TENURE AND PROMOTION CURRICULUM VITAE
OF
ANANDA MOHAN MONDAL, KNIGHT FOUNDATION SCHOOL OF COMPUTING AND INFORMATION SCIENCES

EDUCATION

Degree	Institution	Field	Dates
Ph.D.	University of South Carolina	Computer Science & Engineering **Dissertation:** Network Based Prediction of Protein Localization Using Diffusion Kernel **Advisor:** Jianjun Hu, Ph.D.	12/2011
Master's	University of South Carolina	Computer Engineering	05/2003
Master's	North Carolina A & T State University	Chemical Engineering	08/1998
Bachelor's	Bangladesh University of Engineering & Technology	Chemical Engineering	05/1991

FULL-TIME ACADEMIC EXPERIENCE

Institution	Rank	Field	Dates
Florida International University	Assistant Professor	Computer Science	08/2018 - Present
Claflin University	Associate Professor (Tenured)	Computer Science	08/2018 – 08/2018
Claflin University	Assistant Professor	Computer Science	08/2012 – 08/2018
Claflin University	Instructor	Computer Science	08/2005 – 08/2012
Bangladesh University of Engineering and Technology	Assistant Professor	Chemical Engineering	07/1995 – 01/1997
Bangladesh University of Engineering and Technology	Lecturer	Chemical Engineering	06/1991 – 07/1995

NON-ACADEMIC EXPERIENCE

Place of Employment	Title	Dates
Claflin University	Database Administrator	03/2003 – 08/2005

EMPLOYMENT RECORD AT FIU

Rank	Dates
Assistant Professor	08/2018 – Present

PUBLICATIONS IN DISCIPLINE

Articles (published): Total 11; 6 at FIU [J11-J6] (<u>Graduate</u> student advisee; <u>Undergraduate</u> student advisee)

		Impact Factor
[J11]	<u>R. B. Tanvir</u>, <u>M. M. Islam</u>, <u>M. Sobhan</u>, D. Luo, and **A. M. Mondal** (2024). MOGAT: A Multi-Omics Integration Framework Using Graph Attention Networks for Cancer Subtype Prediction. *International Journal of Molecular Sciences, 25(5)*: 1-16. **https://doi.org/10.3390/ijms25052788**	5.600
[J10]	C. A. Balbin, J. Nunez-Castilla, V. Stebliankin, P. Baral, <u>M. Sobhan</u>, T. Cickovski, **A. M. Mondal**, G. Narasimhan, P. Chapagain, K. Mathee, and J. Siltberg-Liberles (2023). Epitopedia: identifying molecular mimicry between pathogens and known immune epitopes. *ImmunoInformatics, 9*: 1-9. https://doi.org/10.1016/j.immuno.2023.100023	---
[J9]	J. Nunez-Castilla, V. Stebliankin, P. Baral, C. A. Balbin, <u>M. Sobhan</u>, T. Cickovski, **A. M. Mondal**, G. Narasimhan, P. Chapagain, K. Mathee, and J. Siltberg-Liberles (2022). Potential Autoimmunity Resulting from Molecular Mimicry between SARS-CoV-2 Spike and Human Proteins. *Viruses, 14(7)*: 1-20. https://doi.org/10.3390/v14071415	5.818
[J8]	<u>A. A. Mamun</u>, <u>R. B. Tanvir</u>, <u>M. Sobhan</u>, K. Mathee, G. Narasimhan, G. E. Holt, **A. M. Mondal** (2021)**.** Multi-Run Concrete Autoencoder to Identify Prognostic lncRNAs for 12 Cancers. *International Journal of Molecular Sciences, 22 (21)*: 1-13. https://doi.org/10.3390/ijms222111919	5.600
[J7]	<u>M. Maharjan</u>, <u>R. B. Tanvir</u>, K. Chowdhury, W. Duan, and **A. M. Mondal** (2020). Computational Identification of Biomarker Genes for Lung Cancer Considering Treatment and Non-Treatment Studies. *BMC Bioinformatics, 21(9)*:1-19. DOI: <u>10.1186/s12859-020-3524-8</u>	3.307
[J6]	<u>R. B. Tanvir</u>, <u>T. Aqila</u>, <u>M. Maharjan</u>, <u>A. A. Mamun</u>, and **A. M. Mondal** (2019). Graph Theoretic and Pearson Correlation Based Discovery of Network Biomarkers for Cancer. *Data, 4(2):* 1-12. https://doi.org/10.3390/data4020081	2.600
[J5]	G. J. Kenne, P. M. Gummadidala, M. H. Omebeyinje, **A. M. Mondal**, <u>D. K. Bett</u>, S. McFadden, S. Bromfield, N. Banaszek, Mi. Velez-Martinez, C. Mitra, I. Mikell, S. Chatterjee, J. Wee, and A. Chanda (2018). Activation of Aflatoxin Biosynthesis Alleviates Total ROS in Aspergillus parasiticus. *Toxins, 10(2)*: 1 – 16. DOI: <u>10.3390/toxins10020057</u>	5.075
[J4]	**A. M. Mondal** and J. Hu (2014). Network Based Prediction of Protein Localization Using Diffusion Kernel. *International Journal of Data Mining and Bioinformatics,* 9(4): 386-400. DOI: <u>10.1504/ijdmb.2014.062146</u>	0.667

[J3]	J. R. Lin, **A. M. Mondal**, R. Liu, and J. Hu (2012). Minimalist Ensemble Algorithms for Genome-wide Protein Localization Prediction. *BMC Bioinformatics,* 13: 1 – 12. https://doi.org/10.1186/1471-2105-13-157	3.307
[J2]	**A. M. Mondal** and S, Ilias (2005). Analysis of Numerical Instability in Single-Stage Gas Permeation. *Journal of Membrane Science, 262*: 5 – 10, 2005. https://doi.org/10.1016/j.memsci.2005.06.061	9.500
[J1]	**A. M. Mondal** and S. Ilias (2001). Dehydrogenation of Cyclohexane in a Palladium-Ceramic Membrane Reactor by Equilibrium Shift. *Separation Science and Technology, 36(5)*: 1101-1116. https://doi.org/10.1081/SS-100103639	2.799

Proceedings, peer reviewed (published): Total 27; 19 at FIU[P27-P9] (<u>Graduate</u> student advisee; <u>Undergraduate</u> student advisee**)**

		% Acceptance
[P27]	Z. Chen, J. Zhang, J. Ni, X. Li, Y. Bian, <u>M. M. Isam</u>, **A. M. Mondal**, H. Wei and D. Luo (2024). Interpreting Graph Neural Networks with In-Distributed Proxies. *The 2nd Workshop on Trustworthy Learning on Graphs (TrustLOG)*. Singapore, May 13-17. Accepted	---
[P26]	<u>R. B. Tanvir</u>, R. Ruiz, S. Ebert, <u>M. Sobhan</u>, <u>A. A. Mamun</u>, and **A. M. Mondal** (2023). Quantifying Intratumor Heterogeneity by Key Genes Selected Using Concrete Autoencoder. *10th International Conference on Pattern Recognition and Machine Intelligence (PReMI 2023),* Kolkata, India, December 12-15, pages 844–852. https://doi.org/10.1007/978-3-031-45170-6_88	31%
[P25]	<u>M. Sobhan</u> and **A. M. Mondal** (2023). Evaluating SHAP's Robustness in Precision Medicine: Effect of Filtering and Normalization. *IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of Workshop on Machine Learning and Artificial Intelligence in Bioinformatics and Medical Informatics (MABM 2023).* Istanbul, Turkey, December 5-8, pages 3157-64. **DOI:** 10.1109/BIBM58861.2023.10385704	---
[P24]	D. Leizaola, <u>M. Sobhan</u>, K Kaile, **A. M. Mondal**, and A. Godavarty (2023). Deep Learning Algorithms to Classify Fitzpatrick Skin Types for Smartphone-Based NIRS Imaging Device. *Next-Generation Spectroscopic Technologies XV*, Vol. 12516. SPIE Defense + Commercial Sensing, Orlando, USA, June 15. https://doi.org/10.1117/12.2665179	---
[P23]	<u>M. Sobhan</u>, D. Leizaola, A. Godavarty, and **A. M. Mondal** (2022)**.** Subject Skin Tone Classification with Implications in Wound Imaging using Deep Learning. *2022 International Conference on Computational Science and Computational Intelligence (CSCI)*, Las Vegas, USA, December 14-16, pages 1648-53.	19%
[P22]	<u>M. Sobhan</u> and **A. M. Mondal** (2022). Explainable Machine Learning to Identify Patient-specific Biomarkers for Lung Cancer. *IEEE International*	---

	Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of Workshop on Machine Learning and Artificial Intelligence in Bioinformatics and Medical Informatics (MABM 2022). Las Vegas, USA, December 06-08, pages 3152-59. DOI: 10.1109/BIBM55620.2022.9995516	
[P21]	R. B. Tanvir, M. Sobhan, and **A. M. Mondal** (2022). An Autoencoder Based Bioinformatics Framework for Predicting Prognosis of Breast Cancer Patients. *IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of Workshop on Machine Learning and Artificial Intelligence in Bioinformatics and Medical Informatics (MABM 2022).* Las Vegas, USA, December 06-08, pages 3160-66. DOI: 10.1109/BIBM55620.2022.9995632	---
[P20]	M. Sobhan, K. Kaile, A. Godavarty, and **A. M. Mondal** (2022). Skin Tone Benchmark Dataset for Diabetic Foot Ulcers and Machine Learning to Discover the Salient Features. *Proceedings of The 26th International Conference on Image Processing, Computer Vision, & Pattern Recognition (IPCV).* Las Vegas, USA, July 25-28, pages 1-10.	20%
[P19]	K. Kaile, M. Sobhan, **A. M. Mondal,** and A. Godavarty (2022). Machine learning algorithms to classify Fitzpatrick skin types during tissue oxygenation mapping. *Proceedings of Biophotonics Congress: Biomedical Optics, OSA Technical Digest.* Fort Lauderdale, USA, April 24-27. https://doi.org/10.1364/TRANSLATIONAL.2022.JM3A.4	---
[P18]	R. B. Tanvir and **A. M. Mondal** (2020)**.** Stage-Specific Co-expression Network Analysis for Cancer Biomarker Discovery. *Proceedings of 2020 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of International Workshop on Biological Network Analysis and Integrative Graph-Based Approaches (IWBNA).* Seoul, South Korea (Virtual), December 16-19, pages 1661–1667. DOI: 10.1109/BIBM49941.2020.9313242	---
[P17]	A. A. Mamun, W. Duan, and **A. M. Mondal** (2020). Pan-cancer Feature Selection and Classification Reveals Important Long Non-coding RNAs. *Proceedings of 2020 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of International Workshop on Deep Learning in Bioinformatics, Biomedicine, and Health Informatics (DLB2H).* Seoul, South Korea (Virtual), December 16-19, pages 1853–60. DOI: 10.1109/BIBM49941.2020.9313332	---
[P16]	A. A. Mamun, M. Sobhan, R. B. Tanvir, C. J. Dimitroff, and **A. M. Mondal** (2020). Deep Learning to Discover Cancer Glycome Genes Signifying the Origins of Cancer. *Proceedings of 2020 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of International Workshop on Deep Learning in Bioinformatics, Biomedicine, and Health Informatics (DLB2H).* Seoul, South Korea (Virtual), December 16-19, pages 1861–67. DOI: 10.1109/BIBM49941.2020.9313450	---
[P15]	M. Sobhan, A. Al Mamun, R. B. Tanvir, M. J. Alfonso, P. Valle, and **A. M. Mondal** (2020). Deep Learning to Discover Genomic Signatures for Racial	---

	Disparity in Lung Cancer. *Proceedings of 2020 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM).* Seoul, South Korea (Virtual), December 16-19, pages 2147–49. DOI: 10.1109/BIBM49941.2020.9313426	
[P14]	R. B. Tanvir and **A. M. Mondal** (2019). Cancer Biomarker Discovery from Gene Co-expression Networks Using Community Detection Methods. *Proceedings of 2019 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of International Workshop on Biological Network Analysis and Integrative Graph-Based Approaches (IWBNA).* San Diego, USA, November 18-21, pages 2097–2104. DOI: 10.1109/BIBM47256.2019.8982960	---
[P13]	N. Z. Tsaku, S. C. Kosaraju, T. Aqila, M. Masum, D. H. Song, **A. M. Mondal**, H. M. Koh, M. Kang (2019). Texture-based Deep Learning for Effective Histopathological Cancer Image Classification. *Proceedings of 2019 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM).* San Diego, USA, November 18-21, pages 973–977. DOI: 10.1109/BIBM47256.2019.8983226	22%
[P12]	T. Aqila, A. A. Mamun, and **A. M. Mondal** (2019). Pseudotime Based Discovery of Breast Cancer Heterogeneity. *Proceedings of 2019 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of International Workshop on Biological Network Analysis and Integrative Graph-Based Approaches (IWBNA),* San Diego, USA, November 18-21, pages 2049–54. DOI:10.1109/BIBM47256.2019.8983300	---
[P11]	A. A. Mamun and **A. M. Mondal** (2019). Feature Selection and Classification Reveal Key lncRNAs for Multiple Cancers. *Proceedings of 2019 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of Workshop on Long Non-Coding RNAs: Mechanism, Function, and Computational Analysis.* San Diego, USA, November 18-21, pages 2825–31. DOI: 10.1109/BIBM47256.2019.8983413	---
[P10]	M. Maharjan, R. B. Tanvir, K. Chowdhury, and **A. M. Mondal** (2019). Determination of Biomarkers for Diagnosis of Lung Cancer Using Cytoscape-based GO and Pathway Analysis. *Proceedings of The 20th International Conference on Bioinformatics & Computational Biology (BIOCOMP'19).* Las Vegas, USA, July 29 – Aug 01, pages 17-23.	21%
[P9]	**A. M. Mondal**, C. A. Schultz, M. Sheppard, J. Carson, R. B. Tanvir, and T. Aqila (2018). Graph Theoretic Concepts as the Building Blocks for Disease Initiation and Progression at Protein Network Level: Identification and Challenges. *Proceedings of 2018 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of Workshop BigDataNetAnalysis.* Madrid, Spain, December 3-6, pages 2713-19. DOI: 10.1109/BIBM.2018.8621417	---
[P8]	D. K. Bett and **A. M. Mondal** (2015). Diffusion Kernel to Identify Missing PPIs in Protein Network Biomarker. *Proceedings of 2015 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of 8th*	---

	International Workshop on Biomolecular Interaction Network Analysis (IWBNA). Washington, DC, USA, November 9-12, pages 1614-19. DOI: 10.1109/BIBM.2015.7359917	
[P7]	P. Timalsina, K. Charles and **A. M. Mondal** (2014). STRING PPI Score to Characterize Protein Subnetwork Biomarkers for Human Diseases and Pathways. *Proceedings of 14th IEEE International Conference on Bioinformatics and Bioengineering (IEEE BIBE.* Boca Raton, USA, November 10-12, pages 251-156. DOI: 10.1109/BIBE.2014.46	26%
[P6]	**M. Mondal** and J. Hu (2013). Scored Protein-Protein Interaction to Predict Subcellular Localizations for Yeast Using Diffusion Kernel. 5th *International Conference on Pattern Recognition and Machine Intelligence (PReMI 2013),* Kolkata, India, December 10-14, pages 647–655. https://link.springer.com/chapter/10.1007/978-3-642-45062-4_91	30%
[P5]	K. Charles, A. Afful, and **A. M. Mondal** (2013). Protein Subnetwork Biomarkers for Yeast Using Brute Force Method. *Proceedings of 2013 International Conference on Bioinformatics & Computational Biology, (BIOCOMP).* Las Vegas, USA, July 2013, pages 218-223. https://worldcomp-proceedings.com/proc/p2013/BIC3129.pdf	20%
[P4]	**A. M. Mondal** and J. Hu (2012). Mutation Analysis of Disease-Causing Proteins. *Proceedings of IEEE International Conference on Bioinformatics and Biomedicine Workshops (BIBMW).* Philadelphia, USA, October 4-7, pages 975-977.	---
[P3]	**A. M. Mondal**, and J. Hu (2012). Protein Localization by Integrating Multiple Protein Correlation Networks. *Proceedings of The 2012 International Conference on Bioinformatics & Computational Biology, (BIOCOMP).* Las Vegas, USA, July 16-19, pages 82-88.	22%
[P2]	**A. M. Mondal**, J. R. Lin, and J. Hu (2011). Network Based Subcellular Localization Prediction for Multi-Label Proteins. *Proceedings of 2011 IEEE International Conference on Bioinformatics and Biomedicine Workshops (BIBMW).* Atlanta, USA, November 12-15, pages 473-480. DOI: 10.1109/BIBMW.2011.6112416	
[P1]	**A. M. Mondal**, and J. Hu (2010). NetLoc: Network based protein localization prediction using protein-protein interaction and co-expression networks. *Proceedings of 2010 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM).* Hong Kong, December 19-21, pages 142-148. DOI: 10.1109/BIBM.2010.5706553	21%

Abstracts, peer reviewed (published): Total 5 at FIU] (Graduate student advisee; Undergraduate student advisee**)

1. Gabriella Santos, Maria Suarez, Lee Seng Lau, Joseph Souchak, Avery Posey, Raihanul Bari Tanvir, **Ananda M. Mondal**, and Charles J. Dimitroff. Novel Targets for Immunotherapy:

Dysregulated Levels of Galectins in Patients with Diffuse Large B cell Lymphoma. 2023 Annual Biomedical Research Conference for Minoritized Scientists, November 2023.

