

## Tsegaye Habtemariam, DVM, MPVM, PhD

**Dr. Tsegaye Habtemariam** currently serves as Professor of Epidemiology & Biomedical Informatics; and Dean, *College of Veterinary Medicine, Nursing and Allied Health (CVMNAH)*, Tuskegee University. Previously, he served as: Director, *Center for Computational Epidemiology, Bioinformatics & Risk Analysis (CCEBRA)*; Director, *Biomedical Information Management Systems (BIMS)*; Associate Dean for Research and Graduate Studies (1999 – 2005). He is a tenured faculty with the rank of Professor of Epidemiology and Biomedical Informatics. He was appointed Dean of the CVMNAH in January of 2006.

**Dr. Tsegaye Habtemariam** was born in Addis Ababa, Ethiopia. He received his elementary and high school education in Addis Ababa, Ethiopia. He also received his first degree (BS in Animal Sciences) from Alemaya College, HS I University, Ethiopia. He received his DVM degree from Colorado State University, Fort Collins, Colorado (1970), an MPVM degree and the PhD in Epidemiology from the University of California, Davis, California in December of 1979.

H.S.I. University, Ethiopia (With Distinction).	B. Sc.	1960-64	Agriculture
Colorado State University, Fort Collins,	D. V. M.	1965-70	Veterinary Medicine
University of California, Davis, California.	M. P. V. M.	1976-77	Preventive Vet. Med.
Epidemiology-University of California, Davis	Ph. D.	1976-80	Epidemiology
USDA Graduate School	Certificate	1998	Risk Analysis

### Professional Experience

1970-74.	Assistant Professor, College of Agriculture, H.S.I. University, Ethiopia.
1972-74.	Head, Department of Animal Sciences, H.S.I. University, Ethiopia.
1977-79.	Research Assoc, Dept. of Epidemiology, University of California, Davis.
1979-84.	Associate Professor, Veterinary Medicine, Tuskegee University.
1984-	Professor of Epidemiology & Biomedical Informatics
1986-89.	Director, International Center for Tropical Animal Health
1982-	Director, Biomedical Information Management Systems
1999 - 2005	Associate Dean for Research & Graduate Studies
2006 -	Dean

### Research and Scientific Experience

Dr. Habtemariam's biomedical research experience is in *Computational Epidemiology, Bioinformatics and Risk Analysis*. He has over 300 Publications and Presentations in the national and international arena. He served as a Member of Editorial Boards of Scientific Journals, numerous National Scientific Site Visit Teams, chaired National Scientific Grant Review Committees (NIH, NCI, USDA), chaired several National and International Conferences and serves as reviewer on many grant proposals and scientific papers. He has served as a consultant for several National and International Organizations (PAHO, WHO). He has authored one Book and edited four Proceedings and five monographs. In the area of Risk Analysis, he has performed more than a dozen risk assessments including several on FMD and BSE. Along with his team, he has provided more than 12 international workshops in Africa, the Caribbean and USA to train scientists in science-based risk analysis (both quantitative and qualitative risk assessments). He has been serving on the faculty at Tuskegee University since 1980.

### Honors and Awards

- Outstanding Faculty Achievement Award (1984) - Tuskegee University
- Outstanding Faculty Research Award (1984)-School of Veterinary Medicine
- Outstanding Teacher Award for Creativity (1991) - MSD AGVET
- Member of Editorial Boards
- Appointed, Member, NIH's National Advisory Committee on HIV/AIDS
- Certified Research Administrator (2000)
- Member, Elected to National Academies of Practice (2000)
- Member, National Advisory Committee in Microbiological Criteria in Foods (2000 - 2002)
- Elected - Honorary Member – American Veterinary Epidemiology Society (2004)
- President, World Association of Veterinary Educators (WAVE) (2005)
- Tuskegee University – Twenty-five Year Service Certificate (TU)
- Associate Dean for Research & Graduate Studies (CVMNAH)
- Member, National Academy of Sciences/National Research Council/Bill & Melinda Gates Subcommittee to Address Technologies for Transforming Agriculture in Africa & Asia
- Member, Advisory Committee, Center for Excellence for Homeland Defense, Texas A & M University
- Chair, Christian Relief and Development Association (CRDA) of Ethiopia, North America Branch (An umbrella Association of Non-governmental Organizations (NGO) in Ethiopia)
- Member of 50 Invited International Guests to Discuss Global Nexus of Animal and Human Health, Salzburg, Austria
- Member, NIH/NCRR Strategic Planning Team, NIH, December 2007

