

CURRICULUM VITAE

ROBERT W. TAYLOR
Professor of Soil/Environmental Chemistry

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EDUCATION

College: Ph.D. Soil Chemistry - Michigan State University, East Lansing, MI
1973-1977
M.S. Soil Microbiology - Michigan State University, East Lansing,
MI., 1970-1973
B.S. Agronomy (High Honors) Tuskegee Institute, Tuskegee, AL
1967-1970

PROFESSIONAL EXPERIENCE AND ACTIVITY

2012- Dean and Director of Land-grant Programs, College of Agriculture and
Food Science ; Florida A&M Florida A&M University.

2006-2011 Dean of the School of Agricultural and Environmental Sciences, (AAMU)

2006-2007 Director of NSF/CREST Center for Forest Ecosystems Assessment (CFEA)

1990-2006 Professor of Soil/Environmental Chemistry and Director of Center for
Environmental Research and Training (CERT), Alabama A&M
University, Normal, AL,

2001-2002 Acting Deputy Division Director for Biological Infrastructure, Division
of Biological Infrastructure, National Science Foundation (NSF)
Arlington, VA 22230

2000-2001 Rotating Visiting Scientist and Program Director for Research Experiences For Undergraduates (REU) Sites and also Collaborative Research at Undergraduate Institutions (C-RUI) at the National Science Foundation (NSF)

- 1999-Pres. Professor of Soil/Environmental Chemistry and Director of CERT and Program Manager for Integrated Environmental Research and Services of the Research Institute (ERS), Alabama A&M University, Normal, AL
- Sept. 1998 Professor of Soil/Environmental Chemistry and Director of the Center for Environmental Research and Training (CERT), Alabama A&M University, Normal, AL 35762
- Aug. 1997 -
Aug. 1998 Professor and Interim Chairperson of the Department of Plant and Soil Science and Director of the Center for Environmental Research and Training (CERT), Alabama A&M University, Normal, AL 35762
- Oct. 1992 -
July 1997 Professor of Soil/Environmental Chemistry and Director of the Center for Environmental Research and Training (CERT), Alabama A&M University, Normal, AL 35762
- July 1981-
Sept. 1992 Associate Professor of Soil Chemistry and Plant Nutrition, Alabama A&M University; Normal, AL 35762
- Aug. 1979-
June 1981 Co-investigator on two research projects in the Department of Plant Science, Tennessee State University, Nashville, TN
1. Use of Farm Manure and Sewage as Soil Amendments in the Growth of Corn and Sorghum.
 - a. Assisted in field plot establishment, maintenance and observation of corn and sorghum, also application of sewage sludge and beef cattle manure.
 - b. Laboratory analyses of soil samples for available phosphorus, calcium, magnesium, sodium, potassium and DTPA extractable copper, zinc, cadmium and nickel.
 - c. Planning of graduate student and chemist work for soil analyses (organic matter, total nitrogen, ammonium and nitrate nitrogen, conductivity and plant tissue analysis).
 2. Herbicide performance and efficiency under conventional and no-tillage soybean systems.

- a. Assisted in the application of herbicides, in soil sampling and in the establishment and observation of conventional and no-tillage soybeans.
- b. Assisted in taking plant height, plant population and lodging data. Also assisted in harvesting and threshing of soybeans.

July 2-6,
1978 Bahamas Delegate to the Founding Conference of the Caribbean Council for Science and Technology. (Port of Spain, Trinidad and Tobago).

1978-1979 Coordinator of Research: Ministry of Agriculture, Fisheries and Local Government; Nassau, Bahamas.

1977-1979 Senior Research Agronomist/Soil Scientist
Bahamas Agricultural Research, Training and Development Project - A Joint USAID-Bahamas Government Project, San Andros, Andros Island, Bahamas

Conducted Research on: Crops and Soils

Crops:

Corn

- a. Variety trials on germplasm from CIMMYT
- b. Seed increase and field testing of selected varieties

Cassava

- a. Variety trials on germplasm from CIAT

Irish Potato

- a. Fertilizer trial on Red La Soda variety

Pigeon Peas (Cajanus cajan)

- a. Seed increase and performance evaluation of selected high yielding cultivar (Paraguay N-3)

Temperate and tropical pasture legumes

- a. N-P-K fertilizer experiment on alfalfa, desmodium, siratro and glycine

Peanut

- a. Variety trial

Leucaena (K-8 type)

- a. Performance evaluation and seed production for distribution to countries needing germplasm

Soils:

- Initiated pioneer work on the chemistry and fertility of Bahamian soils collected from selected islands in the Bahamas archipelago.

- Investigated the available phosphorus, calcium, magnesium, potassium and sodium status of both virgin and cultivated soils and soil physical properties.

- Determined pH, conductivity (salt content), phosphorus adsorption capability and phosphorus fractionation (i.e. Ca-P, Al-P, Fe-P, etc.) of virgin and cultivated soils.

- Engaged in extension work with farmers around research station and when visiting other islands to collect soil samples.

- Taught agricultural courses to junior high and high school agricultural teachers during the summer in 1978 and 1979.

