

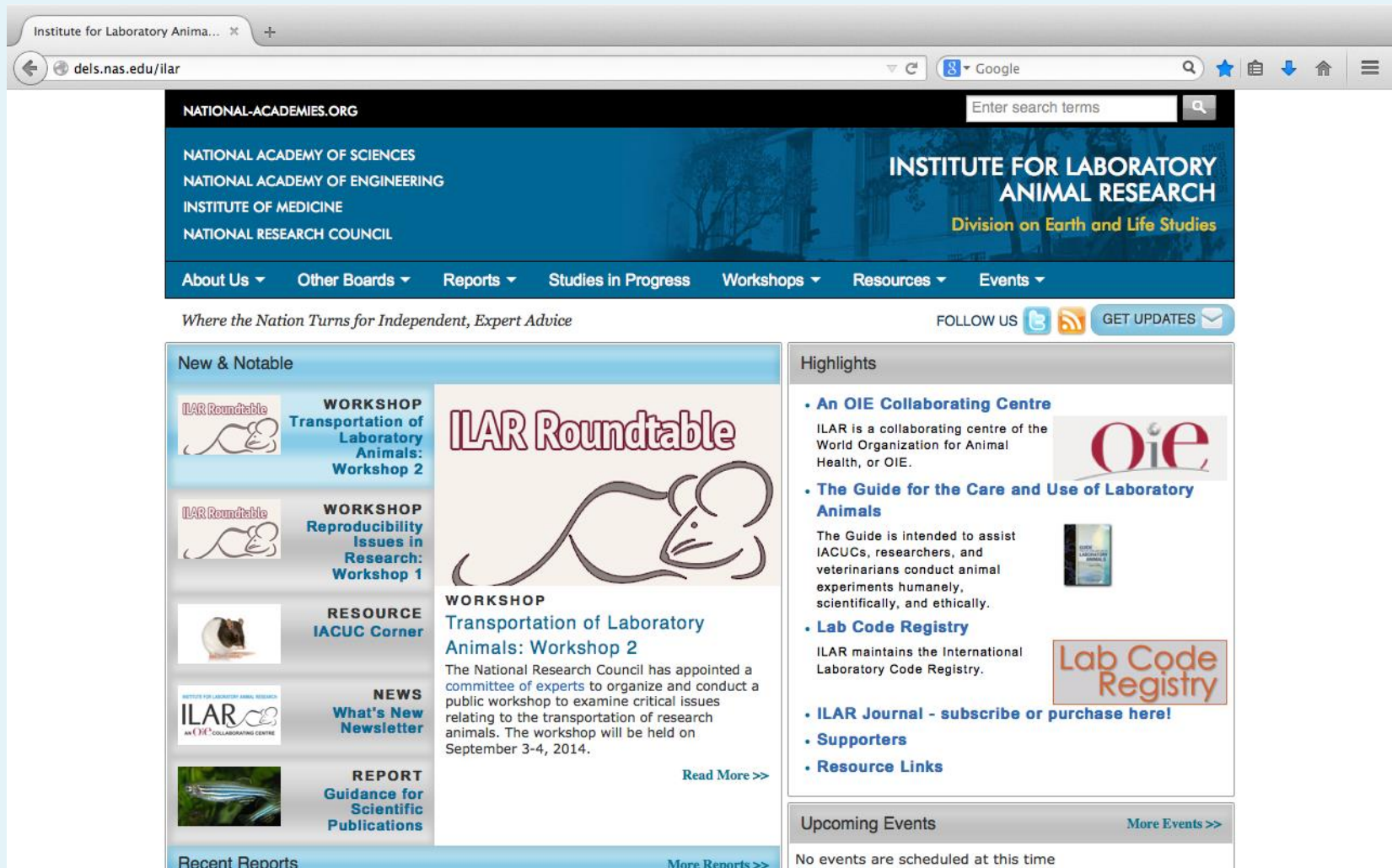
SYSTEMATIC REVIEWS ARE ONLY A PIECE OF THE [REPRODUCIBILITY] PUZZLE

Lida Anestidou, DVM, PhD

Institute for Laboratory Animal Research

US National Academy of Sciences

INSTITUTE FOR LABORATORY ANIMAL RESEARCH (ILAR)