### **Selected Publications**

- Habtemariam, T., Tameru, B., Nganwa, D., Beyene, G., Ayanwale, L., Robnett, V. and Wilson, W. Epidemiologic Modelling of HIV/AIDS: Use of Computational Models to Study the Population Dynamics of the Disease to Assess Intervention Strategies for Decision-Making. *In Press: Advances in Systems Science and Applications (ASSA)*, 2008, vol. 8, no. 1.
- Tameru, B., Habtemariam, T., Nganwa, D., Ayanwale, L., Beyene, G., Robnett V., and Wilson, W. Computational Modelling of Intracellular Viral Kinetics and CD4+ Cellular Population Dynamics of HIV/AIDS. *In Press: Advances in Systems Science and Applications (ASSA)*, 2008, vol. 8, no. 1.
- Habtemariam, T., Tameru, B. Nganwa, D., Beyene, G., Ayanwale, Robnett, V., Wilson, W., and Zekeri, A. A Conceptual Multivariate Modelling Approach for Integrating Epidemiologic and Psychosocial Determinants to Examine Diseases in Under-served Populations. *In Press: Advances in Systems Science and Applications (ASSA)*, 2008, vol. 8, no. 2.
- Tameru, B., Gebremadhin, B., Habtemariam, T., Nganwa, D., Ayanwale, O., Wilson, S., Robnett, V., and Wilson, W. Developing a Generic Risk Assessment Simulation Modelling Software Tool for Assessing the Risk of Foot and Mouth Disease Virus Introduction. *In Press: Advances in Systems Science and Applications (ASSA)*, 2008, vol. 8, no. 2.
- Debretsion, A., T. Habtemariam, S. Wilson, D. Nganwa, T. Yehualalaeshet (2007) “Real-time PCR assay for rapid detection and quantification of *Campylobacter jejuni* on chicken rinses from poultry processing plant”. *Molecular and Cellular Probes*. 21:177-181.
- Andrew A. Zekeri and Tsegaye Habtemariam (2006): African American College Students’ Perceptions of Psychosocial Factors Influencing Racial Disparities in Health. *College Student Journal*. Volume 40, No 4, 901 – 915.
- J. T. Cohen, G. M. Gray, K. Duggar, S. Kreindel, H. Abdelrahman, T. HabteMariam, D. Oryang,
- B. Tameru "A simulation Model for Evaluating the Potential for the spread of Bovine Spongiform Encephalopathy in Animals or Human." *Prions and Mad Cow Disease* edited by Dr. Brian Nunally and Dr. Ira S. Krull, Marcel Dekker, Inc. 2003.
- T. Habtemariam, B. Tameru, D. Nganwa, L. Ayanwale, A. Ahmed, D. Oryang, H. AbdelRahman. Epidemiologic Modelling of HIV and CD4 Cellular/Molecular Population Dynamics.

*Kybernetics: The International Journal of Systems and Cybernetics, Vol. 31 No. 9/10, 1380-1390, 2002.*

