

Arjumand Z. Zaidi

Nationality: Pakistani

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Areas of Interest

My professional experience is in the field of environmental evaluation and decision making. My research interests include optimization and modeling of water resources, environmental, and disaster management systems. Mostly my research is in environmental decision making and economic analysis with the help of various numerical techniques and Geographical Information Systems (GIS) using satellite data. Currently, I am working in the US Pakistan Center for Advanced Studies in Water (USPCASW), Mehran University of Engineering and Technology, Jamshoro, Pakistan, as a Senior Research Fellow.

Education

Degree	Institute	Date
PhD in Information Technology	School of Information Technology George Mason University, Fairfax, Virginia. USA Thesis Title: <i>Economic TMDLs (Total Maximum Daily Loads): An optimization Approach</i>	1999-2004
MS in Urban Systems Engineering	George Mason University, Virginia. USA	1997-1999
BE in Civil Engineering	NED University of Engineering and Technology, Karachi, Pakistan	1984-1989

Scholarships and Honors

1	1 st Prize in Policy Brief Writing Competition organized by the UU Mission December 2019.
2	2019 International Astronautical Federation (IAF) Travel Award to participate IAF Workshop in Washington DC, USA, in October 2019.
3	ASCE's EWRI Visiting International Fellow (VIF) Award of 2018.
4	Recipient of 2009 Quentin Martin Best Practice-Oriented Paper Award by the ASCE Journal of Water Resources Planning and Management for paper titled "How to Include Economic Analysis in TMDL Allocation."
5	Member- Higher Education Commission Environmental Sciences and Environmental Engineering Curriculum Revision Committees.
6	Doctoral Fellowship from School of Information and Technology, George Mason University awarded in Fall 2001 and Spring 2004.

Projects Awarded

Funded by	Title	Responsibility	Amount (million PKR)	Status
Higher Education Commission	Indus River Flow Monitoring using Satellite Radar Altimetry Data and 2D Flood model	Principal Investigator	7.64	Awarded
Small Grant USPCASW	Indus River Water Level Monitoring in Sindh using Satellite Radar Altimetry	Principal Investigator	2.9	Completed
Small Grant USPCASW	Eco-Innovation in Textile Processing Industry of KITE for Sustainable Product Processing.	Team-Member	3.0	Completed
Water Improvement Sector Program (WSIP) Sindh	Study on Water Balance of the Sindh Province of Pakistan	Principal Investigator	1.38	Submitted
Small Grant Mangroves for Future Fund (IUCN Pakistan)	Seaweed mapping and stock assessment along Karachi (Pakistan) Coast	Principal Investigator	1.19	Completed
Higher Education Commission	Drought Management Decision Support System (DM-DSS) in Sindh using Remote Sensing Techniques	Co-Principal Investigator	7.237	Completed
Higher Education Commission	Impact Assessment of Canal Rehabilitation Programs in Sindh using Geospatial Techniques	Principal Investigator	3.669	Completed in May 2015
Initiated by ICIMOD under MyCOE / SERVIR Himalayas Fellowship Program	Vulnerability Assessment for Potential Glacial Lakes Outburst Floods (GLOFs) Events in Passu and Bagrot Valley, Pakistan	Mentor	Student & mentor stipends + fully funded 10-day training in Katmandu	Completed in September 2013

Training/Workshops Conducted

Short training/workshops	
1-day Indus River Water Level Monitoring in Sindh using Satellite Radar Altimetry.	Oct 15, 2019, USPCASW, Jamshoro, Sind
Advanced Remote Sensing.	Feb 4-8, 2019, USPCASW, Jamshoro, Sind
4-day Altimetry and Hydrologic Applications.	November 27-30, 2018, USPCASW, Jamshoro, Sind
Applications of Geospatial Information in Hazard and Disaster Management.	August 2017, COMSATS Abbottabad
Flood forecasting and flood hazard management diploma course (RS and GIS and Flood Modeling Modules) for Sindh Irrigation	Jan – Feb 2018, USPCASW, Jamshoro, Sind

