

CURRICULUM VITA

MIAH MUHMMAD ADEL, Ph. D.

(Before 1999, the name was MUHAMMAD ADEL MIAH and was reshuffled in 1999 in the naturalization process)

Professor of Space Physics, Astronomy, and Environmental Sciences

P.O. Box 4941

University of Arkansas at Pine Bluff

Pine Bluff, AR 71601

e-mail: adelm@uapb.edu

Tel: (870) 575-8788

Fax: (870) 575-8218

URL: miahadel.com

1. Academic Achievements

1995- Full Professor of Earth Science, Environmental Science, Physics, and Astronomy at the University of Arkansas at Pine Bluff

1994- Tenured Faculty

1992- Graduate Faculty

1990-95 Associate Professor of Earth Science, Environmental Science, Physics, Mathematics, and Astronomy at University of Arkansas at Pine Bluff

1988-90 Assistant Professor of Earth Science, Environmental Science, Physics, Mathematics, and Astronomy at the University of Arkansas at Pine Bluff

1980-88 Assistant Professor, Department of Physics, Rajshahi University, Bangladesh
(On Leave Abroad to Louisiana State University, Baton Rouge, Louisiana, USA)

1978-80 Assistant Professor, Department of Physics, Rajshahi University, Bangladesh
(On Leave Abroad to American University in Beirut, Lebanon)

1975-78 Lecturer, Department of Physics, Rajshahi University, Bangladesh

1974-75 Research fellow, Bangladesh Atomic Energy Center, Dhaka, Bangladesh

2008 -12 Adjunct Professor of Statistics in the School of Business and Management at the University of Arkansas at Pine Bluff

2. Teaching Experience

2.1. University of Arkansas at Pine Bluff

2.1.1. Introductory & Advanced Courses (1988-2016)

2.1.1.1. Earth Science, Environmental Science, and Energy Conversion

2.1.1.2. College Algebra, Pre-Calculus, Calculus, Differential Equations, and Statistics,

2.1.1.3. Physical Science, Astronomy, College Physics, University Physics, Space Physics, Acoustics, Astrophysics, Classical & Analytical Mechanics, Electromagnetic Theory, Optics, Modern Physics, Mathematical Physics, Quantum Mechanics, Thermodynamics, Nuclear Physics, Solid State Physics, and Physics, Astronomy, and Physical Science Lab courses

2.1.2. Graduate Courses (1990-2016)

Advanced Environmental Science, and Advanced Physics

2.1.3. Course Development (1999-2010)

2.1.3.1. Environmental Science (PHYS 4365) and Advanced Environmental Science (GPHY 5365)

2.1.3.2. Astronomy (PHYS 1445), Astrophysics (PHYS 4338), Nuclear Physics (PHYS 4343), Space Physics (PHYS 4346), Quantum Mechanics (PHYS 4347), Advanced Physics (GPHY 5331) and Astronomy Lab

2.2. Louisiana State University (1980-88)

Teaching Physics labs and tutoring University Physics and General Physics students

2.3. American University of Beirut (1978-80)

Teaching Physics labs for nursing and pre-med students, and tutoring University Physics to US AID-supported pre-engineering students from abroad

2.4. Beirut University College (1978-80)

1978-80 Teaching General Physics labs

2.5. Rajshahi University, Bangladesh (1975-78)

2.5.1. Advanced Courses (1975-78)

Thermodynamics, Optics, Atomic Physics, Nuclear Physics, and Physics Labs

2.5.2. Graduate Course (1976-78)

Nuclear Physics and Nuclear Reactor Physics

3. Space Physics/ Magnetospheric Physics

3.1. Research Experience and Skills

Geomagnetic field models

Solar maximum emission model

Solar proton event

Solar electron event

Radiation belts models

Solar-terrestrial relations

Analysis and interpretation of Japanese EXOS-C satellite data

Analysis and interpretation of US Air Force S81-1 mission data

Instrument response function

3.2. Journal Publications

2016 M. M. Adel, Date trees the favored lightning targets in the tropics, *Physics International* (in progress)

2015 M. M. Adel, Fifth-power altitude dependence of particle precipitation at the minimum geomagnetic field position, *American Research Journal for Physics.*, vol. 1, Issue 1, pp. 26-35. www.arjonline.org

2013 M. M. Adel, Rotation matrix method for calculation of a detector telescope's response function, *Projournal of Physical Science Research*, vol. 1(2), pp.14-30, September 2013; Online:<http://www.projournals.org/PPSR>

- 2012 M. M. Adel, Superiority of prostration as a protection from lightning, *Physics International*, 3(1), 9-21, 2012
- 2012 M. M. Adel, Absolute flux comparison of magnetospheric particles, *Physics International.*, 3:1-8; DOI: 10.3844/pisp.2012.1.8; URL: <http://thescipub.com/abstract/10.3844/pisp.2012.1.8>
- 2008 M. M. Adel, A detector telescope's pitch angle sampling of magnetospheric particles, *Earth, Planets, and Space*, vol. 60, pp.753-761
- 1994 M. A. Miah, EXOS-C project at UAPB, *UAPB Research Journal*, vol. 1, pp.17-25
- 1994 M. A. Miah, Phoenix-1 observation of storm-time precipitation of ring current particles, *UAPB Research Journal*, vol.1, pp.45-54
- 1994 M. A. Miah, Significant variation of proton precipitation in equatorial thermosphere, *Advances in Space research*, vol.14, no. 9, pp.229-235
- 1993 M. A. Miah, Solar-induced variation of proton precipitation near the equator, *Journal of Atmospheric and Terrestrial Physics*, vol.55, no. 9, pp.1295-1301
- 1993 M. A. Miah, Solar cycle dependence of equatorial protons in the thermosphere, vol. 2, p. 721, in Hruska, Shea, Smart, and Heckman, eds., *Proceedings of the Solar-Terrestrial Predictions - IV Workshop*, Montreal, Canada
- 1992 M. A. Miah, K. Nagata, T. Kohno, H. Murakami, A. Nakamoto, N. Hasebe, J. Kikuchi, and T. Doke, Spatial and temporal features of 0.64-35 MeV protons in the Space Station environment: EXOS-C observations, *Journal of Geomagnetism and Geoelectricity*, vol. 44, pp. 9-20.
- 1991 M. A. Miah, Global proton peak flux profile in the equatorial zone, *Indian Journal of Radio and Space Science*, vol. 20, pp.12-24
- 1991 M. A. Miah, ONR-602 experiment to investigate particle precipitation near the equator, *Journal of Geomagnetism and Geoelectricity*, vol. 43, pp.445-454.
- 1990 M. A. Miah, Observation of $Z \geq 1$ particles below 300 km near the geomagnetic equator, *Journal of Geomagnetism and Geoelectricity*, vol. 43, pp. 461-472.
- 1989 M. A. Miah, Observation of low energy particle precipitation at low altitude in the equatorial zone, *Journal of Atmospheric and Terrestrial Physics*, vol.51, pp.541-550

