CURRICULUM VITAE

MD MAMUN AL-AMIN
12436 Turkel Pl, Fishers, IN-46038, mdalamin@iu.edu

EDUCATION:

GRADUATE

The University of Queensland, Australia	Ph.D.	8/2019
Ludwig-Maximilian University, Germany	M.Sc.	12/2012
Jahangirnagar University, Bangladesh	M.S.	6/2008

UNDERGRADUATE

Jahangirnagar University, Bangladesh	Bachelor	12/2004

APPOINTMENTS:

ACADEMIC

Indiana University School of Medicine	Postdoctoral Fellow	1/2026 – to date
Indiana University School of Medicine	Postdoctoral Fellow	9/2019 – 12/2025
North South University, Bangladesh	Lecturer	1/2013 – 6/2015
Northern University, Bangladesh	Lecturer	1/2005 – 12/2005

NON-ACADEMIC

The University of Queensland	Research Officer	1/2019 – 6/2019
General Pharmaceuticals Ltd, Bangladesh	Product Manager	1/2006 – 9/2010

LICENSURE, CERTIFICATION, SPECIALTY BOARD STATUS

Pharmacist (Pharmacy council of Bangladesh)	A-3988	2015 – to date

PROFESSIONAL ORGANIZATION MEMBERSHIPS:

Society for Neuroscience, USA	2018 – to date
Elite network of Bavaria, Germany	2010 – to date

PROFESSIONAL HONORS AND AWARDS:

RESEARCH

T32 Postdoctoral Fellowship	IUSM and National institute of aging	7/2022 – 6/2024

OTHER

Career development framework scholarship	The University of Queensland	1/2019 – 6/2019
Undergraduate and graduate scholarships	Jahangirnagar University	2/2000 – 6/2004

PROFESSIONAL DEVELOPMENT:

Course/Workshop Title	Provider	Date

JAX Center for Alzheimer's & Dementia Research Workshop	Jackson Laboratory. Bar Harbor, ME	8/29/2022 to 9/1/2022

TEACHING:

TEACHING ASSIGNMENTS:

UNDERGRADUATE

Course #	Course Title	Format	Role	Term
PHR111	Communication & Computer Application in Pharmaceutical Sciences	3 hours per week (3 Credits)	Lecturer, NSU*	2013-2015
PHR112	Statistics in Pharmaceutical Sciences	1.5 hour per week (2 Credits)	Lecturer	2013-2015
PHR211	Human Physiology	3 hours per week (3 Credits)	Lecturer	2013-2015
PHR320	Medicinal Chemistry and Drug discovery	3 hours per week (3 Credits)	Lecturer	2013-2015
PHR421	Pharmaceutical Marketing and Management	3 hours per week (3 Credits)	Lecturer	2013-2015

*NSU= North South University, Dhaka, Bangladesh

MENTORING

Sam Patrick Walsh	Technician, IUSM	7/2023 – 7/2025
https://www.linkedin.com/in/sam-walsh-5850b4303/		
Noah Radtke Kishimoto	Summer Research Mentor, IUSM	5/2023 – 7/2023
Mehreen Zakaria	Summer Research Mentor, IUSM	5/2023 – 9/2023
https://www.linkedin.com/in/mehreen-zakaria/		
Ashfique Rizwan	Master's Research Mentor, JU**	1/2013 – 5/2015
https://ed.buffalo.edu/about/directory/students.host.html/content/shared/ed/doctoral-students/counseling-psych/ashfique.detail.html		
https://www.linkedin.com/in/ashfique-rizwan-13445429/		
Hasan Mahmud Saadi	Research Mentor, NSU	1/2014 – 6/2014
Samiha Akhter	Research Mentor, NSU	1/2014 – 6/2014
Tanzir Alam	Research Mentor, NSU	7/2013 – 6/2014
https://www.linkedin.com/in/tanzir-alam-67b90279/?originalSubdomain=ca		
SM Nageeb Hasan	Research Mentor, NSU	7/2013 – 6/2014
https://www.linkedin.com/in/sm-nageeb-hasan-620a8980/?originalSubdomain=ca		
Ahmed Tasdid Hasan	Research Mentor, NSU	7/2013 – 6/2014
https://www.linkedin.com/in/ahmed-tasdid-hasan-5b621b7b/?originalSubdomain=bd		
Waich Mahmud	Research Mentor, NSU	7/2014 – 6/2015
Musrura Mefta Alam	Research Mentor, NSU	7/2014 – 6/2015
https://www.linkedin.com/in/musrura-mefta-alam-889b5a365/		
Nadia Kabir	Research Mentor	7/2014 – 6/2015

