

May 2008

CURRICULUM VITAE

Nathan Wolfe

PERSONAL DATA

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Born: 24 August 1970

NARRATIVE BIO

Dr. Nathan Wolfe is Professor of Epidemiology at UCLA. He received his bachelor's degree from Stanford in 1993 and his doctorate in Immunology & Infectious Diseases from Harvard in 1998. The recipient of a Fulbright fellowship in 1997, Dr. Wolfe was awarded the National Institutes of Health (NIH) International Research Scientist Development Award in 1999 and the prestigious NIH Director's Pioneer Award in 2005.

Dr. Wolfe has published over 50 articles and chapters. Among his major findings include the discovery of the origin of malignant malaria and the first evidence of natural transmission of retroviruses from nonhuman primates to humans. His work has been published in or covered by Nature, Science, The Lancet, PNAS, JAMA, The New York Times, The Economist, Wired, Discover, Scientific American, NPR, Popular Science, Seed, and Forbes. He has supervised research on over \$15m of grants and contracts from the NIH, the National Science Foundation, the Bill & Melinda Gates Foundation, the National Geographic Society, Merck Research Laboratories and various branches of the US Department of Defense, including: the Global Emerging Infections Surveillance & Response System (GEIS), HIV/AIDS Prevention Program (DHAPP), and the US Military HIV Research Program (USMHRP). He has extensive consulting experience and has served on a number of advisory and editorial boards, including, since 2004, the editorial board of EcoHealth.

Dr. Wolfe has over eight years of full-time experience living and conducting biomedical research in Southeast Asia (Malaysia) and sub-Saharan Africa (Cameroon, Uganda). He founded and directs the Global Viral Forecasting Initiative (GVFI), a pandemic early warning system which monitors the spillover of novel infectious agents from animals into humans. GVFI coordinates activities of over 100 scientists and staff from countries around the world. He currently has active research and public health projects in Cameroon, China, Central African Republic, DR Congo, PR Congo, Gabon, Equatorial Guinea, Lao, Madagascar, Malaysia and Sao Tome.

EDUCATION

- Harvard University, D.Sc. in Immunology & Infectious Disease, 1998
- Harvard University, M.A. in Biological Anthropology, 1995
- Stanford University, B.A. in Human Biology with Honors and Distinction, 1993

PROFESSIONAL EXPERIENCE

- (Full) Professor, University of California Los Angeles, Department of Epidemiology, October 2006 – present
- Assistant Professor, Johns Hopkins University, Department of Epidemiology and Department of Molecular Microbiology & Immunology, July 2003 – October 2006
- Postdoctoral Fellow, Johns Hopkins University, Department of International Health, February 1999 – June 2003

PROFESSIONAL ACTIVITIES

- Consultant, Indiana University, School of Medicine, Xenotransplantation Program, 2008-present
- Consultant, Bloodsystems Research Institute, 2007-present
- Consultant, UCLA-UNC DRC Monkeypox Project, 2005-2006
- Consultant, Overbrook Entertainment, *I am Legend*, 2006
- Consultant, US Military HIV Research Program, Walter Reed Army Institute of Research, December 2001 – 2004
- Consultant, International AIDS Vaccine Initiative, 2002 – 2003
- Guest Researcher, Centers for Disease Control, National Center for Infectious Diseases, HIV and Retrovirology Branch, August 2002 – October 2002
- Consultant and Guest Researcher, Centers for Disease Control, National Center for Infectious Diseases, Parasitic Diseases Branch, June 1996 – June 2000

HONORS, AWARDS, AND CERTIFICATES

- National Institutes of Health Director's Pioneer Award, 2005
- Investigators in Pathogenesis of Infectious Disease Award Finalist, Burroughs Wellcome Fund, 2005
- Charles C. Shepard Science Award Finalist, Centers for Disease Control, 2004, 2006
- International Research Scientist Development Award, NIH Fogarty International Center, 1999
- Travel Award, American Society of Tropical Medicine & Hygiene, 1998
- Fulbright Fellowship, 1997
- Frederick Sheldon Fellowship, Harvard School of Public Health, 1997
- National Security Education Program Graduate Enhancement Fellowship, 1997
- Uwe Brinkmann Traveling Fellowship, Harvard School of Public Health, 1996
- Taplin Fellowship, Harvard School of Public Health, 1995
- Certificate of Distinction for Teaching, Harvard University, 1994
- National Science Foundation Graduate Research Fellowship, 1994
- Gordon Getty Fellowship, Harvard University, 1993
- Phi Beta Kappa, Stanford University Chapter
- Training certificates: NIH Human Participants Protection Education for Research Teams (Feb 2005), AT Level I Awareness Training (May 2004), Hopkins Bloodborne Pathogens Safety Course (May 2004), Hopkins Animal Care & Use Research Compliance Course (June 2003), CDC Bloodborne Pathogens Safety Course (August 2002), CDC Radiation Safety Course (August 2002), CDC Laboratory Safety Course (August 2002), Good Laboratory Practices (May 2002), Hopkins Human Subjects Research Ethics (June 2001), Good Clinical Practices (September 2001), Shipping Infectious and Biological Substances (October 2001)