- 1989 M. A. Miah, J. W. Mitchell, and J. P. Wefel, Magnetospheric particle detection efficiency of a conical telescope, *Nuclear Instrumentation and Methods in Physics Research*, vol. A281, pp. 622-632
- 1988 M. A. Miah, T. G. Guzik, J. W. Mitchell, and J. P. Wefel, Phoenix-1 observation of the equatorial zone particle precipitation, pp. 339-345, in J. Shapiro and J. P. Wefel, eds., *A NATO Advanced Series in Genesis and Propagation of Cosmic Rays*, D. Reidel Publishing Co.
- 1987 T. G. Guzik, M. A. Miah, J. W. Mitchell, and J. P. Wefel, Low energy protons at the equatorial zone, *Journal of Geophysical Research*, vol. 94, pp. 14-21

3.3. Author of Books

- 1016 *Satellite Data Analysis for Particle Precipitation* (manuscript)
- 2016 *Outdoor Shelter from Lightning Strikes* (manuscript)
- 2013 *Seiday Abasthan Bajraghat Theke Paritran* (in Bengali) meaning prostration gives the safest shelter from lightning strikes. Published by Dibbo Prakash, Dhaka, Bangladesh
- 1989 *An International Guide to Crescent Sighting* on lunar astronomy.
- 1986 A collaborating student author for the chapter on astronomical distance scale in Carnegie Mellon Institute's Vera Rubin-edited Edwin Hubble's book on galaxies.

3.4. Selected Conference Contributions

- 2016 M. M. Adel, Spatial and temporal features of particle precipitation in low- and mid-latitude zones 2nd International Conference and Exhibition on Satellite & Space Missions, July 21-23, 2016, Berlin, Germany (**invited speaker**)
- 2015 M. M. Adel, Invitation to speak on telescopic investigation of the Earth's charged particle environment in the Satellite 2015 International Conference, paper titled "Magnetospheric Particle Sampling Based on the Instrument Response Function to Anisotropic Pitch Angle Distribution", during August 17-19 in Houghton (**invited speaker**)
- 2008 M. M. Adel, A geometric method to calculate detector telescope's sampling efficiency for magnetospheric particles, *EOS Transaction AGU*, 89(23), Western Pacific Geophysics Meeting, Cairns, Australia, July 29 – August 1, 2008.
- 2006 M. M. Adel, Instrument efficiency and comparison of magnetospheric particle fluxes, AGU Spring meeting, MD, 23-26 May, 2006.

- 1998 M. A. Miah, K. Nagata, T. Kohno, H. Murakami, A. Nakamoto, N. Hasebe, J. Kikuchi, and T. Doke, EXOS-C observation of off-equatorial particle precipitation, Arkansas Academy of Sciences, UAMS, Little Rock. AR, 3-4 April, 1998.
- 1995 M. A. Miah, Telescopic efficiencies of particle detectors, 21st Plenary Meeting of Geophysics and Environment, University of Colorado at Boulder, 2-17 July, 1995.
- 1994 M. A. Miah, Telescope response functions, COSPAR Meeting, Hamburg, Germany, July 13-15, 1994.
- 1994 M. A. Miah, Spatial and temporal features of particle precipitation in off-equatorial Zones, COSPAR Meeting, Hamburg, Germany, July 13-15, 1994.
- 1993 M. A. Miah, K. Nagata, T. Kohno, H. Murakami, A. Nakamoto, N. Hasebe, J. Kikuchi, and T. Doke, Particle precipitation at off-equatorial global zones: OHOZORA observation, IAGA Meeting, Buenos Aires, Argentina, 8-28 August, 1993.
- 1992 M. A. Miah, K. Nagata, T. Kohno, H. Murakami, A. Nakamoto, N. Hasebe, J. Kikuchi, and T. Doke, OHOZORA observations of protons near the minimum magnetic field equator, AGU Spring Meeting, Montreal, Canada, 17-21 May, 1992.
- 1992 M. A. Miah, K. Nagata, T. Kohno, H. Murakami, A. Nakamoto, N. Hasebe, J. Kikuchi, and T. Doke, Spatial and temporal features of OHOZORA observed protons and electrons in the low- and mid-latitude global zones, Western Pacific Geophysics Union Meeting, Hong Kong, August 17-21, 1992.
- 1990 M. A. Miah, Solar-induced variation of particle precipitation near the equator, URSI Conference, Prague, Czechoslovakia, 28 August-5 September, 1990.
- 1990 M. A. Miah, Temporal features of radiation belt particle precipitation near the equator, Gordon Conference, New Hampshire, 15-16 October, 1990.
- 1989 M. A. Miah, Quasi-trapped protons near the equator, Arkansas-Oklahoma-Kansas Section meeting of the American Association of Physics Teachers, Fayetteville, AR, 16-17 March, 1989.
- 1988 M. A. Miah, J. P. Wefel, and T. G. Guzik, S81-1 measurements of low latitude MeV Ions, AGU Fall Meeting, San Francisco, California, 13-17 December, 1988.
- 1988 M. A. Miah, J. P. Wefel, and J. W. Mitchell, A method of mapping the pitch angles of magnetospheric particles to detector telescope opening angle: detector efficiency, Yosemite Conference on Solar System Plasma Physics, Yosemite National Park, California, 2-5 February, 1988.
- 1987 M. A. Miah, J. P. Wefel, T. G. Guzik, and J. W. Mitchell, Low energy protons at the

equator, Chapman Conference on Plasma Waves and Instabilities in Magnetospheres and Comets, Sendai/Mt. Jao, Japan, 12-16 October, 1987.

