

RESUME

Assefa M. Melesse, Ph.D., P.E., D. WRE
Associate Professor
Department of Earth and Environmental, ECS 339
Florida International University
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EDUCATION

- **Ph.D.**, Agricultural and Biological Engineering
Concentration: Hydrologic Sciences
Minor 1: Environmental Engineering
Minor 2: Remote Sensing
University of Florida, 2002

Dissertation: Spatially Distributed Storm Runoff Modeling using Remote Sensing and GIS. *Chair:* Prof. Wendy Graham
 - **M.E (Master of Engineering)**, Agricultural and Biological Engineering
Concentration: GIS (Geographic Information Systems)
Minor: Civil Engineering
University of Florida, 2000.
 - **M.Eng.Sc (Master of Engineering Science)**., Agricultural Engineering
National University of Ireland, 1991.
 - **B.Sc.**, Agricultural Engineering
Alemaya University, 1986.
 - **Graduate Certificates**
 - Interdisciplinary GIS
University of Florida, 2002
 - GPS for Planners
University of Florida & TRIMBLE, 2001
- 2004/05:** Listed in „**Who is Who in Science and Engineering**“ 8th Edition, 2004
2006/07: Listed in „**Who is Who in Science and Engineering**“ 9th Edition, 2006
Selected for “ **Who is Who in America**”, 2007
Selected for “**Who is Who in American Education**”, 2007

REGISTRATION/CERTIFICATION: Professional Engineer (Civil)

- Florida: License#: 58699
- North Dakota: License#: 4980

Diplomate, Water Resources Engineer (D. WRE)

WORK EXPERIENCE

1. **2008-**
 - Associate Professor, Department of Earth and Environmental
Florida International University
2. **2004 – 2008**
 - *Assistant Professor*, Department of Earth and Environmental
Florida International University
3. **2002 - 2004**
 - *Research Assistant Professor & Assistant Professor*, Earth System Science
Institute, School of Aerospace Sciences, University of North Dakota
 - *Adjunct Asst. Professor*, Department of Civil Engineering, School of
Engineering and Mines, University of North Dakota.
4. **1998 - 2002:** *Research Assistant*, Department of Agricultural and Biological
Engineering, University of Florida.
5. **March 1995 - May 1998:** *Assistant Professor II*, Department of Agricultural
Engineering, Alemaya University, Ethiopia.
6. **Sep. 1986 - March 1995:**
 - *Lecturer II (1991-95)*
 - *Asst. Lecturer (1988-89)*,
 - *Graduate Assistant (1986-88)*,Department of Agricultural Engineering, Alemaya University.

Affiliated Faculty with:

- Department of Civil and Environmental Engineering, FIU
- Department of Earth Sciences, FIU
- Honors College (Research), FIU

RESEARCH/EDUCATION GRANTS:

1. NASA (2009-2014) WaterSCAPES: Science of Coupled Aquatic Processes in
Ecosystems from Space,\$5,000,000, F. Miralles (PI), R. Price, A. Melesse (Co-PI),
H. Fuentes, R. Garcia, D. DeAngelis, D. Fuller, M. Potts, I. Rodriguez-Iturbe, S.
Wdowinski.
2. Internationalization of Biofuel Research, Curriculum and Business, USDA,
\$100,000, M. Bhat (PI), Jayachandran, A. Melesse (Co-PI) (2008-2011)
3. Curriculum Enrichment, Instrumentation and Experiential Learning in Agroecology,
USDA, \$292,000, M. Bhat (PI), Jayachandran, A. Melesse (Co-PI), and S. Kopter, J.
Onsted. (2008-2011).

