CURRICULUM VITAE

DR. TAHAMINA BEGUM

EDUCATION

2006 PhD- Kyoto University, Department of Neuroscience,
Human Brain Research Center, Kyoto University, Japan

1996 MBBS - Dhaka University, Sher-E-Bangla Medical College, Barisal, Bangladesh

JOB EXPERIENCES

August 2024 – present
Cognitive Neuroscientist, Center for Chiropractic Research, Life University, Marietta, Georgia 30060, USA

May 2010 – April 2023
Senior Lecturer, Department of Neurosciences, Universiti Sains Malaysia, Malaysia
May 2008 – June 2009
Assistant Professor, RIEM, Nagoya University, Japan
May 2006 – April 2008
Post-Doctoral Fellow, RIEM, Nagoya University, Japan
January 1998 – September 2000
General Medical Officer, Export Processing Zone (BEPZA), Bangladesh
August 1997 – April 1999
Medical Officer, Health Home Clinic, Chittagong, Bangladesh

CLINICAL EXPERIENCES

1. January 30th, 2023 – 24th March 2023
Trainee Fellow, International EEG/Epilepsy Course, UH Cleveland Medical Center, Cleveland, Ohio, USA.

2. October 2000 – March 2006
PhD period, Human Brain Research Center, Department of Neurology, Kyoto University, Japan

a) Electroencephalography (EEG) report writing
b) Long-term video EEG Monitoring of Epilepsy patient
c) EEG conference (EEG presentation) twice per week and making EEG report
d) Neurological outpatient once per week with the Professor of Neurology department and Epilepsy outpatient clinic once per week with one epileptologist.

AWARDS

1. Japanese Government (Monbukagakusho) Scholarships, Kyoto University, Japan. **2000–2006**
2. Best Paper award- Electrophysiological Quantification of Underlying Mechanism of Decision Making from Auto Dealers Advertisement – A Neuromarketing Research, ICOQSIA. **2016**
3. Excellent Service Award Certificate (Sijil Anugerah Perkhidmatan Cemerlang (APC)), Universiti Sains Malaysia (USM), Kelantan, Malaysia. **2015**

RESEARCH

As a principal investigator (PI):

1. Neurocognitive Processing in Dyslexic Children: An Event-Related Potential (ERP) study.

2. Role of Presynaptic Glutamate Receptors in Modulation of Long-Term Synaptic Plasticity (LTP) in Inhibitory Synapses of Visual Cortical Pyramidal Neuron after Epilepsy: a Whole cell patch clamp recording.
3. Cognitive Function Assessment During Pregnancy: An Auditory Event-Related Potential (ERP) and Neuropsychology Study.
4. Event-related signals analysis in auditory P300 by wavelet transform (WT) method.
5. Influence of the Educational Level on Design induced N240 and P300 ERP Components in the Human Brain.

MEMBERSHIP

1. Life member of the Malaysian Neuroscience Society (MNS). (Membership no: MSN328/L)
2. Member of Brain and Behavior Cluster (BBC), Universiti Sains Malaysia (USM), Health Campus, Malaysia.
3. Member of Bangladesh Medical and Dental Council (BMDC).

RESEARCHER ID:

Researcher ID (Web ISI): http://www.researcherid.com/rid/E-4518-2012 (Web of Science ResearcherID is ABA-1765-2021).
Author ID (Scopus): https://www.scopus.com/authid/detail.uri?authorId=6701840420
Orcid ID: orcid.org/0000-0002-3423-4927
Google Scholar ID: https://scholar.google.com.my/citations?user=uObySg8AAAAJ&hl

PUBLICATIONS

Monograph/book:

1. Ali SA, **Begum T,** Reza MF, Fadzil NAB, Mustafar F. Auditory Cognitive Function Assessment during Pregnancy: A Neuro-Perspective View: An Event-Related Potential (ERP) and Neuropsychological Study. Research book/Monograph. Publisher-Penerbit USM. November, 2023.