- 1987 M. A. Miah, J. P. Wefel, T. G. Guzik, and J. W. Mitchell, Precipitation of radiation belt particles near the equator, 3rd International School of Space Simulation, Beaulieu, France, 22-27 June, 1987.
- 1986 M. A. Miah, J. P. Wefel, and T. G. Guzik, Spatial and temporal features of the quasi-trapped particles near the equator, AGU Fall Meeting, San Francisco, California, 9-13 December, 1986.
- 1985 M. A. Miah, J. P. Wefel, and T. G. Guzik, Observation of 0.5 – 9 MeV protons at low altitude in the equatorial radiation belt, American Physical Society Meeting, Washington, DC, 2-7 December, 1985.

3.5. Selected Domestic and International Collaborations

1989-92 Team leader of seven Japanese investigators - K. Nagata (Electrical Engineering, Tamagawa University, Machida, Tokyo), T. Kohno (The Institute of Physical and Chemical Research, Wako, Saitama), H. Murakami (Department of Physics, Rikkyo University, Nishi-Ikebukuro, Tokyo), A. Nakamoto (Department of Physics Rikkyo University, Nishi-Ikebukuro, Tokyo), N. Hasebee (Faculty of General Education, Ehime University, Matsuyama, Ehime), J. Kikuchi (Science and Engineering Research Laboratory, Waseda University, Shinjuku, Tokyo), and T. Doke (Science and Engineering Research Laboratory, Waseda University, Shinjuku, Tokyo) - in the analysis and interpretation of OHOZORA (EXOS-C) data

2015- Co-Investigator in the analysis and interpretation of Belgium's PROBA-V/EPT data

4. Environmental Science

4.1. Research Experience and Skills

Downstream environmental effects from upstream water piracy

Climate Change: Global warming vis-à-vis cooling

Land use and land cover change-induced environmental changes and climate change

Nanotechnology-based water purification filter preparation to mitigate arsenic contamination of groundwater

4.2. Journal Publications

- 2016 M. M. Adel, Upstream water piracy invalidates GDP, *American Journal of Social Sciences* (in progress)
- 2014 M. M. Adel, M. R. Hossain, and S. F. Hossain, Climatic severity victims of upstream water piracy strongly evidencing inland water depletion-caused global warming vis-a-vis cooling, *American Journal of Environmental Science* 10 (2): 171-198, 2014 ISSN: 1553-345X ©2014 Science Publication; doi:10.3844/ajessp.2014.171.198 Published Online 10 (2) 2014 (<http://www.thescipub.com/ajes.toc>)
- 2013 M. M. Adel, S. F. Hossain, and H. Johnson, Favored zodiac for celebrity births, *Journal of Social Sciences* 9(4):164-170, 2013; doi:10-3844/jssp.2013.164.170 Published Online 9(4) 2013 (<http://www.thescipub.com/jss.toc>)
- 2013 M. M. Adel, Upstream water piracy impact upon the aquatic world and human dimension-some water piracy curses, *Environment and Ecology Research Journal*, vol. 1(4), pp. 161 -195 DOI:10.13189/eer.2013.010401
- 2013 M. M. Adel, Upstream water piracy the strongest weapon to corner a downstream nation, *Environment and Ecology Research Journal*, 1(3):85-123, 2013 DOI: 10-13189/eer.2013.010301
- 2013 M. M. Adel, Cunning strategy for upstream water piracy and its remedial measures, *Environmental Justice*, vol. 6, no. 4, pp. 145-162, 2013 DOI: 10.1089/env.2013.0005
- 2013 M. M. Adel, Environmental pollution through indiscriminate arsenic waste disposal, *Journal of Ecological Science research*, vol. 1(1), pp.1-26, September 2013; Online:<http://www.projournals.org/JESR>
- 2013 M. M. Adel, Upstream water piracy contaminates downstream water, *Environmental Justice* vol.6 No. 3, pp. 103-114, 2013. Mary Ann Liebert, Inc. DOI: 10.1089/env.2013.0008
- 2013 M. M. Adel, Farakka Barrage, the greatest ever riparian bluff for upstream water piracy, *Academia Journal of Environmental Sciences* 1(3):036-052, March 2013
- 2012 M. M. Adel, Downstream ecocide from upstream water piracy. *American Journal of Environmental Sciences*, 8: 528-548.DOI: 10.3844/ajessp.2012.528.548
- 2012 M. M. Adel, Ecosystems sustainability challenges from international river water plunderage, pp. 58-66. in S. Rab ed. *Proceedings of the 3rd ABC Convention*, Astoria World Manor, Astoria, Queens, NY, June 23-24, 2012

- 2010 M. Husain, M. M. Adel, et al., Freedom Water Filtration System-A solution to the arsenic and pathogen contaminated water crisis in Bangladesh and other underdeveloped nations, 4th International Conference on Water Resources & Arid Environments (ICWRAE-4), 184-213, <http://www.icwrae-sipw.org/images/stories/2010/WaterResources/21/index.html> *International Journal of Water Resources & Arid Environments* (2010)
- 2009 M. M. Adel, Growing sugarcane in home gardens, *Arkansas Environmental, Agricultural, & Consumer Sciences Journal*, vol. 9, pp.18-20
- 2008 M. M. Adel, International migration of Gangetic fishermen in South Asia, International Conference on Environment, Forced Migration & Social Vulnerability, Bonn, Germany, 9-11 October, 2008.
<http://www.efmsv2008.org/files/International+Migration+of+Ganges+fishermen+In+South+Asia+?menu=12>
- 2008 M. M. Adel and M. Husain, Sono filter waste disposals contradict safe environmental regulations, UNESCO-Sponsored International Conference on Water Scarcity, Global Changes and Groundwater Management Responses, University of California at Irvine, California, 1- 5 December, 2008.
http://www.groundwater.conference.uci.edu/files/chapter1/2008_conf_AR
- 2008 M. M. Adel, Natural river flow obstruction risks groundwater arsenic contamination, UNESCO-Sponsored International Conference on Water Scarcity, Global Changes and Groundwater Management Responses, University of California at Irvine, California, 1-5 December, 2008.
http://www.groundwater.conference.uci.edu/files/chapter1/2008_conf_AR
- 2008 M. M. Adel, Ordeals to have due share of trans-boundary river water, UNESCO-Sponsored International Conference on Water Scarcity, Global Changes and Groundwater Management Responses, University of California at Irvine, California, 1-5 December, 2008
http://www.groundwater.conference.uci.edu/files/chapter2/2008_conf_AR
- 2007 M. M. Adel, Growing plantain plants in home gardens, *Arkansas Environmental, Agricultural, & Consumer Sciences Journal*, vol.7, pp.14-16
- 2005 M. M. Adel, Background state leading to arsenic accumulation in the Bengal basin groundwater, *Journal of Water and Health*, vol. 3 no. 4, pp. 435-452
- 2005 M. M. Adel and M. T. Hossain, Environmental impact from a giant retail store supercenter construction by the Bayou Bartholomew, *Management of Environmental Quality: An International Journal*, vol 6 no 3, pp. 198-210