PRESENTATIONS & PUBLICATIONS (*indicates advisee, †indicates corresponding)

PUBLISHED OR IN PRESS

1. **ND Wolfe** (2008) An epidemiologist points to a fifth sort of human malaria. *Nature* 453:567 [journal club]
2. Goldberg TL, CA Chapman, K Cameron, T Saj, WB Karesh, **ND Wolfe**, SW Wong, ME Dubois, MK Slifka (2008) Serologic evidence for a novel poxvirus in endangered red colobus monkeys, Western Uganda. *Emerging Infectious Disease* 14: 801-803
3. **Wolfe ND**†, C Panosian Dunavan, J Diamond (2007) Origins of major human infectious diseases. *Nature* 447:279-283
4. LeBreton M*, O Yang, U Tamoufe*, E Mpoudi-Ngole, JN Torimiro*, CF Djoko*, JK Carr, AT Prosser, AW Rimoin, DL Birx, DS Burke, **ND Wolfe**† (2007) Exposure to Wild Primates among HIV-infected Persons. *Emerging Infectious Disease* 13: 1579-1582
5. Rimoin AW, Kisalu N, Kebela-Ilunga B, Mukaba T, Wright LL, Formenty P, **Wolfe ND**, Shongo RL, Tshioko F, Okitolonda E, Muyembe JJ, Ryder RW, Meyer H (2007) Endemic Human Monkeypox, Democratic Republic of Congo, 2001-2004. *Emerging Infectious Disease* 13: 934-937
6. Torimiro JN*, **ND Wolfe**, A Thomas, MP Martin, E Mpoudi-Ngole, U Tamoufe*, DL Birx, M Carrington, DS Burke, JK Carr (2007) Frequency of CCR5 variants among rural populations with low HIV-1 prevalence in Cameroon. *AIDS* 21:527-8
7. **Wolfe ND**† & T Goldberg (2007) HIV-1 Origins: What we don't know. *Cell Science Reviews* 3: 9-14
8. Leendertz FH, F Lankester, C Neel, O Drori, J Dupain, S Speede, P Reed, **ND Wolfe**, S Loul, E Mpoudi-Ngole, M Peeters, C Boesch, G Pauli, H Ellerbrok, E Leroy (2006) Anthrax joins Ebola in threatening central African great apes. *American Journal of Primatology* 68:928-933
9. Ockenhouse CF, WC Hu, KE Kester, JF Cummings, A Stewart, DG Heppner, AE Jedlicka, AA Scott, **Wolfe ND**, M Vahey, DS Burke (2006) Common and Divergent Immune Response Signaling Pathways Discovered from Peripheral Blood Mononuclear Cell Gene Expression in Pre-symptomatic and Clinically Apparent Malaria. *Infection and Immunity* 74:5561-73
10. Murphy HW, M Miller, J Ramer, D Travis, R Barbiers, **ND Wolfe**, WM Switzer (2006) Implications of simian retroviruses for captive primate population management and the occupational safety of primate handlers. *Journal of Zoo and Wildlife Medicine* 37:219-33
11. LeBreton M*, AT Prosser, U Tamoufe*, W Sateren, E Mpoudi-Ngole, DS Burke, **ND Wolfe**† (2006) Patterns of hunting and perceptions of disease risk among central African communities. *Animal Conservation* 9:357-363
12. LeBreton M*, AT Prosser, U Tamoufe*, W Sateren, E Mpoudi-Ngole, JLD Dikko, DS Burke, **ND Wolfe**† (2006) Healthy hunting in central Africa. *Animal Conservation* 9:372-74 [commentary]
13. Switzer, WM, I Hewlett, L Aaron, **ND Wolfe**, DS Burke, TM Folks, W Heneine (2006) Serological testing for HTLV-3 and HTLV-4. *Transfusion* 46:1647-48
14. Gupta SB, CT Mast, **ND Wolfe**, V Novitsky, SA Dubey, EG Kallas, M Schechter, B Mbewe, E Vardas, P Pitisuttithum, DS Burke, D Freed, R Mogg, PM Coplan, JH Condra, RS Long, K Anderson, DR Casimiro, JW Shiver, WL Straus (2006) Cross-Clade Reactivity of Anti-HIV-1 Specific T-Cell Responses in HIV-1-Infected Individuals From Botswana and Cameroon. *JAIDS* 42:135-139
15. Switzer WM, S Qari, **ND Wolfe**, DS Burke, TM Folks, W Heneine (2006) Ancient origin and molecular features of the novel Human T-Lymphotropic Virus Type 3 revealed by complete genome analysis. *Journal of Virology* 80:7427-7438
16. Kuniholm MH*, **ND Wolfe**, M LeBreton*, CYH Huang, E Mpoudi-Ngole, DS Burke, DJ Gubler (2006) Seroprevalence and distribution of *Flaviviridae*, *Togaviridae*, and *Bunyaviridae* arboviral infections in rural Cameroonian adults. *American Journal of Tropical Medicine and Hygiene* 74:1078-1083
17. Steiper ME, **ND Wolfe**, WB Karesh, AM Kilbourn, EJ Bosi, M Ruvolo (2006) The phylogenetic and evolutionary history of a novel alpha-globin-type gene in orangutans (*Pongo pygmaeus*). *Infect Genet Evol* 6:277-286

