

BIOGRAPHICAL SKETCH

NAME: Adams, John H.		POSITION TITLE: Professor	
eRA COMMONS USER NAME: JHADAMS			
EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as</i>)			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Hendrix College, Conway, Arkansas	B.A.	1978	Biology
University of Illinois at Urbana-Champaign	M.Sc.	1982	Vet. Med. Sci.
University of Illinois at Urbana-Champaign	Ph.D.	1986	Vet. Med. Sci.

A. Positions and Honors**Professional Experience**

Professor (2007 to present), Department of Global Health, College of Public Health, University of South Florida, Tampa, Florida.

Professor (2005 to 2007), Associate Professor (1998 to 2005), Assistant Professor (1991 to 1998), Department of Biological Sciences, University of Notre Dame, Notre Dame Indiana.

Senior Staff Fellow (1989 - 1991), Staff Fellow (1987 - 1989), Malaria Section, Laboratory of Parasitic Diseases, National Institutes of Health, Bethesda, Maryland

Post-doctoral Research Fellow (1986 -1987), Department of Parasitology, University of Queensland, Australia

Graduate Assistant (1979 - 1986), Department of Veterinary Pathobiology, University of Illinois

Teaching Assistant (1976, 1978), Department of Biology, Hendrix College, Conway, Arkansas

Other Experience, Professional Memberships, and Honors

2007-, *Molecular & Biochemical Parasitology*, Editorial Board.

2007-2011, Pathogenic Eukaryotes Study Section (NIH), Regular Member.

2006 - present, *Trends in Parasitology*, Editorial Board member.

2006 - ASP Tellers Committee, Chair.

2000 - 2008 Editorial Board member, *Infection and Immunity*.

2002 - 2006 ASTMH: Chair, American Comm. of Mol., Cell., & Immuno Parasit.; Prog. Comm.; YIA comm.

1998 - 2004 Member/past Chair, Scientific Advisory Comm., MR4.

2000 - 2004 ASP Committees: R. Barclay McGhee Memorial Lecture; Ashton Cuckler Award.

2000 - Program Officer, Ann. Midwestern Conference of Parasitologists-52, Notre Dame, June, 2000.

1997 - Co-Chair, Planning Meeting NIAID Malaria Research and Reference Reagent Repository (MR4).

1997 - 1998 USDA National Research Initiative Competitive Grants Program, Panel Member.

1997 - Burroughs Wellcome Fund New Investigator Award in Molecular Parasitology.

1986 - University of Queensland Postdoctoral Research Fellowship.

1981 - University of Illinois List of Teachers Ranked as Excellent by Their Students.

1978 - Honorable Mention, National Science Foundation Graduate Fellowship.

Ad hoc reviews: (Journals) Am. J Trop Med Hyg, Cellular Micro, Eur J Cell Biol, Eur J Immunol, Exp Parasitol, Int J Parasitol, J Cell Biol, J Euk Micro, J Parasitol. Mol Biochem Parasitol, Microbes Infect, Mol Micro, Parasitol Res, Proc Nat Acad Sci (USA), Trends Parasitol; (Grants) CFI, Human Frontier Science Program; NHMRC (Australia); MRC (UK); NIH/NIAID TMP, AARR-4, K99/R00 ZRGs; The Wellcome Trust; USDA.

Patents Issued:

US Patent No. 6,120,770 (September 19, 2000). Plasmodium Proteins Useful for Preparing Vaccine Compositions. Inventors: JH Adams, SHI Kappe and JP Dalton. The invention relates to *Plasmodium* MAEBL as a vaccine.

US Patent No. 5,198,347 (March 30, 1993). DNA encoding *Plasmodium vivax* and *Plasmodium knowlesi* Duffy receptor. Inventors: LH Miller, JH Adams, DC Kaslow, X Fang. The invention relates to Duffy receptor as a vaccine.

Patents application filed:

US Patent application filed April 25, 2006. High Efficiency Transformation of Plasmodium Falciparum by the Lepidopteran Transposon, piggyBac. Inventors: JH Adams, MJ Fraser, Jr., B Balu, and DA Shoue. The

invention relates to the use of piggyBac transposable element constructs as a tool for genetic manipulation of the *Plasmodium* genome.