1970-1977	Graduate Research Assistant Department of Crop and Soil Sciences Michigan State University East Lansing, MI
1963-1967	Agricultural Trainee, Ministry of Agriculture Chippingham Research Station Nassau, Bahamas

TEACHING

Soil Chemistry - SPS 460/560

D (Alabama A&M University 1981-2006)

Instrumental Techniques - SPS 505	G	(Alabama A&M University 1981-2006)
Advanced Soil Chemistry-SPS 750	G	(Alabama A&M University 1981-2006)
Soil Fertility & Fertilizers-SPS 450	U	(Alabama A&M University 1981-2006)
Mineral Nutrition of Plants-SPS 560	G	(Alabama A&M University-1981-2000)
Soil, Plant & Water Analysis-SPS 470/570	D	(Alabama A&M University 1981-2006)
Soil & Water Pollution-SPS 472/572	D	(Alabama A&M University 1982, 1996)
Chemistry of Toxic Substances-SPS 451/551	D	(Alabama A&M University 1990-2000)
Tropical Soils-SPS 454	U	(Alabama A&M University 1982)
Introductory Plant Physiology	U	(Tennessee State University 1980)
Plant Growth Substances	G	(Tennessee State University 1980)
Soil Science	U	(BARTAD - 1977-1979)
Pasture Management	U	(BARTAD - 1977-1979)
Root Crops	U	(BARTAD - 1977-1979)

D = Dual level; G = Graduate level; U = Undergraduate level

GRADUATE STUDENTS TRAINED

Ph.D. STUDENTS

1. **Bhat, Kamala Narayana.** 2010. Chemical and Mineralogical Forms of Metals and Phosphorus in Volcanic Ash and Soils of Montserrat.
2. **Thompson, Meiko Malikh.** 2010. Thinning and Prescribed Burning Effects on the Structural Microbial Diversity and Nutrient Cycling on a Forest Ecosystem.
3. **Yaffa, Sidat.** 2005. Relationships of Spectral Readings, Soil and Plant Tissue Total N and P, and Dry Matter Yield of Forage Crops Grown on a Poultry Litter-A Amended Soil.
4. **Belvitt, B.** 1998. Movement of Nitrate-N and Pesticide Under Different Tillage, Organic Amendment and Cropping Systems in Decatur Silt Loam Soil.

MASTER OF SCIENCE

1. **Armstrong, Shalamar D.** 2005. Comparison of Broadcast and Band Application Of Poultry Litter on Cotton.
2. **Ford, C.** 1999. Effects of Dispersion and Moisture Content on Growth and Colonization of *Pseudomonas fluorescens* HK 44.

3. **Armstrong, F.** 1996. Heavy Metal Uptake and Accumulation by Aquatic and Wetland Plants (Received Ph.D. from Oklahoma State University, 2003).
4. **Cobb, G.** 1995. (Non-thesis option).
5. **Woldu, H.** 1993. (Non-thesis option).
6. **Mamo, M.** 1992. Kinetics of Ammonium Sorption and Desorption by an Illitic Aridisol and Some Clay Minerals. [Received Ph.D. in Soil Chemistry/Fertility from University of Minnesota, St. Paul, MN, 1997].
7. **Lindo, P.** 1991. Availability, Transformation, and Movement of Residual Phosphate in Sludge-Treated Decatur Silty Clay Loam Soil. [Received Ph.D. in Soil Fertility/Chemistry from Auburn University, Alabama in 1997].
8. **Hassan, K.** 1990. Zinc Sorption by Some Benchmark Soils of Alabama. (Received Ph.D. in Geology from University of Nebraska, 1995)
9. **Xiu, He.** 1989. Chemical Forms and Photoavailability of Heavy Metals from Land Application of Sewage Sludge.
10. **Ngewoh, Z. S.** 1989. Cation Exchange Capacity, Exchangeable Cations Determinations and Phosphate Chemistry Evaluation of Some Alabama Benchmark Soils. [Received Ph.D. in Soil Biochemistry from Iowa State University, 1995].
11. **Mehadi, A. A.** 1988. Phosphate Status of Some North Alabama Soils. [Received Ph.D. in Soil Chemistry from University of New Hampshire, 1993].
12. **Jaggernauth, M.** 1988. Uptake of ^{15}N by Algae and Their Evaluation as Plant - Available Nitrogen Sources.
13. **Ubi, M. W.** 1987. Extractable Micronutrient Cations, Exchangeable Cations and Cation Exchange Capacity of Acid Forest Soils. Graduate Student.
14. **Ibeabuchi, I. O.** 1987. Plant growth Response on and Heavy Metal Accumulation from Some Central Alabama Acid Mine Spoils.
15. **Williams, M. L.** 1984. Tolerance of Soybean (*Glycine max* (L) merr.) and *Rhizobium japonicum* to Low Phosphate - High Aluminum under Acid

Conditions. (Received Ph.D. in Tropical Soil Science from North Carolina State University in 1995).

SERVICE ON GRADUATE STUDENT THESIS COMMITTEES

Plant and Soil Science Department: No. of Students = 63

Other Departments: No. of Students = 14

RESEARCH PROJECTS

a) Principal Investigator.

1. CREST: Center of Excellence in Forestry Ecosystem Assessment. 2004-2009. (NSF-CA: HRD-0420541 - \$4.8M).
2. SGER: Effect of Soufriere Hills Volcanic Eruptions on the Plant and Soil Environment of Montserrat. 2004-2006 (NSF-DBI-0441424 - \$125,000)
3. Acquisition of a Microwave Digester for Environmental Chemistry Research and Education in AAMU 2003-2004 (USDA/NRI- \$24,000)
4. Phosphorus Transformation in Poultry Litter Amended Soil: Phosphorus Fractionation and Phosphorus Chemistry. 2003-2005 (USDA/CSREES- \$181-300 per year)
5. Kinetics and Mechanisms of Metal Retention/Release in Geochemical Processes in Soils. 1996-1999 (Agency USDOE - \$361,788).
6. Mechanism(s) of Metal Adsorption/Desorption/Precipitation in Geochemical Processes in Soils. 1995- (USDA/CSREES \$45,000 per year).
7. Alabama A&M University's Hanford Environmental Science and Engineering Consortium Project. 1994-1996 (Agency USDOE - \$192,002).
8. Student Traineeships in Water Science Area of Environmental Science. 1993. (Agency: EPA - \$75,000).
9. Strengthening the Research and Training in Environmental Science. 1992. (Agency: NSF/RIMI - \$384,338).

