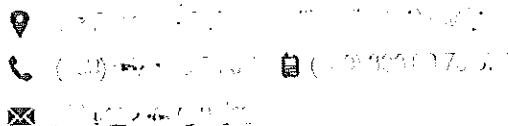


#### **PERSONAL INFORMATION**

Aida Capone



Sex Female | Date of birth 17/07/1984 | Nationality Italian

## **WORK EXPERIENCE**

- December 2012 - November 2015 Research Assistant

Research assistant (Post Doc) in the Parasitology laboratory of University of Camerino involved in the project with the title of "***Yeasts symbionts of malaria vectors: from basic research to the management of malaria control***".

Research project founded by EU

## EDUCATION AND TRAINING

- March 2009 - March 2012 Ph.D in Environmental Sciences and Public Health-Programme on Malaria and Human Development, University of Camerino – 11/05/12. Title of thesis: "Interactions between *Asaia*, *Plasmodium* and *Anopheles*: new insights in mosquito symbiosis and implications in Malaria Symbiotic Control

**Synopsis of Ph.D** The recent identification of acetic acid bacteria belonging to the genus *Asaia*, that are stably associated with larvae and adults of different species of malaria transmitting mosquitoes, in particular *Anopheles stephensi* (Favia G. et al., 2007), indicates this bacterium as a suitable candidate for the paratransgenic or symbiotic control of the malaria infection. The presence of *Asaia* in the mosquito reproductive system represents an additional intriguing feature, particularly important towards the development of *Paratransgenetically Modified* (PM) mosquitoes that can mix with natural populations. In fact, among the main requirements for the development of a good paratransgenic system are: the identification of a microorganism in continuous association to the mosquito body possibly localized in both midgut and gonads and the production of recombination systems including efficient secretion pathway of anti-*Plasmodium* effector molecules. For its features described, and for the functions of Gram-negative bacteria known in the scientific literature, the next step was to characterize the interaction between the *Asaia* bacterium, mosquito and *Plasmodium*, especially investigating its possible protective role in the response to the parasite (Capone A, et al. 2013), and its symbiotic role in the mosquito. In particular the aim of this work was: i) to investigate the relative amount of *Asaia* and *Plasmodium* in co-infected mosquitoes, by the means of Real Time quantitative PCR; ii) to perform immunological studies to provide evidences that *Asaia* induces 'in vitro' the expression of Antimicrobial Peptides (AMPs) in the mosquito; iii) to define co-localization by fluorescent recombinant strains of both *Asaia* and *Plasmodium* at the level of mosquito midgut and salivary glands. iv) to define the symbiotic role of *Asaia* in mosquito *An. stephensi* by microinjection of specific monoclonal antibody.

- November 2009 Authorization to practice the profession of Biologist

- From 2006 to 2008 University of Camerino, Camerino (MC) Italy  
Muster degree in Scienze Biomolecolari e Biofunzionali (cl. 6/S) – 10/07/08  
Grade: 110/110 cum laude  
Title of thesis: "Qualitative and quantitative analysis of the interactions between acetic bacteria of genus *Asaia* and *Plasmodium*".

- From 2003 to 2006 University of Camerino, Camerino (MC) Italy  
Bachelor in Biology (cl. 12)- 15/12/06  
Grade: 110/110 cum laude  
Title of thesis: " Analysis of allelic discrimination in qRT-PCR of Factor V Leiden".

- July 2003 Diploma Liceo Scientifico PNI, "A. Gallotta" Eboli (SA), Italy  
Grade: 96/100

---

**PERSONAL SKILLS**


---

**Mother tongue(s)** Italian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Good	Good	Good	Good	Good

Common European Framework of Reference for Languages

**Organisational / managerial skills** Ability to work with people of different national, cultural and scientific background, to establish collaborative relationships and projects and to work under tight deadlines. I have supervised research activity of undergraduate and graduate students

