

21-SEP-10

CURRICULUM VITAE

Dr. ARISTEIDIS (ARIS) PARMAKELIS

Date of birth: October 29, 1973
Place of birth: Irakleio, Crete, Greece
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CURRENT PROFESSIONAL STATUS (APRIL 2009)

- As of September 2007: Lecturer at the Biology Department of the University of Athens (Greece).

MAJOR RESEARCH INTERESTS

- Evolutionary genetics, ecology, co-evolution of hosts and their parasites, evolution in islands, biogeography, phylogeography, adaptation, phylogenetics, conservation genetics.

FOREIGN LANGUAGES

- ❖ English (First Certificate of Cambridge).

EDUCATION

- ❖ **1992-1996:** Undergraduate studies in the Department of Biology, University of Crete. Mark 8.34 (Very Good). My graduation Thesis was supervised by the Assoc. Prof. Mylonas M. **Graduation Thesis** titled: Differentiation of the genus *Mastus* (Beck, 1837) (Gastropoda, Pulmonata, Bulminidae) in Crete. Mark 10/10 (Excellent).

RESEARCH EXPERIENCE

- ❖ **1996-1998:** Preparation of Master Thesis (Department of Biology, University of Crete). The project of my Master Thesis involved multivariate morphometric analyses on shell and terminal genitalia variables and study of spermatophore morphology of 14 *Mastus* populations from the island of Crete and it was supervised by Assoc. Prof. Mylonas M.
- ❖ **Master Thesis** titled: “Differentiation of the genus *Mastus* (Beck, 1837) (Gastropoda, Pulmonata, Enidae) in Crete”. Mark 10/10 (Excellent).
- ❖ **1998-2003:** Preparation of PhD Thesis (Department of Biology, University of Crete). During my PhD I studied the phylogeny of 23 *Mastus* species (51 populations) from the Aegean Archipelago with the use of one mtDNA and three nuclear genetic markers. The relationships of the studied species were also approached through multivariate analyses on shell variables, while the population dynamics, habitat preferences and dispersal abilities of two sympatric *Mastus* species from the island of Crete, were investigated as well. My PhD was supervised by Assoc. Prof. Mylonas M.
- ❖ **Doctorate Thesis** titled: “The differentiation of the land snail genus *Mastus* (Beck, 1837) (Gastropoda, Pulmonata, Buliminidae) in the Hellenic region. A comparative approach with the use of morphometric, ecological and molecular methods of analysis”. Mark “Excellent”.
- ❖ **Post-doctoral research, 2004:** “Assessing the genetic population structure of two sympatric *Mastus* populations through the use of microsatellite and mtDNA markers. Is natural selection acting upon molecules and morphology in the same way?” Department of Ecology and Evolution of Johann Wolfgang Goethe-Universität Frankfurt am Main.
- ❖ **Post-doctoral research, 2005-2006:** research investigating the effect of habitat fragmentation on the genetic structure of populations: a comparative approach using four species of isopods with different ecological requirements. University of Patras, Greece.
- ❖ **Post-doctoral research, 2006-2008:** “Identification of genes controlling the innate immune response in mosquitoes infected with the malaria parasite, Plasmodium. Yale University and University of Crete. “

PARTICIPATION IN RESEARCH PROJECTS

- **1993-1994:** “Study for the ecological management of Chrysi island”. Region of Crete, 1996.
- **1995-1998:** “Gavdos: Natural environment and civilization of an island on the tip of Europe”. Ministry of Environment, 1996.
- **1998:** Protection and management of the Rodopi mountain”, Region of Drama, 1999.
- **2000:** Species of South Aegean endangered due to their economic exploitation. European Programme “Archi-Med”, Action 2.1.
- **2004:** Research involving landscape genetics of land snails at the department of Ecology and Evolution of Johann Wolfgang Goethe-Universität Frankfurt am Main. DAAD fellowship.
- **2003-2005:** “Molecular analysis of the origin and colonization of Crete by extinct giant and dwarf deer”. Department of Ecology and Evolutionary Biology of the University of Yale, Peabody Museum of Natural History, Natural History Museum of Crete and Department of Biology of the University of Crete collaboration project.
- **2005-2006:** “The effect of habitat fragmentation on the genetic structure of populations: a

comparative approach using four species of isopods with different ecological requirements. University of Patras, Greece.

