Dr. Govinda S. Visvesvara
Doctor
National Center for Infectious Diseases, USA

CURRICULUM VITAE

Name: Govinda S. Visvesvara

RETIRED

Previous Position: Microbiologist
Division of Foodborne, Waterborne & Environmental Diseases
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention
1600, Clifton Road, Atlanta, Georgia 30333

Date and Place of Birth: September 28, 1931 – Bangalore City, India

Citizenship: U.S.A.

Education:

1967–1972: University of California, Berkeley, Ph.D. (Protozoology, Zoology).
1953–1955: University of Nagpur, Zoology. M.Sc. (Zoology).
1950–1952: University of Nagpur, Chemistry, Botany and Zoology. B.Sc.
1948–1950: University of Mysore, Chemistry, Botany and Zoology.

Professional Experience:

1982–1988: Adjunct Associate Professor, University of North Carolina.
1972–2013: Lecturer, CDC Training Activity.
l972– 2013: Microbiologist, Centers for Disease Control & Prevention, Atlanta, Georgia.
1970–1972: Teaching Assistant/Associate, University of California, Berkeley.
1968–1970: Research Assistant, Naval Biological Laboratory and Department of Zoology, University California, Berkeley.
1963–1967: Junior Scientific Officer, Defense Research Lab, Gwalior, India.

1961-1963: Research Assistant, Central Public Health Engineering Research Institute, Nagpur, India.

1956-1961: Lecturer in Zoology, D.H.S.K. College, Dibrugarh, Assam, India.

Doctoral Students Supervised:

Elizabeth Franko, University of North Carolina, Dr.P.H., 1984

Emery Plourde, University of North Carolina, Dr.P.H., 1986

Sherif Abaza, M.D., Suez Canal University, Suez Canal, Egypt, Ph.D., 1991

Hercules Moura, M.D., Rio de Janeiro University, RJ, Brazil, Ph.D., 1992

Fernando Sodre, M.Sc. Rio de Janeiro University, RJ, Brazil (1997)

Post Doctoral Students Supervised:

Ifeyani Udezulu, Ph.D. Morehouse School of Medicine, Atlanta, GA (1989-1991)

Gian Piero Croppo, M.D. Istituto Superiore di Sanita, Rome, Italy (1992-1996)

Carmen de Aguila, Ph.D. Universidade San Pablo CEU, Madrid, Spain (1996)

Simonetta Gatti, Ph.D. University of Pavia, Pavia, Italy (1996)

Fernando Izquierdo, Ph.D. Universidade San Pablo CEU, Madrid, Spain (2002)

Jose Luis Tapia-Malagon, M.D. INDRE, Mexico (2004)

Hélène Yera, Professor, Parasitology/Mycology Department, Paris Descartes University,

75014 Paris, France (2012-2013)

Professional Associations:

Fellow – American Academy of Microbiologists; International Society of Protistologists American Association for Microbiology; American Society of Parasitologists etc

Honors:

Received A Tribute - Govinda S. Visvesvara: A Tribute.. J Eukaryotic Microbiol, 1-2; 2014.

Received Lifetime Scientific Achievement Award - 2012

Received the"Golden Pen Award" from Florida Environmental Health Association – 2012

Received William C. Watson, Jr. Medal of Excellence for outstanding public health service and leadership in understanding the biology, diagnostics, and public health impact of free-living amebae and other protozoan pathogens 2011 .

Received NCZVED Award of Excellence for research on *Acanthamoeba* keratitis outbreak – 2008

Received NCZVED Award of Excellence for Laboratory Science Mentorship – 2008

Cited as"a Leader in Free-Living Amoeba Biology" and a new species of ameba, Monopylocystis visvesvarai was created - 2008.

Received Secretary of the US department of Health and Human Services Award for "Distinguished Service as a member of the "CDC Cyclospora Team" for protecting the health of US people -1997.

Received "Appreciation Award" from American Association of Ophthalmic Pathologists – 1995

Received National Center for Infectious Diseases Recognition Award, 1994

Received Fulbright Travel Grant, 1967.

Received Smith-Mundt U.S. Government Scholarship, 1967-1968

Received University of California, Berkeley Scholarship Award, 1968.

Significant achievements:

Identified *Acanthamoeba* as the agent of *Acanthamoeba* keratitis in people who wear soft contact lenses, early 1980..

Established *Giardia intestinalis* in axenic medium and developed an immune-fluorescence test to determine the anti-*Giardia* antibody titers in human sera, 1980.

Discovered *Balamuthia mandrillaris*, a free-living ameba, as agent of meningoencephalitis in humans and other animals,.1990.

Discovered that *Naegleria fowleri* also causes primary amebic meningoencephalitis in

animals, 1997.

Developed a quick staining method to identify *Cyclospora* in fecal specimens, 1997.

