teaches in national and international courses and **has supervised >40 PhD students and Post Doctoral Researchers**, some pursuing careers in academia and industry, worldwide. He has published over 250 papers ($h > 75$; citations: > 21000 , Google Scholar) and was among **highly cited researchers Clavirate in 2021 and 2022**. He has given a large number of **invited talks** worldwide and organized many international conferences and symposia. He is elected member of the European Molecular Biology Organization (**EMBO**). He is Associate **Editor** and/or Editorial Board member in several Q1 journals in his field. He is **panel member at the ERC** and many funding organizations in Europe and worldwide. He has **coordinated >50 major projects** (GSRT, EU Horizon2020, Horizon Europe, Industry), **raising a total budget of >40M€**. He has long term **collaborations with Greek authorities** (at Ministry and Prefecture level), to support Public Health / mosquito control activities and innovative plant protection programs. He was member of the Advisory Committee at The Hellenic Foundation for Research and Innovation (**HFRI**, 2018-22) and member of the National Life Science Council of Greece (**GSRI**, 2018-2020).

EDUCATION

- Ph.D. (1993-1997) Insect genetics. Agricultural University of Athens (AUA)
- DSPU/Master (1992-93) Mediterranean Agronomic Institute Chania (MAICh, CIHEAM)
- B.Sc. (1987-92) Honours in Agronomy. Agricultural University of Athens (AUA)

EMPLOYMENT HISTORY

- 2021 - today** • Director of the Institute of Molecular Biology & Biotechnology, Foundation for Research and Technology, Hellas (IMBB-FORTH)
- 2014 – today:** • Professor Agr Pharmacology, Agricultural University of Athens
• Principal Investigator Molecular Entomology, IMBB-FORTH
- 2013 – 2014:** • Innovative Vector Control Consortium (IVCC): Development of Framework and Criteria for funding “New Paradigms for vector control”
- 2008 – 2013:** • Associate Professor Biotechnology & Applied Biology, Dept Biology, University of Crete, Greece
- 2004 – 2008:** • Lecture Pesticide Science, AUA, Greece
- 2002 – 2005:** • Research Fellow, IMBB-FORTH, Crete, Greece
- 2001 – 2002:** • Research Fellow, LSTM, Liverpool, UK
- 1998 – 2001:** • Research Fellow, Cardiff University, UK
- 1997 - 1998:** • Career interruption: mandatory service within the Greek Army Forces

FELLOWSHIPS – ACADEMIC DISTINCTIONS

- E.U. Marie Curie Return (2003, IMBB-FORTH, Crete)
- E.U. Marie Curie TMR (2000-02, Cardiff University, UK)
- NATO postdoctoral fellowship (1999-2000, Cardiff)
- State Scholarship's Foundation (IKY) PhD fellowships (1993-1997)
- State Scholarship's Foundation (IKY) Distinction Awards for academic performance 1988,89,90,91
- Graduated 1st, among >300 students (1992, bachelor's degree: 9 - excellent)

RESEARCH INTEREST

Biotechnology based approaches for the control of major human disease vectors and agricultural pests (insecticide resistance, discovery of novel insecticide targets, Green Biotechnology - Biopesticides).

EXECUTIVE EXPERIENCE

- Director, IMBB, FORTH (2021-today)
- Member of the Advisory Committee, Hellenic Foundation for Research and Innovation (HFRI) (2018-2022)
- Member of the National Life Science Council, General Secretary Research & Innovation (2018-20)
- Member EU LIFE Board of Directors (2021-today)
- Director Pharmacology Lab, AUA, 2014-2021
- Coordinator of the Innovative Plant Protection Flagship Project (GSRI, 2023-2025)
- Coordinator of the European NextGenBioPest consortium (Horizon Europe, 2024-2028)
- Coordinator of the European SuperPest consortium (Horizon 2020, 2018-2023)
- Coordinator of the European DMC-MALVEC consortium (Horizon 2020, 2016-2018)
- Chairman of External Scientific Advisory Committee (ESAC 4), Innovative Vector Control Consortium (IVCC) (2014-2017)
- Representative of IMBB- FORTH to the Regional of Crete for Innovation matters (2015 -)
- Director of the Biotechnology & Applied Biology Section, Dept Biology, University of Crete (2012-2014)
- Member of the University Senate of the Univ of Crete, representative of Dept Biology (2011-12)