- **2006-2008:** "Identification of genes controlling the innate immune response in mosquitoes infected with the malaria parasite, *Plasmodium*". Yale University.
- **2008-2009:** "[Biodiversity hot-spot North Africa – effects of glacial-interglacial cycles on species richness: The radiation of the *Buthus* species](#)". Participation as collaborators in the research project of the Musée National d'Histoire Naturelle Luxembourg.
- **2009-2010:** "Patterns of selection in immunity genes related with malaria, in species of the *Anopheles gambiae* complex". Kapodistrias grant, Research Secretariat of the University of Athens.
- **2010-2012:** "Predicting extinctions on islands: a multi-scale assessment". Foundation for Science and Technology (FCT), Ministry of Science, Technology and Higher Education of Portugal.
- **2010-2011:** "The genetic differentiation of the mitochondrial genome and its co-evolution with the nuclear genome as a speciation mechanism in the terrestrial snails of Greece". John S. Latsis Public Benefit Foundation.

EXCELLENCE AWARDS

- **1996:** Drettakis Foundation prize for excellence during my undergraduate studies.

FELLOWSHIPS

1. **1997-1999:** Public benefit "Vardinoyanneion" Foundation.
2. **1998-2000:** Department of Biology, University of Crete.
3. **2000-2003:** Public benefit Foundation "Alexander S. Onassis".
4. **2005-2006:** Post-doctoral research fellowship from (DAAD) the German Academic Exchange Service.
5. **2005-2006:** Post-doctoral fellowship from the European Social Fund (ESF), Operational Program for Educational and Vocational Training II (EPEAEK II), Program *PYTHAGORAS II*.
6. **2006-2008:** Marie Curie post-doctoral fellowship, Marie Curie Actions Outgoing International Fellowship (Human Resources and Mobility, FP6).

TEACHING EXPERIENCE

During my postgraduate studies I contributed to the teaching activities of the Biological Department of the University of Crete as follows:

- **1997-1999:** Lab assistant in Botany I.
- **1997-2000:** Lab assistant in Zoology I, II.
- **2000-2003:** Zoology I. Lectures on Mollusks, Annelids, Aschelminths and Platyelminths anatomy and systematics.
- **1998-2002:** Lab assistant in Ecology.
- **2005-2006:** Lecturer of Zoology, Department of Biology, University of Crete.

- Additionally, I contributed to the postgraduate program of the Biological Department of the University of Crete as follows:
 - **Supervision of mini postgraduate research projects (ROTATIONS)**
 1. **Theodarakopoulou Marianna**, “Molecular phylogeny of the *Mastus* species of the Dionysades island group and the populations of the opposite shore of Crete”.
- **2007-present:** Lecturer of Population Ecology, Faculty of Biology. University of Athens.
Participation in:
 - Undergraduate courses: Population Ecology, General Ecology, Terrestrial Ecosystems of Greece, Introduction to Biology.
 - Postgraduate courses: Bioinformatics, Ecological Systems

