**Dr. GEORGE BISWAS, Ph.D**

**ASSISTANT PROFESSOR, DEPARTMENT OF GEOLOGY**

**PRESIDENCY UNIVERSITY, KOLKATA**

**E-Mail:** [**george.biswas704@gmail.com**](mailto:george.biswas704@gmail.com)**,** [**george.geol@presiuniv.ac.in**](mailto:george.geol@presiuniv.ac.in)

**Google Scholar:** [**https://scholar.google.co.in/citations?user=aNRP8XYAAAAJ&hl=en**](https://scholar.google.co.in/citations?user=aNRP8XYAAAAJ&hl=en)

**Contact number: 9163783026, 9885909166**

**EDUCATION**

* Ph.D. in Geology (Physical Science), Academy of Scientific and Innovative Research (AcSIR) (An Institute of National Importance in India), CSIR-National Geophysical Research Institute, Hyderabad, 2023

Title of the thesis: *‘Mapping Variability in Structure and Functioning of Diverse Basaltic Aquifers.’*

* Master of Science (M.Sc.) in Applied Geology, Indian Institute of Engineering Science and Technology, Shibpur, India, 2016
* Bachelor of Science (B.Sc. honors) in Geology, Calcutta University, Calcutta, 2014.
* Standard XII, West Bengal Council of Higher Education (WBCHE), 2011 with Marks
* Standard X, West Bengal Board of Secondary Education (WBSE), 2009 with Marks.

**WORK EXPERIENCES**

1. Assistant Professor at Department of Geology, Presidency University, Kolkata (17.08.2018 to still date.)
2. CSIR- Junior Research Fellow (JRF) at CSIR- National Geophysical Research Institute, Hyderabad (08.08.2016 to 08.08.2018)
3. CSIR- Senior Research Fellow (SRF) at CSIR- National Geophysical Research Institute, Hyderabad (08.08.2018 to 14.08.2018)
4. One-year Research experience in Planetary Geology (Mars and Moon).

**TEACHING EXPERENCES**

1. Assistant Professor at Department of Geology, Presidency University, Kolkata (17.08.2018 to still date.)
2. Trainer for Science Research Workshop Module by Dhaka University Research Society (DURS), Dhaka, Bangladesh from 3rd September 2022 to 3rd November 2022.

**PROFESSIONAL TRAINING/COURSES**

1. Completed 10th Online Guru-Dakshta, faculty Induction Programmes (FIP) days (Equivalent to Orientation program) from19.05.2022 to 17.06.2022 conducted by The Human Resources Development Centre, Gujrat University, Ahmedabad.
2. Completed Refresher Course at UGC-HRDC, University of Allahabad, UP on Climate Change and Human Health from 08.01.2024 to 21.01.2024.

**EDUCATIONAL ACHIEVEMENTS**

* Received Life membership from Young Earth scientist network (Member number- 02381 dated 31st OCT, 2019)
* Third position in the Essay Writing Competition held at CSIR- National Geophysical Research Institute, Hyderabad, connected with CSIR-NGRI Earth Day Celebrations-2017.
* BHEL Scholar of the Foundation for Academic Excellence and Access (FAEA), New Delhi, 2011-2015.
* National Eligibility Test (NET), India, June 2015, UGC -JRF- All India Rank (AIR)-51.
* National Eligibility Test (NET), India, December-2014, CSIR - JRF - All India Rank (AIR)-49.
* Joint Admission Test for M.Sc. (JAM), 2014 - AIR- 303.
* “Amul Vidya Shree Award for Outstanding Academic Performance at the central/ State Board Secondary Examination,” April 2010.
* Bangiyo Bhugol Mancha qualified- 2009.
* Two times Science Talent Search Examination qualified- 2007 and 2008.
* Scholar of Indo- French Centre of Groundwater Research (IFCGR).
* Received Memento for National Service Scheme (NSS) – “Best Volunteer Award” in 2012-2013 given by University of Calcutta.
* Received Cash prize for “Arijit Guha Memorial Award for Excellence in Community Engagement and Social Welfare,” 2016, given by Indian Institute of Engineering Science and Technology, Shibpur.
* Received ‘Ramai Pandit Award’ in recognition for outstanding accomplishment in the field of Earth Science from Department of Geography, Chatra Ramai Pandit Mahabidyalaya (affiliated to Bankura University), West Bengal at ‘Two days international conference on Recent advances in Earth and Space sciences and their applications’ held on 24th to 25th January, 2024.

