

**Arkansas  
Research  
Alliance (ARA):  
Overview**

**Prepared for the  
Joint Meeting of  
the House and  
Senate Public  
Health, Welfare,  
and Labor  
Committees**

**1:00 p.m., Nov. 1, 2021**

**Big MAC-A**



**Arkansas  
Research  
Alliance**



# Questions relevant to Arkansas that the ARA Academy members are working on...

1. How to grow bone to replace damage from war time injury?
2. How to understand childhood brain development and effects from childhood trauma?
3. How to sustain/increase rice yields with higher night time temperature?
4. How to increase the safety and efficiency of high speed conveyor systems for Amazon and FedEx?
5. How to improve/grow a stronger catfish industry in Arkansas?



# Who we are

- Public-private partnership founded in 2008 from vision of Accelerate Arkansas
- Economic development organization focused on using university research to increase the competitive future of Arkansas
  - Talent, Focus, Collaboration, and Results
- Strong Board of Trustees
- 14<sup>th</sup> year of operation: small and agile team

# What we do

Recruit and retain strategic university research leaders

Focus and elevate their collaboration and impact

Partner with the **state's 5 main research universities** that represent **over 90%** of the federal research dollars that flow into the state:

- University of Arkansas
- University of Arkansas for Medical Sciences
- Arkansas State University
- University of Arkansas at Little Rock
- University of Arkansas at Pine Bluff

Manage a strategic collaboration with the state's largest federal lab: **U.S. FDA National Center for Toxicological Research**

# ARA Board of Trustees

## University Chancellors

Laurence Alexander – UAPB

Kelly Damphousse – A-State

Cam Patterson – UAMS

## Corporate Members

Sonja Hubbard – The Yates Group (Chair)

Ritter Arnold – E. Ritter and Company

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Tracy Rosser – Transplace

Reynie Rutledge – First Security

Barbara Sugg – Southwest Power Pool

Mary Ward – Acxiom

Dan Williams – Garver

Michelle Wolfe – Walmart

# ARA Board of Trustees: Previous Members

Previous members include [14](#) chancellors of Arkansas research universities and [27](#) corporate leaders:

## University Chancellors

Joel Anderson – UA Little Rock  
Lawrence Davis – UAPB  
Dan Ferritor – UA  
Stephanie Gardner – UAMS  
David Gearhart – UA  
Dan Howard – A-State  
Tim Hudson – A-State  
Robert Potts – A-State  
Daniel Rahn – UAMS  
Andrew Rogerson – UA Little Rock  
Joe Steinmetz – UA  
Dodd Wilson – UAMS  
Calvin Johnson – UAPB  
Doug Whitlock – A-State

## Corporate

Dick Bond – Tyson  
Bruce Burrow – MBC Holdings  
Hal Carper – Tyson  
Steven Cosse' – Murphy Oil  
Kristi Crum – Verizon  
Claiborne Deming – C.P. Deming Co.  
Ray Dillon – Deltic Timber  
Ed Drilling – AT&T  
Kent Fonvielle – MISO  
Scott Ford – Westrock Capital  
Jeff Gardner – Windstream  
Todd Hillman – MISO  
Roger Jenkins – Murphy Oil Corp  
Marla Johnson-Norris – Aristotle

## Corporate

Carol Johnston – Walmart  
Gaylon Lawrence – The Lawrence Group  
Alex Lostetter – Cree  
Drew May – Acxiom  
Tommy May – Simmons First Foundation  
Hugh McDonald – Entergy  
Rick Riley – Entergy  
John Roberts – J. B. Hunt  
Bob Shoptaw – AR Blue Cross Blue Shield  
Stephen Smith – Verizon  
Kirk Thompson – J. B. Hunt  
Dean Taylor – Verizon  
Rick Webb – Walmart

In total, there have been [56 members](#) of the ARA Board of Trustees: [19](#) chancellors and [45](#) corporate leaders.



# How we do it

**Programs** to recruit, retain, recognize top research talent

- ARA Scholars
- ARA Fellows
- ARA Academy of Scholars and Fellows
- ARA Impact Grants
- ARA Core Facilities Exchange
- Arkansas Voices 4 Research: *AMP Discovery Economics* + Project Scope

# Why is what we do important to the state

- Recruiting and retaining research talent
- Increasing collaboration between institutions/researchers
- Supporting important organizations such as NCTR



# Impact of increased research in Arkansas

## ARA Academy: Federal Grants Snapshot (2020)

- # of active federal grants: **123**
- \$-value of active federal grants: **\$73,633,540**

**ARA Impact Grants Pilot (2019): \$1M** across 15 projects has led to **\$13M** in federal follow-on funding

- \$36M in the proposal pipeline
- Round 2 (2021) of \$1M underway

**FDA research contracts: \$5M**





# Meet the ARA Academy

Since its launch in 2015, the [ARA Academy of Scholars and Fellows](#) has grown to **32 active members** from **five research universities** and the **National Center for Toxicological Research (NCTR)**.