Identified that *Brachiola algerae*, a mosquito parasite, causes keratitis and other infections in humans and developed an immunofluorescence test to identify *B. algerae* in human tissue, 2001.

Identified *Sappinia* as the agent of a human brain infection - 2001.

Discovered and named *Paravahlkampfia francinae* as the agent of a human brain infection – 2009

Ad Hoc Reviewer For:

A number of scientific journals including Journal of Protozoology; American Journal of Tropical Medicine and Hygiene; Science; Annals of Internal Medicine etc.

Published more than 60 Chapters, Review of Books, Foreword, and Editorials: A few of them listed below

.

Visvesvara GS. Book Review Singh B.W. 1975. Pathogenic and nonpathogenic amoebae. Halsted Press, Division of John Wiley and Sons, New York. p. 235. J. Protozool. 24:355, 1977.

Visvesvara GS. Chapter on Laboratory Diagnosis, in AMPHIZOIC AMOEBAE: HUMAN PATHOLOGY, E.G. Rondanelli, Ed. Puccin Nuova Libraria, Padova, Italy, pp. 201-223, 1987.

Visvesvara GS. Parasite culture: *Acanthamoeba* and *Naegleria* spp., In: Clinical Microbiology Procedures Handbook, (ed) H.D. Isenberg, American Society for Microbiology, Washington, D.C. pp. 7.9.2.1 – 7.9.2.8, 1992.

Visvesvara GS. In vitro culture of microsporidia of clinical importance. Clin Microbiol Rev 15: 401-413, 2002 (July).

Visvesvara GS, and Martinez AJ. Protozoa: Free-living amebae. In; (ed) J Cohen, WJ Powderly, Infectious Diseases, Mosby, London. 2003.

Visvesvara GS, Maguire JH. *Pathogenic and opportunistic free-living amebas*: *Acanthamoeba* spp., *Balamuthia mandrillaris, Naegleria fowleri, and Sappinia diploidea*. Chapter 95, pp. 1114-1125. In: Tropical Infectious Diseases, Vol. 2, RL Guerrant, DH Walker, PF Weller (eds), Tropical Infectious Diseases, Churchill Livingstone (Elsevier), 2006. (Feb)

Visvesvara GS and XIAO L *Anncallia* (*Brachiola*) Chapter 91, In: (ed) Dongyou Liu, Molecular Detection of Human Fungal Pathogens, CRC Press, 2011

Visvesvara GS. Pathogenic and Opportunistic Free-Living Amebae. Chapter 36, In: Manual of Clinical Microbiology Vol 2.10th ed; Versalovic J, Carroll KC, Funke G, Jorgensen JH, Landry ML, Warnock DW, (eds). ASM press, Washington DC., 2011, pp. 2139-2148

Visvesvara GS, Yoder JS, Beach MJ. Primary Amebic meningoencephalitis, Chapter 73 In: Jong EC, Stevens DL (eds), Netter's Infectious Diseases, Saunders Elsevier, 2012:442-447.

Visvesvara GS. Pathogenic and Opportunistic Free-Living Ameba Infections, Chapter 102, In: Hunter's Tropical Medicine and Emerging Infectious Diseases, 9th edition ,Oxford, Elsevier, 2012; 776-779.

Visvesvara GS and Qvarnstrom Y. *Balamuthia* In:Liu D (ed) Molecular Detection of Human Parasitic Pathogens, Chapter 3, CRC Press, Taylor & Francis, Boca Raton, FL, 2012:25-38.

Visvesvara GS . Pathogenic and Opportunistic Free-Living Amoebae: Agents of Human and Animal Disease.. Chapter 50, In: Manson's Tropical Diseases, eds.Farrar J, Hotez PJ, Junghanss T,Kang G, Lalloo D, White NJ. 683-691, 2014.

Participated in more than 50 Invited Lectures at International Conferences, Symposia, and Workshops. A few of them listed below

Visvesvara GS, 1989. Invited to present Keynote address – "Epidemiology of Free-Living Ameba Infections" at the 5th International Conference on the Biology and Pathiogenicity of Free-living amoebae, Brussels, Belgium, August 7-11, 1989.

Visvesvara GS. 1990. Invited to participate and present a paper on the "Biology of *Acanthamoeba* and Epidemiology of *Acanthamoeba* Keratitis – Update" at the International Forum for *Acnanthamoeba*, Tokyo, Japan, August 25, 1990.

Visvesvara GS. 2000. Invited to participate and present two lectures: (A)"Opportunistic and pathogenic amebas; (B) Diagnosis of Microsporidial infections"at the Sociedad Mexicana de Parasitologia A.C., October 5-7, 2000, Guadalajara, Mexico."

Visvesvara GS. 2000. Invited to participate and deliver a lecture on the methods of diagnosisi of microsporidia. At the MEEGID-5, 12-16 Nov 2000, Hyderabad, India.

