

OUR MEETING WILL BEGIN SHORTLY

WELCOME TO THE

# Responsible AI/Big Data - A Dialogue Highlighting Educational Opportunities and Needs in an Insurance Regulatory Context

August 15, 2023

## IN-PERSON ATTENDEES

Wi-Fi Network: **NAIC2023**; Password (case sensitive): **Summer2023**

## VIRTUAL ATTENDEES

- Audio will be muted upon entry
- If virtual attendees would like to speak, please use the "Raise Hand" feature and we will let the Chair know you'd like to speak
- Enter with video on or off (your choice)
- Use the "Chat" feature for questions, comments, or assistance
- If you have joined by phone, to mute and unmute your line, press \*6
- For additional help, please contact NAIC Technical Support team at [MeetingTechHelp@naic.org](mailto:MeetingTechHelp@naic.org) or call (866) 874-4905



# Center for Insurance Policy and Research

The Center for Insurance Policy and Research provides data and education to drive discussion and advance understanding of insurance issues among policymakers, insurance commissioners and other regulators, industry leaders, and academia. It conducts research and provides analysis on important insurance issues. Through this work, the Center drives dialogue and action on today's insurance issues.



**SEATTLE**

**NAIC**

**2023 SUMMER  
NATIONAL MEETING**

**Responsible AI/Big Data -  
A Dialogue Highlighting  
Educational Opportunities  
and Needs in an Insurance  
Regulatory Context**

August 15, 2023

12:30- 2:00 p.m. PT

Columbia Ballroom CD - Hyatt Regency

# Agenda:

- Motivation for the responsible use of AI/Big Data in an Insurance Context (15 minutes) -  
(Dorothy Andrews National Association of Insurance Commissioners)
- In light of the potential issues within an insurance context, highlight work underway at the NAIC to address these issues (25 minutes) -  
(Kathleen Birrane Commissioner Maryland Insurance Administration)  
(Kevin Gaffney Commissioner Vermont Department of Financial Regulation)
- Discuss current education and training offerings, why developed, and how geared toward regulator needs (30 minutes) -  
(Stuart Klugman Society of Actuaries)  
(Ken Williams Casualty Actuarial Society)
- Closing Discussion focused on the identification of additional education and training needs and who/how developed (20 minutes) - All event participants

# **Responsible AI/Big Data**

## A Dialogue Highlighting Educational Opportunities and Needs in an Insurance Regulatory Context

**Center for Insurance Policy and Research  
(CIPR)**

August 15, 2023

Dorothy L. Andrews  
Senior Behavioral Data Scientist & Actuary  
Research and Actuarial Service Department

## The learning objectives of this program

- Explain the importance of the responsible use of AI/Big Data in an insurance context.
- Analyze the work underway by state departments of insurance and the NAIC to understand and assess the AI/Big Data tools being deployed by the insurance sector.
- Recognize relevant education and training offerings for insurance regulators.
- Discuss and identify **longer-term education and training needs for insurance regulators**

*i.e., the educational needs of regulators in the area of artificial intelligence systems (AIS) to inform their regulation of automated decisioning systems used by insurers in the conduct of insurance.*



## Why is this discussion important?

**There is a chasm between what industry knows and what regulators know about AI and ML that needs to be closed. Regulators need training in these techniques to inform their regulation of artificial intelligence systems to protect consumers.**

## Industry FAQs re: Regulator AI Competencies

- 1. Do they understand AI/ML?**
- 2. How are they going to regulate AI/ML?**
- 3. When are they going to get up to speed on AI/ML?**
- 4. Do they have any staff skilled in AI/ML techniques?**
- 5. How long will it take them to catch up?**
- 6. When will they master techniques more advanced than GLMs?**