2. Israel C. Gonzalez, Mona Maharjan, **Ananda M. Mondal**, and Lidia Kos. Dystroglycan receptor and FER maintain melanoma dormancy in the vascular niche. *Proceedings of American Association for Cancer Research Annual Meeting 2020,* pp. 3956-3956, April 2020.

3. Abdullah A. Mamun, and **Ananda M. Mondal**. Long Non-coding RNA Based Cancer Classification using Deep Neural Networks. *Proceedings of 10th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB),* pp. 541-541, September 2019.

4. Tasmia Aqila, and **Ananda M. Mondal**. Pseudotime Based Analysis of Cancer Dynamics. *Proceedings of 10th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB),* pp. 544-544, September 2019.

5. Raihanul B. Tanvir, Mona Maharjan, and **Ananda M. Mondal**. Community Based Cancer Biomarker Identification from Gene Co-expression Network. *Proceedings of 10th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB),* pp. 545-545, September 2019.

PRESENTED PAPERS AND LECTURES

Invited Presentation (Total: 11; 5 while at FIU)

1. Concrete Autoencoder-Based Feature Selection Discovers Key Genes in Evaluating Intratumor Heterogeneity. Jahangirnagar University, Savar, Dhaka, Bangladesh. January 3, 2024.

2. Machine Learning – An Introductory Overview. Seminar at the Research Center in Minority Institutions (RCMI) at Florida International University, Miami, USA. March 11, 2022.

3. Precision Medicine and Intratumor Heterogeneity. Bioinformatics Internship Workshop, Florida International University, Miami, USA. August 17, 2021.

4. Towards Computational Decoding of Cancer Dynamics. Research Day, School of Computing and Information Sciences, Florida International University, Miami, USA. October 25, 2019.

5. Computational Analysis of Cancer Dynamics Using Data with no Temporal Information. Biomolecular Sciences Institute (BSI), Florida International University. Miami, USA. July 9, 2019.

6. Graph-Theoretic Approach to Extract Information and Its Application. Colloquium at University of South Carolina at Aiken, South Carolina, USA. November 2017.

7. Writing a Successful Grant Proposal. Grant Writing Workshop at Claflin University. South Carolina, USA. May 2017.

8. Things to Know – Beginners' Perspective. Grant Writing Workshop at Claflin University. South Carolina, USA. May 2016.

9. Graph Theory to Extract Biological Information from PPI Network - Possibility and Challenges. Student Research day, Claflin University. South Carolina, USA. March 2015.

10. Protein-Protein Interaction to Subnetwork Biomarkers. Cyberinfrastructure Day at Claflin University. South Carolina, USA. April 2013.

11. Diffusion Kernel to Extract Information from Protein-Protein Interaction. Faculty Meeting in the School of Natural Sciences and Mathematics at Claflin University. South Carolina, USA. March 2013.

Conference and Workshop Presentation (Total: 35; 22 while at FIU)

1. MOGAT: An Improved Multi-Omics Integration Framework Using Graph Attention Networks. RECOMB Computational Cancer Biology, Istanbul, Turkey, April 14-15, 2023. (Refereed)
2. Deep Learning Algorithms to Classify Fitzpatrick Skin Types for Smartphone-Based NIRS Imaging Device. SPIE Defense + Commercial Sensing, Orland, Florida, April 2023.
3. Navigating the CAR-T cell glycome to find tools to improve anti-tumor activity in Diffuse Large B Cell Lymphoma. Glycobiology Gordon Research Conference, Ventura, CA, USA, March 12-17, 2023.
4. Classification of Fitzpatrick skin types for smartphone-based NIRS imaging device using deep learning algorithms. FIU BME Graduate Research Day, March 2023. (Refereed)
5. Subject Skin Tone Classification with Implications in Wound Imaging using Deep Learning. The 2022 International Conference on Computational Science and Computational Intelligence (CSCI), Las Vegas, USA, December 2022. (Refereed)
6. Explainable Machine Learning to Identify Patient-specific Biomarkers for Lung Cancer. 2022 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of Workshop on Machine Learning and Artificial Intelligence in Bioinformatics and Medical Informatics (MABM 2022), Las Vegas, USA, December 6-8, 2022. (Refereed)
7. An Autoencoder Based Bioinformatics Framework for Predicting Prognosis of Breast Cancer Patients. 2022 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM) as part of Workshop on Machine Learning and Artificial Intelligence in Bioinformatics and Medical Informatics (MABM 2022), Las Vegas, USA, December 6-8, 2022. (Refereed)
8. Skin Tone Benchmark Dataset for Diabetic Foot Ulcers and Machine Learning to Discover the Salient Features. The 26th International Conference on Image Processing, Computer Vision, & Pattern Recognition, Las Vegas, July 25-28, 2022. (Refereed)
9. Deep Learning Algorithm Identified Patient-specific Biomarker Genes to Explain Lung Cancer Disparity. 2022 RCMI Consortium National Conference, Virtual, March 16-18, 2022. (Refereed)
10. Machine learning algorithms to classify Fitzpatrick skin types during tissue oxygenation mapping. Optica Biophotonics Congress: Biomedical Optics, Fort Lauderdale, April 24-27, 2022. (Refereed)
11. Molecular Mimicry Between SARS-CoV-2 Spike and Human Proteins. American Society for Microbiology Annual Conference Microbe 2022, Washington, DC, June 9-13, 2022.
12. EMoMiS Tool Identifies Molecular Mimicry Between SARS-CoV-2 Spike and Many Viral Immunogenic Proteins. Microbiology Society Annual Conference 2022, Belfast, April 4-7, 2022. (Refereed)
13. Stage-Specific Co-expression Network Analysis for Cancer Biomarker Discovery. 13th International Workshop on Biological Network Analysis and Integrative Graph-Based Approaches (IWBNA) in conjunction with 2020 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM), Virtual Conference, December 2020. (Refereed)
14. Pan-cancer Feature Selection and Classification Reveals Important Long Non-coding RNAs. The 4th International Workshop on Deep Learning in Bioinformatics, Biomedicine, and Health Informatics (DLB2H 2020) in conjunction with 2020 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM), Virtual Conference, December 2020. (Refereed)
15. Deep Learning to Discover Cancer Glycome Genes Signifying the Origins of Cancer. The 4th International Workshop on Deep Learning in Bioinformatics, Biomedicine, and Health Informatics

(DLB2H 2020) in conjunction with 2020 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM), Virtual Conference, December 2020. (Refereed)

16. Deep Learning to Discover Genomic Signatures for Racial Disparity in Lung Cancer. 2020 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM, Virtual Conference, December 2020. (Refereed)

17. Cancer Biomarker Discovery from Gene Co-expression Networks Using Community Detection Methods. 12th International Workshop on Biological Network Analysis and Integrative Graph-Based Approaches (IWBNA) in conjunction with 2019 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM). San Diego, USA, November 2019. (Refereed)

18. Texture-based Deep Learning for Effective Histopathological Cancer Image Classification. 2019 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM). San Diego, USA, November 2019. (Refereed)

19. Pseudotime Based Discovery of Breast Cancer Heterogeneity. 12th International Workshop on Biological Network Analysis and Integrative Graph-Based Approaches (IWBNA) in conjunction with 2019 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM). San Diego, USA, November 2019. (Refereed)

20. Feature Selection and Classification Reveal Key lncRNAs for Multiple Cancers. Workshop on Long Non-Coding RNAs: Mechanism, Function, and Computational Analysis in conjunction with 2019 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM). San Diego, USA, November 2019. (Refereed)

21. Determination of Biomarkers for Diagnosis of Lung Cancer Using Cytoscape-based GO and Pathway Analysis. The 20th International Conference on Bioinformatics & Computational Biology (BIOCOMP). Las Vegas, USA, July 2019. (Refereed)

22. Graph Theoretic Concepts as the Building Blocks for Disease Initiation and Progression at Protein Network Level: Identification and Challenges. Workshop on Towards Precision Medicine: Network Based Big Data Integration and Analysis (BigDataNetAnalysis) in conjunction with IEEE International Conference on Bioinformatics and Biomedicine. Madrid, Spain, December, 2018. (Refereed)

23. Improved Network Ontology Analysis by Segmentation. Rocky Bioinformatics Conference, Aspen, Colorado, USA, December 2016.

24. Diffusion Kernel to Identify Missing PPIs in Protein Network Biomarker. 8th International Workshop on Biomolecular Interaction Network Analysis and Interactomics (IWBNA) in conjunction with IEEE International Conference on Bioinformatics and Biomedicine. Washington DC, USA, November 2015. (Refereed)

25. Scheduling Disease Progression at Protein Network Level. Faculty Research Day, Claflin University, Orangeburg, South Carolina, USA, October 2015.

