

## CURRICULUM VITAE

**Richard David Semba, M.D., M.P.H.**

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### DEMOGRAPHIC INFORMATION

#### Current Appointments:

W. Richard Green Professor of Ophthalmology  
The Johns Hopkins University School of Medicine  
Baltimore, Maryland

Professor (Joint), Molecular Microbiology & Immunology  
The Johns Hopkins Bloomberg School of Public Health  
Baltimore, Maryland

Professor (Joint), Division of Human Nutrition,  
Department of International Health  
The Johns Hopkins Bloomberg School of Public Health  
Baltimore, Maryland

Active Staff, The Johns Hopkins Hospital

#### Personal Data:

Business Address: Ocular Immunology Service  
550 North Broadway, Suite 700  
Baltimore, MD 21205

Telephone: (410) 955-3572 office (410) 955-0629 fax

Clinical Address: Wilmer Eye Institute at Green Spring Station  
10753 Falls Rd., Pavilion 2, Suite 455  
Lutherville, MD 21093

Telephone: (410) 583-2802 clinic (410) 583-2842 clinic fax

#### Education and Training:

1978	B.S.	Yale College, New Haven, CT	Biology
1983	M.A.	Stanford University, Stanford, CA	Latin American Studies
1983	M.D.	Stanford University, Stanford, CA	Medicine
1983-1984	Intern	Pacific Medical Center, San Francisco, CA	Medicine
1984-1987	Resident	Wilmer Eye Institute, Johns Hopkins Hospital	Ophthalmology
1991	M.P.H.	Johns Hopkins School of Hygiene and Public Health	Public Health

**Professional Experience:**

1976-1978	Field Assistant	Division of Ornithology, Department of Biology, Yale University, Yale Peabody Museum of Natural History, New Haven, Connecticut
1978-1983	Technician	Stanford Eye Bank, Division of Ophthalmology, Department of Surgery, Stanford University Medical Center, Stanford, California
1984-1985	Assistant Resident	Department of Ophthalmology, Wilmer Eye Institute, The Johns Hopkins University, Baltimore, Maryland
1985-1987	Resident	Department of Ophthalmology, Wilmer Eye Institute, The Johns Hopkins University, Baltimore, Maryland
1987-1990	Instructor	Department of Ophthalmology, Wilmer Eye Institute, The Johns Hopkins University, Baltimore, Maryland
1991-1997	Assistant Professor	Department of Ophthalmology, Wilmer Eye Institute, The Johns Hopkins University, Baltimore, Maryland Department of Molecular Microbiology and Immunology (joint), The Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland
1993-1997	Assistant Professor	Department of International Health (joint) Division of Human Nutrition, The Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland
1997-2006	Associate Professor	Department of Ophthalmology, Wilmer Eye Institute, The Johns Hopkins University, Baltimore, Maryland Department of Molecular Microbiology and Immunology (joint), The Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland Department of International Health (joint), Division of Human Nutrition, The Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland
2006-present	Professor	Department of Ophthalmology, Wilmer Eye Institute, The Johns Hopkins University, Baltimore, Maryland Department of Molecular Microbiology and Immunology (joint), The Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland Department of International Health (joint), Division of Human Nutrition, The Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland

## RESEARCH ACTIVITIES

### Peer-reviewed original research articles

1. **Semba RD**, Day SH, Spencer WH. Conjunctival nodules associated with onchocerciasis. *Archives of Ophthalmology* 1985; 103: 823-824.
2. **Semba RD**, Donnelly JJ, Rockey JH, Lok JB, Sakla AA, Taylor HR. Experimental ocular onchocerciasis in cynomolgus monkeys. II. Chorioretinitis elicited by intravitreal *Onchocerca lienalis* microfilariae. *Investigative Ophthalmology and Visual Science* 1988; 29: 1642-1655.
3. Donnelly JJ, **Semba RD**, Xi MS, Young E, Taylor HR, Rockey JH. Experimental ocular onchocerciasis in cynomolgus monkeys. III. Roles of IgG and IgE antibody and autoantibody and cell-mediated immunity in the chorioretinitis elicited by intravitreal *Onchocerca lienalis* microfilariae. *Tropical Medicine and Parasitology* 1988; 39: 111-116.
4. Taylor HR, **Semba RD**, Newland HS, Keyvan-Larijani E, White A, Dukuly Z, Greene BM. Ivermectin treatment of patients with severe ocular onchocerciasis. *American Journal of Tropical Medicine and Hygiene* 1989; 40: 494-500.
5. **Semba RD**, Murphy RP, Newland HS, White A, Awadzi K, Greene BM, Taylor HR. Longitudinal study of the posterior segment lesion of onchocerciasis. *Ophthalmology* 1990; 97: 1334-1341.
6. Keenum DG, **Semba RD**, Wirasasmita S, Natadisastra G, Muhilal, West KP Jr, Sommer A. Assessment of vitamin A status by a disk applicator for conjunctival impression cytology. *Archives of Ophthalmology* 1990; 108: 1436-1441.
7. **Semba RD**, Wirasasmita S, Natadisastra G, Muhilal, Sommer A. Response of Bitot's spots in preschool children to vitamin A treatment. *American Journal of Ophthalmology* 1990; 110: 416-420.
8. **Semba RD**, Donnelly JJ, Young E, Green WR, Scott A, Taylor HR. Experimental ocular onchocerciasis in cynomolgus monkeys. IV. Chorioretinitis elicited by *Onchocerca volvulus* microfilariae. *Investigative Ophthalmology and Visual Science* 1991; 32: 1499-1507.
9. **Semba RD**, Muhilal, Scott AL, Natadisastra G, Wirasasmita S, Mele L, West KP Jr, Sommer A. Depressed immune response to tetanus in children with vitamin A deficiency. *Journal of Nutrition* 1992; 122: 101-107.
10. **Semba RD**, Muhilal, West KP Jr, Winget M, Natadisastra G, Scott AL, Sommer A. Effect of vitamin A supplementation on hematological indicators of iron metabolism and nutritional status in children. *Nutrition Research* 1992; 12: 469-478.
11. **Semba RD**, Muhilal, Ward BJ, Griffin DE, Scott AL, Natadisastra G, West KP Jr, Sommer A. Abnormal T-cell subset proportions in vitamin A-deficient children. *The Lancet* 1993; 341: 5-8.
12. **Semba RD**, Graham NMH, Caiaffa WT, Clement L, Vlahov D. Increased mortality associated with vitamin A deficiency during HIV-1 infection. *Archives of Internal Medicine* 1993; 153: 2149-2154.