**Job-related skills** Common techniques of molecular biology-extraction; PCR amplification; Purification of nucleic acids with kits and traditional methods; Agarose gel electrophoresis; Construction and screening of genomic libraries; rT-PCR; cDNA synthesis; Quantitative and allelic discrimination analysis in qRT-PCR; Processing sequences in databases and use of common software for sequence analysis; Cells culture on selective media Spectrophotometer; Microscopic dissection of mosquitoes; Microinjection of mosquitoes; Cloning vectors with conventional plasmids and expression of GFP protein in prokaryotic and eukaryotic system; Manipulation of microorganisms associated with vector insects; Fluorescence and confocal microscopy; Enzyme-Linked ImmunoSorbent Assay (ELISA TEST); Fluorescent *in situ* hybridization (FISH); Immunofluorescence Assay (IFA); Catches of mosquitoes and other bloodsucking insects; Maintenance of mosquito's strains in the insectary; Management of malaria murine model; Study of symbiosis in mosquito vectors.

- Computer skills**
- Basic theoretical concepts of information technology
  - Using the Computer and Managing Files
  - Word Processing (Word)
  - Spreadsheet (Excel)
  - Presentation (ppt)
  - Information and communication
  - Competence in the use of statistical software (R Cran and GraphPad)

**Driving licence** ▪ B

---

**ADDITIONAL INFORMATION**


---

My research project has been selected as finalist of Innovact Campus Award Reims (France), 2011. During my Ph.D I was hosted in IAEA group, in Vienna to learn techniques for the maintenance of mosquito's strains genetically modified. The publication number 7 in the following list was awarded with the BioMedCentral (BMC) award 2013, for the Microbiology, Immunology, Infection & Inflammation category and it is marked as highly accessed article.

**Selected Congresses,  
Courses and Workshops  
(last 5 years)**

- Speaker at SolPa XXVII Congresso Nazionale della Parassitologia;  
Alghero, Italy, 26-29 giugno 2012
- Speaker at SolPa XXVIII Congresso Nazionale della Parassitologia;  
Roma, Italy, 24-27 giugno 2014

**Track-record**

- **Research interest:** General and molecular parasitology, genetics, microbiology, molecular biology (and their applications), study of symbiosis in mosquito vectors.
- **Publications:** N. 9 Scientific papers in international journals "peer-reviewed" (1 as first author); N.1 Chapter in international journals "peer-reviewed"; N. 3 Scientific papers submitted in International Journal "peer-reviewed": Scientific report, Journal of Medical Entomology and Malaria Journal (1 as first author).
- **Bibliometric Indices:** H-index of 6 with a number of total citations of 131 (Google Scholar); H-index of 6 with 95 citations (Scopus).
- **Teaching activity:** I have acted as co-supervisors of 10 undergraduate students of the bachelor in Biology and Biosciences and Biotechnology, 3 students of the Master degree in Biology and 2 PhD students in Environmental Sciences and Public Health.  
I have been teaching assistant in the Laboratory practice course for the Bachelor programme in Biosciences and Biotechnology.
- **Review activity:** I have been serving as referee for the journal "International Journal of Insect Science".