26. Seed for Protein Subnetwork Biomarker for Human Diseases Using PPI Score. Student Research Day, Claflin University, Orangeburg, South Carolina, USA, March 2015.

27. Seed for Protein Subnetwork Biomarker for Human Diseases Using Co-Localized PPI. Student Research Day, Claflin University, Orangeburg, South Carolina, USA, March 2015.

28. STRING PPI Score to Characterize Protein Subnetwork Biomarkers for Human Diseases and Pathways. The 14th IEEE International Conference on Bioinformatics and Bioengineering. Boca Raton, USA, November 2014. (Refereed)

29. Protein Subnetwork Biomarkers for Yeast Using Brute Force Method. The 2013 International Conference on Bioinformatics & Computational Biology (BIOCOMP). Las Vegas, USA, July 2013. (Refereed)

30. Protein Localization by Integrating Multiple Protein Correlation Networks. The 2012 International Conference on Bioinformatics & Computational Biology (BIOCOMP). Las Vegas, USA, July 2012. (Refereed)
31. Network Based Subcellular Localization Prediction for Multi-Label Proteins. IEEE International Conference on Bioinformatics and Biomedicine Workshops (BIBMW). Atlanta, USA, November 2011. (Refereed)
32. NetLoc: Network Based Protein Localization Prediction Using Protein-Protein Interaction and Co-expression Networks. IEEE International Conference on Bioinformatics and Biomedicine. Hong Kong, China, December 2010. (Refereed)
33. Evaluating Knowledge-based Scoring Function for Drug Discovery - Case Study: DrugScore. HBCU-UP National Research Conference, Washington DC, Oct-Nov 2009.
34. Evaluating Empirical Scoring Function for Drug Discovery - Case Study: X-Score. HBCU-UP National Research Conference, Washington DC, USA, Oct- Nov, 2009.
35. Analysis of PROTEIN FASTA Data for Viruses. HBCU-UP National Research Conference, Atlanta, GA, USA, October 2008.

Poster Presentation (Total: 20; 9 while at FIU)

1. Graph Attention Network-based Multi-Omics Integration for Cancer Subtype Prediction. Translational Research Symposium, Port St. Lucie, FL, March 16-17, 2023.

2. Multi-Omics Integration Using Graph Neural Network. Translational Research Symposium, Port St. Lucie, FL, March 16-17, 2023.

3. Game Theory in Cancer Precision Medicine. Translational Research Symposium, Port St. Lucie, FL, March 16-17, 2023.

4. Novel Targets for Immunotherapy: Dysregulated levels of Galectins in Diffuse Large B cell Lymphomas. Translational Research Symposium, Port St. Lucie, FL, March 16-17, 2023.

5. Graph Attention Network-based Multi-Omics Integration for Cancer Subtype Prediction. NCI Spring School on Algorithmic Cancer Biology, NIH, Bethesda, MD, March 13-19, 2023.

6. EMoMiS tool identifies molecular mimicry between SARS-CoV-2 spike and many viral immunogenic proteins., Microbiology Society Annual Conference, Belfast, UK. April 4-7, 2022.

7. Long Non-coding RNA Based Cancer Classification using Deep Neural Networks. 10th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB), Niagara, NY, USA, September 2019. (Refereed)

8. Pseudotime Based Analysis of Cancer Dynamics. 10th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB), Niagara, NY, USA, September 2019. (Refereed)

9. Community Based Cancer Biomarker Identification from Gene Co-expression Network. 10th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB), Niagara, NY, USA, September 2019. (Refereed)

10. SAR- Segmentation, Analysis, and Reintegration: An Algorithm for a Structural Analysis of Protein Interaction Networks. Intelligent Systems for Molecular Biology (ISMB), Orlando, Florida, USA, July 2016.

11. Identifying Probable Missing Protein-Protein Interactions Related to Asthma and Allergy Using Diffusion Kernel. Emerging Researchers National Conference in STEM (ERN), Washington, DC, February 2015.

12. Bipartite Subgraphs and Functional Analysis of Protein Subnetwork Biomarkers for Human Diseases. Research Day, Claflin University, Orangeburg, South Carolina, March 2015.

13. Missing PPIs for Asthma and Allergy Using Diffusion Kernel. Research Day, Claflin University, Orangeburg, South Carolina, March 2015.

14. Analyzing Mutation Data for Human Diseases. Research Day, Claflin University, Orangeburg, South Carolina, March 2015.

15. Study of DNA Methylation Patterns in Cancers. Research Day, Claflin University, Orangeburg, South Carolina, March 2015.

16. Review of Data Mining Tools for Metabolomics Data. 2012 International Conference of the Metabolomics Society, Washington DC, June 2012.

17. Diffusion kernel-type feature for protein localization prediction, Research Day, Claflin University, Orangeburg, SC, March 2010.

18. Running X-Score with Autodock Output. HBCU-UP National Research Conference, Washington DC, Oct- Nov 2009.

19. Encoding Lineages for Bacteria. IEEE Bioinformatics and Bio-engineering Conference (IEEE BIBE), Boston, MA, October 2007.

20. Comparative Study of Fragment Assemblers. 3rd Bioinformatics Research Symposium sponsored by the SC INBRE Bioinformatics Core, Clemson University, South Carolina, January 2007.

WORKS IN PROGRESS

Articles submitted (under review)

1. Z. Chen, J. Zhang, J. Ni, X. Li, Y. Bian, M. M. Isam, **A. M. Mondal**, H. Wei and D. Luo (2024). Generating In-Distributed Proxy Graphs for Explainable Graph Neural Networks. *ICML*. Date of Submission: February 1, 2024.

Article under preparation

1. M. M. Islam, J. M. Templeton, C. Poellabauer1, **A. M. Mondal** (2024). AMASS-PD: Analyzing Gene Mutations Associated with Parkinson's Disease Using Machine Learning. *IEEE Journal of Biomedical and Health Informatics*.

FUNDED RESEARCH

Competitive grants: Total 7 grants ($5.16M). 6 (4 PI + 2 Co-PI) grants at FIU (Total $3.37M | Mondal's Share $1.51M). Portion of the total award coming to the candidate as co-PI is calculated by F&A return percentages.

4 PI Grants at FIU ($1.01M: Mondal's Share: $954K)

1. **Ananda M. Mondal (PI)**. Co-Investigators: Mary Jo Trepka (RSCPHSW, FIU), Charles J. Dimitroff (HWCOM, FIU), and Collaborator: Gregory E. Holt (UM and Miami VA). R21: Explainable AI-Based Multi-Omics Analysis of Lung Cancer Health Disparity. Agency: NIH,

Program: Basic Research in Cancer Health Disparities. Period of Project: 04/01/2024 – 03/31/2026. Amount awarded: $370,600. Mondal's Share: 90% ($333,540).

2. **Ananda M. Mondal** (PI), Kalai Mathee (CoPI), Giri Narasimhan (CoPI), and Trevor M. Cickovski (CoPI). Next-Generation Biomedical Big Data Platform for Cancer Research and Collaboration Across Florida. Subaward from University of Miami. Agency: Florida Department of Health, Program: Bankhead-Coley Cancer Research Program. Period of Project: 04/01/2023 – 03/31/2026. Amount awarded: $59,521. Mondal's Share: 70% ($41,665).

3. **Ananda M. Mondal (PI).** Deep Learning to Discover the Disparities in Lung Cancer between African American and European American Males. Agency: NIMHD/NIH, Period of Project: 07/01/2021 – 06/30/2022, Amount Awarded: $73,250. Mondal's Share: 100%.

4. **Ananda M. Mondal (PI).** "CAREER-RUI: NetDA---Protein Network-Based Software for Disease Analysis Using Cliques, Bipartite Graphs, and Diffusion Kernels." Agency: NSF IIS, Period of Project: 06/01/2017 – 05/31/2022, Amount Awarded: $550,000. Amount transferred to FIU: $505,494. Mondal's Share: 100%.

2 Co-PI Grants at FIU ($2.36M: Mondal's Share: $554K)

5. Anuradha Godavarty (PI), **Ananda M. Mondal (FIU-CoPI),** and Robert Kirsner (UM-CoPI). R01: Smartphone-based optical scanner to physiologically assess diabetic foot ulcers. Agency: NIH, Program: NIH Research Project Grant (Parent R01 Clinical Trial Not Allowed), Period of Project: 08/14/2022 – 05/30/2026, Amount awarded: $2.12M. Mondal's Share: 25% ($530K).