- 2005 M. M. Adel and S. A. Hasnath, Background state of the biosphere, in Environmental Monitoring, from *Encyclopedia of Life Support System (EOLSS)*, Developed under the auspices of the UNESCO, Eolss Publishers, Oxford, UK, [<http://www.eolss.net>] (**Invited Encyclopedia article**)
- 2004 M. M. Adel, Chemical agents incineration exhaust fallout and effects, *Management of Environmental Quality: an International Journal*, vol. 15 no. 6, pp. 629-655
- 2004 M. M. Adel, Impacts from transboundary water rights violations in South Asia, pp. 205-214 in R. Murray, M. K. Jacobson, and S. Anderson, eds., *Proceedings of the 2004 Water Management Conference: Water Rights and Related Water Supply Issues*, Salt Lake City, Utah
- 2004 M. M. Adel, Upstream water diversion constructions on transboundary river, pp. 547-556. in R. Murray, M. K. Jacobson, and S. Anderson, eds., *Proceedings of the 2004 Water Management Conference: Water Rights and Related Water Supply Issues*, Salt Lake City, Utah
- 2003 M. M. Adel, Biosphere III: the site of the unprecedented ecocide in the Ganges basin, pp. 59-79. In J. Ahmed, ed., *National Documentation on the Problems of Arsenic and Farakka*, published by the International Farakka Committee, Inc. New York, NY
- 2002 M. M. Man-made climatic changes in the Ganges basin, *International Journal of Climatology*, vol. 22, pp. 993-1016
- 2001 M. M. Adel, Effects on downstream water resources from upstream water diversion in the Ganges basin, *Journal of Environmental Quality*, vol. 30. Pp.356-368.
- 2000 M. M. Adel, Microlevel climate change in the Ganges basin, *Journal of the Arkansas Academy of Sciences*, vol. 53, pp. 83-91
- 2000 A. Ghanem, J. Smith, M. Elzey, T. S. Sorens, **M. M. Adel**, and G. Thomas, Locating NAPLS in groundwater using partition fluorescent dyes, *Journal of the Arkansas Academy of Sciences*, vol. 53, pp.55-62
- 2000 M. M. Adel, Arsenic contamination in the groundwater of Biosphere III: causes and remediation, pp.71-80. In H. Inyang and V. Ogunro, eds., *Proceedings of the Fourth International Symposium on Environmental Geotechnology and Global Sustainable Development*, Boston, MA.
- 1999 M. M. Adel, The impact of climatic extremes and water shortage upon human health, *World Resource Review*, vol. 11 no. 4, pp. 576-601
- 1999 M. M. Adel, Integrated investigation of the arsenic episode in Bangladesh, *Indian Journal of Environmental Protection*, vol. 19 no. 9, pp. 652-660

- 1996 M. A. Miah and M. A. Samad, History of the environment of Bangladesh, pp. 214-227, in W. Schroder and W. Calocino, eds., *Global Change and History of Geophysics*, Bremen- Roennebeck, Germany
- 1996 M. A. Miah, Farakka Barrage: an unprecedented environmental disaster in the Ganges basin, pp. 18-31, in T. S. Rehman, ed., *Perspectives of the Thirty-Year Water-Sharing Treaty*, Bangla Bazar Publisher, Dhaka, Bangladesh, **(invited article)**
- 1996 M. A. Miah, The water crisis in Bangladesh: a challenge to integrated water management in urban areas, *Environmental Research Forum*, vol. 3-4, pp. 69-86,
- 1993 et al., and M. A. Miah, Sources and sinks of methane, vol. 13, pp. 457-466, in M. A. K. Khalil, ed., *NATO ASI Series in Atmospheric Methane: Sources, Sinks, and Role in Global Change*, Portland, Oregon

4.3. Author and Translator of Books

- 2016 *GDP the Lame Duck Economic Health Index* (in progress)
- 2016 *CO₂ Accumulation vs Inland H₂O Depletion in Regional Warming vis-a-vis Cooling: An Upstream Water Piracy Effect* (manuscript)
- 2016 *The Dam-Locked Delta* (manuscript)
- 2016 *Groundwater Arsenic Contamination in the Bengal Basin: The World's Worst Man-Made Disaster Evolution from the Upstream Water Piracy* (manuscript)
- 2016 *Human Dimension Effect of Upstream water Piracy* (manuscript)
- 2016 *Land Use and Land Cover Changes in the Bengal Basin* (manuscript)
- 2015 *Treeteo Jobjagat* (in Bengali) meaning Bio-World III. The author presents a case study of the integrated effects of drying rivers at the downstream by the upstream water piracy in the Ganges basin. Publisher Dibbo Prakash, Dhaka, Bangladesh (in press)
- 2015 *The Dam-Deluged Gasping Ganges Vol. 1*, published by German Academic Publishing Company Lap Lambert
- 2015 *The Dam-Deluged Gasping Ganges Vol. 2*, published by German Academic Publishing Company Lap Lambert
- 2015 *The Dam-Deluged Gasping Ganges Vol. 3*, published by German Academic Publishing Company Lap Lambert

- 2015 English translation *Tsunami* of the Bengali novel form *Jaloswas* of the National Award Winning Radio Play “*Jaloswas*”, published by German Novel Publishing Company Just!Fiction
- 2015 *Farakka Barrage Vol 1: The Symbol of Bluffing, Blackmailing, Bullying, and Cornering Downstream for Upstream Water Piracy*, published by German Academic Publishing Company Lap Lambert
- 2015 *Farakka Barrage Vol 2: The Symbol of Bluffing, Blackmailing, Bullying, and Cornering Downstream for Upstream Water Piracy*, published by German Academic Publishing Company Lap Lambert
- 2013 *Jaladasyupana* (in Bengali) meaning water piracy. Published by Dibbo Prakash, Dhaka, Bangladesh
- 1989 *Uttar-Pashchim Bangladesher Charambhabapanna Abhawa* meaning the extreme weather in north-west Bengal basin (in Bengali).