B. Selected peer-reviewed publications (Publications selected from 63 peer-reviewed publications)

- Adams JH**, Hudson DE, Torii M, Ward GE, Wellems TE, Aikawa M, Miller LH. (1990). The Duffy receptor family is located within the micronemes of invasive malaria merozoites. *Cell*, 63:141-153.
- Adams JH**, Sim BKL, Dolan SA, Fang X, Kaslow DC, Miller LH. (1992). A family of erythrocyte binding proteins in malaria parasites. *PNAS (USA)*. 89: 7085-7089.
- Tsuboi T, Kappe S, Al-Yaman F, Prickett MD, Alpers MP, **Adams JH**. (1994). Natural variation within the principal adhesion domain of the *Plasmodium vivax* Duffy binding protein. *Infect Immun* 62: 5581-5586.
- Kappe SHI, Noe AR, Blair P L, Fraser T, **Adams JH**. (1998). A chimeric family of erythrocyte binding proteins of malaria parasites. *PNAS (USA)*. 95: 1230-1235.
- Michon P, Fraser T, **Adams JH**. (2000). Naturally acquired and vaccine elicited antibodies block erythrocyte cytoadherence of the *Plasmodium vivax* Duffy binding protein. *Infect Immun* 68: 3164-3171.
- Kappe SHI, Gardner MJ Brown SM, Ross J, Matuisechewski K, Ribiero JM, **Adams JH**, Carucci DJ, Hoffman SL, Nussenzweig V. (2001) Exploring the transcriptome of the malaria sporozoite stage. *PNAS (USA)*, 98, 9895-9900.
- Blair PL, Witney A, Moch JK, Haynes JD, Carucci DJ, **Adams JH**. (2002). Quantification of developmentally regulated gene transcripts in *Plasmodium falciparum* using real-time RT-PCR. *Nuc Acids Res*, 30(10), 2224-2231.
- Blair PL, Kappe SHI, Maciel JE, Balu B, **Adams JH**. (2002). *Plasmodium falciparum* *maeb1* is a unique member of the *eb1* family. *Mol Biochem Parasitol*, 122,35-44.
- Michon P, Stevens JR, Kaneko O, **Adams JH**. (2002). Evolutionary relationships of conserved cysteine-rich motifs in adhesive molecules of malaria parasites. *Molecular Biology and Evolution*, 19, 1128-42.
- Cole-Tobian JL, Cortes A, Baisor M, Kastens W, Xainli J, Bockarie M, **Adams JH**, King CL. (2002). Age-Acquired Immunity to a *Plasmodium vivax* Invasion Ligand, The Duffy Binding Protein. *J Inf Dis*, 186:531-9.
- Xainli J, Baisor M, Kastens W, Bockarie M, **Adams JH**, King CL. (2002) Age-dependent cellular immune responses to *Plasmodium vivax* Duffy binding protein in humans. *J Immunol*, 169:3200-3207.
- Xainli, J., Cole-Tobian, J.L., Baisor, M., Kastens, W., Bockarie, M., Yazdani, S.S., Chitnis, C.E., **Adams, J.H.**, King, C.L. (2003). Epitope-specific humoral immunity to *Plasmodium vivax* Duffy binding protein. *Infect Immun*, 71:2508-2515.
- Ohas EA, **Adams JH**, Waitumbi JN, Orago ASS, Barbosa A, Lanar DE, Stoute JA. (2004). Measurement of antibody levels against region II of the erythrocyte binding antigen 175 (EBA-175) of *Plasmodium falciparum* in a malaria holoendemic area of western Kenya. *Infect Immun*, 72:725-741.
- Srinivasan P, Abraham EG, Ghosh AK, Valenzuela J, Ribeiro JMC, Dimopoulos G, Kafatos FC, **Adams J**, Fujioka H, Jacobs-Lorena M. (2004). Analysis of the *Plasmodium* and *Anopheles* transcriptomes during oocyst differentiation. *J Biol Chem*, 279:5581-5587.
- Preiser P, Rénia L, Singh N, Balu B, Jarra W, Voza T, Kaneko O, Blair PL., Torii M, Landau I, **Adams JH**. (2004) MAEBL Antibodies against MAEBL inhibit sporozoite development in vitro. *Infect Immun*, 72:3604-3608.
- Singh N, Preiser P, Rénia L, Blair PL., Balu B, Barnwell JW, Jarra W, Voza T, Landau I, **Adams JH**. (2004). Conservation and developmental control of alternative splicing in *maeb1* among malaria parasites. *J Mol Biol*, 343:589-599.
- van Buskirk KM, Cole-Tobian JL, Sevova E., Baisor M, Bockarie M, King CL, **Adams JH**. (2004) Polymorphisms in the *Plasmodium vivax* Duffy binding protein ligand domain confer resistance to inhibitory antibodies. *Journal of Infectious Diseases*, 190:1556-1562.
- van Buskirk KM, Sevova E., **Adams JH**. (2004). Conserved residues in the *Plasmodium vivax* Duffy binding protein ligand domain are critical for erythrocyte receptor recognition. *PNAS (USA)*, 101:15754-15759.
- Fu J, Saenz FE, Reed M, Balu B, Singh N, Blair PL, Cowman A, **Adams JH**. (2005). Targeted disruption of *maeb1* in *Plasmodium falciparum*. *Mol Biochem Parasit*, 141:113-117.
- Cerávolo IP, Bruña-Romero O, Braga EM, Fontes CJF, Brito CFA, Sousa JM, Krettli AU, **Adams JH**, Carvalho LH. (2005). Anti-*Plasmodium vivax* Duffy binding protein antibodies measure exposure to malaria in the Brazilian Amazon. *The American Journal of Tropical Medicine and Hygiene*, 72:675-681.
- Kaneko O, Yim Lim BYS, Iriko H, Ling IT, Otsuki H, Grainger M, Tsuboi T, **Adams JH**, Mattei D, Holder AA, Torii M. (2005). Apical expression of three RhopH1/Clag proteins as components of the *Plasmodium*

