

BIOGRAPHICAL SKETCH

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| | | | |
|--|---|---------|----------------------|
| NAME Steven R. Meshnick | POSITION TITLE Professor of Epidemiology and Microbiology & Immunology | | |
| eRA COMMONS USER NAME | | | |
| EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.) | | | |
| INSTITUTION AND LOCATION | DEGREE (if applicable) | YEAR(s) | FIELD OF STUDY |
| Columbia College | B.A. | 1972 | Biochemistry |
| Rockefeller University | Ph.D. | 1978 | Medical Biochemistry |
| Cornell University Medical College | M.D. | 1979 | Medicine |

A. Positions and Honors.**Employment**

- 1978 **Visiting Scientist/Postdoctoral Fellow**, International Laboratory for Research in Animal Diseases, Nairobi, Kenya.
- 1979 -1980 **Assistant Professor** of Medical Biochemistry, Rockefeller University.
- 1980 -1985 **Assistant Professor** of Medicine, Cornell University Medical College
- 1985 -1992 **Associate Medical Professor**, City University of New York Medical School.
- 1992 -1996 **Associate Professor**, Department of Epidemiology, University of Michigan Schl. of Public Health
- 1996-2001 **Professor**, Department of Epidemiology, University of Michigan School of Public Health
- 1999 **Fulbright Fellow and Academic Visitor**, University of Oxford, Wellcome Trust Centre for the Epidemiology of Infectious Diseases
- 2001- **Professor**, Department of Epidemiology, School of Public Health, Joint Professor, Department of Microbiology and Immunology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC
- 2003- **Visiting Professor**, Department of Community Health, University of Malawi College of Medicine, Blantyre, Malawi

Other professional activities and memberships

Editorial Board: *American Journal of Tropical Medicine and Hygiene* (1989-present); *Antimicrobial Agents and Chemotherapy* (1995-present).

NIH Review Panel Member: NCDDG Treatment of Opportunistic Infections Associated with AIDS (1991, 1992); Special Review Panels (1992, 1993, 1995, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005); NIH AIDS Related Research Study Section D (1992-1995)

B. Selected peer-reviewed publications (in chronological order).

- Ittarat, W., Pickard, A.L., Rattanasinganchan, P., Wilairatana, P., Looareesuwan, S., Emery, K., Low, J., Udomsangpetch, R. and Meshnick, S.R. Recrudescence in artesunate-treated patients with falciparum malaria is dependent on parasite burden not on parasite factors. *Am. J. Trop. Med. Hyg.* 68:147-152, 2003.
- Abrams, E.T., Brown, H., Chensue, S.W., Turner, G.D.H., Tadesse, E., Lema, V.M., Molyneux, M.E., Rochford, R., Meshnick, S.R., and Rogerson, S.J. Host response to malaria during pregnancy: placental monocyte recruitment is associated with elevated \square chemokine expression. *J. Immunol.* 170:2759-64, 2003.
- Pickard, A.L., Wongsrichanalai, C., Purfield, A., Kamwendo, D., Emery, K., Zalewski, C., Kawamoto, F., Miller, R.S., and Meshnick, S.R. Antimalarial resistance in Southeast Asia and genetic polymorphisms in *pfmdr1*. *Antimicrob. Agents Chemother.* 47:2418-23, 2003.