4.4. Selected Conference Contributions

- 2015 M. M. Adel, **Keynote speaker** on South Asian water issue at the ABC Convention during September 4-7, 2015, in New York.
- 2014 M. M. Adel, Water aggression, FOBANA Convention New York. NY. August 29-September 1, 2014 (**Keynote Speaker**)
- 2013 M. Husain, T. Bridge, M. Zaman, **M. M. Adel**, M. Pisciatte, H. Agrama, F. AlOtaibi, and S. Husain, Mukti Water Technology from Household to Community Scale for Reducing Arsenic Risks in Drinking Water, Governor’s Conference, Wichita, KS, October 18
- 2013 M. M. Adel and S. A. Hasnath, Damning the Dams: Effects of Climate Change on the Northwestern Region of Bangladesh: A Micro-Level Analysis, on Environment--Development Relationships in the Context of Bangladesh, Harvard University, April 13, 2013.
- 2012 M. M. Adel, Water aggression from upstream and threat to the lower riparian regions June 23-24, 2012, ABC Convention, Astoria World Manor, New York (**Keynote Speaker, invited**)
- 2011 M. M. Adel, Downstream effects from headstream interventions, Press Conference, Dhaka Press Club, Bangladesh, December 29, 2011 (**Keynote Speaker, invited**)
- 2011 M. M. Adel, Ecological responses to indiscriminate anthropogenic actions on water Resources, Henderson State University, Arkadelphia, Arkansas, 7 March, 2011 (**invited**)

- 2011 M. M. Adel, Environmental reactions to human actions, Henderson State University, Arkadelphia, Arkansas, 7 March, 2011 **(invited)**
- 2010 M. Husain and M. M. Adel, Freedom Water Filtration System-A solution to the arsenic and pathogen contaminated water crisis in Bangladesh and other underdeveloped nations, 4th International Conference on Water Resources and arid Environments(2010), Venue: King Saud University in Riyadh, Saudi Arabia, 4-8 December, 2010.
- 2010 M. M. Adel and M. Husain, Extent of arsenic disaster and its mitigation, 2nd America-Bangladesh-Canada Convention, Jackson Heights, New York, 17-18 July, 2010 **(invited)**.
- 2010 M. M. Adel, Survey results of drug abuse among students' peers, Student-Faculty Research Forum, University of Arkansas at Pine Bluff, March 18-19, 2010.
- 2009 M. M. Adel, Farakka's effects-based potential downstream effects from the Tipaimukh Dam, International Conference on the Potential Downstream Effects of Tipaimukh Dam on the Barak River in Monipur, Jewish Community Center, Jackson Heights, New York, 28 June, 2009 **(invited)**.
- 2009 M. M. Adel and J. Mesha, Rush hour air pollution from automobile exhaust in Metropolitan Pine Bluff, Student-Faculty Research Forum, University of Arkansas at Pine Bluff, March 19-20, 2009
- 2008 M. M. Adel, International migration of Gangetic fishermen in South Asia, International Conference on Environment, Forced Migration & Social Vulnerability, Bonn, Germany, 9-11 October, 2008.
- 2008 M. M. Adel, Human dimension of regional environmental changes in South Asia, *EOS Transaction AGU*, 89(23), Western Pacific Geophysics Meeting, Cairns, Australia, 29 July – 1 August, 2008.
- 2008 M. M. Adel and M. Husain, Sono filter waste disposals contradict safe environmental regulations, UNESCO-Sponsored International Conference on Water Scarcity, Global Changes and Groundwater Management Responses, University of California at Irvine, California, 1- 5 December, 2008.
- 2008 M. M. Adel, Natural river flow obstruction risks groundwater arsenic contamination, UNESCO-Sponsored International Conference on Water Scarcity, Global Changes and Groundwater Management Responses, University of California at Irvine, California, 1-5 December, 2008.

- 2008 M. M. Adel, Ordeals to have due share of trans-boundary river water, UNESCO-Sponsored International Conference on Water Scarcity, Global Changes and Groundwater Management Responses, University of California at Irvine, California, 1-5 December, 2008
- 2004 M. M. Adel, Impacts from trans-boundary water rights violations in South Asia, Water Rights and Related Water Supply Issues, a United States Committee on Irrigation and Drainage (USCID) Water Management Conference, Salt Lake City, Utah, 13–16 October, 2004.
- 2004 M. M. Adel, Upstream water diversion constructions on trans-boundary rivers, Water Rights and Related Water Supply Issues, a United States Committee on Irrigation and Drainage (USCID) Water Management Conference, Salt Lake City, Utah, 13–16 October, 2004.
- 2003 M. M. Adel, Water diversion effects in South Asia, Silver Jubilee Conference of the Indian National Geography Congress Themed on Land and Water, Gaziabad near New Delhi, India, 27-29 December, 2003 (**invited**)
- 2003 M. M. Adel, Effects of dams and barrages in the Ganges-Brahmaputra-Teesta-Meghna Basins, Global Water System Project – Open Science Conference, Portsmouth, New Hampshire, 7-9 October, 2003.
- 2000 M. M. Adel, Sea level rise as signatures of global warming, Arkansas Academy of Sciences Annual Meeting, Hot Springs, AR, 7-8 April, 2000.
- 1999 M. M. Adel, Local hydrogeology history and accumulation of poisonous element in groundwater, 51st NGWA Annual Meeting, Nashville, TN, 3-6 December, 1999.
- 1999 M. M. Adel, Arsenic disaster in Bangladesh: causes and remedies, International Conference in Wagner College, NY, December 30 (**invited**)
- 1999 M. M. Adel, The arsenic calamity in the Ganges delta, Arkansas Academy of Sciences Annual Meeting, Hot Springs, AR, 2-3 April, 1999.
- 1998 M. A. Miah, Sources of health risks in using arsenic-contaminated groundwater: a case study in the Ganges basin 2nd International Conference on Managing Health Risks from Water Contamination: Approaches and Applications, University of Chile, Santiago, Chile, 7-10 September, 1998 (**invited, but visa problem arose**)
- 1998 M. A. Miah, Water shortage and water contamination, Annual Convention of NABIC, Columbus, OH, 13 June, 1998 (**invited**).

