

## CURRICULUM VITAE

### Rhoel David Ramos Dinglasan, PhD, MPH, MPhil

#### PART I

#### PERSONAL DATA

##### *Home Address*

7905 NW 4<sup>TH</sup> CT  
Gainesville, FL 32607

##### *Business Address, Phone, FAX & E-Mail*

University of Florida  
Emerging Pathogens Institute  
Department of Infectious Diseases & Pathology  
College of Veterinary Medicine  
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#### EDUCATION AND TRAINING

##### *Degree/Year*

PhD/2004

MPhil/2002

MPH/1998

BA/1994

##### *Institution and Field*

University of Maryland School of Medicine, Baltimore, MD, Microbiology & Immunology  
Yale University, New Haven, CT, Vector Biology  
Yale University, New Haven, CT, Infectious Disease Epidemiology/Global Health  
University of Virginia, Charlottesville, VA, Cognitive Science/Undergraduate Neuroscience

##### *Postdoctoral Training*

2004 – 2008 Dmitri V. d'Arbeloff (Millipore Foundation) Postdoctoral Fellow in the Biological Sciences, and a National Institutes of Health Ruth L. Kirschstein National Research Service Award Fellow, The Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, USA

##### *Other Certification*

2007 Third Functional Genomics of Malaria Parasites Course, Bangkok, Thailand  
2007 Cold Spring Harbor Laboratory Proteomics Course, Cold Spring Harbor, NY  
2005 Complex Carbohydrate Analysis and Mass Spectrometry Training Course, Complex Carbohydrate Research Center (CCRC), University of Georgia, Athens, GA  
1998 PHTN Distance Learning Certificate (CB3050), "Investigating an Outbreak: Pharyngitis in Louisiana," United States Centers for Disease Control (CDC), Atlanta, GA

## PROFESSIONAL EXPERIENCE

Director, CDC Southeastern Regional Center of Excellence in Vector Borne Diseases: Gateway Program, The University of Florida, Gainesville, FL 2016-present  
Associate Professor, Department of Anatomy & Cell Biology, The University of Florida, College of Medicine, Gainesville, FL 2016-present  
Associate Professor, Department of Infectious Diseases & Pathology, The University of Florida, College of Veterinary Medicine, Gainesville, FL 2016-present  
Supervisor for ScM, PhD and Postdoctoral Fellows, Developing Excellence in Leadership and Genetic Training for Malaria Elimination in Sub-Saharan Africa (DELTA) Training Program, Wellcome Trust, UK, 2015-present  
Affiliate Faculty, The Institute for NanoBioTechnology, Johns Hopkins University, 2014-present  
External Supervisor (Adjunct Professor) Appointment, School of Life Sciences and Bioengineering, The Nelson Mandela African Institution of Science and Technology, Arusha, Tanzania, 2013-present  
Member, PATH-Malaria Vaccine Initiative, Transmission-Blocking Vaccine Working Group, 2009-2014  
Faculty Member, Cellular and Molecular Medicine Graduate Program, Johns Hopkins University School of Medicine, Baltimore, MD 2012-present  
Founding Member, Governing Board, Johns Hopkins Medical Institutions Center for Resources in Integrative Biology, Baltimore, MD, 2011-2012  
Assistant Professor, Department of Molecular Microbiology & Immunology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, (March 8) 2009-present  
Organizing Director, JHSPH Postdoctoral Fellows Seminar Series, Office of Graduate Education and Research, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, 2006-2008  
Project Leader, International Centre of Insect Physiology and Ecology (ICIPE), Muhaka Research Station, Ukunda, Kenya, 1999  
Project Leader, Center for Vector and Vector-borne Diseases, Faculty of Science, Mahidol University, Bangkok, Thailand, 1997  
Policy Consultant, "Role of Men in Families and Child Health", UNICEF, New York, NY, 1997  
Senior Laboratory Technician, Beirne B. Carter Center for Immunology, The University of Virginia, Charlottesville, VA, 1993-1995

## PROFESSIONAL ACTIVITIES

### *Society Membership*

Wilbur G. Downs Tropical Medicine Fellow, Yale University	1997
American Society of Microbiology	2002
MacArthur Foundation, The Biology of Disease Vectors Fellowship (Fellow)	2003
The Society for Glycobiology	2004
Reuters Insight (Consultant)	2008
American Society of Biochemistry and Molecular Biology	2012
American Chemical Society	2016

### *Participation on Advisory Panels/Study Review Groups*

Member, Scientific Advisory Board, United States Military Malaria Vaccine Research Program, Military Infectious Diseases Research Program (MIDRP), 2014-present  
Review Panel Member, European Research Council, Belgium, 2014-present

Member, Host-Pathogen Working Group (Advisory panel), NIAID, NIH-funded Malaria Host-Pathogen Interaction Center (MAHPIC), Emory University, Atlanta, GA, 2013-present  
 Review Panel Member, Wellcome Trust, United Kingdom, 2011-present  
 Member, iVAX, Interdisciplinary *Plasmodium vivax* Research Consortium, Bill & Melinda Gates Foundation, 2010-2012  
 Reviewer, Foundation for the National Institutes of Health (FNIH), 2010-present  
 Review Panel Member, Military Infectious Diseases Research Program (MIDRP), 2009-present  
 Reviewer, Contracts, Microbiology Review Branch, National Institutes of Allergy and Infectious Diseases, National Institutes of Health, 2009-present  
 Review Panel Member, Biotechnology and Biological Sciences Research Council (BBSRC), United Kingdom, 2009-present  
 Review Panel Member, President's American Reconstruction and Recovery Act, NIH, 2009  
 Chair, Malaria Eradication Research Agenda (MalERA), Bill & Melinda Gates Foundation, Young Investigators Consultative Group, 2008-2010  
 Member, Malaria Eradication Research Agenda (MalERA), Bill & Melinda Gates Foundation, Vaccines Subgroup, 2008-2010  
 Ad Hoc Member, BBSRC Review Panel, U.K. 2008-present  
 Member, Malaria Eradication Research Agenda (MalERA), Bill & Melinda Gates Foundation, Drugs Subgroup, 2008-2010  
 Member, Bill & Melinda Gates Foundation, Malaria Transmission-Blocking Vaccine Planning Group, 2008-2010  
 Ad Hoc Member, Grant Agency, Academy of Sciences of the Czech Republic, 2006-present

## EDITORIAL ACTIVITIES

Reviewer, Journal of Molecular and Cellular Proteomics	2005-present
Reviewer, International Journal of Parasitology	2006-present
Reviewer, Molecular & Biochemical Parasitology	2007-present
Reviewer, PLoS Neglected Tropical Disease	2007-present
Reviewer, BMC Journal: Parasites & Vectors	2008-present
Reviewer, Proceedings of the National Academy of Sciences	2008-present
Reviewer, Journal of Biotechnology & Applied Biochemistry	2008-present
Reviewer, Molecular Microbiology	2009-present
Reviewer, Molecular & Cellular Proteomics	2009-present
Reviewer, PLoS One	2010-present
Reviewer, Insect Molecular Biology	2011-present
Reviewer, Journal of Proteome Research	2011-present
Reviewer, PLoS Pathogens	2011-present
Reviewer, Molecular Biosystems	2014-present
Reviewer, Journal of Proteomics	2014-present
Reviewer, Proteomics	2014-present
Reviewer, Agents, Antimicrobials & Chemotherapy	2014-present
Reviewer, Molecular Biosystems	2014-present
Reviewer, Science Translational Medicine	2014-present
Reviewer, Nature Communications	2014-present
Reviewer, Journal of Infectious Disease	2015-present
Reviewer, Science	2015-present