13. **Semba RD**, Muhilal, Scott AL, Natadisastra G, West KP Jr, Sommer A. Effect of vitamin A supplementation on IgG subclass responses to tetanus toxoid in children. *Clinical and Diagnostic Laboratory Immunology* 1994; 1: 172-175.
14. **Semba RD**, Miotti P, Chipangwi J, Saah A, Canner J, Dallabetta G, Hoover DR. Maternal vitamin A deficiency and mother-to-child transmission of HIV-1. *The Lancet* 1994; 343: 1593-1597.
15. **Semba RD**, Caiaffa WT, Graham NMH, Cohn S, Vlahov D. Vitamin A deficiency and wasting as predictors of mortality in HIV-infected injection drug users. *Journal of Infectious Diseases* 1995; 171: 1196-1202.
16. **Semba RD**, Munasir Z, Beeler J, Akib A, Audet S, Muhilal, Sommer A. Reduced seroconversion to measles in infants given vitamin A with vaccination. *The Lancet* 1995; 345: 1330-1332.
17. **Semba RD**, Muhilal, Soesatio B, Natadisastra G. Decline of admissions for xerophthalmia to Cicendo Eye Hospital, Bandung, Indonesia, 1981-1992. *International Ophthalmology* 1995; 19: 39-42.
18. Schaumberg DA, Linehan M, Hawley G, O'Connor J, Dreyfuss M, **Semba RD**. Vitamin A deficiency in the South Pacific. *Public Health* 1995; 109: 311-317.
19. **Semba RD**, Miotti PG, Chipangwi JD, Liomba G, Yang LP, Saah A, Dallabetta G, Hoover DR. Infant mortality and maternal vitamin A deficiency during HIV infection. *Clinical Infectious Diseases* 1995; 21: 966-972.
20. **Semba RD**, Park SW, Royal W, Griffin DE. Vitamin A deficiency and T-cell subpopulations in HIV-infected adults. *Nutrition Research* 1996; 16: 915-923.
21. Hoover DR, Peng Y, Saah A, **Semba RD**, Detels RR, Rinaldo CR, Phair JP. Occurrence of cytomegalovirus retinitis after human immunodeficiency virus immunosuppression. *Archives of Ophthalmology* 1996; 114: 821-827.
22. **Semba RD**, Bulterys M, Munyeshuli V, Gatsinzi T, Saah A, Chao A, Dushimimana A. Vitamin A deficiency and T-cell subpopulations in children with meningococcal disease. *Journal of Tropical Pediatrics* 1996; 42: 287-290.
23. Schaumberg DA, O'Connor J, **Semba RD**. Risk factors for xerophthalmia in the Republic of Kiribati. *European Journal of Clinical Nutrition* 1996; 50: 761-764.
24. **Studies of Ocular Complications of AIDS Research Group** in Collaboration with the AIDS Clinical Trials Group. Combination foscarnet and ganciclovir therapy vs monotherapy for the treatment of relapsed cytomegalovirus retinitis in patients with AIDS. The cytomegalovirus retreatment trial. *Archives of Ophthalmology* 1996; 114: 23-33.
25. Jabs DA, Dunn JP, Enger C, Forman M, Bressler N, Charache P, and the **CRVR Research Group**. Cytomegalovirus retinitis and viral resistance. *Archives of Ophthalmology* 1996; 114: 809-814.
26. Wu AW, Coleson LC, Holbrook JT, Jabs DA, **Studies of Ocular Complications of AIDS**

- Research Group.** Measuring visual function and quality of life in patients with cytomegalovirus retinitis: development of a questionnaire. *Archives of Ophthalmology* 1996; 114: 841-847.
27. **Studies of Ocular Complications of AIDS Research Group** in collaboration with the AIDS Clinical Trials Group. Clinical vs photographic assessment of treatment of cytomegalovirus retinitis. Foscarnet-Ganciclovir Cytomegalovirus Retinitis Trial Report 8. *Archives of Ophthalmology* 1996; 114: 848-855.
28. **Studies of Ocular Complications of AIDS Research Group** in collaboration with the AIDS Clinical Trials Group. Assessment of cytomegalovirus retinitis: clinical evaluation vs centralized grading of fundus photographs. *Archives of Ophthalmology* 1996; 114: 791-805.
29. **Semba RD**, Farzadegan H, Vlahov D. Vitamin A levels and human immunodeficiency virus load in injection drug users. *Clinical and Diagnostic Laboratory Immunology* 1997; 4: 93-95.
30. Greenberg BL, **Semba RD**, Vink PE, Farley JJ, Sivapalasingam M, Steketee RW, Thea DM, Schoenbaum EE. Vitamin A deficiency and maternal-infant transmission of human immunodeficiency virus in two metropolitan areas in the United States. *AIDS* 1997; 11: 325-332.
31. **Semba RD**, Miotti PG, Chiphangwi JD, Liomba G, Yang LP, Wu CO, Hoover DR. Maternal vitamin A deficiency and child growth failure during human immunodeficiency virus infection. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology* 1997; 14: 219-222.
32. Tang AM, Graham NMH, **Semba RD**, Saah AJ. Association between serum vitamin A and E levels and HIV-1 disease progression. *AIDS* 1997; 11: 613-620.
33. **Study of Ocular Complications of AIDS Research Group** in Collaboration with the AIDS Clinical Trials Group. MSL-109 adjuvant therapy for cytomegalovirus retinitis in patients with acquired immunodeficiency syndrome. *Archives of Ophthalmology* 1997; 115: 1528-1536.
34. Cobra C, Muhilal, Kusnandi, Rustama D, Djatnika, Suwardi SS, Permaesih D, Muherdiyantiningsih, Martuti S, **Semba RD**. Infant survival is improved by oral iodine supplementation. *Journal of Nutrition* 1997; 127: 574-578.
35. **Studies of Ocular Complications of AIDS Research Group** in collaboration with the AIDS Clinical Trials Group. Parenteral cidofovir for cytomegalovirus retinitis in patients with AIDS: the HPMPC peripheral cytomegalovirus retinitis trial. A randomized, controlled trial. *Annals of Internal Medicine* 1997; 126: 264-274.
36. **Studies of Ocular Complications of AIDS Research Group** in collaboration with the AIDS Clinical Trials Group. Rhegmatogenous retinal detachment in patients with cytomegalovirus retinitis: the foscarnet-ganciclovir cytomegalovirus retinitis trial. *American Journal of Ophthalmology* 1997; 124: 61-70.
37. **Semba RD**, Akib A, Beeler J, Munasir Z, Permaesih D, Muherdiyantiningsih, Komala, Martuti S, Muhilal. Effect of vitamin A supplementation on measles vaccination in nine-month-old infants. *Public Health* 1997; 111: 245-247.
38. Shalaby IA, Dunn JP, **Semba RD**, Jabs DA. Syphilitic uveitis in HIV-infected patients. *Archives of Ophthalmology* 1997; 115: 469-473.