- 1998 M. A. Miah, Biosphere III: the site of unprecedented ecocide, the International Conference on Water Resource Management, Arsenic Contamination, and Desertification Syndromes, Dhaka, Bangladesh, November 15-20, (**invited**).
- 1998 M. A. Miah, Some dire consequences of water shortage in the Ganges delta, 7th International Symposium on Society and Resource Management, University of Missouri-Columbia, Missouri, 27-31 May, 1998.
- 1998 M. A. Miah, Climatic influences from surface features, Arkansas Space Grant Consortium Annual Meeting, UAMS, Little Rock, AR, 19 March, 1998.
- 1997 M. A. Miah, The disastrous effects from river barrages, 10th Annual Convention of Federation of Bangladeshi Associations of North America (FOBANA), Los Angeles, California, July 5, 1997 (**invited**).
- 1997 M. A. Miah, Upstream river barrages or downstream environmental octopuses? International Conference on Water Sharing and Water Treaty, New York, 12 April, 1997 (**invited**).
- 1997 M. A. Miah, Environmental consequences of water shortage, Arkansas Space Grant Consortium Annual Meeting, Fayetteville, AR, 13 March, 1997.
- 1996 M. A. Miah, Surface water depletion and the environmental catastrophe, 6th International Symposium on Society and Resource Management, Pennsylvania State University, 18-23 May, 1996.
- 1996 M. A. Miah, Integrated effects of water shortage, Arkansas-Oklahoma-Kansas Chapter of Physics Teachers, Fayetteville, AR, 15 February, 1996.
- 1995 M. A. Miah, The water crisis in Bangladesh: a challenge to integrated water management in urban areas, UNESCO - IHP Symposium Integrated Water Management in Urban Areas, Lund, Sweden, 26-30 September, 1995.
- 1995 M. A. Miah, Land-use and land-cover changes and the environmental changes in the Ganges basin, 21st Plenary Meeting of Geophysics and Environment, University of Colorado at Boulder, 2-17 July, 1995 (**unforgettable felicitation from the session chair**).
- 1995 M. A. Miah, The impact of the lost water resources upon a developing economy, 21st Plenary Meeting of Geophysics and Environment, University of Colorado at Boulder, 2-17 July, 1995.
- 1995 M. A. Miah, Human-induced environmental changes, 21st Plenary Meeting of Geophysics and Environment, University of Colorado at Boulder, 2-17 July, 1995.

- 1995 M. A. Miah, Integrated effects of upstream water diversion, 8th Annual Convention of FOBANA, Montreal, Canada, 3-5 September, 1995 (**invited**).
- 1995 M. A. Miah, Environmental changes in the Ganges basin, International meeting on Global Change, Interpretation, Analysis, and Modeling, Garmisch-Partenkirchen, Germany, 24-29 September, 1995.
- 1994 M. A. Miah, Urban environmental diseases in the Ganges basin, Bangubandhu Medical University, Dhaka, Bangladesh, August 16, (**invited**).
- 1994 M. A. Miah, Environmental research resources in Biosphere III, COSPAR (Cooperative Space Research) Meeting, Hamburg, Germany, 13-15 July, 1994.

4.5. Selected Domestic and International Collaborations

- 2007- In charge of Asia's sanitation and hygiene program of Humane Water, a Wichita-based (Kansas) non-profit organization in devising methods and instrumentations to provide purified water for the arsenic- and other chemical-affected people of the world, and in planning and implementing steps for integrated rural resource-based flourishing economy.
- 2013- Leading PI in the research project on food security and land use changes with participants from India, Australia and Bangladesh
- 2004 One of the key personnel in the proposal "Global Environmental Change and Human Well-being in the Ganga-Brahmaputra Basin: A Proposed GWSP International Basin Study", prepared in collaboration with R. B. Singh (University of Delhi, School of Economics), C. Vorosmarty (University of New Hampshire, Institute for the Study of Earth, Ocean, and Space), and R. DeFries (University of Maryland), and submitted to IGBP.
- 1998 Coordinator of the proposal "Arsenic Mitigation in the Bengal Basin", prepared in collaboration with environmental geologists from USA and Bangladesh, and submitted to Bangladesh Government
- 1993 Coordinator of the Pilot Project "A Study of the Land-Use and Land-Cover Induced Changes in the Indian Sub-Continent", prepared in collaboration with investigators from USA, UK, Sweden, Germany, Russia, Japan, Nepal, Bangladesh, and India, and submitted to International Institute for Applied System Research, Austria

5. Services (1988-)

5.1. Institutional

5.1.1. Departmental Committee Involvement

Curriculum Committee (Chair), Recruitment Committee, Library Committee (Chair), Promotion and Tenure Committee, and Faculty Peer Evaluation Committee

5.1.2. University-wide Committee Involvement

Promotion and Tenure Committee, Research Advisory Committee, Grievance Committee, Faculty Evaluation Committee, Graduate Faculty Selection Committee, Home-Coming Committee, Teacher Education Committee, Faculty-Staff Workshop Committee, Science Fair Judges Selection Committee, and Awards Committee

5.2. Domestic & International

5.2.1. External Reviewer

Faculty Promotion and Tenure of other universities

5.2. 2. External Examiner

Ph. D. Thesis, Rajshahi University, Bangladesh

5.3. Editorial Board Member

Physics International
American Research Journal of Physics

5.4. Reviewer

- (i) College Physics textbooks published by W. H. Freeman and Pearson
- (ii) Environmental science textbook by McGraw Hill
- (iii) NATO-sponsored conference proceeding articles on methane

- (iv) *Physics International Journal*
- (v) *Environmental Justice Journal*
- (vi) *Hydrology Journal*
- (vii) Ammons Scientific's *Comprehensive Psychology Journal*
- (vii) *Environment and Natural Resources Research Journal*
- (ix) *Elsevier Journal of Rural Studies*
- (x) *Indian Journal of Radio and Space Physics Journal*
- (xi) World Multi-Conference on Systemics, Cybernetics and Informatics
- (xii) Environment and Natural Resources Research, Canadian Center of Science and Education
- (xiii) Engineering International, Email: amin.um@abc.us.org, Home page <http://www.j-ei.us/>

