

## Maisha Farzana Mouli

26 Marvin Dr, Apt#C7, Newark, Delaware, 19713

**Email:** mouli@udel.edu; **Phone:** (302)-407-8093

### RESEARCH INTERESTS

Science & Engineering Education, STEAM/STEM, Curriculum & Instruction, Educational Technology.

### EDUCATION

- **PhD in Learning Science** *Fall 2025 – Continued*  
University of Delaware, USA
- **M.Ed. in Educational Technology** *Spring 2023 – Spring 2025*  
University of Delaware, USA  
CGPA: 3.88/4.0
- **M.A. in TESOL** *Fall 2018 – Spring 2021*  
Brac University, Bangladesh  
CGPA: 3.35/4.0
- **B.A. in English Language and Literature** *Summer 2014 – Spring 2018*  
Northern University, Bangladesh  
CGPA: 3.75/4.0

### RESEARCH & TEACHING EXPERIENCES

- **Graduate Teaching Assistant** *August 2025-Continued*  
Education & Human Development, University of Delaware
  - *Activities*
    - Conduct (instructor on the record) undergraduate-level class (Class size - 25)
    - Preparing lectures and providing class-related materials.
    - Preparing quizzes and exams.
    - Grading.
- **Graduate Research Assistant** *May 2024 - Aug 2025*  
**Project:** SHARK—Student-focused Holistic Aquatic Robotics Kit. (**Federal Funded**)  
**Supervisor(s):**
  - **Dr. Gallo-Fox Jennifer**, Associate Professor  
Dept. of Human Development and Family Sciences, University of Delaware.

- **Dr. Tyler Van Buren**, Assistant Professor  
Mechanical Engineering Dept., University of Delaware.
- **Dr. Zoubeida R. Dagher**, Professor School of Education, University of Delaware.

**Project Objective:** Teaming with Spectral Energies and the Navy, we are developing a K-12 Bio-inspired soft Robotics Education Kit. This kit includes pre-designed builds to guide students through complex mechatronics, compliant materials, and programming of soft robotic swimmers inspired by biology.

- **Activities**

- Gather Information about the kit and check safety issues for the kids.
- Navigating how to involve the kit into K-12 education.
- Analyze the effectiveness of the education kit.
- Write Instructions on how to use the Kit.
- Develop curriculum & create Lesson Plans.
- Develop educational materials and videos on how to navigate the educational kit.
- Develop Research Design.
- In school observation & analyze student motivation.
- Conducting Research Piloting.

- **Graduate Research Assistant**

**Project:** CHARM Study -Opening up the STEM Pipeline through Teacher Education and Support

**Supervisor:**

- **Dr. Gallo-Fox Jennifer**, Associate Professor  
Dept. of Human Development and Family Sciences, University of Delaware.

*January 2025 – Aug  
2025*

**Project Objective:** The project is about undergraduate Early Child Education (ECE) major's engineering and science teaching development across sophomore early field experiences through senior year student teaching.

- **Activities**

- Collect qualitative data from the school and teachers.
- Interview with the teachers and student teachers.
- Having science walks with the teachers to collect data.
- Observe the classroom
- Transcribe, clean, and analyze the data.

- **Graduate Research Assistant**

**Project:** Nature Curriculum Study

**Supervisor:**

- **Dr. Gallo-Fox Jennifer**, Associate Professor  
Dept. of Human Development and Family Sciences, University of Delaware.

*January 2025 – Aug  
2025*

**Project Objective:** An in-depth multi-year study of a nature preschool curriculum to understand how an exemplary preschool teacher addressed NGSS science standards in a place-based context in developmentally appropriate ways.

- **Activities**

- Code, analyze and interpret year-long data.
- Manage the year-long data.

- **Graduate Research Assistant**

**May 2024 - Current**

**Project:** University of Delaware lab school historical archive.

**Supervisor:** Dr. Gallo-Fox Jennifer, Associate Professor

Dept. of Human Development and Family Sciences, University of Delaware.

**Project Objective:** This study aims to gather information on UD Lab School's technological advancement over the last 90 years and write about the CAPP (Computer Assisted Pre-school Project).

- **Activities**

- Analyze computational/technological learning in the 80s.
- Analyze computational curriculum plan in the 80s and compare it with today's world.
- Writing about the UD lab school's 80s CAPP project.
- Digitalizing the archived collection.
- Building & managing the database.
- Writing, Analyzing and proof reading of old curriculum materials.