## HONORS AND AWARDS

### *Honors & Awards*

Wilbur G. Downs Research Travel Fellowship Award, Yale University, 1997  
“Honors with Distinction”, Master’s Thesis, Yale University, 1998  
John Perry Miller Fund Award for Graduate Dissertation Research, Yale University, 2002  
MacArthur Foundation, DVVID Scholarship for *The Biology of Disease Vectors* Course, 2003  
Dmitri V. d’Arbeloff Postdoctoral Fellowship in the Biological Sciences (Millipore Foundation),  
Johns Hopkins Bloomberg School of Public Health, 2005-6  
The 2<sup>nd</sup> Annual Johns Hopkins Postdoctoral Research Poster Competition, *First Place*, 2006  
American Society for Microbiology Branches Logo Design Contest, Stationery Category, *Winner*,  
2006  
Howard Hughes Medical Institutions/World Health Organization (TDR)/BioMalPar, Third  
Functional Genomics of Malaria Parasites Course Scholarship, 2007  
Cold Spring Harbor Laboratory Proteomics Course (Partial Scholarship), 2007  
Journal of Cell Science, Company of Biologists, Travel Fellowship Award, 2007  
Pfizer Centennial Travel Award in Basic Science Tropical Disease Research, American Society of  
Tropical Medicine & Hygiene, 2007  
A\*STAR (Agency for Science, Technology and Research, Singapore) New Investigatorships  
Award (Biomedical Sciences), 2008 (declined)  
UK-US Collaboration Development Award, British Consulate General, USA, 2009  
Human Frontiers Science Program (Strasbourg, France) Young Investigators Award, 2012

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[My NCBI Bibliography](#): Total publications: 41; h-index: 19; i10-index: 30

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### *Journal Articles*

Pastrana-Mena R, Mathias DK, Delves M, Rajaram K, King JG, Yee R, Trucchi B, Verotta L,  
**Dinglasan RR**. A Malaria Transmission-Blocking (+)-Usnic Acid Derivative Prevents  
Plasmodium Zygote-to-Ookinete Maturation in the Mosquito Midgut. *ACS Chemical Biology*  
2016. 11(12):3461-3472. PMID: 27978709

Sanz S, López-Gutiérrez B, Bandini G, Damerow S, Absalon S, **Dinglasan RR**, Samuelson J,  
Izquierdo L. The disruption of GDP-fucose de novo biosynthesis suggests the presence of a  
novel fucose-containing glycoconjugate in *Plasmodium* asexual blood stages. *Scientific Reports*  
2016. doi: 10.1038/srep37230. PMID: 27849032

Smith RC, King JG, Tao D, Zeleznik OA, Brando C, Thallinger GG, **Dinglasan RR**. Molecular  
profiling of phagocytic immune cells in *Anopheles gambiae* reveals integral roles for hemocytes  
in mosquito innate immunity. *Molecular & Cellular Proteomics* 2016. pii: mcp.M116.060723.  
PMID: 27624304

- Sandeu MM, Abate L, Tchioffo MT, Bayibéki AN, Awono-Ambéné PH, Nsango SE, Chesnais CB, **Dinglasan RR**, de Meeûs T, Morlais I. Impact of exposure to mosquito transmission-blocking antibodies on *Plasmodium falciparum* population genetic structure. *Infection, Genetics, & Evolution*. 2016 45:138-144. doi: 10.1016/j.meegid.2016.08.025. PMID: 27566334
- Lecona-Valera AN, Tao D, Rodríguez MH, López T, **Dinglasan RR**, Rodríguez MC. An antibody against an Anopheles albimanus midgut myosin reduces *Plasmodium berghei* oocyst development. *Parasites & Vectors* 2016; 9(1):274. PMID: 27165123
- Balaich JN, Mathias DK, Torto B, Jackson BT, Tao D, Ebrahimi B, Tarimo BB, Cheseto X, Foster WA, **Dinglasan RR**. The non-artemisinin sesquiterpene lactones parthenin and parthenolide block *Plasmodium falciparum* sexual stage transmission. *Agents, Antimicrobials & Chemotherapy* 2016. 60(4):2108-17. doi: 10.1128/AAC.02002-15. PMID: 26787692
- Kurz S, King JG, **Dinglasan RR**, Paschinger K, Wilson IB. The Fucosylated Potential of Mosquitoes: Fucosylated N-glycan Epitopes and their Cognate Fucosyltransferases. *Insect Biochemistry & Molecular Biology* 2016. Epub. pii: S0965-1748(15)30065-5. doi: 10.1016/j.ibmb.2015.11.001. PMID: 26617287
- Atkinson SC\*, Armistead JS\*, Mathias DK, Sandeu MM, Tao D, Borhani-Dizaji N, Tarimo BB, Morlais I, **Dinglasan RR\***, Borg NA\*. Structural analysis of *Anopheles* midgut aminopeptidase N reveals a novel malaria transmission-blocking vaccine B-cell epitope. *Nature Structural & Molecular Biology* 2015. Epub. doi: 10.1038/nsmb.3048. PMID: 26075520
- Colquhoun DR, Lyashkov AE, Ubaida Mohien C, Aquino VN, Bullock BT, **Dinglasan RR**, Agnew B, Graham DR. Bio-Orthogonal Mimetics of Palmitoyl-CoA and Myristoyl-CoA and their Subsequent Isolation by Click Chemistry and Characterization by Mass Spectrometry Reveal Novel Acylated Host-Proteins Modified by HIV-1 Infection. *Proteomics* 2015, 15(12):2066-77. doi: 10.1002/pmic.201500063. PMID: 25914232
- Tharakan R, Tao D, Ubaida-Mohien C, **Dinglasan, RR**, Graham, DR. Integrated Microfluidic Chip and Online SCX Separation Allows Untargeted Nanoscale Metabolomic and Peptidomic Profiling. *Journal of Proteome Research* 2015, 14 (3):1621-6. doi: 10.1021/pr5011422. PMID: 25574574
- Tweedell R, Tao D, **Dinglasan RR**. The cellular and proteomic response of primary and immortalized murine Kupffer cells following immune stimulation diverges from that of monocyte-derived macrophages. *Proteomics* 2015, 15 (2-3):545-53. doi: 10.1002/pmic.201400216. PMID: 25266554
- Ruecker A, Mathias DK, Straschil U, Churcher T, **Dinglasan RR**, Leroy D, Sinden RE, Delves M. A male and female gametocyte functional viability assay to identify biologically relevant malaria transmission-blocking drugs. *Agents Antimicrobials & Chemotherapy* 2014, 58(12):7292-302. PMID: 25267664
- Liang Y, Eng WS, Colquhoun DR, **Dinglasan RR**, Graham DR, Mahal LK. Complex N-linked Glycans Serve as a Determinant for Exosome/Microvesicle Cargo Recruitment. *Journal of Biological Chemistry* 2014, 289(47):32526-3. PMID: 25261472

Talman AM, Prieto JH, Marques S, Ubaida Mohien C, Lawniczak M, Wass MN, Xu T, Frank R, Ecker A, Stanway RS, Krishna S, Sternbeg MJE, Christophedes GK, Graham DR, **Dinglasan RR**, Yates III JR, Sinden RE. Proteomic analysis of the *Plasmodium* male gamete reveals the key role for glycolysis in flagellar motility. *Malaria Journal* 2014, 13:315. PMID: 25124718

Tao D, Ubaida Mohien C, Mathias DK, King JG, Pastrana-Mena R, Tripathi A, Goldowitz I, Graham DR, Moss E, Marti M, **Dinglasan RR**. Sex-partitioning of the *Plasmodium falciparum* stage V gametocyte proteome provides insight into falciparum-specific cell biology. *Molecular & Cellular Proteomics* 2014, 13(10):2705-24. PMID: 25056935

Mathias DK\*, Jardim JG\*, Parish LA, Armistead JS, Trinh HV, Khumpitak C, Sattabongkot J, **Dinglasan RR**. Differential roles of an Anopheline midgut GPI-anchored protein in mediating *Plasmodium falciparum* and *Plasmodium vivax* ookinete invasion. *Infection, Genetics & Evolution* 2014, 28:635-47. PMID: 24929123

Tao D, King JG, Tweedell RE, Jost PJ, Boddey JA, **Dinglasan, RR**. The acute transcriptomic and proteomic response of HC-04 hepatoma cells to Hepatocyte Growth Factor and its implications for *Plasmodium falciparum* sporozoite invasion. *Molecular & Cellular Proteomics* 2014, 13(5):1153-64. PMID: 24532842<sup>†</sup>