PUBLICATIONS

PUBLISHED JOURNAL ARTICLES

1. **Parmakelis, A.**, Mylonas, M., 2002. Aspects of the reproduction and activity of two sympatric *Mastus* (Beck, 1837) species in Crete (Gastropoda: Pulmonata: Buliminidae). *Journal of Molluscan Studies* **68**: 225-234. [Abstract.](#)
2. Cameron, R.A.D., Mylonas, M., Triantis, K., **Parmakelis, A.** and Vardinoyannis, K. 2003. Land snail diversity in a square kilometre of Cretan maquis: modest species richness, high density and local homogeneity. *Journal of Molluscan Studies* **69**: 93-99. [Abstract.](#)
3. **Parmakelis, A.**, Spanos, L., Papagiannakis, G., Louis, C. and Mylonas, M. 2003. Mitochondrial DNA phylogeny and morphological diversity in the genus *Mastus* (Beck, 1837). A study in a recent (Holocene) island group (Koufonisi, SE CRETE). *Biological Journal of the Linnean Society* **78**: 383-399. [Abstract.](#)
4. **Parmakelis, A.**, Mylonas, M. 2004: Dispersal and population structure of two sympatric species of the Mediterranean land snail genus *Mastus* (Gastropoda, Pulmonata, Buliminidae). *Biological Journal of the Linnean Society* **83**: 131-144. [Abstract.](#)
5. **Parmakelis, A.**, Pfenninger, M., Spanos, L., Papagiannakis, G., Louis, C., and Mylonas, M. 2005. Inference of a radiation in *Mastus* (Gastropoda, Pulmonata, Enidae) on the island of Crete. *Evolution* **59**: 991-1005. [Abstract.](#)
6. **Parmakelis, A.**, Stathi, I., Spanos, L., Louis, C., and Mylonas, M. 2006. Phylogeography of *Iurus dufourei* (Brullé, 1832) (Scorpiones, Iuridae). *Journal of Biogeography* **33**: 251-260. [Abstract.](#)
7. Poulakakis, N., **Parmakelis, A.**, Lymberakis, P., Glaberman, S., Mylonas, M., Zouros, E., and Caccone, A. 2006. Ancient DNA forces reconsideration of Mediterranean pygmy elephants. *Biology Letters* (doi:10.1098/rsbl.2006.0467). [Abstract.](#)
8. **Parmakelis, A.**, Stathi, I., Chatzaki, M., Simaiakis, S., Spanos, L., Louis, C., and Mylonas, M. 2006. Evolution of *Mesobuthus gibbosus* (Brullé, 1832) (Scorpiones, Buthidae) in the north-eastern Mediterranean region. *Molecular Ecology* **15**: 2883–2894. [Abstract.](#)
9. Klossa-Kilia, E., Kiliadis, G., Sfenthourakis, S., Tryfonopoulos, G., Koukou, K. and **Parmakelis, A.** 2006. Molecular phylogeny of the Greek populations of the genus *Ligidium* (Isopoda, Oniscidea) using three mtDNA gene segments. *Zoologica Scripta* (doi:10.1111/j.1463-6409.2006.00243.x). [Abstract.](#)