The screenshot shows the ILAR website homepage. At the top, there is a navigation bar with the text "NATIONAL-ACADEMIES.ORG" and a search box. Below this, a blue banner features the ILAR logo and the text "INSTITUTE FOR LABORATORY ANIMAL RESEARCH" and "Division on Earth and Life Studies". A menu bar includes "About Us", "Other Boards", "Reports", "Studies in Progress", "Workshops", "Resources", and "Events". Below the menu, a tagline reads "Where the Nation Turns for Independent, Expert Advice". The main content area is divided into several sections: "New & Notable" on the left, "Highlights" on the right, and "Upcoming Events" at the bottom right. The "New & Notable" section features a large "ILAR Roundtable" graphic and several smaller items: "WORKSHOP Transportation of Laboratory Animals: Workshop 2", "WORKSHOP Reproducibility Issues in Research: Workshop 1", "RESOURCE IACUC Corner", "NEWS What's New Newsletter", and "REPORT Guidance for Scientific Publications". The "Highlights" section lists "An OIE Collaborating Centre", "The Guide for the Care and Use of Laboratory Animals", "Lab Code Registry", and "ILAR Journal - subscribe or purchase here!". The "Upcoming Events" section states "No events are scheduled at this time".

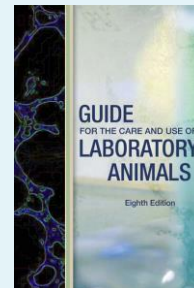
INSTITUTE FOR LABORATORY ANIMAL RESEARCH



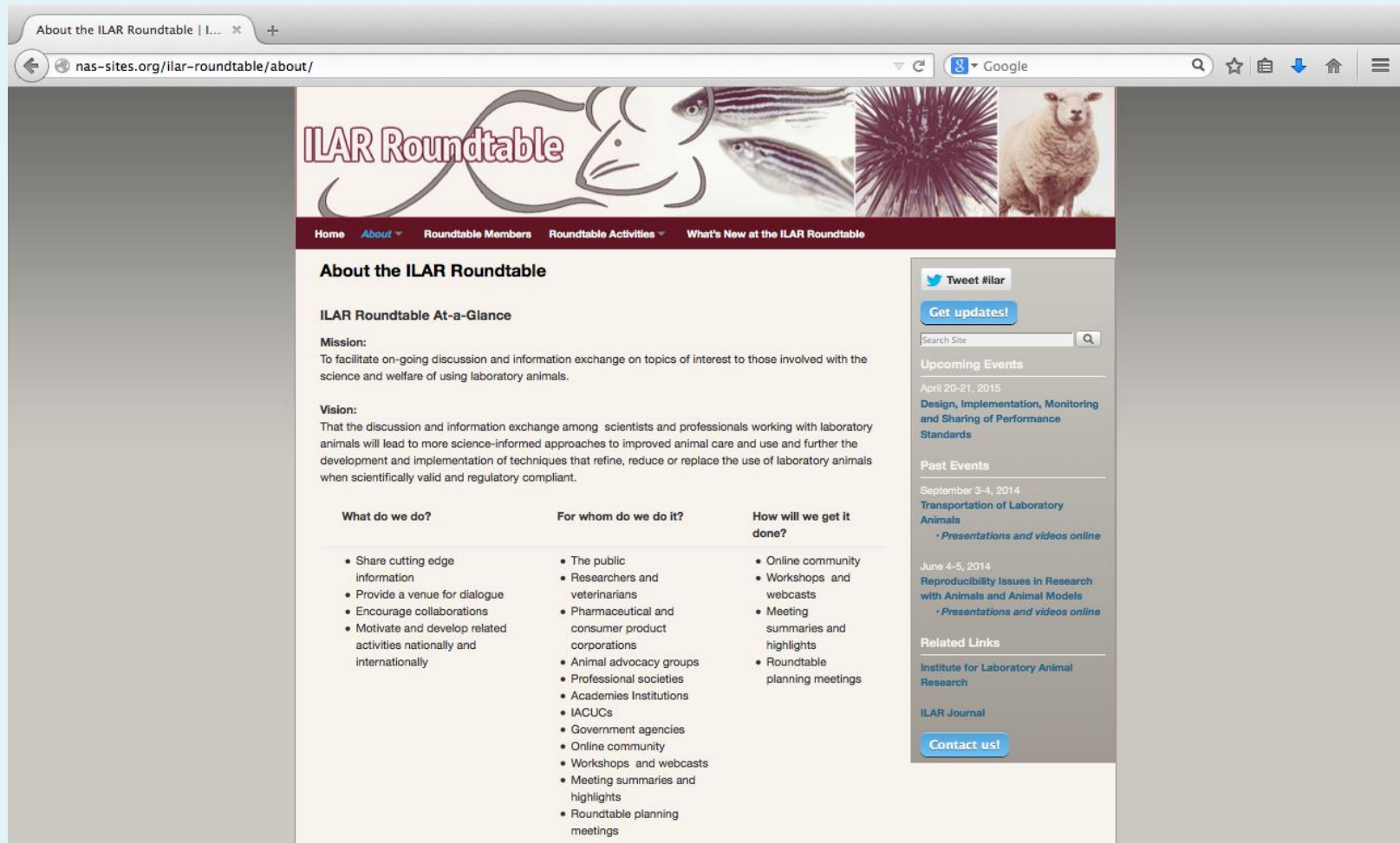
Lida Anestidou, DVM, PhD
3rd International Symposium on Systematic Review and Meta-Analysis of
Laboratory Animal Studies

