

BIOGRAPHICAL SKETCH

MARCELINE EGNIN, Professor of Plant Genetics, Biotechnology and Genomics, Tuskegee University
Coordinator Plant Biotech & Genomics Research Laboratory, megnin@mytu.tuskegee.edu

EDUCATION

INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Université d'Abidjan, Côte d'Ivoire	BS	06/1983	Biological (Natural) Sciences
Université d'Abidjan, Côte d'Ivoire	Maîtrise	09/1985	Génétique
The Pennsylvania State University	MS	08/1988	Genetics and Plant Breeding
The Pennsylvania State University	Ph.D	12/1992	Genetics and Molecular Biology

A. PERSONAL STATEMENT: POSITION TITLE:

For over 23 years, Dr. Egnin has mentor and trained countless US minority students, faculty and international scholars in biotechnology, genomics & health disparities. Her research centered around molecular genetic and biotechnology with a concentration on gene discovery and utilization for expression of nutritionally and pharmacologically active products in transgenics. Her Lab has worked on post harvest production, tissue culture/transformation, functional food, obesity and hypertensive metabolic disorders, and developed transgenic plants expressing nutritional protein and disease resistant motifs, and therapeutic synthetic peptides against cholera and cancer tumor (reduction) and HIV virus replication, respectively. Her Laboratory boast a broad background in genomics, molecular biology, breeding, biofuels, protein engineering, tissue culture, training and expertise in biotech and biosafety outreach. She has provided TU students, teachers, K-12 students, international scholars and students, with innovative and meaningful hands-on research experience & internship opportunities and recently established the plant Breeding initiative iBreed. She also has extensive outreach activities with farmers and a strong research training record in several African countries, long and short-term.

B. POSITION AND HONORS

Position and Employment

2012 Professor and Coordinator Plant Biotech & Genomics Research Laboratory, Tuskegee University
2000-2012: Associate Professor & Coordinator Plant Biotech & Genomics Lab & GWCAES Educators Biotech Outreach, Tuskegee
1997-2000: Research Assistant Professor of Plant Molecular Genetics, NASA/CFESH Center Tuskegee University
1993-1997: Senior Scientist NASA/CFESH Center Plant Biotechnology Research, Tuskegee University
Languages: Fluently Read, Write & Speak French; Fluent in Four African Akan Languages; Read & Write in German

Other Experience and Professional Memberships

2015 Invited Education Outreach Expert to ASPB Symposium and Booth Display
Invited Fellow to University of Florida: PlantSEED Genomics & NSF Transformation Forum workshop
Invited Fellow to University of Florida: NSF Transformation Forum workshop
2013 & 15 Invited Workshop Organizer & Trainer: Introducing Biotech to High School in Ghana, ASPB-Ghana CSIR-CRI Biotech Program
2014 & 15 Invited Speaker & Trainer, and Participant, Scientific Women Researcher Symposium, AFEMC-CI, Abidjan, Ivory Coast
2014 Peer Reviewer HortScience eJournal
2013 Tuskegee University Diversity Workshop
2013 & 2014 Invited Trainee/Mentor, UC-Davis-CREATE IGERT Program
2013 Auburn University 150 years USDA Granting Agencies Celebration
2012 Selected Panel Member USDA/NIFA Biotechnology Risk Assessment Grant Program
2012 Regulatory Activities: Field Trial Permit Approval for transgenic High-Protein Sweetpotato in Ghana by Ghana NBC
2012 Coordinator and Organizing chair of PAWC-GSD Student Research Competition
2010 Invited Faculty Trainer WACI Project Ghana
2009 Invited Fellow: Biosafety/Biotechnology Consultative, Saint Vincent & the Grenadines Workshop
2009 Invited Plenary Speaker: USAID Speaker Program in Sénégal for Biotech & Biosafety- Honor Meeting With President Wade
2008-2010 Served as RCMI Internal Advisory Board Member
2008-2009 Co-Organizer Biotechnology and Biosafety Workshops, Kumasi and Accra, Ghana
2005 Invited Fellow University of Wisconsin Genomics in the Classroom workshop
2005 Invited Fellow for Success Story: USDA/CSREES Successful funded Programs (August 2005)
2004 EPA, Strategic Monitoring for Ecological Impacts of Crops with Plant Incorporated Protectants
2004 Invited Spaker Tuskegee University (Vet School), 4th Annual Biomedical Conference (2004)
2003 & 2004 Invited Speaker ABSF Biotechnology and Biosafety Meeting in Nairobi Kenya
2003 Invited Speaker UNEP Meeting in Nairobi Kenya
2003 Invited Reviewer Jomo Kenyatta University of Agriculture and Technology (Research Co-Adviser and Thesis Committee)
2003 Invited Speaker Auburn University Agriculture and Resource Economics Department
2003 NASA Magazine Press Release: Genetic Research produces a more nutritious sweetpotato, April 2003
2002 Selected Delegate to the USAID African Biotechnology Partnership Meeting Nairobi, Kenya
2002 Selected Delegate for TU-Pioneer/Dupont collaborative agreement
1987-pres Inductee, Gamma sigma Delta Honor Society of Agriculture; Historian and President
2003-Pres Sigma Xi Scientific Society; Alabama Farmers Federation; Alabama Sweetpotato Growers Association
2001 Invited Fellow Salzburg Conference on Biotechnology Research and Legal, ethical and social issues

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- 2001 Invited Presenter Bioastronautics Investigators' Workshop, Galveston, TX
2000 Co-organizer and Rapporteur, The SABRAD Summit on Africa, Accra Ghana
1999-2008 Member Society of In Vitro Biology Plant Group, Plant Program Committee and Chair/Co-convenor: Nutraceuticals/Biopharming
1999 Invited Feature: Chemical Online: Researcher boost protein production in Sweetpotato.
1995-Pres Peer Review Panels & Genomic Reviewer: USDA-NRI, SIVB & TICP Journals
1995 Invited Speaker Auburn University Workshop on biotechnology

Honors, Awards And Recognition:

- 2013 & 15 Outstanding Faculty Trainer Award: Introducing Biotech to High School in Ghana, ASPB-Ghana CSIR-CRI Biotech Program
2014 & 15 Outstanding Faculty Trainer Award & Plenary Speaker Certificate of Appreciation: AFEMC-CI, Abidjan, Ivory Coast
2014 Outstanding Faculty Trainer Award & Plenary Speaker Certificate of Appreciation: 2014, AFEMC-CI, Abidjan
2013 Certificate of Appreciation, Summer 2013, AgriTrek, SciTrek, AgDiscovery & DiscoveryTREK
2013 Outstanding Faculty Trainer Award: Introducing Biotech to High School in Ghana, ASPB-Ghana CSIR-CRI Program
2013 Outstanding Chapter Award Plaque, The International Honor Society of Agriculture, GAMMA Sigma Delta
2013 Outstanding Chapter President Plaque, The Honor Society of Agriculture, GAMMA Sigma Delta
2013 Certificate of Completion, 2013, Tuskegee University Faculty Center For Teaching and Learning
2012 Professor and Coordinator Plant Biotech & Genomics Research Laboratory
2012 International Gold Chapter Award-Tuskegee University Chapter-**President**, The Honor Society of Agriculture GAMMA Sigma Delta
2012 Most Improved Chapter y Award, The Honor Society of Agriculture, GAMMA Sigma Delta, President TU Chapter
2012 New Chapter Activity Award, The Honor Society of Agriculture, GAMMA Sigma Delta, President TU Chapter
2011 International Silver Chapter Award, The Honor Society of Agriculture, GAMMA Sigma Delta, Acting President TU Chapter
2010 Outstanding Leadership Award, The Honor Society of Agriculture, GAMMA Sigma Delta
2009 Certificate of Appreciation USAID Speaker Program in Sénégal for Biotech & Biosafety
2009 Invited Honor Guest to Meet President Wade of Senegal
2007 Outstanding Faculty Service Award: Biosafety Training, TU/USDA FAS Cochran Project
2006-08 Certificate of Appreciation: Biotech Outreach To K-12 by Alabama Sciences Teachers GWCAES Biotech & Genomics Outreach Program
2006 Certificate of Achievement The Alabama Collaboration for Cardiovascular Equality Research Training
2006 Invited Guest to meet President GW Bush
2005 USDA/CSREES Invited Success Story (Implementing IFAFs Biotech Outreach Consortium Project
2004 Outstanding Contribution to AgBiotech Outreach to Kenyan Educators and Students, ABSF
2003 Outstanding Faculty Performance Award In Service, Tuskegee University
2001 Outstanding Fellow, Salzburg Seminar, Austria
Letter of Appreciation, the Office of International Corporation and Development, USDA-P.R.C
Letter of Appreciation, Outstanding Service in Biotechnology, Office of US Representative Eva Clayton
1999 Certificate of Appreciation Willingness to Volunteer/Teach/Impart to Students Knowledge in Molecular Genetics, Tuskegee University
1998 Certificate of Appreciation in Environmental Science Training for Retention and Excellence in Sciences, Tuskegee University
1996 USDA Distinguished Scientific Research/Training/Retention Group Honor Awards
1996 USDA/CSREES Outstanding Group Honor Award for Professional Excellence in NASA Space Research
1989-'92 Pioneer Hi-Bred International PhD Scholarship Award

Honor Societies' Inductee: The Honor Society of Agriculture, Gamma Sigma Delta 1987; Sigma Xi Scientific Honor Society 1998

Professional Affiliations: Society for In-vitro Biology (SIVB); Southern Association of Agricultural Scientists; American Society of Plant Biology; American Peanut Research & Education Society; Alabama Farmers Federation; Alabama Sweetpotato Growers Association; African Biotech Group

C. RESEARCH SUPPORT

- Active:** USDA-NIFA CBG: Development of a Centralized Research & Teaching Support System in Biogas Production Co-PI, 2015-2018; \$600,000
Active: USDA-NIFA CBG: Training the Next Generation of Pant Breeders under iBREED Egnin PI, 2014-2017; \$300,000
Active: ASPB-Introducing Basic Biotech Teaching Techniques in High Schools in Sub-Saharan Africa-Ghana Egnin (TU-PI) 2013-16 \$80,000
Active: Iowa State University Cyclone Grant (D. Hannapel) with Tuskegee in RNASeq Training, PI-TU, 2016. \$20,000
Active: Monsanto and USDA, Biotech Research and Training Infrastructure Co-PI, 2014-2016; \$1,500,000
Active: USDA-NIFA /Evans-Allen: Bioenergy, Biotechnology and Genomics Research Co-PI, 2013-2018, \$1,000,000
Completed: USDA-FAS, West African Seed Technology Training Workshop Co-PI, 2014
Completed: NSF Training Students in biofuels production from agricultural biomass (Auburn U and TU) Egnin (TU-PI), 2012-2015
Completed: USDA/TCAP- QCPS-0000454476. Breeding Experiences for Undegraduates. Egnin (TU-PI), 2011-2013.
Completed: USDA/NIFA: Resistant Gene Analog Discovery in Sweetpotato Transcriptome Co-PI; Jackson (PI), 2010-2013
Completed: USDA/NIFA: Genetically Modified Plants Effect on Soil Enzymes and Microbial Population Ankumah (PI) 2010-2013
Completed: USDA/Evans-Allen: Sweetpotato Biotechnology and Genomics Research Egnin (PI) 2007-2012
Completed: The CREATE program: NSF (DGE-0653984) UCDavis (PI) 2007-2012
Completed: USDA/Evans-Allen. Coupling Formal/Informal Learning to Enhance Youth Education Egnin (Co-PI) 2007-12.
Completed: USDA CSREES (Alcorn State): Transgenic High Starch Sweetpotato for Biofuel and Snack Egnin (PI TU) 2007-2011
Others Completed:

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Health NIH/NCMHD Disparities \$5 Millions Egnin (PI) 2002-2008
USDA/FAS: Biosafety Testing of Transgenic High Protein Sweetpotato in Ghana Egnin (PI) 2008-2011
USDA/FAS: South Africa Sweetpotato Biotechnology Egnin (PI) 2008-2010
USDA/FAS: West Africa Cochran Biosafety Training Program Egnin (PI) 2007
USDA/CBG Reshaping K-12 and sophomore Curricula Via Biotech/Genomics Teaching Egnin (PI) 2005-2008
CO-PI USDA Capacity Building Grant \$200,000 2006-2008; Co-PI AA&MU \$500,000 2005-2008; NASA-Biotech, 2002-2007; CO-PI USAID-IITA-Nigeria, \$200,000, 2005-2007; CO-PI US-AID, \$650,000, 2002-2005; CO-PI on NASA project, Transgenic & gene Discovery in sweetpotato and peanut \$4,000,000, 2002-2006; CO-PI with Dr. Sharma, USDA-IFAF Coordinator Southern AgBiotech. Consortium for Underserved Communities, \$3.8 Million, 2000-2004; CO-PI on NASA project, \$5,000,000, 1996 – 2001; CO-PI with Drs. Prakash, Pace and Suchet, Development, Nutritional, Evaluation and Biosafety Testing of High-Protein Sweetpotato, USDA/CSREE, \$166,766, 1999 – 2002; CO-PI with Drs. Hill, Bonsi, Louis, and Prakash; African Biotech Initiative MOU, USDA, \$50,000, 1999-2000 CO-PI with Dr. Stanton Gelvin (Purdue University) and Dr. C. S. Prakash, Planet genomic research/training NSF \$141,715 from \$4.5 Million, 2000-2005. CO-PI, with Drs. Hill, Bonsi, Louis, and Herrera, 1890 - ARS, African Trade Initiative Through Biotech Outreach, USDAFAS, \$145,000, 2000 - 2002. CO-PI, with Drs. Hill, Bonsi, Louis, and Herrera, 1890 – ARS-CIMMYT, Enabling Environment for African Biotechnology, USDA-AIDS-IFAS, \$180,000, 2000 - 2001.

D. SELECTED PEER-REVIEWED PUBLICATIONS

- Quain, Marian D. and Marceline Egnin. 2014. Agricultural Biotechnology In Ghana The Status: In Genetically Engineered Crops In Developing Countries Eds.: DVR Reddy, P Ananda Kumar, P Lava Kumar, G Loebenstein & C Kameswara Rao. Studium Press LLC, Houston, USA. 2014; pp. 377 - 397.
- Nyiwang, Karine Z., Desmond G. Mortley, Abukari Issah, Marceline Egnin, Conrad K. Bonsi, Walter A. Hill, Barrett T. Vaughan. 2014. Screening Sweetpotato Breeding Clones [*Ipomoea batatas* (L.) Lam] as a Suitable Potential Source of Feedstock for Bioethanol Production. *J. Alt. Energy Sources*. Vol. 5 (3):6-12.
- Owens, Emma, M. Egnin and B. Philip. 2014. Metabolic Profiling Of Apolipoproteins A4, B100 And E In Obese And Non- Obese Individuals From Select Black Belt Counties Of Alabama. 69th PAWC Proceeding, pg 79-90.
- Samuels, S., M. Egnin, J. Jaynes. 2013. Development of Plant-based Therapeutic Treatment Regimen against HIV Replication. 69th PAWC Proceeding, pg 112-120.
- Melissa Johnson, Ralphenia D. Pace, Wendell H. McElhenney, Marceline Egnin, Temesgen Samuel and Norma L. Dawkins. 2013. Evaluation of a Dietary 25:1 Omega-6/Omega-3 Fatty Acid Ratio in SHR Fed Traditional and Nontraditional Vegetables: Part I. *Nutrients* 2013, 5, 1-x manuscripts; doi:10.3390/nu40x000x. ISSN 2072-6643. Submitted under review.
- Peggy Valentine, Jiangmin Xu, Tatiana Jones, Laila Haile, Myrtle Goore, Jane Smolnik and Marceline Egnin. 2012. The relationship between diabetes, obesity and iris markings in African Americans in Montgomery County, Alabama. *Int. Public Health J.* 4(3): 91-104.
- Quain, M. D., Berjak P., Acheampong E. and Egnin M., 2012. Cryopreserving Vegetatively Propagated Tropical Crops - The Case of *Dioscorea* Species and *Solenostemon rotundifolius*. *Current Frontiers in Cryobiology*, Edited by Igor I. Katkov, ISBN: 978-953-51-0191-8 Publisher: InTech: 485 – 504.
- Hu, Hongtao, Narendra K. Singh, David Weaver, Shankar Pant, Marceline Egnin, Min Zhong, Chiachen Weng And Robert Locy. 2012. Characterization Of Cotton Leaf miRNA And Changes In miRNA Expression Associated With Heat Stress In Cotton As Determined By Deep Sequencing. *Beltwide Cotton Conference Journal* 2:131-139.
- Quain, M. D., M. Egnin, B. Bey, R. Thompson and C. Bonsi. 2012. Transgenic potential of *Dioscorea rotundata* using *Agrobacterium*-mediated genetic transformation, *GM Crops: From basic research to application. Aspects of Applied Biology* 110:71-79.
- Wang, Y., B. Rosen, J. Scofield, M. Egnin, D. Mortley, S. Steiner, D. R. Cook and G. He. 2010. Isolation and analysis of resistance gene homologs in sweetpotato. *Plant Breeding* 129: 519-525.
- Nyiwang, K. Z., D. Mortley, M. Egnin, C. Bonsi, and B. Vaughan. 2011. Sweetpotato In: *Handbook of Bioenergy Crop Plants* 31:734-742.
- Odom, L., C. Bonsi, R. Ankumah, J. Jaynes, M. Egnin, L. Ogden, and D. Mortley. 2010. Effect Of Antimicrobial Synthetic Peptide D4e1 On Infestation Of Cotton Seedling Disease And On Soil Microbial Diversity, In *Proceeding of the 66th Annual Professional Agriculture Workers Conference-PAWC - Facing Global Crisis: Local Solutions To Energy, Food and Persistent Poverty*: Edited by Nii O. Tackie, Tasha M. Hargrove, Robert Zabawa, and Walter A. Hill. pg. 226-235
- Chassy, B., M. Egnin, Y. Gao, K. Glenn, G. A. Kleter, P. Nestel, M. Newell-McGloughlin, R. H. Phipps, and R. Shillito. 2008. International Life Sciences Institute. *Nutritional and Safety Assessments of Foods and Feeds Nutritionally Improved through Biotechnology: Case Studies. Comprehensive Reviews In Food Science and Food Safety. Volume 7 (1)* 53-113.
- Chassy, B., M. Egnin, Y. Gao, K. Glenn, G. A. Kleter, P. Nestel, M. Newell-McGloughlin, R. H. Phipps and R. Shillito. 2008. Nutritionally Improved Sweetpotato (4): In *Comprehensive Reviews in Food Science and Food Safety* 7 (1): 81-91.
- Dodo, H. W., K. N. Konan, F. C. Chen, M. Egnin and O M. Viquez. 2007. Alleviating Peanut Allergy Using Genetic Engineering: The Silencing Of The Immunodominant Allergen Ara H 2 Leads To Its Significant Reduction And A Decrease In Peanut Allergenicity. *Plant Biotechnology Journal*, 6:2135-2145.
- Chassy, B., M. Egnin, Y. Gao, K. Glenn, G. A. Kleter, P. Nestel, M. Newell-McGloughlin, R. H. Phipps, and R. Shillito. 2007. *Nutritional and Safety Assessments of Foods and Feeds Nutritionally Improved through Biotechnology Case Studies: Executive Summary of a Task Force Report by the International Life Sciences Institute, Washington, D.C.* doi: 10.1111/j.1750-3841.2007.00579.x. *J. Food Sciences* 72(9): 131-137.
- Shireen, K., R. Pace, M. Egnin, and C. Prakash. 2002. Bioavailability of Calcium From Transgenic sweetpotato and Soy Flour Supplemented Diets In Hamsters. *J. Env. Sci. & Health.* B37 (6): 637-645.

