



CURRICULUM VITAE: Yaw A. Twumasi, Ph.D.

Department of Advanced Technologies
School of Agriculture and Applied Sciences
1000 ASU Drive #1616
Alcorn State, MS 39096, USA
Tel: 601-877-2461 (Office)

Fax: 601-877-3941 (Office)
Tel: 601-925-8967 (home)
Tel: 601-212-6028 (cell)
Email: ytwumasi@yahoo.com
yaw@alcorn.edu

QUALIFICATION AND EDUCATION:

May 2004 **Alabama A & M University, Normal, Alabama.**
Ph.D. in Plant and Soil Science
Areas of Specialization: Applied GIS and Remote Sensing.

Dissertation Title: Development of a protected area management scheme using geographic information system and multi-temporal satellite imagery: the case of the Digya National Park Reserve in Ghana.

June 2000 **York University, Toronto, Canada.**
Master in Environmental Studies (MES)
Areas of Specialization: Environmental Planning and Geographic Information Systems.

Major Paper Title: The application of geographical Information systems and remote sensing techniques in managing nature reserves: the case of Kakum National Park, Ghana.

June 1996 **York University, Toronto, Canada.**
Bachelor of Arts (Honors) in Geography

Thesis Title: The Impact of Structural Adjustment Program on Forest Resources in Ghana.

OTHER TRAINING:

June 2000 **Center for Refugee Studies. York University, Toronto, Canada**
Graduate Diploma in Refugee & Migration Studies

Major: Refugee and Migration

Summer 1998 **Sani-International Technology Advisors** (ERDAS Canadian Training Center). Toronto. Canada.
Certificate (ERDAS Imagine Certified Trainer)
Major: Erdas Advantage, Professional and Orthobase

EMPLOYMENT HISTORY:

August 2007 – Present: Assistant Professor of Remote Sensing and Geographic Information Systems (GIS). Alcorn State University, MS.

Duties:

- Conduct research in remote sensing and GIS
- Teach undergraduate level courses
- Assist with the advisement of undergraduate students
- Co-ordinate Geographic Information Science and Technologies (GIS&T) program
- Participate in the Departmental and University Committees
- Participate in curriculum development

Teaching at Alcorn State University:

- IT 381 Introductory GIS
- IT 386 Introductory Remote Sensing and GPS
- IT 480 Advanced Remote Sensing
- IT 392/592 Remote Sensing Applications to Natural Resource Management

New Courses Developed at Alcorn State University:

- IT 387 Photogrammetry
- IT 389 Aerial Photo Interpretation
- IT 391 Forest Surveying
- IT 392/592 Remote Sensing Applications to Natural Resource Management
- IT 393 Crime Analysis Using GIS
- IT 420 Spatial Epidemiology
- IT 422 Mapping Business Strategies with GIS
- IT 424 Remote Sensing Applications to Public Health

Sept 2004 – August 2007: Research Assistant Professor of Remote Sensing and Geographic Information Systems. Alabama A&M University, Normal, AL.

Duties:

- Conducted research in remote sensing and GIS
- Analyzed multispectral and microwave remotely-sensed data and derive land surface properties
- Assist with teaching undergraduate and graduate level courses
- Assisted with the advisement of graduate students

- Co-director of the joint Alabama A&M and Iowa State Universities Study Abroad Program

Teaching at Alabama A&M University:

- SPS 366 Climate and Global Change
- SPS 490 Foreign Studies
- SPS 376 Applications of GIS and remote sensing in natural resources management

Sept. 2000 – May 2004: Graduate /Teaching Assistant, Center for Hydrology Soil Climatology and Remote Sensing. Alabama A&M University, Normal, AL.

Duties:

- Provide technical support management, PC assembly, configuration and connection to the network.
- Taught introductory and advanced level courses in GIS and remote sensing (SPS 365: Introductory to GIS and SPS 775: Advanced Principles of GIS).
- Provide scientific support in ground-based microwave remote sensing of soil moisture; modeling of field-scale variability of micro-elements; assessment of spatial and temporal soil and vegetation conditions using hyperspectral data, GIS, & GPS applications tools.
- Perform data analysis with SAS, MS-Access, MS-PowerPoint, MS-Excel, and relational database application tools.
- Assist the Center in investigating land use and land cover change in West Africa.

May 1999 – July 2000: Imagery Applications Analyst, Sani-International Technology Advisors (ERDAS Canadian Training Center), Toronto, Canada.

Duties:

- Generated, analyzed and edited digital block elevation from stereo images.
- Performed block triangulation and edited the results.
- Measured tie and ground control points from digital images and source maps.
- Supervised and created radiometric balancing, orthorectified and mosaicked images for the productions of seamless image for Toronto Pearson Airport and the City of Burlington in Ontario, Canada.
- Performed land cover and land use classification and other thematic maps from multi-spectral images.

May 1999 – August 1999: Teaching Assistant, Atkinson College Department of Geography, York University, Toronto, Canada

Duties:

- Provided teaching assistance for the introduction to human geography (AK GEOG 1500) course.
- Designed and maintained listserv for 200 students.

September 1998 - April 1999: GIS Laboratory Manager, Department of Geography, York University, Toronto, Canada

Duties:

- Maintained the department's GIS laboratory and database.
- Assisted students, staff, faculty in using Arcview, SPSS, Idrisi, ArcInfo.

- Collected and analyzed statistical information for faculty and students.

Summer 1998 - Image Processing Technician, Sani-International Technology Advisors, Toronto, Canada

Duties:

- Performed supervised and unsupervised classification, spatial modeling, image mosaick, atmospheric, radiometric and geometric corrections.
- Integrated raster and vector data set.
- Performed database management, maintained and archived data in image catalogue.

September 1997 – April 1998: Resource Center and Computer Lab Assistant, Faculty of Environmental Studies, York University, Toronto, Canada

Duties:

- Assisted students in their computer assignments.
- Built database for books, theses, major papers, periodicals and audio materials in the center's library.
- Managed and updated PCs inventory with MS Access database system
- Troubleshoot personal computers.

ADVISORY/ RESEARCH PANELS AND COMMITTEES SERVED

- April 2008 – present. Main supervisor to Fulbright Scholar- Dr. Emmanuel Amamoo-Otchere's research project at Alcorn State University on "Spatial/planning decision support system for human settlement planning towards sustainable communities in urban and rural Ghana: Pilot land use studies for/and development of training packages for capacity building of the Metropolitan/Municipal/District Assemblies".
- November 2007 – present. Manuscript reviewer for the Journal of Arid Environments.
- October 2007 – present. Manuscript reviewer for the International Journal of Remote Sensing.
- October 2007 – present. Member of the recruitment committee at the Department of Advanced Technologies.
- September 2007 – Present. Department of Advanced Technologies liaison person for the Center for Undergraduate Experimental Learning – Title III Program at Alcorn State University.
- September 2007 – Present. Department of Advanced Technologies liaison person for the Global Council at Alcorn State University.
- September 2007 – Present. Member of Curriculum Development Committee at the Department of Advanced Technologies.
- May 2006 – Present. Guest Editor for the African Journal of Environmental Assessment and Management on "Geo-information Systems Applications for Resource Management in Africa".
- January 2005-June 2005 - Co-director of Joint A&M and Iowa State Universities Study Abroad Program.
- December 2005: Reviewed Manuscript for the Canadian Journal of Forest Research.
- May 2005-July 2006. Mentor for the Summer Enrichment Outreach Program. Center for Hydrology Soil Climatology and Remote Sensing at Alabama A&M University.

