



# ORAU Consortium Engagement

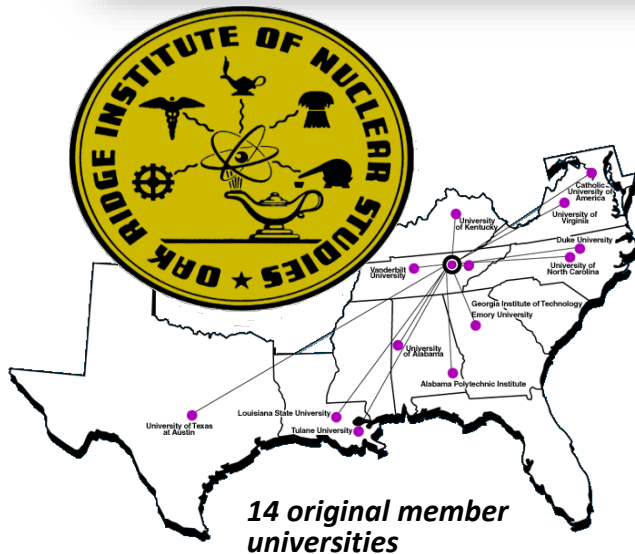
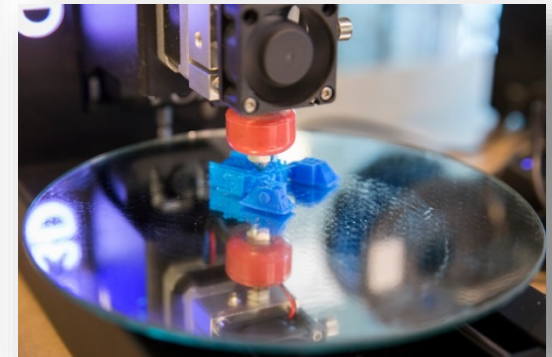
**Arlene Garrison, Ph.D.**  
**Vice President, University  
Partnerships**  
**ORAU**

**University of Toledo**  
**November 22, 2016**

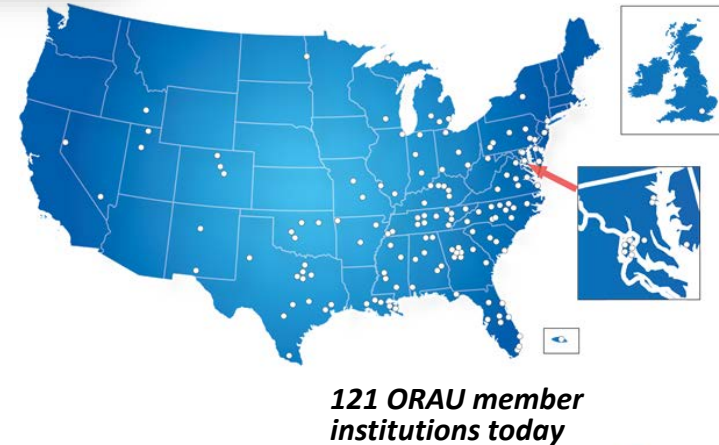


# Our beginning as ORINS

Founded in 1946 as Oak Ridge Institute for Nuclear Studies



- Science education - research fellowships
- Radiation and nuclear medicine
- Health physics
- Radiation emergency response





# ORAU today

- Nonprofit government contractor (large business)
- University consortium
- Provide customers innovative scientific and technical solutions to :
  - Advance science, education and workforce development
  - Strengthen national security
  - Protect health and the environment





# ORAU by the numbers

1,016

employees

\$393.4M

annual revenue

22+

state and federal  
customers

121

member universities

25

locations

70

years in business





# Managing ORISE for DOE

**Established in 1992, ORISE has a portfolio of programs dating back to ORINS in 1946. ORISE's mission is to:**



Strengthen our Nation's research and development enterprise through education and research participation programs



Provide expertise in radiation emergency medicine and the medical management of radiation incidents



Protect workers, the public and the environment through research, outreach and verification activities