Visvesvara GS. 2001. Invited to participate and present a paper "*Balamuthia mandrillaris*" at the 10th International Meeting on the Biology and Pathogenicity of free-living Amoebae, in Paris, France, July 9-14, 2001

Visvesvara GS. 2001. Participated and present a paper "Comparative biology of *Balamuthia mandrillaris*" isolates at the 11th International congress of Protozoology (ICOP), **Salzburg, Austria**, July 15-19, 2001

Visvesvara GS. 2004. Invited to participate in the CRDF Workshop on Cryptosporidiosis and Microsporidiosis as HIV/AIDS Co-Related Infections, July 7 – 9, 2004, St. Petersburg, Russia. Presented a Workshop on Microsporidiosis.

Visvesvara GS. 2005. Invited to participate and give a lecture on the pathogenic free-living amebae in the11th International Meeting on the Biology and Pathogenicity of free-Living Amoebae, Ceske Budejovice, Czech Republic Oct 5-10 2005.

Visvesvara GS. 2012. Invited to present a Keynote lecture on the **Free-Living and Opportunistic Amoebae** at the VII Congreso de la Sociedad Argentina de Bacteriología, Micología y Parasitología Clínica June 26 - 29, 2012 at the *Palais Rouge*, **Buenos Aires, Argentina.**

Visvesvara GS. 2015. Invited to present a Keynote lecture on the **Free-Living and Opportunistic Amoebae** at the XVI International Meeting on the Biology & Pathogenicity of Free-Living Amoebae, **Alghero, Sardinia**, Italy, 18-22 May 2015.

Visvesvara GS.2017. Invited to present a Keynote lecture on the **BRAIN-EATING AMOEBAE** at the XVII International Free-Living Amoebae Meeting at **Zarziz, Tunisia**, 11-15 April 2017.

PUBLICATIONS: Published more than 350 papers in peer-reviewed journals. A few listed below.

Visvesvara GS, Callaway C.S. Light and electron microscope studies on the pathogenesis of *Naegleria fowleri* in mouse brain and tissue culture. J. Protozool. 21:239-250,1974.

Visvesvara GS, Balamuth W. Comparative studies on related free-living and pathogenic amoebae, with special reference to *Acanthamoeba*. J. Protozool. 22:245-256, 1975.

Seidel JS., Harmatz P., **Visvesvara GS**, Cohen A, Edwards J. and Turner J. Successful treatment of primary amebic meningoencephalitis. N. Eng. J. Med. 306:346-348, 1982.

Visvesvara GS. *Acanthamoeba* keratitis associated with contact lenses – Unites States. MMWR, 35 (#25): 405-408, 1986.

Visvesvara GS, Peralta MJ, Brandt FH, Wilson M, Aloysio C, and Franko E. Production of monoclonal antibodies to *Naegleria fowleri*, agent of primary amebic meningoencephalitis. J. Clin. Microbiol. 25: 1629-1634, 1987.

Visvesvara GS. Biology of *Acanthamoeba* and epidemiology of *Acanthamoeba* keratitis. Ophthalmology (Japan) 33: 719-726, 1991.

Visvesvara GS, Schuster F.L., and Martinez A.J. *Balamuthia mandrillaris*, new genus, new species, Agent of amebic meningoencephalitis in humans and animals. J. Eukaryot. Microbiol. 40:504-514, 1993.

Schuster FL and Visvesvara GS. Efficacy of novel antimicrobials against clinical isolates of opportunistic amebas. J. Eukaryot Microbiol. 45:612-618, 1998. (Dec)

Gelman BB, Rauf SJ, Nader R, Popov V, Borkowski J, Chaljub G, Nauta NW and **Visvesvara GS**. Amoebic encephalitis due to *Sappinia diploidea*. JAMA **285**:2450-51, 2001.

Booton GC, Carmichael JR, Visvesvara GS, Byers TJ, Fuerst PA. Identification of *Balamuthia mandrillaris* by PCR assay using the mitochondrial 16S rRNA gene as a target. J Clin Microbiol. 41:453-55, 2003. (Jan)

Deetz TR, Sawyer MH, Billman G, Schuster FL, Visvesvara GS. Successful treatment of *Balamuthia* amebic encephalitis: Presentation of two cases. Clin Infect Dis. 37:1304-1312, 2003, (Nov).

Visvesvara GS, De Jonckheere JF, Marciano-Cabral F, Schuster FL. Morphologic and molecular identification of *Naegleria dunnebackei*, n. sp. isolated from a water sample. J Eukaryot Microbiol **52**:523-531, 2005

Schuster FL, Guglielmo BJ, Visvesvara GS. In-vitro activity of miltefosine and voriconazole on clinical isolates of free-living amebas: *Balamuthia mandrillaris*, *Acanthamoeba* spp., and *Naegleria fowleri*. J Eukaryot Microbiol. **53**:121-126, 2006 (March).

