ΣΥΝΤΟΜΟ ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ
ΚΑΘΗΓΗΤΗ Φ. ΚΑΦΑΤΟΥ

Ο Καθηγητής Φώτης Καφάτος είναι ένας παγκοσμίου φήμης επιστήμονας με εντυπωσιακή επιστημονική σταδιοδρομία.

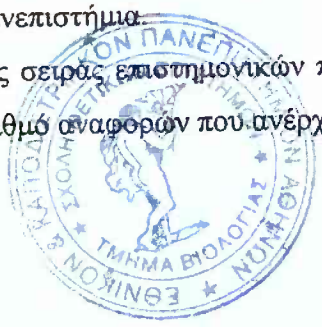
- Καθηγητής στο Πανεπιστήμιο του Harvard στην Αναπτυξιακή και Κυτταρική Βιολογία
- Καθηγητής στο Πανεπιστήμιο της Αθήνας στην τότε έδρα της Γενικής Βιολογίας
- Καθηγητής στο Πανεπιστήμιο της Κρήτης
- Ιδρυτικό μέλος και διευθυντής του Ινστιτούτου Μοριακής Βιολογίας στο Ερευνητικό κέντρο ΙΤΕ
- Γενικός διευθυντής του παγκοσμίου ακτινοβολίας Ευρωπαϊκού Εργαστηρίου Μοριακής Βιολογίας στη Χαϊδελβέργη
- Καθηγητής στην έδρα της Ανοσογενετικής στο Imperial College στο Λονδίνο

Έχει τιμηθεί με πρωτόγνωρες τιμητικές διακρίσεις και μετάλλια από μια σειρά οργανισμούς σε όλο τον πλανήτη. Ενδεικτικά μόνο θα αναφερθούν ορισμένες από αυτές:

- Μέλος της Ευρωπαϊκής οργάνωσης Μοριακής Βιολογίας
- Μέλος της Εθνικής Ακαδημίας της Αμερικής
- Ξένο μέλος της Γαλλικής Ακαδημίας
- Μέλος της Ακαδημίας του Βατικανού
- Ξένο μέλος της Βασιλικής Ακαδημίας του Λονδίνου
- Μέλος της Ευρωπαϊκής Ακαδημίας
- Πρόεδρος του Ευρωπαϊκού Συμβουλίου Έρευνας

Έχει τιμηθεί με μεγάλα παράσημα μεταξύ των οποίων του «Ταξιάρχη του Φοίνικα» και το «Παράσημο Πρώτης Τάξης» από τη Γερμανική κυβέρνηση.

Είναι επίτιμος διδάκτωρ σε μια σειρά Πανεπιστήμια.
Είναι μέλος σε εκδοτικές επιτροπές μιας σειράς επιστημονικών περιοδικών και έχει δημοσιεύσει περί τις 350 εργασίες με αριθμό αναφορών που ανέρχονται σε χιλιάδες.



CURRICULUM VITAE
Fotis C. Kafatos

Personal Data:

Born in Crete, Greece, April 16, 1940
Dual Greek and US citizen (naturalised November 1973)
Married, two daughters

Education:

- Primary and secondary education in Crete (Lyceum "Korais")
- AB Cornell University (High Honours), Zoology, 1961
- MA Harvard University, Biology, 1962
- PhD Harvard University, Biology, 1965

Academic Appointments:

- Instructor of Biology, Harvard University, 1965
- Assistant Professor of Biology, Harvard University, 1965-1969
- Professor of Biology, Harvard University, 1969-1994
- Instructor, Embryology Course, MBL (Wood's Hole), summers 1972-1974
- Professor of Biology, University of Athens (part-time), 1972-1982
- Chair, Cellular and Developmental Biology, Harvard University, 1978-1981
- Professor of Biology, University of Crete (part-time), 1982-present (on leave)
- Founder and Director, Institute of Molecular Biology and Biotechnology, Research Centre of Crete, 1982-1993
- Director General, European Molecular Biology Laboratory, 1993-2005
- Professor of Immunogenomics, Imperial College London, 2005 -
- Adjunct Professor of Immunology & Infectious Diseases, Harvard School of Public Health, 2007 -

Honours:

Academies:

- Member, European Molecular Biology Organisation (elected 1977)
- Fellow, American Academy of Arts and Sciences (elected 1980)
- Member, National Academy of Sciences, USA (elected 1982)
- Member, Academia Europaea (elected 1991)
- Foreign Member of the French Academy of Sciences, 2002
- Member, Pontifical Academy of Sciences, 2003
- Foreign Member of the Royal Society of London, 2003
- Member, European Academy of Sciences and Arts, 2007

Medals:

- G.J. Mendel Honorary Gold Medal for Merit in the Biological Sciences, Academy of Sciences of the Czech Republic, 1995
- Honorary Medal for Distinction in Biology, Academy of Athens, 2000
- Medal “Taxiarchis of Phoenix”, awarded by the President of the Hellenic Republic, for major contributions to science, culture and society, 2003
- “Bundesverdienstkreuz 1. Klasse”, awarded by the President of the Federal Republic of Germany, 2004