18. LeBreton M*, S Umlauf, C Djoko*, P Daszak, DS Burke, PY Nwenkam, **ND Wolfe**† (2006) Rift valley fever in goats in southern Cameroon. *Emerging Infectious Diseases* 12:702-703 [letter]
19. Cummings AT, WJ Moss, K Long*, TJ Muluh, B Kollo, E Nomo, **ND Wolfe**, DS Burke (2006) Improved measles surveillance in Cameroon reveals two major dynamic patterns of incidence. *International Journal of Infectious Disease* 10:148-55
20. Torimiro JN*, JK Carr, **ND Wolfe**, P Karacki, MP Martin, X Gao, U Tamoufe*, E Mpoudi-Ngole, FE McCutchan, DL Birx, DS Burke, M Carrington (2006) HLA class I diversity among rural rainforest inhabitants in Cameroon: identification of A*2612-B*4407 haplotype. *Tissue Antigens* 67: 30-7
21. **Wolfe ND**, W Heneine, JK Carr, V Shanmugam, U Tamoufe*, AT Prosser, VB Bhullar, JN Torimiro*, A Wright, E Mpoudi-Ngole, FE McCutchan, DL Birx, TM Folks, DS Burke, WM Switzer (2005) Emergence of novel primate T-lymphotropic viruses among central African bushmeat hunters. *Proceedings of the National Academy of Sciences* 102: 7994-7999
22. Zhang M, K Wilbe, B Gaschen, **ND Wolfe**, B Gaschen, J Carr, T Leitner (2005) HIV-1 type 1 CRF13-cpx revisited: identification of a new sequence from Cameroon and signal for sub-subtype J2. *AIDS Research & Human Retroviruses* 21:955-60
23. **Wolfe ND**†, P Daszak, AM Kilpatrick, DS Burke (2005) Bushmeat hunting, deforestation, and predicting zoonotic emergence. *Emerging Infectious Diseases* 11:1822-1827
24. Steiper ME, **ND Wolfe**, WB Karesh, AM Kilbourn, EJ Bosi, M Ruvolo (2005) The population genetics of the alpha-2 globin locus of orangutans (*Pongo pygmaeus*). *Journal of Molecular Evolution* 60:400-408
25. Kalish ML, **ND Wolfe**, C Ndongmo, C Djoko*, KE Robbins, J McNicholl, M Aidoo, P Fonjungo, G Alemnji, E Mpoudi-Ngole, C Zeh, TM Folks, DS Burke (2005) Central African hunters exposed to SIV. *Emerging Infectious Diseases* 11:1928-1930
26. Machuca A, O Wood, S Lee, S Daniel, M Rios, **ND Wolfe**, J Carr, E Mpoudi-Ngole, D Burke, I Hewlett (2005) Seroprevalence of HTLV in HIV antibody negative populations of rural Cameroon. *Clinical Infectious Disease* 40:1673-1676
27. Carr JK, Y Nadai, L Eyzaguirre, MD Saad, MM Khakimov, SK Yakubov, DL Birx, RR Graham, **ND Wolfe**, KC Earhart, JL Sanchez (2005) Outbreak of a west African recombinant of HIV-1 in Tashkent, Uzbekistan. *Journal of Acquired Immune Deficiency Syndromes* 39:570-575
28. **Wolfe ND**†, WM Switzer, JK Carr, VB Bhullar, V Shanmugam, U Tamoufe*, AT Prosser, JN Torimiro*, A Wright, E Mpoudi-Ngole, FE McCutchan, DL Birx, TM Folks, DS Burke, W Heneine (2004) Naturally acquired simian retrovirus infections among central African hunters. *Lancet* 363:932-937 (also see commentary: 363:911-912; and letters: 364:137-140)
29. **Wolfe ND**†, WM Switzer, TM Folks, DS Burke, W Heneine (2004) Simian retroviral infections in human beings. *Lancet* 364:139-140 [letter]
30. Waters H, L Dougherty, N Tran, S Charles, SP Tegang, K Long*, **ND Wolfe**, DS Burke (2004) Coverage and costs of childhood immunizations in Cameroon. *Bulletin of the World Health Organization* 82:668-75
31. **Wolfe ND**†, AT Prosser, JK Carr, U Tamoufe*, E Mpoudi-Ngole, JN Torimiro*, M LeBreton*, FE McCutchan, DL Birx, DS Burke (2004) Exposure to nonhuman primates in rural Cameroon. *Emerging Infectious Diseases* 10:2094-99
32. Patz J, P Daszak, AA Aguirre, GM Tabor, M Pearl, J Epstein, **ND Wolfe**, J Fofopoulos, D Molyneux, DJ Bradley, and Members of the Working Group on Unhealthy Landscapes (2004) Unhealthy landscapes: policy recommendations pertaining to land use change and disease emergence. *Environmental Health Perspectives* 112:1092-8
33. Kijak GH, E Sanders-Buell, **ND Wolfe**, E Mpoudi-Ngole, B Kim, ML Robb, DL Birx, DS Burke, JK Carr, FE McCutchan (2004) Development and application of a high-throughput HIV-1 genotyping assay to identify CRF02_AG in West/West Central Africa. *AIDS Research & Human Retroviruses* 20:521-30
34. Kilbourn AM, WB Karesh, **ND Wolfe**, EJ Bosi, RA Cook, M Andau (2003) Health evaluation of free-ranging and semi-captive orangutans (*Pongo pygmaeus pygmaeus*) in Sabah, Malaysia. *Journal of Wildlife Diseases* 39:73-83
35. Hussain AI, V Shanmugam, VB Bhullar, BE Beer, D Vallet, A Gautier-Hion, **ND Wolfe**, WB Karesh, AM Kilbourn, Z Tooze, W Heneine, WM Switzer (2003) Screening for simian foamy virus infection by using a combined antigen western blot assay: Evidence for a wide distribution among old world primates and identification of four new divergent viruses. *Virology* 309:248-257