PROFESSIONAL MEMBERSHIPS– DISTINCTIONS - CONSULTING

Distinctions

- Elected member European Molecular Biology Organization (EMBO) (since 2024).
- Highly Cited Researchers – Clarivate year 2022.
- Highly Cited Researchers – Clarivate year 2021.

Counselling committees (PANEL) / Scientific Evaluator

- ERC Panel (LS9 Adv) – (2021-2026)
- EUROPEAN UNION (EU) – several Panels since 2014
- ANR – France – panel member since 2015 (2014-2018 & 2020-2021)
- FWO – Belgium panel member (PD and PhD) (2021-2027)
- FCT - Portugal – panel member (2018-2020)
- HFRI – Greece - panel member

Scientific Evaluator: MRC, BBSRC, Wellcome Trust – UK (reviewer); ISF, BARD – Israel; FWO – Belgium; NCSTE – Kazakhstan; Research Agency – Slovak Republic; IPE-Cyprus; NRF Singapore; Research Agent, Slovak Republic; CINEKA, Italy; Science Fund – Republic of Serbia; GSRI, HFRI, Onassis Foundation, State Scholarship Foundation etc - Greece

Editorial

- Editor Associate (Europe and UK) Pesticide Biochemistry and Physiology (ELSEVIER)
- Editorial Board *Insect Biochemistry and Molecular Biology* (2008 -)
- Academic Editor *PloS One* (2011-2018)
- Subject Editor *Journal of Economic Entomology* (2011 - 2014)
- Subject Editor *Bulletin of Entomological Research* (2007 - 2015)
- Editorial Board *Pesticide Biochemistry and Physiology* (2008 - 2021)
- Editorial Board *Acta Tropica* (2015 -)

Reviewer: >50 Peer Review Journals (incl. SCIENCE, NATURE, PNAS, Elife, .. etc)

ORGANISER / ORGANISING COMMITTEE FOR CONFERENCES

International (selected)

- EMBO conference Vector and Disease control, Kolymbari Chania, 2013, 2015, 2017, 2019, 2022 (Co-Organiser)
- ICE2020, XXVI International Congress of Entomology, 19-24 July 2020, Helsinki, Finland (co-chair, Section Physiology and Developmental Biology- “Recent progress in the understanding of molecular mechanisms of xenobiotic resistance and detoxification”)
- ECTMIH2019, 11th European Congress on Tropical Medicine and International Health, September 16-20 2019, Liverpool, UK (Vice-chair Scientific Committee – Prevention Track)
- IUPAC 2019, 14th International Congress of Crop Protection Chemistry, May 19-24 2019, Ghent (Theme co-organiser - Mode of Action and Resistance)
- E-SOVE, European Society for Vector Ecology Conference, 22-26 October 2018, Palermo, Italy. Keynote Lecture: “Insecticide resistance and novel technologies for improving the efficiency and sustainability of mosquito control”
- European Congress of Entomology, Napoli 2018 (Scientific Committee)
- XVI International Congress on Molecular Plant-Microbe Interactions Congress, Rhodos island Greece, 6-10 July 2014 (Scientific – Organising Committee)
- 19th E-SOVE Conference (“When epidemic becomes endemic: a global challenge towards vector control”), 13th – 17th October 2014, Thessaloniki (Greece) (Scientific Committee- Session Chair)
- International Whitefly Workshop, Crete, Greece, 20-24 May, 2013, (<http://www.ibws6.gr>) (Scientific – Organising Committee and Session Chair)
- 6th International Symposium on Molecular Insect Science, Amsterdam, 2-5 Oct 2011; Organizer of workshop and Speaker: Molecular mechanism of insecticide resistance (Organiser)