Book chapter:

1. Abdullah JM, Idris Z, Elaini S, **Begum T**, Reza F. Clinical use of EEG/ERP monitoring, ERP, EEG-fMRI in Epilepsy. Book Chapter 13, in "EEG and ERP Analysis: Methods and Clinical Applications", publisher- CRC-Francis and Taylors, US, pp 288-309, **2014**
2. Munsif Ali Jatoi, **Tahamina Begum**. Brain Source Localization Using EEG Signals. Book Chapter 4, in "EEG and ERP Analysis: Methods and Clinical Applications", publisher-CRC-Francis and Taylors, US, pp 91-121, **2014**

Technical report:

1. **Begum T**, Reza F. Auditory Cognitive Function Assessment during Pregnancy: An Event-Related Potential and Neuropsychological Study. Bangladesh Journal of Medical Science. 2021; 20 (3), 608-617. DOI: https://doi.org/10.3329/bjms.v20i3.52803

Publications in Academic Journals

1. Mohammed Faruque Reza, **Tahamina Begum.** Auditory cognitive impairment reflects on source localization of the P300 ERP component in MBI patients: the sLORETA investigation. Manuscript No.: JIN25906. Journal of Integrated Neuroscience (JIN). Submitted **July 2024.**
2. Raid MF, **Begum T**, Reza MF. Educational influence on women's colour perception: C1 event-related component analysis. Bangladesh J Med Sci. **2024.** 27;23(2):471-5. https://www.banglajol.info/index.php/BJMS/article/view/72175.
3. Raid MF, **Begum T**, Reza MF. Source localization of the visual C1 ERP component. Bangladesh J Med Sci. **2023**;22(2):398-402. https://www.banglajol.info/index.php/BJMS/article/view/65002.
4. Zaidil NN, **Begum T**, Reza MF, Ying JH, Rauf RBA. Syntactic Malay Language Processing in Pregnant Women: Analysis of The N400 Component. International Journal of Life Science and Pharma Research; **2021**: 11, Special Issue 15 - Section III, page 17-22. https://doi.org/10.22376/ijpbs/ijlpr/SP15/Oct/2021.1-25.
5. Ali SA, **Begum T**, Reza MF, Fadzil NAB, Mustafar F. Auditory Attention Among Children with Dyslexia: Topographic Mapping and Brain Functional Connectivity Analysis Using P300 Component. International Journal of Life Science and Pharma Research. 2021: 11, Special Issue 15 - Section III, page 1-5. https://doi.org/10.22376/ijpbs/ijlpr/SP15/Oct/2021.1-25.
6. Ananth D, Reza MF, **Begum T.** Visual Sensory Processing and Attention During Visual Oddball Task in Pregnant Women: N100 ERP Component Analysis and Topographic Map Distribution. International Journal of Life Science and Pharma Research. **2021**: 11, Special Issue 15 - Section III, page 13-16. https://doi.org/10.22376/ijpbs/ijlpr/SP15/Oct/2021.1-25.
7. Ali SA, **Begum T,** Reza MF, Fadzil NAB, Mustafar F. Fronto-Temporal N200 Event-Related Component in Dyslexic Malay Children During Audio–Visual Paired Stimuli. Mal J Med Health Sci 17(3): 239-244, July **2021**.
8. Ali SA, **Begum T,** Reza MF, Fadzil NAB, Mustafar F. sLORETA Source Localisation of vMMN in Dyslexic Children During Malay Orthographical Lexicon Stimulations. MJMS, **2020**, 27(5), 36-42. https://doi.org/10.21315/mjms2020.27.5.4 (IF:0.17, Q3)
9. Ali SA, **Begum T,** Reza MF, Fadzil NAB, Mustafar F. Assessment of P300 ERP Component, Cortical Scalp Mapping and Correlation with Age in Dyslexic Children Using True and Pseudo Words in Malay Language. Mal J Med Health Sci 2020, 16(4): 244-251.
10. Ali SA, **Begum T**, Reza MF, Fadzil NAB, Mustafar F. Post-Attentive Integration and Topographic Map Distribution during Audio-Visual Processing in Dyslexia: A P300 Event-Related Component Analysis. Malays J Med Sci. **2020** Jul; 27(4): 130–138. doi: 10.21315/mjms2020.27.4.12. IF: 0.92, Q3.
11. Reza F & **Begum T**. Mild cognitive impairment in mild brain injury (MBI) patients: An event related potential (ERP) and neuropsychology study. Bangladesh Journal of Medical Science. **2019**; 18(3): 557-566. https://doi.org/10.3329/bjms.v18i3.41626 (IF: 0.17, Q3).
12. RA Hasan**,** F Reza, **T Begum.** Gender Influences on Colour processing: An event related potential (ERP) study. Bangladesh Journal of Medical Sciences. **2018;** 17 (4): 612-618. DOI: 10.3329/bjms.v17i4.38324 (IF:0.17, Q3)
13. SA Ali, **T Begum,** F Reza, Wan Rosli WR, Wan or Azlen WM. Neuro Cognitive Improvement during Pregnancy: an Event Related Potential (ERP) and neuropsychology study. iMedPub Journals: Journal of Neurology and Neuroscience. **2018**; 9 (2:254), 1-8. DOI: 10.21767/2171-6625.1000254
14. Samsuri N, Reza F, **Begum T**, Yusoff N, Idris B, Omar H, Isa SM. Application of EEG/ERP and Eye Tracking in Underlying Mechanism of Visual Attention of Auto Dealer's Advertisement – A Neuromarketing Research. International Journal of Engineering & Technology. 2018; 7(3.22): 14 (pp 5-9). DOI: 10.14419/ijet.v7i3.22.17115
15. Shan TY, Reza F, **Begum T**, Yusoff N. Neural Processing of Other-Race Faces as a Function of Racial Familiarity: A P300 Study. International Journal of Engineering & Technology. **2018**; 7(3.22):21-26. DOI: 10.14419/ijet.v7i3.22.17116
16. Al-Marri F, Reza F, **Begum T**, Hitam WHW, Jin GK, Xiang J. Neural activation patterns and connectivity in visual attention during Number and Non-number processing: An ERP study using the Ishihara pseudoisochromatic plates. J Integr Neurosci. **2017**;10.3233/JIN-170058. doi:10.3233/JIN-170058