4. Geospatial and remote sensing application in mapping hotspots of soil erosion in the Minnesota River basin, University of Minnesota, NCED, \$34, 155 (2008-2009) PI
5. Transboundary Water for Biodiversity and Human Health in the Mara River Basin, Kenya and Tanzania, USAID: (2008-2010), (\$1,200,000) (Renewal).
M. McClain (PI), A. Melesse (Co-PI),
6. Nile Basin Hydrology and Ecology under Extreme Climatic Conditions.
NSF, (2007-2008), (\$38,048), Melesse, A. (PI), Senay, G.
7. Multicultural Undergraduate Scholars in Agroecology and Urban Landscape at Florida International University: An Interdisciplinary Approach, USDA, (2007-2012) (\$150,000)
Jayachandran (PI), M. Bhat, A. Melesse (Co-PI)
8. Limits to Growth in Agriculture and Emerging Sustainable Farming Systems in Developing Countries, USDA (2006-2008), (\$100, 000).
M. Bhat (PI), Jayachandran, A. Melesse (Co-PI), M. Allen and A. Ravinet
9. Caribbean Coastal Scenarios, IAI (2006-2010), (\$427,426).
M. McClain (PI), J. FU. J. Gebalin, A. Melesse (Co-PI), F. Vicioso, I. Gonzales, Webber, F. But, J. Ortiz, L. Talaue-McManus
10. Transboundary Water for Biodiversity in the Mara River Basin, Kenya and Tanzania, USAID: (2005-2007), (\$700,000).
M. McClain (PI), A. Melesse (Co-PI),
11. Planning visit to study the effects of vegetation and cropping pattern on soil moisture dynamics and river flow in the Upper Blue Nile Basin, Ethiopia, NSF, (2005-2006) (\$9,896). A. M. Melesse (PI), G. Senay
12. Curricular Development and Capacity Building in Agroecology Sciences, USDA, (2005-2007), (\$229,839).
M. Bhat (PI), Jayachandran, A. Melesse (Co-PI), and S. Kopter
13. Global Water for Sustainability (GLOWS), USAID (PI: McClain), 2004-2009, \$3,750,000.
Melesse: Lead Investigator and team leader for hydrological modeling component,
14. Northern Great Plains Center for People and the Environment - Year 3, NASA (2003- 04), (\$2,700,000)
Seielstad, G.A (PI), O. Beerli, A. Melesse (Co-PI), P. Carter, R. Hanley, , G. Johnson, S. Laguette, R. Phillips, S. Seelan, X. Zhang
15. Northern Great Plains Center for People and the Environment - Year 4. NASA (2004-05), (\$2,149,000)
Seielstad, G.A (PI), O. Beerli, A. Melesse (Co-PI), P. Carter, R. Hanley, , G. Johnson, S. Laguette, R. Phillips, S. Seelan, X. Zhang

16. Quantifying Environmental Benefits from Precision Agriculture, USDA-ARS:
(2003-2004) (\$347, 000)
Seielstad, G.A, R. Phillips (PI) and A. Melesse (Co-PI)
17. Team Express: Crop Range Alert System-Phase 4, Raytheon, 2003 (\$ 688,265)
Seielstad, G.A (PI), O. Beeri, P. Carter, A. Melesse (Co-PI), R. Hanley, G. Johnson,
S. Laguette, R. Phillips, S. Seelan, X. Zhang
18. Team Express: Crop Range Alert System-Phase 5, Raytheon, 2004 (\$275,000)
Seielstad, G.A (PI), O. Beeri, P. Carter, R. Hanley, A. Melesse (Co-PI), G. Johnson,
S. Laguette, R. Phillips, S. Seelan, X. Zhang.

Graduate Students

Name	Degree	Dept./University	Graduation
Jason Oberg✓	M.Sc	Civil Engineering (UND)	2004
Pavel Terselich✓	M.Sc	Earth and Environmental (FIU)	2007
John Stiefel✓	M.Sc	Earth and Environmental (FIU)	2007
Himadri Biswas✓	M.Sc	Earth and Environmental (FIU)	2008
Christina Hoffman✓	M.Sc	Earth and Environmental (FIU)	2007
Nenpan Tukunda✓	M.Sc	Earth and Environment (FIU)	2009
Yirgalem Assegid	Ph. D	Earth and Environmental (FIU)	2010
Liya Mango	M.Sc	Earth and Environmental (FIU)	2010
Gaby Orihuela Lopez	M.Sc	Earth and Environmental (FIU)	2009
Genevieve Diamond	M.Sc	Earth and Environmental (FIU)	2010
Fukhrudin Khalif Maalim	M.Sc	Earth and Environmental (FIU)	2010
Sirikanth Pilli*✓	M.Sc	Civil and Env. Engineering	2010
Luam Azmera*	M.Sc	Civil and Env. Engineering	2010
Sejal Kunchwar*✓	M.Sc	Civil and Env. Engineering	2010
Matilde Dugue	M.Sc	Earth and Environmental (FIU)	2010
Shimelis Behailu	M.Sc/Ph. D	Earth and Environmental (FIU)	2011
Mengistu Balew	M.Sc	Earth and Environmental (FIU)	2011
Yao Yan*	Ph. D	Civil and Env. Engineering	2012
Yonatan Sahle	Ph. D	Earth and Environmental (FIU)	2010

* Co-Advisor ✓ Graduated

Committee member for

Diana K. Ter-Ghazaryan	Ph. D	International Relations (FIU)
Celeste Diaz-Consul	Ph. D	Civil and Environmental Engineering (FIU)
Mauro Nalesso	Ph. D	Civil and Environmental Engineering (FIU)
Beth McCarthy	M.Sc	Earth and Environmental (FIU)
George Atisa	M.Sc	Earth and Environmental (FIU)
Erin Hanan	M.Sc	Earth and Environmental (FIU)
Shanon McClain	M.Sc	Earth and Environmental (FIU)
Mehrnoosh Mahmoudi	Ph. D	Civil and Env. Engineering