TEACHING & MENTORING ACTIVITIES

Undergraduate teaching

Biotechnology (University of Crete), Agr. Pharmacology (AUA), Medical and Molecular Entomology (UoC), Molecular Techniques (Demokritus University Thrace DUTH) etc

Postgraduate teaching

AUA–Plant Protection/Biotechnology, UoC: Molecular Biology and Biomedicine; Protein Biotechnology; Plant Biotechnology; DUTH – Translation Medicine/Molecular Biology and Genetics

Supervision of master/PhD thesis/Postdoctoral researchers

> 30 master; >25 PhD theses (5 in progress); >20 (including several individuals from malaria endemic countries). Many of Alumni lab members pursuing research career in Academia/Industry worldwide.

OTHER INTERESTS

Semi-professional basketball player for >15 years (1982-1998, 5 teams)

INVITED SPEAKER

He has given >100 invited talks, including >20 opening/plenary in international conferences.

Selected examples:

1. XX International Plant Protection Congress (IPCC), July 2024, Athens, Greece. Plenary Lecture: "Significance of molecular diagnostics for pesticide resistance monitoring"
2. SouthWest University, Chongqing., China, 3/6/2024: Research Seminar: Functional approaches for elucidating insecticide resistance mechanisms in agricultural pests
3. 2nd Molecular Plant Protection Congress (IMPPC), 15-18 May 2023, F.A.R.M, Orhangazi, Bursa, Turkey. "Functional approaches for elucidating insecticide resistance mechanisms".
4. ESA2019, Entomological Society of America Annual Conference, 17-20 November 2019, St. Louis, MO. "CYP based metabolic resistance in Anopheles and Aedes mosquito vectors".
5. Salzburg Institut Pasteur Seminar, Global Health: Vector-borne diseases, 3-8 September 2019, Schloss Arenberg, Salzburg, Austria. Lecture: "Resistance to Insecticides"
6. E-SOVE, European Society for Vector Ecology Conference, 22-26 October 2018, Palermo, Italy. Keynote Lecture: "Insecticide resistance and novel technologies for improving the efficiency and sustainability of mosquito control"
7. 8th EMCA (European Mosquito Control Association) Conference: "Mosquito Control in a changing Environment", 12-16 March 2017, Bečići, Montenegro
8. 12th Annual meeting "Roll Back Malaria Vector Control Working Group (RBM VCWG-12)" "Evidence based IRM", 8-10 February 2017, Geneva, Switzerland
9. International Workshop on "Insecticide resistance and emerging arboviruses: Challenge and prospects", 5-8 December 2016, Rio de Janeiro, Brazil: Private-public partnership for the development of new tools for arbovirus vector control, Lectures: "Insecticide resistance in arbovirus vectors"
10. 25th International Congress of Entomology, September 25-30 2016 Orlando, Florida USA. Lectures: "Evaluation of candidate insecticide resistance-associated genes and mutations via ectopic expression and CRISPR/Cas9-mediated genome modification"
11. The Worldwide Insecticide Resistance Network (WHO-TDR), 22 May 2016, Montpellier, France. "Insecticide resistance in *Aedes albopictus*"
12. Zika Summit, 25-26 April 2016, Institut Pasteur Paris, France. "Molecular analysis of insecticide resistance in major mosquito vectors: from mechanisms to resistance management"
13. Bill & Melinda Gates Foundation / IVCC, Insecticide Resistance Convening "New Paradigms in Vector Control", 8-9 December 2015, London, UK
14. Arthropod-borne infectious diseases and Arthropods as disease agents in human and animal health, Leopoldina, 1-3 October 2015, Berlin, Germany. Lecture: "Analysis of insecticide resistance in major vectors: from molecular mechanisms to management"
15. IUPAC 2014, 13th IUPAC International Congress of Pesticide Chemistry, 10-15 August 2014, San Francisco, USA. "Functional, immunohistochemical and targeted mutagenesis / ectopic expression approaches for understanding the role of genes and pathways in resistance"
16. 10th European Congress of Entomology, 3-8 August 2014, York, UK. Lecture: "Insecticide resistance mechanisms in major agricultural pests"
17. Entomology 2013 (Entomological Society of America-ESA Annual Meeting), 9-14 November 2013, Austin Texas, USA. Lectures: «A potential role for 4g family CYP P450s in conferring insecticide resistance in mosquitoes by altering cuticle structure»,
18. 5th International Bemisia Conference, 9-12 November 2009, Guangzhou, China (IS/SC). Lecture: "P450-based neonicotinoid resistance in *Bemisia tabaci* from Crete, Greece"
19. 4th European Meeting of the IOBC/WPRS, 1-4 June 2009, Córdoba, Spain. "Detection and Monitoring of insecticide resistance in *Bactrocera oleae*"
20. 5th African Network Vector Resistance (WHO), 14th of July 2009, Johannesburg, South Africa. Lecture: "MIRO – Insecticide Resistance Mosquito Database"