4. Erhart, L.M., Yingyuen, K., Chuanak, N., Buathong, N., Laoboonchai, A., Miller, R.S., Meshnick, S.R., Gasser, R.A., Jr., and Wongsrichanalai, C. Hematological and clinical indices of malaria in a semi-immune population of western Thailand. Am. J. Trop. Med. Hyg. 70:8-14, 2004.
5. Mwapasa, V., Rogerson, S.J., Molyneux, M.E., Abrams, E., Kamwendo, D.D., Lema, V.M., Tadesse, E., Chaluluka, E., Wilson, P. and Meshnick, S.R. The Effect of *Plasmodium falciparum* Malaria on Peripheral and Placental HIV-1 RNA Concentrations in Pregnant Malawian Women. AIDS 18:1051-1059, 2004.
6. McGready, R., Davison, B.B., Stepniewska, K., Cho, T., Shee, H., Brockman, A., Udomsangpetch, R., Looareesuwan, S., White, N.J., Meshnick, S.R., and Nosten, F. The effects of *P. falciparum* and *P. vivax* infections on placental histopathology in an area of low malaria transmission. Am. J. Trop. Med. Hyg. 70:398-407, 2004.
7. Purfield, A., Nelson, A., Laoboonchai, A., Congpuong, K., McDaniel, P., R. Miller, R.S., Welch, K., Wongsrichanalai, C., and Meshnick, S.R. Detection of *pfmdr1* mutations in *Plasmodium falciparum* DNA using Real Time PCR. Malaria J. 3:9, 2004.
8. Mount, A.M., Mwapasa, V. Elliott, S.R., Beeson, J.G., Tadesse, E., Lema, V.M., Molyneux, M.E., Meshnick, S.R., and Rogerson, S.J. HIV infection impairs humoral immunity to *Plasmodium falciparum* malaria in pregnancy. Lancet 363:1860-7, 2004.
9. Alker, A., Mwapasa, V., and Meshnick, S.R. Rapid real time PCR genotyping of mutations associated with sulfadoxine-pyrimethamine resistance in *Plasmodium falciparum*. Antimicrob. Agents Chemother. 48:2924-2929, 2004.
10. Abrams, E.T., Milner, D.A. Jr., Kwiek, J, Mwapasa, V., Kamwendo, D.D., Zeng, D., Tadesse, E., Lema, V.M., Molyneux, M.E., Rogerson, S.J., Meshnick, S.R. Risk factors and mechanisms of preterm delivery in Malawi. Am. J. Repro. Immunol. 52:174-183, 2004.
11. Nelson, A., Purfield, A., McDaniel, P., Uthaimongkol, N., Buathong, N., Sriwichai, S., Miller, R.S., Wongsrichanalai, C., and Meshnick, S.R. *Pfmdr1* genotyping and in vivo mefloquine resistance on the Thai-Myanmar border. Am. J. Trop. Med. Hyg. 72:586-592, 2005.
12. Ngrenngarmert, W., Kwiek, J.J., Kamwendo, D.D., Ritola, K., Swanstrom, R., Wongsrichanalai, C., Ittarat, W. and Meshnick, S.R. Measuring Allelic Heterogeneity in *Plasmodium falciparum* by Heteroduplex Tracking Assay. Am. J. Trop. Med. Hyg. 72:694-701, 2005.
13. Iliades P., Meshnick S.R. and Macreadie I.G. Mutations in the *Pneumocystis jirovecii* dhps gene confer cross-resistance to sulfa drugs. Antimicrob. Agents Chemother. 49:741-8, 2005.
14. Iliades, P., Meshnick, S.R., and Macreadie. I.G. Analysis of *Pneumocystis jirovecii* DHPS alleles implicated in sulfamethoxazole resistance using an *Escherichia coli* model system. Microb. Drug Resist. 11:1-8, 2005.
15. Yeramian, P., Meshnick, S.R., Krudsood, S., Chalermrut, K., Silachamroon, U., Tangpukdee, N., Allen, J., Brun, R., Kwiek, J., Tidwell, R., and Looareesuwan, S. Efficacy of DB289 in Thai patients with *Plasmodium vivax* and acute uncomplicated *P. falciparum* infections. J. Infect. Dis. 192:319-322, 2005.
16. Patnaik, P., Jere, C.J., Miller, W.C., Hoffman, I.F., Wirimi, J., Pendame, R., Meshnick, S.R., Taylor, T.E., Molyneux, M.E., and Kublin, J.G. Incidence of malaria parasitemia in a cohort of rural Malawian adults according to HIV serostatus, HIV-1 RNA concentration and CD4 count. J. Infect Dis 192(6):984-91, 2005.
17. Alker, A. P., Mwapasa, V, Purfield, A., Rogerson, S.J., Molyneux, M. E., Kamwendo, D., Tadesse, E., Chaluluka, E., Meshnick, S. R. Mutations associated with sulfadoxine-pyrimethamine and chlorproguanil resistance in *Plasmodium falciparum* from Blantyre, Malawi. Antimicrob. Agents. Chemother. 49:3919-21, 2005.
18. Abrams, E.T, Kwiek, J., Mwapasa, V., Kamwendo, D.D., Tadesse, E., Lema, V.M., Molyneux, M.E., Rogerson, S.J., Meshnick, S.R. Malaria during pregnancy and fetal hematological status in Blantyre, Malawi. Malaria J. 25:4:39,2005.
19. Wilson, P.E., Kazadi, W., and Meshnick, S.R. Rare Congolese *Plasmodium falciparum* DHFR Alleles. Mol. Biochem. Parasitol. 144:227-9, 2005.
20. Kwiek, J.J., Mwapasa, V., Milner, D.A. Jr., Alker, A.P., Miller, W.C., Tadesse, E., Molyneux, M.E., Rogerson, S.J., and Meshnick, S.R.. Maternal-fetal microtransfusion and HIV-1 mother-to-child transmission in Malawi. PLoS. Med.;3(1):e10, 2005.
21. Kessl, J.J., Ha, K.A., Merritt, A.K., Meshnick, S.R. and Trumpower, B.L. Molecular basis of *Toxoplasma gondii* atovaquone resistance modeled in *Saccharomyces cerevisiae*. Mol. Biochem. Parasitol., 2005, ePub ahead of print.