36. **Wolfe ND**†, WB Karesh, AM Kilbourn, J Cox-Singh, EJ Bosi, HA Rahman, B Singh, M Andau, A Spielman (2002). The impact of ecological conditions on the prevalence of malaria among orangutans. *Vector Borne & Zoonotic Disease* 2:97-104
37. Deem SL, AM Kilbourn, **ND Wolfe**, RA Cook, WB Karesh (2002) Conservation medicine. *Annals of the New York Academy of Sciences* 916:370-377
38. **Wolfe ND**†, AM Kilbourn, WB Karesh, HA Rahman, EJ Bosi, BC Cropp, M Andau, A Spielman, DJ Gubler (2001) Sylvatic transmission of arboviruses among Bornean orangutans. *American Journal of Tropical Medicine and Hygiene* 64:310-316
39. Carr JK, JN Torimiro*, **ND Wolfe**, MN Eitel, B Kim, E Sanders-Buell, LL Jagodzinski, D Gotte, DS Burke, DL Birx, FE McCutchan (2001) The AG recombinant I_BNG and novel strains of group M HIV-1 are common in Cameroon. *Virology* 286:168-181
40. **Wolfe ND**†, MN Eitel, J Gockowski, PK Muchaal, C Nolte, AT Prosser, JN Torimiro*, SF Weise, DS Burke (2000) Deforestation, hunting and the ecology of microbial emergence. *Global Change and Human Health* 1:10-25
41. Wrangham R. M Wilson, B Hare, **ND Wolfe**† (2000) Chimpanzee predation and the ecology of microbial exchange. *Microbial Ecology in Health and Disease* 12:186-188
42. Cox-Singh J, AS Pomrehn AS, **ND Wolfe**, HA Rahman, HY Lu, B Singh (2000) Blood-filtration survey to determine the detection level of nested-PCR for *Brugia malayi* and the significance of 'free' DNA in PCR-based assays. *International Journal of Parasitology* 30:1177-1179
43. Pollack R, A Kiszewski, P Armstrong, C Hahn, **ND Wolfe**, HA Rahman, K Laserson, SR Telford, A Spielman (1999) Differential permethrin susceptibility of head lice sampled in the US and Borneo. *Archives of Pediatric & Adolescent Medicine* 153:969-973
44. **Wolfe ND**†, AA Escalante, WB Karesh, AM Kilbourn, A Spielman, & AA Lal (1998) Wild primate populations in emerging infectious disease research. *Emerging Infectious Diseases* 4:149-158
45. Hauser MD & **ND Wolfe** (1995) Human language: Are there no nonhuman precursors? *Brain and Behavioral Sciences* 18:190-191
46. Clayton DH & **ND Wolfe** (1993) The adaptive significance of self-medication. *Trends in Evolution and Ecology* 8:60-63
47. Newton P & **ND Wolfe** (1992) Can animals teach us medicine? *British Medical Journal* 305:1517-8

BOOK CHAPTERS AND PUBLISHED PROCEEDINGS

1. **Wolfe ND** and Switzer WM (in press) Primate Exposure and the Emergence of Novel Retroviruses. In *Primate Parasite Ecology: The Dynamics and Study of Host-Parasite Relationships*; Eds. M.A. Huffman and C.A. Chapman. *Cambridge Studies in Biological and Evolutionary Anthropology*, Cambridge University Press, Cambridge
2. **Wolfe ND**, WM Switzer, W Heneine (2006) Emergence of Novel Retroviruses. In: *Emerging Infections*, Seventh Edition (eds. WM Scheld, DC Hooper, and JM Hughes), pp. 139-152. ASM Press, Washington DC
3. Patz J & **ND Wolfe** (2002) Global ecological change and human health. In: *Conservation Medicine: Ecological Health in Practice* (eds. AA Aguirre, RS Ostfeld, GM Tabor, C House, and MC Pearl), pp. 167-181. Oxford University Press, Oxford
4. Kilbourn AM, EJ Bosi, **ND Wolfe**, M Andau, WB Karesh (2000) Disease evaluation and preventative medicine programs incorporated into ape conservation in Sabah, Malaysia. In: *The Apes: Challenges for the 21st Century* (ed. GB Rabb), pp. 241-243. Brookfield Zoo, Chicago
5. Kilbourn AM, WB Karesh, EJ Bosi, RA Cook, M Andau, **ND Wolfe** (1998) Disease evaluation of free-ranging orangutans (*Pongo pygmaeus pygmaeus*) in Malaysia. In: *Proceedings of the American Association of Zoo Veterinarians and American Association of Wildlife Veterinarians Joint Conference* (ed. CK Baker), pp. 417-421. American Association of Zoo Veterinarians Media, Philadelphia