**Abstracts**

- **Acetic acid bacteria in malaria vectors: a possible strategy for malaria control?**  
Damiani C.; Ricci I.; Cappelli A.; Ulissi U.; Rossi P.; Capone A.; Scuppa P.; Mosca M.; Valzano M.; Crotti E.; Epis S.; Esposito F.; Sacchi L.; Mandrioli M.; Bandi C.; Daffonchio D.; Favia G.  
SolPa XXVI Congresso Nazionale della Parassitologia Perugia, 22-25 giugno 2010
- **Yeast symbionts in the Asian malaria vector *Anopheles stephensi***  
Ricci I.; Damiani C.; Scuppa P.; Rossi P.; Crotti E.; Mosca M.; Capone A.; Gonnella E.; Chouala B.; Esposito F.; Alma A.; Mandrioli M.; Sacchi L.; Bandi C.; Daffonchio D.; Favia G.  
SolPa XXVI Congresso Nazionale della Parassitologia Perugia, 22-25 giugno 2010
- **Bacterial symbionts in *Aedes aegypti* and *Aedes albopictus***  
Rossi P.; Damiani C.; Ricci I.; Cappelli A.; Ulissi U.; Capone A.; Scuppa P.; Mosca M.; Valzano M.; Esposito F.; Sacchi L.; Bandi C.; Daffonchio D.; Favia G.  
SolPa XXVI Congresso Nazionale della Parassitologia Perugia, Italy, 22-25 giugno 2010
- **Mosquito/microbiota interactions: from basic research to biotechnological perspectives in mosquito borne diseases control.**  
Capone A., Ricci I., Scuppa P., Damiani C., Rossi P., De Freece C., Valzano M., Cappelli A., Mosca M., Ulissi U., Favia G.  
SolPa XXVII Congresso Nazionale della Parassitologia Alghero, Italy, 26-29 giugno 2012
- **Bacterial symbiotic control of mosquito vectors: from bench to field**  
Mancini M.V., Bozic J., Capone A., Cappelli A., Damiani C., Epis S., Rossi P., Valzano M., Bandi C., Ricci I., Favia G.  
SolPa XXVIII Congresso Nazionale della Parassitologia Roma, Italy, 24-27 giugno 2014
- **Using symbiotic yeasts associated to mosquitoes to prevent plasmodial infection in malaria vectors: current status and future strategies for symbiotic control of mosquito born diseases.**  
Bozic J., Capone A., Valzano M., Cappelli A., Damiani C., Rossi P., Mancini M.V., Favia G., Ricci I.  
SolPa XXVIII Congresso Nazionale della Parassitologia Roma, Italy, 24-27 giugno 2014
- **Engineering of the yeast Wickerhamomyces anomalus, symbiont of mosquito species relevant to public health, for paratransgenic control strategies.**  
Capone A., Bozic J., Cappelli A., Damiani C., Rossi P., Valzano M., Epis S., Favia G., Ricci I.  
SolPa XXVIII Congresso Nazionale della Parassitologia Roma, Italy, 24-27 giugno 2014
- **A killer yeast strain is harbored in malaria vectors: new insights in the mosquito biology and possible implications in the malaria transmission blocking.**  
Valzano M., Cappelli A., Ulissi U., Damiani C., Capone A., Bozic J., Cecarini V., Favia G., Ricci I.  
SolPa XXVIII Congresso Nazionale della Parassitologia Roma, Italy, 24-27 giugno 2014
- **Symbionts and mosquito vectors: work in progress at UNICAM.**  
Ricci I., Damiani C., Rossi P., Capone A., Valzano M., Cappelli A., Bozic J., Mancini MV., Favia G.  
SolPa XXVIII Congresso Nazionale della Parassitologia Roma, 24-27 giugno 2014