17. Begum FA, **Begum T**, Reza F. Hand Dominance and WAIS-R Block Design Performance. Journal of Advances in Medical and Pharmaceutical Sciences. 2017;12(2):1-5. https://doi.org/10.9734/JAMPS/2017/31420
18. Samsuri N, Reza F, **Begum T**, Yusoff N, Idris B, Omar H, Isa SM. Visualization of Cognitive Response and Gaze Behavior to the Display Design of Vertex Reared and Vertex Frontal View from Auto Dealer's Advertisement, Asian Journal of Science and Technology. **2016**;7(5): 3006-3014. http://www.journalajst.com
19. Samsuri N, **Begum T**, Reza F, Omar H, Yusoff N, Idris B, Isa SM. Left Lateral Singular (LLS) view enhances attention at stimulus discrimination during Automobile display setting revealed by EEG/ERP and Eye Tracking Technique. International Journal of Enhanced Research in Science, Technology and Engineering. **2016**;5(5):101-109.
20. Hasan RA, Reza F and **Begum T**. Education Level is Associated with Specific N200 and P300 Profiles Reflecting Higher Cognitive Functioning. Journal of Advances in Medical and Pharmaceutical Sciences. **2016**;10(4): 1-12. DOI: 10.9734/JAMPS/2016/29783.
21. Hassan AB, Yusoff N, **Begum T**, Reza MF. How Much we think of ourselves and how little we think of others: An investigation of neuronal signature of self-consciousness between different personality traits through an event-related potential study. Malays J Med Sci. **2016;** 23(6): 70–82. doi: 10.21315/mjms2016.23.6.8
22. **Begum T**, Reza F, Rosli WRW and Mohamad WNAW. Mild auditory cognitive impairment in mid trimester pregnancy. Merit Res. J. Med. Med. Sci. **2016**; 4(5): 260-265.
23. Yusoff N, Adamu AA, **Begum T**, Reza F. Amplitude and Latency of P300 Component from Auditory Stimulus in Different Types of Personality: An Event Related Potential Study. International Journal of Medical, Health, Biomedical, Bioengineering and Pharmaceutical Engineering. **2016;** 10(4):165-170. http://doi.org/10.5281/zenodo.1123745.
24. MA Jatoi, N Kamel, AS Malik, I Faye, JM Bornot, **T Begum**. EEG-based brain source localization using visual stimuli. International Journal of Imaging Systems and Technology. **2016**; 26 (1):55-64. https://doi.org/10.1002/ima.22157
25. **T Begum,** F Reza, I Ahmed, JM Abdullah. Influence of education level on design-induced N170 and P300 components of event related potentials in the human brain. Journal of Integrative Neuroscience. 2014; 13 (1): 1–18. https://doi.org/10.1142/S0219635214500058
26. MA Jatoi, N Kamel, AS Malik, I Faye, **T Begum.** A survey of methods used for source localization using EEG signals. Biomedical Signal Processing and Control. **2014**; 11: 42-52. https://doi.org/10.1016/j.bspc.2014.01.009.
27. Yoshimura Y, Inaba M, Yamada K, Kurotani T, **Begum T**, Reza F, Maruyama T and Komatsu Y. Involvement of T-type Ca (2+) channels in the potentiation of synaptic and visual responses during the critical period in rat visual cortex. Eur J Neurosci. **2008** Jul 24. https://doi.org/10.1111/j.1460-9568.2008.06384.x.
28. R. Enatsu, N. Mikuni, K. Usui, J. Matsubayashi, J. Taki, **T. Begum**, R. Matsumoto, A. Ikeda, T. Nagamine, H. Fukuyama and N. Hashimoto. Usefulness of MEG magnetometer for spike detection in patients with mesial temporal epileptic focus. NeuroImage. **2008** July; 41(4):1206-1219. https://doi.org/10.1016/j.neuroimage.2008.03.038**.**
29. Inagaki, T., **Begum, T.**, Reza, F.M., Horibe, S., Inaba, M., Yoshimura, Y., Komatsu, Y. Brain-derived neurotrophic factor-mediated retrograde signaling required for the induction of long-term potentiation at inhibitory synapses of visual cortical pyramidal neurons. Neuroscience Research 61 (**2008**) 192-200. https://doi.org/10.1016/j.neures.2008.02.006.
30. Kinoshita M, Ikeda A, **Begum T,** Terada K, Shibasaki H. Efficacy of low-dose, add-on therapy of clobazam (CLB) is produced by its major metabolite, N-desmethyl-CLB. J Neurol Sci. **2007** Dec 15;263(1-2):44-8. https://doi.org/10.1016/j.jns.2007.05.025**.**