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- Shireen, K., R. Pace, M. Egnin, and C. Prakash. 2001. Effects of Different Dietary Proteins and Trypsin Inhibitor on Growth and Lipid Metabolism in Hamsters. *Malaysian Journal of Nutrition* 1-14 (1& 2): 1-13.
- Egnin, M., A. Mora, C. S. Prakash. 1998. Factors Enhancing Agrobacterium tumefaciens-Mediated Gene Transfer in Peanut (*Arachis Hypogaea* L.). *In Vitro Cell. Dev. Biol.-Plant* 34:310-318.
- Prakash, C. S., M. Egnin, G. He, D. Scott. 1997. Molecular Insight into the Sweetpotato Root Biology. In: Ed. H. Flores and J. Lynch *Radical Biology: Advances and Perspectives on the function of Plant Roots*. Current topics in Plant Physiology: An American Society of Plant Physiologist Series 18:307-319.
- Jackson, J. R., M. Egnin, Q. Xhue, C. S. Prakash. 1996. Development of Plant Gene Vectors for Tissue Specific Expression Using the Green Fluorescent Protein (GFP4) gene as a Reporter. In: Ed. E. O. Daso and S. Mebane. *First National Conference Proceedings of NASA University Research Centers at Minority Institutions* 1:74-78.

Proceedings

- Owens, Emma, M. Egnin and B. Philip. 2014. Metabolic Profiling Of Apolipoproteins A4, B100 And E In Obese And Non- Obese Individuals From Select Black Belt Counties Of Alabama. 69th PAWC Proceeding, pg 79-90.
- Samuels, S., M. Egnin, J. Jaynes. 2013. Development of Plant-based Therapeutic Treatment Regimen against HIV Replication. 69th PAWC Proceeding, pg 112-120.
- Egnin, M., Quain M.D., C.S. Prakash, and Bonsi C. 2012. Manual for Genetically Engineered Sweetpotato Handling and Confined Field Trials: In Compliance with the Standard Operating Procedures for Conducting Confined Field Trials. Tuskegee University George Washington Carver Agricultural Experiment Station (GWCAES) Tuskegee, AL 36088. GWCAES Publication Series.

Published Abstracts:

- Samuels, S., M. Egnin, T. Nashar, J. Jaynes, M. Cho. 2015. Engineering Sweetpotato [*Ipomoea Batatas* (L.) Lam] Expressing Synthetic Lytic Peptide for the Potential Inhibition of Human Immunodeficiency Virus Replication. National Sweetpotato Collaborators Group Progress Report, Nashville January 2015, pp.19.
- Bernard, G., M. Egnin, S. Samuels, W. Witola, D. Mortley, C. Bonsi, K. Lawrence. 2015. Phenotypic and Molecular Investigation of Developing Sweetpotato Storage Roots Under Root-knot Nematode Challenge. National Sweetpotato Collaborators Group Progress Report, Nashville January 2015, pp.20.
- Basak, S, C S Prakash, G He, M Egnin and E Sacks. 2015. Genetic Diversity among bioenergy grass *Miscanthus* in the naturalized populations of USA using molecular markers. JARS Symposium, Tuskegee University, February 26-27, 2015.
- Bernard, G., M. Egnin, S. Samuels, W. Witola, D. Mortley, C. Bonsi, K. Lawrence. 2015. Phenotypic and Molecular Investigation of Developing Sweetpotato Storage Roots Under Root-knot Nematode Challenge. National Sweetpotato Collaborators Group Progress Report, Nashville January 2015, pp.20.
- Hu, Hongtao, Narendra K. Singh, David Weaver, Shankar Pant, Marceline Egnin, Min Zhong, Chiachen Weng And Robert Locy. 2012. Discovery and Characterization of Conserved and Novel MiRNAs of Leaf, Root and Fiber of Cotton. *Plant and Animal Genome XX*. www.Intl-pag.org
- Milad, L. K., Angel Grady, OSAGIE IDEHEN2, Steven Samuels, Gregory Benard, Marceline Egnin, Desmond Mortley, Conrad Bonsi, Crystal Lee, Innocent Ritte. 2014. Comparative Analysis of PSII Transcript Expression as Harvest Index Indicator in Crop Under Different N Source. In Press: *In Vitro Cell and Dev. Journal* 50(4)
- Parks, L., Desmond G. Mortley, Marceline Egnin and Moabin Tu. 2014. Influence of Added Nutrients in the Fermentation process of Sugar Cane and Sweet Sorghum Varieties for Ethanol Concentration. In Press: *In Vitro Cell and Dev. Journal* 50(4)
- Steven Samuels, Marceline Egnin, Nashar Toufic and Jesse Jaynes. 2014. Engineering Sweetpotato Expressing Lytic Peptides for the Potential Inhibition of HIV Replication. In Press: *In Vitro Cell and Dev. Journal* 50(4)
- Gregory C. Bernard, Marceline Egnin, Steven Samuels, Desmond Mortley, William Witola, Kathy Lawrence and Conrad Bonsi. 2014. Molecular Fingerprinting of Transcripts involved in Host Response to disease in Developing Sweetpotato Storage Roots. In Press: *In Vitro Cell and Dev. Journal* 50(4).
- Hu, Hongtao, Narendra K. Singh, David Weaver, Shankar Pant, Marceline Egnin, Min Zhong, Chiachen Weng And Robert Locy. 2012. Discovery and Characterization of Conserved and Novel MiRNAs of Leaf, Root and Fiber of Cotton. *Plant and Animal Genome XX*. www.Intl-pag.org
- Samuels, S., M. Egnin, Je. Scoffield, B. Bey, S. Traore, C. S. Prakash, J. Jaynes and J. Jackson. 2011. Somatic Embryogenesis and Genetic Transformation Of Multiple Sweetpotato [*Ipomoea batatas* L. (Lam)] Cultivars for Enhanced Productivity, Nutritional and Health Values. Proceeding of the National Sweetpotato Collaborators Group Progress Report. In Press:
- Samuels, S., M. Egnin, J. Jaynes, S. Traore, B. Min, J Jackson. 2009. Development of Transgenic Sweetpotato [*Ipomoea batatas* (L. lam)] Expressing jc41N and jc41ND Genes as Plant-based Vaccines Against HIV. Society for Invitro Biology Meeting. Charleston, SC June 2009. *In Vitro Cell and Dev. Journal* 45 (4)
- Min, BJ, M. Egnin, C. Bonsi, D. Mortley, S. Traore, and M. Gao. 2009. Characterization of Local Sweetpotato Cultivars as Bio-fuel Crop. *In Vitro Cell and Dev. Journal* 45 (4).
- Egnin, M., M. E. Powell, Scoffield, B. Bey and M. Goore. 2008. Health Disparity Effect Of Obesity Related To Sequence Variations In The Leptin Gene Among African Americans. 2008. Race And Disparities Conference, The Learning Circle. Cape Town, South Africa.
- Egnin, M., D. Mortley, E. F. Sanders, S. Traoré, G. Gao, S. Jack, and T. Radwan. 2008. Comparative Gene Expression Profiling and the Physiological Role of t-Zeatin Riboside (ZR) Between In Vitro and Hydroponic-grown Sweetpotato During Storage Root Initiation and Enlargement. *In Vitro Cell and Dev. Journal* 44 (4): 355-356.