**Publications**

- 1) Mosquito-Bacteria Symbiosis: The Case of *Anopheles gambiae* and *Asala*.  
Damilani C., Ricci I., Crotti E., Rossi P., Rizzi A., Scuppa P., Capone A., Ulissi U., Epis S., Genchi M., Sagnon N., Faye I., Kang A., Chouaia B., Whitehorn C., Moussa GW., Mandrioli M., Esposito F., Sacchi L., Bandi C., Daffonchio D., Favia G. *Microb Ecol*, 60(3):644-654, 2010.
- 2) The yeast *Wickerhamomyces anomalus* (*Pichia anomala*) inhabits the midgut and reproductive system of the Asian malaria vector *Anopheles stephensi*.  
Ricci I., Damiani C., Scuppa P., Mosca M., Crotti E., Rossi P., Rizzi A., Capone A., Gonella E., Ballarini P., Chouaia B., Sagnon N., Esposito F., Alma A., Mandrioli M., Sacchi L., Bandi C., Daffonchio D., Favia G. *Environ Microb*, 13(4):911-921, 2011.
- 3) Different mosquito species host *Wickerhamomyces anomalus* (*Pichia anomala*): perspectives on vector-borne diseases symbiotic control.  
Ricci I., Mosca M., Valzano M., Damiani C., Scuppa P., Rossi P., Crotti E., Cappelli A., Ulissi U., Capone A., Esposito F., Alma A., Mandrioli M., Sacchi L., Bandi C., Daffonchio D., Favia G. *Antonie Van Leeuwenhoek*, 99(1):43-50, 2010.
- 4) Mosquito symbioses: from basic research to the paratransgenic control of mosquito-borne diseases.  
Ricci I., Damiani C., Rossi P., Capone A., Scuppa P., Cappelli A., Ulissi U., Mosca M., Valzano M., Epis S., Crotti E., Daffonchio D., Alma A., Sacchi L., Mandrioli M., Bandi C., Favia G. *J.Appl.Entomol.* 135: 487-493. 2011.
- 5) Facing malaria parasite with mosquito symbionts Ricci I., Scuppa P., Damiani C., Rossi P., Capone A., DeFreece C., Valzano M., Cappelli A., Mosca M., Ulissi U., Favia G. *Malaria Parasites*. Ed. Intech Open access publisher ISBN 979-953-307-072-7 by Omolade Okwa Lagos State University, Nigeria. (Chapter)
- 6) Mosquito/microbiota Interactions: from complex relationships to biotechnological perspectives.  
Ricci I., Damiani C., Capone A., DeFreece C., Rossi P., Favia G. *Current Opinion in Microbiology*, 15(3):278-284. 2012.
- 7) Interactions between *Asala*, *Plasmodium* and *Anopheles*: new insights in mosquito symbiosis and implications in Malaria Symbiotic Control.  
Capone A., Ricci I., Damiani C., Mosca M., Rossi P., Scuppa P., Crotti E., Epis S., Angeletti M., Valzano M., Sacchi L., Bandi C., Daffonchio D., Mandrioli M., Favia G. *Parasite & Vectors* 6(1):182. doi: 10.1186/1756-3305-6-182. 2013.  
*This publication was awarded with the BioMedCentral (BMC) award 2013, for the Microbiology, Immunology, Infection & Inflammation category and it is marked as highly accessed article.*
- 8) Environmental pollutants directly affect the liver X receptor alpha activity: kinetic and thermodynamic characterization of binding.  
Mozzicafreddo M., Cuccioloni M., Bonfili L., Cecarini V., Palermo FA., Coccia P., Mosconi G., Capone A., Ricci I., Eleuteri AM., Angeletti M. *J Steroid Biochem Mol Biol*. 2015; 152:1-7. doi: 10.1016/j.jsbmb.
- 9) Mutual exclusion of *Asala* and *Wolbachia* in the reproductive organs of mosquito vectors.  
Rossi P., Ricci I., Cappelli A., Damiani C., Ulissi U., Mancini MV., Valzano M., Capone A., Epis S., Crotti E., Chouaia B., Scuppa P., Joshi D., Xi Z., Mandrioli M., Sacchi L., O'Neill SL., Favia G. *Parasit Vectors*. 2015; 8(1):278.
- 10) A rapid qPCR method to investigate the circulation of the yeast *Wickerhamomyces anomalus* in humans.  
Epis S., Capone A., Valzano M., Bozic J., Martin E., Barzocchi C., Favia G., Ricci I. *New Microbiologica* 2015.
- 11) A yeast strain associated to *Anopheles* mosquitoes produces a toxin killing the malaria parasite.  
Valzano M., Cecarini V., Cappelli A., Capone A., Bozic J., Cuccioloni M., Angeletti M., Anna Maria Eleuteri AM., Epis S., Sacchi L., Favia G., Ricci I. (Paper submitted).
- 12) Identification of *Candida parapsilosis* in vector mosquitoes with public health relevance.  
Capone A., Bozic J., Pediconi D., Rossi P., Scuppa P., Favia G., Ricci I. (Paper submitted).
- 13) Paratransgenesis to control malaria vectors: a semi-field pilot study.  
Mancini M.V., Spaccapelo R., Damiani C., Facchinelli L., Cappelli A., Capone A., Ricci I., Favia G. (Paper submitted)
- 14) Effects of *Asala* symbiont on mosquito's vitality and longevity  
Capone A. et al. (Paper in preparation).

Camerino, 06/11/2015

Signature

