



| EDUCATION

Doctor of Philosophy , Biochemistry - Florida International University, Miami, FL, USA, <i>GPA 3.83.</i>	2018-2022
Master of Science , Forensic and Investigative Sciences - Purdue University, IUPUI, Indianapolis, IN, USA, <i>Honors, GPA 3.87.</i>	2016-2018
Bachelor of Science , Medical Laboratory Sciences - Haigazian University, Beirut, Lebanon, <i>Cum Laude, GPA 3.34.</i>	2011-2015

| EXPERIENCE

Assistant Professor , Florida International University, Miami, FL - Teach and develop courses in forensics & biochemistry at the undergraduate and graduate levels. - Direct research in forensic genetics, epigenetics, and integrated forensic omics. - Mentor and supervise students in research, writing, and professional development. - Contribute to departmental and university services, and forensic science outreach.	2025- Present
Associate Director , The Center for Forensic Science Research and Education, Horsham, PA - Lead a team of forensic biologists to teach, mentor and do research. - Performed independent research and publish manuscripts. - Worked on grant development, submission, and reporting. - Built partnership with the industry, academia, and crime labs.	2023-2025
Adjunct Faculty , Thomas Jefferson University, Philadelphia, PA - Director of the Master of Science in Forensic Biology (MSFB) program. - Taught advanced Forensic Genetics courses- graduate level. - Mentored graduate students on thesis-based projects. - Recruited new students into the program.	2023- 2025
Application Trainer , Florida International University - Curated training materials on epigenetic modification and sequencing. - Trained field application scientists on pyrosequencing use and maintenance.	2021- 2022
Research Mentor , Florida International University - Coached students to perform research projects. - Supported projects troubleshooting and analysis. - Assisted undergraduate and masters' students in scientific writing. - Assisted in proposals writing, experimental designs & budgeting.	2020 -2022
Research Assistant , Florida International University - Developed biological assays for species ID, body fluid ID and microbiome. - Maintained and troubleshooting NGS and CE-related issues. - Designed primers and probes for Rapid Direct PCR & NGS. - Assisted in bioinformatic analysis for sequencing data.	2018 -2022

Teaching Assistant , Florida International University, FIU	2018-2021
<ul style="list-style-type: none"> - Taught undergraduate students and international young leaders the principles of Forensic Science and how they are applied to the analysis of evidence. - Taught general chemistry labs in hybrid mode. 	
Graduate Assistant , Purdue School of Science, IUPUI	2016-2018
<ul style="list-style-type: none"> - Taught Investigative Forensic Science Lab Courses that cover basic techniques used to analyze forensic evidence for undergraduate students. - Collected, extracted, and analyzed NGS and CE data. 	
Research Assistant , American University of Beirut Medical Center, AUBMC	2016
<ul style="list-style-type: none"> - Worked in the Pathology and Lab Medicine Department on "The Lebanese Bone Marrow Registry", Tests Validations and SOPs. - Worked on different projects: Zika Virus, HPC Genotyping, Cytokines Genotyping, Respiratory Pathogens Multiplexing. 	