5.5. Community Level

- (i) Commissioner, Bayou Bartholomew Flood Protection Action Committee
- (ii) Member of the Bayou Bartholomew Alliance
- (iii) Member of the Advisory Board of the Groundwater Conservation Task Force of the Jefferson County Industrial Foundation
- (iv) Member of the Paper Mill Stakeholder Group for Reduction of High Volume and Low Concentration Pollutants

5.6. International Level

- 1994 - International Farakka Committee (an international water rights watch group)
- 1992 - South Asia Watch, Inc. (a human rights watch group)
- 1990 - Institute of Allergy and Chemical Immunology of Bangladesh (an environmental diseases treatment center)

5.7. Foreign Government's Project

1996-98 Performed the Bangladesh Government-assigned task on finding downstream climate change following upstream water piracy from the Ganges River

6. Leadership, Management and Strategic Planning

1988 Physics Program revitalization

1988- Recruitment of students

2000- Curriculum Committee Chair

2014- Increasing retention of colored male students

7. Institutional Advancement

2001 Honor Club Member donor appreciation by the University of Arkansas at Pine Bluff

1999 Challenge Club Member donor appreciation by the University of Arkansas at Pine Bluff

1998 Challenge Club Member donor appreciation by the University of Arkansas at Pine Bluff

1997 Chancellor Club Member donor appreciation by the University of Arkansas at Pine Bluff

1990 Setup of the state-of-the-art data analysis laboratory

1997 Procurement of the solar radiation monitoring equipment

1997 Procurement of the water quality monitoring equipment

1997 Procurement of the vegetation-atmosphere energy-matter exchange monitoring equipment

1997 Procurement of the ozone monitoring equipment

1988 - Attendance to all Departmental, School-wide, and University-wide meetings and functions

1988- Participation to assigned School-wide and University-wide committees

1988 - Arrangements for a number of years for speakers to speak on astronomical topics, Environmental waste management, and depleting Sparta Aquifer

8. Budgeting and Grant Procurement

8.1. Funded Research Projects (Co-PI where mentioned)

2009 Healthy and Environmentally Friendly Potable Water Supply in Bangladesh, awarded by SUEZ ENVIRONMENT-WATER FOR ALL FOUNDATION, FRANCE, WATER FOR ALL COMPETITION, 2009 to WATC International Arsenic, Water, Ecosystem and Environment Research Center, Wichita, Kansas, USA, EU 1,000.00 (Co-PI)

2000-04 Scholarship grant for students from EPA, \$28,000.00

1997-00 Fluorescent Tracers as Partitioning Tracers for Field Identification and Quantification of Subsurface Contamination, funded by DSWA, \$290,000.00 (Co-PI)

1997-98 Research & Instructional Equipment Grant, funded by DOD, \$82,400.00

1997-98 Investigation of Micro-level Climate Change in the Ganges Basin, funded by NIH, \$8,700.00

1997-98 Investigation of Micro-level Climate Change in the Arkansas River Basin, funded by NIH, \$9,370.00

1997-98 Impact of Surface Feature Changes upon Climate, funded by NASA-Arkansas Space Grant, \$3,500.00

1994-96 Regional Climate Changes Due to Shortage of Natural Water Supply, funded by NASA-Arkansas Space Grant Consortium, \$6,000.00

1993-94 A Study of Environmental Changes in the Ganges Basin, a research incentive grant funded UAPB, \$1,000.00

1992-94 Solar-Induced Variation of Particle Precipitation, funded by NASA-Arkansas Space Grant Consortium, \$10,500.0

1992-94 Particle Precipitation in the South Atlantic Anomaly Region, funded by NASA-Arkansas Space Grant Consortium, \$10,500.00

1992-93 Equipment Proposal funded by NASA-Arkansas Space Grant Consortium, \$4,257.00

1989-93 Global Zones of Particle Precipitation as Observed by EXOS-C, funded by DOD, \$369,000.00

8.2. Selected Travel Grants for Participations in Conferences

- 2015 As the **Keynote speaker** on South Asian water issue in the 2015 ABC Convention in New York
- 2014 As the **Keynote speaker** on water aggression in the 2014 New York FOBANA Convention on the Labor Day weekend
- 2012 3rd America-Bangladesh-Canada Conference, New York
- 2010 2nd America-Bangladesh-Canada Conference, New York
- 2009 International Farakka Committee to attend the international conference on the effects of Tipaimukh Dam, New York
- 2008 From the United Nations University (UNU), Bonn, Germany, to attend the UNU-Sponsored International Conference on Environment, Forced Migration, and Social Vulnerability, 9-11 October.
- 2003 From NOAA to attend the Global Water System Project- Open Science Conference, New Hampshire
- 2003 From IFC and the Indian National Geography Congress (INGC) to attend the Silver Jubilee Conference of the INGC in Gaziabad, India
- 1997 From FOBANA to attend XI annual Convention in Los Angeles, CA
- 1993 From NSF to attend the workshop on biostatistics and public health in Houston, Texas
- 1992 From NATO to attend NATO Advanced Workshop on global methane cycle, Portland, Oregon.
- 1990 From NASA to attend the workshop on global change in Godard Space Flight Center, Greenbelt, MD.

8.3. Selected Recently Developed Unfunded Proposals

- 2013 M. M. Adel (USA), B. Jhunjhunwalla (India), and N. Ahmed (Australia), The Ganges Basin Food Security and Land Use Change, Belmont Forum, Brazil, \$755,600.00 (three-to five-year period)

- 2013 WSC-Category 2: Water Sustainability and Climate Study in the Ganges Basin, National Science Foundation, \$3,993,956.00 (five-year period)
- 2013 Development of Underrepresented Group Manpower for Nuclear Industry, Nuclear Regulatory Commission, \$774,940.00 (five-year period)
- 2012 Super-tank River Basin Model Instrumentation, Department of Defense, \$426,754.34 (three-year period)
- 2012 Super-tank River Basin Model for Groundwater Contamination Study, Army Research Office, \$646,343.00 (three-year period)

8.4. Pending Proposals

Spatial and Temporal Features of PROBA-V/EPT-observed Particle Precipitation (NSF). Three-year solicited amount \$733,705.00