10. Poulakakis, N., **Parmakelis, A.**, Lymberakis, P., Mylonas, M., Zouros, E., Reese, D.S., Glaberman, S., Caccone, A. 2006. It remains a mammoth DNA fragment. A reply to Binladen et al. and Orlando et al. *Biology Letters* (doi:10.1098/rsbl.2006.0555). [Abstract](#).
11. Slotman, M.A., **Parmakelis, A.**, Marshall, J., Awono-Ambene, P., Antonio-Nkondjo, C., Simard, F., Adalgisa, C., Powell, J.R. 2007. Patterns of selection in anti-malarial immune genes in malaria vectors: Evidence for adaptive evolution in LRIM1 in *Anopheles arabiensis*. *PLoS One* **2**: e793. [Abstract and full text](#).
12. **Parmakelis, A.**, Russello, M.A., Caccone, A., Brisola Marcondes, C., Costa, J., Forattini, O.P., Mureb-Sallum, M.A., Wilkerson, R.C., Powell, J.R. 2008. Historical analysis of a near disaster: *Anopheles gambiae* in Brazil. *American Journal of Tropical Medicine and Hygiene*, **78**: 176-178. [Abstract](#).
13. **Parmakelis, A.**, Klossa-Kilia, E., Kiliass, G., Triantis, K.A., Sfenthourakis, S. 2008. Increased molecular divergence of two endemic *Trachelipus* (Isopoda, Oniscidea) species from Greece reveals patterns not congruent with current taxonomy. *Biological Journal of the Linnean Society*, **95**: 361-370. [Abstract](#).
14. **Parmakelis, A.**, Slotman, M.A. Marshall, J., Awono-Ambene, P., Antonio-Nkondjo, C., Simard, F., Adalgisa, C., Powell, J.R. 2008. The molecular evolution of four anti-malarial immune genes in the *Anopheles gambiae* species complex. *BMC Evolutionary Biology*, **8**: 79. [Abstract and full text](#).
15. Abila, P.P., Slotman, M.A., **Parmakelis, A.**, Dion, K.B., Robinson A.S., Muwanika, V.B., Enyaru, J.C.K., Lokedi, L.M., Aksoy, S., Caccone, A. 2008. High levels of genetic differentiation between Ugandan *Glossina fuscipes fuscipes* populations separated by lake Kyoga. *PLoS Neglected Tropical Diseases* **2**(5): e242. [Abstract and full text](#).
16. Kapli, P., Lymberakis, P., Poulakakis, N., Mantziou, G., **Parmakelis, A.**, Mylonas, M. 2008. Molecular phylogeny of three *Mesalina* species (*M. guttulata*, *M. brevirostris* and *M. bahaeldini*) from North Africa and the Middle East: another case of paraphyly? *Molecular Phylogenetics and Evolution*, **49**: 102-110. [Abstract](#).
17. Kyriazh, P., Poulakakis, N., **Parmakelis, A.**, Crochet, P., Moravec, J., Rastegar-Pouyani, N., Tsigenopoulos, C., Magoulas, A., Mylonas, M., Lymberakis, P. 2008. Mitochondrial DNA reveals the genealogical history of the Snake-eyed lizards (*Ophisops elegans* and *O. occidentalis*) (Sauria: Lacertidae). *Molecular Phylogenetics and Evolution*, **49**: 795-805. [Abstract](#).
18. Poulakakis, N., Antoniou, A., Mantziou, G., **Parmakelis, A.**, Skartsi, T., Vasilakis, D., Elorriaga, J., De la Puentes, J., Gavashelishvili, A., Ghasabyan, M., Katzner, T., McGrady, M., Batbayar, N., Fuller, M., Natsagdorj, T. 2008. Population structure, diversity, and phylogeography in the near-threatened Eurasian black vultures *Aegypius monachus* (Falconiformes; Accipitridae) in Europe: insights from microsatellite and mitochondrial DNA variation. *Biological Journal of the Linnean Society*, **95**: 859-872. [Abstract](#).
19. Triantis, K.A., **Parmakelis, A.**, Cameron, R.A.D. 2009. Understanding fragmentation: snails show the way. *Journal of Biogeography*, DOI 10.1111/j.1365-2699.2009.02211.x. [Abstract](#).
20. **Parmakelis, A.**, Moustaka, M., Poulakakis, N., Louis, C., Slotman, M.A., Marshall, J.C., Awono-Ambene, P.H., Antonio-Nkondjo, C., Simard, F., Caccone, A., Powell, J.R. 2010. *Anopheles* Immune Genes and Amino Acid Sites Evolving Under the Effect of Positive Selection. *PLoS ONE* **5**(1): e8885. doi:10.1371/journal.pone.0008885. [Abstract and full text](#).
21. Chiari, Y., Dion, K., Colborn, J., **Parmakelis, A.**, Powell, J.R. 2010. On the possible role of tRNA base modifications in the evolution of codon usage: Queuosine and *Drosophila*. *Journal of Molecular Evolution*. DOI 10.1007/s00239-010-9329-z. [Abstract](#).

REVIEWED PROCEEDINGS

1. **G.M. Tsiourlis, P. Kasapidis, A. Parmakelis and M. Dretakis, 1998:** Effects of grazing

on the structure of phryganic ecosystems in the Asterousia mountain of Crete, Greece. In: V.P. Papanastasis & D. Peter (eds.) *Proceedings of the International workshop on ecological basis of livestock grazing in Mediterranean ecosystems*. Thessaloniki, Greece: 94-97.