<sup>†</sup>Selected for Cover Art: *Molecular & Cellular Proteomics*

Armistead JS, Morlais I, Mathias DK, Jardim JG, Joy J, Fridman A, Finnefrock AC, Bagchi A, Plebanski M, Scorpio DG, Churcher TS, Borg NA, Sattabongkot J, **Dinglasan RR**. Antibodies to a single, conserved epitope in Anopheles APN1 inhibit universal transmission of falciparum and vivax malaria. *Infection & Immunity* 2014, 82: 818. PMID: 24478095

Vega-Rodríguez J, Ghosh AK, Kanzok SM, **Dinglasan RR**, Wang S, Bongio NJ, Kalume DE, Miura K, Long CA, Pandey A, Jacobs-Lorena M. Multiple pathways for Plasmodium ookinete invasion of the mosquito midgut. *Proceedings of the National Academy of Sciences USA* 2014, 111: E492. PMID: 24474798

Ouédraogo AL, Guelbéogo WM, Cohuet A, Morlais I, King JG, Gonçalves BP, Bastiaens GJH, Vaanhold M, Thiombiano F, Sattabongkot J, Wu Y, Coulibaly M, Ibrahima B, Jones S, Morin M, Drakeley C, **Dinglasan RR**, Bousema T. A protocol for membrane feeding assays to determine the infectiousness of *P. falciparum* naturally infected individuals to *Anopheles gambiae*. *Malaria World Journal* 2013, 4:16.

Mathias DK, Pastrana-Mena R, Ranucci E, Tao D, Ferruti P, Ortega C, Staples GO, Zaia J, Takashima E, Tsuboi T, Borg NA, Verotta L, **Dinglasan RR**. A Small Molecule Glycosaminoglycan Mimetic Blocks *Plasmodium* Invasion of the Mosquito Midgut. *PLoS Pathogens* 2013, 9 (11): e1003757. doi:10.1371/journal.ppat.1003757. PMID: 24278017

Tomiya N, Jardim JG, Hou J, Pastrana-Mena R, **Dinglasan RR**, and Lee YC. Liver-Targeting of Primaquine-(poly- $\gamma$ -glutamic acid) and its degradation in rat hepatocytes. *Bioorganic & Medicinal Chemistry* 2013, 21(17):5275-81. doi: 10.1016/j.bmc.2013.06.028. PMID: 23859775

- Dinglasan, RR**, Armistead JS, Nyland JF, Mao HQ. Single-dose microparticle delivery of a malaria transmission-blocking vaccine elicits a long-lasting functional antibody response. *Current Molecular Medicine* 2013, 13(4):479-87. PMID: 23331003.
- Ubaida Mohien C, Colquhoun DR, Mathias DK, Gibbons JG, Armistead JS, Rodriguez MC, Rodriguez MH, Edwards NJ, Hartler J, Thallinger GG, Graham DR, Martinez-Barnette J, Rokas A, **Dinglasan RR**. A bioinformatics approach for integrated transcriptomic and proteomic comparative analyses of model and non-sequenced anopheline vectors of human malaria parasites. *Molecular and Cellular Proteomics*, 2012, 12(1):120-31. PMID: 23082028
- Hain AU, Weltzer RR, Hammond H, Jayabalasingham B, **Dinglasan RR**, Graham DR, Colquhoun DR, Coppens I, Bosch J. Structural Characterization and Inhibition of the *Plasmodium* Atg8-Atg3 Interaction. *Journal of Structural Biology*, 2012, 180(3):551-62. PMID: 22982544
- Bousema T, **Dinglasan RR**, Morlais I, Gouagna LC, et al., (24 authors total). Mosquito feeding assays to determine the infectiousness of naturally infected *Plasmodium falciparum* gametocyte carriers. *PLoS One* 2012, 7(8):e42821. PMID: 22936993
- Martinez-Barnette J, Gomez-Barreto R, Ovilla-Munoz M, Tellez-Sosa, J, Garcia-Lopez DE, **Dinglasan RR**, Ubaida Mohien C, MacCallum RM, Redmond S, Gibbons JG, Rokas A, Machado CM, Cazares-Raga F, Gonzalez-Ceron L, Hernandez-Martinez S, Rodriguez-Lopez MH. Transcriptome of the adult female malaria mosquito vector *Anopheles albimanus*. *BMC Genomics*. 2012, 13: 207. PMID: 22646700
- Mathias DK, Plieskatt JL., Armistead JS, Bethony JM, Abdul-Majid KB, McMillan A, Angov E, Aryee MJ, Zhan B, Gillespie P, Keegan B, Jariwala AR, Rezende W, Bottazzi ME, Scorpio DG, Hotez PJ, **Dinglasan RR**. Expression, immunogenicity, histopathology, and potency of a mosquito-based malaria transmission-blocking recombinant vaccine. *Infection and Immunity*. 2012, 80: 1606. PMID: 22311924
- Parish LA, Colquhoun DR, Ubaida-Mohien C, Lyashkov A, Graham DR, **Dinglasan RR**. Ookinete-Interacting Proteins on the Microvillar Surface are Partitioned into Detergent Resistant Membranes of *Anopheles gambiae* Midguts. *Journal of Proteome Research*. 2011, 10: 5150. PMID: 21905706
- Armistead JS, Wilson IB, van Kuppevelt TH, **Dinglasan RR**. A role for heparan sulfate proteoglycans in *Plasmodium falciparum* sporozoite invasion of anopheline mosquito salivary glands. *Biochemical Journal*. 2011, 438: 475. PMID: 21663594
- Ghosh AK, **Dinglasan RR**, Ikadai H, Jacobs-Lorena M. An improved method for the *in vitro* differentiation of *Plasmodium falciparum* gametocytes into ookinetes. *Malaria Journal*. 2010, 9: 194. PMID: 20615232
- Pastrana-Mena R, **Dinglasan RR\***, Franke-Fayard B\*, Vega-Rodriguez J, Fuentes-Caraballo M, Baerga-Ortiz A, Coppens I, Jacobs-Lorena M, Janse CJ, Serrano AE. Glutathione reductase-null malaria parasites have normal blood stage growth but arrest during development in the mosquito. *Journal of Biological Chemistry*. 2010, 285: 27045. PMID: 20573956

- González-Lázaro M, **Dinglasan RR**, de la Cruz Hernández-Hernández F, Rodríguez MH, Jacobs-Lorena M, Flores-Romo L. *Anopheles gambiae* Croquemort SCR2, expression profile in the mosquito and its potential interaction with the malaria parasite. *Insect Biochemistry and Molecular Biology*. 2009, 39: 395. PMID: 19366631
- Vega-Rodriguez J, Franke-Fayard B\*\*, **Dinglasan RR\*\***, Pastrana-Mena R, Rodriguez-Orengo J, Delgado W, Waters AP, Janse CJ, Jacobs-Lorena M, Serrano AE. The glutathione biosynthetic pathway is essential for *Plasmodium berghei* sporozoite development in the mosquito. *PLoS Pathogens*. 2009, 5(2):e1000302. PMID: 19229315
- Dinglasan RR\***, Devenport M\*, Florens L, Johnson JR, Carucci D, Yates JR, Jacobs-Lorena M. The *Anopheles gambiae* mosquito midgut adult peritrophic matrix 1 proteome. *Insect Biochemistry and Molecular Biology*. 2009, 39(2):125-34. PMID: 19038338
- Dinglasan RR**, Alaganan A, Ghosh AK, Saito A, van Kuppevelt TH, Jacobs-Lorena M. *Plasmodium falciparum* Ookinetes Require Mosquito Midgut Chondroitin Sulfate Proteoglycans for Cell Invasion. *Proceedings of the National Academy of Sciences USA*. 2007, 104: 15882. PMID: 17873063
- Dinglasan RR**, Kalume DE, Kanzok SM, Ghosh AK, Muratova O, Pandey A, Jacobs-Lorena M. Disruption of *Plasmodium falciparum* development by antibodies against a conserved mosquito midgut antigen. *Proceedings of the National Academy of Sciences USA*. 2007, 104: 13461. PMID: 17673553.
- Porter-Kelley JM, **Dinglasan RR**, Alam UA, Azad AF. Axenic *In vitro* Development of Mosquito Phases of the Malaria Parasite, *Plasmodium yoelii* is a potential attenuated sporozoite vaccine candidate. *Experimental Parasitology*. 2006, 112: 99. PMID: 16289466.
- Dinglasan RR**, Porter-Kelley, JM, Alam U, Azad AF. Peptide mimics of mosquito midgut carbohydrate antigens as malaria transmission blocking vaccine candidates. *Vaccine*. 2005, 23: 2717. PMID: 15780718.
- Dinglasan RR**, Valenzuela JG, Azad AF. Sugar Epitopes as Potential Universal Disease transmission blocking targets. *Insect Biochemistry and Molecular Biology*. 2005, 35: 1. PMID: 15607650.
- Dinglasan RR**, Shahabuddin M, Fields I, Azad AF, Sacci JB. Monoclonal Antibody MG96 Completely Blocks *Plasmodium yoelii* Development In *Anopheles stephensi*. *Infection and Immunity*. 2003, 71: 6995. PMID: 14638789.
- Esser MT, **Dinglasan RR**, Krishnamurthy B, Gullo CA, Graham MB, Braciale VL. IL-2 induces Fas ligand/Fas (CD95L/CD95) cytotoxicity in CD8+ and CD4+ T lymphocyte clones. *Journal of Immunology*. 1997, 158: 5612. PMID: 9190908.
- Brase M\*\*, **Dinglasan RR\*\***, Ho M\*\*, Kail N\*\*, Katz R\*\*, Lopez V\*\*, Ton TG\*\*. 1997. "UNICEF REPORT- Yale School of Public Health research project: The role of men in families." New Haven, Connecticut, Yale University School of Medicine, International Health Dept. 154 p.