10. Pesticide Transport in Relation to Tillage Practices and Organic Matter. 1991- (Agency: USDA/Capacity Building Grant - \$224,134).
11. Use of Indigenous Phosphate Rocks for Aluminum-Tolerant Cultivars in Humid-Tropical Soils. 1991- (Agency: USAID/HBCU - \$100,000).
12. Fundamental Investigation of Nitrogen Fixation by Microalgal Biofertilizers. 1986-1987. (Agency: DOE - Battelle PNL - \$100,000).
13. Greenhouse and Field Testing of Selected Soybean-Rhizobium Combinations for Tolerance to Low P-High Al. 1986-1991. (Agency: USDA/CSRS - \$50,000 per year).
14. Geographic Variation in Chemical Properties of New England Forest Soils. 1984-1987. (Agency: Forest Service - \$60,000 per year).
15. Evaluation of Surface Mining and Reclamation on the Water Resource in Central, Alabama. 1981-1985. (Agency: Forest Service - \$60,000).
16. A Study of Soybean and Rhizobia Tolerance to Low Phosphorus - High Aluminum in Acid Soils. 1981-1985 (Agency: USDA/CSRS - \$50,000 per year).

b) Co-Investigator

1. The Fate of P in Poultry Litter-Amended Soils under Different Management Practices in Long-Term Plots. 2002-2006 (USDA/CSREES- \$ 84,000 per year)
2. Trace and Nutrient Element Chemistry in Oxide-Rich Soils of Alabama 2002-2006 (USDA/CSREES- \$73,000)
3. Use of Winter Annual Cover Crops to Reduce or Prevent Leaching of Soil Nitrate Remaining at the End of Summer Growing Season. 1990-1991. (Agency: AUTRC and TVA - \$54,952).
4. Wood Ash Utilization in Fine Turf Liming and Fertilization. 1992. (Agency: AUTRC and TVA - \$20,000).
5. Evaluation of the Biotic Potential of Microorganisms and Higher Plants to Enhance the Quality of Constructed Wetlands. 1991-1996. (Agency: DOI-OSM - \$467,414).

6. Field Sampling and Modeling of Contaminant Transport in the Vadose Zone (Agency: USDA/Capacity Building Grant - \$200,000).
7. Molecular Basis of Tolerance to AI Toxicity in Soybean (Agency: USDA/Capacity Building Grant - \$217,558).
8. Studying Efficiency of Constructed Residential Wetlands. 1995-1997. (Agency: ADEM - \$77,800)
9. Monitoring the Nitrate Levels of Ground Water in Madison Counties, Alabama. 1995-1997. (Agency: ADEM - \$47,000).

COMMITTEES SERVED ON

Alabama A&M University

- Departmental Faculty Promotions Committee
- Departmental Faculty Reappointment Committees
- Departmental Faculty Awards Committee
- Departmental Graduate Committee
- Departmental Recruiting Committee
- School Faculty Salary Supplement Committee, Chairperson
- School Research & Extension Committee
- School Publications Committee
- University Basic & Applied Science Committee, Chairman
- University Hazardous Waste Committee, Co-chair
- University Research Council
- University Library Committee
- University Academic Appeals Committee
- University Duplication of Courses Committee

Tennessee State University

- School Research
- Department Brochure
- Technologically - assisted Physical Science Program's Advisory Committee

OTHER WORK EXPERIENCE

1964-1965: Full-time Agricultural Trainee, Chippingham Experiment Station; Nassau, Bahamas. (Nassau's Botanical Garden)

LIST OF PUBLICATIONS

Refereed Journals.

1. Ranatunga, T.D. , S.S. Reddy, and **R.W. Taylor**. 2013. Phosphorus Distribution in Soil Aggregates Size Fractions in a Poultry Litter Applied Soil and Potential Environmental Impacts. Geoderma: 446-452
2. Duressa, D., K.M. Soliman, **R.W. Taylor**, D. Chen. 2011. Gene Expression profiling in Soybean under Aluminum Stress: Genes Differentially Expressed Between Al-tolerant and Al-sensitive genotypes. Amer. J. of Molecular Biology, 1:156-173.
3. Schulthess, C.P., **R.W. Taylor**, D.R. Ferreira. 2011 the Nanopore Inner Sphere Enhancement Effect on Cation Absorption: Sodium and Nickel. Soil Sci. Soc. Am. J.: 75 (2): 378-388.
4. Duressa, D., K. Soliman, **R. W. Taylor** and Z. Senwo. 2011. Proteomic Analysis of Soybean Roots Under Aluminum Stress. International Journal of Plant Genomics. 2011:XXXX
5. Bhat, K.N., Batra, S. Bhattacharjee, and **R. W. Taylor**. 2010. Effect of Volcanic-ash on Pyroelectric and Dielectric Properties of Portland Cement. Proc of SPIE 77880 77800L: 1-7.
6. Ranatunga, T.D., **R.W. Taylor**, K.N. Bhat, S.S. Reddy, Z.N. Senwo and B. Jackson. 2009. Inorganic Phosphorus Forms in Soufriere Hills Volcanic Ash and Volcanic Ash-Derived Soils. Soil Science. 174:430-438.
7. **Taylor, R.W.**, W.F. Bleam, T.D. Ranatunga, C.P. Schulthess, Z.N. Senwo, DR. A. Ranatunga. 2009. X-ray Absorption Near Edge Structure Study of Lead Sorption on Phosphate-Treated Kaolinite. Environ. Sci. Technol. 43:711-717
8. T.D. Ranatunga, **R.W. Taylor**, C.P. Schulthess, Dr. A. Ranatunga, W.F. Bleam, Z.N. Senwo. 2008. Lead Sorption on Phosphate-Pretreated Kaolinite: Modeling, aqueous Speciation, and Thermodynamics. Soil Science. 173:321-331.