ILAR, US NATIONAL ACADEMY OF SCIENCES

- Founded 60+ years ago
- A unit of the US National Academy of Sciences, founded in 1863
- Provider of Technical Standards
- Policies and guidelines, e.g., Public Health Service Policy of NIH
- Science-based studies and reports
- *ILAR Journal*
- Animal models and genetic stocks database of rodents: Lab Code Registry
- Translations of our products, especially the *Guide for the Care and Use of Laboratory Animals*



ROUNDTABLE ON SCIENCE AND WELFARE IN LABORATORY ANIMAL USE



About the ILAR Roundtable | I... x +

nas-sites.org/ilar-roundtable/about/ Google

ILAR Roundtable

Home About Roundtable Members Roundtable Activities What's New at the ILAR Roundtable

About the ILAR Roundtable

ILAR Roundtable At-a-Glance

Mission:
To facilitate on-going discussion and information exchange on topics of interest to those involved with the science and welfare of using laboratory animals.

Vision:
That the discussion and information exchange among scientists and professionals working with laboratory animals will lead to more science-informed approaches to improved animal care and use and further the development and implementation of techniques that refine, reduce or replace the use of laboratory animals when scientifically valid and regulatory compliant.

What do we do?	For whom do we do it?	How will we get it done?
<ul style="list-style-type: none">• Share cutting edge information• Provide a venue for dialogue• Encourage collaborations• Motivate and develop related activities nationally and internationally	<ul style="list-style-type: none">• The public• Researchers and veterinarians• Pharmaceutical and consumer product corporations• Animal advocacy groups• Professional societies• Academies Institutions• IACUCs• Government agencies• Online community• Workshops and webcasts• Meeting summaries and highlights• Roundtable planning meetings	<ul style="list-style-type: none">• Online community• Workshops and webcasts• Meeting summaries and highlights• Roundtable planning meetings

Upcoming Events
April 20-21, 2015
[Design, Implementation, Monitoring and Sharing of Performance Standards](#)

Past Events
September 3-4, 2014
[Transportation of Laboratory Animals](#)
• Presentations and videos online

June 4-5, 2014
[Reproducibility Issues in Research with Animals and Animal Models](#)
• Presentations and videos online

Related Links
[Institute for Laboratory Animal Research](#)

ILAR Journal
[Contact us!](#)

INSTITUTE FOR LABORATORY ANIMAL RESEARCH



Lida Anestidou, DVM, PhD
3rd International Symposium on Systematic Review and Meta-Analysis of
Laboratory Animal Studies