# Who ORISE serves...



## ORISE Strategic Partners



# ORISE Performance Work Scope

**STEM WD**

**STRI**

**REAC/TS**

**HSH&PS**

**IEAV**



**Science,  
Technology,  
Engineering, and  
Mathematics  
(STEM)  
Workforce  
Development  
(WD)**

**Scientific and  
Technical  
Resource  
Integration  
(STRI)**

**Radiation  
Emergency  
Assistance  
Center/Training  
Site (REAC/TS)**

**Human Subject  
Health and  
Protection  
Surveillance  
(HSH&PS)**

**Independent  
Environmental  
Assessment and  
Verification  
(IEAV)**





# Workforce Development Capabilities

- Workforce Development Program Design
- Research Fellowships, Scholarships and Internships Program Administration
- K-12 Teacher Professional Development
- Science competitions and Events
- Recruitment of Qualified STEM Talent
- Design and Implement Program Enhancements
- Program Assessment and Evaluation



## *At-A-Glance...*

- Over 9,400 participants from 31 federal departments and agencies
- Representing 839 US universities, all 50 states, DC, Puerto Rico, US Virgin Islands, and 107 foreign countries

<http://www.zintellect.com/>





# Scientific Assessment Capabilities



- Identify and recruit scientific and technical experts
- Design and conduct expert-based reviews and evaluations, including peer reviews
- Support meetings and conferences
- Prevent funding decisions from being overturned for procedural reasons
- Provide onsite support for in-person meetings of any size as well as virtual peer reviews

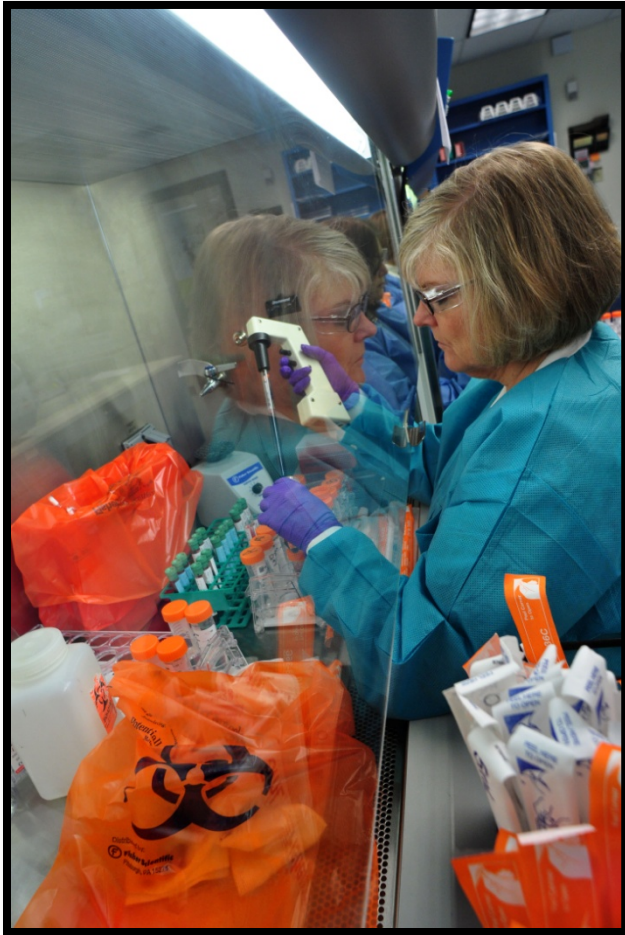


# Radiation Emergency Assistance Center/ Training Site (REAC/TS) Capabilities

- Radiation Emergency Response
- Radiological Incident Medical Consultation
- Cytogenetic Biodosimetry
- Radiobiology Research
- Radiation Emergency Medicine Education
- Registry Maintenance



# Worker Health and Public Health Capabilities



**Provide innovative worker health solutions to government agencies and private industry, relying on capabilities in:**

- Data management/statistical analysis
- Beryllium exposure studies/registry
- Beryllium Lymphocyte Proliferation Tests (~ 5000 tests annually)
- Former Worker Medical Screening Program
- Worker health studies
- Radiation exposure data collection and dose reconstruction
- Protection of human subjects