Department	
Altimetry and Hydrologic Applications.	September 26 – 29, 2016, Islamabad
Applications of Geo-Spatial Techniques in Coastal Resource Mapping and Management	August 2015, Karachi
Management of Irrigation and Agriculture System using Geospatial Techniques	April 15, 2015, Karachi
Management of Watercourse Command Areas Using Geo-spatial Technologies for Irrigation Departments of Sindh (series of workshops)	May-August 2014
Satellite-Based Application in Climate Change	Dec 1-4 and Dec 20-24, 2014, Karachi
Advanced Geospatial Disaster Management Techniques	February 11 - 14 2013, Islamabad
Disaster Management using RS and GIS Techniques	September 17-21, 2012 at Islamabad
Understanding Natural Resources and Climate Change using Geospatial Techniques	March 12-16, 2012 at Islamabad
Integrating Ground Based Methods and Spatial Techniques for Environmental Monitoring	September 15 -19, 2011 at Karachi
Introduction to RS and GIS techniques for beginners	Biannual
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National/International Conferences

Member of the Program/Organizing committee	
Environmentally Sustainable Development ESDEV13 and ESDEV15, Abbottabad	August 23-25, 2015 & August 25-27, 2013
International Conference on Space (ICS-2014), Islamabad	November 12-14, 2014
First National Conference on Space Science (NCSS 2012) University of Karachi, Karachi	October 8-9, 2012

Teaching and Research Experience

Post Ph.D. Teaching and Research Experience till to date	16 years
Aug 2016-	Senior Research Fellow USPCASW, Mehran University of Engineering and Technology Jamshoro, Pakistan
Aug 2016	Volunteer Researcher (without pay) RS and GIS Department Institute of Space Technology Karachi, Pakistan - Teaching and supervising students
Aug 2009 to July 2016	Assistant Professor/Academic Coordinator RS and GIS Department Institute of Space Technology

	<p>Karachi, Pakistan</p> <ul style="list-style-type: none"> — Teaching graduate-level courses <ol style="list-style-type: none"> 1. Introduction to GIS 2. Hydrology and Water Resources 3. Application of Remote Sensing and GIS in Disaster Management 4. Advanced Research Methods 5. Environmental Science — Academic coordination <ol style="list-style-type: none"> 1. Coordination between students and IST 2. Dealing with students and faculty related issues 3. Preparation of semester schedule 4. Monitoring and supervising semester classes, seminars, etc. 5. Coordinating other institutions and government and non-government departments for collaboration, etc. — Supervising graduate students' theses <ol style="list-style-type: none"> 1. Identification of blockages in the natural drainage pattern of Malir River and flood simulation using H&H modeling 2. Selection of suitable sites for Jatropha plantation (biofuel source) 3. Identification of existing and suitable seaweed sites using Remote Sensing and GIS techniques along Karachi coast 4. Rainfall-runoff modeling using hydrologic models and geospatial techniques in Tarbella Catchment, Pakistan 5. Run-of-River Hydro Power Potential of Kunhar River using RS and GIS techniques 6. Dengue Risk Mapping using Geospatial and Geostatistical techniques: 2011 Case study of Lahore
<p>Oct 2008 to July 2009</p>	<p>Assistant Professor Department of Environmental Sciences COMSATS Institute of Technology Abbottabad, Pakistan</p> <ul style="list-style-type: none"> — Teaching graduate and undergraduate level courses
<p>May 2006-Sept 2008</p>	<p>Regional Program Manager (Extension Projects and Studies Division) Cleaner Production Institute (CPI), (Southern zone), NEC Consultants (Private) Limited.</p> <ul style="list-style-type: none"> - Involved in Environmental Studies including proposal writing for EIA and IEEs, conducting EIAs including socio-economic surveys, consultation with stakeholders, and defending EIAs in public hearings. Major EIA projects include P&G Dry Laundry Plant at Port Qasim and LNG Terminal at Port Qasim (Initial studies up to impacts identification were done then this project was terminated due to some political reasons) - Position Paper writing (Economics of Cleaner Technologies at Textile Processing sector and Textile Processing WWTP Cost Estimation and Area Requirement.) - Established “National Environmental Information Management System (NEIMS)” for the policy, development, and planning departments under the Ministry of Environment, Government of Pakistan. - Compiled Project Management Document (PMD) for Programme for Industrial Sustainable Development (PISD). Major industrial sectors under PISD are Textile Processing, Sugar, Leather, and Pulp & Paper. http://pisd-pak.org/index.php. - Supervised PISD dissemination and communication activities. - Developed a framework for assessing environmental performance of cleaner technologies in the above mentioned industrial sectors based on real data and information collected through PISD