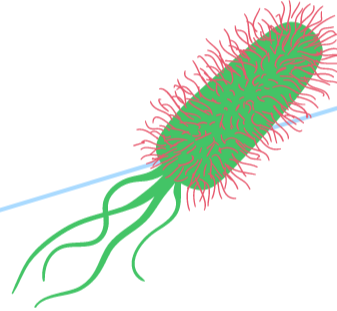


Nushores Biosciences developed a scaffolding that promotes the growth of artificial bone.

There is no satisfactory solution for major bone injuries caused by accidents, warfare and cancer.



But a new challenge remained: how to prevent catastrophic bacterial bone infections.



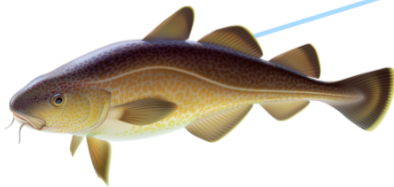
ARA Fellows Dr. Alex Biris (UA Little Rock) and Dr. Mark Smeltzer (UAMS) collaborated to develop a system that infuses antimicrobial properties into the artificial bone, preventing life-threatening infections.

Research results show that NuShores' NuCress™ scaffolding could offer a number of benefits that to date not achieved by currently marketed bone regeneration products, therefore promising to bring better treatment outcomes to millions of people with severe bone injuries. NuShores has the exclusive, global license from University of Arkansas Little Rock to commercialize university-owned patented and patent-pending bone regeneration technologies.



UNIVERSITY  
of ARKANSAS  
AT PINE BLUFF  
1873

Catfish farming is big business in Arkansas.



But foreign competition is flooding the market with cheap fish.



\$55M in sales, 1998



\$28M in sales, 2013



UAPB professor and ARA Fellow Dr. Rebecca Lochmann is recharging Arkansas' catfish industry by engineering healthier fish.

Dr. Rebecca Lochmann's research centers on improving fish performance and production by discovering a comprehensive approach to assessing dietary iron utilization in channel catfish-fed, plant-based diets.



**Problem: more electronics means more heat, which means more weight to cool the systems.**

**The international company wants its heavy-machinery to rely more on clean energy electrical systems.**

**Caterpillar has a major manufacturing presence in Arkansas.**



**ARA Fellow Dr. Alan Mantooth of the University of Arkansas is developing a 2-by-250 kilowatt, dual-power inverter system for use in the electrification of heavy equipment and other, higher-volume transportation vehicles, such as trucks and buses.**



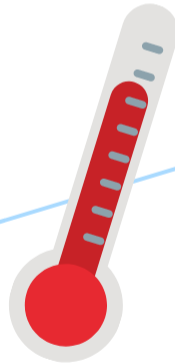
Dr. Mantooth holds the Twenty-First Century Research Leadership Chair in electrical engineering. He serves as executive director of the Department of Energy-funded Cybersecurity Center for Secure Evolvable Energy Delivery Systems and the National Science Foundation-funded GRid-connected Advanced Power Electronic Systems. He is an IEEE Fellow, has served on the IEEE Power Electronics Society Advisory Committee since 2004.



In Arkansas, rice is a \$600M industry. Our state is the nation's leading rice producer.



Climate change has increased Arkansas' nighttime temperature by 0.5°C, threatening yields.



Not only is our state's rice production threatened, so is the world's food security.



**ARA Fellow Dr. Argelia Lorence of Arkansas State University leads a team researching ways to make rice more resistant to rising nighttime temperatures.**

As a professor of metabolic engineering at Arkansas State University, Dr. Lorence has devoted her life to equipping farmers with the latest tools and technologies to maximize their yields and adapt to changing growing conditions.

# Collaborative Research Impact

- Each year, 215,000 Americans are diagnosed with lung cancer. The epidemic is especially burdensome to Arkansas with death rates far higher than the national average.
- A lung biopsy – an invasive procedure needed to diagnose lung cancer – is uncomfortable, risky for the patient, and expensive. But promising research conducted by in-state institutions is changing the game.
- **Arkansas Research Alliance** organized and leads a team of researchers who are breathtakingly close to developing a liquid biopsy for diagnosing and treating lung cancer with precision medicine.
- Fueled by close to \$3 million in contracted funding from the FDA's National Center for Toxicological Research, the team harnesses collaboration between UAMS, UA Little Rock, UAPB, UA, and A-State.



# Summary

1. Who we are...
2. What we do...
3. How we do it...
4. Why it's important to Arkansas...
5. Share examples of research.



# Contact

## **Arkansas Research Alliance**

1125 Oak Street, Suite 301

Conway, Arkansas 72032

[www.aralliance.org](http://www.aralliance.org)

Office: (501) 450-7818

Jerry B. Adams, President, [jadams@aralliance.org](mailto:jadams@aralliance.org), (501) 269-2624

Bryan J. Barnhouse, CEO, [bbarnhouse@aralliance.org](mailto:bbarnhouse@aralliance.org), (501) 539-2777