6. Giri Narasimhan (PI). CoPIs: Prem Chapagain, Jessica Liberles, Kalai Mathee, **Ananda M. Mondal.** RAPID: Bioinformatic Search for Epitope-based Molecular Mimicry in the SARS-CoV-2 Virus Using Chameleon. Agency: NSF, Period of Project: 07/01/2020 – 06/30/2022, Award Amount: $238,798. Mondal's Share: 10% ($24K).

1 Co-PI Grant before FIU ($1.75M; Mondal's Share: $175K)

7. Angela Peters (PI), **Ananda M. Mondal (CoPI)**, Rajagopalan Bhaskaran (CoPI), Brent Munsell (CoPI), and Arezue Boroujerdi (CoPI). "Implementation Project: Transforming Computational STEM Education at Claflin University." Agency: NSF, Period of Project: 06/01/2014 – 05/31/2019, Award Amount: $1,750,000. Mondal's Share: 10% ($175K).

PROPOSALS SUBMITTED BUT NOT FUNDED

27 Submissions at FIU (10 PI and 17 Co-PI) | 2 Pre-FIU Submission

1. Christian Poellabauer (PI). **Ananda M. Mondal** (CoPI). Collaborative Research: SCH: Towards Precision Medicine for Neurodegenerative Disorders via Integration of Genetic and Digital Health Metrics. Agency: NSF, Program: Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science (SCH), Period of Project: 05/01/2024 – 04/30/28. Amount requested: $1,020,000. Date of submission: 11/09/2023.

2. **Ananda M. Mondal (PI),** Charles Dimitroff (Mentor), Gregory Holt (Co-Mentor). Game Theory in Lung Cancer Health Disparity. Agency: DoD, Program: Lung Cancer Research Program Career Development Award. Period of Project: 01/01/2024 – 12/31/2026. Amount requested: $ 539,180. Date of submission: 05/23/2023.

3. Trevor Cickovski (PI), **Ananda M. Mondal (CoPI),** Christine Lisetti (CoPI), Kalai Mathee (CoPI), Giri Narasimhan (CoPI), Prem Chapagain (CoPI), and Jessica Liberles (CoPI). A Centralized,

Community-Driven Infrastructure for Analysis Pipeline. Agency: National Science Foundation, Program: CISE Community Research Infrastructure (CCRI), Period of Performance: 08/01/2023 – 07/31/2025. Amount requested: $ 1,142,672. Date of Submission: 01/05/2023.

4. **Ananda M. Mondal (PI)**. Co-Investigators: Charles J. Dimitroff (HWCOM, FIU), Collaborator: Gregory E. Holt (UM and Miami VA), and Other Significant Contributor: Mary Jo Trepka (RSCPHSW, FIU). Explainable AI-Based Analysis of Transcriptome in Lung Cancer Disparity. Agency: NIH, Program: Basic Research in Cancer Health Disparities (R21 Clinical Trial Not Allowed), Period of Project: 07/01/2023 – 06/30/2025. Amount requested: $396,569. Date of submission: 10/17/2022.

5. Charles J. Dimitroff (PI), **Ananda M. Mondal (Co-I)**. R01: Analyzing galectin-9 ligands as novel targets in multiple myeloma therapy. Agency: NIH, Program: NCI, Period of Project: 1/1/23 – 12/31/27, Amount requested: $460k direct. Date of submission: 06/05/22. Mondal's portion: 3% Effort.

6. Anuradha Godavarty (PI), **Ananda M. Mondal (FIU-CoPI),** and Robert Kirsner (UM-CoPI). R01: Smartphone-based optical scanner to physiologically assess diabetic foot ulcers. Agency: NIH, Program: NIH Research Project Grant (Parent R01 Clinical Trial Not Allowed), Period of Project: 04/01/2023 – 03/31/2027, Amount requested: $2,628,070. Date of submission: 07/05/2022. Mondal's portion: 24.70% F&A. (*Proposal withdrawn since the previous submission was funded*)

7. Joshua D. Hutcheson (PI), Anuradha Godavarty (CoPI), and **Ananda M. Mondal (CoI)**. Reperfusion as a novel non-invasive indicator of CKD-induced vascular calcification. Agency: American Heart Association, Program: AHA Collaborative Science Grant, Period of Performance: 07/01/2022 – 06/30/2025. Amount requested: $750,000. Date of Submission: 03/16/2022.

8. Trevor Cickovski (PI), **Ananda M. Mondal (CoPI),** Christine Lisetti (CoPI), Kalai Mathee (CoPI), Giri Narasimhan (CoPI), Prem Chapagain (CoPI), and Jessica Liberles (CoPI). A Centralized, Self-Sustaining Infrastructure for Building Analysis Pipelines. Agency: National Science Foundation, Program: CISE Community Research Infrastructure (CCRI), Period of Performance: 08/01/2022 – 07/31/2025. Amount requested: $ 1,128,506. Date of Submission: 01/03/2022. Effort: 10% AY and 7% SU.

9. Anuradha Godavarty (PI), **Ananda M. Mondal (CoPI),** and Wensong Wu (CoPI). R21/R33: Smartphone technology to triage high risk diabetic foot ulcer subjects in India. Agency: NIH, Program: Mobile Health: Technology and Outcomes in Low-and-Middle-Income Countries (R21/R33 - Clinical Trial Optional), Period of Project: 07/01/2022 – 06/30/2027, Amount requested: $1,122,144, Date of submission: 11/15/2021. Mondal's portion: 5% F&A.

10. Charles J. Dimitroff (PI), **Ananda M. Mondal (Co-I)**. R01: Analysis of galectin-9 as a critical regulator of B cell malignancy. Agency: NIH, Program: NIAID, Period of Project: 4/30/22 – 3/31/27, Amount requested: $3,366,935. Date of submission: 11/05/21. Mondal's portion: 3% Effort.

11. Charles J. Dimitroff (PI), **Ananda M. Mondal (Co-I)**. R01: Analyzing the role of galectin-9-binding glycans in the racial disparity of multiple myeloma. Agency: NIH, Program: NCI, Period of Project: 4/30/22 – 3/31/27, Amount requested: $450k direct. Date of submission: 10/05/21. Mondal's portion: 3% Effort.

12. **Ananda M. Mondal (PI)**. Co-Investigators: Charles J. Dimitroff (HWCOM, FIU), Nan Hu (RSCPHS, FIU), and Fahad Saeed (KFSCIS, FIU). Collaborator: Gregory E. Holt (UM and Miami VA). DeepTransITH: Deep Learning to Explore Transcriptomic Intratumor Heterogeneity. Agency:

NIH, Program: Development of Innovative Informatics Methods and Algorithms for Cancer Research and Management (R21 Clinical Trial Optional), Period of Project: 07/01/2022 – 06/30/2024. Amount requested: $396,567. Date of submission: 11/17/2021.

13. **Ananda M. Mondal (PI)**. Co-Investigators: Charles J. Dimitroff (HWCOM, FIU), Nan Hu (RSCPHS, FIU), and Fahad Saeed (KFSCIS, FIU). Collaborator: Gregory E. Holt (UM and Miami VA). Deep Learning-Based Analysis of Transcriptome in Lung Cancer Disparity. Agency: NIH, Program: Basic Research in Cancer Health Disparities (R21 Clinical Trial Not Allowed), Period of Project: 07/01/2022 – 06/30/2024. Amount requested: $396,567. Date of submission: 10/18/2021.

14. Wenrui Duan (PI). **Ananda M. Mondal (CoPI).** Functional Analysis of Germline or Somatic Homologous Recombination Repair (HRR) Deficiency in Advanced Prostate Cancer. Agency: DoD, Program: Prostate Cancer Research Program Idea Development Award, Period of Project: 03/01/2022 – 02/28/2025, Amount requested: $1.05M. Date of submission: 09/23/2021. Mondal's portion: 20% F&A.

15. **Ananda M. Mondal (PI)**. Key Personnel: Nan Hu (RSCPHS, FIU) and Gregory E. Holt (UM and Miami VA). Collaborators: Charles J. Dimitroff (HWCOM, FIU), Wenrui Duan (HWCOM, FIU), Kalai Mathee (HWCOM, FIU), Giri Narasimhan (KFSCIS, FIU), and Fahad Saeed (KFSCIS, FIU). DeepLungITH: Deep Learning to Discover the Intratumor Heterogeneity in Lung Cancer. Agency: DoD, Program: Lung Cancer Research Program Idea Development Award, Period of Project: 01/01/2022 – 12/31/2023. Amount requested: $ 464,232. Date of submission: 07/28/2021.

16. **Ananda M. Mondal (PI)**. Mentor: Charles J. Dimitroff (HWCOM, FIU) and Co-Mentor: Gregory E. Holt (UM and Miami VA). Collaborators: Wenrui Duan (HWCOM, FIU), Kalai Mathee (HWCOM, FIU), Giri Narasimhan (KFSCIS, FIU), and Sathibalan Ponniah (Immune Analytics). Transcriptome State Intratumor Heterogeneity in Lung Cancer Disparity between African American and European American Males. Agency: DoD, Program: Lung Cancer Research Program Career Development Award, Period of Project: 09/01/2021 – 08/31/2023, Amount requested: $333,440. Date of submission: 04/20/2021.