Qvarnstrom Y, Visvesvara GS, Sriram R, Da Silva AJ A multiplex real-time PCR assay for simultaneous detection of *Acanthamoeba* spp., *Balamuthia mandrillaris* and *Naegleria fowleri*. J. Clin Microbiol. **44**: 3589–3595, 2006 (Oct)

Visvesvara GS, Booton CG, Kelley DJ, Fuerst P, Sriram R, Finkelstein A, Garner MM. In vitro culture, serologic and molecular analysis of *Acanthamoeba* isolated from the liver of a keel-billed toucan (*Ramphastos sulfuratus*). Vet Parasitol **143**: 74–78, 2007 (Jan).

Visvesvara GS, Moura H, Schuster FL. Pathogenic and opportunistic free-living amoebae: *Acanthamoeba* spp., *Balamuthia mandrillaris*, *Naegleria fowleri*, and *Sappinia diploidea*. FEMS Immunol Micribiol **50**:1-26, 2007 (June).

Visvesvara GS, Sriram R, Qvarnstrom Y, Bandyopadhyay K, Da Silva AJ, Pieniazek NJ, Cabral GA. *Paravahlkampfia francinae* n. sp. masquerading as an agent of primary amoebic meningoencephalitis. J Eukaryot Microbiol. **56**: 357-66, 2009.

Visvesvara GS, Arrowood MJ, Qvarnstrom Y, Sriram R, Bandea B, Wilkins PP, Farnon E, Weitzman G. Concurrent parasitic infections in a renal transplant patient. Emerg Infect Dis. 19:2044-45; 2013.

Jackson BR, Kucerova Z, Roy SL, Aguirre G, Weiss J, Sriram R, Yoder J, Foelber R, Baty S, Derado G, Stramer S, Winkelman V, Visvesvara GS. Serologic survey for exposure following fatal *Balamuthia mandrillaris* infection. Parasitol Res 1-8. 2014

Gupte AA ,Hocevar SH, Lea AS, Kulkarni RD, Schain DC, Casey MJ, Zendejas-Ruiz IR, Mbayeyi C, Roy SL, **Visvesvara GS**, Da Silva AJ, Tallaj J, Eckhoff D, Baddley JW. Transmission of *Balamuthia mandrillaris* through Solid Organ Transplantation: utility of organ recipient serology to guide clinical management. Amer J Transplantation. 1-8, 2014

Roy SL, Metzger R, Chen JG, Laham FR, Martin M, Kipper SW, Smith LE, Lyon III GM, Haffner J, Ross JE, Rye AK, Johnson W, Bodager D, Friedman M, Waldh DJ, Collins C, Inman B, Davis BJ, Robinson T, Paddock C, Zaki SR, Kuehnert M, DaSilva A, Qvarnstron Y, Sriram R, Visvesvara GS. Risk for transmission of *Naegleria fowleri* from solid organ transplantation. Amer J Transplantation 14:163-171, 2014

Linam WM, Ahmed M, Cope JR, Chu C, Visvesvara GS, da Silva AJ, Qvarnstrom Y, Green J. Successful treatment of an adolescent with Naegleria fowleri primary amebic meningoencephalitis Pediatrics 135:e744-48; 2015.

Schafer KR, Shah N, Amira-Suarez MI, Reese JM, Hokw GM, Mandell JW, Roy S, Visvesvara GS. Disseminated *Balamuthia mandrillaris* infection. J Clin Microbiol 53: 3072-76, 2015.

Roy SL, Atkins JT, Gennuso R, Kofos D, Sriram R, Dorlo TPC, Hayes T, Qvarnstrom Y, Kucerova Z, Guglielmo SB, Visvesvara GS.. Assessment of blood–brain barrier penetration of miltefosine used to treat a fatal case of granulomatous amebic encephalitis possibly caused by an unusual *Balamuthia mandrillaris* strain. Parasitol Res 114:1-9; 2015

Farnon EC, Kokko KE, .Budge PJ, Mbaeyi C,.Lutterloh EC, Qvarnstrom Y, da Silva AJ, Shieh WJ, Roy SL, Paddock CD, Sriram R, Zaki SR, **Visvesvara GS**, Kuehnert MJ for the *Balamuthia* Transplant Investigation Teams. Transmission of *Balamuthia mandrillaris* by Organ Transplantation Clin Infect Dis 63: 878-888, 2016

Garcia L, Arrowood, MJKokoskin E, Paltridge G, Pillai D, Procop G, Ryan N, Shimura-Cohen, R, **Visvesvara GS**. Laboratory diagnosis of parasites from the gastrointestinal tract. Clin Rev Microbiol 31: 79-, 2018