39. Greenberg BL, **Semba RD**, Schoenbaum E, Klein RS. Vitamin A deficiency among former and current injecting drug users in Bronx, New York. *Nutrition Research* 1997; 17: 785-796.
40. Tay-Kearney ML, Enger C, **Semba RD**, Royal W, Dunn JP, Jabs DA. T-cell subsets and CMV retinitis in HIV-infected patients. *Journal of Infectious Diseases* 1997; 176: 790-794.
41. Enger C, Jabs DA, Dunn JP, Forman MS, Bressler NM, Margolick JB, Charache P, and the **CRVR Research Group**. Viral resistance and CMV retinitis: design and methods of a prospective study. *Ophthalmic Epidemiology* 1997; 4: 41-48.
42. **Studies of Ocular Complications of AIDS Research Group** in collaboration with the AIDS Clinical Trials Group. MSL-109 adjuvant therapy for cytomegalovirus retinitis in patients with acquired immunodeficiency syndrome: the Monoclonal Antibody Cytomegalovirus Retinitis Trial. *Archives of Ophthalmology* 1997; 115: 1528-1536.
43. **Studies of Ocular Complications of AIDS Research Group** in collaboration with the AIDS Clinical Trials Group. Cytomegalovirus (CMV) culture results, drug resistance, and clinical outcome in patients with AIDS and CMV retinitis treated with foscarnet or ganciclovir. *Journal of Infectious Diseases* 1997; 176: 50-58.
44. **Studies of Ocular Complications of AIDS Research Group** in collaboration with the AIDS Clinical Trials Group. Foscarnet-Ganciclovir Cytomegalovirus Retinitis Trial. 5. Clinical features of cytomegalovirus retinitis at diagnosis. *American Journal of Ophthalmology* 1997; 124: 141-157.
45. **Semba RD**, Lyles CM, Margolick J, Caiaffa WT, Farzadegan H, Cohn S, Vlahov D. Vitamin A supplementation and human immunodeficiency virus load in injection drug users. *Journal of Infectious Diseases* 1998; 177: 611-616.
46. **Semba RD**, Miotti PG, Lan Y, Chipangwi JD, Hoover DR, Dallabetta GA, Yang LP, Saah AJ. Maternal serum lactoferrin and vertical transmission of HIV. *AIDS* 1998; 12: 331-332.
47. Jabs DA, Enger C, Dunn JP, and Forman M, for the **CMV Retinitis and Viral Resistance Study Group**. Cytomegalovirus retinitis and viral resistance: ganciclovir resistance. *Journal of Infectious Diseases* 1998; 177: 770-773.
48. Lewallen S, Taylor TE, Molyneux ME, **Semba RD**, Wills BA, Courtright P. Association between measures of vitamin A and the ocular fundus findings in cerebral malaria. *Archives of Ophthalmology* 1998; 116: 293-296.
49. **Semba RD**, Miotti PG, Chipangwi JD, Yang LP, Saah A, Hoover DR. Maternal vitamin A deficiency and infant mortality in Malawi. *Journal of Tropical Pediatrics* 1998; 44: 232-234.
50. Park SW, Royal W, **Semba RD**, Wiegand G, Griffin DE. Expression of adhesion molecules and CD28 on T lymphocytes during human immunodeficiency virus infection. *Clinical and Diagnostic Laboratory Immunology* 1998; 5: 583-587.
51. Jabs DA, Enger C, Forman M, Dunn JP, for the **CMV Retinitis and Viral Resistance Study Group**. Incidence of foscarnet resistance and cidofovir resistance in patients treated for cytomegalovirus retinitis. *Antimicrobial Agents & Chemotherapy* 1998; 42: 2240-2244.