- T. Habtemariam, B. Tameru, D. Nganwa, L. Ayanwale, A. Ahmed, D. Oryang, H. AbdelRahman, G. Gray, J. Cohen, S. Kreindel. Application of Systems Analysis In Modelling The Risk Of Bovine Spongiform Encephalopathy (BSE). *Kybernetics: The International Journal of Systems and Cybernetics, Vol. 31 No. 9/10, 136-1379, 2002.*
- T. Habtemariam, P. Yu, D. Oryang, D. Nganwa, O. Ayanwale, B. Tameru, H. Abdelrahman and A. Ahmad and V. Robnett. Modelling Viral and CD4 Cellular Population Dynamics in HIV: Approaches to Evaluate Intervention Strategies. *Cellular and Molecular Biology, 47(7): 1201-1208, 2001.*
- T. Habtemariam, P. Yu, D. Oryang, V. Robnett, D. Nganwa, O. Ayanwale. Epidemiologic Modelling of HIV/AIDS: A Study of Population dynamics (from cellular to human population interactions). *Advances in Systems science and Applications (SAMS), Special Issue, 246-254, 1997.*
- Yu, P., Habtemariam, T., Wilson, S., Oryang, D., Obasa, M., Nganwa, D., and Robnett, V. 1997. "A Risk Assessment Model For Foot And Mouth Disease (FMD) Introduction Through Meat Importation", *Prev. Vet. Med.*, 30: 49-59, 1997.
- Yu, P., Habtemariam, T., Oryang, D., Obasa, M., Nganwa, D., and Robnett, V., A Stochastic Model of Spatial Spread and Control of Tsetse Flies, *Environmental Entomology, 25: 78-84, 1996.*
- Habtemariam, T., Yu, P., Oryang, D., Nganwa, D., Obasa, M, and Ayanwale, O. Epidemiologic modeling using systems dynamics methods as applied to the AIDS epidemic in the USA. *Journal of System Analysis, Modeling, and Simulation, 23(4):265-274, 1996.*
- Yu, P., Habtemariam, T., Oryang, D., Obasa, M., Nganwa, D., and Robnett, V., Integration of Temporal and Spatial Stochastic Models for Examining the Epidemiology of African Trypanosomiasis, *Prev. Vet. Med.*, 24:83-95,1995.
- Habtemariam, T., D. Oryang and V. Robnett, Computational epidemiologic approaches in studying population health systems analysis as a method to develop epidemiologic models. *Journal of Mathematical Modelling and Scientific Computing, Volume 2: 694-699, 1993.*
- Habtemariam, T., Oryang, D., Gabreab,F., Robnett,V., Trammell, G. Research in Computational Epidemiology. *Mathematical and Computer Modelling 14:653-658, 1990.*
- Habtemariam, T.Utility of Epidemiologic Simulation Models in the Planning of Trypanosomiasis Control Programs. *Annales de la Societe belge de Medicine Tropicale. 69:109-124 (1989).*
- Habtemariam, T., Ghartey-Tagoe, A., Robnett, V., Trammell, G. Computational Epidemiology - New Research Avenues. *ACTA Veterinaria Scandinavica. 84:439-441, 1988.*
- Habtemariam, T., Ghartey-Tagoe, A., Robnett, V., Trammell, G. A Simulation Model of Schistosomiasis: Interrelationships between Social and Biological Components, In: *Databases in the Humanities and Social Sciences* (Edited by L.J. McCrank), 1989.

### **Selected Government Reports**

- J. T. Cohen, Gray, G. M., K. Duggar, S. Kreindel, H. Abdelrahman, T. HabteMariam, D. Oryang, B. Tameru "Evaluation of the Potential for Bovine Spongiform Encephalopathy in the United States." USDA, <http://www.aphis.usda.gov/oa/bse/> (released by US Secretary of Agriculture Ann M.Veneman November 2001).
- T. Habtemariam et al. Quantitative risk assessment of the likelihood of foot and mouth disease virus introduction into the United States via cheese importation, USDA/APHIS Report, November, 2003
- T. Habtemariam et al. Quantitative risk assessment of the likelihood of citrus canker disease introduction into the United States, November, USDA/APHIS Report, 2001
- T. Habtemariam et al. The Knollwood Community Health Survey, ATSDR/CC report, 2004

### **Recent Presentations**

T. Habtemariam, B. Tameru, D. Nganwa, O. Ayanwale, V. Robnett: Computational Modeling: Macro and Micro Epidemiologic Modelling. 8<sup>th</sup> Biomedical Research Symposium, College of Veterinary Medicine, Nursing & Allied Health Tuskegee University, September 19 - 22, 2007