**PUBLICATIONS**

**2023**

* **George Biswas**, Mohd Arshad, Naseem us Saba, Tanvi Arora, Shakeel Ahmed, 2023. Hydrogeochemical investigation and groundwater quality assessment toward ‘smart city planning in a coastal aquifer, India. Water Practice and Technology, 18(1), pp.168-184. <https://doi.org/10.2166/wpt.2022.168>
* **George Biswas**, Totan Garai, Uttaran Santra (2023), A possibility-based multi-criteria decision-making approach for artificial recharge structure selection using pentagonal fuzzy numbers. Decision Analytics Journal, p.100365. <https://doi.org/10.1016/j.dajour.2023.100365>
* Totan Garai, Harish Garg, & **George Biswas**, 2023, A fraction ranking-based multi-criteria decision-making method for water resource management under bipolar neutrosophic fuzzy environment. Artificial Intelligence Review, pp.1-42. (Impact Factor: 12) <https://doi.org/10.1007/s10462-023-10514-3>
* Totan Garai, Harish Garg, **George Biswas** (2023), " Possibilistic index-based multi-criteria decision-making with an unknown weight of air pollution model under bipolar fuzzy environment. Soft Computing, 27(23), pp.17991-18009. (Impact factor: 4.1) <https://doi.org/10.1007/s00500-023-09008-9>

**2022**

* Totan Garai, **George Biswas**, and Uttaran Santra, (2022), “A Novel MCDM Method Based on Possibility Mean and Its Application to Water Resource Management Problem Under Bipolar Fuzzy Environment” In International Conference on Intelligent and Fuzzy Systems (pp. 405-412). Springer, Cham. <https://doi.org/10.1007/978-3-031-09173-5_49>

**2020**

* Warsi, T., Kumar, V. S., Kumar, D., Nandan, M. J., **Biswas, G.,** Sahadevan, D. K Manikyamba, C., Rao, T.V., Rangarajan, R., Ahmed, S. and Chandrasekhar, V. (2020). ‘Integration of geophysics and petrography for identifying the aquifer and the rock type: A case study from Giddalur, Andhra Pradesh, India.’ Journal of Earth System Science, 129(1), 1-13. (Impact Factor: 1.371)

**Paper Under review**

1. **George Biswas**, Tanvi Arora, Mohd Arshad, Suryadipta Mukherjee, Taufique Warsi, and Shakeel Ahmed (2022), "Mapping groundwater potential zones in a basin section of the alluvial-basaltic coupled aquifer of peninsular India using a combination of AHP, geospatial and geophysical methods" submitted to "Water Resources Management" Manuscript Number: WARM-D-23-00327.
2. **George Biswas**, Mohd Arshad, Tanvi Arora, Suryadipta Mukherjee, Taufique Warsi, and Shakeel Ahmed (2022), A combined study of Geospatial, AHP, and Geophysical techniques for the selection of groundwater recharge site in a basaltic terrain, India, Water supply. Manuscript Number: watersupp-D-22-0060
3. **George Biswas**, Totan Garai, Uttaran Santra, MCDM technique on water resource management based on possibility theory under bipolar fuzzy, Journal of Intelligent & Fuzzy Systems. Article number IFS-230279.
4. **George Biswas**, Taufique Warsi, Suryadipta Mukherjee, Syed Shams Rizvi, Tanvi Arora, and Shakeel Ahmed Groundwater Dynamics in the Basaltic Impact Crater: Insights from Lonar Crater, India, Icarus, ICARUS-D-23-00245.
5. Totan Garai, Harish Garg, George Biswas (2022), Parametric centre-based sustainable modelling of Chennai water resource management under bipolar-fuzzy MCDM techniques, Socio-Economic Planning Sciences, Manuscript Number: SEPS-D-23-00324.

**Paper about to submit**

1. **George Biswas** et al (2023), Decision support framework for assessing groundwater in basaltic terrain: A statistical approach towards grooming model." (About to submit
2. Tanvi Arora, **George Biswas**, Taufique Warsi, Nepal Chandra Mondal and Shakeel Ahmed, Upshots of Electrical Imaging structures for identifying MAR locates in the Basaltic terrain of Peninsular India.
3. Taufique Warsi, **George Biswas**, Integrated AHP, Geophysics and Infiltration to Delineate Groundwater Potential and Recharge Zone in a Semi-Arid Basaltic Terrain