- September 2004 – present: PhD Supervision (Foreign Committee Member). Brilliant M. Petja, University of Limpopo, South Africa. Satellite derived monitoring of asbestos rehabilitation in the post-mining environment of Mafefe and Mathabatha, Limpopo Province.
- June 2004. Reviewed manuscript for the Journal of Soil and Water Conservation.
- June 2002-Present. Manuscript reviewer for IEEE Transactions on Geoscience and Remote Sensing.
- January 2001 – present: Collaborative research in geospatial technologies applications with the University of Mines and Technology, Ghana (Geomatics Department), Oakwood College (Department of Mathematics, Physics and Computer Science), and Jackson State University (Department of Urban and Regional Planning).
- Planning Committee Member for Proposed African Water Resources Journal.

ACADEMIC AWARDS AND SCHOLARSHIPS:

- 2005 Who is who in America for Outstanding Publications.
- Co-Recipient of “Best Paper” award on “Urban Growth Model using GIS and Remote Sensing” at the 5th African Association of Remote Sensing and Environment (AARSE) conference at the United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya, 2004.
- Winner of International Geo-science and Remote Sensing Symposium (IGARSS) Minority Abstract Competition in Toulouse, France, 2003.
- Winner of Royal Bank of Canada Bursary at York University, Toronto, Canada, winter 2000.
- Faculty of Graduate Studies Award at York University, Toronto, Canada, fall/winter 1999.
- Entrance Scholarship, Master’s program at York University, Faculty of Environmental Studies, Toronto, Canada, 1997-2000.
- Esri Dafiewhere Award for “Best Paper” on African Issues at York University, Toronto, Canada, 1996.

MEMBERSHIP OF LEARNED SOCIETIES:

- Alabama Academy of Science (AAS)
- American Society for Photogrammetry and Remote Sensing (ASPRS)
- IEEE Geo-science and Remote Sensing Society (IGARSS)
- African Studies Association (ASA)
- The Remote Sensing and Photogrammetry Society of Great Britain (RSPSoc)
- African Association of Remote Sensing and Environment (AARSE)
- Environmental Information Systems (EIS) – Africa

COMPUTER SKILLS:

- **Applications:** Photoshop, CorelDraw, Adobe PageMaker, Adobe Illustrator, Macromedia Dreamweaver and Flash, MS Office, FrontPage.
- **GIS, Remote Sensing and Photogrammetry Software:** Idrisi, ArcView and ArcGIS with extensions (spatial Analyst, 3D Analyst and Image Analysis), Surfer, Didger,

MapInfo, The Integrated Land and Water Information System (ILWIS), ERMapper, PCI Geomatics, ENVI, Intergraph Geomedia, Erdas (Imagine Professional, Orthobase, virtual GIS).

- **Statistical Software:** SPSS, SAS, Minitab, Sigma Plot, Statistix.
- **Systems:** Windows/NT, Macintosh, MS-DOS.
- **Hardware:** PC assembly, upgrades and maintenance involving various makes of IBM

GRANT PROPOSALS SUBMITTED/FUNDED

- Co-PI., \$200,000.00. November, 2007. (Funded). Alcorn State University. *Development of an Undergraduate Interdisciplinary Curriculum for Homeland Security STEM Fields.* Funded by the Department of Homeland Security.
- Co-PI., \$99,992.00. May, 2006. (Funded). (Joint Proposal: Alabama A&M University, and University of Alabama in Huntsville). *Mitigating Local and Regional Agricultural Droughts by increased Irrigation Using Cool Season Run-off in Alabama.* Funded by the National Oceanic and Atmospheric Administration (NOAA) Educational Partnership Program (EPP).

MAIN RESEARCH OR TECHNOLOGY TOPICS:

Dr. Twumasi's research interest focuses on the use of Geo-spatial Information Technologies in natural resources management and environmental planning. Specifically, his work is focused on mapping, monitoring and modeling the linkages between socio-economic, policy issues and land use/land cover change on one hand; and the role and extent of biophysical processes such as climate affect land degradation process on the other. His work also include image processing, classification and analysis, Geographic Information Systems (GIS) database construction as well as the development of policies using GIS and Remote Sensing technology in order to inform environmental decision-making on the risks associated with the continuous anthropocentric degradation of sensitive natural habitats.

RESEARCH AND PUBLICATIONS

Books

Twumasi, Y.A. (2009, forthcoming). *Geoinformation Science for Sustainable Resource Management.* The Netherlands : Springer Publishing Company.

Twumasi, Y.A. 2005. *Park Management in Ghana Using Geographic Information Systems (GIS) and Remote Sensing Technology.* New York : Edwin Mellen Press (ISBN: 0-7734-5990-1), 329pp.

Article in a Book

Rochon, G. L., J.E. Quansah, M.A. Mohamed, **Y.A. Twumasi**, T.L. Coleman, V. Taylor, C. Luther, C. Johannsen and D. Landgrebe. 2005. Applicability of Near-Real-Time Satellite Data Acquisition, Analysis and Distribution of Geoinformation in Support of African Development. *In the United Nations Economic and Social Council: Committee on Development Information (CODI) IV. April 22-28. United Nations Economic Commission for Africa (UNECA):* Addis Ababa, Ethiopia, pp.1-24. Distribution: General – E/ECA/CODI/4/48

Papers in Refereed Journal

Merem, E.C, and **Y.A. Twumasi**. 2008. Using geospatial information technology in natural resources management: The case of urban land management in West Africa. *Sensors*, volume 8, pp. 607-619.

Petja, B.M., G.T. Tengbeh, and **Y.A. Twumasi**. 2008. Using Earth Observation for Challenges facing Monitoring Environmental Remediation of Derelict Mines in South Africa. *African Skies*, Volume 12, pp. 71-76.

Twumasi, Y.A., and E.C. Merem. 2008. Geospatial information systems analysis of regional environmental change along the Savannah River Basin of Georgia. *International Journal of Environmental Research and Public Health*, volume 5 no. 1, pp. 54-67.

Petja, B.M., **Y.A. Twumasi**, G.T. Tengbeh, M. Atanasova. 2008. Assessment of asbestos pollution in South Africa using *in situ* remote sensing together with X-Ray Diffraction and Scanning Electron Microscopy. *Sensors*. (under peer review).

Merem, E.C, and **Y.A. Twumasi**. 2007. GIS applications in global environmental protection: the case of environmental monitoring of fossil fuel emission from oil and gas activities in Africa. *World Resource Review*, volume 19, no.3, pp. 657-680.

B.M. Petja, G.T. Tengbeh, and **Y.A. Twumasi**. 2007. Using Remote Sensing and Geographic Information System (GIS) to Monitor Environmental Change in the Post Asbestos Mining Environment, South Africa. *World Resource Review*. (under peer review).

Twumasi, Y.A., and E.C. Merem. 2007. Using remote sensing and GIS in the analysis of ecosystem decline along the river Niger basin: The case of Mali and Niger. *International Journal of Environmental Research and Public Health*, volume 42, no.2, pp. 173-184.