POSTER AND ORAL PRESENTATIONS IN INTERNATIONAL CONGRESSES

- Parmakelis, A.**, Kotoulas, G., Mylonas, M., 1999: The path is no longer foggy for the land snails of the genus *Mastus* (Gastropoda, Pulmonata, Enidae). 8th International Congress on the Zoogeography and Ecology of Greece and Adjacent regions (ICZEGAR), Kavala, Greece 17-21 May 1999. (Poster).
- Parmakelis, A.**, Giokas, S., Mylonas, M., 1999: Cladistic analysis of morphological and molecular characters of *Mastus* (Gastropoda, Pulmonata, Enidae). VII European Society of Evolutionary Biology Congress, Barcelona, Spain, 23-28 August 1999. (Poster).
- Parmakelis, A.**, Mylonas, M., 2001: Molecular phylogeny of the genus *Mastus* (Gastropoda, Pulmonata, Buliminidae). World Congress of Malacology 2001, Vienna, Austria, 19-25 August 2001. (Oral presentation).
- Parmakelis, A.**, Mylonas, M., Spanos, E., Papagiannakis, G., 2002. The effects of historical processes on the genetic and morphological diversity: an example from the genus *Mastus* (Gastropoda, Pulmonata, Buliminidae). International Symposium: Phylogeography in Southern European Refugia, CECA-ICETA, University of Porto, Vairao, Portugal, 11-15 March 2002. (Poster).
- Parmakelis, A.**, Mylonas, M., 2002: Population structure, density, habitat preference, burrowing and migratory activity of two sympatric land snail species of the genus *Mastus* (Gastropoda, Pulmonata, Enidae) from Crete. 9th International Congress on the Zoogeography and Ecology of Greece and Adjacent regions (ICZEGAR), Thessaloniki, Greece, 22-25 May 2002. (Oral presentation).
- Parmakelis, A.** & Mylonas, M. 2002. Molecular and morphological differentiation of the genus *Mastus* (Gastropoda: Pulmonata: Buliminidae). (VI-ICSEB) Sixth International Congress of Systematic and Evolutionary Biology. Biodiversity in the information age. Patras, Greece, 9-16 September 2002. (Oral presentation).
- Stathi, I., **Parmakelis, A.** and Mylonas, M. 2004. «The evolutionary footsteps of scorpions in the Aegean». 16th International Conference in Arachnology. Ghent, Belgium, 2-7 August 2004. (Poster).
- Mylonas, M., Giokas, S., **Parmakelis, A.**, Triantis, K., Vardinoyannis, K. 2004. Evolution and diversity of land snails in a laboratory of nature: the Aegean Archipelago. World Congress of Malacology. Molluscan Megadiversity: Sea, Land and Freshwater. Perth, Western Australia, 11-16 July 2004. (Oral presentation).
- Poulakakis, N., Mantziou, G., Antoniou, A., **Parmakelis, A.**, Skartsi, Th., Vasilakis D., Elorriaga J., de la Puente J., Gavashelishvili A., Ghasabyan M., Katzner T., McGrady M., Batbayar N., Fuller M., Natsagdorj T. 2005. Using microsatellite markers to infer the genetic structure of *Aegyptius monachus* (Aves: Accipitridae). International Conference on Conservation and Management of Vulture Populations, Thessaloniki, Greece. (Oral presentation).
- Parmakelis, A.**, Klossa-Kilia, E., Kiliadis, G., Sfenthourakis S. 2006. Genetic divergence between populations of three terrestrial isopod species with different niche breadth. 10th

