How should Research Integrity be Introduced to Undergraduate Students? Insights from SURE-Africa Project at a Medical School in Southern Nigeria

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Strengthening University Research Education in Africa SURE - Africa

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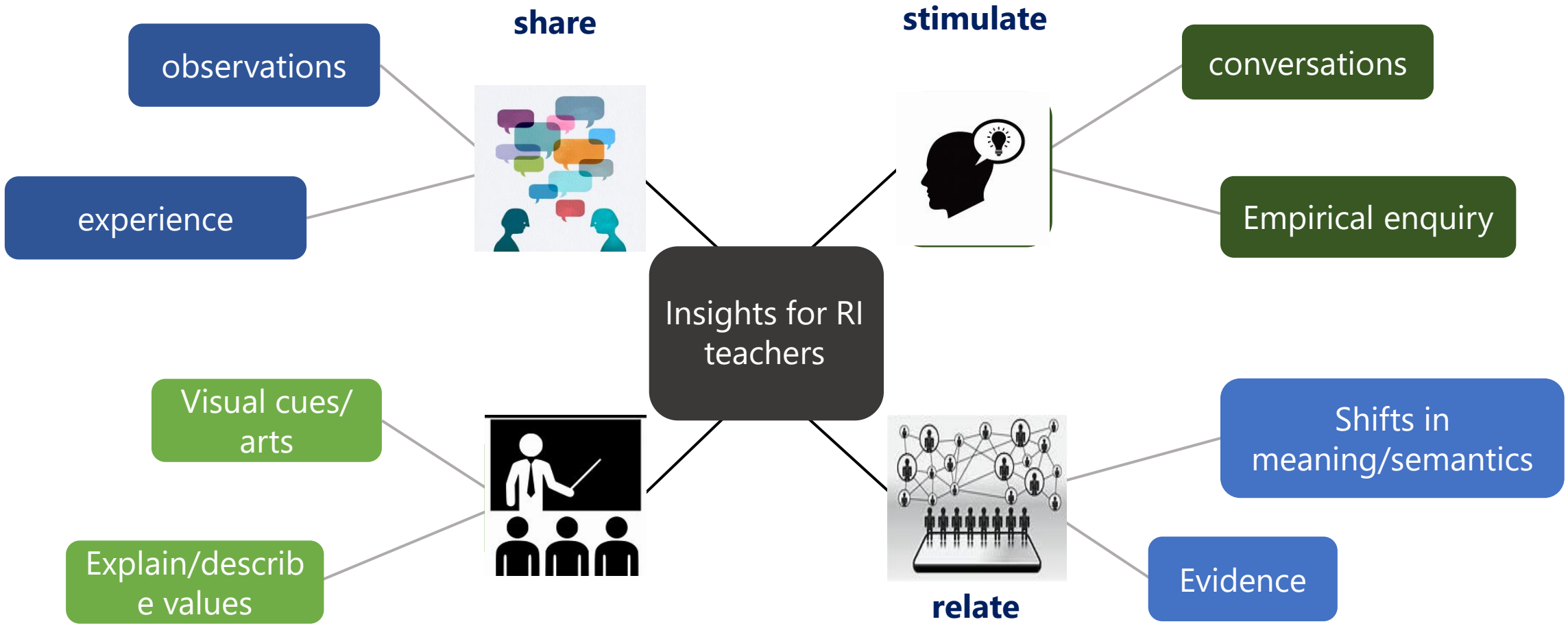
Problem Statement: There is a paucity of information on how to *introduce* RI to undergraduates (Research-Naïve students)

- **Available Info:**
- Earlier years??? (**Why not say from first year**?)
- Students 18 years +
- At the research- year (**will this be adequate**?)
- Continuous with increasing depth (**how**?)
- Across all STE(A)M disciplines (-specific)
- Hybrid
- Innovative methods (**which? And for who**?)
- Included in the curriculum (**before/ after RM**?)
- Virtue ethics + Rule-based approach

Objectives: to share insights on our RI teaching experience with undergraduate research- naïve med. students



Background/ History: The consistent inclusion of topics related to Training/ Education in RI suggests its critical importance in RI promotion (chart: not accurate)

