

# CMB NEWS | NORTH DAKOTA STATE UNIVERSITY

A biannual newsletter brought to you by the Cellular and Molecular Biology Graduate Program

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## CMB Student Earns Ph.D.!



Congratulations to **Jesmin Jahan** who successfully defended her dissertation research for the CMB program! Jesmin's research was focused on the effects of TGF- $\beta$  silencing on vasoreparative mechanisms in diabetic CD34+ stem cells. Jesmin was mentored by CMB faculty member **Dr. Yagna Jarajapu** (Pharmaceutical Sciences). Thanks to **Drs. Rick Jansen, Katie Reindl, and Stefan Vetter** for serving on Jemin's examining committee. Jesmin co-authored 5 publications during her time at NDSU and presented her work at 3 national meetings. We are proud of her and the outstanding work she accomplished at NDSU. Congratulations, Dr. Jahan!

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## CMB Student Completes the College Teaching Certificate



**Philip Salu** completed the College Teaching Certificate, a 3-semester program that included coursework and a teaching practicum. For his practicum, Philip served as the instructor of record for the Vertebrate Histology course where he taught lecture and lab sections of 44 undergraduate students, most of whom are pre-health professional students. The students had wonderful things to say about Philip's teaching and the course overall. Well done, Philip!

## CMB Students Publish Research



**Kafi Mia** published a first-author paper in the Canadian Journal of Animal Science titled “[The effects of feeding hempseed cake on pancreatic and jejunal digestive enzymatic activity in finishing heifers](#)”. Kafi is mentored by **Dr. Kendall Swanson**. CMB faculty member, **Dr. Carl Dahlen**, served as a co-author on the manuscript. Congratulations, Kafi and Drs. Swanson and Dahlen!

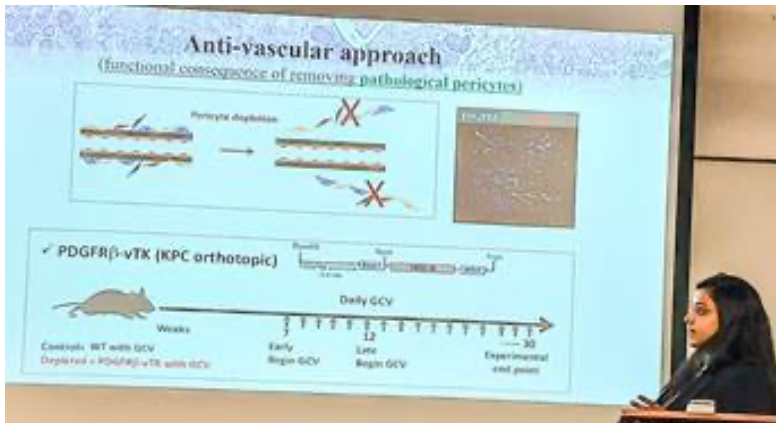


**Jesmin Jahan** co-authored a paper in Clinical Science (London) titled “[Restoration of the gut barrier integrity and restructuring of the gut microbiome in aging by angiotensin-\(1-7\)](#)”. Congratulations, Jesmin and Dr. Jarajapu!

## CMB Students Present Research and Receive Awards



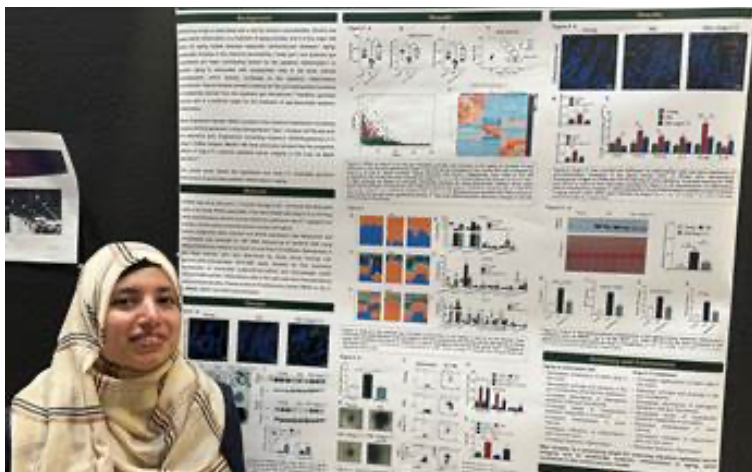
**Kafi Mia** won the Barbara Ann Earwicker Award for the best graduate student oral presentation at the 2023 North Dakota Academy of Science (NDAS) meeting in Minot, ND. The title of his talk was "Influence of vasoactive intestinal polypeptide on growth performance and health in sheep". Kafi also gave an oral presentation at the ASAS-Midwest annual meeting in Madison, WI. The title of his talk was "The effects of feeding hempseed cake on pancreatic and jejunal digestive enzymatic activity in finishing heifers".