BOOK AND ARTICLE REVIEWS

1. Goldberg TL & **ND Wolfe**† (2007) Review of "Infectious Diseases in Primates: Behavior, Ecology and Evolution. By CL Nunn & SM Altizer. *Quarterly Review of Biology* 82: 289
2. Goldberg TL & **ND Wolfe** (2007) Review of "Infectious Diseases in Primates: Behavior, Ecology and Evolution. By CL Nunn & SM Altizer. *Ecohealth* 4:2
3. Hauser MD & **ND Wolfe** (1994) Review of "Language Comprehension in Ape & child". By ES Savage-Rumbaugh et al. *American Anthropologist* 96:745-747

EXHIBIT

- **Wolfe ND** (1992-1995) *The use of plants as medicine: self-medicating behaviour in the animal kingdom*, Oxford University Museum.

DOCTORAL THESIS

- **Wolfe ND** (1999) Pathogen Evolution and Exchange in Bornean Orangutans. Department of Immunology & Infectious Disease, Harvard University

ARTICLES FOR A GENERAL AUDIENCE

1. **Wolfe ND** (accepted) Preventing the Next HIV. *Scientific American*
2. Diamond J & **Wolfe ND** (accepted) Forecasting the Next Big Killers. *Discover Magazine*
3. **Wolfe ND** (2007) Year in Science 2006: Infectious Disease. *Seed Magazine*

INVITED TALKS & SEMINARS (All listed for 2008, selected from 2004-2007)

- **2008** (Dec) Keynote address. *Epidemics: Infectious Disease Dynamics*, Asilomar, California
- **2008** (Dec) Invited Lecture. *American Society of Tropical Medicine & Hygiene*, New Orleans, Louisiana
- **2008** (Oct) Keynote address. *Molecular Epidemiology and Evolutionary Genetics of Infectious Diseases*, Irvine, California
- **2008** Keynote address. *Keck Foundation Young Investigators Symposium*, Los Angeles, California
- **2008** Seminar. *University of Michigan, School of Public Health*, Ann Arbor, Michigan
- **2008** Keynote address. *Central Veterinary Conference, West*, Baltimore, Maryland
- **2008** Plenary Topical lecture. *American Association for the Advancement of Science (AAAS) Annual Meeting*, Boston, Massachusetts
- **2008** Chair and Invited lecture. *Keystone symposium: Molecular Evolution as a Driving Force in Infectious Diseases*, Breckenridge, Colorado
- **2008** Seminar. *Rockefeller Foundation*, Seattle, Washington
- **2008** Seminar. *Microsoft Research*, Seattle, Washington
- **2008** Seminar. *Bill & Melinda Gates Foundation*, Seattle, Washington
- **2008** Seminar. *Google.org*, San Francisco, California
- **2008** Seminar. *Defense Advanced Research Projects Agency (DARPA)*, Arlington, Virginia
- **2008** Seminar. *The Rockefeller University*, New York, New York
- **2007** Keynote address. *Central Veterinary Conference, East*, San Diego, California
- **2007** Invited lecture. *DARPA Symposium on Aggression & Reconciliation*, San Diego, California
- **2007** Seminar. *California Institute of Technology*, Pasadena, California
- **2007** Invited lecture. *UCLA Climate Change Summit*, Los Angeles, California
- **2007** Seminar. *International Development Research Centre (IDRC)*, Ottawa, Canada
- **2007** Seminar. *Guangdong Centers for Disease Control*, Guangzhou, China
- **2007** Invited Lecture. *California Institute of Technology Graduate Student Invited Speaker Series*, Pasadena, California
- **2006** Invited Lecture. *Evolution, Mind, & Behavior Conference at the University of California Santa Barbara*. Santa Barbara, California

- **2006** Awardee Lecture. *NIH Director's Pioneer Award Symposium*. Bethesda, Maryland
- **2006** Invited lecture. *2nd Pasteur-Areva Forum*, Shanghai, China
- **2004** Invited Lecture. *U.S. National Academy of Sciences – British Royal Society Frontiers of Science Symposium*, Cambridge, England
- **2004** Invited Lecture. *Research, Conservation & Animal Welfare of African & Asian Great Apes (SAGA 7)*, Kyoto, Japan

TALKS FOR A GENERAL AUDIENCE

- **2008** *Town Hall Seattle*, Seattle, Washington
- **2007** *National Geographic Society*, Washington, D.C.
- **2007** *Aspen Health Forum*, Aspen, Colorado

SELECTED PRESS (Written by others)