- Medal of Honour, City of Heraklion, Crete, 2004
- Uni-Heidelberg Grosse Universitats Medal, 2005

Doctor honoris causa:

- Agricultural University, Athens, Greece, 1992
- Aristotelian University of Thessaloniki, Greece, 1994
- Université Louis Pasteur, Strasbourg, France, 2002
- Democretian University of Thrace, 2004
- University of Ioannina, 2005
- University of Patras, 2005

Honorary (or Visiting) Professorships:

- Overseas Fellow, Churchill College, University of Cambridge, 1993
- Visiting Professor, Department of Biology, Imperial College London, 2000 - 2003
- Honorary Professor, University of Heidelberg, Germany, 2000 – 2005

Other Major Academic Activities:

Major Advisory Responsibilities:

- Founder Member, Chairman of the Scientific Council, and President, European Research Council, 2005 – present
- Sanger Institute, Hinxton (UK), Scientific Advisory Board Member, 2004 –
- Board Member, Grand Challenges for Global Health, Bill and Melinda Gates Foundation, 2003-
- Chair, Institutional Advisory Board, Flanders InterUniversity Institute for Biotechnology (VIB), 2002- present
- Chair, EIROforum, 2002-2003
- International Review Panel on Development of Biotechnology in Finland (Chair), 2002
- Temasek Life Sciences Laboratory, Singapore, International Scientific Advisory Board (Member), 2002-2006
- Institut Pasteur, Paris, Member, External Scientific and Strategic Committee, 2000-2005
- Member, Conseil National de la Science, France, 1998- 2002
- Max Planck Institute Göttingen, Member and Chair of the Fachbeirat, 1995-present
- Fondation Louis Jeantet de Mèdicine, Science Committee Member, 1995-2004
- European Molecular Biology Organisation Council Member, 1988-1990
- European Molecular Biology Laboratory Scientific Advisory Committee Member, 1984-1989
- Research Centre of Crete/Foundation of Research and Technology - Hellas, Governing Board Member 1982-1993
- University of Crete, Organizing and Governing Committee, 1973-1975 and 1976-1980 (Associate Member); 1982-1986 (Member)

Other Advisory Responsibilities (selection):

- NSF, Developmental Biology Panel Member, 1970-1972
- American Cancer Society, Cell Biology and Nucleic Acids and Protein Synthesis Advisory Committees Member, 1983-1986
- Committee for Development of European Science and Technology (CODEST) Member, 1987-1994
- European Economic Community, Biotechnology Evaluation Panel Member, 1988
- National Science Advisory Board of Greece (Member), 1988-1991, 1994-1999
- Fondation des Treilles, Scientific Committee, (1989-2002) and Board (2002-present)

- International Centre for Insect Physiology and Ecology, Nairobi, Governing Board/Programme Committee Member, 1991-1994
- WHO/TDR Steering Committee on Biological Control of Vectors, Molecular Entomology Subgroup Member, 1991-1998
- European Science and Technology Assembly (Member), 1995-1998
- A. Fleming Biomedical Research Centre, Athens, Scientific Board (Member) 1995-1999
- Wellcome CRC Institute, Cambridge, International Advisory Board (Member), 1995-2000
- CIBA Foundation, Scientific Advisory Panel (Member), 1995-
- Bijvoet Graduate School for Biomolecular Chemistry Scientific Advisory Board, Netherlands (Member), 1996-2001
- Fondation Bettencourt Schueller, Scientific Committee, 1997-2002
- Institute of Molecular Agrobiology, Singapore, International Advisory Board, 1997-2002
- German Human Genome Project, Scientific Advisory Committee (Member) 1998-2000
- Sars International Centre for Marine Molecular Biology, Bergen, Norway, Scientific Advisory Committee (Member), 2000-
- University of Geneva School of Medicine, External Scientific Advisory Board (Member), 2001-
- MacArthur Foundation, Biology of Disease Vectors Course (Teacher; Cuernavaca 2003, Ceské Budejovice 2001, Manaos 1999, Bamako 1997, Crete 1994, Fort Collins 1990)
- Bill and Melinda Gates Foundation, Scientific Board of "Grand Challenges in Global Health Initiatives" (Member), 2003-
- Centro Regional de Estudios Genómicos, Argentina, External Advisory Committee (Member), 2003-
- Hellenic Pasteur Institut, Athens, Scientific Committee (Member), 2003-
- Centro Nacional de Investigaciones Oncológicas Carlos III, Spain, Scientific Advisory Board Member, 2004-
- International Risk Governance Council, Geneva, Member of the Scientific and Technical Council, 2004-2007
- Bio 4EU Advisory Committee, 2005 -

Editorial Boards:

- Insect Molecular Biology, 1992-
- Structure, 1995-
- ChemBioChem, 2000-
- Cellular Microbiology, 2001-
- Phil. Trans. R. Soc. B, 2005 -

Other Professional service:

- Organiser and co-organiser of multiple colloquia, workshops and conferences (including founding the series of EMBO workshops on Molecular Biology of Drosophilia), Crete, 1978 –present, and co-founding the series of Mosquito Molecular Biology Conferences, Kolymbari, Crete, 2000-present

Publications:

- More than 300 research publications in refereed journals.