Supervised Research/Independent study projects

Graduate Students

- Genevive Diamond, 2008. Rainwater Harvesting for Agriculture in the Bahamas –
A Feasibility Study
- Nenpan Tunkuda, 2008, Utilizing GIS and Remote Sensing for Watershed
Analysis in the Milk River basin, Jamaica
- Sejal Kuchwar, 2008., Statistical Downscaling for simulating climate change using
SDSM
- Sirikanth Pilli, 2008, Estimation of Evapotranspiration using SEBAL Model for the
Landsat 7 ETM+ Imagery of South Florida
- Matilde Dugue, 2008, Evaluation of wildlife’s habitat restoration in the Lake
Apopka

Undergraduate students

- Debra Deras Coastal Flooding mapping using GIS (2006)
- Imrul Hack Climate change and water resources of South Florida
(2006)
- Melisa Miano Land-use change analysis of South Florida (2006)
- Ashley Thomas Sediment analysis and estimation in the Le Suer River,
Minnesota (2008)

International Research Scientists, Visiting Scholars and Interns hosted

- Shimelis G. Setegn, Royal Institute of Technology, Sweden, March –Nov. 2009
- Flavio Lupia, Italian National Institute for Agricultural Economics, Italy, July-August, 2009
- P. K. Singh (Fulbright Scholar) , Maharana Pratap University of Agriculture and Technology, India, Sep. 2009-Jan. 2010

Courses developed/taught at FIU

GIS 5050/EVR 4934 Environmental GIS
EVR 3010 Energy Flow
EVR 4211 Water Resources
EVR 5215 Water Resources Assessment
EVR 7056 GIS in Water Resources
EVR6990 Remote Sensing in Hydrology
EVR 4905 Independent Study
EVR 5907 Independent Study
EVR 6970 Thesis Research
EVR 6971 Masters Thesis

Courses taught at University of North Dakota

GLY 427 Groundwater Modeling Fall 2003

Courses taught at Alemaya University

Ag En 201	Int. to Agricultural Engineering	(1986-87)
Ag En 211	Descriptive Geometry	(1986-87)
Ag En 222	Technical Drawing	(1987-89)
Ag En 331	Engineering Materials	(1991-92)
Ag En 561	Design of Farmstead Structures	(1992-96)
Ag En 332	Strength of Materials	(1994-96)
Agri 162	Int. to Agri. and Forestry	(1995-96)

RESEARCH EXPERIENCE AND INTERESTS

- Spatially distributed hydrologic modeling and scaling
- Integration of hydrological models and remote sensing data into GIS
- Surface and groundwater interactions modeling
- Spatial and temporal land cover dynamics and scaling, spatial analysis
- Watershed characterization and modeling using Remote sensing and GIS
- Ecohydrology
- ANN, Neurofuzzy and data fusion techniques
- Water, carbon and energy flux coupling
- Evapotranspiration estimation using satellite imagery

AWARDS AND HONORS

- Diplomate of Water Resources Engineering by American Academy of Water Resources Engineering, 2007-
- Dean's Honor List (1983), Alemaya University.
- Graduated with distinction (1986), Alemaya University.
- Irish Government Fellowship (1989 - 91).
- Promoted to the rank of Asst. Professor II (March 1995), Alemaya University.

PROFESSIONAL AND UNIVERSITY SERVICE

- Guest Editor, Special Issue: Climate change, land-use dynamics and ecohydrology of the Nile River basin, [Hydrological Processes](#)
- Editor-in-Chief, [J. of Spatial Hydrology](#)
- Guest Editor, *Special Issue*: [Remote Sensing of Natural Resources and the Environment](#) for **Sensors** journal
- Editor, Proceedings of the [Nile workshop](#) on the hydrology and ecology of the Nile River under extreme conditions.
- Guest Editor, Special issue [Land surface Fluxes](#), Remote Sensing journal
- Member, Editorial Advisory Board for [Sensors](#) journal (RS section)
- Member, Editorial Board, [Remote Sensing](#) journal
- Member, Southwest Florida Water Management District (SWFWMD) Agricultural Advisory Committee
- Member, Graduate Admission Committee (EVR) (2004-2008)
- Chair, Curriculum Committee (EVR) 2008-
- Member, Curriculum Committee (EVR) (2007-2008)
- Secretary, Departmental Faculty Meeting (2005/06)
- Member, Science Task Force (EVR) (2005-2006)
- Member, University-wide Remote Sensing and GIS Advisory Committee (FIU)2004-
- Member of College-wide School of the Environment exploratory Committee (2005)
- Member, Faculty Advisory Council for Center for African New World Studies
- Member, Coordinating Committee for Graduate Certificate in Water, Environment, and Development Studies (WEDev), (EVR)
- Member, Coordinating Committee for Certificate in Agroecology, (EVR)
- Member, Coordinating Committee for Certificate in GIS (FIU)
- Florida Chapter Representative in SWFWMD, American Society of Agricultural and Biological Engineers (ASABE).
- Alternate FIU Representative, Consortium of Universities for the Advancement of Hydrological Science (CUAHSI)