52. Rwangabwoba JM, Fischman H, **Semba RD**. Serum vitamin A levels during tuberculosis and human immunodeficiency virus infection. *International Journal of Tuberculosis and Lung Disease* 1998; 2: 771-773.
53. Thorne JE, Jabs DA, Vitale S, Miller T, Dunn JP, **Semba RD**. Catheter complications in AIDS patients treated for cytomegalovirus retinitis. *AIDS* 1998; 12: 2321-2327.
54. Jabs DA, Enger C, Dunn JP, Forman M, Hubbard L, for the **CMV Retinitis and Viral Resistance Study Group**. Cytomegalovirus retinitis and viral resistance: 3. Culture results. *American Journal of Ophthalmology* 1998; 126: 543-549.
55. **Semba RD**. Vitamin A as “anti-infective” therapy, 1920-1940. *Journal of Nutrition* 1999; 129: 783-791.
56. Taffs RE, Enterline JC, Rusmil K, Muhilal, Suwardi SS, Rustama D, Djatnika, Cobra C, **Semba RD**, Cohen N, Asher DM. Oral iodine supplementation does not reduce neutralizing-antibody responses to oral poliovirus vaccine. *Bulletin of the World Health Organization* 1999; 77: 484-491.
57. Lan Y, Kumwenda N, Taha TF, Chiphangwi JD, Miotti PG, Mtimavalye L, Broadhead R, van der Hoeven L, Hoover DR, **Semba RD**. Carotenoid status of pregnant women with and without HIV infection in Malawi. *East African Medical Journal* 1999; 76: 133-137.
58. Shankar AH, Genton B, **Semba RD**, Wu L, Baisor M, Paino J, Tamja S, Wabanange W, Tielsch J, Alpers M, West KP Jr. Effect of vitamin A supplementation on morbidity due to *Plasmodium falciparum* in young children in Papua New Guinea: A randomized trial. *The Lancet* 1999; 354: 203-209.
59. **Semba RD**, Kumwenda N, Hoover DR, Taha TE, Quinn TC, Mtimavalye L, Biggar R, Broadhead R, Miotti PG, Sokoll L, van der Hoeven L, Chiphangwi JD. Human immunodeficiency virus load in breast milk, mastitis, and mother-to-child transmission of human immunodeficiency virus type 1. *Journal of Infectious Diseases* 1999; 180: 93-98.
60. **Semba RD**, Kumwenda N, Taha TE, Hoover DR, Lan Y, Eisinger W, Mtimavalye L, Broadhead R, Miotti PG, van der Hoeven L, Chiphangwi JD. Mastitis and immunological factors in breast milk of lactating women in Malawi. *Clinical and Diagnostic Laboratory Immunology* 1999; 6: 671-674.
61. Burns DN, FitzGerald G, **Semba RD**, Hershow R, Zorilla C, Pitt J, Hammill H, Cooper ER, Fowler MG, Landesman S. Vitamin A deficiency and other nutritional indices during pregnancy in human immunodeficiency virus (HIV-1) infection: prevalence, clinical correlations, and outcome. *Clinical Infectious Diseases* 1999; 29: 328-334.
62. **Semba RD**, Muhilal, Mohgaddam NEG, Munasir Z, Akib A, Permaesih D, Muherdiyantiningsih, Osterhaus A. Integration of vitamin A supplementation with the Expanded Program on Immunization does not affect seroconversion to oral poliovirus vaccine in infants. *Journal of Nutrition* 1999; 129: 2203-2205.
63. **Semba RD**, Kumwenda N, Taha TE, Hoover DR, Quinn TC, Lan Y, Mtimavalye L, Broadhead R, Miotti PG, van der Hoeven L, Chiphangwi JD. Mastitis and immunological factors in breast

- milk of human immunodeficiency virus-infected women. *Journal of Human Lactation* 1999; 15: 301-306.
64. **Semba RD.** Théophile Roussel and the elimination of pellagra from 19th century France. *Nutrition* 2000; 16: 231-233.
  65. Tang AM, Smit E, **Semba RD**, Lyles CM, Shah N, Li D, Vlahov D. Improved antioxidant status among HIV-infected injection drug users on potent antiretroviral therapy. *Journal of Acquired Immunodeficiency Syndromes* 2000; 23: 321-326.
  66. **Studies of the Ocular Complications of AIDS Research Group** in Collaboration with the AIDS Clinical Trials Group. Long-term follow-up of patients with AIDS treated with parenteral zidovudine for cytomegalovirus retinitis: the HPMPC Peripheral Cytomegalovirus Retinitis Trial. *AIDS* 2000; 14: 1571-1581.
  67. Almekinder J, Manda W, Soko D, Lan Y, Hoover DR, **Semba RD.** Evaluation of plasma retinol-binding protein as a surrogate measure for plasma retinol levels. *Scandinavian Journal of Clinical & Laboratory Investigation* 2000; 60: 199-204.
  68. Holbrook JT, Davis MD, Hubbard LD, Martin BK, Holland GN, Jabs DA, Gilpin AK, Meinert CL, Reshef DS, for the **Studies of the Ocular Complications of AIDS Research Group.** Risk factors for advancement of cytomegalovirus retinitis in patients with acquired immunodeficiency syndrome. *Archives of Ophthalmology* 2000; 118: 1196-1204.
  69. **Semba RD**, Muhilal, West Jr. KP, Natadisastra G, Eisinger W, Lan Y, Sommer A. Hyporetinolemia and acute phase proteins in children with and without xerophthalmia. *American Journal of Clinical Nutrition* 2000; 72: 146-153.
  70. **Semba RD**, Garrett E, Johnson B, Guralnik JM, Fried LP. Vitamin D deficiency among older women with and without disability. *American Journal of Clinical Nutrition* 2000; 72: 1529-1534.
  71. French AL, Kirstein LM, Massad LS, **Semba RD**, Minkoff H, Landesman S, Palefsky J, Young M, Anastos K, Cohen MH. The association of vitamin A deficiency with cervical squamous intraepithelial lesions in HIV-infected women. *Journal of Infectious Diseases* 2000; 182: 1084-1089.
  72. **Semba RD**, Kumwenda N, Hoover DR, Taha ET, Mtimavalye L, Lema V, Broadhead R, Eisinger W, Miotti PG, Chipangwi JD. Assessment of iron status using transferrin receptor in pregnant women with and without human immunodeficiency virus infection in Malawi. *European Journal of Clinical Nutrition* 2000; 54: 872-877.
  73. **Semba RD**, Kumwenda N, Taha TE, Mtimavalye L, Broadhead R, Miotti PG, Eisinger W, Hoover D, Chipangwi JD. Plasma and breast milk vitamin A as indicators of vitamin A status in pregnant women. *International Journal for Vitamin and Nutrition Research* 2000; 70: 271-277.
  74. **Semba RD**, Taha TE, Kumwenda N, Mtimavalye L, Broadhead R, Miotti PG, Chipangwi JD. Iron status and indicators of HIV disease severity among pregnant women in Malawi. *Clinical Infectious Diseases* 2001; 32: 1496-1499.