**BOOK CHAPTER**

**Published book chapters**

1. T Warsi, T., Mukherjee, S., **Biswas, G**., Mitran, T., & Rizvi, S. S. (2022). Urban water resources and its sustainable management. In *Current Directions in Water Scarcity Research* (Vol. 6, pp. 489-509). Elsevier. <https://doi.org/10.1016/B978-0-323-91838-1.00020-8> , ISSN: 2542-7946
2. Mukherjee, S., Rizvi, S. S., **Biswas, G.,** Paswan, A. K., Vaiphei, S. P., Warsi, T., & Mitran, T (2022). Aquatic Eco‐systems Under Influence of Climate Change and Anthropogenic Activities: Potential Threats and Its Mitigation Strategies. Hydrogeochemistry of Aquatic Ecosystems, 307-331. Wiley, ISBN: 978-1-119-87053-1, <https://doi.org/10.1002/9781119870562.ch14>

**Book chapters about to submit (Abstract accepted)**

1. Tina Sultana, Sahana Hegde, Suryadipta Mukherjee, Khan Tahama, Sarita Chemburkar, **George Biswas**, Shams Rizvi, Taufique Warsi, Tarik Mitran, Assessment & Future Projection of Drought Vulnerability under Climate Change Scenarios using Artificial Intelligence & Remote sensing, (Book Title: Data Analytics and Artificial Intelligence for Earth Resource).
2. Shams Rizvi, **George Biswas**, Sarita Chemburkar, Khan Tahama, Tina Sultana, Suryadipta Mukherjee, Taufique Warsi, Tarik Mitran, Water contamination and mitigation measures in megacities (Book Title: Environmental challenges and mitigation measures in megacities)
3. Khan Tahama, Taufique Warsi, Sarita Chemburkar, Tina Sultana, Farz Rupani, Shams Rizvi, **George Biswas**, Suryadipta Mukherjee, Tarik Mitran, Gautam Gupta Plastic pollution and alternative solutions in megacities (Book Title: Environmental challenges and mitigation measures in megacities)
4. Sarita Chemburkar, Taufique Warsi, Tina Sultana, Faraz Rupani, Shams Rizvi, Suryadipta Mukherjee, **George Biswas**, Khan Tahama, Tarik Mitran, Degradation and conservation of biodiversity in megacities (Book Title: Environmental challenges and mitigation measures in megacities)

**INVITED SPEAKER/ KEY NOTE SPEAKER/ DISTINGUISH LECTURE**

1. Invited **‘Keynote Speaker’** in National Conference on “Earth Science for a Sustainable World” held in Government Post Graduate College Rajouri J&K (India). From 09 to 15 October 2022.

**Topic:** Delineation of groundwater potential zones using AHP and Geophysical method in Basaltic terrain.

1. **Invited as ‘Facilitator’** in Govt. Titumir College Research Club (GTCRC), Bangladesh under the promise of "Learn, Discover and Change" on 15th December 2022 based on “Literature Review”.
2. **Invited as Guest Speaker** at an interdisciplinary research session on "Interdisciplinary Research Career & Scholarship" on 21st January, 2023 at TSC, University of Dhaka.
3. **Invited as Guest Speaker** to conduct a session on 'How to write a research paper'on 23rd January 2023, 11 at Shaheed Barkat Auditorium, Govt. Titumir College, Dhaka.
4. **Invited as Speaker “**1st Undergraduate Research Summit-2023" on 1 March 2023 at the TSC Auditorium, University of Dhaka organized by Dhaka University Research Society (DURS), in collaboration with Bangladesh Research Society (BDRS).
5. **Invited as Guest Speaker** for special segment "Research Talk” at Jatiya Kabi Kazi Nazrul Islam University Research Society on 29 April 2023.
6. **Special Invited Lecture** on ‘Careers in Earth Science and Future Scope of Earth Science’ at Department of Geography, Chatra Ramai Pandit Mahabidyalaya (affiliated to Bankura University), West Bengal at ‘Two days international conference on Recent advances in Earth and Space sciences and their applications’ held on 24th to 25th January, 2024.

**ORAL PRESENTATIONS/ POSTER PRESENTATIONS**

**National**

* Oral presentation of a paper entitled “Determination of aquifer zone in hard rock terrain application of Gradient Resistivity Profile (GRP).” at 35th & 36th AHI Annual Convention & National Seminar on Hydrology with a colloquium on. ‘Nature-based solutions to Water Challenges during 22nd - 24th March 2018. Andhra University, Visakhapatnam.
* Oral presentation of a paper entitled “Role of Geophysical Investigations in Managed Aquifer Recharge (MAR): A case study in crystalline rock terrain of Maheshwaram watershed, Telangana., 35th & 36th AHI Annual Convention & National Seminar on Hydrology with a colloquium on. ‘Nature-based solutions to Water Challenges’ during 22nd - 24th March 2018. Andhra University, Visakhapatnam.
* Oral presentation of a paper entitled “Mapping groundwater potential zones in a basin section of the alluvial-basaltic coupled aquifer of peninsular India using a combination of AHP, geospatial and geophysical methods” at 6th Regional Science and Technology Congress, 2023 held on 21st-22nd December, 2023, jointly organized by at University of Calcutta