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- Traoré, M. Egnin, F. Sanders, E. Powell and J. Jaynes. 2008. Cloning, Characterization and Expression of Synthetic Tumor Reducing Peptide Gene in Sweetpotato for Use as Therapeutic Drugs against Cancer. *In Vitro Cell and Dev. Journal* 44 (4): 353.
- Sanders, E. F., H. Guohao, L. Gong, M. Egnin and D. Morley. 2008. Transferability of Soybean (Glycine Max) SSR Markers in Peanut Genomic DNA (*Arachis hypogaea* L.). *In Vitro Cell and Dev. Journal* 44 (4): 356-357.
- Harrison, C.A., M. Egnin and S. Traoré. 2008. Plant Tissue Culture Technique for the Secondary Classroom. *In Vitro Cell and Dev. Journal* 44 (4): 346.
- Egnin, M, Harrison, C.A., Powell, E., Scoffield, J. and Mortley, D. 2007. Modeling AgBiotechnology in undergraduate and High School Using Tuskegee University's Transformation Paper model Activities. *In Vitro Cell and Dev. Journal* 43 (6): 673.
- Scoffield, J., M. Egnin, E. Powell, B. Bey, M. Gore and Carol Harrison. 2007. Assessing Sequence Variations in the *Leptin* Gene in African American. *In Vitro Cellular & Developmental Biology - Animal* 43(7):264-268. doi: 10.1007/s11626-007-9044-2.
- Egnin, M., G Gao, D. Mortley, J. Scoffield, S. Jack, G. He and B. Bey. 2007. Gene Expression Profiling and the Physiological Role of t-Zeatin Riboside (ZR) in sweetpotato Storage Root Initiation and Enlargement. *HortScience*, 42 (4): 976.
- Egnin, M, Harrison, C.A., Powell, E., Scoffield, J. and Mortley, D. 2007. Modeling AgBiotechnology in undergraduate and High School Using Tuskegee University's Transformation Paper model Activities. *In Vitro Cell and Dev. Journal* 43 (6): 673.
- Scoffield, J., M. Quain, C. Hoffman M. Egnin, B. Bey and E. Acheampong. 2007. Effect of Lipoic Acid on Phenol Compound in Yam somatic Embryogenesis. *In Vitro Cell and Dev. Journal* 43 (6): 672.
- Egnin, M., C. A. Harrison, E. Powell, J. Scoffield and D. Mortley. 2007. Modeling AgBiotechnology in Undergraduate and High School Classroom Using Tuskegee University's Transformation Paper Model Activities. Submitted to *In Vitro Cell and Dev. Journal*.
- Scoffield, J., M. Egnin, B. Bey, M. Quain, C.S. Prakash and D. Mortley. 2006. Development of an Efficient Agrobacterium-Mediated Gene Transfer System for Multiple Sweetpotato Cultivars. *In Vitro Cell and Dev. Journal*, 42 (4):36A.
- Bey, B., M. Egnin, J. Scoffield, A.S. Williams, D. Mortley, L.S. Crawford, and M. Quain. 2006. Development of Efficient In Vitro Systems For Peanut (*Arachis hypogaea* L.) Micropropagation And Seed Production. *J. In Vitro Cell and Development*, 42(4): 44A.
- Harrison, C. A., M. Egnin, J. Scoffield and B. Bey. 2006. Use of Lettuce Tissue Culture For Developing Transformation Techniques in High School. *In Vitro Cell and Dev. Journal*, 42 (4): 30A.
- Harrison, A. C. and M. Egnin. An Approach to Biotechnology In the High School: Modeling DNA, RNA and Proteins. 2004. *In Vitro Cell and Dev. Biol.* 38 (4): 56A.
- Quain, M.D. M. Egnin, J. Scoffield, B. Bey, C. Bonsi and Elizabeth Acheampong. 2006. Agrobacterium-Mediated Transformation Of Tropical Root Crop (*Dioscorea Rotundata*) Vital For Food Security In Sub-Saharan African. *In Vitro Cell and Dev. Journal*, 42 (4): 47A.
- Gao, H., M. Egnin, G. He, F. Woolard and D. Mortley. 2005. Expression Profiling of Differentially Expressed Genes Possibly Related To Sweetpotato Storage Root Development. *In Vitro Cell and Dev. Biol.* 41(4): 4.
- Brown, V., M. Egnin, E. Powell, R. Pace, E. Kebede, C. Harrison and M. Gore. 2005. Metabolic Profiling And Assessing Polymorphism in Leptin and Obesity Gene In African American. *Cell and Dev. Biol. Vertebrate* 41 (4):4.
- Kone-Coulibaly, S., M. Egnin, G. He and C. S. Prakash. 2004. Analysis of Gene Expression in Yam (*Dioscorea rotundata* Poir) During Dormancy. *In Vitro Cell and Dev. Biol.* 40(4): 8-9.
- Karanja, P., M. Egnin, L. S. Crawford, D. Mortley, J. Williams, and C. Williams. 2004. Molecular Approach To The Process Of Sweetpotato (*Ipomoea batatas* L.) Microstorage Root Production In Vitro. *In Vitro Cell and Dev. Biol.* 40 (4):9.
- Harrison, C. A. and M. Egnin. 2004. An Approach to Biotechnology In the High School: Modeling DNA, RNA and Proteins. *In Vitro Cell and Dev. Biol.* 40 (4):4-5.
- Gichuhi, P., E. Bromfield, N. Alvarez, P. Biswas, M. Egnin, K. Kpombekou-A, A. C. Bovell-Benjamin, 2004. Protein profiles and morphological structures of newly developed sweetpotato cultivars (*Ipomoea batatas* [L.] Lam). Technical Paper # 04ICES-291 2001-012278. SAE International, Warrendale, PA.
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BIOGRAPHICAL SKETCH