Research Interests and Expertise:

- Insect Biology 1959 – current

- Natural history, defence mechanisms of arthropods 1959-1961
- Developmental biology 1961-2001
- Molecular and cell biology 1963 – current
- Molecular evolution 1977-current
- Genomics 1987-current
- Innate immunity 1991-current

Major Research focus:

- Anopheles / Plasmodium interactions
- Insect immunity
- Mosquito and comparative genomics
- Vector-based control of malaria

Addresses:

Home Address:

Flat 12,
7 Prince's Gardens,
London.
SW7 1NA.

Laboratory & Office Address:

Faculty of Natural Sciences,
Imperial College London,
Sir Alexander Fleming Building,
South Kensington Campus,
London, United Kingdom.
SW7 2AZ.

2. A brief Scientific Biography

F.C. Kafatos and his collaborators have made critical contributions to an interlocking set of research fields, reflecting a continuity of vision and strategy from the basic early work based on recombinant DNA, to their recent landmark achievements in genomics and innate immunity of malaria vector mosquitoes.

At Harvard he was one of the pioneers who introduced Molecular Biology to the study of Development. Together with colleagues, they cloned and sequenced in full the first eukaryotic gene via cDNA, the rabbit β-globin gene (Efstratiadis, Maniatis and Kafatos). He also developed the dot-blot technique, an early precursor of DNA microarrays. With his PhD student J. Pustell they developed computational tools to compare DNA sequences.

He used these techniques to reveal and analyze developmentally-regulated gene expression programs, chiefly in the chorion/eggshell system of insects (silkworms and *Drosophila*). He was one of the early students of evolution at the DNA level, and the initiator of genomic analysis in *Drosophila*. A comparative sequence analysis of the chorion multi-gene locus in multiple insect species led to the detection of conserved sequence motifs in 5′ DNA. Their transgenic analysis then demonstrated an essential role of an invariant motif, in developmentally regulated chorion gene expression in both silkworms and *Drosophila;* this is an evolutionary distance comparable to that between birds and mammals.

Beginning in 1990, he focused increasingly on malaria vector mosquitoes. By utilizing approaches of demonstrated utility in silkworms and *Drosophila,* he and his group and collaborators converted *Anopheles gambiae,* a major malaria vector in Africa, from practically "terra incognita" to its present status as the model vector of parasitic diseases in terms of molecular and cellular analysis,

notably through the studies of innate immunity, vector/parasite interactions, and vector genomics.

Together with F. H. Collins they initiated the *A. gambiae* genome project, which engaged a wide, international group of scientific collaborators, two sequencing centers (Celera Genomics and Genoscope) and support from the NIH and the French Government. Sequencing was completed in record time in 2002, and since then the field of malaria research has changed beyond recognition.

In the same period, the Kafatos laboratory methodically dissected the innate immune system of *Anopheles*. A starting point was the rapidly accumulating knowledge of this system in *Drosophila,* but the laboratory discovered experimentally novel genes, functions and mechanisms in mosquitoes. Nearly all scientists working in this field currently are either past and present co-workers, or students of previous members of the group.

The main landmark discoveries of the group include:

- the development of the genetic map of *A. gambiae* (refs. 208, 231, 240).
- the development of an RNAi-mediated method for silencing mosquito genes in vivo (ref. 296).
- the discovery of a complement-like mosquito gene, TEP1, that negatively regulates vectorial capacity (ref. 309).
- the discovery that mosquito genes exert both positive and negative effects on vectorial capacity (ref. 310).
- the discovery that immune system genes evolve rapidly in mosquitoes (refs. 301, 343).
- the characterization of a genetic module responsible for the highly regulated melanization immune response (refs. 329, 324).

- the characterization of the molecular, transcriptomic and cellular events triggered by parasite invasion of the gut, a key organ in the parasite transmission cycle (refs. 276, 311, 323, 326, 345).

In addition to model studies in the laboratory, the group and collaborators have initiated studies in Africa to dissect the genetic influences on transmission of the human parasite *P. falciparum* in the field (refs. 302, 336). In parallel they pursued studies of genetic diversity and speciation of the *A. gambiae* species complex (refs. 282, 346).

In parallel to his pioneering scientific work, F. C. Kafatos is a builder of institutions and scientific communities. One example of this type of contribution is represented by his modernising the teaching of biology in Greece through a part-time appointment at the University of Athens (1972 – 1982) and his founding the Department of Biology and the research Institute of Molecular Biology and Biotechnology in Crete (1982 – 1993) which he directed until he moved to EMBL. It is fair to say that the community of modern biologists in Greece largely derives from his teaching and his establishing these institutions. His institution-building at EMBL is also widely recognised as a major success: in its scientific impact, as well as the establishment of a model PhD programme, which has now been copied in the EU-funded European Network of Excellence for malaria research and training, BioMalPar.