PROFESSIONAL MEMBERSHIP

- Member, American Geophysical Union (AGU), (1999 - present)
- Member, American Society of Agricultural Engineers (ASAE), (1999 - present)
- Member, Gamma Beta Chapter of Alpha Epsilon, (2000 - present)

KNOWLEDGE OF SOFTWARES/PROGRAMS/MODELS

- **Water Resources Models:** HEC-1, AnnGNPS, TOPMODEL, MODFLOW, PMWIN, SWAT, PRSM and WMS
- **Image processing/GIS:** Arc/Info, ArcGIS, Arcview, ERDAS, ENVI, Earth
- **Statistical:** Surfer, GS+, SPSS, SAS, and SYSTAT
- **Programming:** Mathlab, C and Avenue

JOURNAL/BOOK CHAPTER REVIEWER

- Journal of Hydrology
- Journal of Environmental Management
- Journal of American Water Resources Association
- Transactions of American Society of Agricultural Engineers: Soil and Water Division
- Transactions of American Society of Agricultural Engineers: Information & Electrical Technologies Division
- Hydrobiologia
- Hydrological Sciences Journal
- Journal of Water Resources Management
- Atmospheric Research
- Remote Sensing of Environment
- Hydrological Processes
- Photogrammetric Engineering and Remote Sensing (PE&RS)
- Journal of Coastal Research
- Journal of Environmental Quality
- CRC Press/Taylor & Francis Group
- Conference of Southern Graduate Schools Thesis Award

PROPOSALS REVIEWED FOR

- NSF (Panel Review), Environmental Sustainability Program
- U.S. Civilian Research & Development Foundation, Cooperative Grants Program
- National Institute for Space Research Program, Bureau External Research (The Netherlands), Earth Observation Research
- Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET)
- BARD, the United States - Israel Binational Agricultural Research & Development Fund
- NIWR-USGS National Competitive Grants Program
- NSF, Geography and Regional Science Program
- USDA

PUBLICATIONS

100+ journal articles, book, book chapter, proceedings, edited special issues and conference abstracts/presentations)

Peer-reviewed published/in-press/accepted journal articles

1. Melesse, A., Abteu, W., Desalegn, T. and Wang, X. 2009. Low And High Flow Analysis And Wavelet Application For Characterization Of The Blue Nile River System, *Hydrological Processes*, Special Issue: Nile Hydrology (accepted).
2. *Chebud, Y.A., **Melesse, A.**, Modeling the Groundwater Flow System of the Lake Tana Basin, Ethiopia, *Hydrological Processes*, Special Issue: Nile Hydrology (conditionally accepted).
3. Setegn, S.G., Srinivasan, R., Dargahi1 ,B., **Melesse, A.**, Spatial Delineation of Soil Erosion Prone Areas: Application of SWAT and MCE Approaches in the Lake Tana Basin, Ethiopia, *Hydrological Processes*, Special Issue: Nile Hydrology (accepted).
4. Setegn, S.G., Bijan Dargahi, B., Srinivasan, R., **Melesse, A. M.** Modelling of Sediment Yield from Anjeni Gauged Watershed, Ethiopia Using SWAT , JAWRA, accepted
5. Abteu, W., **Melesse, A.**, Desalegn, T. El Niño Southern Oscillation link to the Blue Nile River Basin hydrology, *Hydrological Processes*, Special Issue: Nile Hydrology, (accepted)
6. Setegn, S.G., Srinivasan, R. , **Melesse, A.**, Dargahi1 ,B., Analysis of the Hydrological Processes in the Lake Tana Basin, Ethiopia: SWAT Model Application and Uncertainty Analysis, *Hydrological Processes*, (accepted).
7. Abteu, W., **Melesse, A.**, Desalegn, T Spatial, inter and intra-annual variability of the Blue Nile River Basin Rainfall, *Hydrological Processes*, Special Issue: Nile Hydrology (accepted).
8. *Stiefel, J.; **Melesse, A.**, McClain,M., Price, R.M., Anderson, A.P., Chauhan, N.K. ,*Effects of rainwater harvesting induced artificial recharge on the groundwater of wells in Rajasthan, India*, Hydrogeology Journal (accepted).
9. *Chebud, Y.A., **Melesse, A.**, Modeling Lake Stage and Water Balance of Lake Tana, Ethiopia, *Hydrological Processes*, Special Issue: Nile Hydrology (accepted).
10. Wang, X., Shang, S. Yang,W., and Melesse, A., 2008. *Simulation of an Agricultural Watershed Using an Improved Curve Number Method in SWAT*, Tans. of American Society of Agri. and Bio. Engineers, **51(4)**:

1323-1339.

