

UNIVERSITY OF THE
DISTRICT OF COLUMBIA
SCHOOL OF ENGINEERING AND APPLIED SCIENCES

All are Welcome

Senior Capstone Presentations

Friday, April 26, 2024

9:00 am to 3:00 PM



COMPUTER SCIENCE

10:00am – 12 noon - Computer Science – A09

Poster Session 11:20am-12:20pm

Best Poster \$Award

12:00 noon - Lunch – A09A

ENGINEERING

9:00am-10:00am - Civil Engineering – A06

10:00am – 11:00am - Electrical Engineering – A06

11:15am-11:45am - Biomedical Engineering – A06

12:00noon – 1:00pm Lunch – A09A

Poster Session - Mechanical Engineering

Best Poster \$Award

1:00pm – 3:30pm - Mechanical Engineering – A06

COMPUTER SCIENCE			
Time	Team Members	Project Title	Advisor
10:00am-10:20am	Carlos Luna Sangama, Nurus Safa, Jose Lazo and Akemi Taira Vasquez Q&As and Transition to Next Presentation	Unity MindSpace: An Online Mental Health Wellness Resource for Everyone	Dr. Thabet Kacem
10:25am-10:45am	Khoa Pham, Leo Andrei Gusto and Shin-Shyang Kao Q&As and Transition to Next Presentation	The Future of Fraud Prevention: Evaluating Predictive Models for Credit Card Transactions	Dr. Thabet Kacem
10:50am-11:10am	Fabrice Wansi, Mosunlade Ishola, Mohamed Bayo and Joshua Proctor	Multimodal Multi-Task Learning (MMTL) for Plant Disease Detection	Dr. Thabet Kacem
11:20am-12:20am	Poster Session		
12:00 noon	Lunch		

CIVIL ENGINEERING	
Project Title	Planning and Design of Civil Engineering Systems
Students	Isaac Blaker, Maduabuchi Akaigwe, Etochukwu Ofodile,
Advisor	Dr. Pradeep Behera
Project Abstract	The civil engineering senior project involves (i) Small Site Development, (ii) Large Site Development - Planning and design of civil engineering systems for the 27 acres land development which include understanding the clients need, complexity of the problem, regulation requirements, planning, analysis, and design. The project develops alternative layout designs of the sub-division and selection of best layout that must include single family & multi-family residences, multi-storied office building, commercial area, and parking. The specific design project included structural design of a multi-storied building including foundation design, stormwater management of the proposed lay out, storm sewer system design, sanitary sewer system design and water supply system design and design of transportation system for the sub-division,

ELECTRICAL ENGINEERING	
Project Title	Unmanned Surface Vehicle for Bathymetric Mapping of Shallow Water Basins
Students	Stephanie Rouamba, Koffi Fonzan, Phillip Wright
Advisors	Dr. Esther Ososanya and Dr. Devdas Shetty

Project Title	Autonomous 'GREEN' MOWER
Students	Devan Newman and Temeche Sisaye
Advisor	Dr. Esther Ososanya



Senior Capstone Project presentations Friday, April 26, 2024

BIOMEDICAL ENGINEERING	
Project Title	Evaluation of A Prosthetic Arm for Transradial Amputation in Bimanual Activities
Project Members	Jamelia Ancel, Oluwasola Okhuoya, Michael Tobias
Advisor	Dr. Ji Chen
Sponsor	2022 Waterman Award

MECHANICAL ENGINEERING	
Project Title	Acoustic Tracking of Pulsed Sources
Project Members	Brent Thigpen, Terrance Graves
Advisor	Dr. Max Denis
Sponsor	Applied Physics Laboratory University of Washington

Project Title	Electrostatic Charge Repulsion of Astronaut suits using Aerosol Jet Printing (AJP) Deposition
Project Members	Mariona Franco Martin, Melissa Prado Valdivia
Advisors	Dr. Jiajun Xu, Dr. Fisseha Gebre, Dr. Xiao Zhang
Sponsor	NASA MINDS Student Competition and UDC Center for Advanced Manufacturing in Space Technology & Applied Research

Project Title	Effects of Defects in Thin-Walled Components for Aerospace Applications
Project Members	A-Sun Truth, Leopold M. Nzonou, Keino Thompson, Serge Brohiri
Advisors	Dr. Jiajun Xu, Dr. Faridreza Attarzadeh
Sponsor	Naval Air Warfare Center Aircraft Division, Patuxent River, MD

Project Title	Design of a Platform Perturbation Device for Human Balance Diagnostics and Training
Project Members	Antonio Simo Durall, Everick McDonald
Advisor	Dr. Alex Peebles
Sponsor	NASA MINDS Student Competition



Senior Capstone Project presentations Friday, April 26, 2024

Senior Capstone Projects

Senior Capstone Projects represent the culmination of the educational experience, integrating the classroom with real world problems. The students handle open-ended engineering and computational problems whose solutions require a synthesis of engineering knowledge, computational analysis, creativity, market needs, safety and esthetics. Projects are supervised by instructors and industry mentors.

Panel of Judges

Representatives from Civil Engineering, Electrical and Computer Engineering, Mechanical Engineering, Computer Science departments faculty and External Advisory Board members.

Supervising Faculty

Dr. Faridreza Attarzadeh

Dr. Pradeep Behera, PE, F.ASCE, BC.WRE, Professor and Chair, Civil Engineering

Dr. Ji Chen, Assistant Professor of Mechanical Engineering

Dr. Max Denis, Assistant Professor of Mechanical Engineering

Dr. Fisseha Gebre

Dr. Thabet Kacem, Associate Professor of Computer Science

Dr. Esther T. Ososanya, Professor of Electrical and Computer Engineering

Dr. Alex Peebles, Assistant Professor of Mechanical Engineering

Dr. Devdas Shetty, P.E., Dean and Professor of Mechanical Engineering

Dr. Jiajun Xu, Professor of Mechanical Engineering

Dr. Xiao Zhang

Acknowledgements

Applied Physics Laboratory University of Washington

NASA MINDS Student Competition

Naval Air Warfare Center Aircraft Division, Patuxent River, MD

UDC Center for Advanced Manufacturing in Space Technology & Applied Research

Waterman Award

Pablo Sanchez Guerrero

Hung Ha

Netra Simmons

Gebretensae Tzadu