# Environmental Assessment Capabilities

- Independent verification (Is it clean enough?)
- Facility and land area characterization (How dirty is it?)
- Health physics technical services and research
- Health physics instrumentation and calibration
- Radiochemistry and metals laboratory using inductively coupled plasma mass spectrometry
- Radiation science training
- Atmospheric research and monitoring



# Why University Partnerships?



# Comprehensive Engagement Strategy

**ORAU**

Past performance  
Federal/State relationships  
Program specific resources  
Independence  
Operational Infrastructure

**UNIVERSITY**

Subject Matter Experts  
Students  
Research assets  
Funding relationships

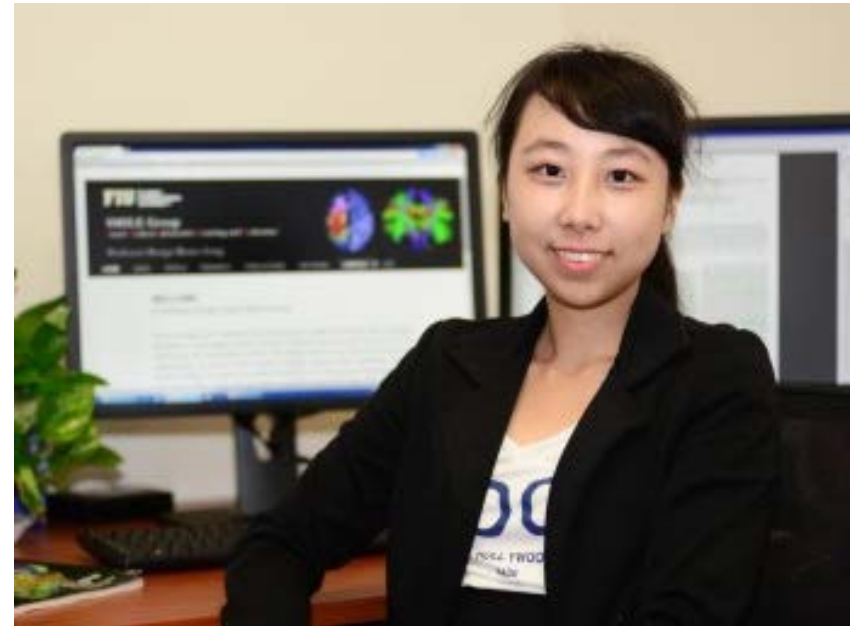
**Win-Win**





# Ralph Powe Junior Faculty Award

- Early career faculty – competitive selection
- 35 awards at \$5,000 ORAU, \$5,000 university match
- Intended to enrich the research and professional growth of young faculty and result in new funding opportunities

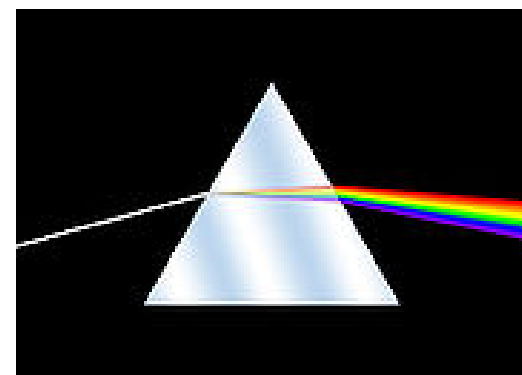


**Ruogu Fang, Florida International University  
researcher, FY16 Recipient**



# ORAU Events Grants FY 2017

- Plenary for NSF IES Proposal planning **October 2016**  
*Appalachian State University*
- Louisiana Power and Energy Symposium **November 2016**  
*Louisiana State University*
- Applied Polymer Technology Extension Consortium  
**November 2016** *Georgia Institute of Technology*
- Participation in CareerLink **November 2016** *North Carolina  
A&T State University*
- Diversity in Computing Summit **November 2016** *University  
of Maryland*
- Frontiers in Biorefining: Chemicals and Products for  
Renewable Carbon **November 2016** *University of Tennessee*
- Venkateswarlu Memorial Lecture **December 2016** *Alabama  
A&M*
- Pacific Conference on Spectroscopy and Dynamics **January  
2017** *Ohio State University*