Petja, B.M., **Y.A. Twumasi**, G.T. Tengbeh, P.C. Sibandze, and L. Croukamp. 2006. Spectral differentiation of asbestos minerals in South Africa for potential use in pollution monitoring. *GIS Development* (published online, November, 24).

http://www.gisdevelopment.net/application/geology/mineral/maf06_26.htm

Merem, E.C. and **Y.A. Twumasi**. 2006. Using geospatial information systems in the analysis of sub-Saharan African hydrogeology: a case of the Niger River Basin. *GIS Development*, volume 1, no.2. pp. 24-29.

Twumasi, Y.A., T.L. Coleman, and A. Manu. 2006. Remote sensing and GIS in coastal zone management. *PositionIT (Official Journal of Geoinformation Society of South Africa)*, volume 6, no.1. pp. 18-23.

Twumasi, Y.A., and E.C. Merem. 2006. GIS and remote sensing applications in the assessment of change within a coastal environment in the Niger Delta region of Nigeria. *International Journal of Environmental Research and Public Health*, volume 3, no.1. pp. 98-106.

Twumasi, Y.A., T.L. Coleman, and A. Manu. 2006. Relationships between climate parameters and forest vegetation at and near Digya National Park, Ghana. *International Journal of Climatology*. (under peer review).

Twumasi, Y.A., A. Manu, T.L. Coleman, B. Schmid, and A. Moustapha. 2006. Use of geo-spatial data for sustainable management of solid waste in Niamey, Niger. *Journal of Sustainable Development in Africa*, volume. 8, no.1, pp. 1-13.

Merem, E.C., and **Y.A. Twumasi**. 2006. GIS and remote sensing assessment of oil and gas impacts in a tropical ecosystem. *Regional Environmental Change*. (under peer review).

Twumasi, Y.A., and E.C., Merem. 2005. GIS Applications in land management: the loss of high quality land to development in Central Mississippi from 1987-2002. *International Journal of Environmental Research and Public Health*, volume 2, no.2, pp. 234-244.

Merem, E.C., and **Y.A. Twumasi**. 2005. GIS based analysis of growth management and environmental decline in Central Mississippi region. *Journal of Geographic Information Sciences*, volume 11, no.2, pp. 126-134.

Manu, A., **Y.A. Twumasi**, K.S. Lu, and T.L. Coleman. 2005. Predicting Urban Growth of a Developing Country City Using a Statistical Modeling Approach. *Computers, Environment and Urban Systems*. (under peer review).

Merem, E.C., and **Y.A. Twumasi**. 2005. Issues in wildlife habitat conservation: the current initiatives in the South East, the case of Mississippi. *The Journal of the Alabama Academy of Science*. (Abstract), volume 76, no.2, p.123.

Coleman, T.L., **Y.A. Twumasi**, and A. Manu. 2005. Assessment of migration patterns in Ghana using GIS. *The African Journal of Geoinformation*, (under peer review).

Coleman, T.L., F. Archer, A. Shutko, K.F. Golson, **Y.A. Twumasi**, W. Tadesse, and T.D. Tsegaye 2005. Automated environmental monitoring systems a requirement for validating remote sensing data from satellites. *Canadian Geographer*, under peer review.

Ayala-Silva, T., and **Y.A. Twumasi**. 2004. Hurricane Georges and vegetation change in Puerto Rico using AVHRR satellite data. *International Journal of Remote Sensing*, volume 25, no.9, pp. 1629-1640.

Twumasi, Y.A., A. Manu, and T.L. Coleman. 2004. Monitoring urban expansion of Bamako, Mali, using principal component analysis of multi-temporal Landsat data. *The Journal of the Alabama Academy of Science*, (Abstract) volume 75, no.2, p. 81.

Merem, E.C., and **Y.A. Twumasi**. 2004. The Environmental efforts of African American community development organizations. *The Western Journal of Black Studies*. (under Peer Review).

Merem, E.C., and **Y.A. Twumasi**. 2004. Analysis of trends on forested land areas: the case of Mississippi. *The Journal of the Alabama Academy of Science*, (Abstract) volume 75, no.2, p. 82.

Twumasi, Y.A., T.L. Coleman, and A. Manu. 2003. Monitoring of urban growth in the Accra Metropolitan Area, Ghana using satellite imagery. *The Journal of the Alabama Academy of Science*, (Abstract) volume 74, no.2, p. 95.

Merem, E.C., and **Y.A. Twumasi**. 2003. Environmental initiatives of community-based development organization: the case of the Federation of Southern Co-operatives of Alabama. *The Journal of the Alabama Academy of Science*, (Abstract) volume 74, no.2, p. 97.

Twumasi, Y.A. 2001. Park management from Canada to Ghana. *ER Mapper Magazine*, 6, pp.15-16.

Papers in Refereed Conference Proceedings

Merem, E.C, and **Y.A. Twumasi**. 2009. Using rural stewardship scheme in environmental protection. *In Proceedings of the Annual Meeting of the 2009 USDA-CSREES National Water Conference*. February 8-12. Millennium Hotel St. Louis, St. Louis, Missouri , USA.

Amamoo-Otchere, E., **Y.A. Twumasi** and K. Agyepong. 2008. Data Mining from Automated Resource Information Systems (ARIS) for Geohazards Studies of the Mississippi State. *In Proceedings of the 5th African Association of Remote Sensing of the Environment (AARSE) Conference*. October 27-31, Accra, Ghana.

Twumasi, Y.A. 2008. Vulnerability to climate change along the coast in Southern Mississippi: Potential impacts on agricultural and coastal resource sectors and response capabilities. *2008 Annual Agriculture Extension and Research Field Day. Agriculture: Enhancing Community Life and Health*. Extension Research Complex, August 28, 2008. Alcorn State University, Mississippi, U.S.A.

Twumasi, Y.A. 2008. The integration of field survey and remote sensing data for biodiversity assessment: A case study in the Natchez Trace forests of Southwest Mississippi. *2008 Annual Agriculture Extension and Research Field Day. Agriculture: Enhancing Community Life and Health*. Extension Research Complex, August 28, 2008. Alcorn State University, Mississippi, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2008. Applying GIS and Remote Sensing Techniques As Monitoring Tools In Multinational Watershed Conservation: The Case of Senegal River Basin In

West Africa. *In Proceedings of the National Water Quality Monitoring Conference*. May 18-22, Atlantic City, New Jersey, U.S.A.

Andrew Manu, A.E. Norton, M.A. Tabatabai, **Y.A. Twumasi**, and T.L. Coleman. 2007. Multi-scale Evaluation of Environmental Degradation Resulting from Surface Gold Mining in Ghana. *In Proceedings of the Annual Meeting of the American Association of Agronomy (ASA-CSSA-SSSA)*, November 4-8. New Orleans, Louisiana, U.S.A.

Petja, B.M., G.T. Tengbeh, and **Y.A. Twumasi**. 2007. Using Earth Observation for Challenges facing Monitoring Environmental Remediation of Derelict Mines in South Africa. *In Proceedings of the Second African Leadership Conference on Space Science and Technology for Sustainable Development*. "Building African partnerships in space". 2-5 October Pretoria, South Africa.

Petja, B.M., **Y.A. Twumasi**, and G.T. Tengbeh. 2007. Comparative analysis of reflectance spectroscopy and laboratory based assessment of asbestos pollution in the rehabilitated mining environment, South Africa. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference*. On DVD ISBN: 978-1-4244-1212-9. July 23-27, Barcelona, Spain.