75. **Semba RD**, Shah N, Vlahov D. Improvement of anemia among HIV-infected injection drug users on highly active antiretroviral therapy. *Journal of Acquired Immune Deficiency Syndromes* 2001; 26: 315-319.
76. Metzger AM, Mukasa G, Shankar AH, Ndeezi G, Melikian G, **Semba RD**. Antioxidant micronutrients and acute malaria in children in Kampala, Uganda. *American Journal of Tropical Medicine and Hygiene* 2001; 65: 115-119.
77. Holbrook JT, Meinert CL, Jabs DA for the **Studies of the Ocular Complications of AIDS Research Group**. Patient notification and follow-up after suspension of treatment protocols: experience from four clinical trials of treatments for AIDS-related CMV retinitis. *Controlled Clinical Trials* 2001; 22: 62-68.
78. Mehendale SM, Shepherd ME, Brookmeyer RS, **Semba RD**, Divekar AD, Gangakhedkar RR, Joshi S, Paranjape RS, Risbud AR, Gadkari DA, Bollinger RC. Low carotenoid concentrations and risk of HIV seroconversion in Pune, India. *Journal of Acquired Immune Deficiency Syndromes* 2001; 26: 352-359.
79. **Studies of the Ocular Complications of AIDS Research Group** in collaboration with the AIDS Clinical Trials Group. The ganciclovir implant plus oral ganciclovir versus parenteral cidofovir for the treatment of cytomegalovirus retinitis in patients with acquired immunodeficiency syndrome: the Ganciclovir Cidofovir Cytomegalovirus Retinitis Trial. *American Journal of Ophthalmology* 2001; 131: 457-467.
80. **Semba RD**, Kumwenda N, Taha TE, Mtimavalye L, Broadhead R, Garrett E, Miotti PG, Chipangwi J. Impact of vitamin A supplementation on anemia and plasma erythropoietin concentrations in pregnant women: a controlled clinical trial. *European Journal of Haematology* 2001; 66: 389-395.
81. Jabs DA, Martin BK, Forman MS, Dunn JP, Davis JL, Weinberg DV, Biron KK, and Baldanti F, for the **Cytomegalovirus Retinitis and Viral Resistance Study Group**. Mutations conferring ganciclovir resistance in a cohort of patients with acquired immunodeficiency syndrome and cytomegalovirus retinitis. *Journal of Infectious Diseases* 2001; 183: 333-337.
82. Melikian G, Mmiro F, Ndugwa C, Perry R, Jackson JB, Garrett E, Tielsch J, **Semba RD**. Relationship of vitamin A and carotenoid status to growth failure and mortality among human immunodeficiency virus-infected infants in Uganda. *Nutrition* 2001; 17: 567-572.
83. **Semba RD**, Munasir Z, Akib A, Melikian G, Permaesih D, Muherdiyantiningsih, Martuti S, Muhilal. Integration of vitamin A supplementation with the Expanded Programme on Immunization: lack of impact on morbidity or infant growth. *Acta Paediatrica* 2001; 90: 1107-1111.
84. **Semba RD**, Shah N, Klein RS, Mayer KH, Schuman P, Gardner LI, Vlahov D, HER (Human Immunodeficiency Virus Epidemiology Research) Study Group. Highly active antiretroviral therapy associated with improved anemia among HIV-infected women. *AIDS Patient Care STDS* 2001; 15: 473-480.
85. Holbrook JT, Meinert CL, Van Natta ML, Davis M, Hubbard L, Jabs DA for the **Studies of the Ocular Complications of AIDS**. Photographic measures of cytomegalovirus retinitis as

- surrogates of visual outcomes in treated patients. *Archives of Ophthalmology* 2001; 119: 554-563.
86. Shah S, Whalen C, Kotler DP, Melikian G, Mugerwa R, **Semba RD**. Severity of human immunodeficiency virus infection is associated with decreased phase angle, fat mass and body cell mass in adults with pulmonary tuberculosis infection in Uganda. *Journal of Nutrition* 2001; 131: 2843-2847.
  87. Nussenblatt V, Mukasa G, Metzger A, Ndeezi G, Garrett E, **Semba RD**. Anemia and interleukin-10, tumor necrosis factor alpha, and erythropoietin levels among children with acute uncomplicated *Plasmodium falciparum* malaria. *Clinical and Diagnostic Laboratory Immunology* 2001; 8: 1164-1170.
  88. Martin BK, Kaplin Gilpin AM, Jabs DA, Wu AW, for the **Studies of the Ocular Complications of AIDS Research Group**. Reliability, validity, and responsiveness of general and disease-specific quality of life measures in a clinical trial for cytomegalovirus retinitis. *Journal of Clinical Epidemiology* 2001; 54: 376-386.
  89. Verreault R, **Semba RD**, Volpato S, Ferrucci L, Fried LP, Guralnik JM. Low serum vitamin D does not predict new disability and loss in muscle strength in older women. *Journal of the American Geriatrics Society* 2002; 50: 912-917.
  90. **Semba RD**, Broadhead R, Taha TE, Totin D, Ricks MO, Kumwenda N. Erythropoietin response to anemia among human immunodeficiency virus-infected infants in Malawi. *Haematologica* 2001; 86: 1221-1222.
  91. Totin D, Ndugwa C, Mmiro F, Perry R, Jackson JB, **Semba RD**. Iron deficiency anemia is highly prevalent among human immunodeficiency virus-infected and uninfected infants in Uganda. *Journal of Nutrition* 2002; 132: 423-429.
  92. Davidson M, Min YI, Holbrook JT, Van Natta ML, Murphy R, Jabs DA, Welch W, Meinert CL for the **Studies of the Ocular Complications of AIDS Research Group**. Use of filgrastim as adjuvant therapy in patients with AIDS-related cytomegalovirus retinitis. *AIDS* 2002; 16: 757-765.
  93. **Semba RD**, Yuniar Y, Gamble MV, Natadisastra G, Muhilal. Assessment of vitamin A status of preschool children in Indonesia using plasma retinol-binding protein. *Journal of Tropical Pediatrics* 2002; 48: 84-87.
  94. Davidson M, Min YI, Holbrook JT, Van Natta M, Quinn TC, Murphy RL, Welch W, Jabs DA, Meinert CL for the **Studies of the Ocular Complications of AIDS (SOCA) Research Group**. Influence of filgrastim (granulocyte colony-stimulating factor) on human immunodeficiency virus type 1 RNA in patients with cytomegalovirus retinitis. *Journal of Infectious Diseases* 2002; 186: 1013-1018.
  95. Jabs DA, Kaplan Gilpin AM, Min YI, Erice A, Kempen JH, Quinn TC, for the **Studies of the Ocular Complications of AIDS Research Group**. HIV and cytomegalovirus viral load and clinical outcomes in AIDS and cytomegalovirus retinitis patients: Monoclonal Antibody Cytomegalovirus Retinitis Trial. *AIDS* 2002; 16: 877-887.