Dec 2005-April 2006	<p>GIS Specialist Department of Architecture, NED University of Engineering and Technology</p> <ul style="list-style-type: none"> - GIS mapping of Karachi Heritage Building - GIS Training
Nov 2004-Oct 2005	<p>Post-doctoral Fellow Civil, Environmental, and Infrastructure Engineering (CEIE) George Mason University (GMU), Virginia.</p> <p>— Teaching graduate-level courses (partial) at George Mason University, Virginia. Those courses were:</p> <ul style="list-style-type: none"> - Infrastructure Modeling - Infrastructure System Analysis <p>The Louis Berger Group D.C. office, Washington D.C.</p> <p>Worked as a team member of George Mason University and The Louis Berger Group for the development of Total Maximum Daily Load (TMDL) for benthic and bacterial impaired waters in Virginia using the HSPF (water quality) model. The work included data collection and analysis, sources assessment and characterization, and preparing model input files and simulation. The 2004 completed TMDLs include Roses Creek, Falling River, Hurricane Branch, Twitty's Creek, and the Birch Creek watersheds.</p>
Pre Ph.D. Teaching and Research Experience	7 years
2003 - 2004	<p>Graduate Research Assistance Civil, Environmental, and Infrastructure Engineering (CEIE) George Mason University (GMU), Virginia & The Louis Berger Group D.C. office, Washington D.C.</p> <p>Analysis of the effect of economics through optimization (knowing the cost of implementations at the load allocation phase) in final TMDLs allocations through establishing the cost-performance relationship of control strategies specific to the agricultural-based watersheds.</p>
1999-2003	<p>Graduate Teaching Assistant Civil, Environmental, and Infrastructure Engineering (CEIE) George Mason University (GMU), Virginia.</p> <p>As a Graduate Teaching Assistance, I was responsible for assisting the CEIE faculty in graduate-level courses.</p> <p>Assistant to Editor American Society of Civil Engineers (ASCE) Energy Journal.</p>
Summer 2000	<p>Worked on a research project (<i>ConservIT: A Water Conservation Model</i>) regarding domestic water conservation under the supervision of Dr. Sharon deMonsabert, Associate Professor Civil, Environmental, and Infrastructure Engineering George Mason University, Virginia</p>
1997-1999	<p>Graduate Research Assistant Civil, Environmental, and Infrastructure Engineering George Mason University, Virginia</p>

	As Graduate Research assistance, I worked on a research project to benchmark wastewater industries.
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Working Experience

- Summer 2001 **Summer Intern**
Fairfax County Water Authority
Fairfax, Virginia.
Worked on developing and digitizing a comprehensive database for Best Management Practices and Storm Water Management Systems in the Loudon, Fairfax, and Prince William Counties.
- 1994-1997 **Structural Design Engineer**
Vazirali Associates
Karachi Pakistan
As a senior structural design engineer, I designed various structures ranging from heavy industrial to residential buildings.
- 1990-1991 **Junior Structural Design Engineer**
Kamil Associates
Karachi, Pakistan