- **Assistant Teacher**

**May 2024 – August 2024**

Early learning Center, University of Delaware

- **Activities**

- Teach and supervise the kids of Pre-K – Grade 2.
- Assist in developing, preparing, and implementing program.
- Assist with classroom management.
- Observes and documents children and provides feedback to teachers / parents / guardians.
- Participates in ELC staff meetings, in-service training, and parent/guardian conferences.
- Maintain materials and equipment for ELC.
- Assist in field research, pre-service experiences, and community collaboration.

- **Graduate Research Assistant**

**Jan 2024 – May 2024**

**Project:** Study on emotion and motivation in AI directed math classroom

**Supervisor:** Dr. Teomara Rutherford, Professor

Dept. of Education, Learning Science, University of Delaware

**Project Objective:** This study aims to determine how motivated and emotional the students are in the AI-directed math classroom.

- **Activities**

- Conducting class observations in three different schools.
- Interacting with the students and teachers to introduce our study.
- Preparation of the drawing of the classroom before study.
- Taking Important notes about lecture delivery, technology used, teaching methods.
- Performing *Baker Rodrigo Ocumpaugh Monitoring Protocol* (BROMP) coding
- Collecting teachers' notes during the class.
- Observing classroom activities.
- Entering, sorting, and analyzing students' qualitative data.

- **Assistant Teacher**

*Feb 2022 – Dec 2022*

Jahan International School, Dhaka, Bangladesh

- **Activities**

- Taught various subjects including English language, Literature, Social Science, Writing and Public speaking to Grade 6 – 10 students.
- Constructed lesson plans and assessments.
- Provide evaluation and feedback on students' progress
- Prepared online learning materials
- Conducting workshops on making lesson plans and using technology in class

- **Assistant Teacher**

*May 2021 – Jan 2022*

South Point School & College, Dhaka, Bangladesh

- **Activities**

- Taught various subjects including English, Basic Science & Math, public speaking, general knowledge, and Social Studies to grade 1 – 5 students.
- Constructed lesson plans and assessments.
- Provide evaluation and feedback on students' progress
- Conducting Parent-Teacher meeting

- **Student Research (M.A. Final Semester Project)**

*Feb 2020 – Dec 2020*

**Project:** Online Teaching Challenges during the Covid-19 Pandemic in Bangladesh: An Insight from Teachers.

**Supervisor:** Kushal Das, Lecturer

Brac Institute of Language, Brac University, Bangladesh.

**Project Objective:** The purpose of this project is to document the challenges, effectiveness, and probable solutions to newly introduced online teaching at the school level in developing countries like Bangladesh during the COVID-19 pandemic.

- **Activities**

- Conducting literature reviews.
- Preparing questionnaire for interviews.
- Conducting teachers' interview. Conducted 10 individual interviews.
- Attending online classes for observation.
- Transcription of data from interviews.
- Collected qualitative data with closed-ended questions.
- Qualitative data analysis.

- **Undergraduate Research Student (B.A. Final Year Project)**

*Jan 2018 – May 2018*

**Project Name:** Gender Differences in learning English in Bangladeshi EFL (English as a Foreign Language) academic context.

**Supervisor:** Mohammad Obaidullah, Senior Lecturer

Dept. of English, Northern University, Bangladesh.

**Project Objective:** The project aims to determine the impact of gender differences in learning English in the Bangladeshi social context at school level.

- **Activities**

- Conducting class observation.
- Interacting with the students and teachers and introducing the study.
- Preparing Questionnaire.
- Conducting literature reviews.
- Using SPSS (Statistical package for the Social Studies) software.
- Quantitative data analysis, and data representation.

## TEACHING IN HIGHER EDUCATION

- Instructor, (Fall semester 2025). EDUC – 341010: Ambitious Science Teaching.
- Guest Lecturer, (15<sup>th</sup> October 2024). HDFS 221: Child Development: Ages 3-10. University of Delaware. Topic – Cognitive development in early childhood, Piaget's theories.
- Guest Lecturer, (12<sup>th</sup> November 2024). HDFS 222: Inclusive early Childhood curriculum & assessment: Birth-Grade 2. University of Delaware. Topic – Teaching science to young children.