**Vikneshwari Natarajan** presented a research talk at the NDAS annual meeting in Minot, ND. Her talk was titled "Effect of pericyte remodeling in PDAC tumor progression and metastasis". She received the Dennison Award for 2<sup>nd</sup> place in graduate communication. Vikneshwari is mentored by **Dr. Jiha Kim** (Biological Sciences).



**Tariqul Islam** gave an oral presentation at the NDAS annual meeting in Minot, ND. The title of his talk was "Facilitation of Torque teno virus (TTV) replication by porcine circovirus 1 (PCV1) replicase". Tariqul is mentored by **Dr. Sheela Ramamoorthy** (Microbiological Sciences).



**Jesmin Jahan** presented a poster at the American Society for Pharmacology and Experimental Therapeutics (ASPET) annual meeting in St. Louis, MO. The title of her poster was “Modulation of mitochondrial bioenergetics in human brain microvascular endothelial cells by telomerase reverse transcriptase”. Jesmin received a CMB travel award to present this work.



Jacob Tesch presented his research at the American Thoracic Society (ATS) annual meeting in Washington DC. His project titled “Targeting SLC7A11/GPX4 signaling induces ferroptosis in lymphangioliomyomatosis (LAM) cells” was selected by the LAM Foundation, for a scholarship. Jacob is mentored by **Dr. Sathish Venkatachalem** (Pharmaceutical Sciences).



**Philip Salu** presented a research talk at the NDAS annual meeting in Minot, ND. His talk was titled “Anterior gradient 2 (AGR2) knockdown increases endoplasmic reticulum proteotoxic stress in pancreatic cancer cells”. He received the 3<sup>rd</sup> place award for graduate communication. Philip is mentored by **Dr. Katie Reindl** (Biological Sciences).



**Jenna Duttenhefner** gave an oral presentation of her research at the University of North Dakota Epigenetics Symposium. The title of her talk was “Mechanistic effect of glutathione S-transferase Pi-1 (GSTP1) knockdown on redox homeostasis and energy metabolism in pancreatic ductal adenocarcinoma (PDAC)”. Jenna is mentored by **Dr. Katie Reindl**.

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## CMB Faculty Receive Awards



**Dr. Chris Colbert** (Chemistry and Biochemistry) received a competitive NIH supplement for the purchase of a NanoTemper Monolith Pico Red/Blue microscale thermophoresis instrument. This instrument is capable of measuring binding interaction between molecules with affinities between micromolar to picomolar. He also was awarded an ND EPSCoR equipment grant to purchase a Sorvall Lynx 600 high-speed centrifuge. These awards have brought cutting-edge structural biology and biochemistry infrastructure to NDSU. Congratulations, Dr. Colbert!



**Dr. Yagna Jarajapu** (Pharmaceutical Sciences) received a three-year Translational Grant Award from the American Heart Association. The title of the research project is “Targeting the  $\beta$ -Splice Variant of TERT in CD34+ Cells for Diabetic Vascular Disease”. Dr. Jarajapu also received a U24 Type B pilot award from The National Institutes of Health NIDDK Cooperative Center of Excellence in Hematology to study the TERT splice variants and myelopoiesis in diabetic CD34+ cells. Congratulations, Dr. Jarajapu!



**Dr. Sheela Ramamoorthy** (Microbiological Sciences) was awarded a USDA-NIFA small business innovation (SBIR) grant along with co-investigators, Dr. Gregory Tobin (Biological Mimetics Inc.) and Dr. Viju Pillai (South Dakota State University). The grant entitled “An improved PCV2 vaccine” will explore the application of artificial intelligence- (AI) based algorithms for vaccine antigen and epitope discovery. Congratulations, Dr. Ramamoorthy!



**Dr. Sangita Sinha** (Chemistry and Biochemistry) was awarded an NIH R15 grant “Molecular mechanism by which Epstein-Barr Virus-encoded BCL2 down-regulates BECN1-mediated autophagy”. She also received an EPSCoR equipment grant to obtain two Eppendorf I-26 Stacking Incubating Shakers for large scale bacterial cell culture, which will expand biochemistry research capabilities at NDSU. Dr. Sinha also received an EPSCoR seed grant to obtain preliminary Cryo-EM data on BECN1-BCL2 complexes. Congratulations, Dr. Sinha!

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