**JU= Jahangirnagar University, Dhaka, Bangladesh

CREATIVE ACTIVITY:

GRANTS IN RESEARCH:

COMPLETED RESEARCH GRANTS/FELLOWSHIPS

Title	Granting Agency	Role	%Effort	Amount	Dates
Effect of mir-33 gene deletion on myelination and neurite density in an amyloid mouse model	Pre-Clinical Neuroimaging Pilot, Stark Neuroscience Research Institute	Co-investigator	80%	$10,000	7/2021 to 6/2022

INVITED PRESENTATIONS – RESEARCH

Title	Organization	Date
Apolipoprotein e4 increases white matter impairment in the 5xFAD mouse model of Alzheimer's disease	Neuroimaging Core, Stark Neuroscience Research Institute, IUSM	8/8/2024

TECHNIQUE DEVELOPED/IMPLEMENTED IN RESEARCH:

- Behavioral phenotyping
    a) Implemented a novel spatial memory testing system at the Stark Neurosciences Research Institute, enhancing the precision and reliability of behavioral assessments in preclinical models
- Immunohistochemistry image analysis
    a) Established a semi-automated pipeline for immunohistochemistry image analysis utilizing advanced machine learning techniques, significantly improving the accuracy and throughput of tissue quantification
    b) Introduced computational automation to replace manual image analysis, thereby increasing efficiency and reducing observer bias.
- MRI (Magnetic resonance mage) data analysis
    a) Applied convolutional neural networks to automatically segment and extract brain tissue from magnetic resonance images, streamlining the image processing workflow.
    b) Developed distinct analytical pipelines for structural MRI, diffusion imaging, and neurite orientation, dispersion, and density index (NODDI) analyses, facilitating comprehensive and high-resolution neuroimaging studies.

PUBLICATIONS:

POSTDOC

1) **Al-Amin, M. M.,** Kim, B., Karahan, H., Tate, M. D., Walsh, S. P., Puntambekar, S. S., ... & Kim, J. (2025). Apolipoprotein ε4 exacerbates white matter impairment in a mouse model of Aβ amyloidosis by decreasing actively myelinating oligodendrocytes. Alzheimer's & dementia: the journal of the Alzheimer's Association, 21(10), e70791.
2) Kim, B., Dabin, L. C., Tate, M. D., Karahan, H., Sharify, A. D., Acri, D. J., **Al-Amin, M. M.,** Philtjens, S., Smith, D. C., Wijeratne, H. R. S., Park, J. H., Jucker, M., & Kim, J. (2024). Effects of SPI1-mediated transcriptome remodeling on Alzheimer's disease-related phenotypes in mouse models of Aβ amyloidosis. Nat Commun, 15(1), 3996. https://doi.org/10.1038/s41467-024-48484-x

3) Quddus, A.H.M.R., Pervin M.S., Zinchenko A., **Al-Amin, M. M.,** (2024). Investigating the role of structural connectivity in the individuals with moderate hearing loss. Brain disorders. 16, 100165. https://doi.org/10.1016/j.dscb.2024.100165
4) Cadiz, M. P., Gibson, K. A., Todd, K. T., Nascari, D. G., Massa, N., Lilley, M. T., Olney, K. C., **Al-Amin, M. M.,** Jiang, H., Holtzman, D. M., & Fryer, J. D. (2024). Aducanumab anti-amyloid immunotherapy induces sustained microglial and immune alterations. J Exp Med, 221(2). https://doi.org/10.1084/jem.20231363
5) Li, W., **Al-Amin, M. M.,** & Nair, A. (2023). Editorial: New insights into the disorder of brain connectivity in schizophrenia. Front Neuroimaging, 2, 1266695. https://doi.org/10.3389/fnimg.2023.1266695
6) Karahan, H., Smith, D. C., Kim, B., McCord, B., Mantor, J., John, S. K., **Al-Amin, M. M.,** Dabin, L. C., & Kim, J. (2023). The effect of Abi3 locus deletion on the progression of Alzheimer's disease-related pathologies. Front Immunol, 14, 1102530. https://doi.org/10.3389/fimmu.2023.1102530
7) Smith, D. C., Karahan, H., Wijeratne, H. R. S., **Al-Amin, M.,** McCord, B., Moon, Y., & Kim, J. (2022). Deletion of the Alzheimer's disease risk gene Abi3 locus results in obesity and systemic metabolic disruption in mice. Frontiers in aging neuroscience, 14, 1035572. https://doi.org/10.3389/fnagi.2022.1035572
8) Karahan, H., Smith, D. C., Kim, B., Dabin, L. C., **Al-Amin, M. M.,** Wijeratne, H. R. S., Pennington, T., Viana di Prisco, G., McCord, B., Lin, P. B., Li, Y., Peng, J., Oblak, A. L., Chu, S., Atwood, B. K., & Kim, J. (2021). Deletion of Abi3 gene locus exacerbates neuropathological features of Alzheimer's disease in a mouse model of Aβ amyloidosis. Sci Adv, 7(45), eabe3954. https://doi.org/10.1126/sciadv.abe3954