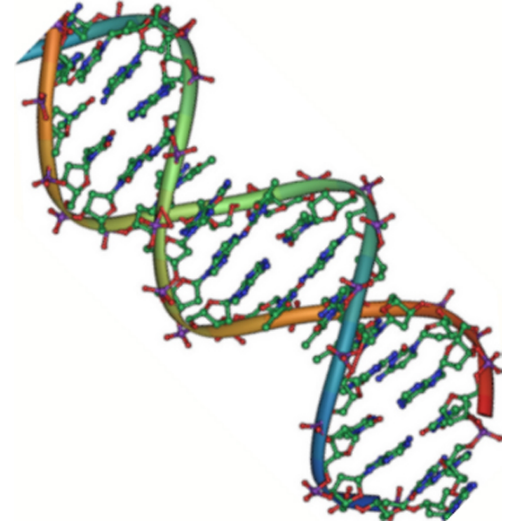


***Deadline for next cycle of proposals: March 1, 2017***



# ORAU Events Grants FY 2017 (cont.)

- NDnano 2017 Symposium: Nanotechnology to Treat Neurodegenerative Disorders **March 2017** *Notre Dame*
- New Media and Emergency Communication **April 2017** *University of Texas at Austin*
- Emergency Management of Advanced Materials and Manufacturing Workshop **April 2017** *Virginia Tech*
- Future of Integrative Structural Biology **April 2017** *Clemson University*
- 2017 Florida Worm Meeting **May 2017** *Florida Institute of Technology*
- Energy and Community Development in a Carbon Constrained Economy **May 2017** *Ohio University*
- American Ecological Engineering Society **May 2017** *University of Georgia*



***Deadline for next cycle of proposals: March 1, 2017***





# Lindau and Heidelberg Fellows



ORAU student participant, Brendan Wigen, from Johns Hopkins University, engages in discussion with Nobel Laureate Roy Glauber, while participating in the 66th Lindau Meeting of Nobel Laureates in Lindau, Germany.

## Lindau Meeting of Nobel Laureates

- The Lindau meeting has been in place for 67 years as the premiere meeting of students with Nobel Laureates.
- 2016: UPO sponsored 10 students

## Heidelberg Laureate Forum

- University Partnerships is the U.S. delegation lead for the Heidelberg Fellows Program, a program for top doctoral students in mathematics
- 2016: UPO supported 8 students



# ORAU-Directed Research and Development (ODRD) Pilot Program

- Maintain scientific & technical vitality of ORAU programs
  - Strengthen core competencies
- Enhance ORAU's ability to address current & future customer needs
  - Enhanced service/product to our customers
- Foster creativity & stimulate exploration to expand ORAU thought leadership
  - Technical differentiation/innovation that enhances our competitiveness
- Support university-engaged, applied research
  - Strengthens value proposition for consortium member



# ODRD: Tier 3 Awards

## ***“Statistical Modelling Approaches for Epidemiological Studies of Low Dose Health Effects”***

**Lead by:** Dr. Betsy Ellis, ORAU; and Dr. John Boice, Vanderbilt

**Primary Goal:** Perform comparative analysis to identify optimum approach for statistical modelling of health effects due to low dose radiation exposures.



**Funds to the University:** \$35,000



## ***“Spatial Reorganization of a 3-Dimensional Genome Following Radiation Exposure”***

**Lead by:** Dr. Adayabalam Balajee, ORAU; and Dr. Rachel McCord, UT

**Primary Goal:** Analyze 3D genome reorganization changes imposed by ionizing radiation exposure and determine how these changes lead to chromosomal aberrations – dicentric chromosomes and translocations.