Last Updated: 15 January 2008

Fotis C. Kafatos: Selected Publications

* = most important publications

1. Eisner, T. and Kafatos F. C. (1962). Defense mechanisms of arthropods. X. A pheromone promoting aggregation in an aposematic distasteful insect. *Psyche* **69,** 53-61.

*2. Eisner, T., Kafatos, F. C. and Linsley, E. G. (1962). Lycid predation by mimetic adult *Cerambycidae* (Coleoptera). *Evolution* **16,** 316-324.

4. Kafatos, F. C. and Williams, C. M. (1964). Enzymatic mechanism for the escape of certain moths from their Cocoons. *Science* Vol. **146,** No. **3643**, 538-540.

*12. Kafatos, F. C. and Reich, J. (1968). Stability of differentiation-specific and nonspecific messenger RNA in insect cells. *Proc. Natl. Acad. Sci. USA* **60,** 1458-1465.

33. Paul, M., Goldsmith, M. R., Hunsley, J. R. and Kafatos, F. C. (1972). Specific protein synthesis in cellular differentiation: Production of eggshell proteins by silkmoth follicular cells. *J. Cell Biol.* **55,** 653-680.

35. Donohoo, P. and Kafatos, F. C. (1973). Differences in the proteins synthesized by the progeny of the first two blastomeres of the mosaic *Ilyannassa* embryo. *Devel. Biol.* **32,** 224-229.

42. Selman, K. and Kafatos, F. C. (1974). Transdifferentiation in the labial gland of silkmoths: Is DNA synthesis required for cellular metamorphosis? *Cell Differentiation* **3,** 81-94.

*45. Paul, M. and Kafatos, F. C. (1975). Specific protein synthesis in cellular differentiation. II. The program of protein synthetic changes during chorion formation by silkmoth follicles, and its implementation in organ culture. *Devel. Biol.* **42,** 141-159.

*46. Efstratiadis, A., Maniatis, T., Kafatos, F. C., Jeffrey, A. and Vournakis, J. N. (1975). Full length and discrete partial reverse transcripts of globin and chorion mRNAs. *Cell* **4,** 367-378.

*54. Efstratiadis, A., Kafatos, F. C., Maxam, A. M. and Maniatis, T. (1976). Enzymatic *in vitro* synthesis of globin genes. *Cell* **7,** 279-288.

*55. Maniatis, T., Sim, G. K., Efstratiadis, A. and Kafatos, F. C. (1976). Amplification and characterization of a beta-globin gene synthesized *in vitro*. *Cell* **8,** 163-182.

*63. Efstratiadis, A., Kafatos, F. C. and Maniatis, T. (1977). The primary structure of rabbit beta-globin mRNA as determined from cloned DNA. *Cell* **10,** 571-585.

*68. Kafatos, F. C., Regier, J. C., Mazur, G. D., Nadel, M. R., Blau, H. M., Petri, W. H., Wyman, A. R., Gelinas, R. E., Moore, P. B., Paul, M., Efstratiadis, A., Vournakis, J. N., Goldsmith, M. R., Hunsley, J. R., Baker, B., Nardi, J. and Koehler, M. (1977). The eggshell of insects: Differentiation-specific proteins and the control of their synthesis and accumulation during development. *In* "Results and Problems in Cell Differentiation" (W. Beermann, Ed.), Vol. 8, pp. 45-145. Springer-Verlag, Berlin.

*69. Kafatos, F. C., Efstratiadis, A., Forget B. G. and Weissman, S. M. (1977). Molecular evolution of human and rabbit beta-globin mRNAs. *Proc. Natl. Acad. Sci. USA* **74,** 5618-5622.

*71. Regier, J. C., Kafatos, F. C., Goodfliesh, R. and Hood, L. (1978). Silkmoth chorion proteins: Sequence analysis of the products of a multigene family. *Proc. Natl. Acad. Sci. USA* **75,** 390-394.

*78. Sim, G. K., Kafatos, F. C., Jones, C. W., Koehler, M. D., Efstratiadis, A. and Maniatis, T. (1979). Use of a cDNA library for studies on evolution and developmental expression of the chorion multigene families. *Cell* **18,** 1303-1316.

*79. Jones, C. W., Rosenthal, N., Rodakis, G. C., and Kafatos, F. C. (1979). Evolution of two major chorion multigene families as inferred from cloned cDNA and protein sequences. *Cell* **18,** 1317-1332.

*80. Kafatos, F. C., Jones, C. W. and Efstratiadis, A. (1979). Determination of nucleic acid sequence homologies and relative concentrations by a dot hybridization procedure. *Nucl. Acids Res.* **7,** 1541-1552.

*97. Jones, C. W. and Kafatos, F. C. (1980). Structure, organization and evolution of developmentally-regulated chorion genes in a silkmoth. *Cell* **22,** 855-867.

*106. Pustell, J. and Kafatos, F. C. (1982). A convenient and adaptable package of DNA sequence analysis programs for microcomputers. *Nucl. Acids Res.* **10,** 51-60.

109. Rodakis, G. C. and Kafatos, F. C. (1982). The origin of evolutionary novelty in proteins: How a high-cysteine chorion protein has evolved. *Proc. Natl. Acad. Sci. USA.* **79,** 3551-3555.