\*Co-first author or senior author/Contributed equally.

### *Reviews and Opinion Pieces*

Bousema T, Churcher T, Morlais I, **Dinglasan RR**. Can field-based mosquito feeding assays be used for evaluating transmission-blocking interventions? *Trends in Parasitology*. 2013, 29(2): 53-9.. PMID: 23273727. Invited Opinion

malERA Consultative Group on Basic Science and Enabling Technologies. A research agenda for malaria eradication: basic science and enabling technologies. *PLoS Medicine*. 2011, 8: e1000399. PMID: 21311584. (**Dinglasan, R.R.**, Chair).

malERA Consultative Group on Drugs. A research agenda for malaria eradication: drugs. *PLoS Medicine*. 2011, 8: e1000402. PMID: 21311580.

malERA Consultative Group on Vaccines. A research agenda for malaria eradication: vaccines. *PLoS Medicine*. 2011, 8: e1000398. PMID: 21311586.

**Dinglasan RR**, Jacobs-Lorena M. Flipping the Paradigm on Malaria Transmission-Blocking Vaccines. *Trends in Parasitology*. 2008, 24(8):364-70. PMID: 18599352. Invited Review.

**Dinglasan RR**, Jacobs-Lorena M. Insight Into A Conserved Lifestyle: Protein-carbohydrate adhesion strategies for vector-borne pathogens. *Infection and Immunity*. 2005, 73 (12): 7797-7807. PMID: 16299269.

### *Book chapter*

Linsler PJ and **Dinglasan RR**. (2014) Chapter 1. Insect Gut Structure, Function, Development and Target of Biological Toxins. In Dhadialla, T. S. and Gill, S.J. (Eds.) *Insect Midgut and Insecticidal Proteins (Advances in Insect Physiology)*. (September 2014) Academic Press. pp. 1-38. ISBN: 978-0128001974

Parish LA, Garver LS, Colquhoun DR, Ubaida Mohien C, Weissbrod E, **Dinglasan RR**. (2013) Chapter 12. Dissecting mosquito-parasite interactions through molecular biology and biochemistry: Genomic, Proteomic and Glycomic analyses. In Carlton, J., Deitsch, K., Perkins, S. (Eds.) *Malaria Parasites: Comparative Genomics, Evolution and Molecular Biology (February 2013)*. Horizon Scientific Press. ISBN: 978-1-908230-07-2

\*Co-first author or senior author/Contributed equally.

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## CURRICULUM VITAE

**Rhoel David Ramos Dinglasan, PhD, MPH**

### PART II

#### TEACHING

##### *Predoctoral Advisees*

2016-present University of Florida

##### *Undergraduate Program*

- *Carly Crump*, undergraduate Microbiology & Cell Science, Click-chemistry based labeling of mosquito cells [**primary undergraduate thesis lab-current**]
- *Sarah Nguyentran*, undergraduate Entomology & Nematology, Modeling mosquito midgut morphogenesis *in vitro* [**primary undergraduate thesis lab-current**]

##### *Doctoral Program*

- *Rebecca E. Tweedell*, PhD student, Johns Hopkins School of Medicine, Cellular and Molecular Medicine Graduate Program, Glycoproteomic analysis of *Plasmodium falciparum* sporozoite interaction with Kupffer cells [**primary thesis lab-current**]
- *Silvia Sanz Sender*, PhD student, ISGlobal, Barcelona, Spain. The role of the O-fucose Posttranslational Modification during *Plasmodium falciparum* transmission biology [**primary thesis lab-current/shared with Dr. Izquierdo, ISGlobal defending April 2017**]
- *Brian B. Tarimo*, PhD student, The Nelson Mandela African Institution of Science and Technology Graduate Program, Arusha, Tanzania. Endogenous oxidative stress metabolites and *Plasmodium* development in the mosquito [**primary thesis lab/thesis writing-defending June 2017**]

2009-2016 Johns Hopkins Bloomberg School of Public Health

##### *Masters Program*

- *Catherine de Beaumont*, ScM student, Natural and synthetic product glycosaminoglycan mimetics as transmission-blocking compounds (**primary thesis lab-Graduated**)
- *Simran Jandu*, MHS student, The role of iron-binding molecules in vector host-parasite interactions (**primary thesis lab-Graduated**)
- *Nicole Azene*, MPH student, (Capstone Advisor), Malaria Measures in Women at Parturition & Fetal Anthropometry (**primary thesis lab-Graduated**)
- *Elizabeth Weissbrod*, MA Student (School of Medicine), Visualizing *Plasmodium* ookinete invasion of the mosquito midgut (**primary thesis lab-Graduated**)

- *Juliette Jardim*, ScM Student, Chitosan nanoparticle target delivery of primaquine to the liver (**primary thesis lab-Graduated**)
- *Travis van Warmerdam*, ScM Student, Development of a molecular beacon-based quantitative PCR assay for quantification of early *Plasmodium* oocyst development in the mosquito (**primary thesis lab-Graduated**)
- *Heidi Sinsel*, MA Student (School of Medicine), Visualizing *Plasmodium* gametocytogenesis and gametogenesis (**primary thesis lab-Graduated**)
- *Emine Ozelkan*, MHS Student, The role of the gut microbiome in health and disease (**primary thesis lab-Graduated**)
- *Nathan White*, MHS Student, Protein energy malnutrition and vaccine responses (**primary thesis lab-Graduated**)
- *Maya Aleshnick*, ScM student, Development of a novel quantitative RT-PCR assay for the enumeration of individual malaria parasites in its host through the use of a highly conserved single-copy parasite gene (rotation)
- *Jared Balaich*, ScM student, Mechanism of action of the natural product compound *Parthenin* in the prevention of *Plasmodium falciparum* transmission through the mosquito [**primary thesis lab- graduated**]
- *Pavitra Gudur*, MHS student, *Clostridium novyi*-NT accelerates Glioblastoma multiforme treatment [**primary thesis lab- graduated**]