9. Senwo, Z.N., T.D. Ranatunga, I.A. Tazisong, **R.W. Taylor**, Z. He. 2007. Phosphatase Activity of Ultisols and Relationship to Soil Fertility Indices. J. Food Agric. Envi. 5:262-266.
10. I.A. Tazisong, I. A., Z.N. Senwo, and **R.W. Taylor**. 2005. Trends in Trace Elements in an Ultisol Impacted by Long-Term Applied Broiler Litter. Bull. Environ. Contam. Toxicol. 75:975-981.
11. Tazisong, I.A., Z.N. Senwo, **R. W. Taylor**, M.O. Mbila, and Y.Wang. 2004. Concentration and Distribution of Iron and Manganese Fractions in Alabama Ultisols. Soil Science. 169:489-496.
12. Prochnow, L. I., S.H. Chien, **R.W. Taylor**, G. Carmona, J. Henao, and E.F. Dillard, 2003. Characterization and agronomic evaluation of single superphosphate varying in iron phosphate impurities. Agron.J. 95:293-302
13. Prochnow, L.I., S.H. Chien, E.F. Dillard, E.R. Austin, G. Carmona, J. Henao, U. Singh, **R.W. Taylor**. 2003. Synthesis characterization and agronomic evaluation of iron phosphate impurities in superphosphate. Soil. Sci. Soc. Am. J. 67: 1551-1563.
14. Shen, S., **R.W. Taylor** and S. Tu. 2002. Interactions of Enzymes with Clays and Applications in bioremediation. In Soil Mineralogy with Environmental Applications, Ch. 27. Joe B. Dixon and Darrell E. Schulze (Co-Ed). Soil Science Society of America Book Series. No. 7. 677 South Segoe Road, Madison, WI 53711, USA.
15. Senwo, Z. N., **R. W. Taylor**, and K. R. Sistani. 2003. Phosphorus Distribution in Five Highly Weathered Alabama Soils. Commun. Soil Sci. Plant Anal., 34(1&2): 97-109.
16. **Taylor, R. W.**, S. Shen. W. F. Bleam and S. Tu. 2000. Chromate Removal by Dithionite-reduced Clays: Evidence from Direct XANES of Chromate Reduction at Clay Surfaces. Clays and Clay Minerals 48 (6) : 648-654.
17. Shen, S., **R. W. Taylor** , H. Bart and S. Tu. 1999. Equilibrium and Spectroscopic Studies of Lead Retention in Smectite. Commun. Soil Sci. Plant Anal., 30 (19 & 20), 2711-2730.

18. Senwo, Z. N., F. Archer, A. Manu, T. L. Coleman, and **R.W. Taylor**. 1998. Comparative Assessment of DTPA and Mehlich 3 Extractable Metals in Poultry Manure Amended Soil. J. Soil and Water Conservation. 52: 2.
19. **Taylor, R. W.**, P. V. Lindo, J. W. Shuford, D. C. Adriano and K. S. Sajwan. 1998. Availability to Crops of Residual P from A Sludge-Treated Soil. J. Environ. Sci. and Health, Part A. 33 (No. 6):1075-1090.
20. Sistani, K. R., D. A. Mays and **R. W. Taylor**. 1998. Development of Natural Conditions in Constructed Wetlands; Biological and Chemical Changes. 1998. Ecological Engineering. 12(1-2):125-131.1. Prochnow, L.I., S.H. Chien, E.F. Dillard, E.R. Austin, G. Carmona, J. Henao, U.
21. Singh, **R.W. Taylor**. 2003. Synthesis characterization and agronomic evaluation of iron phosphate impurities in superphosphate. Soil. Sci. Soc. Am. J. 67: 1551-1563.
22. Xia, K., **R. W. Taylor**, W. F. Bleam, P. A. Helmke. 1998. The Distribution of Cu(II) on Boehmite and Silica Surfaces: Correlating EPR Signal Loss With the Effective Bohr Magneton Number of Sorbed Ions. J. Colloid and Interface Sci. 199:77-82.
23. Prochnow, L.I., S.H. Chien, E.F. Dillard, E.R. Austin, G. Carmona, J. Henao, U. Singh, **R.W. Taylor**. 2003. Synthesis characterization and agronomic evaluation of iron phosphate impurities in superphosphate. Soil. Sci. Soc. Am. J. 67: 1551-1563.
24. Xia, K., A. Mehadi, **R. W. Taylor** and W. F. Bleam. 1996. X-ray Absorption and Electron Paramagnetic Resonance Studies of Cu(II) Sorbed to Silica: Surface-Induced Precipitation at Low Surface Coverage. J. Colloid and Interface Science. 185:252-257.
25. **Taylor, R. W.**, W. F. Bleam, and Shu-I Tu. 1996. On the Langmuir Phosphate Adsorption Maximum. Commun. in Soil Sci. Plant Anal. 27(13&14), 2615-2623.
26. **Taylor, R. W.**, H. Xiu, A. A. Mehadi, J. W. Shuford, and W. Tadesse. 1995. Fractionation of Residual Cadmium, Copper, Nickel, Lead and Zinc in Previously Sludge-Amended Soil. Commun. Soil Sci. & Plant Anal. 26(13&14), 2193-2204.