- International Congress on the Zoogeography and Ecology of Greece and Adjacent regions (ICZEGAR), Patras, Greece, 26-30 June 2006. (Oral presentation).
- Stathi, I., **Parmakelis, A.**, Simaiakis, S., Louis, C., Mylonas, M. 2006. The evolutionary history of the north-eastern Mediterranean scorpion species *Mesobuthus gibbosus* and *Iurus dufourei*. 23rd European Colloquium of Arachnology, and VII Jornadas del Grupo Iberico de Aracnologia, Sitges, Catalonia (Spain), 4-8 September 2006. (Poster).
- Slotman, M.A., **Parmakelis, A.**, Marshall, J.C., Awono-Ambene, P., Antonio-Nkondjio, C., Simard, F., Caccone, A., Powell, J.R. 2006. Patterns of selection in genes implicated in the immune response of anopheline vectors against malaria. 55th Annual Meeting of the American Society of Tropical Medicine and Hygiene (ASTMH). Atlanta, USA, 12-16 November 2006. (Poster).
- Slotman, M.A., **Parmakelis, A.**, Marshall, J.C., Poulakakis, N., Awono-Ambene, P., Antonio-Nkondjio, C., Simard, F., Caccone, A., Powell, J.R. 2007. Patterns of selection in anti-malarial immune genes in the *Anopheles gambiae* complex: Evidence for positive selection in LRIM1 in *An. arabiensis*. 3rd International Meeting on “Molecular and Population Biology of Mosquitoes and Other Disease Vectors”. Kolymbari, Crete, Greece. 13-20 July 2007. (Poster).
- Slotman, M.A., **Parmakelis, A.**, Marshall, J.C., Poulakakis, N., Awono-Ambene, P., Antonio-Nkondjio, C., Simard, F., Caccone, A., Powell, J.R. 2007. Patterns of selection on anti-malarial immune genes: adaptive evolution in LRIM1 in *Anopheles arabiensis*. 56th Annual Meeting of the American Society for Tropical Medicine and Hygiene. Philadelphia, USA, 4-8 November 2007. (Poster).
- Dimopoulou, A., **Parmakelis, A.**, Simaiakis, S., Mylonas, M. 2008. Preliminary results on the phylogeography of *Scolopendra cingulata* in the Aegean archipelago. 14th International Congress of Myriapodology. Göerlitz, Germany, 21-25 July 2008. (Poster).
- Kotsakiozi, P., Parmakelis, A., Giokas, S., Pafilis, P., Valakos, E. 2008. Ecophysiological adaptations of the Helicidae (Gastropoda, Pulmonata) under severe environmental conditions. Adaptation or phylogeny? 4th National Congress “Contemporary trends of the ecological science”. University of Thessaly, Volos, Greece, 9-12 October, 2008. (Oral presentation).
- Dimopoulou, A., Mitrakos, A., Simaiakis, S., Mylonas, M., **Parmakelis, A.** 2009. The phylogeography of *Scolopendra cingulata* (Chilopoda, Scolopendridae) in Greece. 11th International Congress of on the Zoogeography and Ecology of Greece and adjacent regions (11th ICZEGAR). Heraklion, Crete, Greece, 21-25 September 2009. (Oral presentation).
- Pachi, M., Poulidakos, P., Simaiakis, S., Mylonas, M., **Parmakelis, A.** 2009. Insights into the evolutionary history of *Scolopendra cretica* (Chilopoda, Scolopendridae) in the island of Crete. 11th International Congress of on the Zoogeography and Ecology of Greece and adjacent regions (11th ICZEGAR). Heraklion, Crete, Greece, 21-25 September 2009. (Poster).
- Poulidakou, S., Mplazakis, I., **Parmakelis, A.**, Stathi, I., Fet, V., Mylonas, M. 2009. Insights into the molecular phylogeny of Euscorpius (Scorpiones, Euscorpiidae) in Greece. 25th European Congress of Arachnology (25th ECA). Alexandroupolis, Greece, 16-21 August 2009. (Oral presentation).
- Kotsakiozi, P., Papanikolaou, E., **Parmakelis, A.**, Giokas, S., Pafilis, P., Valakos, E.D. 2009. The phylogeny of the endemic land snail genus of Greece *Codringtonia* (Gastropoda, Pulmonata) based on mtDNA sequence data. 11th International Congress of on the

Zoogeography and Ecology of Greece and adjacent regions (11th ICZEGAR). Heraklion, Crete, Greece, 21-25 September 2009. (Poster).

MANUSCRIPT REVIEWER

Frequent reviewer in the following journals: Biological Journal of the Linnean Society, Molecular Phylogenetics and Evolution, Zootaxa, Molecular Ecology, Biochemical Genetics, Journal of Natural History, Journal of Heredity, Diversity, International Journal of Molecular Sciences, Journal of Zoological Systematics and Evolutionary Research.

ADDITIONAL INFORMATION

- ✦ Excellent use of statistical, DNA sequence manipulation and phylogenetic software:
 - Statistical analysis software: NTSYS, STATISTICA, SYSTAT, S-PLUS, SPSS, STATGRAPHICS, KREBS.
 - Phylogenetic inference and sequence handling software: SEQUENCHER, CLUSTAL, ARLEQUIN, DAMBE, PAUP*, PAML, MEGA, PHYLIP, MODELTEST, COLLAPSE, DNASP, MRBayes, BEAST, GARLI.

OTHER ACTIVITIES

- ❖ Ample experience in field work since I have been participating in the sample collecting expeditions of the Natural History Museum of Crete since 1993. Besides expeditions in mainland Greece and most of the Aegean islands I have participated in expeditions in Tunisia, Syria, Jordan, Turkey and South Africa.
- ❖ Member of the Hellenic Zoological Society.