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- Phong, D. T., P. B. Ngoc, M. Egnin, C. S. Prakash and L. T. Bin. 2000. Transformation of synthetic protein gene into Vietnamese Sweetpotato Cultivars by Agrobacterium tumefaciens. In Vitro Cell And Dev. Biol. 36 (3): 67-A
- George, K., M. Egnin, X., Zhu, A. McKenzie, J. Jackson, O. Abdelmagid, P. McGarvey, V. Yusibov, H. Koprowski, and C. S. Prakash. 1999. Engineering plants with an edible vaccine gene against rabies virus. In Vitro Cell and Dev. Biol. 35 (3):63A.
- Egnin, M. and Prakash, C.S. 1997. Transgenic sweetpotato expressing a synthetic storage protein gene exhibits high level of total protein and essential amino acids. In Vitro Cell and Dev. Biol. 33 (3): 52A.
- Egnin, M. and Prakash C.S. (1995). Genetic Transformation and Regeneration of Transgenic Sweetpotato. HortScience 30:435.
- Egnin, M. and C.D. Boyer, 1992. Amyloplast Genome Structure and Expression in Zea mays L. Fresh Endosperm and Endosperm Suspension Culture. Plant Physiology, 99:91.

Manual: Experiment Station

Egnin, M., Quain M.D., C.S. Prakash, and Bonsi C. 2013. Manual for Genetically Engineered Sweetpotato Handling and Confined Field Trials: In Compliance with the Standard Operating Procedures for Conducting Confined Field Trials. Tuskegee University George Washington Carver Agricultural Experiment Station (GWCAES) Tuskegee, AL 36088. GWCAES Publication Series.

E. SYNERGETIC ACTIVITIES.

Research Advising/Mentoring History: 120 graduate students & faculty in Genomics workshops; 45 Senior Research Scientists (National & International); 4 Post-Doc Fellows; 30 Graduate Students; 48 Undergraduate Students, 18 IBREED undergraduate Stars (in progress Plant Breeding gene Discovery); 25 Visiting Scientists Trained & more than 1,000 International Impact in outreach training. Community Outreach Training History: 350 K-12 Educators; 1000 K-12 Students; 120 Farmers;. **Teaching:** Biotechnology, Plant Breeding, Advanced Molecular Plant Breeding, Biotechnology, Graduate Research, Business Ethics. **Ph.D Advisor:** Charles D. Boyer. **Collaborators and Co-Editors:** Marian Quain & James Asibuo (Ghana); T-CAP wheat Program consortium; Peggy Valentine (Winton-Salem); Min Gao (Alcorn U); Bob Loci and Narendra Singh (Auburn University); Kenzo Nakamura, Nagoya University, Japan; P Chitnis, M. Wannermhuler, P Scott, Iowa State University; J. Bassagany and E Smith, Virginia Tech; J Brink, Michigan State University; J Hammond, USDA/ARS, Beltsville; H Mason, C Arntzen, Arizona State University; P McGarvey, H Koprowski, V. Yusibov, Thomas Jefferson Institute, Philadelphia; C Clark, Louisiana State University; M Burow Texas A&M University; H Dodo K Konan, Alabama A&M University; BJ Min (Biofuels); Craig Yencho, NCState (iBREED), David Hannapel, Iowa State University (Genomics & iBREED); K McDonald, UC-Davis (CREATE IGERT)

Regulatory Activities: Institutional Biosafety Committee (Tuskegee University 200-present); USDA-BRAG Program Panel reviewer (2011-2012); Field Trial Permit Approval for transgenic High-Protein Sweetpotato (Ghana NBC 2008-present); US-AID Biosafet Speaker Program in Senegal; Manual for Confined Field Trials of Genetically modified Sweetpotato.

New Technologies: Development of transgenic sweetpotato and peanut plants with value added traits; development of in-vitro systems for yam, cocoyam, peanut seed production and sweetpotato edible root; gene discovery and utilization in sweetpotato and peanut; NIH project EXPORT with genomics and vaccine related to obesity gene and leptin profiling; IBREED.

Work featured in: Ça Marche comment Online and TV Show (2009); The White House Archives, 2006; The History Channel Modern Marvell; Wall Street Journal; Alabama Agriculture video; US Black Engineer Magazine; Montgomery Advertiser; pamphlets; Village Voice- 1998 Trend of Nature; Peanut Farmers-1998; Agricell report-1998, 2000 & 2001; Demegen Press Releases; Chemical Online; Focus (Germany); Biosafety News (Kenya) 2000; ABSF News (Kenya)- 2004; AgBioWorld, NASA Press Release, Union Spring News; Alabama Agricultural Video; WSFA Morning News; Tuskegee News; Selma News; South Africa News;

Consultancy Activities: AFEMC-CI Ivory Coast; USDA/FAS (Biosafety/Regulatory); Danforth Center (Training in Biosafety); Monsanto (Training in Biotechnology, Reviewer of Regulatory document); Demeteer Biotech- Biotech Research; Demegen, Inc- Sweetpotato transformation; ISAAA/BTI-Scientist Training in Genetic engineering; Agricultural Services Sub-Sector Investment Program (AgSSIP)/Ghana CSIR- Scientist Training in Genetic engineering and Post Harvest; TN & Associates, Inc-Internal EPA guideline document; ILSI-High Protein Sweetpotato Case Studies; Tennessee State University-Genetic Engineering Document Review.