31. **Begum T**, Ikeda A, Yoshioka A, Sawada H, Fukuyama H, Shibasaki H. Rapid recovery from coma with multifocal PLEDs in a patient with severe dementia and transient hypoxemia. Intern Med. 2006 Aug; 45(13):823-26. 11. https://doi.org/10.2169/internalmedicine.45.1625.
32. **Begum T,** Ikeda A, Takahashi J, Tomimoto H, Shimohama S, Satow T, Nagamine T, Fukuyama H and Shibasaki H. Clinical outcome of patients with SREDA (subclinical rhythmic EEG discharge of adults). Intern Med. 2006 Mar; 45(3):141-4. https://doi.org/10.2169/internalmedicine.45.1479.
33. Ueki Y, Mima T, Ali Kotb M, Sawada H, Saiki H, Ikeda A, **Begum T,** Reza F, Nagamine T, Fukuyama H. Altered plasticity of the human motor cortex in Parkinson's disease. Ann Neurol. 2005 Oct 20; 59(1):60-71. https://doi.org/10.1002/ana.20692.
34. **Begum T**, Mima T, Oga T, Hara H, Satow T, Ikeda A, Nagamine T, Fukuyama H, Shibasaki H. Cortical mechanisms of unilateral voluntary motor inhibition in humans. Neurosci Res. 2005 Dec; 53(4):428-35. https://doi.org/10.1016/j.neures.2005.09.002.
35. Kinoshita M, Ikeda A, **Begum T,** Yamamoto J, Hitomi T, Shibasaki H. Low-frequency repetitive transcranial magnetic stimulation for seizure suppression in patients with extratemporal lobe epilepsy-A pilot study. Seizure. 2005 Sep;14(6):387-92. DOI: 10.1016/j.seizure.2005.05.002.
36. Kinoshita M, Ikeda A, Matsuhashi M, Matsumoto R, Hitomi T, **Begum T**, Usui K, Takayama M, Mikuni N, Miyamoto S, Hashimoto N, Shibasaki H. Electric cortical stimulation suppresses epileptic and background activities in neocortical epilepsy and mesial temporal lobe epilepsy. Clin Neurophysiol. 2005 Jun; 116(6):1291-9. https://doi.org/10.1016/j.clinph.2005.02.010.
37. Chen WH, Mima T, Siebner HR, Oga T, Hara H, Satow T, **Begum T**, Nagamine T, Shibasaki H. Low-frequency rTMS over lateral premotor cortex induces lasting changes in regional activation and functional coupling of cortical motor areas. Clin Neurophysiol. 2003 Sep; 114(9):1628-37. https://doi.org/10.1016/S1388-2457(03)00063-4.

