

# Fifty-Second Annual Arkansas Junior Science And Humanities Symposium

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## OBJECTIVES

- To promote research and experimentation in the sciences, mathematics, and engineering at the high school level.
- To recognize the significance of research in human affairs, and the importance of humane and ethical principles in the application of research results.
- To search out talented youth and their teachers, recognize their accomplishments at symposia and encourage their continued interest and participation in the sciences, mathematics, and engineering.
- To expand the horizons of research-oriented students by exposing them to opportunities in the academic, industrial, and governmental communities.
- To increase the number of future adults capable of conducting research and development.

## Program

All rooms are located on the main campus of Arkansas Tech University

### FRIDAY, MARCH 9, 2018

12:30pm      **Registration, McEver Hall Lobby**  
Bus parking is available in the Tucker Coliseum lot across from the East entrance to Doc Bryan

1:00-4:30pm      **Demonstration Tours:**  
Tours will assemble in the McEver lobby

2:40-3:00pm      **Refreshments McEver 103**

4:35pm      **Meeting of All Delegates, McEver 162**  
A meeting of all teachers and delegates with the director to go over policies and procedures.

5:15pm      **Return to Hotel**  
**(La Quinta Inn of Russellville)**

6:30pm      **Recognition Banquet, Chambers West**  
Introductions:  
Dr. Jessica Young, Director Arkansas JSHS

Welcome:  
Dr. Robertson, Dean ATU Nat. & Health Sci.

Certificates:  
Dr. Hamed Shojaei, Assoc Professor of Physics

7:45m      **Keynote Speaker, Chambers West.**  
**Dr. Santoshi Nandivada, Assistant Professor of Physics, ATU**

9:00pm      **Return to Hotel for Pizza Party and Swimming**  
La Quinta Inn of Russellville

### SATURDAY, MARCH 10, 2018

6:15-7:45am      **Breakfast, La Quinta Inn of Russellville**  
Students should be checked out before leaving the hotel for the paper presentations.

8:00-12:00      **Presentation of Student Papers, Doc Bryan Auditorium**  
Moderator:  
Dr. Jackie Bowman Assoc. Prof. of Bio. ATU

12:00-1:00 pm      **Lunch, Chambers Cafeteria**

12:00-1:30pm      **Poster Setup, Young ballroom**

1:30-3:00pm      **Judging of Posters, Young Ballroom**  
Head Judge:  
Dr. Rajib Choudhury , Assistant Professor of Chemistry, ATU

3:00-3:15pm      Break/move to Doc Bryan

3:15-4:15 pm      Magic Show with Illusionist Paul Carlon

4:15—5:00 pm      **Awards Presentations, Doc Bryan Auditorium**  
Announcement of Arkansas JSHS paper and poser contest winners, announcement of the JSHS Teacher Award, and adjournment

## Judges

### Head Judges

Dr. Hamed Shojaei, Head Paper Judge, Assoc. Professor of Physics, ATU  
Dr. Rajib Choudhury, Head Paper Judge, Asst. Professor of Chemistry, ATU

### Paper Judges Panel

Dr. Robert Allen, Professor of Chemistry (retired), ATU  
Dr. Reza Hamidi, Asst. Professor of Engineering, ATU  
Dr. Ehsan Hosseini, Asst. Professor of Engineering, ATU  
Dr. Chris Kellner, Professor of Wildlife Biology, ATU  
Dr. David Osburn, Assoc. Professor of Psychology, ATU  
Dr. Ivan Still, Professor of Biology, ATU  
Dr. Bruce Tedford, Professor of Biology, ATU  
Dr. Tsunemi Yamashita, Professor of Biology, ATU  
Dr. Charles Mebi, Professor of Chemistry, ATU  
Dr. Doug Barron, Asst. Professor of Biology, ATU  
Dr. Jamie Earls, Asst. Professor of Emergency Management

## Planning

### Arkansas Tech University Planning Committee

Dr. Jacqueline Bowman, Professor of Biology  
Ms. Cheryl Chaney, Asst. Professor of Biology  
Dr. Cindy Jacobs, Professor of Biology  
Dr. Jeff Robertson, Professor of Astrophysics and Dean ATU Nat. & Health Sci.  
Dr. Amber Harrington, Asst. Professor of Physics

### Director, Arkansas Junior Science & Humanities Symposium

Dr. Jessica Conry Young, Asst. Professor of Physics, Arkansas Tech University



## Speaker



### Dr. Santoshi Nandivada

Assistant Professor of Physics  
Arkansas Tech University

### The world of small things- Finding and measuring objects at nanoscale

Objects at nanoscale consist of proteins like DNA and RNA – building blocks of life, viruses, and nanoparticles. With the advancement in characterization techniques, it is possible to detect and measure at the nanoscale. This measurement gives us a wealth of information about the properties of these objects and enhances our understanding of it. In this talk, we will briefly look at different characterization techniques and measurements performed by them. We will also talk about the scope of nanoparticles and technology. The characterization of nanoparticles was the work based on my research for my doctoral dissertation.

Santoshi Nandivada is originally from India. She grew up in the southern part of India, where she received her Bachelor's degree in Physics from Osmania University. She then moved to the United States to pursue graduate studies and earned her Master's in 2014 and Doctorate in Physics in 2017 from University of Arkansas. Since spring 2017, she has been working as an Assistant Professor of Physics at Arkansas Tech University. Her research interests include building low-cost characterization tools using lasers to study proteins, viruses, and nanoparticles



[www.atu.edu/jshs](http://www.atu.edu/jshs)



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



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UNIVERSITY**

March 9-10, 2018  
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Russellville, AR 72801