- Anonymous (April 12, 2008) And now here is the virus forecast. *The Economist*
- JR Minkel (February 22, 2008) Pandemic Hot Spots Map a Path to Prevention. *Scientific American*
- E Ratliff (April 24, 2007) The Plague Fighters: Stopping the Next Pandemic Before It Begins. *Wired*
- T Nugent (March 2007) Preventing the Next Plague. *Stanford Magazine*
- Anonymous (July 24, 2006) Popular Science's Fourth Annual Brilliant 10. *Popular Science*
- S Calvert (July 16, 2006) Monkey meat and its hazards: Hopkins researchers in Cameroon try to stop emerging viruses in their tracks. *The Baltimore Sun*

TEACHING

ADVISEES (*indicates supervisor, †indicates graduate):

- Ms. Katie Chan* (MPH candidate, Dept. of Epidemiology, UCLA School of Public Health)
- Ms. Erin Conners* (MPH candidate, Dept. of Epidemiology, UCLA School of Public Health)
- Mr. Cyrille Djoko* (PhD candidate, University of Yaoundé, Cameroon)
- Ms. Hope Hamrick* (ScM candidate, Dept. of Epidemiology, JHSPH)
- Dr. Kelly Hugunin* (PhD candidate, Dept. of Epidemiology, JHSPH)
- Ms. Lisa Krain* (MHS candidate, Dept. of Epidemiology, JHSPH)
- Mr. Makoah Nigel Aminake* (PhD candidate, Dept. of Biochemistry, University of Yaoundé)
- Mr. Morgan Marks (PhD candidate, Department of Epidemiology, JHSPH)
- Mr. Douglas Morier* (MPH candidate, Dept. of Epidemiology, UCLA School of Public Health)
- Ms. Boanna Owens† (BSc graduate, Independent Study Instructor, Johns Hopkins University)
- Ms. Elena Pselio† (MPH graduate†, Dept. of Environmental Health, JHSPH)
- Dr. Amy Peterson* (PhD candidate, Dept. of Epidemiology, JHSPH)
- Dr. Elizabeth Roberts† (MPH candidate, Department of Epidemiology, JHSPH)
- Mr. David Sintasath (PhD candidate, Dept. of International Health, JHSPH)
- Dr. Judith Torimiro*† (PhD graduate†, London School of Hygiene and Postdoctorate, JHSPH)
- Mr. Ryan Whitmarsh*† (MSc graduate†, Dept. of Epidemiology, JHSPH)

COURSEWORK

- Course: "Origins: Cross-species transmission and the emergence of human disease" (3 credits), 2006, Johns Hopkins Bloomberg School of Public Health, Department of Epidemiology
- Teaching Fellow, Harvard University, Human Behavioral Biology, Science Core, Spring 1994, 95, 96
- Teaching Fellow, Harvard University, Evolution of Communication, Autumn 1994/95
- Writing Fellow, Harvard University, Autumn 1995
- Field Course Supervisor, Cornell University, Chemical Ecology of Uganda, Summer 1994

RESEARCH GRANT PARTICIPATION

CURRENT

Title: "Hunter Cohorts for Monitoring Viral Emergence (DP1-OD00370)

Date: 9/30/2005-9/30/2010

Sponsoring Agency: National Institutes of Health, NIH Director's Pioneer Award Program

Principal Investigator: ND Wolfe

Funding Level: \$500,000/yr (direct costs)

Main Grant Objective: To establish a global sentinel surveillance system for monitoring viral emergence

Principal Responsibilities of Individual: Principal Investigator

Title: "Metagenomic Analysis of the Human Virome"

Date: 04/01/2007 - 03/31/2011

Sponsoring Agency: National Institutes of Health, National Heart, Lung, & Blood Institute

Principal Investigator: E Delwart

Funding Level: \$400,600/year (direct costs)

Main Grant Objective: To monitor the emergence of new viruses using the database of the Human Virome

Principle Responsibilities of Individual: Co-Investigator, Consultant

Title: "Influenza Surveillance in Cameroon"

Date: 2/2008 – 9/2008

Sponsoring Agency: Henry M. Jackson Foundation (Subcontractor for the US Department of Defense, Global Emerging Infections Surveillance and Response System)

Principal Investigator: ND Wolfe

Total Funding Level: \$1,402,493 (includes indirect costs)

Main Grant Objective: To establish influenza laboratory and field infrastructure in Cameroon

Principal Responsibilities of Individual: Principal Investigator

Title: "HIV Surveillance and Prevention among Armed Forces and Police Personnel in Congo-Kinshasa, Equatorial Guinea, and Sao Tome"

Date: 7/2006-7/2008

Sponsoring Agency: Naval Health Research Center

Principal Investigator: ND Wolfe

Total Funding Level: \$364,000 (includes indirect costs)

Main Grant Objective: To conduct surveillance and prevention of HIV among armed forces personnel in three Central African Countries

Principal Responsibilities of Individual: Principal Investigator

Title: "Preparation for Establishment of Human and Animal Laboratories in Yaoundé, Cameroon"

Date: 1/14/2008 – 4/30/2008

Sponsoring Agency: Henry M. Jackson Foundation (Subcontractor for the US Department of Defense, Global Emerging Infections Surveillance and Response System)

Principal Investigator: ND Wolfe

Total Funding Level: \$230,301 (includes indirect costs)

Main Grant Objective: To establish influenza laboratory infrastructure in Cameroon