RESEARCH FUNDING

Total number of projects as Coordinator: >50 projects

Total budget managed as coordinator: > 40 M euros

Selected granted projects

No	Funding	Title	Time	Role
34	HORIZON-CL6-23 FARM2FORK- NextGenBioPest	Next Generation Biopesticides for the control of the most “difficult-to-manage” pests and pathogens in fruits and vegetables	2023-2028	Coordinator
33	GSRI Flagship actions, InnoPP - TAEDR-0535675	Innovations in Plant Protection for sustainable and environmentally friendly pest control	2023-2025	Coordinator
32	HORIZON-MSCA-2023-PF-01, LeVec	Molecular characterization of insecticide resistance and transmission competence in sand flies, major vectors of leishmaniasis	2024-2026	Coordinator
31	ADAMA	Selectivity and efficiency of insecticide formulations, using biotechnology based approaches	2024-2025	Coordinator
30	HORIZON-WIDERA-2022-TALENTS-01, MicroBioPest	Microbial Biopesticides to Control Disease Vectors and Agricultural Pests (ERA Chair: G. Dimopoulos)	2023-2028	Coordinator
29	HORIZON-HLTH-2023-TOOL-05, UniHealth	Development of a global diagnostic ecosystem for detecting and monitoring emergency-prone pathogens across species	2023-2027	Partner
28	HORIZON-MSCA-2021-SE-01, INOVEC	A research and InNOvation Partnership for enhancing the surveillance and control of mosquito VECtors of emerging arboviruses	2023-2026	Partner
27	Ministry of Rural Development and Food, Measure 16	An alternative method of olive fruit fly management, through the control of the symbiotic bacteria of <i>B. oleae</i> ,	2023-2025	Partner
26	HFRI, MalVec (16044)	Improving the sustainability of malaria vector control	2023-2025	Coordinator
25	National Public Health Organization	Mosquitos Laboratory analysis of mosquitoes in the framework of enhanced entomological surveillance	2023-2024	Project Coordinator
24	HORIZON-CL6-2022-FARM2FORK-01	Risk Assessment Innovation for low-risk pesticides RATION	2022-2026	Partner
23	HORIZON-INFRA-2021-EMERGENCY-02	Integrated Services for Infectious Disease Outbreak Research ISIDORe	2022-2025	Partner
22	BAYER	Discovery of novel insecticide target and resistance analysis	2015-2024	Coordinator
21	HORIZON 2020-MSCA-RISE-2020, CypTox	Develop highly selective and safe insecticides	2021-2025	Coordinator
20	SYNGENTA	In vitro metabolism: insecticide selectivity and robustness by design	2020-2025	Coordinator
19	Prefecture Crete	Scientific support and novel methods for olive fruit fly control	2020-2024	Partner
18	GSRI / Agrospecum	Development of a rapid method for the fast diagnosis of phosphine resistance in Greece	2020-2022	Subcontractor