C. Research Support.

Ongoing

1 U01 HD043475-01 (Ryder, R., PI) 9/1/03-8/30/08

NIH-NICHD **Safe Pregnancy by Infectious Disease Control in Kinshasa**

This is a collaborative grant to carry out clinical trials of new interventions to prevent malaria, STI and TB in pregnant women in Kinshasa

1 D43 TW006568-01 (Meshnick, PI) 11/1/03-10/30/08

NIH-FIC **Infectious Disease Epidemiology Training for Malawians**

This is a grant to provide advanced training in infectious disease epidemiology for Malawians both at the University of Malawi and University of North Carolina Schools of Public Health.

1 R21 AI065369-01 (S. Meshnick) 2/15/2005 - 1/31/07

NIAID

Routes of Transmission of HIV in Malawian Mothers

The aim of this proposal is to study the biological mechanism of mother-to-child transmission (MTCT) of HIV using samples collected from a well-characterized cohort of 860 HIV (+) pregnant women and their offspring in Malawi.

Completed

1 R01 AI49084-02 (Meshnick) 3/15/01 – 2/28/06

NIH/NIAID **Malaria and HIV in Pregnant Women in Malawi**

This grant tests whether maternal malaria increases mother-to-child transmission (MTCT) of HIV via effects on viral load, cytokines or cytokine receptors, and whether HIV inhibits the development of pregnancy-specific immunity. Patient recruitment is ending in March 2004.

1 R03 TW05927-01 (Meshnick-US); (S. Crowe-AUS) 5/1/02 – 4/30/05

FIC/FIRCA **Malaria and HIV in Pregnant Women in Malawi (Parent grant is AI49084)**

This proposal extends the grant listed above by characterizing the observed monocytic infiltrate in the placenta of pregnant women in Malawi and assessing the potential contribution of these cells to maternal HIV-1 viral load and thus to mother-to-child transmission (MTCT) of HIV-1.

1 R01 AI46966-02 (Meshnick) 4/1/00 – 3/31/05

NIH/NIAID **Yeast models for drug-resistant *Pneumocystis carinii***

This is a grant to construct cytochrome b and dihydropteroate mutants in transgenic yeast in order to confirm that clinically observed mutations in the *P. carinii* genes confer drug resistance.

S1935-21/21 (Meshnick, PI) 10/1/01-9/30/04

ASPH/CDC/ATSDR **Strengthening Malaria Prevention and Control in Malawi**

This project is a collaboration with the University of Malawi College of Medicine and the Malawian Ministry of Health and Population to (1) provide advanced training in Public Health to Malawian District Health Officers, (2) evaluate new intermittent presumptive therapy regimens for malaria in pregnant women, and (3) implement and evaluate a critical care pathways approach for pediatric patients with malaria diagnoses.

R21 AI45426-01 (Meshnick) 9/1/00-8/31/01

NIH/NIAID **Antimalarial Resistance in Thailand**

The goal of this project was to understand the molecular basis of antimalarial resistance in Thailand.

D43 TW00908 (T. Taylor) (Meshnick-Co-Inv) 9/1/97 – 8/31/01

NIH/NIAID **Training med school faculty to tackle malaria in Malawi**

This was a training grant to bring Malawian physicians to the U.S. for post-graduate training and to send U.S. graduate students to Malawi to do malaria research

Principal Investigator/Program Director (Last, First, Middle):

R01 AI31775 (**Meshnick**)

1/1/97 – 12/31/99

NIH/NIAID **Studies on the Pneumocystis dihydropteroate synthase**

The goals of this project were to develop new antipneumocystis agents that inhibit the P. carinii DHPS and to understand the epidemiology of sulfa resistance

R01 AI38708 (**Meshnick**)

8/1/96 – 7/31/99

NIH/NIAID **Biochemical studies of antipneumocystis naphthoquinones**

The goals of this project were to better understand the mechanism of action of atovaquone and analogs and to develop more effective derivatives.

R01 AI-26848 (**Meshnick**)

3/1/91 – 2/29/00

NIH/NIAID **Oxidant effects in malaria-infected erythrocyte**

This was a grant to study the mechanisms of action of oxidant antimalarials such as artemisinin.