Habtemariam, T., Tameru, B., Nganwa, D., Beyene, G., Ayanwale, L., and Robnett, V. Epidemiologic Modelling of HIV/AIDS: Use of Computational Models to Study the Population Dynamics of the Disease to Assess Intervention Strategies for Decision-Making. The 5th International Institute for General Systems Studies Conference, (Plenary Session) , Abstract p 384, 2007

Habtemariam, T., Tameru, B. Nganwa, D., Beyene, G., Ayanwale, Robnett, V., Wilson, W., and Zekeri, A. A Conceptual Multivariate Modelling Approach for Integrating Epidemiologic and Psychosocial Determinants to Examine Diseases in Under-served Populations. The 5th International Institute for General Systems Studies Conference, Abstract p383.

T. Habtemariam, B. Tameru, D. Nganwa, L. Ayanwale, A. Ahmad. "Computational modeling methods to assess the risk of agricultural Bioterrorism agents". Invited speaker in the workshop: *Mathematical Modeling of the Spread of Agricultural Bioterrorism*, organized by US Scientific & Technical Intelligence Committee, National Intelligence Council, 16 – 17 September 2003.

B. Tameru, T. Habtemariam, D. Nganwa, L. Ayanwale, A. Ahmad. "Risk analysis and modeling: Applying mathematical models in risk assessment of infectious agents". Invited speaker in the workshop: *Mathematical Modeling of the Spread of Agricultural Bioterrorism*, organized by US Scientific & Technical Intelligence Committee, National Intelligence Council, 16 – 17 September 2003.

T. Habtemariam, R. Fite, S. Wilson, C. Bonsi, and B. Tameru *Strengthening Sanitary/Phytosanitary (SPS) Capacity of Sub-Saharan Africa Through Risk Assessment Training*; Society for Risk Analysis Annual Meeting "The World of Risk Analysis" December 8-11, 2002.

T. Habtemariam, R. Fite, S. Wilson, C. Bonsi, and B. Tameru. "Strengthening Sanitary/Phytosanitary (SPS) Capacity of Sub-Saharan Africa Through Risk Assessment Training. "Society for Risk Analysis Annual Meeting "The World of Risk Analysis" December 8-11, 2002.

H. A. Ahmad, T. Habtemariam, B. Tameru, D. Nganwa, and O. Ayanwale. "Quantitative Risk Assessment of Salmonella Enteritidis Using a Dynamic Egg Production Model." Society for Risk Analysis Annual Meeting "The World of Risk Analysis" December 8-11, 2002.

B. Tameru, T. Habtemariam, D. Nganwa, R. Fite, and D. Oryang, *Applying Mathematical Models in Risk Assessments of BSE*; Society for Risk Analysis Annual Meeting "The World of Risk Analysis" December 8-11, 2002.

D. Nganwa, T. Habtemariam, B. Tameru, R. Fite, and D. Oryang, *Pest Risk Assessment of Citrus Canker Introduction Into the USA Via Importation of Citrus Fruit*; Society for Risk Analysis Annual Meeting "The World of Risk Analysis" December 8-11, 2002.

H. A. Ahmad, T. Habtemariam, B. Tameru, D. Nganwa, and O. Ayanwale, *Quantitative Risk Assessment of Salmonella Enteritidis Using a Dynamic Egg Production Model*. Society for Risk Analysis Annual Meeting "The World of Risk Analysis" December 8-11, 2002.

T. Habtemariam. "An analysis of the European Foot and Mouth Crisis: The Core Policy, Risk Management and Communication Issues." **Plenary Session**. 2001 Annual Meeting Risk Analysis in an Interconnected World December 2-5, 2001, Westin Hotel Seattle, WA

D. Nganwa, T. Habtemariam, S. Elamin, D. Oryang, B. Tameru, H. Abdelrahman, A. Ahmed, A. Ayanwale, and V. Robnett. "Qualitative Risk Assessment for the Introduction of Bovine Spongiform Encephalopathy Through Importation of Live Cattle and Animal Products into the United States

Using an Adjacent Region/Country as an Example.” 2001 Annual Meeting, Risk Analysis in an Interconnected World, December 2-5, 2001, Seattle, WA.