Proceedings/conference presentations/ working papers

1. Zaidil NN, **Begum T**, Rauf RA, Ying JH, Al-Marri F, Reza F. Syntactic Language Processing among Women - An EEG/ERP Study of Visual Pictorial Stimuli. IEEE-EMBS Conference on Biomedical Engineering and Sciences (IECBES), Sarawak, Malaysia. **2018.** 520-522, doi: 10.1109/IECBES.2018.8626694.
2. Samsuri N, Reza F, **Begum T**, Yusoff N, Idris B, Omar H and Isa SM. Electrophysiological Quantification of Underlying Mechanism of Decision Making From Auto Dealers Advertisement – A Neuromarketing Research. AIP Conference Proceedings. **2016;** 1782: 040017. https://doi.org/10.1063/1.4966084
3. Jatoi MA, Kamel N, Malik AS, Faye I, **Begum T**. Representing EEG Source Localization Using Finite Element Method. IEEE-ICCSCE **2013**, Penang, Malaysia.
4. **T. Begum**, F. Reza, A.L. Ahmed. S. Elaina, M.C.L. Hanif, H. Omar, J. M. Abdullah, F.A Begum. Neural Stimulants to N170 Event Related Potential (ERP) Component of Hijab Covered Faces: An ERP Study. IEEE-EMBS International Conference on Biomedical Engineering and Sciences proceeding, **2012**, 642-646. 10.1109/IECBES.2012.6498062
5. F. Reza, K. Ikoma, **T. Begum**, M. C. L. Hanif, M. B. H. Hafiz, J. M. Abdullah. Bioelectrical and biomechanical signal monitoring from an intrinsic muscle of hand during pinch grip revisited. The 6th International Conference on Bioinformatics and Biomedical Engineering (iCBBE **2012**) proceeding, IEEE, Vol. 3, 817 – 820.
6. **T. Begum**, F. Reza, M.C.L. Hanif, M. Akbari, J. M. Abdullah. Theta oscillation in relation with education: a Wavelet Transform (WT) study. The 6th International Conference on Bioinformatics and Biomedical Engineering (iCBBE **2012**) proceeding, IEEE, Vol. 3, 706 – 709. http://www.icbbe.org
7. **T. Begum**, F. Reza, A. L. Ahmed, S. Elaina, J. M. Abdullah. Analysis of event-related alpha oscillations in auditory P300 by wavelet transform (WT) method. Proceeding for 11th International conference on Hybrid Intelligent System, **2011,** 162-166. DOI: 10.1109/HIS.2011.6122098
8. F. Reza, **T. Begum,** M.U. Ilmie, M. C. L. Hanif, J. Zhang, J. M. Abdullah. Simulation study of the effect of Mitragyna speciosa on Hybrid current in rat Hippocampus CA3 Pyramidal Neuron.

Proceeding for 11th International conference on Hybrid Intelligent System, **2011,** 301-305. DOI: 10.1109/HIS.2011.6122122

9. **T. Begum**, F. Reza, A. L. Ahmed, S. Elaina, J. M. Abdullah. Delta signal in high educational level in auditory oddball paradigm-a Wavelet study. Proceeding for 4th International Congress on Image and Signal Processing, **2011,** 2756-2759. DOI: 10.1109/CISP.2011.6100749
10. F. Reza, **T. Begum**, Z. Idris, A. R. I. Ghani, S. Bhaskar, T. Y. Chin, J. Tharakan, J. M. Abdullah. Root Mean Square (RMS) of Neuronal Discharge During Functional Neurosurgery. Proceeding for 4th International Congress on Image and Signal Processing, **2011**, 2192-2195. DOI: 10.1109/CISP.2011.6100613
11. **T. Begum,** F. Reza, H. Omar, A. L. Ahmed, S. Bhaskar, J. M. Abdullah, J. Tharakan K.J. Periodic lateralized epileptiform discharges (PLEDs) in post-traumatic epileptic patient—Magnetoencephalographic (MEG) study. IFMBE Proceeding, 35. Page 548-551, Biomed **2011.** DOI: 10.1007/978-3-642-21729-6_137
12. F. Reza, H. Omar, A. L. Ahmed, **T. Begum**, M. Muzaimi, J. M. Abdullah. Brain waves after short duration exercise induced by miswak- wooden tooth brush as a physical agent – a pilot study. IFMBE Proceeding, 35. Page 480-483, Biomed **2011**. ISI. https://doi.org/10.1007/978-3-642-21729-6_121