| PUBLICATIONS

- Ghemrawi, M.**, Torres, A. R., Netherland Jr, M., Wang, Y., Hasan, N. A., El-Fahmawi, B., ... & McCord, B. (2025). Forensic insights from shotgun metagenomics: Tracing microbial exchange during sexual intercourse. *Forensic Science International: Genetics*, 78, 103266
- Ghemrawi, M.**, Nangeroni, L., Kotchey, L., & Frye, J. (2025). DNA Methylation Approaches of Human Body Fluid Detection. In *Advances in Forensic Biology and Genetics* (pp. 47-68). Singapore: Springer Nature Singapore.
- Kotchey, L. L., Lee, S., Nangeroni, L., Thomas, J. T., Staadig, A., Tillmar, A., ... & **Ghemrawi, M.** (2025). Investigating SNP typing using alternative reference materials with the FORCE panel and QIAseq® chemistry. *Forensic Science International: Genetics*, 103294.
- Wu, Z. B., Sui, Z. Y., Peng, L. H., **Ghemrawi, M.**, Duncan, G., Jones, H., ... & Luo, S. J. (2025). Forensic assessment of kinship, genomic ancestry, and natural history of an iconic tiger of Harlem, New York City. *Journal of Heredity*, esaf003.
- Neilson, S., Nangeroni, L., & **Ghemrawi, M.** (2025). Differential DNA Extraction from Lateral Flow Immuno-chromatographic Tests via the EZ1® Advanced XL System. *Methods and Protocols*, 8(1), 2.
- Herrick, N., **Ghemrawi, M.**, Singh, S., Mahfouz, R., & Walsh, S. (2024). Exploring ancestry inference of the Middle East. *bioRxiv*, 2024-08.
- Kampmann, M. L., Fleckhaus, J., Børsting, C., Jurtikova, H., Pitters, A., Papin, J., **Ghemrawi, M.**, ... & Morling, N. (2024). Collaborative exercise: analysis of age estimation using a QIAGEN protocol and the PyroMark Q48 platform. *Forensic Sciences Research*, 9(1), owad055.
- Ghemrawi, M.**, Fernandez-Tejero, N., Vaquero, L., Wanna, A., Carmel, J. H., & McCord, B. (2024). An examination of differences in epigenetic methylation of saliva type samples based on collection method. *Electrophoresis*.
- Fernandez-Tejero, N., Sanchez, A. N., **Ghemrawi, M.**, Bilodeau, C., Etim, S., Duncan, G., ... & McCord, B. (2023). A study of the potential application of digital PCR in the detection of fecal contamination of strawberries using *Bacteroides* markers. *Journal of Microbiological Methods*, 212, 106811.
- Riman, S., **Ghemrawi, M.**, Borsuk, L. A., Mahfouz, R., Walsh, S., & Vallone, P. M. (2023). Sequence-based allelic variations and frequencies for 22 autosomal STR loci in the Lebanese population. *Forensic Science International: Genetics*, 65, 102872.
- Ghemrawi, M.**, Tejero, N. F., Duncan, G., & McCord, B. (2023). Pyrosequencing: Current forensic methodology and future applications—A review. *Electrophoresis*, 44(1-2), 298-312.
- Ghemrawi, M.**, & McCord, B. (2022). Development of a nanoplate-based digital PCR assay for species identification with mixture deconvolution. *Forensic Science International: Genetics Supplement Series*, 8, 193-195.

Ghemrawi, M. (2022). *Novel Applications for Forensic DNA Analysis, the Human Genome and Beyond*. (PhD Dissertation)

Fernandez-Tejero, N., **Ghemrawi, M.**, McCord, B. R., & Lee, S. B. (2022). Deoxyribonucleic Acid Extraction Methods in Forensic Analysis. *Encyclopedia of Analytical Chemistry: Applications, Theory and Instrumentation*, 1-21.

Ghemrawi, M., Fischinger, F., Duncan, G., Dukes, M. J., Guilliano, M., & McCord, B. (2021). *Developmental validation of SpelD: A pyrosequencing-based assay for species identification*. *Forensic Science International: Genetics*, 55, 102560.

Ghemrawi, M., Torres, A. R., Duncan, G., Colwell, R., Dadlani, M., & McCord, B. (2021). *The genital microbiome and its potential for detecting sexual assault*. *Forensic Science International: Genetics*, 51, 102432.

Boelens, D., Fogliatto Mariot, R., **Ghemrawi, M.**, Kloosterman, A. D., & McCord, B. R. (2021). *The development of miniSTRs as a method for high-speed direct PCR*. *Electrophoresis*, 42(12-13), 1352-1361.