**Funds to the University:** \$33,967

## ***“An Exploratory Analysis of Sources of Variation in Beryllium Lymphocyte Proliferation Test Results in the National Supplemental Screening Program”***

**Lead by:** Dr. Ashely Golden, ORAU; and Dr. Lee Newman, UCD

**Primary Goal:** Investigate potential associations of uninterpretable results of the Beryllium Lymphocyte Proliferation Test (Be-LPT) with patient characteristics and clinical data obtained the National Supplemental Screening Program (NSSP).



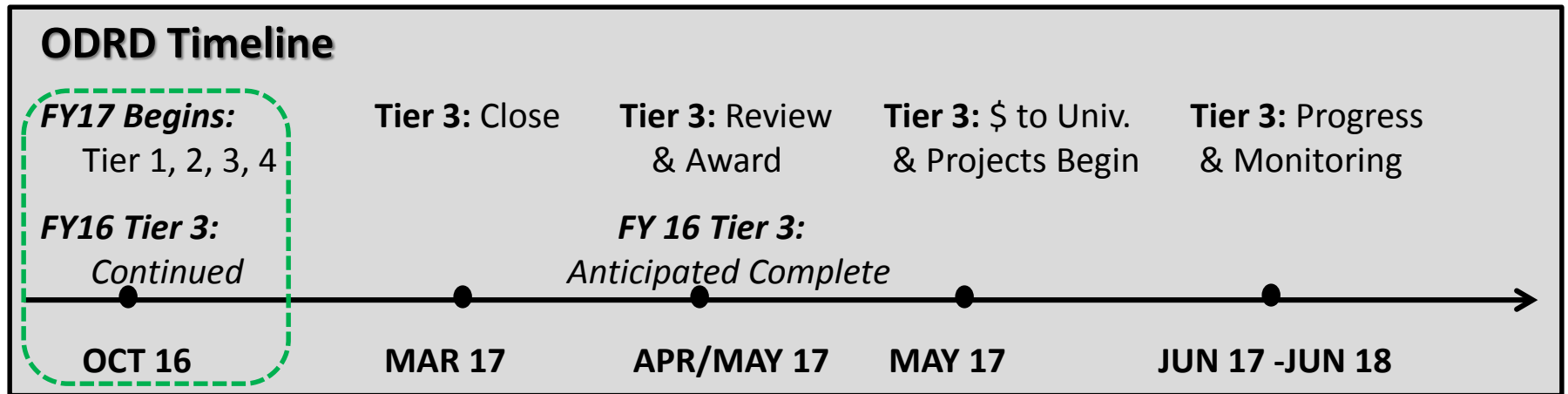
**Funds to the University:** \$23,780





# ORAU-Directed Research and Development (ODRD): Program Timeline and Update

All FY17 Tiers are open; FY16 Tier 3 Projects continue to progress



## Tier 3 Criteria:

- Strengthens Competency of ORAU Program (40 points)
- External Research Funding Potential (30 points)
- Strengthens Value Proposition for University Partner (20 points)
- Miscellaneous Criteria (10 points)

In FY 16, five Tier 3 applications were submitted. Three received awards of \$75K each.