17	HORIZON (H2020, SFS-17-2017), SuperPests	Innovations in plant protection. Innovative tools for rational control of the most difficult-to-manage pests and the diseases they transmit	2019-2023	Project Coordinator
16	Prefecture Crete	Scientific support for the mosquito control program in Crete	2018-2026	Coordinator
35	GSRT Flag ship - Agrofood actions	Emblematic actions – Agrofood (Roads of Bees, Olives & vineyards)	2018-2021	Partner
15	RIS3Crete	"Smart diagnostic tools and database to support precision plant protection in horticultural crops in Crete"	2018-2021	Partner
14	EU HORIZON 2020 (GA731060)	Research capacity for the Implementation of Genetic Control of Mosquitoes (INFRAVEC2)	2016-2021	Partner
13	EU HORIZON 2020 (GA-688207)	Automated diagnostic platform, data management & communication tool, for improving malaria vector control interventions (DMC MALVEC)	2016-2020	Coordinator
12	GSRI (<i>Aristeia</i>)	Genomic approaches for understanding detoxification of the olive fruit fly and adaptation to olives	2013-2015	Coordinator
11	GSRI (<i>Synergasia</i>)	New Enzyme targets for the development of novel Pesticides	2013-2015	Partner
10	GSRI (<i>Thales</i>)	Genomic and functional approaches for understanding insecticide resistance in major agricultural pests	2012-2015	Coordinator
9	GSRI (<i>Thales</i>)	Development of IT and molecular diagnostic tools, for improving the sustainability of pesticide based control of major agricultural pests	2012-2015	Partner
8	GSRI	Molecular and functional approach for understanding CYP P450-based detoxification in <i>Tetranychus urticae</i>	2012-2015	Coordinator
7	FP7 – EU	HEALTH.2010.2.3.2-4 Controlling malaria by hitting the vector: New Vector Control Tools. Title: African Vector Control (AVECNET)	2010-2016	Partner WP leader
6	FP7 – EU	Research capacity for the Implementation of Genetic Control of Mosquitoes (INFRAVEC)	2009-2013	Partner
5	IVCC – Bill Gates Foundation	Pyrethroid Quantification Kit (PQK)	2006-2012	Coordinator
4	IVCC – Bill Gates Foundation	Vector Population Monitoring Tool (VPMT)	2006-2010	Partner
3	BAYER	An integrated approach to establish the role of spiromecifen in the control of <i>B. tabaci</i> & <i>T. urticae</i>	2006-2008	Coordinator
2	GSRT Technology Greece-Taiwan	Monitoring and functional analysis of insecticide resistance mutations in <i>Bactrocera</i>	2006-2008	Coordinator
1	Welcome Trust	Genomic approaches to regulators of insecticide resistance gene function	2002-2005	Coordinator

PUBLICATIONS

	Scopus	Google Scholar
Total number of citations	>14500	>21000
h- index	61	75

Total number: >250. First author 30; Last author/corresponding >100

Top journals: 2 Science, 1 Nature, 1 Science Advances, 10 PNAS

List of publications: <https://www.imbb.forth.gr/en/research-en/item/2057-john-vontas>