METHOD : AN EDCTP FUNDED CONSORTIUM PROJECT SUPPORTED THE CREATION OF SURE-AFRICA PROJECT

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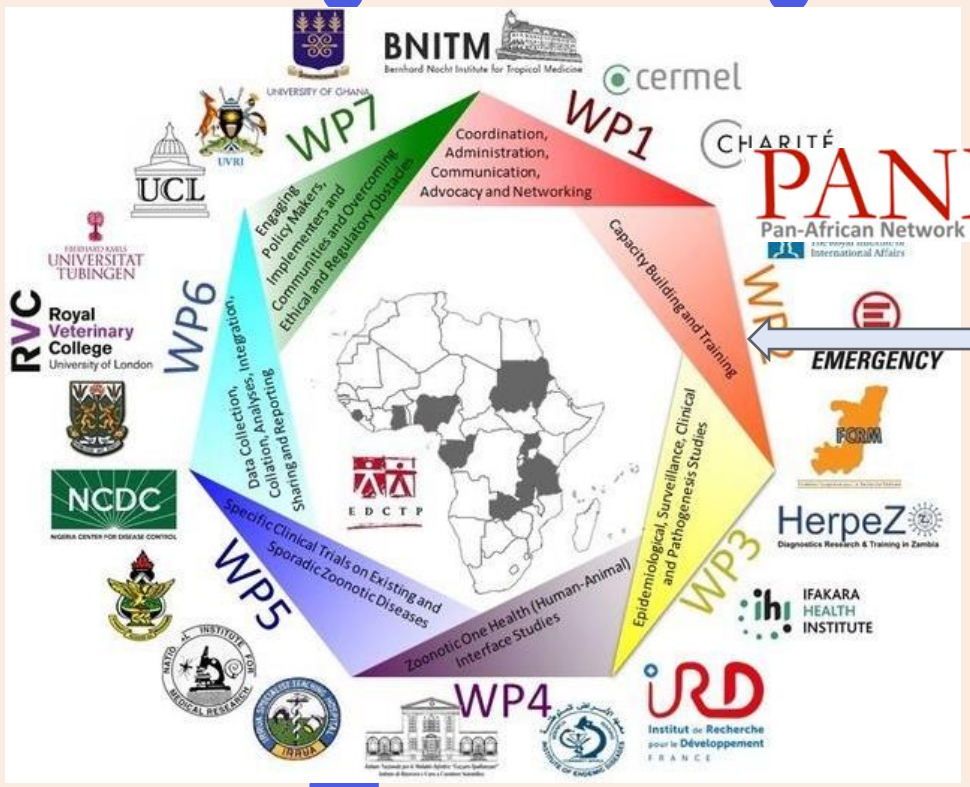

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Strengthening University Research Education in Africa
SURE - Africa

One health approach to addressing infectious diseases in Africa

Funded by the EDCTP

PANDORA created a virtual research clinic to support researchers in 2022

SURE-Africa is a mountain we are climbing to promote continuous quality research education

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The Innovative RI teaching techniques for undergraduates

- Large class of 161 students reduced to 27 students per cohort for the research method course
- RI topics were a combination of European and U.S versions
- Smaller group of 7 for the Rotterdam Dilemma game
- Students facilitated sessions on virtues and RI dilemma
- Innovations were the use of gamification, folklore, Ubuntu quotes, and song on happiness- Eudaimonia
- Session reduced to 90 mins for RI
- Hybrid format
- Invites were sent & certificates were awarded

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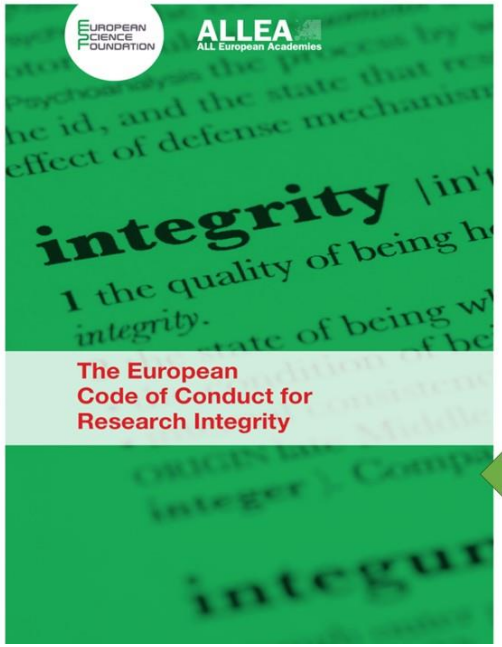
Methods: Beginning with the Principles (and virtues) in the EU code and the U.S. ORI with illustrations (A 'Virtue Clock' and 'Ubuntu quotes.')