96. **Semba RD**, Shah N, Vlahov D. Risk factors and cumulative incidence of anaemia among HIV-infected injection drug users. *International Journal of AIDS & STDS* 2002; 13: 119-123.
97. **Semba RD**, Shah N, Klein RS, Mayer KH, Schuman P, Vlahov D, Human Immunodeficiency Virus Epidemiology Research Study Group. Prevalence and cumulative incidence of and risk factors for anemia in a multicenter cohort study of human immunodeficiency virus-infected and -uninfected women. *Clinical Infectious Diseases* 2002; 34: 260-266.
98. Jabs DA, Van Natta M, Kempen JH, Pavan PR, Lim J, Murphy R, Hubbard L, for the **Studies of the Ocular Complications of AIDS Research Group**. Characteristics of patients with cytomegalovirus retinitis in the era of highly active antiretroviral therapy. *American Journal of Ophthalmology* 2002; 133: 48-61.
99. French AL, Cohen MH, Gange SJ, Burger H, Gao W, **Semba RD**, Meyer III WA, Robison E, Anastos K. Vitamin A deficiency and genital viral burden in women infected with HIV-1. *The Lancet* 2002; 359: 1210-1212.
100. Clark TD, Mmiro F, Ndugwa C, Perry RT, Jackson JB, Melikian G, **Semba RD**. Risk factors and cumulative incidence of anemia among human immunodeficiency virus-infected children in Uganda. *Annals of Tropical Paediatrics* 2002; 22: 11-17.
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223. Alipanah N, Varadhan R, Ferrucci L, Sun K, Fried LP, **Semba RD**. Relationship of low serum carotenoids and selenium to grip strength over three years in older moderately to severely disabled community-dwelling women. (Submitted for publication).

224. Beck J, Ferrucci, L, Sun K, Fried LP, Varadhan R, Walston J, Guralnik JM, **Semba RD**. Circulating oxidized low-density lipoproteins are associated with overweight, obesity, and low serum carotenoids in older community-dwelling women. *Nutrition* (In press).
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2. **Semba RD**. Vitamin A supplementation for measles. *Medika* 1993; 11: 40-41. [Invited review]
3. **Semba RD**. Vitamin A, immunity, and infection. *Clinical Infectious Disease* 1994; 19: 489-499.
4. **Semba RD**. Linking vitamin A supplementation with childhood immunizations. *Journal of Nutritional Immunology* 1995; 4: 87-109. [Invited review]
5. **Semba RD**. Vitamin A and human immunodeficiency virus infection. *Proceedings of the Nutrition Society* 1997; 56: 459-469.
6. **Semba RD**. The role of vitamin A and related retinoids in immune function. *Nutrition Reviews* 1998; 56: S38-S48. [Invited review]
7. **Semba RD**. Overview of the potential role of vitamin A in mother-to-child transmission of HIV-1. *Acta Paediatrica* (Suppl) 1997; 421: 107-112.
8. **Semba RD**, Tang AM. Micronutrients and the pathogenesis of HIV infection. *British Journal of Nutrition* 1999; 81: 181-189. [Invited review]
9. **Semba RD**, Neville MC. Breast-feeding, mastitis, and HIV transmission: nutritional implications. *Nutrition Reviews* 1999; 57: 146-153.
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14. **Semba RD**, Gray GE. The pathogenesis of anemia during human immunodeficiency virus infection. *Journal of Investigative Medicine* 2001; 49: 225-239. [Invited review]

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17. **Semba RD**. The vitamin A and mortality paradigm: past, present, and future. *Scandinavian Journal of Nutrition* 2001; 45: 46-50.
18. **Semba RD**, Bloem MW. The anemia of vitamin A deficiency: epidemiology and pathogenesis. *European Journal of Clinical Nutrition* 2002; 56: 271-281.
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20. Nussenblatt V, **Semba RD**. Micronutrient malnutrition and the pathogenesis of malarial anemia. *Acta Tropica* 2002; 82: 321-337.
21. **Semba RD**, Juul SE. Erythropoietin in human milk: physiology and role in infant health. *Journal of Human Lactation* 2002; 18: 252-261.
22. **Semba RD**. The safety of daily oral vitamin A supplementation for individuals with retinitis pigmentosa. *Annals of Ophthalmology* 2002; 34: 194-198.
23. **Semba RD**. Iron deficiency anemia and the cycle of poverty among HIV-infected women in the inner city. *Clinical Infectious Diseases* 2003; 37 (Suppl 1): S105-S111.
24. Van Lettow M, Fawzi WW, **Semba RD**. Triple trouble: the role of malnutrition in tuberculosis and human immunodeficiency virus co-infection. *Nutrition Reviews* 2003; 61: 81-90.
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29. **Semba RD**, Luong VQ, Tandingan EB, Bloem MW, Thanh TTK. Ophthalmology in Vietnam: challenges in reducing the burden of blindness. (Submitted for publication).
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## Book Chapters and Monographs