Selected – Recent publications

1. Kefi M, Balabanidou V, Sarafoglou C, Charamis J, Lycett G, Ranson H, Gouridis G, Vontas J. ABCB2 transporter mediates deltamethrin uptake and toxicity in the malaria vector *Anopheles coluzzii*. **PLoS Pathog.** 19(8):e1011226. DOI: 10.1371/journal.ppat.1011226. PMID: 37585450.
2. Nauen R, Bass C, Feyereisen R, Vontas J. (202) The Role of CYPs in Insect Toxicology and Resistance. **Annu Rev Entomol.** 67:105-124. DOI: 10.1146/annurev-ento-070621-061328. PMID: 34590892
3. Vlogiannitis S, Mavridis K, Dermauw W, Snoeck S, Katsavou E, Morou E, Harizanis P, Swevers L, Hemingway J, Feyereisen R, Van Leeuwen T, Vontas J. (2021) Reduced proinsecticide activation by cytochrome P450 confers coumaphos resistance in the major bee parasite *Varroa destructor*. **PNAS.** 118(6):e2020380118. DOI: 10.1073/pnas.2020380118. PMID:33547243
4. Ingham VA, Anthousi A, Douris V, Harding NJ, Lycett G, Morris M, Vontas J, Ranson H. (2020) A sensory appendage protein protects malaria vectors from pyrethroids. **Nature.** 577(7790):376-380. DOI: 10.1038/s41586-019-1864-1. PMID: 31875852
5. Balabanidou V, Kefi M, Aivaliotis M, Koidou V, Girotti JR, Mijailovsky SJ, Juárez MP, Papadogiorgaki E, Chalepakis G, Kampouraki A, Nikolaou C, Ranson H, Vontas J. (2019) Mosquitoes cloak their legs to resist insecticides. **Proc R Soc B.** 286:20191091. DOI: 10.1098/rspb.2019.1091. PMID: 31311476
6. Singh KS, Troczka BJ, Duarte A, Balabanidou V, Trissi N, Carabajal Paladino LZ, Nguyen P, Zimmer CT, Papapostolou KM, Randall E, Lueke B, Marec F, Mazzoni E, Williamson MS, Hayward A, Nauen R, Vontas J, Bass C. (2020) The genetic architecture of a host shift: An adaptive walk protected an aphid and its endosymbiont from plant chemical defenses. **Sci. Adv.** 6(19): eaba1070. DOI: 10.1126/sciadv.aba1070. PMID:32494720
7. Vontas J, Grigoraki L, Morgan J, Tsakireli D, Fuseini G, Segura L, Niemczura de Carvahlo J, Nguema R, Weetman D, Slotman MA, Hemingway J. (2018) Rapid selection of a pyrethroid metabolic enzyme CYP9K1 by operational malaria control activities. **PNAS.** 115(18):4619-4624. DOI:10.1073/pnas.1719663115. PMID: 29674455
8. Douris V, Steinbach D, Panteleri R, Pickett JA, Van Leeuwen T, Nauen R, Vontas J. (2016) Resistance mutation conserved between insects and mites unravels the benzoylurea insecticide mode of action on chitin biosynthesis. **PNAS.** 113:14692–14697. DOI:10.1073/pnas.1618258113. PMID:27930336
9. Balabanidou V, Kampouraki A, MacLean M, Blomquist GJ, Tittiger C, Juárez MP, Mijailovsky SJ, Chalepakis G, Anthousi A, Lynd A, Antoine S, Hemingway J, Ranson H, Lycett GJ, Vontas J. (2016) Cytochrome P450 associated with insecticide resistance catalyzes cuticular hydrocarbon production in *Anopheles gambiae*. **PNAS.** 113(33):9268-9273. DOI: 10.1073/pnas.1608295113 PMID: 27439866.
10. Neafsey DE, Waterhouse RM, Abai MR, ...Vontas J, ..., Zwiebel L, Besansky N. (2015) Highly evolvable malaria vectors: The genomes of 16 *Anopheles* mosquitoes. **Sci.** 347(6217):1258522 DOI: 10.1126/science.1258522. PMID: 25554792
11. Hemingway J, Vontas J, Poupardin R, Raman J, Lines J, Schwabe C, Matias A, Kleinschmidt I. (2013) Country-level operational implementation of the Global Plan for Insecticide Resistance Management. **PNAS.** 110(23):9397-9402. DOI:10.1073/pnas.1307656110. PMID:23696658
12. Dermauw W, Wybouw N, Rombauts S, Menten B, Vontas J, Grbic M, Clark RM, Feyereisen R, Van Leeuwen T. (2013) A link between host plant adaptation and pesticide resistance in the polyphagous spider mite *Tetranychus urticae*. **PNAS.** 110(2):E113-E122. DOI:10.1073/pnas.1213214110. PMID:23248300