27. Chien, S. H., R. G. Menon, **R. W. Taylor**, and K. R. Sistani. 1995. Evaluation of Agronomic Effectiveness of Phosphate Rocks for Aluminum-Tolerant Soybean Cultivars. Commun. Soil Sci. & Plant Anal. 26(19&20), 3133-3144.
28. Lindo, P. V., **R. W. Taylor**, D. C. Adriano, and J. W. Shuford. 1995. Fractionation of Residual Phosphorus in a Highly Weathered Sludge-treated Soil: Organic Phosphorus. Commun. Soil Sci. Plant Anal. 26(15&16): 2639-2653.
29. **Taylor, R. W.**, K. Hassan, A. A. Mehadi, J. W. Shuford. 1995. Kinetics of Zinc Sorption by Soils. Commun. in Soil Sci. Plant Anal. 26(11&12): 1761-1771.
30. Sistani, K. R., D. A. Mays, and **R. W. Taylor**. 1995. Biogeochemical Characteristics of Wetlands Developed After Strip Mining for Coal. Commun. Soil Sci. & Plant Anal. 26(19&20) 3221-3229.
31. Sistani, K. R., D. A. Mays, **R. W. Taylor** and C. Buford. 1995. Evaluation of Four Chemical Extractants for Metal Determinations in Wetland Soils. Commun. in Soil Sci. Plant Anal. 26(13&14) 2167-2180.
32. Folle, F., J. W. Shuford, **R. W. Taylor**, A. A. Mehadi and W. Tadesse. 1995. Effect of Sludge Treatment, Heavy Metals, Phosphate Rate and pH on Soil Phosphate. Commun. in Soil Sci. Plant Anal. 26(9&10):1369-1381.
33. **Taylor, R. W.**, K. Hassan, A. A. Mehadi and J. W. Shuford. 1995. Zinc Sorption by Some Alabama Soils. Commun. in Soil Sci. Plant Anal. 26(7&8):993-1008.
34. Lindo, P. V., **R. W. Taylor**, J. W. Shuford and Domy C. Adriano. 1993. Accumulation and Movement of Residual P in Sludge-Treated Decatur Silty Clay Loam Soil. Commun. in Soil Sci. Plant Anal. 24:1805-1816.
35. Mamo, M., **R. W. Taylor** and J. W. Shuford. 1993. Ammonium Fixation by Soil and Pure Clay Minerals. Commun. in Soil Sci. Plant Anal. 24:1115-1126.
36. **Taylor, R. W.**, I. O. Ibeabuchi, K. R. Sistani and J. W. Shuford. 1993. Heavy Metal Concentration in Forage Grasses and Extractability From Some Acid Mine Spoils. Water, Air and Soil Pollution. 68:363-372.
37. Cox, A., **R. W. Taylor** and H. Raeburn. 1992. Comparison of Extractants for Determination of Available P, K., and Ca in Some Grenada Soils. Tropical Agriculture 70:22-26.

38. **Taylor, R. W.**, I. O. Ibeabuchi, K. R. Sistani and J. W. Shuford. 1991. Accumulation of Some Metals by Legumes and Their Extractability From Acid Mine Spoils. J. of Environmental Quality. 21:176-180.
39. Blears, W. F., P. E. Pfeffer, S. Goldberg, **R. W. Taylor** and R. Dudley. 1991. A ³¹P Solid-State Nuclear Magnetic Resonance Study of Phosphate Adsorption at the Boehmite/Aqueous-Solution Interface. Langmuir 7:1702-1712.
40. Xiu, H., **R. W. Taylor**, J. W. Shuford, W. Tadesse and D. C. Adriano. 1991. Comparison of Extractants for Available Sludge-Borne Metals: A Residual Field Study. Water, Air and Soil Pollution. 57-58:913-922
41. Tadesse, W., J. Shuford, **R. W. Taylor**, D. C. Adriano and K. S. Sajwan. 1990. Comparative Availability to Wheat of Metals from Sewage Sludge and Inorganic Salts. Water, Air and Soil Pollution 55:397-408.
42. **Taylor, R. W.**, M. L. Williams and K. R. Sistani. 1991. N₂ Fixation by Soybean-bradyrhizobium Combinations under Acidity, Low P and High Al Stresses. Plant and Soil 131:293-300.
43. **Taylor, R. W.**, K. R. Sistani and S. Patel. 1990. Soybean Rhizobium Combination for Tolerance to low P- high Aluminum. J. Agronomy and Crop Science 165:54-60.
44. Mehadi, A. A., **R. W. Taylor** and J.W. Shuford. 1990. Prediction of Phosphate Requirement of Soils Using the Langmuir Adsorption Maximum. Plant and Soil 122:267-270.
45. Sistani, K. R., **R. W. Taylor**, R. D. Hauck and K. R. Kelly. 1989. Recovery of ¹⁵N From Ammonium Nitrate and Algal Biomass-amended Soil. Fertilizer Research 20:67-73.
46. Ngewoh, Z. S., **R. W. Taylor** and J. W. Shuford. 1989. Exchangeable Cations and CEC Determinations of Some Highly Weathered Soils. Commun. in Soil Sci. Plant Anal., 20 (17 & 18): 1833-1855.
47. **Taylor, R. W.**, I. O. Ibeabuchi and J. W. Shuford. 1989. Growth and Metal Accumulation of Forage Grasses at Various Clipping Dates on Acid Mine Spoils. J. Environ. Sci. Health, A24 (2), 195-204.