A. Manu, **Y.A. Twumasi**, T.L. Coleman, A.A. Mensah, M.A. Tabatabai and A.E. Norton. 2007. Mercury and arsenic levels in sediments as a result of small scale gold mining in the Western region of Ghana. *In Proceedings of the 1st International Conference on Environmental Research, Technology and Policy : Building Tools and Capacities for Sustainable Production*. July 16 - 19, La Palm Royal Beach Hotel, Accra, Ghana.

Petja, B.M., **Y.A. Twumasi**, G.T. Tengbeh and L. Croukamp. 2007. Reflectance spectroscopy and laboratory based analysis of different asbestos minerals in South Africa for potential use in pollution monitoring. *In Proceedings of the 32nd International Symposium on Remote Sensing of Environment (ISRSE) – Sustainable Development Through Global Earth Observations*. June 25-29. San Jose, Costa Rica.

Merem, E.C., C. Taylor and **Y.A. Twumasi**. 2007. The analysis of agro-environmental ethics among black farmers. *In Proceedings of the 1st Black Environmental Taught Conference*, May 22-24. Tuskegee, Alabama. USA.

Merem, E.C., and **Y.A. Twumasi**. 2007. Using geospatial information systems in watershed management: The case of environmental change along the Yazoo River watershed in Mississippi. *In Proceedings of the World Environmental and Water Resources Congress*. May 15 -19. Tampa, Florida, U.S.A.

Twumasi, Y.A., T.L. Coleman, A. Manu, and E.C. Merem. 2007. Mapping Seasonal Flooding in Sub-Saharan Africa using Temporal Remote Sensing Data. *In Proceedings of the ACSM-ASPRS Annual Convention and Exhibition* May 7-11. Tampa, Florida. American Society for Photogrammetry and Remote Sensing, Bethesda, Maryland, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2007. Using GIS and remote sensing in the assessment of watershed change along Southern Mississippi. *In proceedings of the 2nd National Conference on Ecosystem Restoration*. April 22-27. Kansa City, Missouri, USA.

Merem, E.C., and **Y.A. Twumasi**. 2007. The applications of GIS and Remote Sensing in the conservation of watershed: The case of Pearl River watershed in Mississippi. *In Proceedings of the USDA-Cooperative State Research, Education, and Extension Service (CSREES), National Water Conference*. January 28 – February 01. Marriot Savanna Riverfront, Savannah, Georgia, U.S.A.

Twumasi, Y.A., E.C. Merem, A. Manu, T.L. Coleman, and A. Osei. 2007. Using GIS and Remote Sensing in Land Use Assessment: The Case of Eastern Nigeria. *In Proceedings of the 4th African Soil Science Society Conference: Impacts of climate change, global trade, urbanization and biotechnology on land use in Africa*. January 7-13. Accra, Ghana.

Osei, A., E.C. Merem, and **Y.A. Twumasi**. 2006. The applications of geospatial information technology in land management: a case study of Lagos, Nigeria. *In Proceedings of the 9th International Conference for Global Spatial Data Infrastructure (GSDI)*. 3-11 November. Santiago, Chile.

Petja, B.M., **Y.A. Twumasi**, and G.T. Tengbeh. 2006. The use of remote sensing to detect asbestos mining degradation in Mafefe and Mathabatha, South Africa. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) and 21st Canadian Symposium on Remote Sensing Conference on DVD ISBN: 0-7803-9510-7*. July 31- August 4, Denver, Colorado, U.S.A

Osei, A., E.C. Merem, and **Y.A. Twumasi**. 2006. Use of remote sensing data to detect environmental degradation in the coastal region of Southern Nigeria. *In Proceedings of the International Society for Photogrammetry and Remote Sensing (ISPRS) Mid-term Symposium. Remote Sensing: From Pixels to Processes*. May 8-11. Enschede, the Netherlands.

Merem, E.C, and **Y.A. Twumasi**. 2006. GIS and remote sensing applications in the hydrogeology of Sub-saharan Africa: the case of multinational management of River Niger basin of West Africa. *In Proceedings of the National Monitoring Conference*: May 7-11, San Jose, California, U.S.A.

Twumasi, Y.A., and E.C. Merem. 2006. Management of watersheds with remote sensing and GIS: A case study of River Niger Delta Region in Nigeria. *In Proceedings of the ACSM-ASPRS Annual Convention and Exhibition on CD ROM ISBN: 1-57083-081-9*. May 1-5. Reno, Nevada. American Society for Photogrammetry and Remote Sensing, Bethesda, Maryland, U.S.A.

Merem, E.C, and **Y.A. Twumasi**. 2006. GIS applications in global environmental protection: the case of environmental monitoring of fossil fuel emission from oil and gas activities. *In Proceedings of the 17th Global Warming International Conference and Expo (GW17)*. April 20-21, Miami, Florida, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2006. GIS and remote sensing assessment of oil and gas impacts in a tropical ecosystem. *In Proceedings of the Sixteenth Annual Association for Environmental Health and Sciences (AEHS) Meeting and West Coast Conference on Soils, Sediments, and Water*. March 13-16, 2006. Mission Valley Marriott, San Diego, California, USA.

Twumasi, Y.A., A. Manu, T. L. Coleman, and A. Osei 2006. Use of Geo-spatial Information Management as a Decision Support Tool in Land Use Planning: a Case of Ghana. *In Proceedings of the 5th International Federation of Surveyors (FIG) Regional Conference for Africa-Promoting Land Administration and Good Governance*. ISBN: 87-90907-49-3. March 8-11. Accra, Ghana. FIG, Lindevangs Alle 4, DK-2000 Frederiksberg, Denmark.

Manu, A., **Y.A. Twumasi**, and T. L. Coleman, 2006. Is it global warming or the effect of urbanization? The rise in air temperature in two cities of Ghana. *In Proceedings of the 5th International Federation of Surveyors (FIG) Regional Conference for Africa-Promoting Land Administration and Good Governance*. ISBN: 87-90907-49-3. March 8-11 March. Accra, Ghana. FIG, Lindevangs Alle 4, DK-2000 Frederiksberg, Denmark.

Osei, A., E.C. Merem, and **Y.A. Twumasi**. 2006. Use of GIS and Remote Sensing Technology as a Decision Support Tool in Land Administration: the Case of Lagos, Nigeria. *In Proceedings of the 5th International Federation of Surveyors (FIG) Regional Conference for Africa*. ISBN: 87-90907-49-3. March 8-11. Accra, Ghana. FIG, Lindevangs Alle 4, DK-2000 Frederiksberg, Denmark.

Twumasi, Y.A., A. Manu, T.L. Coleman, 2005. Remote sensing and GIS application in coastal zone management: a case study of Ghana. *In Proceedings of the Seventh Biannual Africa GIS Conference (on CD ROM)*. ISBN: 1-920-01710-0. 31 October- 4 November 2005, Tshwane (Pretoria), South Africa. The Geo-Information Society of South Africa, pp. 383-388.

Rochon, G.L., M.A. Mohamed, T. Woldai, V. B. Taylor, J. E. Quansah, T.L. Coleman, and **Y.A. Twumasi**. 2005. Post Conflict Reconstruction and Sustainable Development: The Potential Contributions of Collaborative Remote Sensing and Environmental Monitoring to Sudan. *In Proceedings of the Inter-Islamic Network on Space Science and Technology (ISNET) and Remote Sensing Authority of Sudan (RSA), Workshop on Space Technology for Peace, Rehabilitation and Development, United Nations Office for Outer Space Affairs (UNOOSA) Conference (on CD ROM)*. September 26-29. Khartoum, Sudan.