Ghemrawi M., Riman S., Herrick N., Mahfouz R., Vallone P., Walsh S. (2018). *A Genetic Investigation into a Lebanese Population: From STR's to SNP's*. (Graduate Dissertation).

Itani, H. A., Jaffa, M. A., Elias, J., Sabra, M., Zakka, P., ...**Ghemrawi, M.**, ... & Refaat, M. M. (2020). Genomic and proteomic study of the inflammatory pathway in patients with atrial fibrillation and cardiometabolic syndrome. *Frontiers in Cardiovascular Medicine*, 7, 613271.

| Presentations

Ghemrawi, M. (2025). *The Young Forensic Scientist's Compass: Navigating Careers and Growth*. Invited-Proceedings of the 77th American Academy of Forensic Sciences Meeting, Baltimore, MA.

Ghemrawi, M. (2025). *Integrating Genetic and Epigenetic Sequencing for Forensic Application in a Single Workflow*. Oral-Proceedings of the 77th American Academy of Forensic Sciences Meeting, Baltimore, MA.

Ghemrawi, M. (2025). *Low-Level DNA Recovery from Fired Cartridge Casings, Firearms, and Explosive Devices: Comparing Conventional Methods and Sequencing-Based DNA Typing*. Oral-Proceedings of the 77th American Academy of Forensic Sciences Meeting, Baltimore, MA.

Ghemrawi, M., Kotchey, L. Cicek, I., Barnard R., Frere P., Consugar, M. (2024). *OneShot: Developing a novel methodology for simultaneous genetic and epigenetic sequencing for forensic applications*. Oral-Proceedings of the 30th Congress of the International Society for Forensic Genetics, Santiago De Compostella, Spain.

Ghemrawi, M. (2024). *A Comparison of Traditional Serological Techniques and DNA Methylation for the Identification of Body Fluids*. Oral-Proceedings of the 76th American Academy of Forensic Sciences Meeting, Denver, CO.

Ghemrawi, M. (2024). *An investigation of Forensic Applications for Nanoplate-Based Digital Polymerase Chain Reaction (dPCR)*. National Institute of Justice Symposium, Denver, CO.

Ghemrawi, M. (2023). *Exploring the Genital Microbial Transfer After Sexual Contact Using a Deep Metagenomic Sequencing Approach*. The Green Mountain Meeting, Burlington, VT.

Ghemrawi, M. (2023). *Beyond the Human DNA: Investigating the Genital Microbiome and Species Identification*. **Invited Speaker**. The International Symposium on Forensic DNA in Law in Seoul, South Korea

Ghemrawi, M. (2023). *Effects Of the Composition Of Saliva On The Development Of Epigenetic Markers.* Guest Speaker at the Seoul National University College of Medicine, South Korea

Ghemrawi, M. (2023). *Sequencing the Lebanese Mitogenome and Y-SNPs: Variants, Haplogrouping and Databasing.* The 12th Haploid Marker Conference in Budapest, Hungary

Ghemrawi, M., McCord, B. (2023). *An investigation of Forensic Applications for Nanoplate-Based Digital Polymerase Chain Reaction (dPCR).* Oral-Proceedings of the 75th American Academy of Forensic Sciences Meeting, Orlando, FL.

Ghemrawi, M., McCord, B. (2022). *Development of a nanoplate-based digital PCR assay for species identification with mixture deconvolution.* Oral-Proceedings of the 29th Congress of the International Society for Forensic Genetics, Washington, DC.

Ghemrawi, M., Duncan, G., McCord, B. (2022). *Investigating the genital microbiome by metagenomic sequencing and qPCR to prove sexual contact.* Virtual Innovation Forum, QIAGEN.

Ghemrawi, M., Fernandez N., McCord B. (2022). *Investigating the identification of menstrual blood using epigenetic methylation-based assay.* Oral – The Gordon Research Seminar, Mount Snow, VT.