48. Sistani, K. R. and **R. W. Taylor**. 1988. Crop Recovery of ^{15}N from Microalgae Grown in Simulated Inorganic - Wastewater Medium. J. Environ. Sci. Health A23:745-755.
49. **Taylor, R. W.**, K. R. Sistani and M. Floyd - 1988. Algal Biomass Production, N Uptake and N_2 Fixation in a Synthetic Medium. Biomass 15:249-257.
50. Mehadi, A. A. and **R. W. Taylor**. 1988. Phosphate Adsorption by Two Highly -Weathered Soils. Soil Sci. Soc. Am. J., 52:627-632.
51. Thangudu, P. R., **R. W. Taylor** and D. R. Duseja - 1981. Available Phosphorus Status of an Acid Soil Treated with Sewage Sludge and Farm Manure. J. Environ. Sci. Health, A16(6), 611-621.
52. **Taylor, R. W.**, D. R. Duseja and P. R. Thangudu - 1982. Sewage Sludge Effects on Soil: Heavy Metal Accumulation and Movement. J. Environ. Sci. Health, A17(3), 427-441.
53. **Taylor, R. W.**, P. R. Thangudu and D. R. Duseja - 1981. The Effect of Sewage Sludge and Manure on Soil Available Calcium, Magnesium, and Potassium. J. Environ. Sci. Health, A16 (6), 589-604.
54. **Taylor, R. W.** and J. Woods - 1981. Inorganic Phosphorus in Calcareous Rockland Soils of the Bahamas. Soil Sci. Soc. Am. J., 45:750-734.
55. **Taylor, R. W.** 1979. Response of Two Grasses to Inoculation with Azospirillum spp. in a Bahamian Soil. Tropical Agriculture, 56:361-365.
56. **Taylor, R. W.** and B. G. Ellis - 1978. A Mechanism of Phosphate Adsorption on Soils and Anion Exchange Resin Surfaces - Soil Sci. Soc. of Am. J., 42:432-436.

Unrefereed Publications:

1. Mays, D. A., M. Floyd, **R. W. Taylor** and K. Sistani. 1998. Evaluation of the Biotic Potential of Microorganisms and Higher Plants to Enhance the Quality of Constructed Wetlands. Final Report, September 30, 1998. Office of Surface Mining, Department of Interior.
2. Sistani, K. R., **R. W. Taylor** and M. Floyd. 1989. Microalgal Growth and Use as Fertilizer. Bulletin No. 5052. Alabama A&M University, Normal, AL 35762.

3. King, L. D., **R. W. Taylor** and J. W. Shuford, 1986. Macronutrients in Municipal and Industrial Sludges and Crop Response to Sludge Application. In Agricultural Use of Municipal and Industrial Sludges in Southern United States (L. D. King, Editor) Ch. 2 pp 5-28. Southern Cooperative Series Bulletin No. 314.
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2. Bioavailability of Phosphate Fractions in Poultry Litter Amended Ultisols. Myers, S., **R.W. Taylor**, B. Belvitt, T. Ranatunga, Z. Senwo, and M. Mbila. Alabama A&M University.

3. Mineral and Chemical Composition of Soufriere Hills Volcanic Ash and Soil. Ranatunga, T.D., **R.W. Taylor**, K.N. Bhat, R. April, and B. Jackson. Department of Plant and Soil Science, Alabama A&M University; Department of Geology, Colgate University; and Department of Biomedical Engineering and Biotechnology, University of Massachusetts.
4. The Pedotransfer Function: Usage and Applications. Ngowari, J., T.D. Tsegaye, K.F. Garner, and **R.W. Taylor**. Alabama A&M University.
5. Distribution of Trace Metal in Poultry Litter Amended Soils in Northern Alabama. Belvitt, B., R. Monkolo, **R. Taylor**, and M. Mbila. Alabama A&M University.
6. Microbial community Structure and Diversity of an Agricultural Soil. Moss, E.M., M.M Thompson, Z.N. Senwo, and **R.W. Taylor**. Alabama A&M University.
7. Activities and Kinetics of Nitrate Reductases. Ntoko, F.A., Z.N. Senwo, and **R.W. Taylor**. Alabama A&M University.
8. Phosphatase Hydrolysis of Organic Phosphorus. Tzison, I.A., Z.N. Senwo, and **R.W. Taylor**. Alabama A&M University.

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10. Trace Metal Content and Distribution in Poultry Litter-Amended Soils of North Alabama. B. Belvitt, **R.W. Taylor**, R. Mankolo, and J. Shuford. Alabama A&M University.

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11. Enrichment of Trace Metals in an Ultisol Impacted by Applied Broiler Litter. I.A. Taizson, Z.N. Senwo and **R.W. Taylor**. Alabama A&M University.

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13. Lead Sorption by Pre-sorbed Phosphate on Kaolin. **R.W. Taylor**, T.D. Ranatunga, Alabama A&M Univ. D.R.A. Ranatunga, Oakwood College, Z.N. Senwo, Alabama A&M University.
14. Relationship of Spectral Reflectance to Soil and Plant Tissue N and P of Forage Crops Grown on a poultry Litter Amended Soil. S. Yaffa , **R.W. Taylor**, D.A. Mays, Alabama A&M Univ., K.R. Sistani, USDA-ARS, Bowling Green, KY, T. Tsegaye, W. Tadesse, Alabama A&M University.

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25. Transport of Entonopathogenic Nematodes in Soil Columns. Dennis, S.O., T. Tsegaye, S.A. Aburime, R.E. Harrison, **R.W. Taylor**, Tennessee State University, Alabama A&M University, and Clark Atlanta University.

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28. Evaluating the Reductive Capacity of Humic Substances: Reaction Between Thiol/Thio Group and Chromate. M. D. Szulczewski*, K. Xia, P. A. Helmke, W. F. Bleam, **R. W. Taylor**. University of Wisconsin-Madison and Alabama A&M University.
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41. Simmons, M., K. R. Sistani, S. H. Chien, D. A. Mays, and **R. W. Taylor**. *Use of Phosphate Rock for Reclamation of Mined Soils*. Alabama A&M University.

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6th Association of Research Directors Research Symposium, Atlanta, Georgia, October 20-22, 1985.