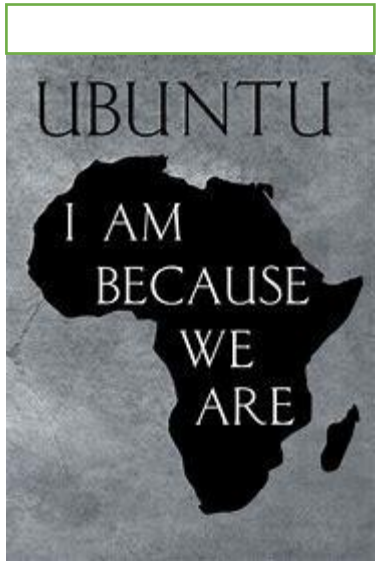
Respect:

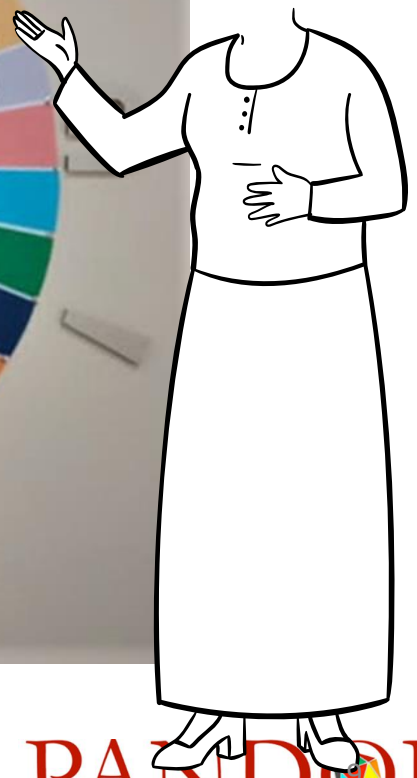
1. Admiration felt or shown for someone or something that you believe has good ideas or qualities.
2. Politeness, honour, and care shown towards someone or something that is considered important
3. A feeling that something is right or important and you should not attempt to change it or harm it.
4. The feeling you show when you accept that different customs or cultures are different from your own and behave towards them in a way that would not cause offence.

Cambridge. Dictionary

practi… describe Research Integrity (RI):

3. Respect for colleagues, research participants, society, ecosystems, cultural heritage and the environment.





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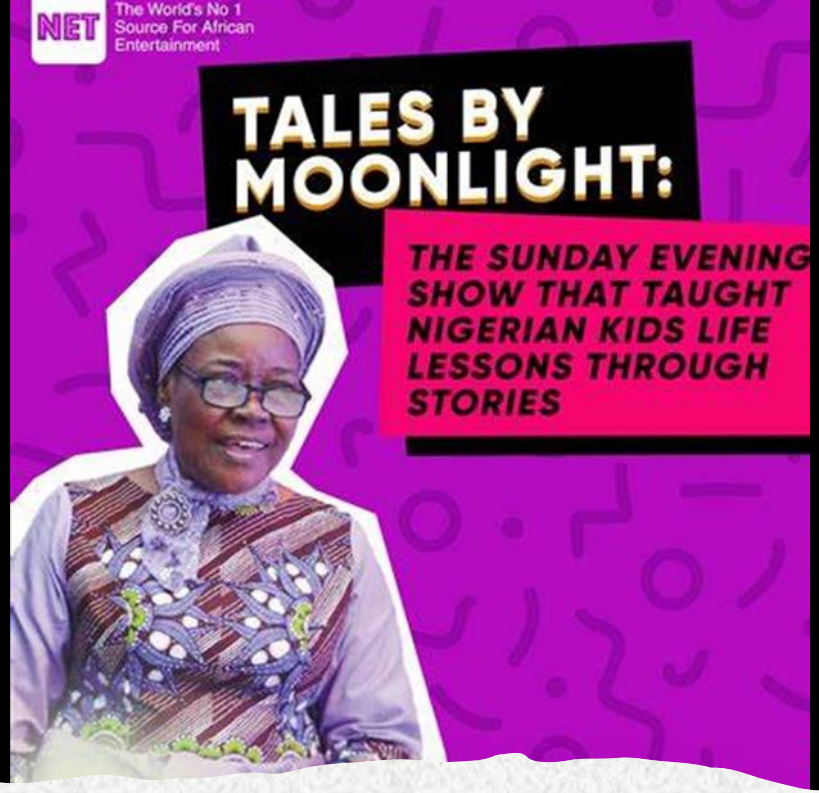