**International**

* Oral presentation of a paper entitled “A novel MCDM method based on possibility mean and its application to Water Resource Management problem under Bipolar Fuzzy environment” in the fourth International Conferences on intelligence and fuzzy systems (INFUS 2022) from 19th July to 21st July 2022 at Yasar University, Izmir.
* Poster presentation of a paper entitled “An integrated geospatial and geophysical approach for groundwater management and artificial recharge”, International Conference Groundwater, key to the Sustainable Development Goals May 18-20, 2022 - Paris / France.
* Oral presentation of a paper entitled “Assessment of water resource management problem in an agriculture field, Purulia, India using multi-criteria decision making (MCDM) based on possibility measures under generalized single valued non-linear bipolar neutrosophic environment” Global Summit on Advances in Earth Science and Climate Change. 2022, Adv. ESCC, 44.

**CONFERENCE ABSTRACTS**

**National**

* **George Biswas,** Erugu Nagaiah, Joy Choudhury, Subash Chandra, and Shakeel Ahmed., Determination of aquifer zone in hard rock terrain- application of Gradient Resistivity Profile (GRP)., 35th & 36th AHI Annual Convention & National Seminar on Hydrology with a colloquium on. ‘Nature-based solutions to Water Challenges during 22nd - 24th March 2018. Andhra University, Visakhapatnam.
* Taufique Warsi, C. Manikyamba, T. Vinoda Rao, **George Biswas,** V. Satish Kumar, Mohd Arshad, R. Rangarajan, D. Muralidharan, and Shakeel Ahmed., Geophysical techniques to decipher dyke which act as a barrier making the upstream highly potential for groundwater in Telangana: A case study., 35th & 36th AHI Annual Convention & National Seminar on Hydrology with a colloquium on. ‘Nature-based solutions to Water Challenges during 22nd - 24th March 2018. Andhra University, Visakhapatnam.
* Mohd Arshad, Ankita Chatterjee, Taufique Warsi, Syed Adil Mizan, **George Biswas,** Shakeel Ahmed, and N Subba Rao., Role of Geophysical Investigations in Managed Aquifer Recharge (MAR): A case study in crystalline rock terrain of Maheshwaram watershed, Telangana., 35th & 36th AHI Annual Convention & National Seminar on Hydrology with a colloquium on. ‘Nature-based solutions to Water Challenges’ during 22nd - 24th March 2018. Andhra University, Visakhapatnam.
* Mohd Arshad, MD Naushad Ali, Ankita Chatterjee, MD Taufique Warsi, **George Biswas**, Shakeel Ahmed., Delineation of Managed Aquifer Recharge (MAR) sites: An integrated approach of Remote sensing, GIS and MCDM techniques., in the 5th International Conference on “Hydrology and Watershed Management” with a Focal Theme on “Urban Water Management for Sustainable Development.”, during 12th - 15th Feb 2019., Jawaharlal Nehru Technological University Hyderabad.

**International**

* **George Biswas**, S Ahmed M Arshad, T Arora, S Mukherjee, T Warsi, (2022), “An integrated geospatial and geophysical approach for groundwater management and artificial recharge”, International Conference Groundwater, key to the Sustainable Development Goals May 18-20, 2022 - Paris / France.
* Totan Garai, **George Biswas**, Uttaran Santra, Suryadipta Mukherjee, (2022), “Assessment of water resource management problem in an agriculture field, Purulia, India using multi-criteria decision making (MCDM) based on possibility measures under generalized single valued non-linear bipolar neutrosophic environment” Global Summit on Advances in Earth Science and Climate Change. 2022, Adv. ESCC, 44.

**STUDENT SUPERVISED**

**Master’s**

1. Bikram Kabiraj, (2019-2021), His M.Sc. dissertation thesis entitled “Geophysical contemplate of hard rock aquifer through resistivity survey.”
2. Somen Majee (2020-2022), His M.Sc. dissertation thesis entitled, “Critical review on Zeolite and its application on Groundwater”
3. Aritra Mondal (2021-2023), His M.Sc. dissertation thesis entitled, “Delineation of groundwater potential zones in basaltic terrain using geophysical methods”