Publications and Presentations

Journal Papers

1	Zaidi, Arjumand, Stefano Vignudelli, Zarif Khoro, Badar M. K. Ghauri, Ramsha Muzzafer, Babar Naeem, Vengus Panhwar, Sumaira Zafar, Saad ul Haque. April 2020. “ <i>Indus River Water Level Monitoring Using Satellite Radar Altimetry.</i> ” Advances in Space Research. IF= 1.746 . Journal Quality Ranking System Ranking = Bronze . HEC Journal Recognition System (HJRS) Category= W . Medallion= Silver .
2	Panhwar, Vengus, Arjumand Zaidi , Asmat Ullah. “ <i>Impact of water sector interventions on economy, equity, and environment in the rainfed region of Punjab, Pakistan.</i> ” Environment, Development and Sustainability (Published online on March 6, 2020). IF= 1.676 . HEC Journal Recognition System (HJRS) Category= X . Medallion= Honorable Mention .
3	AG Soomro, MM Babar, A Memon, A. Z. Zaidi , A Ashraf, J. Lund. “ <i>Sensitivity of Direct Runoff to Curve Number Using the SCS-CN Method.</i> ” Civil Engineering Journal (ISSN: 2476-3055). Accepted for the upcoming Issue 12 of Volume 5, December 2019. HEC Journal Recognition System (HJRS) Category= Y .
4	Panhwar, Vengus, Arjumand Zaidi , Asmat Ullah. “A Review to Select Performance Evaluation Methods for Check-dams in Balochistan.” Mehran University Research Journal of Engineering and Technology. (accepted). HEC Journal Recognition System (HJRS) Category= Y .
5	Siddiqui, Muhammad Danish, Arjumand Zaidi , Muhammad Abdullah. 2019. “Performance evaluation of newly proposed seaweed enhancing index (SEI).” Remote Sensing’s Special Issue “Novel Advances in Aquatic Vegetation Monitoring in Ocean, Lakes, and Rivers.” 11(12), p.1434. IF = 5.189 . Journal Quality Ranking System Ranking = GOLD . HEC Journal Recognition System (HJRS) Category= W . Medallion= Platinum .
6	Zafar, Sumaira, and Arjumand Zaidi . “ <i>Impact of Urbanization on Basin Hydrology: A case Study of Malir Basin of the Karachi (Pakistan) City.</i> ” Regional Environmental Change. pp.1-13. IF=3.149 . Journal Quality Ranking System Ranking = SILVER . HEC Journal Recognition System (HJRS)

	Category= W . Medallion= Bronze .
7	Amjad Ali, Saad Malik, Arjumand Z. Zaidi , Naveed Ahmad, And Seema Shafique. 2019. “ <i>Standing Stock Of Seaweeds In Submerged Habitats Along The Karachi Coast, Pakistan: An Alternative Source Of Livelihood For Coastal Communities.</i> ” Pakistan Journal of Botany. 51:3. IF=0.84 . HEC Journal Recognition System (HJRS) Category= X . Medallion= Clay .
8	Tariq, Bilal., and Zaidi, A. Z. , 2019. “Geostatistical modeling of dengue disease in Lahore, Pakistan.” <i>SN Applied Sciences</i> , 1(5), p.459. HEC Journal Recognition System (HJRS) Category= Y .
9	Zaidi, A. Z. , and Khan Majid, 2018. “ <i>Identifying high potential locations for run-of-the-river hydroelectric power plants using GIS and digital elevation models.</i> ” Renewable and Sustainable Energy Reviews, 89 (2018): 106-116. 89, pp.106-116. IF= 12.11 . Journal Quality Ranking System Ranking = GOLD . HEC Journal Recognition System (HJRS) Category= W . Medallion= Platinum .
10	Zafar, Sumaira, Maha Qaisar, Zainab Sohail, and Arjumand Zaidi . 2017. "Development of Government Schools in Orangi Town, Karachi." Journal of Geoscience, Engineering, Environment, and Technology 2, no. 4 (2017): 235-241.
11	Tariq, B., and A. Z. Zaidi . "REMOTE SENSING AND GIS FOR DENGUE EPIDEMIC RISK MAPPING IN LAHORE, PAKISTAN." Pakistan Journal of Science 68, no. 1 (2016): 21.
12	Yasmeen, Z., Zaidi, A, Z. , 2016. “Rainfall-Runoff Modeling using Geo-Spatial Techniques in sub-catchment Tarbela.” Pakistan Journal of Meteorology. Vol. 12, Issue 24: Jan 2016
13	Siddiqui, Danish, Zaidi, A, Z. , 2016. "Seaweed mapping along Karachi Coast using geospatial techniques." Pakistan Journal of Engineering Tech & Science. Volume 5, No 2, 2016, 134-151
14	Khan, Majid., Zaidi, A, Z. , 2015 “Run-of-River Hydropower Potential of Kunhar River, Pakistan.” Pakistan Journal of Meteorology. Vol. 12, Issue 23: Jul 2015
15	Zaidi, Arjumand Z. deMonsabert S., 2015: Arguments for inclusion of economic criteria in the total maximum daily load (TMDL) allocation phase. Sustainable Water Resources Management: Volume 1, Issue 3, Page 267-271. (DOI) 10.1007/s40899-015-0024-5. HEC Journal Recognition System (HJRS) Category= Y .
16	Tariq Bilal., Zaidi A. , 2015: Geo-statistical Dengue Risk Model: Case Study of Lahore Dengue Outbreaks 2011. Journal of Space Technology, Institute of Space Technology, Islamabad, Pakistan. Vol. 5, No 1.
17	Arslan M., Zaidi A. , and Malik S., 2015: Identification of Suitable Sites for Plantation of Biofuel Source Jatropha C. using Geospatial Techniques. Journal of Space Technology, Institute of Space Technology, Islamabad, Pakistan. Vol. 5, No 1.
18	Zafar Sumaira., Zaidi A. , 2015: Landuse changes and their impacts on the natural drainage system of Malir River Basin. Journal of Space Technology, Institute of Space Technology, Islamabad, Pakistan. Vol. 5, No 1.
19	Zaidi, A. Z. , and deMonsabert S., 2014: Economic total maximum daily load for watershed-based pollutant trading. Environmental Science and Pollution Research, 1-17. (DOI) 10.1007/s11356-014-3867-7. IF=2.8 . Journal Quality Ranking System Ranking = SILVER . HEC Journal Recognition System (HJRS) Category= W . Medallion= Bronze .
20	Zaidi, A. , deMonsabert S., El. Farhan R., 2008: How to Include Economic Analysis in TMDL Allocations? Journal of Water Resources Planning and Management. American Society of Civil Engineers (ASCE). Best Practice-Oriented Paper Award. IF=3.573 . Journal Quality Ranking System Ranking = SILVER . HEC Journal Recognition System (HJRS) Category= W . Medallion= Gold .