PhD study in Australia

1) **Al-Amin, M. M.,** Sullivan, R. K. P., Alexander, S., Carter, D. A., Bradford, D., & Burne, T. H. J. (2022). Impaired spatial memory in adult vitamin D deficient BALB/c mice is associated with reductions in spine density, nitric oxide, and neural nitric oxide synthase in the hippocampus. AIMS Neurosci, 9(1), 31-56. https://doi.org/10.3934/Neuroscience.2022004
2) **Al-Amin, M.M.,** Bradford, D., Sullivan, R. K. P., Kurniawan, N. D., Moon, Y., Han, S. H., Zalesky, A., & Burne, T. H. J. (2019). Vitamin D deficiency is associated with reduced hippocampal volume and disrupted structural connectivity in patients with mild cognitive impairment. Hum Brain Mapp, 40(2), 394-406. https://doi.org/10.1002/hbm.24380
3) **Al-Amin, M. M.,** Sullivan, R. K. P., Kurniawan, N. D., & Burne, T. H. J. (2019). Adult vitamin D deficiency disrupts hippocampal-dependent learning and structural brain connectivity in BALB/c mice. Brain Struct Funct, 224(3), 1315-1329. https://doi.org/10.1007/s00429-019-01840-w
4) Jaeschke, K. N., Blackmore, D. G., Groves, N. J., **Al-Amin, M. M.,** Alexander, S., & Burne, T. H. J. (2019). Vitamin D Levels Are Not Associated with Hippocampal-Dependent Learning in Young Adult Male C57BL/6J Mice: A Negative Report. Journal of Psychiatry and Brain Science, 4(2), e190008, Article e190008. https://doi.org/10.20900/jpbs.20190008
5) **Al-Amin, M.M.,** Sullivan, R., Jaeschke, K., & Burne, T. (2017). Impact of combined adult vitamin D deficiency and second-hit exposures on brain function. CABI Reviews, 1–16. https://doi.org/10.1079/pavsnnr201712040
6) Zinchenko, A., **Al-Amin, M. M.,** Alam, M. M., Mahmud, W., Kabir, N., Reza, H. M., & Burne T. H. J. (2017). Content specificity of attentional bias to threat in post-traumatic stress disorder. J Anxiety Disord, 50, 33-39. https://doi.org/10.1016/j.janxdis.2017.05.006

7) Zinchenko, A., Mahmud, W., Alam, M. M., Kabir, N., & **Al-Amin, M. M.** (2016). Picture Novelty Influences Response Selection and Inhibition: The Role of the In-Group Bias and Task-Difficulty. PLoS One, 11(10), e0165470. https://doi.org/10.1371/journal.pone.0165470