1. **Semba RD.** Medical care and the survival of the Venezuelan Yanomami. IN: Colchester M (ed.) *The Health and Survival of the Venezuelan Yanoama*. International Work Group for Indigenous Affairs 53, Copenhagen, pp. 31-43, 1985.
2. Colchester M, **Semba RD.** The health and survival of the Yanoama Indians. IN: Colchester M (ed.) *The Health and Survival of the Venezuelan Yanoama*. International Work Group for Indigenous Affairs 53, Copenhagen, pp. 13-30, 1985.
3. Taylor HR, **Semba RD.** Eye manifestations. IN: Warren KS, Mahmoud AAF. (eds.) *Tropical and Geographical Medicine*, New York, McGraw-Hill, 1990, pp. 37-47.
4. Beltran F, Silva JC, **Semba RD.** *Manual de Evaluacion Oftalmologica en la Oncocercoses*, Pan American Health Organization, Washington, D.C., 1993.
5. Ward BJ, **Semba RD.** Vitamin A and HIV Infection. IN: Watson RR (ed.) *Nutrition and AIDS*, CRC Press, 1994.
6. **Semba RD.** Micronutrients and the pathogenesis of HIV/AIDS. IN: Fitzpatrick DW, Anderson JE, L'Abbe ML (eds.). *Proceedings of the 16th International Congress of Nutrition*. July 27-August 1, 1997, Montreal, Canadian Federation of Biological Sciences. Ottawa, Canada, 1998, pp. 349-351.
7. **Semba RD.** Impact of vitamin A on immunity and infection in developing countries. IN: Deckelbaum R, Bendich A (eds.). *Preventive Nutrition*, Humana Press, Totowa, New Jersey, 1997.
8. **Semba RD**, Smith JC. Vitamin A and the immune system. IN: Delves PJ (ed.). *Encyclopedia of Immunology*, Second Edition. Academic Press, London, 1998.
9. **Semba RD.** Vitamin A and immune function. IN: *Military Strategies for Sustainment of Nutrition and Immune Function in the Field*. Institute of Medicine, Washington, D.C. National Academy Press, 1999, pp. 279-288.
10. **Semba RD.** Nutritional blindness. IN: Albert DM, Jakobiec FA (eds.). *Principles and Practice of Ophthalmology*. Vol. 5, Second Edition, Philadelphia, W.B. Saunders, 2000, pp. 4760-4766.
11. **Semba RD.** Micronutrients and micronutrient replacement therapy. IN: Miller TL, Gorbach SL (eds.). *Nutritional Aspects of HIV Infection*. Arnold and Oxford University Press, New York, 1999.
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13. Font RL, Gutierrez Y, **Semba RD**, Marty AM. Ocular onchocerciasis. IN: Meyers WM, Neafie RC, Marty AM, Wear DJ (eds.). *Pathology of Infectious Diseases. Volume I. Helminthiases*. Armed Forces Institute of Pathology, Washington, D.C., 2000, pp. 307-318.
14. **Semba RD**. Iodine deficiency disorders. IN: **Semba RD**, Bloem NW (eds.). *Nutrition and Health in Developing Countries*. Humana Press, Totowa, New Jersey, 2001, pp. 343-363.
15. Whalen C, **Semba RD**. Tuberculosis. IN: **Semba RD**, Bloem NW (eds.). *Nutrition and Health in Developing Countries*. Humana Press, Totowa, New Jersey, 2001, pp. 209-235.
16. **Semba RD**. Nutrition and development: a historical perspective. IN: **Semba RD**, Bloem MW (eds.). *Nutrition and Health in Developing Countries*. Humana Press, Totowa, New Jersey, 2001, pp. 1-30.
17. **Semba RD**, Gray G. Human immunodeficiency virus infection. IN: **Semba RD**, Bloem MW (eds.). *Nutrition and Health in Developing Countries*. Humana Press, Totowa, New Jersey, 2001, pp. 237-266.
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19. **Semba RD**. Vitamin A and infectious diseases. IN: Livrea MA (ed.). *Vitamin A and Retinoids: An Update of Biological Aspects and Clinical Applications*. Birkhauser Verlag, Basel/Switzerland, 2000, pp. 97-108.
20. **Semba RD**. Vitamin A, carotenoids, and HIV infection. IN: Friis H (ed.). *Micronutrients and HIV Infection*. CRC Press, Boca Raton, FL, 2002, pp. 73-97.
21. **Semba RD**. Vitamin A, infection, and immune function. IN: Calder PC, Field CJ, Gill HS (eds.). *Nutrition and Immune Function*. CABI Publishing, New York NY, 2002, pp. 151-169.
22. **Semba RD**. Vitamin A. IN: Hughes DA, Bendich A, Darlington LG (eds.). *Diet and Human Immune Function*. Humana Press, Totowa, New Jersey, 2004, pp. 105-131.
23. **Semba RD**. Impact of micronutrient deficiencies on immune function. IN: Pettifor J, Zlotkin S (eds.). *Micronutrient Deficiencies During the Weaning Period and the First Years of Life*. Nestlé Nutrition Workshop Series, Volume 54, Philadelphia, Lippincott Williams & Wilkins, 2004, pp. 137-152.
24. **Semba RD**. Nutrition and infection. IN: Shils M, Shike E, Ross AC, Cabellero B, Cousin R. (eds). *Modern Nutrition in Health and Disease. Tenth edition*. Baltimore, Williams & Wilkins, 2006, pp 1401-1413.
25. **Semba RD**. The impact of improved nutrition on disease prevention. IN: Ward JW, Warren C (eds). *Silent Victories: the History and Practice of Public Health in Twentieth-Century America*. New York, Oxford University Press, 2006, pp. 163-192.
26. **Semba RD**. Nutritional blindness. IN: Albert DM, Miller J, Azar D, Blodi B (eds.). *Albert and Jakobiec's Principles and Practice of Ophthalmology*. Vol. 5, Third Edition, Philadelphia, W.B. Saunders, 2007, (In press).

27. Huang HY, Caballero B, Chang S, Alberg AJ, **Semba RD**, Schneyer C, Wilson RF, Cheng TY, Prokopowicz G, Barnes G, Vassy J, Bass EB. *Multivitamin/Mineral Supplements in the Prevention of Chronic Disease*. Evidence Report/Technology Assessment No. 139. AHRQ Publication No. 06-E012. Rockville, MD, Agency for Healthcare Research and Quality, 2006.
28. **Semba RD**, Ferrucci L. Epidemiology and biology of aging. IN: Semba RD, Bloem MW (eds) *Nutrition and Health in Developing Countries. Second Edition*. Totowa, NJ, Humana Press (in press).
29. **Semba RD**. Nutrition and development: a historical perspective. IN: Semba RD, Bloem MW (eds) *Nutrition and Health in Developing Countries. Second Edition*. Totowa, NJ, Humana Press (in press).
30. Best C, **Semba RD**. Parental tobacco use and child malnutrition. IN: Semba RD, Bloem MW (eds) *Nutrition and Health in Developing Countries. Second Edition*. Totowa, NJ, Humana Press (in press).
31. **Semba RD**, Delange F. Iodine deficiency disorders. IN: Semba RD, Bloem MW (eds) *Nutrition and Health in Developing Countries. Second Edition*. Totowa, NJ, Humana Press (in press).
32. Ramakrishan U, **Semba RD**. Iron deficiency. IN: Semba RD, Bloem MW (eds) *Nutrition and Health in Developing Countries. Second Edition*. Totowa, NJ, Humana Press (in press).
33. **Semba RD**, Victora C. Neonatal mortality. IN: Semba RD, Bloem MW (eds) *Nutrition and Health in Developing Countries. Second Edition*. Totowa, NJ, Humana Press (in press).
34. **Semba RD**. Selenium. IN: Kraemer K, Zimmerman M (eds) *Nutritional Anemia*. Basel, Sight and Life Press, 2007, pp. 189-197.
35. de Pee S, Bloem MW, Moench-Pfanner R, **Semba RD**. Making programs for controlling anaemia more successful. IN: Kraemer K, Zimmerman M (eds) *Nutritional Anemia*. Basel, Sight and Life Press, 2007, pp. 257-267.