Ghemrawi, M., McCord B. (2022). *Pyrosequencing-based epigenetic assays for the identification of oral fluids and menstrual blood.* Oral-Proceedings of the World Police Summit, Dubai, United Arab Emirates.

Ghemrawi, M., Fernandez N, Castaneda V, McCord B. (2022). *Development of pyrosequencing-based DNA methylation assay for menstrual blood identification.* Oral-Proceedings of the 74th American Academy of Forensic Sciences Meeting, Seattle, WA.

Ghemrawi, M., Vaquero L., Wanna A., Fernandez N., McCord, B. (2021). *Investigating the intravariability of saliva methylation markers using a variety of oral fluid collection methods.* Poster-Proceedings of the 32th International Symposium on Human Identification, Orlando, CA.

Ghemrawi, M., Duncan, G., McCord, B. (2021). *Pyrosequencing and qPCR assays for species identification and mixture deconvolution",* Virtual Investigator Forum, QIAGEN.

Ghemrawi, M., Ramirez, A., Duncan, G., McCord, B. (2021). *Application of Microbiome Transfer for Sexual Assault detection using Deep Sequencing and Real-time PCR".* Crossing forensic borders series.

Ghemrawi, M., Duncan, G., McCord, B. (2020). *Development of qPCR assay to identify household miscellaneous biological mixtures.* The Virtual 9th Annual Forensic Science Symposium, Miami, FL.

Ghemrawi, M., Fischinger, F., McCord, B. (2020). *Pyrosequencing-based DNA analysis for species identification.* Oral - Proceedings of the 72nd American Academy of Forensic Sciences Meeting, CA.

Ghemrawi, M., Fischinger, F., Duncan, G., McCord, B. (2019). *Pyrosequencing-based method for species ID.* Poster-Proceedings of the 30th International Symposium on Human Identification, Palm Springs, CA.

Ghemrawi, M., Walsh, S. (2018) *Eye, hair and skin pigmentation prediction of a Lebanese population.* Oral presentation at the Emirates International Forensic Conference & Exhibition, Dubai, United Arab Emirates.

Ghemrawi, M., Walsh, S. (2018) *HirisPlex-S performance on an admixed Lebanese population.* Oral presentation, The National Institute of Standards and Technology (NIST), Applied Genetics Group,

12th Summer Institute in Statistics and Modeling in Infectious Diseases , <i>UW, Seattle, WA</i>	July 2020
- Microbiome Data Analysis workshop.	
25th Summer Institute in Statistical Genetics (SISG) , <i>University of Washington, Seattle, WA</i>	July 2020
- Regression Methods: Concepts and Application.	
- Bayesian statistics for Genetics.	
24th Summer Institute in Statistical Genetics (SISG) , <i>University of Washington, Seattle, WA</i>	July 2019
- Statistical Genetics.	
- Association Mapping: GWAS and Sequencing Data.	
- Computational Pipeline for WGS Data.	

| SCHOLARSHIPS AND AWARDS

MIT Innovator under 35 – MENA Region , <i>MIT Technology Review</i>	December 2024
- MIT IU35 MENA Award for 2024 , Biotechnology & Medicine	
Real Triumphs Award , <i>Florida International University</i>	December 2022
- Outstanding graduate for extraordinary academic and professional achievements	
Gordon Research Seminar Chair , <i>Gordon Research Conferences</i>	June 2025
- Elected to co-chair the 2025 GRS Forensic Analysis of Human DNA	
Electrophoresis peer-reviewed Journal , <i>Wiley-VCH</i>	January 2022
- Invitation to contribute to the "Young and Inspiring Scientists Special Issue".	
Three Minute Thesis , <i>Florida International University</i>	November 2021
- Winner of the 3MT competition for the College of Arts, Sciences & Education.	
International Forensic Research Institute (IFRI) , <i>Florida International University</i>	January 2020
- 2020 IFRI Student Development Award (\$2500).	
International Symposium on Human Identification (ISHI) , <i>Promega</i>	September 2019
- Student Ambassador Award .	
U.S. Department of State, Bureau of Educational and Cultural affairs , <i>Washington, D.C.</i>	2016-2018
- J. William <i>Fulbright</i> Foreign Student Scholarship one of the most prestigious scholarships to pursue my graduate studies in the United States.	
Haigazian University , <i>Beirut, Lebanon</i>	May 2015
- Award for Outstanding Academic Performance.	
- Award for Sports and Team Performance.	
Beyond Reform and Development , <i>Beirut, Lebanon</i>	April 2014
- Best Community Interaction Award for building a platform to link high-school students to universities.	
U.S. Agency for International Development (USAID) , <i>Lebanon</i>	2011-2015
- Full Merit University Program (USPI) Scholarship to pursue my undergraduate studies.	
U.S. Embassy in Lebanon , <i>Lebanon</i>	2009-2011
- English Access Microscholarship Program.	