Twumasi, Y.A., E.C. Merem, and C. Romorno. 2005. GIS and remote sensing assessment of the environmental health of parks in Mississippi: the case of Central and Southern Mississippi. *In Proceedings of the 2nd International Symposium on Recent Advances in Environmental Health Research Conference (Softbound)*. September 19-20. Regency Hotel. Jackson, Mississippi, USA.

Twumasi, Y.A., A. Manu, T.L. Coleman, and I.A. Maiga, 2005. The Impact of Urban Growth and Long-term Climatic Variations on the Sustainable Development of the City of Niamey, Niger. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference (on CD ROM)*. ISBN: 0-7803-9051-2. July 25-29. Seoul, Korea. Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ. vol.II., pp. 1500-1503.

Twumasi, Y.A., T.L. Coleman, and A. Manu. 2005. Biodiversity management using remotely sensed data and GIS technologies: the case of Digya National Park, Ghana. *In Proceedings of the 31st International Symposium on Remote Sensing of Environment (ISRSE) – Global Monitoring for Sustainability and Security Conference (on CD ROM)*. The International Society of

Photogrammetry and Remote Sensing (ISPRS). June 20-21. Saint Petersburg, Russia Federation.

Coleman, T.L., A. Manu, and **Y.A. Twumasi**. 2005. Application of landsat data to a base-line ecological study of mangrove vegetation along the coast of Ghana. *In Proceedings of the 31st International Symposium on Remote Sensing of Environment (ISRSE) – Global Monitoring for Sustainability and Security Conference (on CD ROM)*. The International Society of Photogrammetry and Remote Sensing (ISPRS). June 20-21. Saint Petersburg, Russia Federation.

Manu, A., **Y.A. Twumasi**, and T. L. Coleman. 2004. Application of remote sensing and GIS technologies to assess the impact of surface mining at Tarkwa, Ghana. pp. 572-574. *In Proceedings IEEE 2004 International Geosciences and Remote Sensing Symposium on DVD ISBN: 0-7803-8743-0*. 20-24 September 2004. Anchorage, AK. Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ.

Merem, E.C., and **Y.A. Twumasi**. 2004. GIS applications in growth management: the case of Central Mississippi. *In Proceedings of the American Society for the Photogrammetry and Remote Sensing (ACSM-ASPRS) Annual Convention and Exhibition (on CD ROM ISBN 1-57083-072-X)*. May 23-28, Denver, Colorado. American Society for Photogrammetry and Remote Sensing, Bethesda, MD.

Coleman, T.L., **Y.A. Twumasi**, and A. Manu. 2004. Spatio-temporal analysis of migration patterns in Ghana from 1970-2000 using GIS. *In Proceedings of the 5th African Association of Remote Sensing of the Environment (AARSE) Conference : Geoinformation sciences in support of Africa's development (on CD ROM)*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Merem E.C., and **Y.A. Twumasi**. 2004. Deforestation and GIS application to forest management in Nigeria . *In Proceedings of the 5th African Association of Remote Sensing of the Environment (AARSE) Conference : Geoinformation sciences in support of Africa's development (on CD ROM)*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Twumasi, Y.A., A. Manu, and T.L. Coleman, B. Schmid, A. Moustapha. 2004. Locating landfill site for Niamey, Niger using remote sensing and GIS technologies. *In Proceedings of the 5th African Association of Remote Sensing of the Environment (AARSE) Conference : Geoinformation sciences in support of Africa's development (on CD ROM)*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Manu, A., **Y.A. Twumasi**, T.L. Coleman, I.A. Maiga, and K. Klaphake. 2004. Database development for urban planning using photogrammetry and GIS techniques: the case of Niamey, Niger. *In Proceedings of the 5th African Association of Remote Sensing of the Environment (AARSE) Conference : Geoinformation sciences in support of Africa's development (on CD ROM)*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Manu, A., **Y.A. Twumasi**, T.L. Coleman, K.S. Lu, and I.A. Maiga. 2004. Modeling Urban Growth of a Developing Country City Using Remote Sensing and GIS. *In Proceedings of the 5th African Association of Remote Sensing of the Environment (AARSE) Conference: Geoinformation sciences in support of Africa's development (on CD ROM)*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Manu, A., T.L. Thurow, T.L. Coleman, **Y.A. Twumasi**, B.M. Schmid, and M. Salou. 2004. The Impact of Forest Restoration on Ecological Health of a Degraded West African Sahelian Plateau. *In Proceedings of the Annual Meeting of the American Association of Agronomy (ASA-CSSA-SSSA), Conference (on CD ROM)*. October 31-November 3. Seattle, Washington, U.S.A.

Twumasi, Y.A., A. Manu, T.L. Coleman, K. Klaphake, and I.A. Maiga, 2004. The impact of climatic and anthropogenic factors on natural resource aggradation and degradation in Niamey, Niger and its environ *In Proceedings of the Annual Meeting of the American Association of Agronomy (ASA-CSSA-SSSA) Conference (on CD ROM)*. October 31-November 3. Seattle, Washington, U.S.A.

Twumasi, Y.A., T.L. Coleman, and A. Manu. 2003. Integrated resource databases for coastal zone management of Metropolitan Accra. *In Proceedings of the Annual Convention and Exhibition of the American Society for the Photogrammetry and Remote Sensing (ACSM-ASPRS), Bethesda, Maryland (on CD ROM ISBN 1-57083-069-X)*. 5-9 May. Anchorage, Alaska. American Society for Photogrammetry and Remote Sensing, Bethesda, MD. pp.206-214.

Gariba, S.A., and **Y.A. Twumasi**. 2003. Application of GIS in community environmental education in the developing countries: the case of Ghana's forest region. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference* (ISBN CD-ROM: 0-7803-7930-6). July 21-25. Toulouse, France. Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ. vol. II., pp. 994-996.

Twumasi, Y.A., A. Manu, and T.L. Coleman. 2003. Management of watersheds with Landsat TM data: a case study of the Volta River in Ghana. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference* (ISBN CD-ROM: 0-7803-7930-6). July 21-25. Toulouse, France. Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ. vol. II., pp. 1004-1006.

Manu, A., **Y.A. Twumasi**, T.L. Coleman, and I. Zanguina. 2003. The use of GIS and satellite remote sensing techniques for the management of inland dry valley systems of the Sahel: the case of the watershed toposequence of Tanda, Niger. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference* (ISBN CD-ROM: 0-7803-7930-6). July 21-25. Toulouse, France. Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ. vol. I., pp. 267-269.

Manu, A., **Y.A. Twumasi**, T.L. Coleman, and T.S. Jean-Baptiste. 2003. Investigation of the impact of urban sprawl in three Sahelian cities using remotely sensed information. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference* (ISBN CD-ROM: 0-7803-7930-6). July 21-25. Toulouse, France. Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ, vol. II., pp. 988-990.

Nwaneri, S., and **Y.A. Twumasi**. 2003. Integration of GIS technology for urban transportation planning: the experience in Owerri, Nigeria. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference* (ISBN CD-ROM: 0-7803-7930-6). July 21-25. Toulouse, France. Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ. vol. III., pp. 1724-1726.

Twumasi, Y.A., A. Manu, T.L. Coleman, G. Mohamadou, and T.S. Jean-Baptiste. 2003. The use of satellite imagery in rangeland management: a comparative analysis of three Sahelian zones. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference* (ISBN CD-ROM: 0-7803-7930-6). July 21-25. Toulouse, France. Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ. vol.I., pp. 258-260.