17. Anuradha Godavarty (PI), **Ananda M. Mondal (FIU-CoPI),** and Robert Kirsner (UM-CoPI). Collaborative Research: SCH: Smart Scanner for Physiological and Visual Analysis of Wounds via Automated Machine Learning Algorithms. Agency: NSF/NIH, Program: Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science (SCH), Period of Project: 10/01/2021 – 09/30/2025, Amount requested: $1.08M. Date of submission: 02/16/2021. Mondal's portion: Full support including tuition for a Ph.D. student for four year and one summer month each year for Mondal.

18. Wenrui Duan (PI). **Ananda M. Mondal (CoPI).** Functional Analysis of Germline or Somatic Homologous Recombination Repair (HRR) Deficiency in Advanced Prostate Cancer. Agency: DoD, Program: Prostate Cancer Research Program Idea Development Award, Period of Project: 03/01/2021 – 02/28/2024, Amount requested: $1.05M. Date of submission: 09/24/2020.

19. **Ananda M. Mondal (PI)**. CoPI: Michael Campos (UM and Miami VA). Mentor: Puneeth Iyengar (UTSW) and Co-Mentor: Charles Dimitroff (HWCM, FIU). Collaborators: Wenrui Duan (HWCM, FIU), Kalai Mathee (HWCM, FIU), Giri Narasimhan (SCIS, FIU), and Sathibalan Ponniah (Immune Analytics). LungEpiScreen: Epigenetic Nexuses as Screening Tools and Predictive Markers for Lung Cancer. Agency: DoD, Program: Lung Cancer Research Program Career Development Award, Period of Project: 01/01/2021 – 12/31/2022, Amount requested: $340,030. Date of submission: 08/10/2020.

20. Wenrui Duan (PI). CoPIs: Florence George, Yuan Liu, **Ananda M. Mondal**. Elucidating DNA damage, inflammation, and cancer formation in lungs among at-risk individuals with increased genetic mutational load exposing to cigarette smoke. Agency: NIH, Period of Project: 03/01/2021 – 02/28/2026, Amount requested: $3.5M. Date of submission: 06/05/2020.

21. **Ananda M. Mondal** (PI). CoPIs: Michael Campos (UM, Miami VA), Kalai Mathee, and Giri Narasimhan. LungEpiScreen: Epigenetic Nexuses as Screening Tools and Predictive Markers for Lung Cancer. Agency: DoD, Program: Lung Cancer Research Program Idea Development Award, Period of Project: Pre-proposal. Date of submission: 05/18/2020.

22. Giri Narasimhan (PI). CoPIs: **Ananda M. Mondal,** Prem Chapagain, Charles Dimitroff, Jessica Liberles. NSF Convergence Accelerator – Track D: AI-Driven Pipeline for Tackling Future Viral Epidemics (Pre-proposal). Agency: NSF, Period of Project: 01/01/2021 – 09/30/2021, Amount requested: $1M. Date of submission: 05/11/2020.

23. Giri Narasimhan (PI). CoPIs: **Ananda M. Mondal,** Prem Chapagain, Jessica Liberles, Kalai Mathee. RAPID: Bioinformatic Search for Epitope-based Molecular Mimicry in the SARS-CoV-2 Virus. Agency: NSF, Period of Project: 01/05/2020 – 04/30/2021, Amount requested: $100,000. 04/25/2020.

24. Giri Narasimhan (PI), **Ananda M. Mondal** (CoPI-FIU), Trevor Cickovski (CoPI-FIU), Kalai Mathee (CoPI-FIU), Fahad Saeed (CoPI-FIU), Vincent Lovko (PI-Mote Lab), and Ziv Bar-Joseph (PI-CMU). MTM 2: A Multi-omic approach to study the rise and decline of a Harmful Algal Bloom. Agency: NSF, Period of Project: 09/01/2020 – 8/31/2025, Amount requested: $2,297,856. Date of submission: 03/02/2020.

25. **Ananda M. Mondal** (PI), Wenrui Duan (CoPI), Yuan Liu (CoPI), and Giri Narasimhan (CoPI). URoL: Epigenetics 2: Leveraging Cancer Epigenetics to Understand the Rules of Life. Agency: NSF, Period of Project: 09/01/2020 – 08/31/2025, Amount requested: $2,999,776. Date of submission: 02/06/2020.

26. **Ananda M. Mondal** (PI). MetaBRCA: Metastatic Tipping Point of Breast Cancer. Agency: DoD, Period of Project: 10/01/2020 – 09/30/2023, Amount requested: $611,594. Date of submission: 09/05/2019.

27. Giri Narasimhan (PI), **Ananda M. Mondal** (CoPI-FIU), Shekhar Bhansali (CoPI-FIU), Mitsunori Ogihara (PI-UM), Hemant Ishwaran (CoPI-UM), Meera Sitharam (PI-UF), Jun Xu (PI-GATech), and Ziv Bar-Joseph (PI-CMU). HDR TRIPODS: Collaborative Research: INStitute for Temporal data ANalyTics (INSTANT). Agency: NSF, Period of Project: 01/01/2020 – 12/31/2022, Amount requested: $1,500,000. Date of submission: 05/08/2019.

2 Pre-FIU Submission

28. **Ananda M. Mondal (PI)**. "CAREER: NetDA---Protein Network-Based Software for Disease Analysis Using Cliques, Bipartite Graphs, and Diffusion Kernels." Agency: NSF IIS, Period of Project: 06/01/2016 – 05/31/2021, Amount requested: $692,388.

29. Angela Peters (PI), **Ananda M. Mondal (CoPI)**, Camelia Kantor (PI), Florence Anoruo (CoPI). "ACE Implementation Project - Claflin University Renewable Energy Center." Agency: NSF, Period of Project: 06/01/2013 – 05/31/2018, Amount requested: $3,000,000.

AWARDS AND HONORS

1. **NSF CAREER RUI Award:** CISE Information and Intelligent Systems, 2017.
2. **Innovative Scientific Research Award:** The Attorney William H. and Annette B. Johnson Endowed Annual Faculty Award, Claflin University, May 2017.

OFFICES HELD IN PROFESSIONAL SOCIETIES

1. Member, Association for Computing Machinery (ACM)
2. Member, Institute of Electrical and Electronics Engineers (IEEE)
3. Member, International Society for Computational Biology (ISCB)

OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

Ph.D. Major Advisor [2 graduated; 3 left; 2 advising**]**

[1] Abdullah Al Mamun (Fall 2018 – Spring 2022: Graduated)
Dissertation: A Machine Learning Framework for Identifying Molecular Biomarkers from Transcriptomic Cancer Data
Year of Graduation: Spring 2022
Support: Fall 2020 through Spring 2021 from NSF RAPID and Spring 2022 from NSF CAREER
Employment: Machine Learning Engineer at Meta (Facebook)

[2] Raihanul Bari Tanvir (Fall 2018 – Summer 2023: Graduated)
Dissertation: Graph-Theoretic and Machine Learning-Based Frameworks for Cancer Biomarker Discovery
Year of Graduation: Summer 2023
Support: Fall 2020 through Summer 2023 (NSF CAREER)
Employment: Postdoctoral associate at Boehringer Ingelheim

[3] Mona Maharjan (Fall 2018 – Summer 2020: Left with non-thesis Master's)
Project: Computational Identification of Biomarker Genes for Lung Cancer Considering Treatment and Non-Treatment Studies
Support: Fall 2018 through Summer 2020 (NSF CAREER)

[4] Tasmia Aqila: (Fall 2018 – Fall 2020: Left with non-thesis Master's)
Project: Pseudotime Based Discovery of Breast Cancer Heterogeneity
Support: Fall 2018 through Fall 2020 (FIU Startup)

[5] Emam Hossain (Spring 2022 - Summer 2022: Left after one semester)

[6] Masrur Sobhan (Fall 2020 - Current)
PhD Candidate (Passed qualifying, working on dissertation proposal)
Support: NIH Pilot, NIH R01, and NSF CAREER

[7] Md Mezbahul Islam (Fall 2022 – Current)
PhD Candidate (Passed qualifying, working on dissertation proposal)
Support: NSF CAREER

PhD: Dissertation Committee Member (17, 9 Graduated)

[1] Daniel Ruiz-Perez; Major: Computer Science; Major Advisor: Giri Narasimha. Project: Temporal and Causal Inference with Longitudinal Multi-Omics Microbiome Data. ***Graduated in Fall 2020***.

[2] Chia-Pei Denise Hsu; Major: Biomedical Engineering; Major Advisor: Sharan Ramaswamy; *__ends in Fall 2020__*.