Conference Papers

- 1 Naseer, Talal, Stefano Vignudelli, and Arjumand Zaidi. "Study of Sea Surface Temperature (SST) and Sea Level Rise (SLR) Along Karachi Coast using Satellite Data, Pakistan." (2020). <https://sciforum.net/manuscripts/8039/manuscript.pdf>
- 2 Talpur, Zenobia, Talal Naseer, Abdul Rafay Memon, and Arjumand Zaidi. "Impact of Floods on Vegetation Cover in the Sanghar District of Sindh, Pakistan." (2020). <https://sciforum.net/manuscripts/8009/manuscript.pdf>
- 3 Arjumand Zaidi, Stefano Vignudelli, Ramsha Muzzafer, Vengus Panhwar, Sumaira Zafar, Saad Haque. "Validation of Sentinel 3A Altimetry Data for River Level Monitoring at Two Locations along the Lower Indus River." (2020). IGARSS 2020, September 26 - October 2, 2020 • Virtual Symposium.
- 4 Ramsha Muzaffer, Arjumand Zaidi, Saad ul Haque. "Water Balance Study of Manchar Lake (Sindh, Pakistan) Using Landsat and Sentinel 3A." (2020). IGARSS 2020, September 26 - October 2, 2020 • Virtual Symposium.
- 5 Vengus Pahnwar, Asmat Ullah, Arjumand Zaidi. "Impact of Small Dams on Vegetation Cover in the Potohar Region of Pakistan." (2020). IGARSS 2020, September 26 - October 2, 2020 • Virtual Symposium.
- 6 Shoaib Jamro, Talal Naseer, Dr. Arjumand Zaidi, Dr. Stefano Vignudelli. A Comparative Analysis of Altimetry Derived Water Levels With In-Situ Gauge Data on River Indus, Pakistan. IGARSS 2019, Jul 28, 2019 – Aug 2, 2019. Pacifico, Yokohama, Japan. (Poster)
- 7 Ramsha Muzaffar, Rao Zahid Khalil, Saad ul Haque, Institute of Space Technology, Pakistan; Arjumand Zaidi. Volumetric Variations of Inland Water Body: A Case Study of Manchar Lake. IGARSS 2019, Jul 28, 2019 – Aug 2, 2019. Pacifico, Yokohama, Japan. (Poster)
- 8 Salman Sarwar, Talal Naseer, Mumtaz Ali, Arjumand Zaidi. Impacts of Climate Variability on Hanna Lake in Quetta, Pakistan. IGARSS 2019, Jul 28, 2019 – Aug 2, 2019. Pacifico, Yokohama, Japan. (Poster)
- 9 Nabeel Ali Khan, Rao Muhammad Zahid Khalil, Arjumand Zaidi, Asmat Ullah, and Faris Ahmed Bhatti. Application of Simplified Surface Energy Balance Index (S-SEBI) for Estimating Actual Crop Water Requirement Using Remote Sensing. 2nd Young Researchers' Conference on Water and Environment. USPCASW- Mehran University of Engineering and Technology, Jamshoro, Pakistan. August 02 – 03, 2018.
- 10 Panhwar, V., Zaidi, A., and Ullah A. (2018). "Vegetation change detection to quantify the impact of small dams using Geospatial techniques: A case study of Potohar Region." 2nd Young researcher National conference on water and environment, MUET Jamshoro, Pakistan. August 02 – 03, 2018.
- 11 Faris Ahmed Bhatti, Rao Muhammad Zahid Khalil, Arjumand Zaidi, Asmat Ullah, and Nabeel Ali Khan. Simulating Chickpea (*Cicer Arietinum*) potential yield for different irrigation applications using the CropSyst model. 2nd Young researcher National conference on water and environment, MUET Jamshoro, Pakistan. August 02 – 03, 2018.
- 12 Zaidi, A., Zafar, S., and Arslan, M. (2018). "Impact Assessment of Watercourse Rehabilitation Program in Sindh, Pakistan using Geospatial Techniques." COSPAR