# PPA, HO, Life Surveys - Definitions

## 1. Definitions

- Artificial Intelligence
- Machine Learning
- Generalized Linear Models



## 2. Machine Learning Taxonomy

## 3. Conflict Among Insurance Company Data Scientists

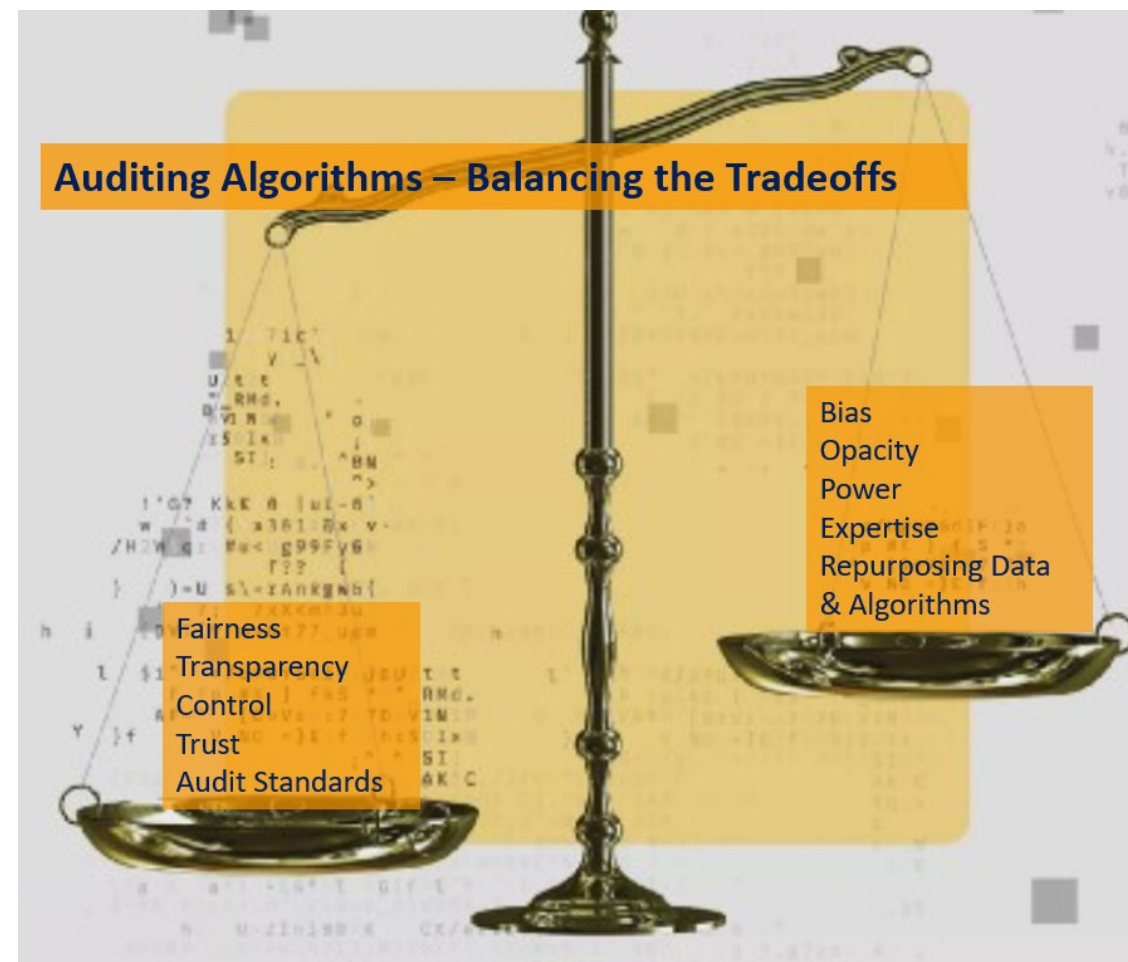
## 4. Governance vs. Ethical Considerations

# Ethical/Governance Dilemmas

1. Balancing the Tradeoffs
2. Algorithmic Accountability
3. Risks of 3<sup>rd</sup> – Party Data
4. Biased Model Outcomes
5. Algorithms v. Human Autonomy

*The invention of the ship was also the invention of the shipwreck...Every technology carries its own negativity, which is invented at the same time as technical progress.*