#### **Books and Textbooks**

1. **Semba RD**, Bloem MW. (eds.). *Nutrition and Health in Developing Countries*. Humana Press, Totowa, New Jersey, 2001.
2. **Semba RD**. *Handbook of Nutrition and Ophthalmology*. Humana Press, Totowa, New Jersey, 2007.
3. **Semba RD**, Bloem MW (eds). *Nutrition and Health in Developing Countries. Second Edition*. Humana Press, Totowa, New Jersey (In press, May 2008).
4. **Semba RD**. *Catalogue of the William Holland Wilmer Rare Book Collection*. (In progress).

#### **Book Reviews**

1. **Semba RD.** Life, liberty, and the pursuit of vitamins. [Review of Apple RD. *Vitamina: Vitamins in American Culture*. Rutgers University Press, New Brunswick, NJ, 1996] *The Lancet* 1997; 349: 658.
2. **Semba RD.** Lessons in the rice bowl. [Review of Carpenter KJ. *Beriberi, white rice, and vitamin B: a disease, a cause, and a cure*. Berkeley, University of California Press, 2000] *The Lancet* 2000; 356: 172-173.
3. **Semba RD.** Book Review. [Review of Kraut A. *Goldberger's War: The Life and Work of a Public Health Crusader*. New York, Hill & Wang, 2003] *American Journal of Clinical Nutrition* 2004; 80: 531-532.

### **Book Exhibits**

1. **Semba RD.** Curator of "A Perfect Vision: The William Holland Wilmer Rare Book Collection" at the George Peabody Library, Baltimore, Maryland, April-June 2006. First public exhibit of rare incunabula and early books on astronomy, optics, medicine, and ophthalmology collected by Dr. Wilmer and bequeathed to the Wilmer Institute in the 1930s.

### **Editorial Activities**

1995-1997	Editorial Board, <i>Journal of Nutrition</i>
1998-present	Editorial Advisory Board, Vitamins and Micronutrients, <i>Nutrition</i>
2005-present	Associate Editor, <i>Journal of Gerontology Medical Sciences</i>

Journal peer reviewer: *The Lancet, Journal of Infectious Diseases, Journal of Pediatrics, Clinical Infectious Diseases, Journal of Nutrition, Nutrition, Haematologica, European Journal of Clinical Nutrition, American Journal of Clinical Nutrition, Public Health Nutrition, Clinical Trials, Tropical Medicine and International Health, International Journal of Vitamin and Nutrition Research, Journal of Gerontology A Biological Sciences Medical Sciences*

### **CLINICAL ACTIVITIES**

#### **Certification**

1984	Diplomate of the National Board of Medical Examiners (267313).
1987	Physician and Surgeon, Board of Medical Examiners of the State of Maryland (D35251).
1991	Diplomate of the American Board of Ophthalmology

#### **Service Responsibilities**

1989-2007	General Ophthalmology, Comprehensive Eye Service
1993-2007	Ocular Immunology Division
2008-present	General Ophthalmology, Wilmer Eye Institute at Green Spring Station

### **ORGANIZATIONAL ACTIVITIES**

### Professional Societies, since:

1984	American Academy of Ophthalmology
1984	Wilmer Residents Association
1994	American Institute of Nutrition
1994	American Society for Clinical Nutrition
1995-2003	American Association for the History of Medicine
1996	Society for International Nutrition Research
1996	Nutrition Society of the United Kingdom
1999-2007	International Society for Research on Human Milk and Lactation
2002	Gerontological Society of America

### Advisory Committees/Review Groups/Consultantships:

1992	World Health Organization Task Force Group for the Epidemiological Characterization of Onchocerciasis, Pan American Health Organization, Washington, D.C.
1999-2002	Board of Directors, Dwight Hall Center for Social Justice, Yale University
2002-present	Women's Eye Health Task Force, Schepens Eye Research Institute, Harvard Medical School
2003-2007	History of Nutrition Committee, American Society for Nutritional Sciences
2004-2006	Regional Advisor, Helen Keller International Asia-Pacific Region
2006	Consultant, World Food Programme, Rome, Italy
2007	Aging Systems and Geriatrics Study Section (ASG), Center for Scientific Review, National Institutes of Health

## RECOGNITION

### Awards

1973	Japanese-American Citizens League Scholarship Award
1978	<i>Cum laude</i> , Yale College
1978	Honors and Distinction in Biology, Yale College
1978	William R. Belknap Prize for Excellence in Biology, Yale College, Biology Department Prize
1980	Orinoco Foundation Fellowship (Tropical Medicine, Venezuela), Stanford University
1982	Tinker Foundation Graduate Fellowship in Latin American Studies
1987	Physician Scientist Award, National Institutes of Health (1987-1992)
1992	Eli Lilly Clinician Scientist Award, Johns Hopkins University School of Medicine (1992-1994)
2002	John Kinney/Nestle Pediatric Nutrition Award, given to the research team for the scientific paper: Melikian G, Mmiro F, Ndugwa C, Perry R, Jackson JB, Garrett E, Tielsch J, Semba RD. Relationship of vitamin A and carotenoid status to growth failure and mortality among human immunodeficiency virus-infected infants in Uganda. <i>Nutrition</i> 2001; 17: 567-572.
2006	Lew R. Wasserman Merit Award, Research to Prevent Blindness
2007	Inaugural W. Richard Green Professor of Ophthalmology