Principal Responsibilities of Individual: Principal Investigator

Title: "Fogarty AITRP Supplement: Cameroon – Vaccinology", AIDS International Training and Research Program (2 D 43 TW000010-17-AITRP)

Date: 10/2003-9/2008

Sponsoring Agency: National Institutes of Health, Fogarty International Center
Principal Investigator: C Beyrer
Funding Level: \$100,000/yr (direct costs)
Main Grant Objective: To provide training in HIV vaccinology to Cameroonian scientists.
Principal Responsibilities of Individual: Co-Investigator, responsible for supervision of Cameroonian activities

PAST

Title: "Incidence and Diversity of HIV-1 among Military, Plantation, and Rural Populations in Cameroon"
Date: 6/2005-12/2007
Sponsoring Agency: Walter Reed Army Institute of Research
Principal Investigator: ND Wolfe
Funding Level: \$1,500,000/yr (includes indirect costs)
Main Grant Objective: To investigate the incidence of HIV infection among three distinct populations in Cameroon
Principal Responsibilities of Individual: Principal Investigator

Title: "Establishing a sentinel surveillance system to monitor retrovirus emergence in central Africa"
Date: 1/1/2006-12/31/2007
Sponsoring Agency: The WW Smith Charitable Trust
Principal Investigator: ND Wolfe
Total Funding: \$188,000 (\$170,912 direct, \$17,088 indirect)
Main Grant Objective: To establish a sentinel surveillance system for monitoring retrovirus emergence in central Africa.
Principal Responsibilities of Individual: Principal investigator

Title: "The Impact of Deforestation on the Ecology of Viral Emergence"
Date: 11/15/2004-5/1/2006
Sponsoring Agency: National Geographic Society, Committee for Research & Exploration
Principal Investigator: ND Wolfe
Total Funding: \$19,000 (no indirect costs permitted)
Main Grant Objective: To investigate the impact of deforestation and hunting on the ecology of viral emergence among human and wildlife populations in Cameroon.
Principal Responsibilities of Individual: Principal Investigator

Title: "Natural History of Simian Foamy Virus (SFV) Infection among Central African Hunters", International Research Scientist Development Award (5 K01 TW000003-05)
Date: 9/01/2003-5/31/2007
Sponsoring Agency: National Institutes of Health, Fogarty International Center
Principal Investigator: ND Wolfe
Total Funding: \$380,457 (\$352,275 direct, \$28,182 indirect)
Main Grant Objective: To investigate the transmissibility, virological, and immunological consequences of naturally acquired SFV infection among rural African hunters.
Principal Responsibilities of Individual: Principal Investigator

Title: "The Health of Wild and Domestic Food Animals in Central African Forests"
Date: 11/1/2004-10/31/2006
Sponsoring Agency: Center for a Livable Future, Johns Hopkins University
Principal Investigator: ND Wolfe
Total Funding: \$19,750 (internal JHU, no indirect costs)
Main Grant Objective: To examine pathogens in wild and domestic ungulates in Cameroon as well as human behaviors associated with contact with ungulate blood and body fluids.
Principal Responsibilities of Individual: Principal investigator

Title: "SIV Infection among Central African Hunters", Center for AIDS Research (P30 AI42855)

Date: 5/1/2004-6/30/2006

Sponsoring Agency: National Institutes of Health, Johns Hopkins Center for AIDS Research

Principal Investigator: ND Wolfe

Total Funding: \$63,270 (\$59,000 direct, \$4,720 indirect)

Main Grant Objective: To determine if hunters exposed to the blood and body fluids of nonhuman primates are infected with SIV

Principal Responsibilities of Individual: Principal investigator

Title: "Development of Clinical Measles Vaccine Research Capability in Cameroon"

Date: 9/2000-6/2006

Sponsoring Agency: Gates Foundation

Principal Investigator: DS Burke

Funding level: \$250,000/yr (internal JHU, no indirect costs)

Main Grant Objective: Evaluate in parallel three promising new approaches to measles immunization in order to identify the one with the best chance for immunizing young infants while they still have maternal antibody

Principal Responsibilities: Co-Investigator, responsible for overseeing in-country Cameroon activities

Title: "Cameroon Site Development"

Date: 6/2004-5/2005

Sponsoring Agency: Walter Reed Army Institute of Research

Principal Investigator: ND Wolfe

Funding Level: \$1,154,256 (includes indirect costs)

Main Grant Objective: To advance laboratory, infrastructure and training in the Cameroon site in preparation for a large-scale HIV incidence cohort study

Principal Responsibilities of Individual: Principal investigator

Title: "Molecular Epidemiology of HIV-1 and Related Viruses in Rural Human Populations in African Rain Forest"

Date: 2/2000-4/2004

Sponsoring Agency: Walter Reed Army Institute of Research

Principal Investigator: D.S. Burke

Funding Level: \$450,000/yr (includes indirect costs)

Main Grant Objective: To investigate the distribution of viral genetic diversity of retroviruses and other viruses in relation to nonhuman primate exposure, travel and geography in Cameroon

Principal Responsibilities: Co-Principal Investigator, responsible for study design and overall supervision of study