T. Habtemariam, B. Tameru, D. Nganwa, L. Ayanwale, A. Ahmed, D. Oryang, H. Abdelrahman,

R. Fite, and R. McDowell. “Evaluating the Risk of FMD Introduction into the USA via Imported Beef or Mutton.” 2001 Annual Meeting, Risk Analysis in an Interconnected World, December 2-5, 2001, Seattle, WA.

B. Tameru, T. Habtemariam, D. Oryang, H. Abdelrahman, D. Nganwa, G. Gray, J. Cohen, S. Kreindel, A. Ahmed, L. Ayanwale, and V. Robnett, “Dynamic Model for BSE.” 2001 Annual Meeting, Risk Analysis in an Interconnected World, December 2-5, 2001, Seattle, WA.

J. T. Cohen, K. Duggar, G. Gray, S. Kreindel, and T. Habtemariam; “Modeling the Potential for

Bovine Spongiform Encephalopathy Transmission in the United States” 2001 Annual Meeting, Risk Analysis in an Interconnected World, December 2-5, 2001, Seattle, WA.

H. A. Ahmad, T. Habtemariam, T. Berhanu, D. Oryang, D. Nganwa, H. Abdelrahman, and O. Ayanwale. “Developing a Professional Microbial Risk Analysis Training Course. “2001 Annual Meeting, Risk Analysis in an Interconnected World, December 2-5, 2001, Seattle, WA.

T. Habtemariam, B. Tameru, D. Nganwa, L. Ayanwale, A. Ahmed, D. Oryang, H. Abdelrahman, R. Fite, and R. McDowell. “Evaluating the Risk of FMD Introduction into the USA via Imported Beef or Mutton.” 2001 Annual Meeting, Risk Analysis in an Interconnected World, December 2-5, 2001, Seattle, WA.

#### **Recent Workshops provided to International Scientists:**

- Sanitary Phytosanitary Risk Analysis and Modelling Workshop: Capacity Building for Risk Analysis and Modelling to Promote Agricultural Trade in India. Hyderabad, India. 2007.
- Annual Biomedical Research Symposium, College of Veterinary Medicine, Nursing & Allied Health Tuskegee University, 1<sup>st</sup> - 8<sup>th</sup> (2000 – 2007).
- Hosted NCBI workshops on Field Guide to GenBank and NCBI Molecular Biology Resources (2004 and 2006), Tuskegee University.
- International Conference on SPS Risk Analysis Methodology: Optimization of SPS Regulatory Tool-Box Recognizing that ongoing learning, introspection and review are critical to achieving progress in SPS regulation and risk assessment, the USDA and Tuskegee University are partnering with the Society for Risk Analysis to organize this International Conference on SPS Risk Assessment Methodology, 2005.
- Introduction to Risk Analysis Workshop: Sanitary Phytosanitary Capacity Building Through risk Assessment Training in Sub-Saharan Africa, Eastern Africa Region, Addis Ababa, Ethiopia, June 2002
- Introduction to Risk Analysis Workshop: Sanitary Phytosanitary Capacity Building Through risk Assessment Training in Sub-Saharan Africa, Western Africa Region, Accra, Ghana, August, 2002
- Introduction to Risk Analysis Workshop: Sanitary Phytosanitary Capacity Building Through risk Assessment Training in Sub-Saharan Africa, Southern Africa Region, Pretoria, South Africa, October, 2002
- Advanced Risk Analysis Workshop: Sanitary Phytosanitary Capacity Building Through risk Assessment Training in Sub-Saharan Africa, Eastern Africa Region, Addis Ababa, Ethiopia, June 2003, Western Africa Region, Accra, Ghana, September 2003; Southern Africa Region, Pretoria, South Africa, October, 2003
- Risk Analysis: Strengthening SPS Capacity in the Caribbean Region, Antigua, The Caribbean, June, 2004; St. Lucia, The Caribbean, June, 2004; Port of Spain, Trinidad & Tobago, The Caribbean, July, 2004
- Train the Trainer Workshop and First Pan-African Conference in Risk Analysis and SPS Capacity Building in Africa, Addis Ababa, Ethiopia, October 2004