2018, Pasadena, California, USA, 14 - 22 July 2018.

- 13 Jamro, S., Haque, S.U., and Zaidi, A., 2018, July. Indus river monitoring using satellite altimetry. In 42nd COSPAR Scientific Assembly (Vol. 42). Pasadena, California, USA, 14 - 22 July 2018. (Poster)
- 14 Zaidi, A., & Zafar, S. (2018, May). “*Karachi: An Expanding City with Rising Disasters.*” In World Environmental and Water Resources Congress 2018: Watershed Management, Irrigation and Drainage, and Water Resources Planning and Management (pp. 337-342). Reston, VA: American Society of Civil Engineers.
- 15 Zaidi, A (2017, Nov). “*Optimal locations for run-of-the-river (RoR) hydropower installations along a stream using geospatial data and tools.*” Keynote Talk at Fifth International Conference on Aerospace Science and Engineering ICASE 2017 - Nov 14-16, 2017 Institute of Space Technology Islamabad, Pakistan.
- 16 Panhwar V., Jabeen U., and Zaidi A., Ullah A., (2017). “Geospatial Tools for Tsunami Hazard Mapping: A Case Study of Gwadar Port.” GeoMundus 2017, Münster Germany.
- 17 Zaidi, A., Yasmeen Z. (2017). The sensitivity of Simulated Hydrographs to Initial Abstraction in NRCS-CN Method for Runoff Estimation: A Case Study of Tarbela Catchment. International Conference on Environmentally Sustainable Development (ESDev), Aug 26 -28, 2017.
- 18 Panhwar V., Zaidi A., and Ullah A., (2017), “Can check dams restore Balochistan aquifers?”. 7th International Conference: Environmentally Sustainable Development – ESDev-VII, Aug 26 -28, 2017. COMSATS Abbottabad, Pakistan.
- 19 Zafar, S., & Zaidi, A. (2016, July). Flash floods in the Malir basin due to urbanization. In *Geoscience and Remote Sensing Symposium (IGARSS), 2016 IEEE International* (pp. 4481-4484). IEEE. Beijing China, July 10-15, 2016.
- 20 Zaidi A., Siddiqui M. D. (2015). Passu Glacial Lake Outburst Flood (GLOF) Mapping. 3rd Space for Hydrology Workshop "Surface Water Storage and Runoff: Modelling, In-Situ data, and Remote Sensing." 15 -17 September 2015, ESA-ESRIN, Frascati, Italy
- 21 Tariq B., Zaidi A., 2014: *Geo-statistical Dengue Risk Model: Case Study of Lahore Dengue Outbreaks 2011*. International Conference on Space 2014. 12-14 November 2014, Islamabad, Pakistan.
- 22 Gul C., Zaidi A., Ghauri B.: *Spatial and Temporal Trends of Sea Surface Temperature and its Relationship with Aerosol Optical Depth*. Third International Conference on Aerospace Science & Engineering (ICASE-2013). August 21-23, 2013, Islamabad, Pakistan
- 23 Haneef M., Zaidi A., Waqar M.: Evaluation of Landfill Sites using Geo-Spatial Techniques: A case study of Karachi City. Environmentally Sustainable Development, ESDev 2013. August 25-27, 2013 COMSATS Institute of Information Technology, Abbottabad
- 24 Zaidi A., Yasmeen Z., Siddiqui D., 2013: *Glacial Lake Outburst Flood (GLOFs) Risk Mapping in Hunza River Basin (Pakistan) using Geospatial Techniques*. 6th International Conference on Recent Advances in Space Technologies RAST 2013, 12 -14 June 2013, Istanbul Turkey