A popular local TV drama on moral values (folktales): one way to discuss morals(values) related to research

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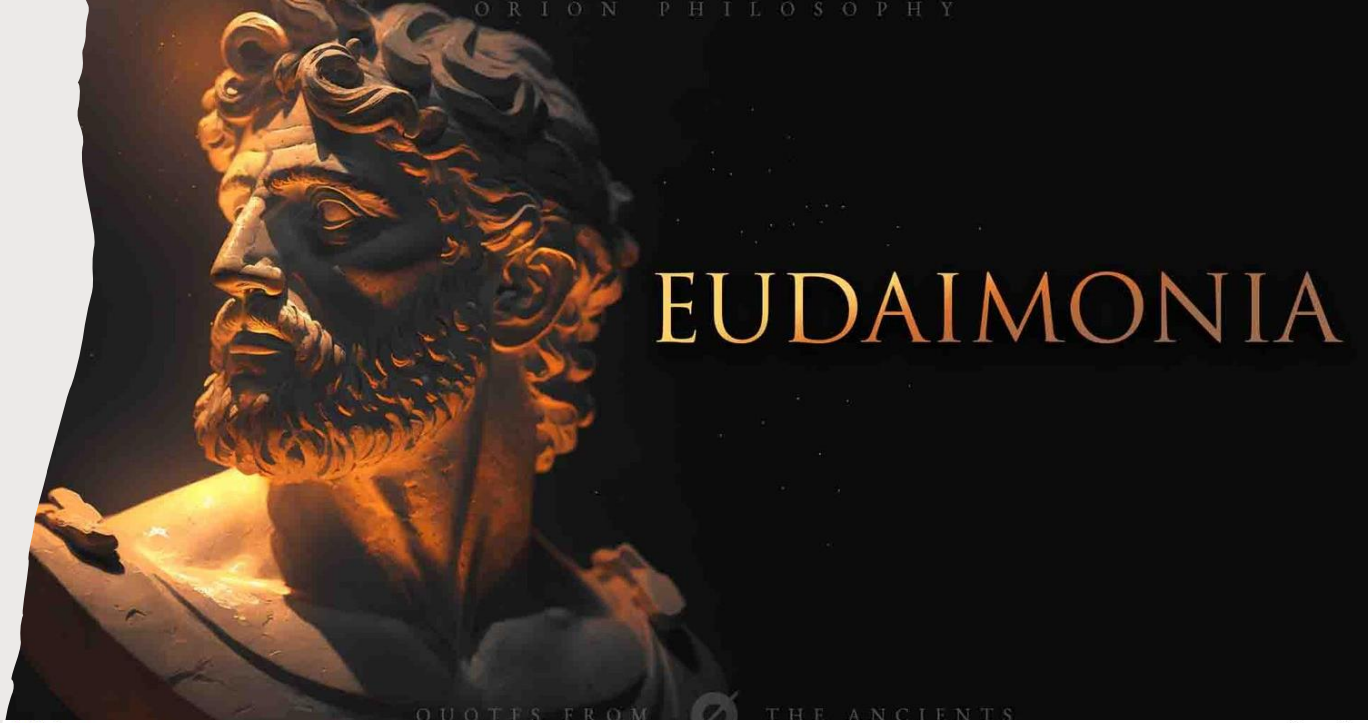
Method: Kirk Franklin's song (Wanna Be Happy?) was used to enhance the understanding of the concept of the Golden Mean.