## OTHER EXPERIENCES

- **Voluntary Research Assistant**

**Supervisor:** Dr. Teomara Rutherford, Professor

*Sept 2023 – Dec 2023*

Dept. of Education, Learning Science, University of Delaware

- **Activities**

- Learned Baker Rodrigo Ocumpaugh Monitoring Protocol (BROMP) coding.
- Entering, sorting, and analyzing students' qualitative data.
- Literature review of ongoing project/study.

## RESEARCH PUBLICATIONS

### Conference Proposal (Accepted)

[01] Gallo-Fox, J., Mykyta-Chomsky, R. & **Mouli, M.F.** (October 30, 2025). Preparing Early Childhood Preservice Educators in Nature-Based Field Placements The 22nd Annual North American Environmental Education Research Symposium (Virtual, Individual Live Session).

[02] Dagher, Z.R., Gallo-Fox, J., **Mouli, M.**, Vahdat Nia, F., & Van Buren, T.W. Designing research-based STEM frameworks for student-focused holistic aquatic robotics kits (SHARK) for children and adolescents. NARST roundtable Annual International Conference, March 23-26, 2025.

### Conference Proposal (Submitted)

[01] Dagher, Z., **Mouli, M.**, Gallo-Fox, J., Vahdat Nia, F. & VanBuren, T. (Submitted). Beyond Building: Teacher Discourse and the Development of Elementary Students' Epistemic Engineering Practices. Paper for *National Association for Research in Science Teaching* Annual International Conference, April 19-26, 2026, Seattle, WA.

[02] Niranjana, S., Gallo-Fox, J., **Mouli, M.** & Kouzeli, A. (Submitted). Engaging Two- and Three-year-olds in Science and Engineering: A Case-Study. Paper for *National Association for Research in Science Teaching* Annual International Conference, April 19-26, 2026, Seattle, WA.

[03] **Mouli, M.**, Niranjana, S., Gallo-Fox, J. & Kouzeli, A. (Submitted). *Splash, splash, squish, crack: Young children explore water concepts through play-based learning*. Paper for *National Association for Research in Science Teaching* Annual International Conference, April 19-26, 2026, Seattle, WA.

[04] Mykyta-Chomsky, R., Gallo-Fox, J. & **Mouli, M.** (Submitted). Early Childhood Preservice Educator Opportunities to Learn to Teach Science and Engineering During Undergraduate Field Placement Experiences. Paper for *National Association for Research in Science Teaching* Annual International Conference, April 19-26, 2026, Seattle, WA.

### Journal (Under Review):

[03] **Mouli, M.**, Gallo-Fox, J., UD Lab School CAPP Project: History of Technology.

[02] **Mouli, M.**, Gallo-Fox, J., Challenges of Using Technology Now and Then: A Comparative Analysis.

[01] **Mouli, M.**, Online Teaching Challenges during the Covid-19 Pandemic in Bangladesh: An Insight from Teachers.

## SKILLS

- **Research Skills** : Transcription, Interview, Participant Recruitment, Classroom Observation.
- **Software Skills** : Qualtrics, SPSS, BROMP, SPO.
- **Programming Skills** : Python (Intermediate User), HTML, JMP
- **Microsoft Skills** : Word, Excel, Power Point, Access, Spreadsheet.
- **Web Design Skills** : Google Site, Wix, Word press.

## HONORS & AWARDS

- Longwell-Grice Doctoral Student Support Award, University of Delaware. **2025 - 2029**
- University Merit Tuition Scholarship in MA Program, Brac University, Bangladesh. **2019 – 2021**

- University Merit Tuition Scholarship, Northern University, Bangladesh. **2015 – 2018**
- Education Board Scholarship (SSC), Jessore Board, Bangladesh. **2010 – 2011**
- Primary Scholarship, Jessore Board, Bangladesh. **2005**

## REFERENCES

- **Zoubeida R. Dagher**  
Professor  
School of Education, University of Delaware.  
*Email:* zoubeida@udel.edu  
*Phone:* 302-831-1667
- **Dr. Gallo-Fox Jennifer**  
Associate Professor  
Dept. of Human Development and Family Sciences, University of Delaware.  
*Email:* gallofox@udel.edu  
*Phone:* 302-831-7370
- **Dr. Fred Hofstetter**  
Professor  
School of Education, University of Delaware  
*Email:* fth@udel.edu  
*Phone:* 302-831-8164
- **Dr. Tyler Van Buren**  
Assistant Professor  
Mechanical Engineering Dept., University of Delaware.  
*Email:* vanburen@udel.edu  
*Phone:* 302-831-2421