### ***Doctoral Program***

- *Jillian Legault*, PhD student, Characterization of the *Anopheles gambiae* midgut Polypeptide N-acetylgalactosaminyl Transferase 1 (rotation)
- *Melissa Zarr*, PhD student (School of Medicine/Dept. of Pharmacology & Molecular Sciences), Structure-function analysis of non-canonical Apicomplexan lectin-like molecules (rotation)
- *Jaimy Joy*, PhD student (School of Medicine/Immunology Program), Antibody responses of transgenic human MHC II/DR mice to the AnAPN1 Transmission-blocking vaccine (rotation)
- *Jennifer Armistead*, PhD student, The mechanism of action of the pan-malaria anti-AnAPN1 transmission-blocking antibodies [**primary thesis lab-Graduated**]
- *Nina M. Martin*, PhD student, Characterization and purification of the recombinant delta-N AnAPN1 TBV construct (rotation)
- *Rebecca E. Tweedell*, PhD student, Johns Hopkins School of Medicine, Cellular and Molecular Medicine Graduate Program, Glycoproteomic analysis of *Plasmodium falciparum* sporozoite interaction with Kupffer cells [**primary thesis lab-current**]
- *Dillon Muth*, DVM, PhD student, Johns Hopkins School of Medicine, Cellular and Molecular Medicine Graduate Program, Biodegradable nanoparticle delivery of malaria transmission-blocking vaccines (rotation)
- *Leah A. Walker*, PhD student, *Plasmodium falciparum* surface antigens on the gametocyte-infected red blood cell plasma membrane (rotation)
- *Russell Swift*, PhD student, Nascent protein biosynthesis during *Plasmodium* gametocytogenesis (rotation)
- *Rebecca Yee*, PhD student, Mechanism of action of a natural product compound that exhibits potent *Plasmodium falciparum* transmission-blocking activity (rotation)

- Casey Daniels*, PhD student (Biochemistry & Molecular Biology, JHSPH), Thesis Committee member (**Graduated**)
- *Brian B. Tarimo*, PhD student, The Nelson Mandela African Institution of Science and Technology Graduate Program, Endogenous oxidative stress metabolites and *Plasmodium* development in the mosquito [**primary thesis lab-graduating June 2017**]

***Summer Research Interns/Visiting Scholars***

- *Monica Gonzalez-Lazaro*, PhD student (Mexico), Scavenger receptor proteins in mosquitoes (Graduated)
  - *Joel Vega-Rodriguez*, PhD student (University of Puerto Rico), *Plasmodium berghei* gamma-glutamylcysteine synthetase knockout parasites exhibit developmental arrest in the mosquito (Graduated)
  - *Rebecca Pastrana-Mena*, PhD student (University of Puerto Rico), *Plasmodium berghei* glutathione reductase disruptant parasites are highly susceptible to sporogony-induced reactive oxygen species (Graduated)
  - *Pannada Krairojananan*, PhD student (Mahidol University, Thailand), C-type lectins in *Anopheles dirus* (Graduated)
  - *Nwamaka Dike*, University of Maryland Baltimore County Meyerhoff Scholar/JHMRI Undergraduate Student Intern, The role of midgut extracellular adhesion molecules on ookinete attachment and invasion (Graduated, Medical School)
  - Bernadette Hritz*, High School student, Villa Julie School, Pennsylvania, Volunteer Summer Intern, Mosquito midgut microvilli complex formation via lipid raft coalescence (Graduated)
  - Bernadette Hritz*, Undergraduate, Furman University, South Carolina, Johns Hopkins Malaria Research Institute Summer Research Fellow, Biochemical analysis of the mode of action of transmission-blocking compounds that prevent *Plasmodium* sporogonic development inside the mosquito (tentative title) [**Senior thesis lab-Graduated**]
  - *Francesca Brancatti*, Undergraduate, Duke University, Durham, North Carolina, Summer Intern. Medium throughput screen of novel compounds that prevent ookinete development in the mosquito midgut and sporozoite development in human hepatocytes (tentative title). In collaboration with Dr. Emily Derbyshire, Duke University (former)
  - *Carly Crump*, High School student, Jacksonville Episcopal High School, Jacksonville, Florida, Volunteer Summer Intern, Click-chemistry based labeling of mosquito cells [**ISEF science fair project-graduated**]\*
- \*Won Third Overall, ISEF 2015; featured on UF EXPLORE**

***Postdoctoral & Senior Staff Advisees***

2016-present University of Florida

- Garima Verma*, PhD, Postdoctoral Fellow, Biodegradable nanoparticle malaria vaccine delivery [**current**]

- Tim Hamerly, PhD, Postdoctoral Fellow, Metabolomic analyses of *Plasmodium falciparum* gametocyte susceptibility and resistance to antimalarials [**current**]
- Henry Law, PhD, Postdoctoral Fellow, Proteomic analyses of Sexual Dimorphism in *Plasmodium falciparum*[**current**]

2009-2016 Johns Hopkins Bloomberg School of Public Health

- Khairul Bariah Abdul-Majid, PhD, Postdoctoral Fellow, APN1 Transmission-blocking vaccine process development (former)
- Zeinab Annan, PhD, Postdoctoral Fellow, The Evolution of mosquito midgut Aminopeptidase N as a ligand for *Plasmodium* parasites (former)
- David Colquhoun, PhD, Senior Staff, Comparative proteomics analysis of mosquito midgut brush border microvilli from genome sequenced and non-sequenced anopheline mosquito vectors (former)
- Suchi Goel, PhD, Postdoctoral Fellow, *Plasmodium* Mac-attack ookinete protein-midgut microvilli glycoprotein interactions (former)
- Hung Viet Trinh, PhD, Swiss National Foundation Postdoctoral Fellow, Molecular and proteomic characterization of *Anopheles* midgut microvilli lipid-raft-ookinete receptor invasion complexes (former)
- Bashir Idris, MD, MPH, Postdoctoral Fellow, Vaccination under drug cover: Functional analysis of the synergistic effects of novel and rediscovered antimalarials on malaria transmission when delivered in parallel with the AnAPN1 malaria transmission-blocking vaccine (former)
- Lindsay Parish, PhD, Postdoctoral Fellow, Proteomic characterization of mosquito midgut detergent-resistant membrane glycoproteins (former, currently Infectious Disease Advisor, Global Health Security and Development Unit, Bureau for Global Health & Research Division, Bureau for Food Security at the USAID)
- Ceereena Ubaida Mohien, PhD, Postdoctoral Fellow, Developing a single bioinformatic analysis platform for glycomic and proteomic mass spectrometry data (former)
- Jonas King, PhD, MS, Postdoctoral Fellow, Cellular and biochemical characterization of the transition of *Plasmodium falciparum* sporozoites from mosquito to man (former, currently an Assistant Professor at Mississippi State University)
- Rebecca Pastrana-Mena, PhD, Postdoctoral Fellow, The role of the O-GlcNAc post-translational modification in *Plasmodium* development in the mosquito (former)
- Nahid Borhani Dizaji, PhD, Postdoctoral Fellow, Development of a new vaccine construct based on AnAPN1 (former)
- Krithika Rajaram, PhD, Postdoctoral Fellow, Mechanism for sexual dimorphism during *Plasmodium falciparum* gametocyte development (former)
- Garima Verma, PhD, Postdoctoral Fellow, Biodegradable nanoparticle malaria vaccine delivery [**current**]

**Junior Faculty Advisees**

2009-2016 Johns Hopkins Bloomberg School of Public Health

-*Derrick Mathias, PhD, MPH*, Faculty Research Associate, Glycosyltransferases of *Anopheles gambiae* (former, currently an Assistant Professor, Auburn University)

-*Dingyin Tao, PhD*, Assistant Scientist (non-tenure track), Glycoproteomic analysis of *Plasmodium* transmission stages through the mosquito: from gametocytes to sporozoites (former, currently Staff Scientist, NIH)

### ***Other Significant Teaching***

1. Teaching Fellow, Epidemiology/Vector Biology/Parasitology, Yale University, New Haven, CT, 1997-2002
2. Lecturer, Molecular Medical Entomology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 2006-present
3. Lecturer, Malariology Online Course, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 2009-present
4. Lecturer, Malariology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 2009-present
5. Lecturer, Molecular Biology Literature Class, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 2009-present
6. Lecturer, Vaccinology Certificates Course, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 2010-present
7. Co-lead, Vector Biology Literature Course, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 2013-present
8. Lecturer, Cellular and Molecular Medicine Core Topics Course, Johns Hopkins School of Medicine, Baltimore, MD, 2013-present
9. Lecturer, Biology of Parasitism, Molecular Biology Laboratory at Woods Hole, Woods Hole, MA, 2015-present
10. Lecturer, Grant Writing, Cellular & Molecular Medicine, Johns Hopkins School of Medicine, Baltimore, MD, 2015-present