11. Wang, X., Yang, W., Melesse, A., **2008. *Using hydrologic equivalent wetland concept within SWAT to estimate streamflow in watersheds with numerous wetlands*** Tans. of American Society of Agri. and Bio. Engineers, Vol. 51(1): 55-72
12. Melesse, A., Weng, Q., Thenkabail, P., Senay, G. 2007.. ***Remote Sensing Sensors and Applications in Environmental Resources Mapping and Modeling***, Special Issue: Remote Sensing of Natural Resources and the Environment, *Sensors*, 7, 3209-3241.
13. Senay, G.B, J.P. Verdin, R. Lietzow , A.M. Melesse 2008. ***Global Daily Reference Evapotranspiration Modeling and Validation*** Journal of the American Water Resources Association (JAWRA) 44(4):969-979.
14. Melesse, A, Nangia, V. Wang, X., McClain, M. 2007. ***Wetland Restoration Response Analysis using MODIS and Groundwater Data*** Special Issue: Remote Sensing of Natural Resources and the Environment, *SENSORS*, 7: 1916-1933
15. Senay, G.B, , M. Budde, J.P. Verdin, A.M. Melesse 2007. ***A Coupled Remote Sensing and Simplified Energy Balance Approach to Estimate Actual Evapotranspiration from Irrigated Fields*** Special Issue: Remote Sensing of Natural Resources and the Environment, *SENSORS* journal 7, 979-1000
16. Melesse, A., Frank, A, Nangia, V, Liebig, M and Hanson, J. 2008. ***Analysis of Energy Fluxes and Land Surface Parameters in Grassland Ecosystem: Remote Sensing Perspective*** Int. Journal of Remote Sensing, 29(11): 3325 – 3341.
17. Wang, X., Melesse, A.M. McClain, M. 2007. ***Water quality changes as result of coalbed methane development in a Rocky Mountain watershed***, J. of American Water Resources Association 43 (6): 1383-1399
18. Melesse Jayachandran, K., Zhang, K. 2008. ***Modeling Coastal Eutrophication at Florida Bay using neural networks***. Journal of Coastal Research ,24:190–196
19. Wang, X., Melesse, A.M and Yang, W. 2006. ***Influences of Potential Evapotranspiration Estimation Methods on SWAT's Hydrologic Simulation in a Northwestern Minnesota Watershed***. Transactions of the ASAE. 49(6): 1755- 1771.
20. Wang, Xixi, Melesse, A.M. Kelsch, S.W., and Yang, W 2006. ***DISCUSSION: "Adapting Existing Models to Examine Effects of Agricultural***

Conservation Programs on Stream Habitat Quality,” by F. Douglas Shields, Jr., Eddy J. Langendoen, and Martin W. Doyle.
J. of American Water Resources Association 42(6):1711-1713.

21. Wang, Xixi, **Melesse**, A.M., Yang, W., 2006. *Development of a Multivariate Regression Model for Soil Nitrate-Nitrogen Content Prediction* J. of Spatial Hydrology 6(2): 38-56
22. Melesse, A.M., Wang X. **2006. Multi-temporal scale hydrograph prediction using Artificial Neural Networks**, J. of American Water Resources Association 42(6) 1647-1657.
23. Melesse, A.M., Nangia, V., Wang, X. 2006, *Hydrology and Water Balance of Devils Lake Basin: Part 1. Hydrometeorological Analysis and Lake Surface Area Mapping*, J. of Spatial Hydrology, 6(1): 120-132.
24. Melesse, A. M., Nangia, V., Wang, X., 2006., *Hydrology and Water Balance of Devils Lake Basin: Part 2. Grid-Based Spatial Surface Water Balance Modeling* J. of Spatial Hydrology, 6(1): 133-144.
25. *Oberg, J., **Melesse, A. M.** 2006. *Evapotranspiration Dynamics at an Ecohydrological Restoration Site: An Energy Balance and Remote Sensing Approach*, J. of American Water Resources Association 42(3): 565-582.
26. Wang, Xixi, **Melesse, A.M** 2006. *Effects of STATSGO and SSURGO as Inputs on SWAT Model's Snowmelt Simulation*, J. of American Water Resources Association Vol. 42 (5): 1217-1236.
27. Melesse, A.M., J. Oberg, O. Beerli, Nangia, V., Baumgartner, D. 2006, *Spatiotemporal Dynamics of Evapotranspiration and Vegetation at the Glacial Ridge Prairie Restoration*, Hydrological Processes, 20(7): 1451-1464.
28. Wang, Xixi, **Melesse, A.M.** 2005 *Evaluations of the SWAT Model's Snowmelt Hydrology in a Northwestern Minnesota Watershed*. Trans. of ASAE 48(4): 1359 –1376.
29. Melesse, A. M., Hanley, R. 2005. *Artificial Neural Network Application for Multi-Ecosystem Carbon Flux Simulation*, Ecological Modeling 189, 305–314
30. Melesse, A., Nangia, V., 2005. *Spatially distributed surface energy flux estimation using remotely-sensed data from agricultural fields*. Hydrological Processes 19 (14): 2653-2670.
31. Melesse, A. M., Hanley, R., 2005, **Energy and Carbon Flux Coupling: Multi-ecosystem Comparisons Using Artificial Neural Network** American Journal of Applied Sciences 2 (2): 491-495.