Teaching: PLSS 565, PLSS531, APSC 540, PLSS 631, IBSC-604/605- Molecular Biology, PLSS 595, PLSS 700, EVSC 595 and EVSC 700, EVSC 540-01 bioinformatics; Guess Lectures in biotechnology/Genomics in Bioethics: Phil 0348 Bioethics-Business Ethics in biotechnology, PLSS530 Plant Biotechnology and issues in Agbiotechnology.

Outreach Activities: Trainer for iAGRI Training Program for Tanzanian Emerging Scholars; AgriTreck, Ag Discovery, DiscoveryTREK, ASPB-Ghana-CSIR-CRI-TU, NSF-REU Summer Program and GWCAES Summer Program, Invited Speakers/trainer to Mali, Ghana, RSA and Sénégal; bringing biotech teaching Program to K-12 youth and teachers, bringing valued-added crop to Southern Underserved Communities-Farmers, training of many international visiting scientists, graduate students and undergraduate students, USDA High School Apprenticeship Program, Summer High School Internship, Summer Youth College Program. Biotech Outreach to Southern US undeserved Communities-Farmers and K-12 Students and Educators. Biotech Outreach to Sub-Saharan African Communities. Summer intership in the biotech and genomics lab Training in biotechnology/Genomics of graduate and undergraduate students, K-12 students under USDA High School Apprenticeship Program; NASA Summer High School Internship and Summer Youth College Program. Training of several visiting international scientists in Biotech-related research and education.

BIOGRAPHICAL SKETCH

Leadership: TU Chapter of GSD President; Organizing committee GSD-PAW Student Competition; Coordinator George Washington Carver Ag. Experimentation Biotech and Genomics Outreach program; Co-Director Southern AgBiotech Consortium for Underserved Communities (SACUC); Society for In Vitro Biology Plant Organizing Committee; Member: Tuskegee University Graduate Faculty, Biosafety Committee, Tuskegee University NASA Center, Tuskegee University Ph.D. Program Committee, TU/NASA Center /Demegen Inc Research and Development Agreement, SOFSEC and Kellogg Summer Student's Reach-out Program; African Biotechnology Initiative; Member NIH/NCMHD Proposal Writing Committee; Member NASA Renewal Proposal Writing Committee. Organizing committee: Workshop on Transgenic Plants, 1996 Tuskegee University; SABRAD Workshops in Kenya (8-2000) and Ghana (11-2000); Invited Fellow Salzburg Seminar 2001.

Workshop Co-Organized:

USA: iBREED, GWCAES Summer Outreach in Biotech Lab, PAWC-Gamma Sigma Delta Student competition, Educators and Youth Biotech and genomics workshop, USDA/FAS-Cochran West African Biosafety Workshop (2007); EPA Symposium on Strategic Monitoring for Ecological Impacts From Crops with Plant Incorporated Protectants (August 2004); Southern AgBiotech Consortium of Underserved Community (SACUC) Commodity Outreach Summers 2002, 2003, 2004 and 2005 to 2008; SACUC Teachers AgBiotech Workshop Summer 2002, 2003, 2004, 2005 and 2006; Co-convenor Nutraceuticals and Biopharming/Vaccines Congress on In Vitro Biology (2000-2005); SACUC Biotech Community Outreach Fall 2002 to 2004; Pioneer Teachers workshop (2002); Workshop on Transgenic Plants(1996) Tuskegee University. USDA/CSREES 2005 Invited Success Story Presentation for Successful Implementation of IFAFs Biotech Outreach Consortium Project (2000-2005).

AFRICA: 2014 AFEMC-CI youth Biotech, 2013 ASBP Ghana youth & Educators' Biotech, 2008 & 09 Ghana CRI, 2010 WACCI Summer program activities, 2006 Danforth Center Atelier de Formation en Biosecurité à l'attention des Inspecteurs et Organismes De Reglementation des Essais au Champ pour les Cultures Genetiquement Modifiees (2006) Sikasso, Mali; Kenyan Teachers' and Students' Biotechnology Workshop July 2004, Machakos, Kenya; Students' Biotechnology Workshop July 2004, Nairobi, Kenya; Nigerian stakeholder Biotech & Regulatory workshop, May 2004; Kenya Stakeholder Biotech & Biosafety Workshop, April and August 2003; SABRAD Biosafety Workshops in Kenya (8-2000); SABRAD Biotech Workshops, November 2000 Ghana. Delegate to the USAID African Biotechnology Partnership Meeting (AICHA Initiative) Nairobi, 2002.

GRADUATES STUDENTS ADVISED

Osa Idehen (PhD in Progress) Phenotyping & gene discovery associated with As in Fern

Getrude Kanyarita (MS in progress): Screening of Maize for Drought Tolerant Markers

Inocent Ritter (MS 2015) Phenotyping & gene discovery associated with TZ maize Lethal necrosis disease

Inocent Ritter (MS) Phenotyping and gene discovery associated with Tanzanian maize Lethal necrosis disease

Gregory Bernard (PhD) Gene discovery associated with sweetpotato resistance to nematode infection

Steven Samuels (PhD, **MS 2010**): Development of Transgenic Plants Expressing Anti-HIV Peptides

Emma Owens (2013) Characterization of Apo A, B and E proteins in obese African-American

Tarek Radwan (2010): Physiological Role of ABA during Hydroponic-Grown Medicinal Plants

Lakia More (2009) Dietary Stress & Orexin-A Gene Expression In Broad-Breasted W-Turkeys: A Genetic Model of Heart Disease & Eating Behavior

Cristal Hill (2009) Pro-Inflammatory Cytokine Gene expression in High Fat Fed Turkeys with Induced Dilated Cardiomyopathy.

Sy Mamadou Traoré (2009) Cloning, Characterization & Expression of Synthetic Tumor Reducing Peptide Genes in Sweetpotato against Cancer

Hui Gao (2005) Differential Gene Expression Profiling in Sweetpotato Storage Root Development.

Pheris Karanja (July 2004) Molecular Approach To Sweetpotato Microstorage Root Formation in vitro.

Ashantye Williams (2004) Development of In-vitro System for Peanut Micropropagation and Seed Production.

Sali Kone-Coulibaly (2004) Molecular Analyses of Differentially Expressed in Yam during Post Harvest Storage.

Michon Walker (August 2003) Molecular characterization of Super-High Protein Sweetpotato.

Chantal Daniels (2001) Development of Sweetpotato Tissue Culture and Transformation Techniques.