## **RESEARCH GRANT PARTICIPATION**

### *Current Research Projects*

**Dinglasan, R.R** (PD/Multi-PI)  
CK000510

12/30/16-12/29/20

U.S. Centers for Disease Control

“CDC Southeastern Regional Center of Excellence in Vector Borne Diseases: Gateway Program”

— This is a unified, flagship proposal from the State of Florida, to establish a Regional Center of Excellence in Vector Borne Disease (VBD), with the following objectives: (1) develop novel control interventions and discover insecticide-resistance-breaking compounds; (2) expand the level of inter-institute/inter-agency coordination and partnership in the exchange of research and operational information in the Southeast; (3) establish a comprehensive, four-tiered training program for public health entomologists and students throughout the Southeast, and (4) provide an evidence-based set of recommendations for a locally-tailored surveillance-response program in the

form of a decision-making tool. Achieving these goals would effectively lay down the integrated framework and template for a long-standing regional center geared towards the effective control and prevention of vector borne disease threats in the US.

Total Costs: \$9,999,628.00

**Dinglasan, R.R.** (PI), Harbers, M. (Co-PI)

03/01/16 – 02/28/17

G2015-214

Global Health Innovative Technology (GHIT) Fund

“Lead optimization of an evolution proof malaria transmission-blocking vaccine” — The goal is to develop the next generation AnAPN1 mosquito-based malaria transmission-blocking vaccine.

Total Direct Costs (per year): \$340,238

**Dinglasan, R.R.** (PI), Mao, H.Q. (Co-PI)

04/01/15 – 03/30/20

1R01AI114609-01

NIAID/NIH

“A biodegradable nano-microparticle prime-boost vaccine strategy” — We aim to develop scalable biodegradable nano- and microparticle technologies as a synergistic approach for the multi-mode presentation of a vaccine antigen in a single formulation, which can potentially help improve vaccine efficacy against infectious diseases, in particular those against malaria. Such a platform harnesses (1) the ability of small, virus-like nanoparticles to achieve a strong priming immune response, (2) the efficiency of biodegradable microparticles as slow-release “natural” boosting platforms, and (3) the capability of co-delivery of immunostimulatory agonists into a single platform for the development of the next generation of malaria vaccines.

Total Direct Costs (per year): \$250,000

**Dinglasan, R.R.** (PI), Izquierdo, L. (Co-PI)

04/01/15 – 03/30/17

1R21AI115063-01

NIAID/NIH

“Function and mechanism of O-fucosylation of malaria parasite TSR-domain proteins” — The purpose of this proposal is to investigate the biological function of O-fucosylated proteins, specifically those with thrombospondin type I repeat (TSR) domains, in the sexual stages of the human malaria parasite, *Plasmodium falciparum*.

Total Direct Costs: \$275,000.00 NCE

**Dinglasan, R.R.** (PI), Rokas, A. (Co-PI)

09/01/14 – 08/31/16

1R21AI105619-01

NIAID/NIH

“Midgut Transcriptome and Proteome Analyses: Non-model Anopheline Malaria Vectors” — The major goal of this project is to use our novel, seamless RNASeq transcriptomics to proteomics data analysis workflow to perform comparative analyses of the midgut transcriptomes and proteomes of sugar-fed and blood-fed colony and wild-type *Anopheles farauti* 1 mosquitoes.

Total Direct Costs: \$275,000.00 NCE

### *Past Research Support*

**Dinglasan, R.R.** (PI)

06/01/15 – 03/31/16

Maryland Innovation Initiative Grant, Maryland TEDCO

“Saliva Based Rapid Diagnostic Test for Detection of Asymptomatic Carriers of the Malaria Parasite” — Biotech start-up funding for diagnostic product development.

**Dinglasan, R.R.** (PI)  
1R01AI082587-01

04/01/09 – 03/31/15

NIAID/NIH, RFA AI08-005: Development of Novel Interventions and Tools for the Control of Malaria, Neglected Tropical Diseases and their Vectors

“Small molecule protein-glycan inhibitors as malaria transmission-blocking therapeutics” — The aim of this translational grant is to develop novel structural mimetic compounds of mosquito midgut chondroitin sulfate glycosaminoglycans that can effectively inhibit parasite development in and transmission through the mosquito vector.

**Dinglasan, R.R.** (PI)

02/10/15 – 12/31/15

Bill & Melinda Gates Foundation

“Saliva Based Malaria Asymptomatic and Asexual Rapid Infection Detection Test” — The goal of this aggressive, milestone-driven feasibility study is to further optimize our Nanotrap<sup>®</sup>-based highly sensitive, non-invasive point-of-care lateral flow immunoassay diagnostic that can identify of pre-symptomatic (low asexual parasite density) and asymptomatic (gametocytemic) carriers of *Plasmodium falciparum* parasites. This proposal is a follow up to our successful Grand Challenges Exploration grant wherein we discovered novel parasite biomarkers in the saliva of asymptomatic children in Cameroon and quickly developed a process for capture and enrichment of the target analytes from 1 ml of saliva using Nanotrap technology.

**Dinglasan, R.R.,** (PI)

01/01/14 – 12/31/15

Johns Hopkins Malaria Research Institute Pilot Grant

“Characterization of the *Plasmodium* O-GlcNAc-OME”— Nuclear and cytosolic O-linked- $\beta$ -N-acetylglucosamine posttranslational modifications (PTM) are important mediators of intracellular signaling, cell survival and the stress response in metazoans. Evidence for the presence of this PTM, much less the availability of molecular information and mechanistic insight in the possible role of the O-GlcNAc modification of proteins in protozoans (especially *Plasmodium*) remains poor. A close examination into the possible role of O-GlcNAc modifications in malaria biology has not been adequately and properly performed and such a line of experimentation can lead to the development of new transmission-blocking drugs. We propose to carefully test the hypothesis that O-GlcNAc modification of specific parasite proteins increase and the number of modified proteins expand in direct response to both extrinsic and intrinsic stress stimuli.

Boddey, J. (PI), **Dinglasan, R.R.** (Co-PI), Jost, P. (Co-PI)  
Human Frontiers Science Program

08/01/12 – 01/31/16

"Role of exported proteins in the intracellular dynamics of liver-stage falciparum malaria"— Although the overall goal is to get critical biological insight for this parasite stage of development, the underlying aim is to complete the falciparum life cycle in vitro.

**Dinglasan, R.R.** (PI)

06/01/12 – 09/30/14

PATH-Malaria Vaccine Initiative/Bill & Melinda Gates Foundation

"Feasibility study and process development of a Mosquito-based Pan-Malaria Transmission-Blocking Vaccine"— Phase II feasibility study of novel molecular adjuvants and parallel process development of the Anopheline Aminopeptidase N (AnAPN1)-Alhydrogel Transmission-blocking vaccine.