Kent Lloyd, UC-Davis

Steve Niemi, Harvard

Bonnie Beaver, Texas A&M

Brian Berridge, GSK

Pamela Chamberlain, FDA

Carol Clarke, USDA

Margaret Landi, GSK

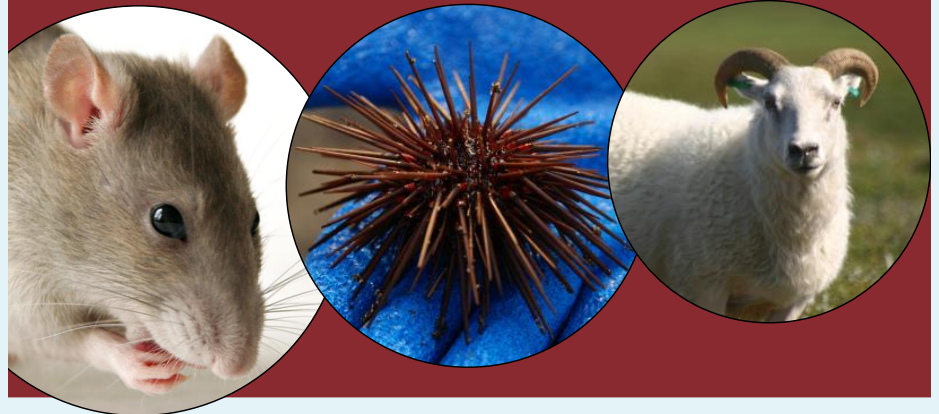
Malcolm McLeod, U
Edinburgh

Brian Martinson,
HealthPartners Institute

Susan Silk, NIH

THE MISSING “R”: REPRODUCIBILITY IN A CHANGING RESEARCH LANDSCAPE

A Workshop of the Roundtable on Science
and Welfare in Laboratory Animal Use
(an ILAR Roundtable series)



June 4 - 5, 2014

2100 C Street NW, Washington, DC 20418
National Academy of Sciences Building, Room 125

INSTITUTE FOR LABORATORY ANIMAL RESEARCH

ILAR 
AN **QIe** COLLABORATING CENTRE

Lida Anestidou, DVM, PhD

3rd International Symposium on Systematic Review and Meta-Analysis of
Laboratory Animal Studies

REPRODUCIBILITY WORKSHOP THEMES

- **The research enterprise**
 - Systemic issues, scientific training and culture
 - Public perceptions
 - “Incentives” for research integrity
- **Interactive assessment of published research**
- **Improving the reliability of published results**
- **Animals and animal models**
 - Learning from clinical research and proactive planning in preclinical research
 - Reproducibility and the 3Rs
 - Animal Welfare considerations

REPRODUCIBILITY WORKSHOP SUMMARY POINTS

- **Reproducibility is not intentional fraud (generally)**
- **Flawed experimental design**
- **Begley's criteria**
 - Is the study blinded; Is a complete set of results shown
 - Can experiments be replicated
 - Are positive and negative controls shown; Are statistical tests used (in)appropriately
 - Are reagents validated
- **Animal models are not poor predictors that contribute to lack of reproducibility**
 - Small sample sizes and genetic variation among species (NHP studies)
 - Inbred vs. outbred strains (rodents)

NEXT STEPS

- **Publication of reviewed workshop summary and wide distribution to government agencies, journals, website, etc.**
- **Short Perspectives on the topic on the Roundtable's website**
- **Train IACUCs to (re)train investigators on the basics of proper experimental design for animal protocols**

NEXT STEPS (CONT)

- **Design and track metrics of reproducibility involving animal experiments**
 - To compare outcomes and trends (i.e., evidence) in association with specific interventions (what about the systemic issues?)
 - To identify those interventions that appear to be more effective and understand how they may be applied (and taught) broadly
- **Energize/Interest the broader US research community and involve the lab animal veterinary community in the reproducibility conversation**
- **Can we combine the next international SR symposium with a reproducibility-focused activity?**