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Contact Information

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Message from the Chair

First of all, let me thank our member Karl McCaleb, P.E. for arranging our financial speakers from Ballentine Capital Advisors for our January meeting. It was quite interesting and thought provoking. In spite of taking Engineering Economics and working on capital rates of return, payback time, and net present value for many projects, financial things are still a challenge for me to grasp. I appreciate the clarity they provided.

Did you know that February is named after a Roman purification festival called februa, which occurred around the fifteenth of this month? Februa literally means “month of cleansing” - a fitting title considering that February was once the last month of the year. Now it's no longer the last month of the year, but the second and it's known for love, black history, and presidential birthdays. The point is that things are always changing and that is particularly true for our profession. Not only is technology constantly changing and advancing, but so is our reach into new industries and technologies. Our impact on health care was restricted to pharmaceutical synthesis and pollution control a relatively short time ago. Now we are working on polymers that can contract like muscles, sensors that can monitor blood sugar without finger sticks, etc. Who knows what our future holds. Remember in Star Trek IV where Dr. McCoy gives the dialysis patient a pill and in just a few minutes she's cured? Wouldn't it be awesome to be part of an advancement like that?

Our February meeting on February 10th will be hosted by Clemson's ChE department and our speaker will be Dr. Cat Majors, Assistant Professor of Chemical & Biomolecular Engineering at Clemson

University. She will discuss her work detecting disease and the future for in vitro protein engineering and its potential to enable a wide variety of healthcare solutions. I encourage you to come out and hear directly from someone who is taking chemical engineering and bioengineering into fields that were once the realm of science fiction. We will also be handing out our annual Clemson Scholarship to two deserving students. Come join us to celebrate the future of Chemical Engineering.

Bill Thompson, Chair, WSC AIChE

February Meeting Information

Dr. Cat Majors is an Assistant Professor of Chemical & Biomolecular Engineering at Clemson University. Her research focuses on engineering novel protein signaling networks to enable ultrafast, ultrasensitive diagnostic tests that can be deployed at the point-of-care.

Dr. Majors will give a presentation on detecting bacterial infections at the point of care. An abstract is below:

Rapid, inexpensive detection of disease biomarkers at the point of care is vital for many clinical purposes. For analytes where point-of-care testing is possible, improved disease screening, diagnosis, monitoring, and management have been achieved. The first half of Dr. Majors' talk will describe two technologies she developed to detect bacterial infections at the point of care. First, Dr. Majors will discuss a portable fluorescence microscope with associated one-step sample staining disposable cartridge that performs a white blood cell count and partial differential from a single drop of blood. Second, Dr. Majors will describe a lateral flow assay (LFA) to detect two protein biomarkers of bacterial infections leading to sepsis, highlighting key drawbacks to the use of LFA diagnostic technology. The LFA is one of the most common point-of-care diagnostic tests to detect protein biomarkers of disease, but due to a lack of signal amplification it often suffers from false negative results for low concentration biomarkers. As such, the second half of the presentation will focus on Dr. Major's current work developing synthetic in vitro protein signaling networks incorporating self-amplifying enzymatic pathways to detect and amplify signals from low-concentration antigen biomarkers of disease. The talk will conclude with a summary of the exciting future for in vitro protein engineering and its potential to enable a wide variety of healthcare solutions.

TITLE:	Detecting Bacterial Infections at the Point of Care with Dr. Cat Majors
DATE:	Monday, February 10th, 2025
Event timing:	Social Starts at 6:00pm Dinner Starts at 6:30pm Presentation starts at 7:00pm
LOCATION (in-person event):	Earle Hall - Room 100 S Palmetto Blvd, Clemson, SC 29631
LOCATION (virtual event):	Virtual event Link on Website Meeting will open at 6:45pm
COST	No Charge for Dinner
RSVP by 2/8/25	RSVP HERE if you plan to attend

RSVP [\[HERE\]](#) - by February 8th.

2025 WSC AIChE Clemson Scholarship Application

The 2025 WSC AIChE Scholarship will be distributed to two deserving students at our February meeting in Clemson. Come out and support rising Chemical Engineers and students who are the future of our industry.

Opportunities to Assist

We welcome your participation on any level in this organization. Please reach out to Devon Clymer, sec@wscaiche.org, if you have any feedback on any of the following:

- You or someone you know would like to give a technical presentation at an upcoming meeting.
- Provide meeting topic or location recommendations to the leadership team.
- Provide recommendation or access for a plant tour (usually in the spring).
- You have interest in joining our Officers or Executive Committee.
- Any general question or comments on meeting times, locations, and topics

2023-2024 Officers and Executive Committee

POSITION	NAME	COMPANY	E-MAIL
Chair	Bill Thompson	Ortec	bthompson@ortecinc.com chair@wscaiche.org
Vice-Chair	James Young	Fluor	James.H.Young@fluor.com vchair@wscaiche.org
Secretary	Devon Clymer	Jacobs	Devon.clymer@jacobs.com sec@wscaiche.org
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Scholarship Coordinator	David Hine		dpkjhine@gmail.com
Newsletter	(open)		
Historian	(open)		
Executive Committee	Karl McCaleb		kmccaleb2@bellsouth.net
	Donald P Gurney, Jr., ScD, P.E.	Consultant	degurney@charter.net
	Anil Wagle	Retired	Anilwagle123@gmail.com
	Anastase (Tasso) Ghionis	Omega Chemicals	

2024-2025 Calendar of Events

DATE	LOCATION	TOPIC
December 2024	FireForge Brewery	WSCAICHe Holiday Social
January 14, 2025	Jacobs Engineering	Financial Planning with Bryan Ballentine
February 10, 2025	Clemson	Detecting Bacterial Infections at Point of Use
March 10, 2025	Jacobs Engineering	Robotic DePainting F-15 Fuel Tanks, Part I
April 2025	Nicca Chemical	Nicca Chemical Presentation and Plant Tour
May 2024	TBD	WSCAICHe May Social