**PROFESSIONAL MEMBERSHIP**

* Life Member of the International Association of Hydrological Sciences (IAHS) (Membership Number: 16264)
* An active member of the International Water Association (IWA).
* Member in YES network Deutschland (Membership Number: yes02381)
* Life member of The Indian Science Congress Association (ISCA). (Membership Number: L37449)
* Life Member of the Mining and Metallurgical Society of India (MMSI)
* Life Member of the Indian Geophysical Union (IGU)
* Member of the International Association for Water, Environment, Energy, and Society (IAWEES)
* Life Member of Geological Society of India (Membership No- M-0241)
* Life Member of Association of Global Groundwater Scientists. (Membership Number: LM-AGGS-153)

**REVIEWER OF THE JOURNALS**

* Journal of the Geological Society of India
* Journal of Water and Climate Change.
* Journal of Water Resources Planning and Management
* Journal of Water Science and Technology.
* Journal of Computers and Electrical Engineering

**WORKSHOPS/INTERNSHIPS/TRAINING PROGRAMMES ATTENDED**

* Foundation for Academic Excellence and Access- Entrepreneurship and Employability, Loyala College, Chennai, 19th January to 23rd January 2015.
* Foundation for Academic Excellence and Access, Presidency University, Kolkata, December 22-29, 2013.
* Department of Science and Technology (DST) Inspire (Internship) Science Camp, Kalyani University, and February 22-26, 2010.
* 7th Asian G-WADI Meeting cum Workshop at CSIR-National Geophysical Research Institute, Hyderabad, India, with the support of the National Institute of Hydrology & IHP Indian National Committee (Ministry of Water Resources, RD-GR, Govt. of India), Roorkee, India, November 26-30, 2017, Hyderabad, India.
* Advanced Training Program on ANALYTICAL GEOCHEMISTRY (A CSIR integrated Initiative) held at CSIR- National geophysical research Institute, Hyderabad from 12th March to 21st March 2018.
* Workshop at CSIR-National Geophysical Research Institute, Hyderabad, India on “Current Trends and Sustainable Management Options in Water Section- Telangana state” by Central Ground Water Board, Southern Region, Hyderabad on 8th December 2017.
* The workshop is jointly organized by the CSIR-National Geophysical Research Institute (NGRI), India, and the World-Wide Fund for Nature (WWF-India) under the project entitled “Development of Decision Support Tool (DST) For Sustainable Water Management in Selected Sugarcane Growing Regions in India.” The workshop is aimed at capacity building of sugar mill professionals on a decision support tool developed for sustainable groundwater management in sugarcane growing areas on March 27-28, 2018.
* 35th & 36th AHI Annual Convention & National Seminar on Hydrology with a colloquium. ‘Nature-based solutions to Water Challenges’ during 22nd - 24th March 2018. Andhra University, Visakhapatnam.
* Participated in Quiz Competition during 54th of Annual Convention of Indian Geophysical Union (IGU) on ‘Recent Advances in Geophysics with Special Reference to Earthquakes Seismology’ at CSIR-NGRI on 1st December, 2017.
* Participated in three days long Training on “Local Ground Water Management Issues” from 18th September 2018 to 20th September 2018 at Central Ground Water Board, Eastern Regional Office, Kolkata, under the aegis of Rajiv Gandhi National Ground Water Training & Research Institute, Raipur.
* Completed the e-Training on “Fundamentals of Aero-geophysical Survey” Special Programme for Faculty, Research Scholar, PG & Post PG Students of Academic Institutions conducted by Geophysics Division of GSI Training Institute, Hyderabad from 04.08.2020 to 06.08.2020.
* Completed Tier II e-Training on “Local groundwater development management” from 10.8.2021 to 12.8.2021 conducted by CGWB, Kolkata.
* Completed online training program course on ‘Sustainable Aquifer Management for Groundwater Resources’ held at Dehradun, Uttarakhand, from 16-18 February 2022.
* Attended “1st International Higher Education Conference” form February 25 and 26, 2023 at Intercontinental Hotel, Dhaka, in Bangladesh organized by Michigan State University, USA together with the Directorate of Secondary and Higher Education in Bangladesh and the Global Center for Innovation and Learning, USA.
* Attended an international workshop on “Collaborative opportunities in Climate Resilience and Sustainability in South Asia” on 27th February, 2023 at Intercontinental Hotel, Dhaka, in Bangladesh organized by Asia Hub, Michigan State University, USA & Global Center for Innovation and Learning, USA.
* Attended the international conferences' Deccan Next' organed by the Department of Geology, Savitribai Phule Pune University & Ministry of Earth Sciences Borehole Geophysics Research Laboratory at SPPU, Pune from 1st Oct 2023 to 5th Oct, 2023 at Savitribai Phule Pune University, Pune.