falciparum RhopH complex. *Mol Biochem Parasitol*, 143:20-28.

Balu B, Shoue DS, Fraser MJ, **Adams JH**. (2005). High efficiency transformation of *Plasmodium falciparum* by the lepidopteran transposable element *piggyBac*. *PNAS(USA)*, 102:16391-16396..

Chattopadhyay D, Rayner JC, McHenry AM, **Adams JH**. (Invited Review) The three dimensional structure of *Plasmodium falciparum* EBA175 ligand domain provides insight into the molecular basis of host specificity. *Trends in Parasitology*, 22, 143-145.

McHenry AM, **Adams JH**. (2006). (Invited review). The crystal structure of *Plasmodium knowlesi* DBP α DBL domain and its implications for immune evasion. *Trends in Biochemical Sciences*, 31, 487-491.

Balu B, **Adams JH**. (2006). (Invited review) Functional genomics of *Plasmodium falciparum* thorough forward genetic screens. *Cellular Microbiology*, 8, 1529-1536.

Balu B, **Adams JH**. (2007). Improved transfection technologies for *Plasmodium*. *International Journal for Parasitology*, 37, 1-10.

Lobo N, Fraser TS, **Adams JH**, Fraser MJ Jr. (2006). Interplasmid transposition demonstrates *piggyBac* mobility in cells of vertebrate species. *Genetica*, 128, 347-357.

Wuchty S, Barabasi A-L, Ferdig MT, **Adams JH**. Evolutionary core of a protein interaction network in *Plasmodium falciparum*. Submitted for review.

Grimberg BT, Udomsangpetch R, Xainli J, McHenry A, Panichakul T, Sattabongkot J, Cui L, Bockarie M, Chitnis C, Adams JH, Zimmerman PA, King CL. *Plasmodium vivax* invasion of human erythrocytes inhibited by antibodies directed against the Duffy binding protein. Submitted for review.

Bhattacharjee S, van Ooij C, Balu B, Adams J, Haldar K. A network of protein export in erythrocytes infected with the malaria parasite. Submitted for review.

Tamez PA, van Ooij C, Hiller NL, Bhattacharjee S, Balu B, Adams J, Haldar K. A variant protein linked to nutrient and lipid import is required for blood stage infection by human malaria. Submitted for review.

Wuchty S, Barabasi A-L, Ferdig MT, **Adams JH**. Evolutionary core of a protein interaction network in *Plasmodium falciparum*. Submitted for review.

C. Research Support

Ongoing Research Support

R01 AI-33656-11 Adams, J (PI) 06/01/1994-02/28/2010
NIH/NIAID

MOLECULAR ANALYSIS OF APICAL ORGANELLES OF *PLASMODIUM*

The specific aim of this proposal is to characterize erythrocyte binding proteins of *Plasmodium* merozoites.

Role: PI

BWF grant #1006227 (Adams) 02/01/2006-01/31/2007
Burroughs Wellcome Fund

FUNCTIONAL GENOMICS INITIATIVE FOR *PLASMODIUM FALCIPARUM*

The aim of the project is to initiate development of transposon-based insertional mutagenesis tools for malaria research, while pursuing other sources of funding.

R21 AI070888-01 Adams (PI) 06/15 /2006-05/31/2008
NIH/NIAID

DEVELOPING A TRANSPOSASE-BASED TOOLKIT FOR GENETIC ANALYSIS OF MALARIA PARASITES

The aim of the proposal is to optimize the transposon-based transformation system, using the Lepidopteran transposon *piggyBac*, for random insertional mutagenesis and transgenesis of malaria parasites.

Role: PI

R01 AI064478-01A1 Adams (PI) 08/01/2006-07/31/2011
NIH/NIAID

IMMUNOLOGICAL CHARACTERIZATION OF THE P. VIVAX DBP

The specific aims of this proposal are to identify and characterize the residues present on the *Plasmodium vivax* Duffy binding protein responsible for determining its antigenic characterizing and controlling is sensitivity to neutralizing antibody inhibition.

Role: PI (Co-PI: Chris King, Case Western Reserve University)