Teaching at North South University, Bangladesh

1) **Al-Amin, M. M.,** Mahmud, W., Pervin, M. S., Ridwanul Islam, S. M., Ashikur Rahman, M., & Zinchenko, A. (2019). Astaxanthin ameliorates scopolamine-induced spatial memory deficit via reduced cortical-striato-hippocampal oxidative stress. Brain Res, 1710, 74-81. https://doi.org/10.1016/j.brainres.2018.12.014
2) **Al-Amin, M. M.,** Chowdury, M. I. A., Saifullah, A. R. M., Alam, M. N., Jain, P., Hossain, M., Alam, M. A., Kazi, M., Ahmad, A., Raish, M., Alqahtani, A., & Reza, H. M. (2019). Levocarnitine Improves AlCl(3)-Induced Spatial Working Memory Impairment in Swiss albino Mice. Front Neurosci, 13, 278. https://doi.org/10.3389/fnins.2019.00278
3) **Al-Amin, M. M.,** Choudhury, M. F. R., Chowdhury, A. S., Chowdhury, T. R., Jain, P., Kazi, M., Alkholief, M., Alshehri, S. M., & Reza, H. M. (2018). Pretreatment With Risperidone Ameliorates Systemic LPS-Induced Oxidative Stress in the Cortex and Hippocampus. Front Neurosci, 12, 384. https://doi.org/10.3389/fnins.2018.00384
4) Rizwan, A., Zinchenko, A., Özdem, C., Rana, M. S., & **Al-Amin, M. M.** (2017). The effect of black tea on human cognitive performance in a cognitive test battery. Clinical Phytoscience, 3(1), 13. https://doi.org/10.1186/s40816-017-0049-4
5) **Al-Amin, M.M.,** Alam, T., Hasan, S. M., Hasan, A. T., & Quddus, A. H. (2016). Prenatal maternal lipopolysaccharide administration leads to age- and region-specific oxidative stress in the early developmental stage in offspring. Neuroscience, 318, 84-93. https://doi.org/10.1016/j.neuroscience.2016.01.002
6) **Al-Amin, M. M.,** Sultana, R., Sultana, S., Rahman, M. M., & Reza, H. M. (2016). Astaxanthin ameliorates prenatal LPS-exposed behavioral deficits and oxidative stress in adult offspring. BMC Neurosci, 17, 11. https://doi.org/10.1186/s12868-016-0245-z
7) **Al-Amin, M. M.,** Reza, H. M., Saadi, H. M., Mahmud, W., Ibrahim, A. A., Alam, M. M., Kabir, N., Saifullah, A. R., Tropa, S. T., & Quddus, A. H. (2016). Astaxanthin ameliorates aluminum chloride-induced spatial memory impairment and neuronal oxidative stress in mice. Eur J Pharmacol, 777, 60-69. https://doi.org/10.1016/j.ejphar.2016.02.062
8) Zannat, R., Nasir, U. M. M., Atiar, R. M., Jannatul, A., & and **Al Amin, M. M.** (2016). Antihistamines considerably modulate the cognitive and psychomotor performance of human volunteers. Cogent Psychology, 3(1), 1216242. https://doi.org/10.1080/23311908.2016.1216242
9) **Al-Amin, M.M.,** Akhter, S., Hasan, A. T., Alam, T., Nageeb Hasan, S. M., Saifullah, A. R., & Shohel, M. (2015). The antioxidant effect of astaxanthin is higher in young mice than aged: a region-specific study on brain. Metab Brain Dis, 30(5), 1237-1246. https://doi.org/10.1007/s11011-015-9699-4
10) Das, B. K., **Al-Amin, M. M.,** Chowdhury, N. N., Majumder, M. F., Uddin, M. N., & Pavel, M. A. (2015). Analgesic, anti-inflammatory, and anti-oxidant activities of Phlogacanthus thyrsiflorus leaves. J Basic Clin Physiol Pharmacol, 26(2), 153-159. https://doi.org/10.1515/jbcpp-2013-0164
11) **Al-Amin, M. M.,** Rahman, M. M., Khan, F. R., Zaman, F., & Mahmud Reza, H. (2015). Astaxanthin improves behavioral disorder and oxidative stress in prenatal valproic acid-induced mice model of autism. Behav Brain Res, 286, 112-121. https://doi.org/10.1016/j.bbr.2015.02.041
12) **Al-Amin, M. M.,** Hasan, S. M., Alam, T., Hasan, A. T., Hossain, I., Didar, R. R., Alam, M. A., & Rahman, M. M. (2014). Tadalafil enhances working memory, and reduces

hippocampal oxidative stress in both young and aged mice. Eur J Pharmacol, 745, 84-90. https://doi.org/10.1016/j.ejphar.2014.10.026

