

AR-BIC2020: Artificial Intelligence (AI) at Arkansas (AR)

Arkansas Bioinformatics Consortium (AR-BIC) is an AR-centric community which facilitates communication and collaboration to leverage AR expertise and resource in the area of data sciences and bioinformatics applied to a broad range of disciplines crucial for AR. It was established in 2014 with the first five annual conferences centered around precision medicine, agriculture, and data sciences. Its 6th annual conference will be focused on Artificial Intelligence (AI) at AR. The 1.5 day conference will be held at Wyndham Riverfront Little Rock, Feb 10-11, 2020, <https://aralliance.org/ar-bic/>.

Artificial Intelligence (AI) is a broad concept of training machines to think and behave like humans. It consists of a wide range of statistical and machinal leaning approaches with a specific emphasis on learning from the existing data/information to predict future outcomes. This conference will discuss the basic concept and methodologies of AI applied in the fields of biomedical research, food safety, drug discovery/development and clinical application. In addition to provide a platform for networking and collaboration, this conference will also showcase AI expertise and experience at AR.

AR-BIC Governing Board

- Arkansas Biosciences Institute (ABI): Bobby McGehee
- Arkansas Economy Development Commission (AEDC): Tom Chilton
- Arkansas Research Alliance (ARA): Jerry Adams, Bryan Barnhouse, and Julie LaRue
- Arkansas State University (ASU): Thomas Risch
- National Center for Toxicological Research (NCTR): William Slikker, Weida Tong, Shraddha Thakkar
- University of Arkansas (UA): Dan Sui
- University of Arkansas at Little Rock (UALR): Brian Berry
- University of Arkansas for Medical Sciences (UAMS): Shuk-Mei Ho
- University of Arkansas at Pine Bluff (UAPB): Mansour Mortizavi

Scientific Program Committee:

- Arkansas Research Alliance (ARA): Bryan Barnhouse and Julie LaRue
- Arkansas State University (ASU): Jason Causey, Jake Qualls, Xiuzhen Huang, Emily Bellis
- National Center for Toxicological Research (NCTR): Weida Tong (Chair), Shraddha Thakkar, Tanmay Bera, Syed Ali
- University of Arkansas (UA): Justin Zhan, Douglas Rhoads
- University of Arkansas at Little Rock (UALR): Mary Yang, Jerry Darsey
- University of Arkansas for Medical Sciences (UAMS): David Ussery, Timothy Ashby, Michael Bauer
- University of Arkansas at Pine Bluff (UAPB): Karl Walker

Points of Contact:

- Logistics: Julie LaRue (jarue@aralliance.org)
- Scientific Programs: Weida Tong (Weida.Tong@fda.hhs.gov)

Draft Agenda:

Day 1 (Feb 10, Monday)

1:00-1:10pm: Welcome Remarks <ul style="list-style-type: none">Jerry Adams (ARA)
1:10 – 4:00pm: Introduction to Artificial Intelligence (AI) CO-Chaired by Weida Tong (NCTR) and Brian Berry (UALR) <ul style="list-style-type: none">An Introduction to AI, Weida Tong (NCTR)AI for text mining, Xiaowei Xu (UALR)AI for imaging analysis, Mariofanna Milanova (UALR)
4:00 - 5:00pm: Keynote Speaker 1 (TBD) (TBI)
5:00 -7:30pm: Poster Presentation and Reception

Day 2 (Feb 11, Tuesday)

8:30 – 9:30am: Cesare Furlanello, FBK, Trento, Italy
9:30-12:00pm: Session 1: ARA Academy on AI (25min each with 25min break) Chaired by Doug Hutchings and Bryan Barnhouse (ARA) <ul style="list-style-type: none">Clint Kilts (UAMS): AI for brain (TBC)FDA efforts on ML for genomic biomarker, Weida Tong (NCTR)Biomedical imaging segmentation, Xiuzhen Huang (ASU)Argelia Lorence (ASU): AI in crop studies (TBC)Data Bridge and Deep Learning For AI, Justin Zhan (UA)
12:00-1:00pm: Lunch Break
1:00-2:00pm: Session 2: Imaging and Radiomics (20min each) Co-Chaired by Douglas Rhoads (UA) and Fred Prior (UAMS) (To Be Confirmed) <ul style="list-style-type: none">FIDE: an AI-based Recognition System to advance ORA regulatory operations at Importing Mail Facilities, Leihong Wu (NCTR)Advanced Approaches in Deep Learning and Computer Vision to 3D Face Emotion Recognition in Food Eating, Khoa Luu (UA)Deep-learning for automated segmentation of skin wound features, Kyle Quinn (UA)Can add one more speaker
2:00-2:30pm: Coffee Break

2:30-4:10pm: Session 3: AI/ML in biomedical research (20min each)

Co-Chaired by Emily Bellis (ASU) and Shraddha Thakkar (NCTR) (TBI)

- **Advances in neural AI and applications to drug discovery**, Andreu Vall, Institute for Machine Learning, Johannes Kepler University, Linz, Austria
- **AI for drug design and drug discovery**, Jerry Darsey (UALR):
- **Deep learning inferential methods for protein structure predictions**, Mahmoud Moradi (UA)
- **Drug Repositioning in the Era of AI**, Zhichao Liu (NCTR)
- **AI/ML for predicting drug-induced liver injury**, Shraddha Thakkar (NCTR)

4:10 – 4:30pm: Poster Award and Concluding Remark

Conference sponsors and acknowledgement:

- * Arkansas Research Alliance (ARA)
- * University of Arkansas (UA)
- * University of Arkansas at Little Rock (UALR)
- * Arkansas State University (ASU)
- * Arkansas Biosciences Institute (ABI)
- * University of AR for Medical Sciences (UAMS)
- * University of Arkansas at Pine Bluff (UAPB)
- * Food and Drug Administration (FDA)

**Funding for this conference was made possible, in part, by the Food and Drug Administration through grant 1R13FD005304-01, views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does any mention of trade names, commercial practices, or organization imply endorsement by the united states government*