96. Soybean Tolerance of Low Phosphate - High Aluminum in Acid Nutrient Culture. **R. W. Taylor** and S. U. Patel, Alabama A&M University.

5th Biennial Research Symposium Sponsored by Association of Research Directors Historically Black Land-Grant Colleges and State Universities, Dallas, Texas, October 23-26, 1984.

97. A Method of Screening Plants for Tolerance to Low P - High Al in Nutrient Culture. **R. W. Taylor** and S. U. Patel, Alabama A&M University.

98. System of Maintaining a Constant Low Supply of P for *Rhizobium japonicum* Strains. M. L. Williams and **R. W. Taylor**, Alabama A&M University.

81st Annual Meeting of the Southern Association of Agricultural Scientists, Nashville, Tennessee, February 4-8, 1984.

99. A Method for Maintaining a Constant Low Supply of P for Plants Grown in Nutrients Culture. **R. W. Taylor** and S. U. Patel, Alabama A&M University.

12th International Congress of Soil Science. February 8-16, 1982, New Delhi, India.

100. Heavy Metal Accumulation and Movement in a Sewage Sludge Amended Soil. **R. W. Taylor**, D. R. Duseja and P. R. Thangudu. Tennessee State University.

72nd Annual Meetings of American Society of Agronomy, Crop Science Society of America and Soil Science Society of America. November 30 - December 5, 1980, Detroit, MI.

101. Available Nutrient and Heavy Metal Content of an Organic-Amended Soil. D. R. Duseja, **R. W. Taylor**, and P. R. Thangudu. Tennessee State University.

102. Available Nutrients Levels of an Organic Amended Soil. Prabhakar R. Thangudau, **Robert W. Taylor**, Desh R. Duseja, and Sam Osawaru. Tennessee State University.

3rd Biennial Research Symposium sponsored by the Association of Research Directors - Historically Black Land-Grant Colleges and State Universities, November 12-15, 1980: Atlanta, Ga.

103. Heavy Metal Levels in Sewage Sludge Amended Soil Cropped to Corn and Sorghum. **Robert W. Taylor**, Desh R. Duseja, Prabhakar R. Thangudu and Sam O. Osawaru. Tennessee State University.

INVITED PRESENTATIONS

104. Presented at the Seminar for Scientists cosponsored by Office of Pesticide Programs USEPA and HBCU, November 5-7, 1991, Washington, D.C. Removal of N, P, and Heavy Metals from Wastewater by Microalgae. **Robert W. Taylor.**
105. Presented at the Eastern Regional Research Center (USDA), Philadelphia, PA, November 6, 1988. N₂ Fixation by Soybean-Bradyrhizobium Combinations under Conditions of Acidity, Low P and High Al. **R. W. Taylor.**
106. Together We Can Make It Work In Alabama Conference (QEM Network) Huntsville, Alabama, March 18-19, 1994. Strengthening the Research and Training in Environmental Science. **R. W. Taylor.**
107. Fourth Annual National Conference of the Quality Education for Minorities in Mathematics, Science, and Engineering (QEM/MSE) Network, February 9-12, 1995, Washington, D.C. The Center for Environmental Science Research and Training. **R. W. Taylor.**

Professional Awareness and Appreciation Program with Martin Marietta Energy Systems and Alabama A&M University, Oakridge Tennessee, November 10, 1994.

108. Comparison of Extractants for Available Sludge-borne Metals: A Residual Study. He Xiu, **R. W. Taylor**, J. W. Shuford, W. Tadesse and D. C. Adriano.
109. Mechanism(s) of Metal Adsorption/Desorption/Precipitation in Geochemical Processes in Soils. **R. W. Taylor** and A. A. Mehadi.
110. Use of Microalgae for Wastewater Cleanup and as a Biofertilizer. K. R. Sistani, **R. W. Taylor**, and McArthur Floyd. Alabama A&M University.
111. Partitioning and Transport of Trichloroethylene and Carbon Tetrachloride Vapors at Different Soil Moisture Contents. W. R. Belisle, S. A. Aburime, and **R. W. Taylor**, Alabama A&M University and J. E. Amonette, Battelle PNL.
112. Environmental Awareness Week, Spelman College, Atlanta, GA, April 22, 1997. Enhancing "Environmental Sciences and Education in Liberal Arts Institutions." **R. W. Taylor**, Alabama A&M University.

RESEARCH SOJOURNS

Visiting scientist at the **USDA/ARS-Eastern Regional Research Center, Philadelphia, PA.** Summer 1988. Summer 1989. Summer 1990. Summer 1994. Summer 1995. Summer 1996. Summer 1997.

HONORS AND AWARDS

Beta Kappa Chi Scientific Honor Society
Alpha Kappa Mu Honor Society
Alpha Zeta Agricultural Honor Society

Chair, Soil Chemistry Division (S-2) of Soil Science Society of America, 2002-2003.
Fellow of American Society of Agronomy, 2000
Fellow of Soil Science Society of America, 2002
Morrison-Evans Outstanding Research Scientist (Land Grant HBCU), 2003
20th Century Agricultural Development International Award, 2000 (Hisar, India)
Inducted in the Bahamas Science and Technology Hall of Fame, 2005
Selected as a Caribbean Icon in Science and Technology, 2007
Re-appointed as an Associate Editor of Soil Chemistry Division of Soil Science Society of America Journal, 2012-2014.
Soil Science Society of America Journal Editor's Citation for Excellence in Manuscript Review, 1999.
Who's Who Among America's Teachers; 1998

First Place Scientific Paper Award in Plant and Soil Science (8th Biennial Research Symposium-Association of Research Directors, Washington, D.C. October 10, 1989).