Aristotle's Concept of the Golden Mean		
Deficiency (–)	**BALANCE**	**Excess (+)**
cowardice	COURAGE	rashness
stinginess/miserliness	GENEROSITY	extravagance
sloth	AMBITION	greed
humility	MODESTY	pride
secrecy	HONESTY	loquacity
moroseness	GOOD HUMOR	absurdity
quarrelsomeness	FRIENDSHIP	flattery
self-indulgence	TEMPERANCE	insensibility
apathy	COMPOSURE	irritabilit
indecisiveness	SELF CONTROL	impulsive

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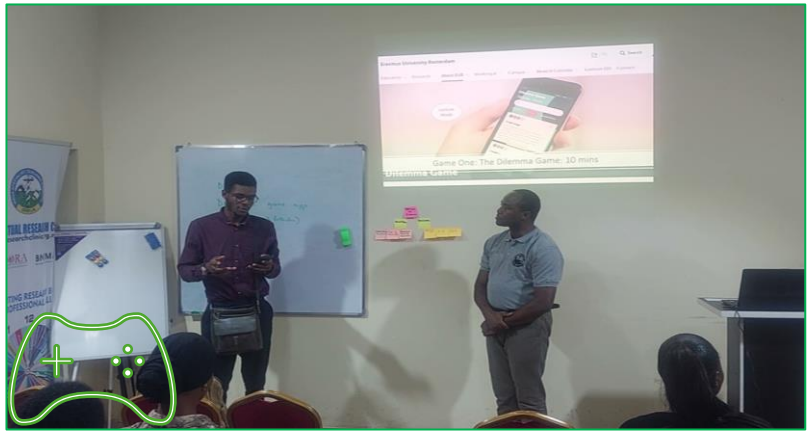

Innovations in RI Education for Undergraduates

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HIGH RESPONSE RATE

94% Participation with more than 70% attendance in all small sessions throughout the week-long RM course.

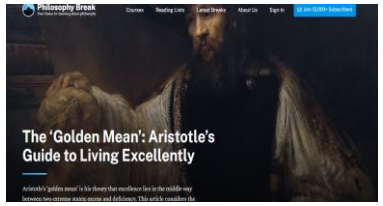
INCREASED AND SUSTAINED ENGAGEMENT

Increased engagement and group activity during dilemma games, cinema and discussions.

ENTHUSIASM FOR RESEARCH

A self-imposed analysis of 'the most important scientific value was carried out by the students:

- Doctor- Empathy
- Researcher- Honesty
- Student- Diligence



UNDERSTANDING OF RI CONCEPTS

Greek words like Eudaimonia (by Aristotle) were frequently echoed across the room by students as a way to flourish/ excel in science/research

DEVELOPMENT OF COLLABORATIVE SPIRIT

Students accepted to collaborate in making the WCRI presentation a reality by agreeing to be mentioned or photographed and contributing to the presentation.

Undergraduate Students' Response to RI Teaching Methods

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Insights

(For Empirical Evaluation)

INNOVATION IN TEACHING COULD ENHANCE RI LEARNING

Teaching designs such as using a blended format, appropriate duration, use of artistic representation and manageable class size could enhance RI learning

VALUES/ VIRTUES ARE EASY TO UNDERSTAND

Fundamentals in the codes and guidelines center on values; so, these should be taught first and then selectively applied as students progress in study years

YOUNG PEOPLE LIKE GAMES ESPECIALLY THE COMPUTER GAMES

Most young people love computer games and have android phones; these could be explored for creating awareness about RI locally and internationally.

DIFFICULT CONCEPTS IN RI COULD BE SIMPLIFIED USING ARTS

Appropriate artistic representation of values and the philosophy behind them could be used to simplify complex terms/ concepts in RI education

PRINCIPLES OF RI COULD BE INTRODUCED IN THE FIRST YEAR

Using innovative techniques (Arts), RI principles could be introduced in the first year with graded in-dept topics close to students' research year.

Public Private Partnership Could Improve Research Education

A university may not have the funds to innovate RI education in the undergraduate year; a PPP or external science funding may be necessary.

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References

- Pizzolato, D., Dierickx, K. Stakeholders' perspectives on research integrity training practices: a qualitative study. *BMC Med Ethics* **22**, 67 (2021). https://doi.org/10.1186/s12910-021-00637-z
- Pan-African Network for Rapid Response, Research (PANDORA). Page available at https://pandora.tghn.org/ accessed 30th May 2024
- ISTH Virtual Research Clinic. Page available at https://isthresearchclinic.org.ng/ accessed 30th May 2024
- The virtual clock created by Dr. Chiedozie Ike was adapted from Dr. Neelam Wright's virtue wheel.
- ALLEA European code on RI, 2017 edition.
- Images are from Google, Microsoft 365, except students' photos used with their consent
- World Conferences on Research Integrity. Page available at https://www.wcrif.org/ accessed 2nd June 2024

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