

**CAES Associate Director Quarterly Report
Idaho State University, FY22Q3
April, May, June 2022**

Section 1. Publications on behalf of CAES

Because ISU faculty are off-contract, I did not request this information from them

Section 2. Conferences Attended on behalf of CAES

Because ISU faculty are off-contract, I did not request this information from them

Sections 3. Submitted Proposals Related to CAES Activities, FY22Q3

Lead PI	Admin Unit	Title	Sponsor
Anirban Chakraborty	Biological Sciences	Improving the electron shuttling efficie...	BEA
Xiaomeng Xu	Psychology	Research Assistantship Summer 2022	BEA
Leslie Kerby	COSE Informatics / Comp Sci	Cyber Attack and Defense for Autonomous ...	BEA
Leslie Kerby	COSE Informatics / Comp Sci	Using Artificial Intelligence to Guide t...	BEA
Mostafa Fouda	Electrical Engineering	Developing Machine Learning Based Force ...	BEA

Section 3.5. Funded Awards related to CAES Activities , FY22Q3

Lead PI	Admin Unit	Title	Sponsor
Anirban Chakraborty	Biological Sciences	Improving the electron shuttling efficiency of a...	BEA
Daniel LaBrier	Nuclear Engineering	University Nuclear Leadership Programs (UNLP) - ...	DOE
Bruce Finney	Biological Sciences	Synthesis of lacustrine tephra data in central a...	BEA
Mustafa Mashal	Civil Engineering	Utilization of Waste Products from Agricultural ...	BEA
Mustafa Mashal	Civil Engineering	Mobile Robot for Security Applications in Remote...	BEA
Leslie Kerby	COSE Informatics / Comp Sci	Using Artificial Intelligence to Guide the Run-l...	BEA
Mostafa Fouda	Electrical Engineering	Developing Machine Learning Based Force Field fo...	BEA
Amir Ali	Nuclear Engineering	Fundamentals of Computational Analysis of Thermo...	BEA
Leslie Kerby	COSE Informatics / Comp Sci	Cyber Attack and Defense for Autonomous or Remot...	BEA
Chad Pope	Nuclear Engineering	Faculty Development Program in Nuclear Engineeri...	NRC
Mary Lou Dunzik-Gougar	Nuclear Engineering	Nuclear Regulatory Commission Scholarship	NRC

Section 4. Patents, Licenses, other IP - None

Section 5. Other Awards

Section 6. Graduated CAES-affiliated students - Many

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Section 7. Continuing CAES-affiliated students (partial list)

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Section 8. Incoming CAES-affiliated students - None

Section 9. Joint Appointments (continuing)

Chad Pope (nuclear engineering)

Sean McBride (cybersecurity)

Larry Leibrock (cybersecurity)

David Rodgers (CAES AD)

Section 10. New Equipment - None**Section 11. Collaborative Research:**

(1) CAES Collaboration Grants - continuing in FY22Q3

INL PI	ISU co-PI	ISU Department	BSU/UI Co-PI	Project
Kunal Mondal	Mustafa Mashal	Civil Engineering		Net Zero: Utilization of Waste Products from Agricultural and Biomass Industries to Reduce Concrete Emissions
Vaibhav Yadav	Mustafa Mashal	Civil Engineering		Mobile Robot for Security Applications in Remotely Operated Advanced Reactors
Kingyue Yang Rajiv Khadka John Koudelka	Mustafa Mashal	Civil Engineering		Investigation on Designing a Framework of Utilizing Sensor Data in Virtual Training for Disaster Response Preparedness and Response
Ryan Stewart	Leslie Kerby	Computer Science		Using Artificial Intelligence to Guide the Run-In of a Pebble Bed Reactor
Joshua Fishler	Amir Ali	Nuclear Engineering	Lan Li	Fundamentals of Computational Analysis of Thermal Systems: Curriculum Development
Asef Redwan	Anirban Chakraborty	Biological Sciences		Improving the electron shuttling efficiency of activated carbon in relation to biological nitrogen removal during water treatment
Md Riaz Kayser Ahmed Hamed	Mostafa Fouda	Electrical & Computer Engineering		Developing Machine Learning Based Force Field for Predicting Radiation Resistance of High Entropy Alloys

(2) ISU-CAES Seed Grant Program - continuing in FY22Q3

ISU PI	ISU Department	ISU co-PIs	University co-PIs	INL co-PI	Project
Ali, Amir	Nuclear engineering			Yasir Arafat	Performance optimization of MARVEL Microreactor power conversion system
Bodily, Paul	Computer Science			Rajiv Khadka	Application of Advanced Computational Theory to Facilitate Efficient Solutions to Real-World Combinatorial Problems
Forest, Tony	Physics			Chutiing Tan	A neutron Generator for Materials Testing
Fouda, Mostafa	Electrical & Computer Engineering			Ahmed Hamed	Smart Analytics of Biomass Images
Kalivas, John	Chemistry			John Koudelka	Virtual Reality for Dynamic Data Visualization of Analytical Chemical Data
Mashal, Mustafa	Civil Engineering	Dan LaBrier Jared Cantrell		Som Duhlipala Amit Jain	Machine Learning-Aided Validation of a Sustainable and Highly Durable Construction Technology for the Containment Facility of Advanced Reactors
Pashikanti, Srinath	Biomedical and Pharmaceutical Sciences	Rene Rodriguez		Robert Fox Donna Baek	Incorporation of Sterics in novel Phosphonium Ionic Liquid (PIL) and their Effect on Ligand Intermolecular Interactions and Chelation Properties
Savage, Bruce	Civil Engineering	Chikashi Sato Jim Mahar Mustafa Mashal	Karen Humes, UI Dakota Roberson, UI		Water Storage Infrastructure Viability using Repurposed Tires for Pumped Hydro
Weber, Keith	GIS TReC		Kathleen Araujo BSU Cassandra Koerner, BSU	Kelly Wilson Ryan Hruska Shiloh Elliot Chris Forsgren	The Power Grid/Wildfire Nexus: Using GIS and Satellite Remote Sensing to Identify Vulnerabilities
Xu, Danny	Biomedical and Pharmaceutical Sciences		Kenneth Cornell, BSU	Eric Whiting	Hearing Loss Prevention through Integrative High Performance Computing, Data Science, and Experimental Biology