| SKILLS

- Experience in NGS/MPS and Pyrosequencing Platforms.	● ● ● ● ●
- Experience in DNA Library Prep, QC and QA.	● ● ● ● ●
- Experience in Rapid DNA technology, NGS and CE platform.	● ● ● ● ○
- Knowledge in primers and probes design: qPCR, dPCR, Sequencing.	● ● ● ● ○
- Knowledge in R, SPSS, Arlequin and other bioinformatic tools.	● ● ● ○ ○
- Knowledge in website development.	● ● ● ● ○

| BLOGS & INTERVIEWS

Ghemrawi, M. ["How to Choose a Research Thesis Topic"](#) . Blog.

Ghemrawi, M. ["PhDs: From Distressing to De-Stressing"](#) Blog.

Ghemrawi, M. ["No Nuclear DNA in Rootless Hair: Myth or Fact"](#) Blog.

Ghemrawi, M. ["Identifying Non-Human Samples Found at a Crime Scene"](#) Interview.

Ghemrawi, M. ["Women Advancing Forensics"](#) Interview.

Ghemrawi, M. ["Writing the Books on Forensic DNA: Dr. John Butler"](#) Interviewee.

Features ["Meet Mirna Ghemrawi"](#) QIAGEN Young Investigator Blog.

["PhD student recognized for DNA research"](#) ["Up Close: Mirna Ghemrawi"](#). FIU CASE News.

| LEADERSHIP AND SERVICES

Counselor & Team Lead, Florida International University

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|---|-----------|
| - AAFS Forensic Science Educational Conference. | 2021-2022 |
| - Forensic workshop for high-school students. | 2019-2021 |
| - Crime Scene Investigation overnight camp at the Frost Museum. | 2019 |

Vice President, Florida International University

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| - Graduate Forensic Science Students Organization. | 2019-present |
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Volunteer services

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| - Meal Preparation at the DC central Kitchen, Washington D.C. | 2018 |
| - Elderly community services at a retirement home, Portland, OR. | 2016 |
| - Tutor at the Children Cancer Center of Lebanon, Beirut, Lebanon. | 2015 |
| - High school students' orientation and consultation, Beirut, Lebanon. | 2013 |
| - Public schools' assessment and data collection, Tripoli, Lebanon. | 2011 |

| MEMBERSHIPS

- Sigma Xi, The Scientific Research Honor Society	2022-present
- International Society for Forensic Genetics (ISFG).	2021-present
- American Academy of Forensic Sciences (AAFS).	2017-2022
- Exchange Alumni, Bureau of Educational and Cultural Affairs, USA.	2011-present

| LANGUAGES

Arabic	● ● ● ● ●
English	● ● ● ● ●
French	● ● ● ● ○

| SPECIAL INTERESTS

- Table-Tennis Player	● ● ● ○ ○
- Infographics and SciComm visuals Designer	● ● ● ● ●
- Website Developer (self-taught)	● ● ● ○ ○