- Dinglasan, R.R.** (PI) 07/01/12 – 04/30/14  
The Bill & Melinda Gates Foundation  
"Toward the development of a rapid diagnostic test (RDT) for asymptomatic gametocyte carriers"—Robust and highly sensitive saliva-based malaria diagnostics, especially for asymptomatic carriage of infectious gametocytes represent one of the critical knowledge gaps and a significant research priority for the eradication of malaria. We will use mass spectrometry (MS)-based approaches to identify *Plasmodium falciparum* gametocyte stage-specific biomarker proteins in human saliva from a malaria endemic region. The production of high-affinity antibodies against the validated, targeted biomarker proteins will allow for the development of prototype gametocyte-specific saliva rapid diagnostic tests (RDT).
- Dinglasan, R.R.** (Co-PI) and Mathias, D.K. (Co-PI) 07/01/11 – 03/01/13  
PATH-Malaria Vaccine Initiative/Bill & Melinda Gates Foundation  
"Vector Fitness Study of a Mosquito-based Pan-Malaria Transmission-Blocking Vaccine"— Study to determine the effect of anti-AnAPN1 antibodies on vector fitness.
- Dinglasan, R.R.** (Co-PI) and Lee, Y.C. (Co-PI) 10/01/09 – 05/01/12  
Johns Hopkins Malaria Research Institute Pilot Grant  
"Revisiting Primaquine Efficacy, Toxicity and Transmission-Blocking Activity"— The aim of this grant is to (a) develop an improved *in vivo* liver-selective, slow-release delivery system for PQ that will show a dramatic increase in liver loading with PQ and that inhibitory activity against *Plasmodium in vivo* can be achieved at lower doses, and (b) conduct *in vitro and in vivo* (mosquito) dose-ranging/efficacy studies against the sexual stages of *P. falciparum* using a parasite line that expresses a stage V gametocyte specific fluorescence marker, to begin the process of amassing information to increase our understanding of how PQ metabolites affect schizonts and most especially non-replicating forms such as gametocytes and hypnozoites.
- Dinglasan, R.R.** (PI) 10/01/09 – 03/01/11  
PATH-Malaria Vaccine Initiative/Bill & Melinda Gates Foundation  
"Feasibility study of a Mosquito-based Pan-Malaria Transmission-Blocking Vaccine"— Phase I feasibility study to optimize antigen production for the Anopheline Aminopeptidase N (AnAPN1) Transmission blocking vaccine candidate.
- Dinglasan, R.R.** (PI) 06/02/08 – 06/30/10  
1K22AI077707-01A1  
NIAID/NIH, K22 Research Scholar Development Award  
"Glycobiological Analysis of *Plasmodium*-Vector Host Interactions"—Award to provide laboratory start-up funds. The aim of this grant is to characterize and determine the role of glycans on parasite invasion of the mosquito gut and to complement this approach, identify novel parasite ookinete lectin-like molecules. (Phase II)
- Mao, Hai-Quan (PI) and **Dinglasan, R.R.** (Co-PI) 03/01/08 – 03/01/10  
Johns Hopkins Malaria Research Institute Pilot Grant  
"Biodegradable Microparticles for Oral Delivery of a Malaria Transmission-Blocking Vaccine"— The aim of this project is to test the efficacy of a single dose immunization of mice with a biodegradeable microparticle (BMP)-encapsulated transmission-blocking antigen (AgAPN1). We hypothesize that the antigen-loaded BMP, which is temperature stable (no cold chain) and intended

for mucosal delivery (no needles), is capable of releasing antigen over 6 months and maintaining protective specific antibody titers in mice for at least 1 year.

**Dinglasan, R.R.** (PI)  
5 F32 68212-01A1

07/01/06 – 07/01/09

Ruth L. Kirschstein National Research Service Award, NIAID/NIH

“*Plasmodium* carbohydrate receptors in *Anopheles gambiae*”— The over-arching goal of this proposal is to develop glycobiological approaches to elucidate at the molecular level, the synthesis of mosquito carbohydrate receptors that influence parasite development.

**Dinglasan, R.R.** (PI)

05/01/05 – 05/01/06

The Millipore Foundation, Dmitri V. d’Arbeloff Postdoctoral Fellowship in the Biological Sciences  
“Elucidation of Molecular Interactions between the Malaria Parasite and Carbohydrates of the Mosquito Gut”— The goal of this project was to determine the full spectrum of glycan ligands for distinct parasite stages using glycan microarrays.

**Dinglasan, R.R.** (PI)

05/01/97 – 08/30/97

Yale University School of Medicine Research Grant

“Pathogenicity of Mosquito *Densonucleosis Virus* for *Aedes albopictus* Immatures”— The goal of this study was to evaluate the use of densovirus isolated from *Aedes aegypti* as a Dengue biocontrol agent for *Ae. albopictus* larvae in Thailand.

**Dinglasan, R.R.** (PI)

01/01/01 – 06/01/02

Yale Institute for Biospheric Studies (YIBS) Research Grant

“Microsatellite Polymorphism in the tsetse flies *Glossina fuscipes fuscipes* and *Glossina tachinoides* (Diptera: Glossinidae)” — The goal of this project was to develop tools and initiate a study to determine tsetse fly population structures in Uganda and Kenya as part of the Organization of African Unity (OAU) effort to conduct region-wide Sterile-Insect release.

## PRESENTATIONS

### *Scientific Meetings*

1. **Dinglasan, R.R.** “Mosquito Midgut Glycoproteins and the Disruption of Malaria Parasite Development”. The Biology of Disease Vectors Course, INSP, Cuernavaca, Mexico, June 14-29, 2003. (**Invited Poster Presentation**)
2. **Dinglasan R.R.**, et al. “A novel antivector *Plasmodium falciparum* transmission-blocking antibody reveals heterogeneous ookinete invasion strategies.” American Society of Tropical Medicine & Hygiene Conference, Atlanta, GA., November 13- November 17, 2006. (**Oral presentation**)
3. **Dinglasan, R.R.**, et al. “The role of protein-glycan interactions in *Plasmodium falciparum* development: Toward the identification of global antivector malaria transmission-blocking vaccine glycoconjugate antigens.” XIX International Symposium on Glyconjugates, Cairns, Australia, July 15-20, 2007. (**Oral presentation**)

4. Kanzok, S.M., **Dinglasan, R.R.**, et al. “The malaria parasite utilizes multiple pathways to infect its mosquito vector”. Molecular Parasitology Meetings, MBL, Woods Hole, MA. September 16-20, 2007. (**Poster Presentation**)
5. Vega-Rodriguez, J., **Dinglasan, R.R.**, et al. “The glutathione detoxification pathway is essential for mosquito stage development in *Plasmodium berghei*.” Molecular Parasitology Meetings, MBL, Woods Hole, MA. September 16-20, 2007. (**Poster Presentation**)
6. **Dinglasan, R. R.**, et al., “Protein-glycan interactions mediate malaria parasite transmission”. ASTMH, New Orleans, Dec. 7-11, 2008. (**Oral presentation**)
7. **Dinglasan, R.R.** “Dessert first: Blocking Malaria Before the Bite”. Symposium. ASTMH, New Orleans, Dec. 7-11, 2008. (**Invited Speaker**)
8. **Dinglasan, R.R.** “A Sticky Situation: Proteoglycans and *Plasmodium* parasites”. 6<sup>th</sup> International Conference on Proteoglycan, Aix-les-Bains, France, September 13-17, 2009. (**Invited speaker**)
9. **Dinglasan, R.R.** “Vaccine Approaches based on Vector Antigens”. American Society of Tropical Medicine & Hygiene 58<sup>th</sup> Annual Meeting, Washington, DC, November 18-22, 2009 (**Invited speaker**)
10. **Dinglasan, R.R.** “Glycomic and glycoproteomic insights into *Plasmodium* transmission biology”. American Society of Tropical Medicine & Hygiene 58<sup>th</sup> Annual Meeting, Washington, DC, November 18-22, 2009 (**Invited speaker**)
11. **Dinglasan, R.R.**, “Progress towards the development of a pan-malaria transmission-blocking vaccine”. 2<sup>nd</sup> International Conference Malaria Vaccines for the World, Washington, DC, September 28-30, 2010 (**Invited Speaker**)
12. Dinglasan, R.R., “Lectin-glycan interactions in malaria transmission biology”. NIH-FDA Glycosciences Research Day, Bethesda, MD, June 15, 2011 (**Invited Speaker**)
13. **Dinglasan, R.R.** “Transmission-blocking vaccines that target the mosquito”. Gordon Research Conference on “The Science Behind Malaria Control and Eradication”, Lucca, Italy, July 31-August 5, 2011. (**Invited Speaker**)
14. **Dinglasan, R.R.**, “Approaches for Dissecting the *Plasmodium* Ookinete’s Midgut Invasion Complex”. Harvard School of Public Health Mini-Symposium: “Towards malaria eradication: targeting the mosquito vector”. Boston, MA, March 15, 2013. (**Invited Speaker**)
15. **Dinglasan, R.R.**, “Differential strategies for *Plasmodium vivax* invasion of the *Anopheles* Midgut?” CRESIB, Barcelona, Spain, May 26-31, 2013. (**Invited Speaker**)
16. **Dinglasan, R.R.**, “Differential strategies for *Plasmodium vivax* invasion of the *Anopheles* Midgut?” CRESIB, Barcelona, Spain, May 26-31, 2013. (**Invited Speaker**)