Coleman, T.L., F. Archer, A. Shutko, K.F. Golson, **Y.A. Twumasi**, W. Tadesse, and T.D. Tsegaye. 2003. Environmental monitoring systems for land, air, and water bodies using remote sensing technology. *In Proceedings of the Joint US-Egyptian Workshop on the Integration of Remote Sensing and GIS Technology for Assessing and Managing Surface and Groundwater in Egypt Conference (on CD ROM)*. 3-9 December 2003. Cairo, Egypt.

Twumasi, Y.A., A. Manu, T.L. Coleman, T.S. Jean-Baptiste, and A. Moustapha. 2003. Multiscale application of remote sensing and GIS for the management of natural resources in the West Africa Sahel. *In Proceedings of the Annual Meeting of the American Association of Agronomy (ASA-CSSA-SSSA) Conference (on CD ROM)*. November 2-6. Denver, Colorado, U.S.A.

Twumasi, Y.A., and R. Asomani-Boateng. 2002. Mapping seasonal hazards for flood management in Accra, Ghana using GIS. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference* (ISBN Softbound: 0-7803-7536-0). June 24-28. Westin Harbour Castle, Toronto, Canada, Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ. pp. 2874-2876.

Twumasi, Y.A. 2001. The use of GIS and remote sensing techniques as tools for managing nature reserves: the case of Kakum National Park in Ghana. *In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference (ISBN CD ROM: ISBN 0-7803-7031-7)*. July 9-13. University of New South Wales, Sydney, Australia. Institute of Electrical and Electronics Engineers Inc., Piscataway, NJ. pp. 3227-3229.

Papers Presented at Conferences

Merem, E.C, and **Y.A. Twumasi**. 2009. Using rural stewardship scheme in environmental protection. *Paper presented at the Annual Meeting of the 2009 USDA-CSREES National Water Conference*. February 8-12. Millennium Hotel St. Louis, St. Louis, Missouri , USA.

Amamoo-Otchere, **E. Y.A. Twumasi** and K. Agyepong. 2008. Data Mining from Automated Resource Information Systems (ARIS) for Geohazards Studies of the Mississippi State. *Paper presented at the 5th African Association of Remote Sensing of the Environment (AARSE) Conference*. October 27-31, Accra, Ghana.

Twumasi, Y.A. 2008. Vulnerability to climate change along the coast in Southern Mississippi: Potential impacts on agricultural and coastal resource sectors and response capabilities. *Paper presented at the 2008 Annual Agriculture Extension and Research Field Day. Agriculture: Enhancing Community Life and Health.* Extension Research Complex, August 28, 2008. Alcorn State University, Mississippi, U.S.A.

Twumasi, Y.A. 2008. The integration of field survey and remote sensing data for biodiversity assessment: A case study in the Natchez Trace forests of Southwest Mississippi. *Paper presented at the 2008 Annual Agriculture Extension and Research Field Day. Agriculture: Enhancing Community Life and Health.* Extension Research Complex, August 28, 2008. Alcorn State University, Mississippi, U.S.A.

Merem, E.C., and **Y.A. Twumasi.** 2008. Applying GIS and Remote Sensing Techniques As Monitoring Tools In Multinational Watershed Conservation: The Case of Senegal River Basin In West Africa. *Paper presented at the National Water Quality Monitoring Conference.* May 18-22, Atlantic City, New Jersey, U.S.A.

Petja, B.M., **Y.A. Twumasi,** and G.T. Tengbeh. 2007. Comparative analysis of reflectance spectroscopy and laboratory based assessment of asbestos pollution in the rehabilitated mining environment, South Africa. *Paper presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference.* July 23-27, Barcelona, Spain.

Twumasi, Y.A., A. Manu, T.L. Coleman, E.C. Merem, E. Amamoo-Otchere, B.M. Petja and A. Osei. (2007). Climate change and biodiversity in tropical African rainforests. *Paper presented at the 1st International Conference on Environmental Research, Technology and Policy : Building Tools and Capacities for Sustainable Production.* July 16 - 19, La Palm Royal Beach Hotel, Accra, Ghana.

A. Manu, **Y.A. Twumasi,** T.L. Coleman, A.A. Mensah, M.A. Tabatabai and A.E. Norton. 2007. Mercury and arsenic levels in sediments as a result of small scale gold mining in the Western region of Ghana. *Paper presented at the 1st International Conference on Environmental Research, Technology and Policy : Building Tools and Capacities for Sustainable Production.* July 16 - 19, La Palm Royal Beach Hotel, Accra, Ghana.

Petja, B.M., **Y.A. Twumasi,** G.T. Tengbeh and L. Croukamp. 2007. Reflectance spectroscopy and laboratory based analysis of different asbestos minerals in South Africa for potential use in pollution monitoring. *Paper presented at the 32nd International Symposium on Remote Sensing of Environment (ISRSE) – Sustainable Development Through Global Earth Observations.* June 25-29. San Jose, Costa Rica.

Merem, E.C., C. Taylor and **Y.A. Twumasi.** 2007. The Analysis of Agro-Environmental Ethics Among Black Farmers. *Paper presented at the 1st Black Environmental Taught Conference,* May 22-24. Tuskegee, Alabama. USA.

Merem, E.C., and **Y.A. Twumasi.** 2007. Using Geospatial Information Systems in Watershed Management: The Case of Environmental Change Along The Yazoo River Watershed in Mississippi. *Paper presented at the World Environmental and Water Resources Congress.* May 15 -19. Tampa, Florida, U.S.A.

Twumasi, Y.A., T.L. Coleman, A. Manu and E.C. Merem. 2007. Mapping Seasonal Flooding in Sub-Saharan Africa Using Temporal Remote Sensing Data. *Paper presented at the American Society for the Photogrammetry and Remote Sensing (ACSM-ASPRS) Annual Convention and Exhibition*. May 7-11. Tampa, Florida, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2007. Using GIS and Remote Sensing in the Assessment of Watershed Change along Southern Mississippi. *Paper presented at the 2nd National Conference on Ecosystem Restoration*. April 22-27. Kansa City, Missouri, USA.

Merem, E.C., and **Y.A. Twumasi**. 2007. Geospatial Information Systems Assessment of Environmental Change in Georgia. The case of Savanna River. *Paper Presented at the Seventeenth Annual Association for Environmental Health and Sciences (AEHS) Meeting and West Coast Conference on Soils, Sediments, and Water*. March 19-22, 2007. Mission Valley Marriott, San Diego, California, USA.

Merem, E.C., and **Y.A. Twumasi**. 2007. The applications of GIS and Remote Sensing in the conservation of watershed: The case of Pearl River watershed in Mississippi. *Paper presented at the USDA-Cooperative State Research, Education, and Extension Service (CSREES), National Water Conference*. January 28 – February 1, 2007. Marriot Savanna Riverfront, Savannah, Georgia, U.S.A.

Y.A. Twumasi, E.C. Merem, A. Osei, A. Manu and T.L. Coleman. 2007. Using GIS and remote sensing in land use assessment: The case of Eastern Nigeria. *Paper presented at the 4th African Soil Science Society International Conference: Impacts of climate change, global trade, urbanization and biotechnology on land use in Africa*. 7-13 January. Accra, Ghana.