13) Das, B. K., **Al-Amin, M. M.,** Russel, S. M., Kabir, S., Bhattacherjee, R., & Hannan, J. M. (2014). Phytochemical Screening and Evaluation of Analgesic Activity of Oroxylum indicum. Indian J Pharm Sci, 76(6), 571-575.
14) Shohel, M., Rahman, M. M., Zaman, A., Uddin, M. M., **Al-Amin, M. M.,** & Reza, H. M. (2014). A systematic review of effectiveness and safety of different regimens of levonorgestrel oral tablets for emergency contraception. BMC Womens Health, 14, 54. https://doi.org/10.1186/1472-6874-14-54
15) Wykowska, A., Chellali, R., **Al-Amin, M. M**., & Müller, H. J. (2014). Implications of robot actions for human perception. How do we represent actions of the observed robots? International Journal of Social Robotics, 6, 357-366.
16) Ali Adnan, M. S., **Al-Amin, M. M.,** Nasir Uddin, M. M., Shohel, M., Bhattacharjee, R., Hannan, J. M., & Das, B. K. (2014). Analgesic, anti-inflammatory, and antipyretic effects of Ixora coccinea. J Basic Clin Physiol Pharmacol. https://doi.org/10.1515/jbcpp-2013-0125
17) **Al-Amin, M. M.,** & Reza, H. M. (2014). Neuroinflammation: Contemporary anti-inflammatory treatment approaches. Neurosciences (Riyadh), 19(2), 87-92.
18) **Al-Amin, M. M.,** Uddin, M. M., Rahman, M. M., Reza, H. M., & Rana, M. S. (2013). Effect of diclofenac and antidepressants on the inflammatory response in astrocyte cell culture. Inflammopharmacology, 21(6), 421-425. https://doi.org/10.1007/s10787-013-0181-9
19) **Al-Amin, M. M.,** Nasir Uddin, M. M., & Mahmud Reza, H. (2013). Effects of antipsychotics on the inflammatory response system of patients with schizophrenia in peripheral blood mononuclear cell cultures. Clin Psychopharmacol Neurosci, 11(3), 144-151. https://doi.org/10.9758/cpn.2013.11.3.144

Master's Study in Germany

1) Wykowska, A., Chellali, R., **Al-Amin, M. M.,** & Müller, H. J. (2012). Does observing artificial robotic systems influence human perceptual processing in the same way as observing humans? Social Robotics: 4th International Conference, ICSR 2012, Chengdu, China, October 29-31, 2012. Proceedings 4,
2) **Al-Amin, M. M.,** Rana, A. Z. M. S., Uddin, M. M. N., & Pervin, M. S. (2012). Study on polypharmacy in patients with cardiovascular diseases. Journal of Applied Pharmaceutical Science, 2(12), 053-060.

MANUSCRIPT UNDER REVIEW:

1) **Md Mamun Al-Amin**, Byungwook Kim, Hande Karahan, Mason D. Tate, Sam P. Walsh, Shweta S. Puntambekar, Stephanie J. Bissel, Bruce T. Lamb, Nian Wang, Jungsu Kim. Apolipoprotein ε4 exacerbates white matter impairment in a mouse model of Aβ amyloidosis by decreasing actively myelinating oligodendrocytes, Submitted to Alzheimer's & Dementia

MANUSCRIPT UNDER PREPARATION:

1) **Md Mamun Al-Amin**, Byungwook Kim, Hande Karahan, Mason D. Tate, Jungsu Kim. Structural changes underlie memory deficits in an APP^{NL-G-F} Knock-in mouse model of Alzheimer's disease. To be submitted to Brain
2) **Md Mamun Al-Amin**, Mason D. Tate, Sagara Wijeratne, Byungwook Kim, Hande Karahan, Carlos Fernandez-Hernando, Nian Wang, Jungsu Kim. MiR-33 deletion impairs myelination and cognitive function in mice. To be submitted to Advanced Science

3) **Md Mamun Al-Amin**, Byungwook Kim, Sam P. Walsh, Luke C. Dabin, Hande Karahan, Jungsu Kim. Amyloidosis aggravates tau-associated disruption of structural connectivity in a combined amyloid-tau mouse model of Alzheimer's disease. To be submitted to Alzheimer's & Dementia

2025-07-16

(Date)

(Signature)