32. Melesse, A. M., W. D. Graham 2004. *Storm runoff prediction using spatially distributed travel time concept utilizing remote sensing and GIS*. J. of American Water Resources Association 40(4): 863-879.
33. Melesse, A. 2004. *Spatiotemporal Dynamics of land surface parameters in the Red River of the North Basin*. Physics and Chemistry of Earth, 29: 795-810. (Special Issue: Anthropogenic impacts on catchment processes)
34. Melesse, A. 2004. *DEM-RS-GIS based storm runoff response study of Heart River sub-basin, Missouri River Basin*. J. of Environmental Hydrology, No. 4, Vol. 12.
35. Melesse, A. M., J. D. Jordan 2003. *Spatially Distributed Watershed Mapping and Modeling: Land Cover and Microclimate Mapping using Landsat Imagery Part 1*, J. of Spatial Hydrology (e-journal), Vol. 3, No. 2.
36. Melesse, A. M., W. D. Graham 2003. *Spatially Distributed Watershed Mapping and Modeling: GIS-Based Storm Runoff Response and Hydrograph Analysis Part 2*, J. of Spatial Hydrology (e-journal), Vol. 3, No. 2.
37. Melesse, A. M., S. F. Shih, 2002. *Spatially Distributed Storm Runoff Depth Estimation using Landsat Images and GIS*. Computers and Electronics in Agriculture, Vol. 37: 173 – 183.
38. Melesse, A. M., J. D. Jordan, 2002. *A Comparison of Fuzzy vs. Augmented-ISODATA Classification Algorithm for Cloud and Cloud-Shadow Discrimination in Landsat Imagery*. Photogrammetric Engineering and Remote Sensing, Vol. 68(9): 905-911.
39. Melesse, A. M., S. F. Shih, 2000. *Remote Sensing and GIS Database for Runoff Curve Number Change Assessment*. Soil and Crop Science Society of Florida Proceedings, Vol. 59: 141-146.

Peer-reviewed in review/accepted pending revision

40. Melesse, A.M., Ahmad, S., McClain, M., Wang, X., Lim, H., Nangia, V. *Sediment Load prediction in Large Rivers: ANN Approach*. (in review)
41. Wang, X., Pacchai, S. Melesse. A., *Analysis of Depression Storage in a Glaciated Watershed Using Topographic Datasets With Different Resolutions* (in review)
42. Melesse, A., Abteu, W., Desalegn, T. Evaporation estimation of Rift Valley Lakes in Ethiopia: Comparison of Models, *Hydrological Processes*, Special Issue: Nile Hydrology (under Review).

43. *Hofmann, C. **Melesse, A.**, McClain, M. Geospatial Mapping and Analysis Of Water Availability-Demand-Use Within The Mara River Basin, *Hydrological Processes*, Special Issue: Nile Hydrology (under Review).

Books/Book Chapter

44. Wang, X., Garza, J. Whitney, M. **Melesse, A.M.**, and Yang, W. *Prediction of Sediment Source Areas Within Watersheds as Affected by Soil Data Resolution*, In Environmental Modelling: New Research (ed. Paul N. Findley; ISBN: 978-1-60692-034-3), Ch. 7, Nova Science Publishers, Inc., Hauppauge, NY 11788.
45. Melesse, A., Wang, X., and McClain, M 2010. Effects of land management and topography on land surface fluxes under different altitudes. In: Modeling Hydrologic Effects of Microtopographic Features at Watershed Scale Editor: Xixi Wang, Nova Science Publishers.
46. Melesse, A., and Scinto, L. *Water Degradation*, Encyclopedia of Geography, Warf, B. Editor, Sage Publishers (accepted)
47. Melesse, A., and Wang, X., 2007. *Impervious Surface Area Dynamics and Storm Runoff Response, in Remote Sensing of Impervious Surfaces*, CRC Press/Taylor & Francis, Ch. 19: 369-384.
48. Abteu, M, and **Melesse, A.** 2008, *Proceedings of the Nile workshop on the hydrology and ecology of the Nile River under extreme conditions*, FIU, 387pp.

Edited special issues

49. Climate change, land-use dynamics and ecohydrology of the Nile River basin, for [Hydrological Processes](#)
50. [Remote Sensing of Natural Resources and the Environment](#) for *Sensors* journal
51. [Land Surface Fluxes](#) with *Remote Sensing* journal

CONFERENCE PROCEEDINGS

- * Supervised graduate student
** undergraduate student advised

52. *Hoffman, C., **Melesse, A.M.**, M. McClain 2009. *Geospatial Mapping and Analysis of Water Availability-Demand-Use Within the Mara River Basin*, AWRA Spring Specialty Conference: Managing Water Resources & Development in a Changing Climate, Anchorage, AK, May 4-6, 2009.