17. **Dinglasan, R.R.**, “Small molecule protein-glycan inhibitors as malaria transmission blocking therapeutics,” The 62<sup>nd</sup> ASTMH Conference, Symposium #37, Washington, DC November 14, 2013. (**Invited Speaker**)
18. **Dinglasan, R.R.**, “Can field-based mosquito feeding assays be used for evaluating malaria transmission-blocking interventions?” Invited speaker, XIX Brazilian Meeting on Malaria, Manaus, Brazil, November 20-23, 2013. (**Invited Speaker**)
19. **Dinglasan, R.R.**, “Breaking Bad: Enabling technologies for Malaria elimination and eradication.” Infectious Diseases Forum, De La Salle University, Manila, Philippines, February 4, 2014. (**Invited Speaker**)
20. **Dinglasan, R.R.** “Paired Diagnostic-Prophylactic Interventions for Infectious Disease Elimination.” 3rd annual “Host Pathogen Interactions in Biodefense and Emerging Infectious Diseases” conference, George Mason University, Manassas, VA, February 12, 2015. (**Invited Speaker**)
21. **Dinglasan, R.R.** “Deconstructing the malaria parasite-specific innate immune response in mosquitoes”. Entomological Society of America, Eastern Branch, Annual Meeting, Rehoboth Beach, DE, March 14-17, 2015. (**Invited Speaker**)
22. **Dinglasan, R.R.** “Neglected once again: Vivax malaria transmission-blocking vaccines.” XX Brazilian Meeting on Malaria & Science of Eradication: Malaria Course, Sao Paulo, Brazil, October 1-3, 2015. (**Invited Speaker**)

#### *Invited Seminars*

1. **Dinglasan, R.R.** “A Sweet Discovery: The Development of Anti-glycan Transmission Blocking Antibodies.” Transmission Blocking Vaccine Mini-Symposium, The Malaria Vaccine Development Branch, NIAID, NIH, March 9, 2004.
2. **Dinglasan, R.R.** “Protein-Glycan Interactions and Malaria parasite development.” Baltimore-Washington Glycobiology Interest Group Seminar, December 14, 2006.
3. **Dinglasan, R.R.** “The Malaria Parasite’s Proclivity for Sweets: The Role of Protein-Glycan Interactions in *Plasmodium* Host Cell Invasion.” University of Puerto Rico, Dept. of Microbiology and Medical Zoology Seminar, August 27, 2007.
4. **Dinglasan, R.R.** “A weakness for sweets: Protein-glycan interactions and *Plasmodium* cell invasion”. The Tropical Medicine Dinner Club of Baltimore and Washington, DC. October 3, 2007.
5. **Dinglasan, R.R.** “A conserved strategy: Glycosaminoglycans and *Plasmodium* development”. Baltimore-Washington Malaria Meeting. February 11, 2008.
6. **Dinglasan, R.R.** “Glycomics and the development of a universal mosquito-based transmission-blocking vaccine”. Papua New Guinea Institute of Medical Research-Yagaum, Madang, PNG. May 12, 2008.

7. **Dinglasan, R.R.** “Towards a Universal Pan-Malaria Transmission-Blocking Vaccine: Progress and Pitfalls”. De La Salle University Health Sciences Institute, Dasmariñas, Cavite, Philippines, June 4, 2008.
8. **Dinglasan, R.R.**, “A Pan-Malaria Transmission-Blocking Vaccine”. Bill & Melinda Gates Foundation Transmission-Blocking Strategies Meeting, Bangkok, Thailand, March 3, 2009.”
9. **Dinglasan, R.R.**, “A "Match.com" approach to identifying ookinete binding partners on the mosquito midgut surface”. Imperial College London, Kensington, London, UK, January 20, 2011.
10. **Dinglasan, R.R.**, “Update on the development of a pan-malaria transmission-blocking vaccine”. The Jenner Institute, University of Oxford, UK, January 21, 2011.
11. **Dinglasan, R.R.**, “A "Match.com" approach to identifying ookinete binding partners on the mosquito midgut surface”. Wellcome Trust Sanger Institute, January 24, 2011.
12. **Dinglasan, R.R.**, “Development of Mosquito-based Malaria Transmission-blocking Vaccines”. Ifakara Health Institute, Millennium Hotel, Bagamoyo, Tanzania, March 6, 2012.
13. **Dinglasan, R.R.**, “Malaria Transmission-blocking Vaccines”. Malaria No More’s World Malaria Day (Capitol Hill), April 25, 2012.
14. **Dinglasan, R.R.**, “Malaria Vaccine Development is not only the right thing to do but the smart thing to do: Advancing Appropriate Scientific Research and Technology Development in the era of Malaria Eradication”. The British Embassy, Washington, DC, May 2, 2012.
15. **Dinglasan, R.R.**, “From the lab to the field: The value of relevant vertebrate and invertebrate animal models for pathogen transmission in fast-paced malaria vaccine development”. American College of Laboratory and Animal Medicine Forum, St. Petersburg, FL, May 8, 2012.
16. **Dinglasan, R.R.**, “Making the transition from Postdoc to PI: Carving your niche in global health research.” National Institutes of Health, Postdoctoral Fellows Global Health Interest Group, Laboratory of Malaria Immunology and Vaccinology, Rockville, MD, July 11, 2012.
17. **Dinglasan, R.R.**, “Approaches to pre-clinical development of malaria transmission blocking drugs and vaccines.” Walter Reed Army Institute for Research, Silver Spring, MD, July 26, 2012.
18. **Dinglasan, R.R.**, “Dissecting the Science Underpinning Malaria Eradication”. Furman University (Greenville, SC) and Winston-Salem State University (Winston-Salem, NC), October 24-25, 2012.
19. **Dinglasan, R.R.**, “Enabling Technologies for Molecular and Ecological Analysis of Vector Host-Pathogen Interactions”. Keele University, Keele, Staffordshire, UK, April 15, 2013.

20. **Dinglasan, R.R.**, “Approaches for Dissecting the *Plasmodium* Ookinete’s Midgut Invasion Complex”. Walter Reed Project, Kisumu, Kenya. April 24, 2013.
21. **Dinglasan, R.R.**, “MIND THE GAP: Bridging Malaria Laboratory & Field Transmission-Biology Studies”. KEMRI/CDC, Kisumu, Kenya. April 26, 2013.
22. **Dinglasan, R.R.**, “Glycobiological analysis of Malaria Parasite Transmission & Developmental Biology”. Penn State University School of Medicine, Hershey, PA. September 23, 2013.
23. **Dinglasan, R.R.** “A malaria transmission-blocking natural product derivative prevents *Plasmodium* zygote-to-ookinete maturation in the mosquito midgut”. University of South Florida College of Public Health, Tampa, FL. October 14, 2014.
24. **Dinglasan, R.R.** Invited lecturer for the Veterinary Medical Sciences Course VMSC689: *Use of Genomics and Proteomics in Infectious Disease* (focusing on Malaria). Department of Veterinary Medicine, University of Maryland-College Park, College Park, MD, October 31, 2014.
25. **Dinglasan R.R.** “Paired diagnostic-prophylactic interventions for infectious disease elimination.” 3rd Annual Host Pathogen Interactions in Biodefense and Emerging Infectious Diseases. George Mason University, Manassas, VA, February 12, 2015.
26. **Dinglasan R.R.** “Mining human saliva for pathogen exosome biomarker discovery and the development of novel diagnostics.” United States Naval Research Laboratory, Washington, DC. May 26, 2015.
27. **Dinglasan, R.R.** “Every child deserves a 5th birthday: Tackling infectious disease transmission head-on to make this happen.” Amgen Scholars Program at NIH, Office of Intramural Training & Education, NIH, Bethesda, MD, July 8, 2015.
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