[3] Bashir Sabquat: Major: Electrical & Computer Engineering; Major Advisor: Tauhidur Rahman. Project: Non-invasive Techniques Towards Recovering Highly Secure Unclonable Cryptographic Keys and Detecting Counterfeit Memory Chips. *__Graduated in Fall 2021__*.

[4] Ahmed Imteaj: Computer Science; Major Advisor: Hadi Amini. Project: Distributed Machine Learning Algorithms for Resource-Constrained Heterogeneous Internet-of-Things Environments. *__Graduated in Summer 2022__*.

[5] Jayesh Soni; Major: Computer Science; Major Advisor: Nagarajan Prabakar. Project: Automated Behavioral Analysis of Sequential Data for System Anomaly Detection. *__Graduated in Summer 2022__*.

[6] Farah Ferdaus: Major: Electrical & Computer Engineering; Major Advisor: Tauhidur Rahman. Project: Facilitating Emerging Non-Volatile Memories for Next-Generation Secure Computing System. *__Graduated in Fall 2022__*.

[7] Muhammad Haseeb: Major: Computer Science; Major Advisor: Fahad Saeed. Project: High-Performance Computing Algorithms for Accelerating Peptide Identification from Mass-Spectrometry Data using Heterogeneous Supercomputers. *__Graduated in Spring 2023__*.

[8] Vitalii Steblliankin: Major: Computer Science; Major Advisor: Giri Narasimha. Project: Deep Learning Strategies to Investigate Protein Binding. *__Graduated in Spring 2023__*.

]9] Proyas Podder: Major: Computer Science; Major Advisor: Alex Afanasyev. *__Graduated in Summer 2023__*.

[10] Arpit Mehta: Major: Computer Science; Major Advisor: Giri Narasimhan.

[11] Fahad Ibrahim Almuqhim: Major: Computer Science; Major Advisor: Fahad Saeed. Fall 2021-

[12] Daniela Leizaola: Major: Biomedical Engineering; Major Advisor: Anuradha Godavarty. Summer 2022 – discontinued.

[13] Jimeng Shi: Major: Computer Science; Major Advisor: Giri Narasimhan.

[14] Azam Shirali: Major: Computer Science; Major Advisor: Giri Narasimhan.

[15] Ingrid Gonzalez: Major: Biostatistics; Major Advisor: Gabriel Odom.

[16] Sajad Farrokhi: Major: Computer Science; Major Advisor: Christian Poellabauer

[17] Gautham Vijay Kumar: Major: Computer Science; Major Advisor: Napthali Rishe

Master's Major Advisor (5 graduated)

[1] Genevieve Ferguson (Fall 2023)
Project: Discovering Potential Biomarkers for Uterine and Cervical Cancers with Machine Learning

[2] Jaya Gudipalli (Summer 2023)
Project: Autoencoder-based Approach for Cancer Subtype Prediction and Intratumor Heterogeneity Level Estimation Using Multi-Omics Data

[3] Ravi Chandra Madamanchi (Spring 2023)
Project: Analyzing Skin Tone Bias in Deep Neural Networks for Skin Condition Diagnosis

[4] Santhosh Gadipelly (Spring 2023)
Project: Analyzing Skin Tone Bias in Deep Neural Networks for Skin Condition Diagnosis.

[5] Sai Borelly (Fall 2022)
Project: Computer Aided Diagnosis of Chest X-ray Images.

Master's Major Advisor (5 Current Students)

[6] Vamshidhar Sai Donekal and Sri Sai Teja Chanthati
Project: AutoML for Multi-Omics Based Cancer Subtype Prediction

[7] Sai Siva Prabhu and Jhansi Lakshmi
Project: Graph Neural Network-Based Analysis of Multi-Omics Data for Cancer Subtype Prediction

[8] Erick Gonzalez-Vega
Project: Machine Learning-Based Analysis of Drug Response for Breast Cancer Treatment

Research Mentor: Undergraduate Students (FIU: 3; Pre-FIU: 20)

[1] Praveen Raj Subramaniam (Undergrad, AIMST U, Malaysia), Bioinformatics Internship Program for College Students (Academy for CS Education, PI: Giri Narasimhan), Project: Machine Learning to Identify Breast Cancer Biomarkers, Fall 2021.
[2] Anais Obregon; REU (PIs: Niki Pissinou and Ram Iyengar), summer 2019.
[3] Anher Pinky; REU (PIs: Niki Pissinou and Ram Iyengar), summer 2019.
[4] Adarsh Mishra (UG, Claflin University, 2017), Project: Decoding CyFinder app and possible extension. NSF CAREER (PI: Ananda M. Mondal), summer 2017
[5] Suman Neupane (UG, Claflin University, 2017), Project: Cluster algorithms for network analysis and their applications. NSF CAREER (PI: Ananda M. Mondal), summer 2017
[6] Shubham Patel (UG, Claflin University, 2017), Project: Likelihood ratio for Naïve Bayes Network in predicting PPI. NSF CAREER (PI: Ananda M. Mondal), summer 2017
[7] Harika Etha (UG, Claflin University, 2017), Project: Cytoscape apps for pathway analysis and their applications. NSF CAREER (PI: Ananda M. Mondal), summer 2017
[8] Isaiah Freeman (UG, Claflin University, 2017), Project: Decoding CyFinder app and possible extension. NSF CAREER (PI: Ananda M. Mondal), summer 2017
[9] Charles Schultz (UG, Claflin University, 2016), Project: Bipartite sub-graph and functional Correlation of Protein Subnetwork Biomarkers for Human Diseases.
[10 Jenish Koirala (UG, Claflin University, 2016), Project: GLASSO Analysis of Protein Network Biomarker. Current Position: Advanced Software Engineer, Honeywell Aerospace USA.
[11] Kumar Lama (UG, Claflin University, 2016), Project: DNA Mutation Analysis of Human Diseases. Current Position: Software Developer, JPMorgan Chase & Co.
[12] Dominic Bett (UG, Claflin University, 2016), Project: Diffusion Kernel to Identify Missing PPIs in Protein Network Biomarker. Current Position: Senior Software Engineer, Dell Technologies.
[13] Prayas Timalsina (UG, Claflin University, 2015), Project: Clique and Functional Correlation of Protein Subnetwork Biomarkers for Human Diseases. Current Position: Lead Security Engineer, US Customs and Border Protection.
[14] Stephanie Y. Wyche (UG, Claflin University, 2015), Project: Study of DNA Methylation Patterns in Cancers. Current Position: Senior Developer and Management Consultant, BTG.
[15] Markea Sheppard (UG, Claflin University, 2015), Project: Cytoscape to cluster proteins based on subcellular localization.
[16] Jasmine Carson (UG, Claflin University, 2015), Project: Cytoscape to cluster proteins based on subcellular localization. Current Position: Test Automation Engineer, iDirect Government.
[17] Kevin Charles (UG, Claflin University, 2014), Project: Diffusion Kernel to Extract Information from Protein-Protein Interaction Network.
[18] Andrews Afful (UG, Claflin University, 2013), Project: Subnetwork Biomarkers for Yeast from Co-expressed and Physical Protein-Protein Interaction Using Brute Force Method. Current Position: Core Developer, IEX.
[19 Joseph Rush (UG, Claflin University, 2012), Project: Evaluating Knowledge-based Scoring Function for Drug Discovery. Current Position: Executive Integrator, Boeing.
[20] Reginald Taylor (UG, Claflin University, 2011), Project: Evaluating Empirical Scoring Function for Drug Discovery. Current Position: Monitor and Notification Engineer, Allstate.

[21] Nze Lawson (UG, Claflin University, 2010), Project: Generating Diffusion Kernel-Type Feature for Protein Localization. Current Position: Global Commodity Manager, Google.
[22] Naza A. Mack (UG, Claflin University, 2010), Project: Analysis of Protein FASTA Data for Viruses. Current Position: Assistant Professor, Morgan State University.
[23] Kelechi Agu (UG, Claflin University, 2009), Project: Analysis of Protein FASTA Data for Viruses. Current Position: Senior IT Security Specialist, IBM.