- 25 Zaidi A., 2012: *Water Quality Management using GIS and RS Tools*. 2012 EWRI Congress, American Society of Civil Engineers (ASCE), Albuquerque, New Mexico, USA. May 20-24, 2012
- 26 Zaidi A., deMonsabert S., 2011: *Developing Cost-Effective Water Quality Improvement Programs*. 2011 EWRI Congress, American Society of Civil Engineers (ASCE), Palm Springs, California, USA
- 27 Ghauri b., Zaidi A. 2011: *Application of Remote Sensing in Environmental Studies*. 2nd International Conference on Aerospace Science & Engineering (ICASE), December 28-30, 2011, Islamabad, Pakistan
- 28 Zaidi A., and Shah S., 2010: *A Proposed Framework: Impact Assessment of Canal System Rehabilitation Program in Sindh (Pakistan) through Geospatial Techniques*. ISNET/NARSS Seminar on Bridging the Gap through Satellite Technology. Cairo, Egypt.
- 29 Zaidi A., Masud K., Khan M. A., 2007: *Environmental Protection with Economic Gain: A Win-Win Situation*. International Conference on Environmentally Sustainable Development “ESDev-2007” by the Department of Environmental Sciences, COMSATS Institute of Information Technology, Abbottabad, Pakistan.
- 30 Zaidi, A., deMonsabert S., El. Farhan R., 2005: *TMDL Program: Are the State Standards Attainable?* Watershed 2005 Management Conference. Environmental and Water Resources Institute of American Society of Civil Engineers. July 19-22, 2005. Williamsburg, Virginia.
- 31 deMonsabert S., Zaidi A., El. Farhan R., 2005: *Is it really too hard to estimate TMDL allocation costs?* Third Conference on Watershed Management to Meet Water Quality Standards and Emerging TMDL. American Society of Agriculture Engineer. March 5-10, 2005. Atlanta, Georgia.
- 32 Zaidi, A., deMonsabert S., El. Farhan R., Choudhury S., 2004: *A Framework of Pollutant Trading During the TMDL Allocation Phase*. Self Sustaining Solution for Streams, Wetlands, and Watersheds. American Society of Agriculture Engineer. September 12-15, 2004. St. Paul, Minnesota.
- 33 Zaidi A., deMonsabert S., El. Farhan R., 2003: *Are Your TMDLs Cost-Effective?* TMDL 2003 Specialty Conference. Water Environment Federation. November 16-19, 2003. Chicago, Illinois.
- 34 Zaidi, A., deMonsabert S., El. Farhan R., 2003: *A Cost-Based Strategy For TMDL Allocation*. Second Conference on Watershed Management to Meet Emerging TMDL Environmental Regulations. American Society of Agriculture Engineer. November 8-12, 2003. Albuquerque, New Mexico.

References

- 1 [Dr. Badar Ghauri](#), Retired Professor
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 Email: b_ghauri@yahoo.com

2 [Dr. Sharon deMonsabert](#), Associate Professor
Civil, Environmental, and Infrastructural Engineering Department
George Mason University, Fairfax, Virginia.
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Email: sharon.demonsabert@aemcorp.com , sdemonsa@gmu.edu