A. Anderson, A. Manu, E. Hasselman, C. Dedzoe, A. Rossi, T.L. Coleman, **Y.A. Twumasi**, J. Harpenau and K. Horihan. 2007. Establishing soil quality database for Ghana: A students' Project. *Paper presented at the 4th International Conference of the African Soil Science Society (ASSS)*. 7 - 13 January. Accra, Ghana.

Petja, B.M., G.T. Tengbeh and **Y.A. Twumasi**. 2006. Satellite Derived Monitoring of Derelict Asbestos Mine Rehabilitation in Mafefe and Mathabatha, Limpopo Province. *Paper presented at the Annual Research Conference on Environmental Research in Limpopo*. 28 - 30 November, Polokoane, Limpopo Province, South Africa.

Petja, B.M., **Y.A. Twumasi**, and G.T. Tengbeh. 2006. The use of remote sensing to detect asbestos mining degradation in Mafefe and Mathabatha, South Africa. *Paper presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) and 21st Canadian Symposium on Remote Sensing Conference*. July 31- August 4, Denver, Colorado, U.S.A

Osei, A., E.C. Merem, and **Y.A. Twumasi**. 2006. Use of remote sensing data to detect environmental degradation in the coastal region of Southern Nigeria. *Paper presented at the International Society for Photogrammetry and Remote Sensing (ISPRS) Mid-term Symposium*. May 8-11. Enschede, the Netherlands.

Merem, E.C, and **Y.A. Twumasi**. 2006. GIS and remote sensing applications in the hydrogeopolitics of Sub-Saharan Africa: the case of multinational management of River Niger basin of West Africa. *Paper presented at the National Monitoring Conference: May 7-11, San Jose, California, U.S.A.*

Twumasi, Y.A., and E.C. Merem. 2006. Management of watersheds with remote sensing and GIS: A case study of River Niger Delta Region in Nigeria. *Paper presented at the Annual Convention and Exhibition of the American Society for the Photogrammetry and Remote Sensing (ASPRS)*. May 1-5. Reno, Nevada. American Society for Photogrammetry and Remote Sensing, Bethesda, MD, U.S.A.

Merem, E.C, and **Y.A. Twumasi**. 2006. GIS applications in global environmental protection: the case of environmental monitoring of fossil fuel emission from oil and gas activities. *Paper presented at the 17th Global Warming International Conference and Expo (GW17)*. April 20-21, Miami, Florida, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2006. GIS and remote sensing assessment of oil and gas impacts in a tropical ecosystem. *Paper Presented at the Sixteenth Annual Association for Environmental Health and Sciences (AEHS) Meeting and West Coast Conference on Soils, Sediments, and Water*. March 13-16, 2006. Mission Valley Marriott, San Diego, California, USA.

Twumasi, Y.A., A. Manu, T.L. Coleman, and A. Osei. 2006. Use of Geo-spatial Information Management as a Decision Support Tool in Land Use Planning: a Case of Ghana. *Paper presented at the 5th International Federation of Surveyors (FIG) Regional Conference for Africa*. 8-11 March. Accra, Ghana.

Manu, A., **Y.A. Twumasi** and T.L. Coleman, 2006. Is it global warming or the effect of urbanization? The rise in air temperature in two cities of Ghana. *Paper presented at the 5th International Federation of Surveyors (FIG) Regional Conference for Africa*. 8-11 March. Accra, Ghana.

Osei, A., E.C. Merem, and **Y.A. Twumasi**. 2006. Use of GIS and Remote Sensing Technology as a Decision Support Tool in Land Administration: the Case of Lagos, Nigeria. *Paper presented at the 5th International Federation of Surveyors (FIG) Regional Conference for Africa*. 8-11 March. Accra, Ghana.

Twumasi, Y.A., A. Manu, T.L. Coleman, 2005. Remote sensing and GIS application in coastal zone management: a case study of Ghana. *Paper presented at the Seventh Biannual Africa GIS Conference*. 31st October – 4th November. Tshwane (Pretoria), South Africa.

Rochon, G.L., M.A. Mohamed, T. Woldai, V. B. Taylor, J. E. Quansah, T.L. Coleman, and **Y.A. Twumasi**. 2005. Post Conflict Reconstruction and Sustainable Development: The Potential Contributions of Collaborative Remote Sensing and Environmental Monitoring to Sudan. *Paper presented at the Inter-Islamic Network on Space Science and Technology (ISNET) and Remote Sensing Authority of Sudan (RSA), Workshop on Space Technology for Peace, Rehabilitation and Development, United Nations Office for Outer Space Affairs (UNOOSA)*, September 26-29, Khartoum, Sudan.

Twumasi, Y.A., E.C. Merem. 2005. GIS and remote sensing applications in the assessment of change within a coastal environment in the Niger Delta region of Nigeria. *Paper presented at the 2nd International Symposium on Recent Advances in Environmental Health Research*, September 18-21. Regency Hotel. Jackson, Mississippi, U.S.A.

Twumasi, Y.A. 2005. Assessment and monitoring of environmental degradation in the Sahel and the forest regions of West Africa. *Invited Paper Presented at the United States Geological Survey (USGS) Earth Resources Observation and Science (EROS), Summer Institute*, September 18-20. Sioux Falls, South Dakota, U.S.A.

Twumasi, Y.A., E.C. Merem, and C. Romorno. 2005. GIS and remote sensing assessment of the environmental health of parks in Mississippi: the case of Central and Southern Mississippi. *Paper Presented at the Proceedings of the 2nd International Symposium on Recent Advances in Environmental Health Research*. September 18-21. Regency Hotel. Jackson, Mississippi, U.S.A.

Twumasi, Y.A., and E.C. Merem. 2005. GIS and remote sensing applications in the assessment of change within a coastal environment in the Niger Delta region of Nigeria. *Paper Presented at the Proceedings of the 2nd International Symposium on Recent Advances in Environmental Health Research*. September 18-21. Regency Hotel. Jackson, Mississippi, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2005. GIS Application in Coastal Resource Management: The Case of the Mississippi Gulfport Region. *Invited paper presented in Joint ASPRS GIS division, Annual American Society for the Photogrammetry and Remote Sensing (ASPRS) Conference*. March 7-11. Baltimore, Maryland, U.S.A.

Rochon, G.L., J.E. Quansah, M.A. Mohamed, **Y.A. Twumasi**, T.L. Coleman, V. Taylor, C. Luther, C. Johannsen and D. Landgrebe. 2005. Applicability of Near-Real-Time Satellite Data Acquisition, Analysis & Distribution of Geoinformation in Support of African Development. *Paper presented at the United Nations Economic Commission for Africa (UNECA) Committee for Development Information (CODI) IV. April 22-30*. Addis Ababa, Ethiopia.

Twumasi, Y.A., T.L. Coleman, and A. Manu. 2005. Biodiversity management using remotely sensed data and GIS technologies: the case of Digya National Park, Ghana. *Paper presented at the 31st International Symposium on Remote Sensing of Environment (ISRSE) – Global Monitoring for Sustainability and Security Conference (on CD ROM)*. June 20-21. Saint Petersburg, Russia Federation.

Coleman, T.L., A. Manu, and **Y.A. Twumasi**. 2005. Application of landsat data to a base-line ecological study of mangrove vegetation along the coast of Ghana. *Paper presented at the 31st International Symposium on Remote Sensing of Environment (ISRSE) – Global Monitoring for Sustainability and Security Conference (on CD ROM)*. June 20-21. Saint Petersburg, Russia Federation.