*114. Eickbush, T. H. and Kafatos, F. C. (1982). A walk in the chorion locus of *Bombyx mori*. *Cell* **29,** 633-643.

115. Pustell, J. and Kafatos, F. C. (1982). A high speed, high capacity homology matrix: zooming through SV40 and polyoma. *Nucl. Acids Res.* **10,** 4765-4782.

*120. Jones, C. W. and Kafatos, F. C. (1982). Accepted mutations in a gene family: Evolutionary diversification of duplicated DNA. *J. Mol. Evol.* **19,** 87-103.

*139. Mitsialis, S. A. and Kafatos, F. C. (1985). Regulatory elements controlling chorion gene expression are conserved between flies and moths. *Nature* **317,** 453-456.

155. Delidakis, C. and Kafatos, F. C. (1987). Amplification of a chorion gene cluster in *Drosophila* is subject to multiple cis-regulatory elements and to long range position effects. *J. Mol. Biol.* 197, 11-26.

*159. Mitsialis, S. A., Spoerel, N., Leviten, M. and Kafatos, F. C. (1987). A short defined DNA region is sufficient for developmentally correct expression of moth chorion genes in *Drosophila*. *Proc. Natl. Acad. Sci., USA* **84,** 7987-7991.

187. Swimmer, C., Fenerjian, M. G., Martínez-Cruzado, J. C. and Kafatos, F. C. (1990). Evolution of the autosomal chorion cluster in *Drosophila*. III. Comparison of the *s18* gene in evolutionarily distant species and interspecific control of chorion gene amplification. *J. Mol. Biol.* **215,** 225-235.

*188. Sidén-Kiamos, I., Saunders, R. D. C., Spanos, L., Majerus, T., Trenear, J., Savakis, C., Louis, C., Glover, D. M., Ashburner, M. and Kafatos, F. C. (1990). Towards a physical map of the *Drosophila melanogaster* genome: Mapping of cosmid clones within defined genomic divisions. *Nucl. Acids Res.* **18,** 6261-6270.

192. Kafatos, F. C., Louis, C., Savakis, C., Glover, D. M., Ashburner, M., Link, A. J., Sidén-Kiamos, I. and Saunders, R. D. C. (1991). Integrated maps of the *Drosophila* genome. *Trends in Genetics* 7, 155-161.

*196. Merriam, J., Ashburner, M., Hartl, D. L. and Kafatos, F. C. (1991). Towards cloning and mapping the genome of *Drosophila*. *Science* **254,** 221-225.

197. Zheng, L., Saunders, R. D. C., Fortini, D., della Torre, A., Coluzzi, M., Glover, D. M. and Kafatos, F. C. (1991). Low resolution genome map of the malaria mosquito, *Anopheles gambiae*. *Proc. Natl. Acad. Sci., USA* **88,** 11187-11191.

*203. Hsu, T., Gogos, J. A., Kirsh, S. A. and Kafatos, F. C. (1992). Multiple zinc finger forms resulting from developmentally regulated alternative splicing of a transcription factor gene. *Science* **257,** 1946-1950.

*204. Gogos, J. A., Hsu, T., Bolton, J. and Kafatos, F. C. (1992). Sequence discrimination by alternatively spliced isoforms of a DNA binding zinc finger domain. *Science* **257,** 1951-1955.

*208. Zheng, L., Collins, F. H., Kumar, V. and Kafatos, F. C. (1993). A detailed genetic map for the X chromosome of the malaria vector, *Anopheles gambiae*. *Science* **261,** 605-608.

215. Fenerjian, M. G. and Kafatos, F. C. (1994). Developmental specificity of a bidirectional moth chorion promoter in transgenic *Drosophila*. *Dev. Biol.* **161,** 37-47.

*218. Madueño, E., Papagiannakis, G., Rimmington, G., Saunders, R.D.C., Savakis, C., Sidén-Kiamos, I., Skavdis, G., Spanos, L., Trenear, J., Adam, P., Ashburner, M., Benos, P., Bolshakov, V.N., Coulson, D., Glover, D.M., Herrmann, S., Kafatos, F.C., Louis, C., Majerus, T., and Modolell, J. (1995). A physical map of the *X* chromosome of *Drosophila melanogaster*: Cosmid contigs and sequence tagged sites. *Genetics* **139**, 1631-1647.

*231. Zheng L., Benedict M.Q., Cornel A.J., Collins F.H. and Kafatos F.C. (1996) An integrated genetic map of the African human malaria vector mosquito, *Anopheles gambiae*. *Genetics* **143**: 941-952

*233. Barillas-Mury C., Charlesworth A., Gross I., Richman A., Hoffmann J.A. and Kafatos F.C. (1996) Immune factor Gambif1, a new rel-family member from the human malaria vector, *Anopheles gambiae*. *EMBO Journal* **15:** 4691-4701

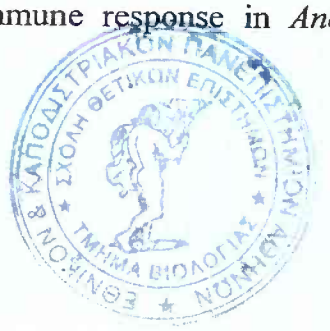
234. Richman A.M., Bulet P., Hetru C., Barillas-Mury C., Hoffmann J.A. and Kafatos F.C. (1996) Inducible immune factors of the vector mosquito *Anopheles gambiae*: biochemical purification of a defensin antibacterial peptide and molecular cloning of preprodefensin cDNA. *Insect Molecular Biology* **5(3)**: 203-210.