K-12 Outreach Activities

Research Mentor: Middle and High School Students (8 FIU; 5 Pre-FIU)

[1] Trisha Chapagain (rising 10th grader, Archimedean Upper Conservatory); NSF CAREER (PI: Ananda M. Mondal), summer 2022.
[2] Aakash Suresh (rising 11th grader, Pembroke Pines Charter High School); NSF CAREER (PI: Ananda M. Mondal), summer 2022.
[3] Kevin Toledo (rising 12th grader, Medical Academy for Science and Technology); NSF CAREER (PI: Ananda M. Mondal), summer 2022.
[4] Ruchik Vansadia (rising 12th grader, Medical Academy for Science and Technology); NSF CAREER (PI: Ananda M. Mondal), summer 2022.
[5] Michael Guan (rising 6th grader); NSF CAREER (PI: Ananda M. Mondal), summer 2019.
[6] Franklin Zhuang (rising 7th grader); NSF CAREER (PI: Ananda M. Mondal), summer 2019.
[7] Abiel Almonte (rising 9th grader); NSF CAREER (PI: Ananda M. Mondal), summer 2019.
[8] Natalia Laca (rising 11th grader); NSF CAREER (PI: Ananda M. Mondal), summer 2019.
[9] Irtija Nazim (rising 8th grader); NSF CAREER (PI: Ananda M. Mondal), summer 2017.
[10] Bilal Saleem (rising 8th grader); NSF CAREER (PI: Ananda M. Mondal), summer 2017.
[11] Arpon Das (rising 10th grader); NSF CAREER (PI: Ananda M. Mondal), summer 2017.
[12] Je'Wan Goodwin (rising 10th grader); NSF CAREER (PI: Ananda M. Mondal), summer 2017.
[13] Zyon Utsey (rising 12th grader); NSF CAREER (PI: Ananda M. Mondal), summer 2017.

Research Mentor: High School Teachers

[1] Natalia Cardona; RET (PIs: Niki Pissinou and Ram Iyengar), summer 2019.
[2] Joel Rodriguez; RET (PIs: Niki Pissinou and Ram Iyengar), summer 2019.

Teaching Activities (Florida International University)

Courses Taught (9 courses with 8 different preparations)

Undergraduate Courses:
[1] COP 3530 Data Structures (Fall 2020)
[2] COP 4534 Algorithm Techniques (Spring 2020)
[3] CAP 4612 Introduction to Machine Learning (Fall 2021, Fall 2022)
Graduate Courses:
[4] COT 5407 Introduction to Algorithms (Spring 2024)
[5] CAP 5510C Bioinformatics (Spring 2023)
[6] CAP 5610 Machine Learning (Fall 2021, Fall 2022, Fall 2023)
[7] CAP 5738 Data Visualization (Spring 2019)
[8] CAP 6619 Advanced Machine Learning (Spring 2021, Spring 2022, Spring 2023)
[9] CAP 6778 Advanced Data Mining (Fall 2018, Fall 2019)

Graduate Independent Study

[1] Daniela Leizaola   Spring 2022, BME 6509 Machine Learning
[2] Jaya Gudipalli   Summer 2023, CIS 5900 Directed Independent Study

Courses Developed

[1] CAP 6619: Advanced Topics in Machine Learning, Fall 2019.

Senior Projects Directed (10 Semester offerings: Mentored 61 students)

[1] Fall 2019: Project Title: App Development for Analyzing Biological Networks (Version-1). Students: Saias Evyatar and Ariel Sari.

[2] Spring 2020: Project Title: App Development for Analyzing Biological Networks (Version-2). Students: Rolans Apinis and Kyle Pulido.

[3] Fall 2020: Project Title: Cyfinder, a Cytoscape plugin to analyze biological Networks. *Capstone I*: Adolfo Perera, Cesar Martin, Juan Ibarra Cuza, Maikel Ventura, Tyrone Gallardo.

[4] Spring 2021: Project Title: Cyfinder, a Cytoscape plugin to analyze biological Networks. *Capstone II*: Adolfo Perera, Cesar Martin, Juan Ibarra Cuza, Maikel Ventura, Tyrone Gallardo. *Capstone I*: Alvaro Orozco, Carlos Andres Neira, Carlos Sautie, Paulina Acosta Cevallos, Yasmani Rene Valdes.

[5] Fall 2021: Project Title: Cyfinder, a Cytoscape plugin to analyze biological Networks. *Capstone II*: Adam Samson, Damani Cephas, Gabriel Albuquerque Ribeiro, Gersan Landero, Steven Reynoso. *Capstone I*: Kevin Da Silva, Sabrina Camargo, Tyler Uwate.

[6] Spring 2022: Project Title: Cyfinder, a Cytoscape plugin to analyze biological Networks. *Capstone II*: Samuel Perez, Dayron Tabares. *Capstone I*: Laura Penza, Mayelin Espino Gavilanes, Jose Paredes, Jorge Aguero, Leslie Fleitas, Randy Alvarez.

[7] Fall 2022: Project Title: App Development for Biological Network Analysis: Implementing Huffman Coding and Infomap Algorithm. *Capstone II*: Jesus Rodriguez, Sehyun Cho, Josecarlos Lusbel, Maria Hernandez, Binhao Lu. *Capstone I*: Daniel Milanes, Adeel Hye, Rebeca Gonzalez, Mojeed Ashaleye, Alexis Loriga, Ralph Calixte, Jose Altamirano, Austin Escobar.

[8] Spring 2023: Project Title: Computer Aided Diagnosis of Chest X-Ray Images. Implementation of a convolutional neural network to check if the given user image is an x-ray or not. *Capstone II*: Manuel Briseno, Robert Calistri, Jose Illidge.

[9] Spring 2023: Project Title: App Development for Biological Network Analysis: Fine tuning Infomap Algorithm. *Capstone II*: Slav Lazurenko, Osmany Pujol, Sage A Pages, Kyle Gareth Brindle, Anthony Abello.

[10] Fall 2024: Project Title: App Development for Biological Network Analysis: Fine tuning Infomap Algorithm. *Capstone II*: Oscar Alvarez, Valeria Garcia Lizardi, William Lopez, Tyler Uwate, and Leonardo Villa.

Teaching Activities (Claflin University: 2005 - 2018)

Course Name	Terms
CSCI 207: Intro. to Object-Oriented Programming	Fall/Spring (2005 – 2018)
CSCI 237: Data Structures and Algorithms	Spring (2005 – 2018)
*CSCI 451: Bioinformatics Programming in PERL	Spring (2008 – 2018)

*CSCI 452: Bioinformatics Algorithms	Fall (2008 – 2018)
*CSCI 453: Data Mining	Fall (2009 – 2018)
*CSCI 455: Big Data Analytics	Spring (2016 – 2018)

New course proposed and developed by Dr. Mondal

College of Engineering and Computing Services

[1] Representative: CEC Budget Committee   2021 – 2022
[2] Representative: CEC Budget Committee   2022 – 2023
[3] Representative: CEF Budget Committee   2023 – 2024

School of Computing and Information Sciences Services

[1] Coordinator: KFSCIS Graduate Student Seminar   2021 – 2024
[2] Member: SCIS Undergraduate CS-0 Type Courses Committee 2020 – 2021
[3] Member: Distinguished lecture series committee   2019 – 2021
[4] Member: PhD dissertation committee   2019 – date
[5] Member: Qualifying exam committee   2018 – date
[6] Member: Graduate program committee   2018 – 2019

Other Institutional Services

[1] **Faculty Interview:** One-on-one meeting, zoom meeting, and hosting candidate seminar talks (2019 – 2024)

[2] **Judge, Senior Project Showcase:** 2018 (5 posters), 2019 (5 posters), 2023 (5 posters), 2024 (4 posters).

Professional Services

4. NIH grant reviewer: Special Emphasis Panel, February 2024.
5. Guest Editor, PLOS Computational Biology (2022 - present)
6. Organizing Committee Member:
   a. *Proceedings Chair:* 14th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM-BCB 2023)
   b. *Workshop Chair:* IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2022, 2023).
7. Program Committee Member (Conference)
   a. IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM: 2016 - present)
   b. 22nd IEEE International Workshop on High Performance Computational Biology (HiCOMB 2023)
   c. ACM International Conference on Information and Knowledge Management (ACM CIKM: 2022 - present)
8. Program Committee Member (Workshop)
   a. The International Workshop on Deep Learning in Bioinformatics, Biomedicine, and Healthcare Informatics (DLB2H 2020, 2021, 2022).
   b. IEEE BIBM Workshop on Long Non-Coding RNAs: Mechanism, Function, and Computational Analysis (BIBM-LncRNA, 2020, 2021, 2022, 2023)
   c. Towards Precision Medicine: Network Based Big Data Integration and Analysis (BigDataNetAnalysis 2018).

d. BigGraphs Workshop at 2018 IEEE International Conference on Big Data (IEEE BigData 2018).

9. Reviewer of Journals: Bioinformatics, BMC Bioinformatics, BMC Genomics, BMC Medical Genomics, Cancers, Computational and Mathematical Methods in Medicine, Computational and Structural Biotechnology Journal, Diagnostics, IEEE/ACM Transactions on Computational Biology and Bioinformatics, International Journal of Molecular Biology, Lung Cancer, Methods, PLOS ONE, Scientific Report.

10. Reviewer of Conference Proceedings: *ACM BCB, ACM CIKM, BIOKDD, IEEE BIBE, IEEE BIBM, PSB.*