Twumasi, Y.A., A. Manu, T.L. Coleman, and I.A. Maiga, 2005. The Impact of Urban Growth and Long-term Climatic Variations on the Sustainable Development of the City of Niamey, Niger. *Paper presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Proceeding*. July 25-29. Seoul, South Korea.

Merem, E.C., and **Y.A. Twumasi**. 2005. Issues in wildlife habitat conservation: the current initiatives in the South East, the case of Mississippi. *Paper Presented at the 82nd Annual Meeting of the Alabama Academy Science (AAS)*. March 30 – April 2. Birmingham Southern College, Birmingham, Alabama, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2004. GIS applications in growth management: the case of Central Mississippi. *Paper presented at the American Society for the Photogrammetry and Remote Sensing (ACSM-ASPRS) Annual Convention and Exhibition*. May 23-28, Denver, Colorado, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2004. GIS Applications in land management: the loss of high quality land to development in Central Mississippi from 1987-2002. *Paper Presented at the First International Symposium on Recent Advances in Environmental Health Research*, September 19-20. Crowne-Plaza (Marriott) Hotel. Jackson, Mississippi, U.S.A

Twumasi, Y.A., A. Manu, and T.L. Coleman, B. Schmid, A. Moustapha. 2004. Locating landfill site for Niamey, Niger using remote sensing and GIS technologies. *Paper Presented at the 5th African Association of Remote Sensing of the Environment (AARSE) Conference Proceedings*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Manu, A., **Y.A. Twumasi**, T.L. Coleman, K.S. Lu, and I.A. Maiga. 2004. Modeling urban growth of a developing country city using remote sensing and GIS. *Paper presented at the 5th African Association of Remote Sensing of the Environment (AARSE) Conference Proceedings*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Merem E.C., and **Y.A. Twumasi**. 2004. Deforestation and GIS application to forest management in Nigeria. *Paper presented at the 5th African Association of Remote Sensing of the Environment (AARSE) Conference Proceedings*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Manu, A., K.S. Lu, **Y.A. Twumasi**, T.L. Coleman, T.S. Jean-Baptiste, and A. Barro. 2004. Integrating neural networks with logistic regression to model and predict urban growth in two West African cities. *Paper Presented at the 5th African Association of Remote Sensing of the Environment (AARSE) Conference Proceedings*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Coleman, T.L., **Y.A. Twumasi**, and A. Manu. 2004. Spatio-temporal analysis of migration patterns in Ghana from 1970-2000 using GIS. *Paper presented at the 5th African Association of Remote Sensing of the Environment (AARSE) Conference Proceedings*. 18-21 October. United Nations Environment Programme (UNEP) Headquarters, Gigiri, Nairobi, Kenya.

Manu, A., T.L. Thurow, T.L. Coleman, **Y.A. Twumasi**, B.M. Schmid, and M. Salou. 2004. The Impact of Forest Restoration on Ecological Health of a Degraded West African Sahelian Plateau. *Paper Presented at the Annual Meeting of the American Association of Agronomy (ASA-CSSA-SSSA)*, October 31-November 3. Seattle, Washington, U.S.A.

Twumasi, Y.A., A. Manu, and T.L. Coleman. 2004. Monitoring urban expansion of Bamako, Mali, using principal component analysis of multi-temporal Landsat data. *Paper Presented at the 81st Annual Meeting of the Alabama Academy Science (AAS)*. March 17-20. University of Montevallo, Montevallo, Alabama, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2004. Analysis of trends on forested land areas: the case of Mississippi. *Paper Presented at the Annual Meeting of the 81st Annual Meeting of the Alabama Academy Science (AAS)*. March 17-20. University of Montevallo, Montevallo, Alabama, U.S.A.

Twumasi, Y.A., T.L. Coleman, and A. Manu. 2003. Monitoring of urban growth in the Accra Metropolitan Area, Ghana using satellite imagery. *Paper Presented at the Annual Meeting of the Alabama Academy of Science (AAS)*. March 22, 2003. Jacksonville State University, Jacksonville, Alabama, U.S.A.

Merem, E.C., and **Y.A. Twumasi**. 2003. The Environmental Initiatives of Community Based Development Organizations: the Case of the Federation of Southern Cooperatives of Alabama. *Paper Presented at the Annual Meeting of the Alabama Academy of Sciences (AAS)*. March 22, 2003. Jacksonville State University, Jacksonville, Alabama, U.S.A.

Twumasi, Y.A., T.L. Coleman, and A. Manu. 2003. Integrated resource databases for coastal zone management of Metropolitan Accra. *Paper Presented at the Annual Meeting of the American Society for the Photogrammetry and Remote Sensing (ASPRS), Bethesda, Maryland*. 5-9 May, 2003, Anchorage, Alaska, U.S.A.

Gariba, S.A., and **Y.A. Twumasi**. 2003. Application of GIS in community environmental education in the developing countries: the case of Ghana's forest region. *Paper Presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference Proceedings*. July 21-25. Toulouse, France.

Twumasi, Y.A., A. Manu, and T.L. Coleman. 2003. Management of watersheds with Landsat TM data: a case study of the Volta River in Ghana. *Paper Presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference Proceedings*. July 21-25. Toulouse, France.

Manu, A., **Y.A. Twumasi**, T.L. Coleman, and I. Zanguina. 2003. The use of GIS and satellite remote sensing techniques for the management of inland dry valley systems of the Sahel: the case of the watershed toposquence of Tanda, Niger. *Paper Presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference Proceedings*. July 21-25. Toulouse, France.

Manu, A., **Y.A. Twumasi**, T.L. Coleman, and T.S. Jean-Baptiste. 2003. Investigation of the impact of urban sprawl in three Sahelian cities using remotely sensed information. *Paper Presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference Proceedings*. July 21-25. Toulouse, France.

Nwaneri, S., and **Y.A. Twumasi**. 2003. Integration of GIS technology for urban transportation planning: the experience in Owerri, Nigeria. *Paper Presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference Proceedings*. July 21-25. Toulouse, France.

Twumasi, Y.A., A. Manu, T.L. Coleman, G. Mohamadou, and T.S. Jean-Baptiste. 2003. The use of satellite imagery in rangeland management: a comparative analysis of three Sahelian zones. *Paper Presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference Proceedings*. July 21-25. Toulouse, France.

Twumasi, Y.A., A. Manu, T.L. Coleman, T.S. Jean-Baptiste, and A. Moustapha. 2003. Multiscale application of remote sensing and GIS for the management of natural resources in the West Africa Sahel. *Paper Presented at the Annual Meeting of the American Association of Agronomy (ASA-CSSA-SSSA) Conference Proceedings*. November 2-6. Denver, Colorado, U.S.A.

Twumasi, Y.A., and R. Asomani-Boateng. 2002. Mapping seasonal hazards for flood management in Accra, Ghana using GIS. *Paper Presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference Proceedings*. June 24-28. Westin Harbour Castle, Toronto, Canada.

Twumasi, Y.A. and T.L. Coleman. 2002. Information system for the environment in Africa: a case of Ghana. *Paper presented at 45th Annual Meeting of the African Studies Association (ASA)*. December 5-8. Washington DC, U.S.A.

Twumasi, Y.A. 2001. The use of GIS and remote sensing techniques as tools for managing nature reserves: the case of Kakum National Park in Ghana. *Paper Presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Conference Proceedings*. July 9-13. University of New South Wales, Sydney, Australia.