53. Wang,X., Shiyou Shang, Assefa M.Melesse, and Dawen Yang, 2009
Estimation of design discharge for an ungauged overflow-receiving watershed using HEC-RAS hydrodynamic model, ASCE-EWRI. World Environmental and Water Resources Congress, Kansas City, Missouri, May 17-21, 2009, 20pp.
54. Melesse, A., Abteu, W. Desalegne, T. *Simple Model and Remote Sensing Methods for Evaporation Estimation of Rift Valley Lakes in Ethiopia*, Proceedings of the Nile Hydrology and Ecology under Extreme Conditions Workshop, June 16-19, 2008, Addis Ababa, Ethiopia, pp 262-274.
55. Melesse, A., Abteu, W. Desalegne, T. *Flow analysis and characterization of the Blue Nile River system*, Proceedings of the Nile Hydrology and Ecology under Extreme Conditions Workshop, June 16-19, 2008, Addis Ababa, Ethiopia, pp 113-126.
56. *Chebud, Yirgalem., Melesse, A., *Hydrological Water Balance of Lake Tana* Proceedings of the Nile Hydrology and Ecology under Extreme Conditions Workshop, June 16-19, 2008, Addis Ababa, Ethiopia, pp 181-198.
57. *Chebud, Yirgalem., Melesse, A., *Groundwater Simulation of lake Tana* Proceedings of the Nile Hydrology and Ecology under Extreme Conditions Workshop, June 16-19, 2008, Addis Ababa, Ethiopia, pp 145-158.
58. Abteu, W., Melesse, A., Desalegn, T. *Blue Nile Basin Hydrology Relationship to Climatic Indices* Proceedings of the Nile Hydrology and Ecology under Extreme Conditions Workshop, June 16-19, 2008, Addis Ababa, Ethiopia, pp 76-89.
59. Abteu, W., Melesse, A., Desalegne, T. *Analysis of monthly and annual rainfall of the Blue Nile River basin* Proceedings of the Nile Hydrology and Ecology under Extreme Conditions Workshop, June 16-19, 2008, Addis Ababa, Ethiopia, pp 249-261.
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ASAE Annual International Meeting, ASAE Paper # 05-3023, July 17-20, 2005, Tampa, Florida, 11pp (CD proceeding).
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CONFERENCE PRESENTATIONS WITH ABSTRACTS

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European Geophysical Society
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91. Melesse and Wang, 2007. *Landsat-Based Impervious Surface Mapping And Storm Runoff Response*, Joint AGU Meeting, May 21-25, 2007, Acapulco, Mexico.

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93. *Biswas, H., Melesse, A., and McClain, M. 2007. *Remote sensing and-GIS based approach for delineation of groundwater prospect zones in a semi-arid area in Rajasthan, India*, Annual AWRA meeting, Albuquerque, NM, November 2007
94. **Deras, D, Melesse, A. 2007. *Geospatial mapping of sea level rise-induced coastal zone inundation and associated economic loss analysis: The case of Miami-Dade County in South Florida*, Annual AWRA meeting, Albuquerque, NM, November 2007
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97. *Tunkuda, N., Melesse, A., *Delineation of flood-prone areas of the Rio Minho Watershed, Jamaica using topographic index and watershed physical parameters*, Eos Trans. AGU, 89(23), Jt. Assem. Suppl., Abstract H43A-06, Ft. Lauderdale, May 2008
98. *Biswas, H., Melesse, A., McClain, M. Sukop, M. *Groundwater flow modeling using PMWIN model in the Wakal River basin, Rajasthan, India*, Eos Trans. AGU, 89(23), Jt. Assem. Suppl., Abstract H41B-04, Ft. Lauderdale, May 2008
99. P Belmont, E Viparelli, G Parker, W Lauer, C Jennings, K Gran, P Wilcock, A Melesse 2008. *Parameterization of a complex landscape for a sediment routing model of the Le Sueur River, southern Minnesota*, AGU Fall Meeting, 15-19 December, 2008, INVITED
100. **A R Thomas, C Jennings, F Khalif, L Azmera, A Melesse, P Belmont, 2008. *Sediment Dynamics in the Agricultural Le Sueur River Watershed, Southern Minnesota: Tile Drain Influence on Sediment Transport*, AGU Fall Meeting, 15-19 December, 2008
101. *F K Maalim, A M Melesse, A R Thomas, P Belmont, *L Azmera, C E Jennings *Delineating the Erosion-Potential of Agricultural Lands Within the Le Sueur Watershed Using Remotely Sensed Data and GIS*, AGU Fall Meeting, 15-19 December, 2008
102. *L A Azmera, F R Miralles-Wilhelm, A M Melesse, P Belmont, C E Jennings, A

Thomas, F Khalif, *Estimation of Ravine Sediment production using MIKE 11 model, in the lower Le Sueur Watershed, Minnesota*, AGU Fall Meeting, 15-19 December, 2008.