GRADUATES STUDENTS CO-SUPERVISED

Melissa Johnson (PhD, Advisory committee, May 2013) C-Reactive protein levels in high fat diet fed rat livers

Shaina Atoh (2013) Characterization of Apo A and B, and C-Reactive proteins in high fat diet fed rat brains

Marian Dorcas Quain (Ghana, 2009) Dioscorea Species and Solenostemon Rotundifolius

Judith Adhiambo Owiti (2004) Agrobacterium Mediated Transformation of Sweetpotato (*Ipomoea batatas* (L.) Lam) in Kenya

Freeda Woolard (2008) Gene Discovery in Sweetpotato Storage Root Development.

Karine Nyiauwung (May 2010) Bioenergy production in Sweetpotato

Issa Abukary (May 2010) Screening Sweetpotato Cultivars for High Biomass Production

Lakisha Odom (Summer 2010) Effect Of Antimicrobial Synthetic Peptide D4E1 On Infestation Of Cotton Seedling Disease & Soil Microbial Diversity

Mgavi Braithwaite (2001) High Throughput Transcript analysis of ASP1-Sweetpotatoes.

Jacqueline Jackson (May 2000) Expression of Pharmacologically-Active Products in Peanut

Tina McKenzie (August 1999) Genetically Engineered Jewel and AC-87 with the Cholera LTB vaccine.

James Lewis (1999) Development of Transgenic Peanuts with dnp-2.

Kelli George (1999) Molecular Characterization of Transgenic Peanut with edible rabies glycoprotein.

K. Shireen (1999) Transgenic High Protein Sweetpotatoes Effect on Protein Quality/Toxicity and Lipid.

Xiaoping Zhu (1998) Engineering Sweetpotato and Tobacco with Rabies Vaccine Glycoproteins.

Ragonwa Walls (1997) Expressing Fungal Resistance Genes (chitinase/ β -1-3glucunase) In Sweetpotato.

Agnes Kilonzo (1997) Genetic engineering of edible cholera vaccine in sweetpotato.

Adalgisa Mora (1995) Tissue Culture and Gene Transfer in Peanut (*Arachis hypogaea* L.).

BIOGRAPHICAL SKETCH

Advisory Committee: *Melissa Johnson* (PhD) C-Reactive protein levels in high fat diet fed rat livers; *Shaina Atoh (2013)* Characterization of Apo A and B, and C-Reactive proteins in high fat diet fed rat brains; *Marian D. Quain* (Ghana, 2009) Dioscorea Species and Solenostemon Rotundifolius; K. Nyiawung (2010, Post Doc) Sweetpotato Bioenergy Production; S Cooks, PhD; D Abugri, PhD; P Binangwa, MS; K Mathew PhD; B Gines PhD;

VISITING SCIENTISTS TRAINED/ NATIONAL & INTERNATIONAL IMPACT

Dr. Ramanjini Gowda, Univ. Agri. Sciences (India) Biopolymer and Rabies genes in sweetpotato.
Dr. Qihan Xue, Jiangsu Academy of Agricultural Sciences (China) Green Fluorescent Protein gene.
Prof. E. Ene-Obong (Nigeria). Resolving Genetic Differences by DAF in Cowpea.
Dr. V. A. Parthasarathy (India) Genetic Engineering of Sweetpotato for virus resistance.
Mr. Aswadi Anwar (Indonesia) Radiation-Induced mutations in Sweetpotato Tissue Cultures. IAEA.
DR. H. L. Sreenath (India) Coffee Biotechnology.
Ms. Netty Suraya (Indonesia) Green Fluorescent Protein Transgene in Sweetpotato. IAEA.
Mr. Martin Steinau (Germany) Transformation with Sweetpotato Crinivirus CP Resistance Gene.
Mr. Tarek Radwan (Egypt) Tissue Culture and Transformation/Techniques for medicinal plants.
Mrs. Agnes Alajo (Uganda) Tissue Culture and Transformation/Techniques of African Sweetpotato. UNESCO.
Ms. Pham Bich Ngoc (Vietnam) Transgenic asp-1 Sweetpotato Varieties from Vietnam. ISAAA.
Ms. Judith Adhiambo (Kenya) Transformation of Kenyan Sweetpotato Cultivars with gus-A gene
Ms. Chantal Daniels (South Africa) Engineering Elite South African Sweetpotato Disease resistance Transgenics
Ms. Dinh Thi Phong (Vietnam) Transformation of Vietnamese Sweetpotato Cultivars. ISAAA.
Ms. Anne Sama (Cameroon) Tissue Culture/Transformation Techniques for African Taro Varieties. TU-SABRAD.
Dr. Marian Dorcas Quain (Ghana, 2005-06; 2009-2013) Dioscorea Species and Solenostemon Rotundifolius. World Bank.
Prof. Walter Alhassan (Ghana) Biotech Outreach To West Africa. (USAID/ABSP II, August 2005).
Mr. Claude Tiemtore (INRA Burkina, 2006) Biotech/Biosecurity Training on sweetpotato and cowpea. Monsanto
Mr. Hamadou BALDE (Ministry of Agriculture, Senegal, 2007) Tuskegee University West Africa Biosafety Training Program. USDA-FAS
Dr. Yacine TOURE (Food Technology Institute, Senegal, 2007) Tuskegee University West Africa Biosafety Training Program. USDA-FAS
Mr. Souleymane NDIAYE (Senegalese Consumers Association, 2007) Tuskegee University West Africa Biosafety Training Program. USDA-FAS
Dr. Mame Oureye SY (University Cheikh Anta Diop-Dakar Senegal, 2007) Tuskegee University West Africa Biosafety Training Program. USDA-FAS
Mrs. Fana Marie Antoinette SYLLA (President BIODA, Senegal, 2007) Tuskegee University West Africa Biosafety Training Program. USDA-FAS
Mr. Mbalo Ndiaye (USDA-FAS Dakar Senegal, 2007) Tuskegee University West Africa Biosafety Training Program. USDA-FAS
Dr. M. SAWADOGO (University of Ouagadougou, Burkina Faso, 2007) Tuskegee University West Africa Biosafety Training Program. USDA-FAS
Dr. Lompo Zourata (Director National Biosafety, Burkina Faso, 2007) Tuskegee University West Africa Biosafety Training Program. USDA-FAS
Dr. Inamoud Ibn YATTARA (University of Bamako, Mali, 2007) Tuskegee University West Africa Biosafety Training Program. USDA-FAS
Prof. Tidou, Abi (2014); President UJLG, Gouvernement of Ivory coast, Biotechnology and Molecular Ecology Outreach;
USDA-FAS: Four African USDA-FAS Cochran Fellows (2014), Training in Seed Technology.