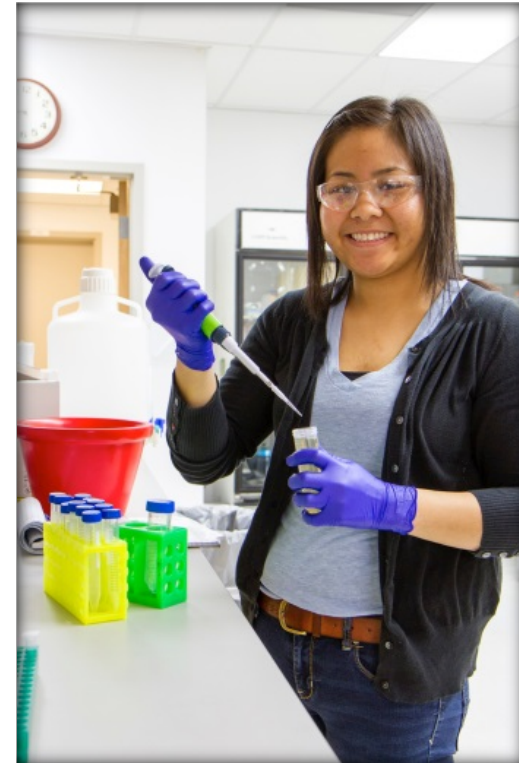
# ODRD Topic Areas posted on SharePoint

- Radiation detection/survey applications/modeling
- Radiochemistry/mercury analyses
- Health physics/radiation dosimetry
- Beryllium LPTs/worker health
- Data analytics/GPS applications
- Epidemiology/exposure risk assessments
- Safety culture/health communication
- Atmospheric science/CO2 measurements
- Nanotechnology related to emergency response
- Emergency management/community resilience
- REAC/TS radiation emergency/CBL techniques
- Assessment and evaluation studies/educational technology
- Energy/small modular reactors



# Funding Opportunities

- Listserv: Opportunity information emails, many regarding ORNL
- ORAU placement programs –
  - \$227M in FY15
  - Nearly 9,500 participants in FY15
- Campus visits



# Relationship Building

- ORNL Associate Lab Director Visits
- Campus Visits
- Memoranda of Understanding
- SharePoint Agreements
- Four new members in March 2016
  - Ohio University
  - University of Colorado, Denver
  - University of Louisiana at Lafayette
  - University of Toledo





# University Engagement – University Led Proposals

## ***Awarded***

- *University of Oklahoma*: NSF Research Traineeship Program

## ***Pending***

- *Florida International University*: DOE Minority Institutions Partnership Serving Program
- *North Carolina A&T State University*: DOE Minority Institutions Partnership Serving Program
- *Tennessee State University*: NOAA Cooperative Science Center
- *University of Tennessee Space Institute*: NOAA Joint Technology Transfer Initiative
- *University of Texas at San Antonio*: NRC Nuclear Research Faculty Fellows Program
- *Florida Institute of Technology*: NCI Small Grants Program



# University Engagement – Open Opportunities: IDIQ Contracts

- CACI/Air Force Research Lab
  - Cyber Security
  - 2 draft task orders received
- **CACI/Defense Intelligence Agency – Awarded 2016**
  - **Data Science, Operations, Requirements and Exploitation**
- **Engility/Defense Threat Reduction Agency – Awarded 2016**
  - **Consequences of Nuclear Execution**
- IIA/Defense Technical Information Center
  - Homeland Defense Information Analysis Center (HDIAC)
- SRC/U.S. Navy Space and Naval Warfare Systems Center (SPAWAR)
  - Biometric Support Services
- SNA International/National Institute of Justice
  - Grants Management
- GSA Professional Services Schedule



# CACI/Defense Intelligence Agency, S&T Directorate

## *Data Science, Operations, Requirements and Exploitation*

- Multiple award IDIQ contract, ceiling: \$350M over 5 yrs.
  - Awaiting receipt of task orders
- Multiple task order contract types
- Requires highly specialized experts
  - Data science
  - Sensor technology
  - Technical intelligence disciplines
- Key scope areas include
  - Rapid-Response SME Support
  - Academic/Industry Outreach and Innovation
- Majority of the task orders will be classified
- Business model developed for university engagement



**CACI**  

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**EVER VIGILANT**



# Engility/Defense Threat Reduction Agency

## *Consequences of Nuclear Execution*

- Multiple award IDIQ contract, ceiling: \$500M over 5 yrs.
  - Awaiting receipt of task orders
  - ORAU's National Security Program is lead office
- Key focus area
  - Research, development, testing & evaluation of WMD/CBRNE threats
- Requires subject matter experts
  - CWMD weapons and targets
  - Modeling and simulation
  - Systems engineering & survivability
  - WMD physical & medical countermeasures
  - Nuclear & standoff detection
  - Treaty and verification technologies
  - Sensor platforms





# FY 2016 Revenue to Universities

Georgia Tech - Time motion studies, Flu on Call™ Model

- PIs: Eva Lee, Director, Center for Operations Research in Medicine and HealthCare
- 