*240. Zheng L., Cornel A.J., Wang R., Erfle H., Voss H., Ansorge W., Kafatos F.C. and Collins F.H. (1997) Quantitative trait loci controlling refractoriness of *Anopheles gambiae* to *Plasmodium cynomolgi* B. *Science* **276,** 425-428.

241. Louis C., Madueño E., Modolell J., Omar M.M., Papagiannaki G., Saunders R.D.C., Savakis C., Sidén-Kiamos I., Spanos L., Topalis P., Zhang Y., Ashburner M., Benos P., Bolshakov V.N., Deak P., Glover D.M., Herrmann S. and Kafatos F.C. (1997) 105 new potential *Drosophila melanogaster* genes revealed through STS analysis. *Gene* **195**, 187-193.

242. Deák P., Omar M.M., Saunders R.D.C., Pál M., Komonyi O., Szidonya J., Maróy P., Zhang Y., Ashburner M., Benos P., Savakis C., Siden-Kiamos I., Louis C., Bolshakov V.N., Kafatos F.C., Madueno E., Modolell J. and Glover D.M. (1997) *P*-element insertion alleles of essential genes on the third chromosome of *Drosophila melanogaster*: Correlation of physical and cytogenetic maps in chromosomal region 86E-87F. *Genetics* **147:** 1697.1722.

*244. Richman A. M., Dimopoulos G., Seeley D. and Kafatos F.C. (1997) *Plasmodium* activates the innate immune response in *Anopheles gambiae* mosquitoes. *EMBO Journal* **16**, 6114-6119.



245. Dimopoulos G., Richman A., Müller H.-M. and Kafatos F.C. (1997) Molecular immune responses of the mosquito *Anopheles gambiae* to bacteria and malaria parasites. *PNAS* **94**, 11508-11513.

*251. Richman A. and Kafatos F.C. (1998) Malaria: In the belly of the beast. *Nature Medicine* **4**:552-553.

*253. Dimopoulos G., Seeley D., Wolf A. and Kafatos F.C. (1998) Malaria infection of the mosquito *Anopheles gambiae* activates immune-responsive genes during critical transition stages of the parasite life cycle. EMBO Journal **17**: 6115-6123.

*258. Barillas-Mury C., Han Y.-S., Seeley D. and Kafatos F.C. (1999) *Anopheles gambiae* Ag-STAT, a new insect member of the STAT family is activated in response to bacterial infection. *EMBO Journal* **18 (4)**: 959-967.

259. de Celis J.F., Barrio R. and Kafatos F.C. (1999) Regulation and function of the *spalt/spalt-related* gene complex during sensory organ development in the *Drosophila* thorax.*Development* **126**: 2653-2662.

260. Müller H.-M., Dimopoulos G., Blass C. and Kafatos F.C. (1999) A hemocyte-like cell line established from the malaria vector *Anopheles gambiae* expresses six prophenoloxidase genes. *Journal of Biological Chemistry* **274:17**:11727-11735.

*263. Hoffmann J.A., Kafatos F.C., Janeway Jr C.A. and Ezekowitz R.A.B. (1999) Phylogenetic perspectives in innate immunity. *Science* **284:** 1313-1318.

*266. Dessens J.T., Beetsma A.L., Dimopoulos G., Wengelnik K., Crisanti A., Kafatos F.C. and Sinden R.E. (1999) CTRP is essential for mosquito infection by malaria ookinetes. *EMBO Journal* 18: 6221-6227.

272. Benos P.V., *et al.* (2000) From Sequence to Chromosome: The tip of the X chromosome of *D. melagonaster, Science* **287**:2220-2222

*273. Dimopoulos G., Casavant T.L., Chang S *et al.* (2000) *Anopheles gambiae* pilot gene discovery project: Identification of novel mosquito innate immunity genes from ESTs generated from immune competent cell lines, *PNAS* **97** (12), 6619-6624

*275. Catteruccia F., Nolan T., Loukeris T.G., Blass C., Savakis C., Kafatos F.C., Crisanti A. (2000) Stable germline transformation of the malaria mosquito *Anopheles stephensi*, *Nature* **405**: 959-962.

*276. Han Y.S. , Thompson J., Kafatos F.C. and Barillas-Mury C. (2000) Molecular interactions between *Anopheles stephensi* midgut cells and *Plasmodium berghei*: The time bomb theory of ookinete invasion of mosquitoes. *EMBO Journal* **19** (22), 6030-6040.