Land Cover and Land Use Changes in South Asia – Bangladesh (NASA). Three-year solicited amount about \$750,000.00

9. Faculty Recruitment (1988-)

Post-Doctoral Fellow Selection Committee

Faculty Selection Committee

Two times member in the Chemistry & Physics Chairperson Selection Committee

10. Faculty Evaluation (1988-)

Multiple times involved in the Departmental and University-wide Promotion and Tenure Committee

External Member for Faculty Promotion and Tenure of other institutions

Annual Faculty Peer Evaluation Committee member

Graduate Faculty Selection Committee member

Faculty Evaluation Committee member

11. Program Accreditation

Two times worked in the Physics Program Accreditation

12. Selected Awards/Honors/Recognitions

- 2014 Chancellor's Award for **Excellence in Research at the University of Arkansas at Pine Bluff**
- 2013 **Nominated for Excellence in Research at the University of Arkansas at Pine Bluff**
- 2010 Silver Lapel Pin from American Geophysical Union for achieving 25 years of consecutive membership
- 2010 Recognition for more than two decades of services at the University of Arkansas at Pine Bluff
- 2006 Recognition by the American Registry of Outstanding Professionals
- 2003 **Outstanding Established Faculty Award for scholarly activities**
- 2001 Honor Club Member donor appreciation by the University of Arkansas at Pine Bluff
- 1999 A certificate of recognition from NGWA for presentation at the 51st Annual Convention, Nashville, TN
- 1999 Challenge Club Member donor appreciation by the University of Arkansas at Pine Bluff
- 1998 Challenge Club Member donor appreciation by the University of Arkansas at Pine Bluff
- 1997 Chancellor Club Member donor appreciation by the University of Arkansas at Pine Bluff
- 1994 An award from Rotary Club, Bangladesh
- 1990 An Award of **the Key to the City of Pine Bluff by the Pine Bluff City Mayor**
- 1989 **New Comer Award from the University of Arkansas at Pine Bluff for outstanding performance in research and other scholarly activities**
- 1977 An award from the Bangladesh Institute for the Advancement of Science and Technology Teaching for outstanding performances in the Institute's 1977 Summer School in Rajshahi University, Rajshahi, Bangladesh.

13. Featured in

- 2015 The Weekly Thikana, New York, USA, October 1 issue
 2010 *The Weekly Thikana*, New York, USA, August 17 issue
 1999 *The Daily Sangram*, Dhaka, Bangladesh, May 10 issue
 1995 *The Weekly Thikana*, New York, USA, September 10 issue
 1994 *The Daily Ittefaq*, Dhaka, Bangladesh, September 7 issue
 1993 *Homecoming*, Vol. X, No. 1, Spring, USA
 1989 *The Arkansas Gazette*, Little Rock, AR, July 31 Issue
 1989 *The Arkansas Democrat*, Little Rock, AR, April 30 issue
 1989 *The Pine Bluff News*, Pine Bluff, AR, April 13 issue
 1989 *The Pine Bluff Commercial*, Pine Bluff, AR, April 3 issue
 1989 *The Arkansawyer*, Pine Bluff, AR March 30 issue

14. Professional Affiliations

- (i) American Geophysical Union (AGU), Washington, DC, USA
 (ii) World Federation of Scientists, Erice, Sicily, Italy
 (iii) Emerald Literacy Group, UK

15. Education

- 1988 Ph. D. Louisiana State University, Baton Rouge, Louisiana, USA
 Major Field: Space Physics (Earth's space environment)
 Minor Field: Astronomy/Astrophysics
 Thesis Title: *Global Zones of Particle Precipitation*
- 1980 M. S. (ABD), American University of Beirut (AUB), Beirut, Lebanon (**Left without completion because of acceptance to Ph. D. program at LSU, Baton Rouge, Louisiana**)
 Major Field: Nuclear Physics
 Minor Field: Computer Science
- 1974 M. Sc. Rajshahi University (RU), Rajshahi, Bangladesh
 Major Field: Nuclear and Particle Physics
 Minor Field: Quantum Mechanics and Electronics
- Thesis Title: *A Dissertation on Properties of Hyperfragments and Other Fragments Produced in Nuclear Emulsion Exposed to 3.0 GeV/c K^- - Meson Momentum*
- 1972 B. Sc. (Honors): Rajshahi University, Rajshahi, Bangladesh
 Major Field: Physics
 Minor Fields: Mathematics and Chemistry

16. Hobbies

Gardening and writing

Research Interests

My research interests are the following:

1. The Earth's space environment – particle precipitation at low altitudes from the Earth's radiation belts,
2. Geomagnetism,
3. Remote sensing- and Geographic Information System-based study of land cover and land use changes of the Earth,
4. Regional land cover and land use changes and the climate change,
5. Upstream and downstream problems of dams and barrages, climate change, and extreme events,
6. Transboundary water issues,
7. Solar-terrestrial relations,
8. Construction of an underground exploration instrument,
9. Construction of a rotor to transform translational energy to rotational energy, and
10. Outdoor lightning safety

Teaching Interests

On top of undergraduate physics, mathematics, statistics, astronomy/astrophysics, and environmental science courses, the following:

1. Space geophysics,
2. Physics of climate,
3. World's sweet water bodies,
4. Remote sensing, and
5. GIS

Referees

1. M. A. Karim, Ph. D.

Provost and Executive Vice Chancellor for Academic and Student Affairs

University of Massachusetts Dartmouth

285 Old Westport Road

North Dartmouth, MA 02747-2300

Tel: (508) 999-8024

Fax: (508) 999-8375

e-mail: mkarim@umassd.edu

2. M. S. Jahan, Ph. D.

Professor and Ex-Chairman, Department of Physics

University of Memphis

Manning Hall, Room 216

Memphis, TN 38152-0001

Tel: (901) 678-3657/2620

e-mail: mjahan@memphis.edu

3. Mirza Shahjahan, Ph. D.

Professor and Chairman, Department of Economics

University of Arkansas at Pine Bluff

Pine Bluff, AR 71601

Tel: (870) 575-8018

e-mail: shahjahanm@uapb.edu

4. Mansour Mortazavi, Ph. D.

Professor of Physics

University of Arkansas at Pine Bluff

Pine Bluff, AR 71601

Tel: (870) 575-8789

Fax: (870) 575-8210

e-mail: mortazavim@uapb.edu