University of Colorado Denver - Beryllium exposure of former workers

- PI: Lee Newman, Director, Center for Health, Work & Environment
- 



University of Colorado  
Denver



# FY 2016 Revenue to Universities

## *Office of the Director of National Intelligence*



<http://orau.org/icpostdoc/>

### Georgia Tech

- PI: Gregory Durgin, Professor, Electromagnetics



### Purdue University

- PI: Zhihong Chen, Associate Professor of Electrical and Computer Engineering



### University of Maryland

- PI: Christopher Monroe, Professor, Physics



# Moving Forward

- **Actively pursuing joint proposals**
  - ORAU plus universities
  - ORNL with universities
  - Facilitating collaborative proposals between universities
- **Negotiating MOUs, signing SharePoint agreements with member universities**



# 2017 Council Meeting

## 72<sup>nd</sup> Annual Meeting of the ORAU Council of Sponsoring Institutions

March 8 - 9, 2017

Pollard Technology Conference Center, Oak Ridge, Tennessee

*“Compliance Complexity in Higher Education”*

- **Tuesday, March 7: Afternoon & Evening**
  - Optional Oak Ridge History Tour
  - Afternoon Early Registration
  - New Councilor Orientation Session
- **Wednesday, March 8: Entire Day & Evening**
  - Council Meeting
  - Business Meeting and Dinner
- **Thursday, March 9: Morning**
  - Council Meeting



<https://www.orau.org/council/>

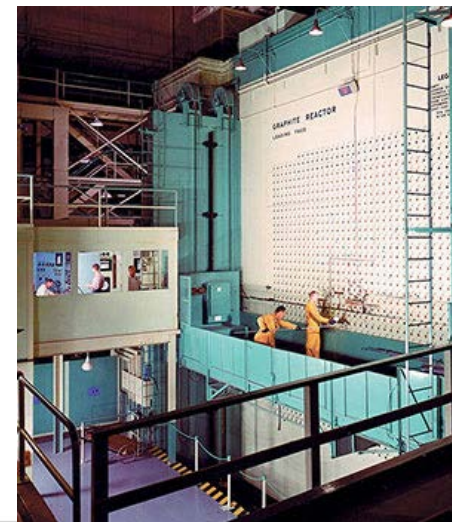
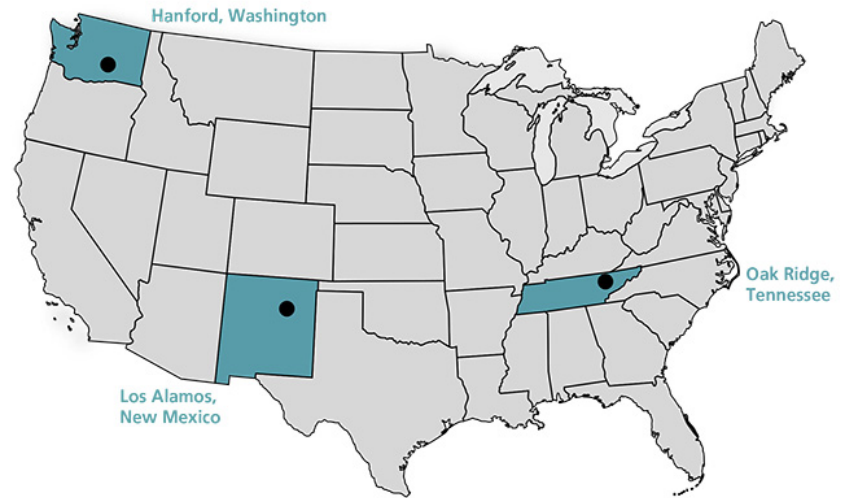






# Manhattan Project National Historical Park

- Optional tour on the afternoon of March 7 prior to the Annual Council Meeting
  - ORNL Graphite Reactor National Historic Landmark
  - Y-12 National Security Complex
  - K-25 Building (Virtual Museum)
- Participants must be U.S. citizens





# Thank You

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