277. Dimopoulos G., Müller H.-M., Levashina E., Kafatos F.C. (2001) Innate immune defense against malaria infection in the mosquito, *Current Opinion in Immunology* **13**: 79-88

*279. Levashina E., Moita L., Blandin S., Vriend G., Lagueux M. and Kafatos F.C. (2001) Conserved role of a complement-like protein in phagocytosis revealed by dsRNA knockout in cultured cells of the mosquito, *Anopheles gambiae, Cell* **104:** 709-718

*282. Wang R., Zheng L., Touré Y., Dandekar T. and Kafatos F.C. (2001) When genetic distance matters: Measuring genetic differentiation at microsatellite loci in whole genome scans of recent and incipient mosquito species, *PNAS* **98** (19), 10769-10774

286. Vizioli J., Bulet P., Hoffmann J.A., Kafatos F.C., Müller H.M. and Dimopoulos G. (2001) Gambicin: A novel immune responsive antimicrobial peptide from the malaria vector *Anopheles gambiae*, *PNAS* **98** (22), 12630-12635

293. Thomasova D. *et al.* (2002) Comparative genomic analysis in the region of a major *Plasmodium*-refractoriness locus of *Anopheles gambiae*, *PNAS*, **99** (12), 8179-8184

294. Dimopoulos G., Christophides G. K., Meister S., Schultz J., White K. P., Barillas-Mury C., Cantera R. and Kafatos F. C. (2002) Genome expression analysis of *Anopheles gambiae:* Responses to Injury, Bacterial challenge and Malaria Infection, *PNAS* **99**: 8814-8819

*295. Rusten T.E., Cantera R., Kafatos F.C. and Barrio R. (2002) The role of TGFβ signalling in the formation of the dorsal nervous system is conserved between *Drosophila* and chordates, *Development* **129**, 3575-3584

*296. Blandin S., Moita, L.F., Köcher, T., Wim, M., Kafatos, F.C. and Levashina, E.A. (2002) Reverse genetics in the mosquito *Anopheles gambiae*: targeted disruption of the *Defensin* gene, *EMBO reports* **3** (9), 852-856

298. Alphey, L. *et al.* (2002) Malaria control with genetically manipulated insect vectors, Science **298** (5591): 119-21

*299. Holt R., *et al.* (2002) The genome sequence of the malaria mosquito *Anopheles gambiae*, *Science*, **298**, 129-149

*300. Zdobnov E.M, *et al.* (2002) Comparative genome and proteome analysis of *Anopheles gambiae* and *Drosophila melanogaster*, *Science*, **298**, 149-159

*301. Christophides G.K, *et al.* (2002) Immunity-related genes and gene families in *Anopheles gambiae*, *Science*, **298**, 159-165

*302. Niaré O, *et al.* (2002) Genetic loci affecting resistance to human Malaria parasites in a West African mosquito vector population, *Science*, **298**, 213-216

304. Danielli A., Kafatos F.C. and Loukeris T.G. (2003) Cloning and characterization of four *Anopheles gambiae* serpin isoforms, differentially induced in the midgut by *Plasmodium berghei* invasion, *Journal of Biological Chemistry*, **278(6)**, 4184-4193

306. Kumar, S., Christophides, G.K., Cantera, C., Charles, B., Soo Han, Y., Meister, S., Dimopoulos, G., Kafatos, F.C. and Barillas-Mury, C. (2003) The role of reactive oxygen species on *Plasmodium* melanotic encapsulation in *Anopheles gambiae*, *PNAS*, **100**(24), 14139-14144

*309. Blandin, S., Shiao, S.-H., Moita, L.F., Waters, A.P., Kafatos, F.C and Levashina, E.A.(2004) Complement-like protein TEP1 is a determinant of vectorial capacity in the malaria vector *Anopheles gambiae, Cell*, **116**, 661-670

*310. Osta, M.A., Christophides, G.K. and Kafatos, F.C (2004) Effects of mosquito genes on *Plasmodium* development, *Science*, **303**, 2030-2032

*311. Vlachou D., Zimmermann T, Janse C.J., Waters A.P. and Kafatos F.C. (2004) Real-time, *in vivo* analysis of malaria ookinete locomotion and mosquito midgut invasion, *Cellular Microbiology*, **6**(7), 671-685

*313. Osta, M.A., Christophides, G.K., Vlachou, D. and Kafatos, F.C. (2004) Innate immunity in the malaria vector *Anopheles gambiae*: comparative and functional genomics, *Journal of Experimental Biology* **207**, 2551-2563

314. Lycett, G. J., Kafatos, F. C. and Loukeris, T. G. (2004) Conditional expression in the malaria mosquito *Anopheles stephensi* with Tet-on and Tet-off systems, *Genetics* **167**, 1781-1790

*315. Hall N., Karras, M., Raine Dale, J.,...Waters, A. P. and Sinden, R. E. (2005) A comprehensive survey of the *Plasmodium* life cycle by genomic, transcriptomic, and proteomic analyses, Research Article *Science* 307, 82-86