Title: "Molecular Evolution of *P. falciparum* and *P. vivax*", Evolution of Infectious Diseases (RFA: GM-99-005)

Date: 4/1999- 3/2004

Sponsoring Agency: National Institutes of Health

Principal Investigator: Ananias Escalante

Funding level: \$300,000/yr (direct costs)

Main Grant Objective: To investigate the molecular evolution of two important human malaria parasites and their nonhuman primate analogues

Principal Responsibilities: Collaborator, participate in the collection of samples from nonhuman primates in Africa

Title: "Improving Surveillance and Prevention of STI/HIV/AIDS among Armed Forces and Police Personnel in Four Central African Countries: Cameroon, Chad, Congo-Brazzaville, and Gabon"

Date: 12/2002-11/2003

Sponsoring Agency: Naval Health Research Center

Principal Investigator: ND Wolfe

Funding Level: \$299,708 (includes indirect costs)

Main Grant Objective: To conduct surveillance and prevention of HIV among armed forces personnel in four Central African Countries

Principal Responsibilities of Individual: Principal Investigator

Title: "Emergence of HIV Genetic Diversity in Cameroon", International Research Scientist Development Award (1 K01 TW00003-01)

Date: 8/1999-9/2003

Sponsoring Agency: National Institutes of Health, Fogarty International Center

Principal Investigator: ND Wolfe

Funding Level: \$75,000/yr (direct costs)

Main Grant Objective: To investigate a potentially crucial natural mechanism for the introduction of novel HIV genetic diversity into the human population

Principal Responsibilities of Individual: Principal Investigator

Title: Adult T-Cell Gene Expression after Malaria Infection

Date: 9/2002-9/2003

Sponsoring Agency: Malaria Research Institute, Johns Hopkins University

Principal Investigator: DS Burke

Funding level: \$58,000/ 6 months (internal JHU, no indirect costs)

Main Grant Objective: To understand the impact of malaria infection on adult T-cell gene expression

Principal Responsibilities of Individual: Co-Principal Investigator, to assist in the study design and supervision of field epidemiology components of the study

Title: "Observational Probe Study of In Vitro Immune Response Parameters to the Candidate HIV-1 Vaccine Antigens among Subjects from Brazil, Thailand, South Africa, Malawi, Botswana and Cameroon"

Date: 7/2002-7/2003

Sponsoring Agency: Merck Research Laboratories

Principal Investigator: DS Burke

Funding Level: \$110,000 (direct costs)

Main Grant Objective: To examine cross-reactivity of HIV strains prevalent in Cameroon with candidate HIV vaccines

Principal Responsibilities: Co-Investigator, responsible for supervision of Cameroonian components of the study

Title: "Prevention of HIV/AIDS and STIs among the Cameroon Uniformed Services"

Date: 11/2001-12/2002

Sponsoring Agency: Naval Health Research Center

Principal Investigator: ND Wolfe

Funding Level: \$300,000 (includes indirect costs)

Main Grant Objective: To conduct surveillance and prevention of HIV among armed forces personnel in Cameroon

Principal Responsibilities: Principal Investigator

Title: "A Third Way: Developing Culturally-Based Solutions to the Environmental and Health Consequences of Central African Forest Hunting"

Date: 8/2000-7/2001

Sponsoring Agency: Center for a Livable Future, Johns Hopkins University

Principal Investigator: Adria Tassy Prosser

Funding Level: \$20,000 (internal JHU, no indirect costs)

Main Grant Objective: To investigate the behavioral patterns of wild game hunting and their associated infectious disease risks and to identify culturally appropriate alternatives to these behaviors

Principal Responsibilities: Co-Principal Investigator, responsible for study design, scientific oversight, and write-up

ACADEMIC AND COMMUNITY SERVICES

- Reviewer, National Institutes of Health, Director's New Innovator Award Program, 2007
- Member, X Prize Foundation, Health & Healthcare X Prize Advisory Board, 2007
- Member, Scientific Committee, Cameroon National HIV Vaccine Plan Review and Validation Workshop, Yaoundé, Cameroon, April 2004
- Editorial Board, EcoHealth, 2004-present
- Associate, Consortium for Conservation Medicine, 2006 – present (Member since 2004)
- Scientific Advisory Board Member, Center for Chimpanzee Conservation, Guinea, 2000-2002
- Secretary, Working Group on Pathogen Transmission at the Hunter-Primate Interface, 1999-2001

SOCIETY MEMBERSHIP

- American Association for the Advancement of Science, member since 1999
- American Society of Microbiology, member since 1999
- American Society of Tropical Medicine and Hygiene, member since 1996
- American Society for Virology, member since 2004
- Ecological Society of America, member since 2000
- International Primatological Society, member since 2004
- International Society for Ecosystem Health, member since 2000

PATENTS

- Switzer, WM, W Heneine, TM Folks, **ND Wolfe**, DS Burke, E Mpoudi-Ngole (2004) "Novel human T-cell lymphotropic virus, designated HTLV-3 and HTLV-4", pending
- Switzer, WM, W Heneine, TM Folks, **ND Wolfe**, DS Burke, E Mpoudi-Ngole (2006) "Novel primate T-cell lymphotropic virus, designated STLV-5", pending