103. Melesse, A.M., M. McClain, X. Wang, 2009. *Energy fluxes as function of topography, land management and landscape features under different latitudes*, International Conference on Land Surface Radiation and Energy Budgets: Observations, Modeling and Analysis, Beijing, China, March 18-20, 2009.
104. Melesse, A.M., Miralles, F., X. Wang, 2009 *Energy flux and surface parameters in an urban-agriculture-wetland interfaced area: The case of South Florida*, International Conference on Land Surface Radiation and Energy Budgets: Observations, Modeling and Analysis Beijing, China, March 18-20, 2009.
105. *Mango, L., **Melesse, A.**, McClain. M., Onsted, J., Gann, D. 2009. *Modeling the Effect of Land-Use Change and Soil and Water Management Practices on the Water and Sediment Flux in the Mara River Basin*, AWRA Spring Specialty Conference: Managing Water Resources & Development in a Changing Climate, Anchorage, AK, May 4-6, 2009
106. Setegn, S.G., **Melesse, A.M.**, Dargahi, B., Srinivasan, R. 2009 *Water Resources Variability as a Result of Changing Climate: A Case Study in the Lake Tana Basin, Blue Nile Ethiopia*, AWRA Spring Specialty Conference: Managing Water Resources & Development in a Changing Climate, Anchorage, AK, May 4-6, 2009
107. Setegn, S.G., **Melesse, A.M.**, Dargahi, B., Srinivasan, R. 2009 *Effect of downscaling Methods on the Assessment of the Impact of Climate Change in watershed Scale Management Models* , AWRA Spring Specialty Conference: Managing Water Resources & Development in a Changing Climate, Anchorage, AK, May 4-6, 2009.
108. Setegn, S.G., Melesse, A.M., Dargahi, B, Srinivasan, R., Abbaspour, K. (2009). *Changing Climate Effect on Water Resources Variability in the Lake Tana Basin, Ethiopia*. First Annual Nile Basin Research Conference organized by the Applied Training Project (ATP) of the Nile Basin Initiative (NBI) and the Nile Basin Research Programme (NBRP), University of Bergen Norway, 8-11 June 2009, Dar es Salaam, Tanzania

Professional trainings/seminars given

1. SWAT application to watershed modeling in the Mara River basin
June 26-27, 2006, Kissimu, Kenya
2. SWAT: Theory and application, May 17-18, 2008, Quito, Ecuador.
3. SWAT application in the Caribbean Islands. May 26-27, 2009, Santa Domingo, Dominican Republic

4. SWAT application in the Caribbean Islands. May 29-30, 2009, Kingston Jamaica.

Invited Seminars/Lectures

1. **Understanding the ecohydrological response of impacted watersheds to restoration: Remote sensing and GIS application**, National Center for Earth-Surface Dynamics, An NSF Center of Excellence, Oct. 30, 2006: University of Minnesota.
2. **Evapotranspiration mapping using remote sensing** (Video conference Lecture), April 2005, Department of Earth Systems and Policy, University of North Dakota.
3. **Evapotranspiration mapping using remote sensing** (Video conference Lecture), April 2006, Department of Earth Systems and Policy, University of North Dakota.
4. **The role of science in integrated water resources management**, July 2006, Alemaya University, Ethiopia.
5. **Water Resources Research: Challenges and opportunities**, 2006, Civil and Environmental Engineering, FIU.
6. **The role of GIS and remote sensing in water resources Research**, 2006, Honor's College, FIU.
7. **GIS and remote sensing in water resources research: Application examples**, Feb. 2006, GIS day, FIU.
8. **Impervious surface area dynamics and storm runoff response**, Sep. 2006, Environmental Studies, FIU.
9. **Impervious surface Dynamics in South Florida**, Oct. 2006, Applied Research Center, FIU.

Attended Workshops/Conferences

2003. ASAE Annual International Meeting, July, 2003, Las Vegas, Nevada
2004. InSAR Workshop, October 20-22, 2004, Oxnard, CA.
2006. Facilitating Sustainable Agriculture: A Participatory National Conference on Post-Secondary Education, 23-25 Jan, 2006, Pacific Grove, CA.

Technical Reports and Manual

1. Melesse, A., Judge, J., Jordan, J. *Remote Sensing and Geographic Information System in Runoff Coefficient Estimation for Irrigated Regions in*

southern Taiwan.

Final Report for Tsao-Jiin Research Project Grant, March 2002.

2. Melesse, A., Tien, K., Judge, J., Jordan, J. *Remote Sensing and Geographic Information System in Land Cover Study and Runoff Coefficient Estimation for Irrigated Regions in southern Taiwan.*
User's Manual for Tsao-Jiin Research Project Grant, April 2002.