Outstanding Research Scientist, School of Agriculture
Alabama A&M University (1986-87), (1988-89) and (1996-97)

SERVICE TO PROFESSION/UNIVERSITY

1. Served on NSF Science and Technology Center (STC) Review Committee, November 2011.
2. Served on the Committee of Visitors (COV) Panel for the NSF Office of International Science and Engineering (OISE) July 2011.
3. One of the founders and member of the Alabama Environmental Education Consortium Steering Committee. (2005 to present).
4. Member of the Alabama State Agriculture Energy Committee.

5. Alabama A&M University's representative for National Council for Science and the Environment. (NCSE- 2002 to present).
6. Alabama A&M University's representative the Council of Environmental Deans and Directors. (CEDD - 2002 to present).
7. Served on the NSF's Math and Science Partnership Review Panel; February 8-10, 2004, Arlington, VA.
8. Served on the NSF's Distinguished Teaching Scholars Review Panel; January 6-10, 2004, Arlington, VA.
9. Served on the NSF's Collaborative Research Review Panel Undergraduate Institution (C-RUI) Panel; June 16-17, 2003, Arlington, VA.
10. Served on the NSF's Math and Science Partnership Review Panel; March 2-4, 2003. Arlington, VA.
11. Served on the Postdoctoral Research Fellowship in Microbial Biology Review Panel, December 19-22, 2002, Arlington, VA.
12. Served on the Postdoctoral Research Fellowship in Microbial Biology Review Panel, March 9-10, 2000. Arlington, VA.
13. Served as an ad hoc reviewer for at least one to two research proposals for each of the following federal agencies since 2002:
 - 1) NSF- Research Experience at Undergraduate Sites. (REU)
 - 2) USDA- National Research Initiative Program. (NRI)
 - 3) USDA- Small Business Innovative Research.
14. Member, Alabama Water Resources Council, 1999
15. Member, Alabama Department of Environmental Management's Clean Water Action Plan Technical Committee, 1999
16. Member, Alabama Water Resources Council, 1999
17. Member, Alabama Department of Environmental Management's Clean Water Action Plan Technical Committee, 1999

18. Served on review panel for USDA/CSRS Air, Water and Soils Small Business Innovative Research; January 22-23, 1992, Washington, D.C. and February 3-5, 1993, Washington, D. C.
19. Served on the (S480) Soil Science Education Award Committee (American Society of Agronomy) 1989 and 1990
20. Served on USDA's 1996 National Research Initiative Competitive Grant Program Panel in the Soil and Soil Biology Area, April 2-5, 1996, Washington, D.C. Personally reviewed thirty (30) proposals.
21. Served on NSF Site Visit Team to review the proposal submitted by the Science and Technology Center (STC) for Engineering Plants for Resistance Against Pathogens (CEPRAP) at University of California, Davis, August 28 and 29, 1996.
22. Competitive Grants Proposal Program September 23, 1996, Birmingham, Alabama. Personally reviewed fifteen (15) proposals.
23. Served on the Panel to Review the Proposal for a Ph.D. program in Biology at Tennessee State University, Nashville, TN for the Tennessee Board of Regents, December 15-17, 1996.
24. Served as ad hoc reviewer for two proposals for the National Research Initiative Competitive Grants Program (NRICGP) in the Soils and Soil Biology Area, Feb. 14, 1997.
25. Served as ad hoc reviewer for two proposals for USDA's Small Business Innovative Research (SBIR) Program November 1998.
26. Reviewed proposal for U. S. Department of Interior, U. S. Geological Survey, September 1998.
27. Peer proposal reviewer, USDOJ/U. S. Geological Survey, 1998
28. Reviewer, Research Project, Western Association of Agricultural Experiment Station Directors, 1999
29. One of ten professors to establish the first and only Ph.D program in Plant and Soil Science at an 1890 Land Grant University.
30. Member of Alabama A&M Institutional Self-Study (SACS) Steering Committee, 1991-1993

31. Chairman of AAMU Basic and Applied Science Committee
32. Co-Chair of AAMU Hazardous Waste Committee
33. Member, AAMU Research Council
34. Member of several other past and present University committees since 1979 (Tennessee State University and AAMU)
35. Coordinator, High School Summer Apprenticeship Program, 1991-1994

COMMUNITY SERVICE

1. Assistant Varsity Soccer Coach, Michigan State University, 1972-1977
2. Head Varsity Soccer Coach, Tennessee State University, 1979-1981
3. Youth Head Soccer Coach for Traveling Club Team, Huntsville, AL 1982-1992
4. Minister of Communion, Our Lady Queen of the Universe Catholic Church.

Reviewed Manuscripts for Refereed Journal Publication

<u>Journal</u>	<u>Years</u>
Soil Science Society of America (Soil Chemistry)	1978 to present
Water, Air and Soil Pollution	1993, 1995
Journal of Environmental Quality	1994
Journal of Environmental Geochemistry and Health	1994 to present
Journal of Colloid and Interface Science	1996
Clays and Clay Minerals	1998 to present

PROFESSIONAL SOCIETIES

American Society of Agronomy	American Chemical Society
Soil Science Society of America	
International Society of Soil Science	
American Association for the Advancement of Science	
Minorities in Agriculture, Natural Resources and Related Sciences	
Soil and Water Conservation Society	
Gaurav Society of Agricultural Research, Hisar, India	
Clay Mineral Society	

PUBLICATION RECORD

Refereed Journal Articles (Technical Publications) -45; Published abstracts - 104; Un-refereed Publications - 20.

PERSONAL DATA

Born: March 1, 1947 - St. Andrew, Jamaica, W.I.
Married: August 11, 1973
Wife: Beverly A. (Redfield) Taylor
Children: Two
Interests: Writing Poetry, Soccer, Basketball and Fishing