317. Hill, C. A., Kafatos, F. C., Stansfield, S. K. & Collins, F. H. (2005) Arthropod-borne diseases: Vector control in the genomics era, Nature Reviews Microbiology **3**(3), 262-268

322. Vlachou, D., Kafatos, F.C. (2005) The complex interplay between mosquito positive and negative regulators of Plasmodium development. *Curr Opin Microbiol.* **8** (4), 415-21 Review

*323. Vlachou, D., Schlegelmilch, T., Christophides, G.K., and Kafatos, F.C. (2005) Functional genomic analysis of midgut epithelial responses in *Anopheles* during *Plasmodium* invasion, *Current Biology*, **15** (13), 1185-95

*324. Moita, L. F., Wang-Sattler, R., Michel, K., Zimmermann, T., Blandin, S., Levashina, E. A., Kafatos, F. C. (2005) *In vivo* identification of novel regulators and conserved pathways of phagocytosis in *A. gambiae*, *Immunity*, **23** (1), 65-73

*325. Meister, S., Kanzok, S.M., Zheng, X.L.,...Christophides, G.K., Zheng, L. (2005) Immune signaling pathways regulating bacterial and malaria parasite infection of the mosquito Anopheles gambiae. *PNAS*, **102** (32), 11420-5.

*326. Michel, K., Budd, A., Pinto, S., Gibson, T.J., Kafatos, F.C. (2005) *Anopheles gambiae* SRPN2 facilitates midgut invasion by the malaria parasite, *Plasmodium berghei*, *EMBO Reports*, **6** (9), 891-7

*329. Volz J, Osta M A, Kafatos F C, Müller H-M (2005) The roles of two clip domain serine proteases in innate immune responses of the Malaria vector *Anopheles gambiae*, *JBC*, **280** (48), 40161–8

*330. Abraham, E.G., Pinto, S.B., Ghosh, A., Vanlandingham, D.L., Budd, A., Higgs, S., Kafatos, F.C., Jacobs-Lorena, M., Michel, K. (2005) An immune-responsive serpin, SRPN6, mediates mosquito defense against malaria parasites, *PNAS*, **102** (45), 16327-32

333. Vlachou, D., Schlegelmilch, T., Runn, E., Mendes, A., Kafatos, F.C. (2006) The developmental migration of Plasmodium in mosquitoes. Curr Opin Genet Dev. **16** (4), 384-91.

*334. Volz J, Muller HM, Zdanowicz A, Kafatos FC, Osta MA (2006). A genetic module regulates the melanization response of *Anopheles* to *Plasmodium*, *Cell Microbiology*, **8** (9), 1392-1405

*336. Cohuet, A., Osta, M.A., Morlais, I., Awono-Ambene, P.H., Michel, K., Simard, F., Christophides, G.K., Fontenille, D., Kafatos, F.C. (2006) Anopheles and Plasmodium: from laboratory models to natural systems in the field. *EMBO Reps*, 7 (12), 1285-1289

338. Thompson, J., Fernandez-Reyes, D., Sharling, L., Moore, S.G., Eling, W.M., Kyes, S.A., Newbold, C.I., Kafatos, F.C., Janse, C.J., Waters, A.P. (2007) Plasmodium cysteine repeat modular proteins 1-4: complex proteins with roles throughout the malaria parasite life cycle. *Cell Microbiol.*, **9** (6),1466-80.

339. Ecker, A., Pinto, S.B., Baker, K.W., Kafatos, F.C., Sinden, R.E. (2007) Plasmodium berghei: plasmodium perforin-like protein 5 is required for mosquito midgut invasion in Anopheles stephensi. *Exp Parasitol.*, **116** (4), 504-8.

340. Lobo, N.F., Clayton, J.R., Fraser, M.J., Kafatos, F.C., Collins, F.H. (2007) High efficiency germ-line transformation of mosquitoes. *Nat Protoc.* **1** (3), 1312-7.

*341. Schnitger, A.K.D., Kafatos, F.C. and Osta, M.A. (2007) The melanization reaction is not required for survival of Anopheles gambiae mosquitoes after bacterial infections. *JBC,* **282** (30), 21884-8

342. Koutsos, A.C., Blass, C., Meister, S……Kafatos, F.C., Christophides, G.K. (2007) Life cycle transcriptome of the malaria mosquito Anopheles gambiae and comparison with the fruitfly Drosophila melanogaster. *PNAS*, **104** (27), 11304-9.

*343. Waterhouse, R.M., Kriventseva, E.V., Meister, S…..Zdobnov, E.M., Christophides, G.K. (2007) Evolutionary dynamics of immune-related genes and pathways in disease-vector mosquitoes. *Science,* **316** (5832), 1738-43.

*345. Pinto, S.B., Kafatos, F.C., Michel, K. (2007) The parasite invasion marker SRPN6 reduces sporozoite numbers in salivary glands of Anopheles gambiae. *Cell Microbiol [Epub Dec 2007]*

*346. Wang-Sattler, R., Blandin, S., Ning, Y.,...Kafatos, F.C., Zheng, L. (2007) Mosaic Genome Architecture of the Anopheles gambiae Species Complex. PLoS, **2** (11).