-Paul Virilio

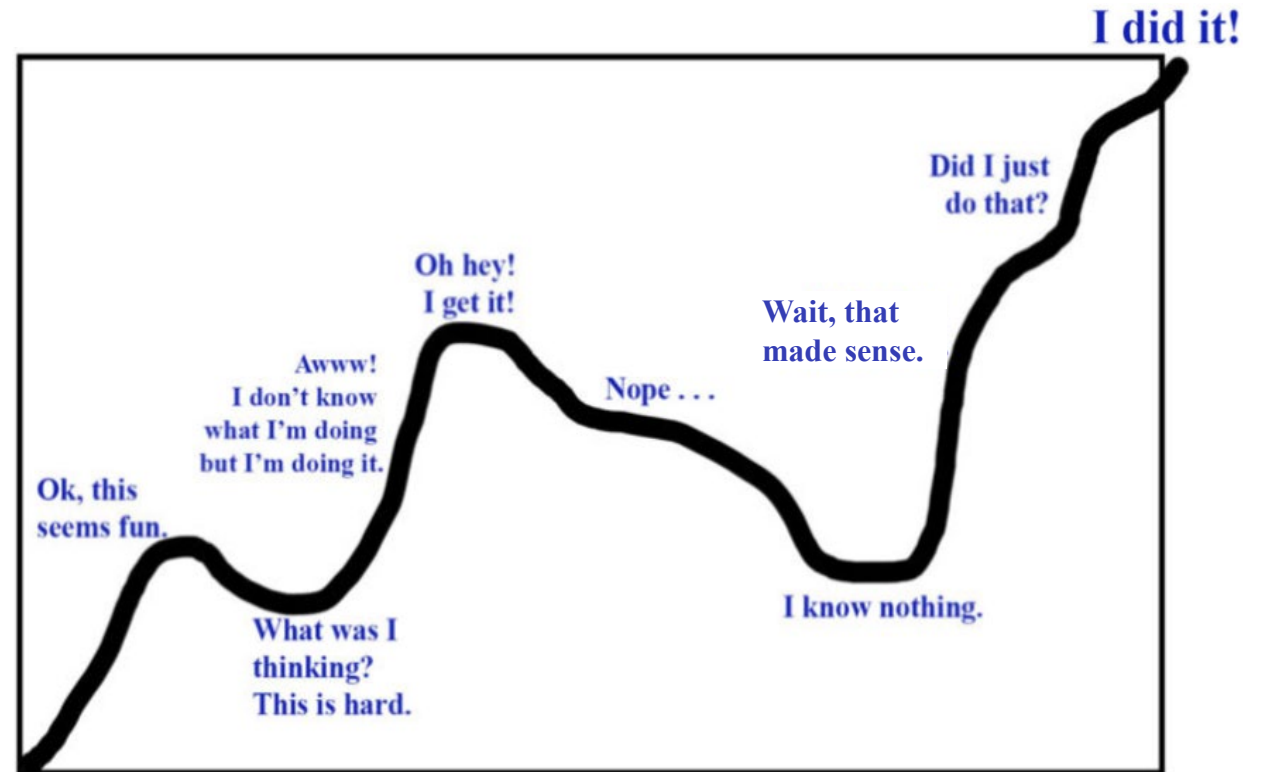


# Common Perception of AI Learning Curve



## Innovation Cybersecurity and Technology (H) Committee

Innovation, Cybersecurity, and Technology (H) Committee





# SOA Certificates in Data and Model Ethics

**STUART KLUGMAN, FSA, CERA, PHD**

**Education Senior Staff Fellow, Society of Actuaries**

August 15, 2023



# What is an SOA Certificate Program?

- Outside the pathways to ASA/FSA
- Provide knowledge that is either different from that in the pathway or provides access to newer material in a non-exam setting
- Three current areas:
  - Climate change
  - Data and model ethics
  - Predictive analytics

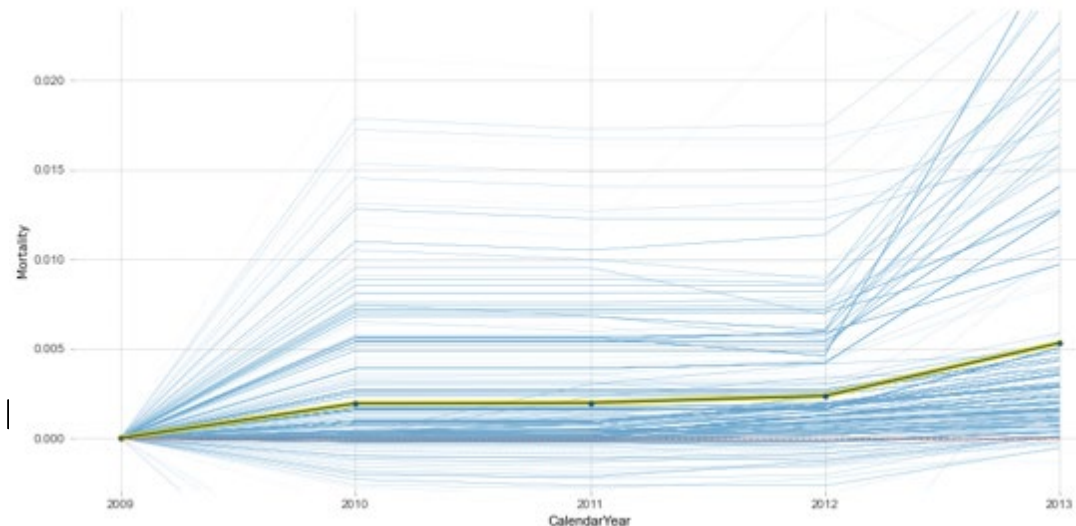
# How are they structured?

- A sequence of e-Learning modules
- Option 1 – Purchase and complete modules separately
- Option 2 – Purchase full set of modules
- Option 3 – Option 2 plus take an assessment
- Only Option 3 grants the certificate



# Ethical and Responsible Use of Data and Predictive Models

- Full course with in-depth coverage – six modules
  - Introduction
  - Regulation and ethical framework
  - Data
  - Analytics and modeling
  - Implementation
  - Organizational approach to governance



# ERUD – Executive Track

- Also has six modules
- However, content has been trimmed with a focus on those who manage analytics rather than those who perform analytics
- No assessment, hence no formal certificate awarded

# Regulator Discount

- Modules 1 and 2 of the main program available for free to regulators
- Remainder of course available at a prorated bundle price
- Contact [certificates@soa.org](mailto:certificates@soa.org) if interested



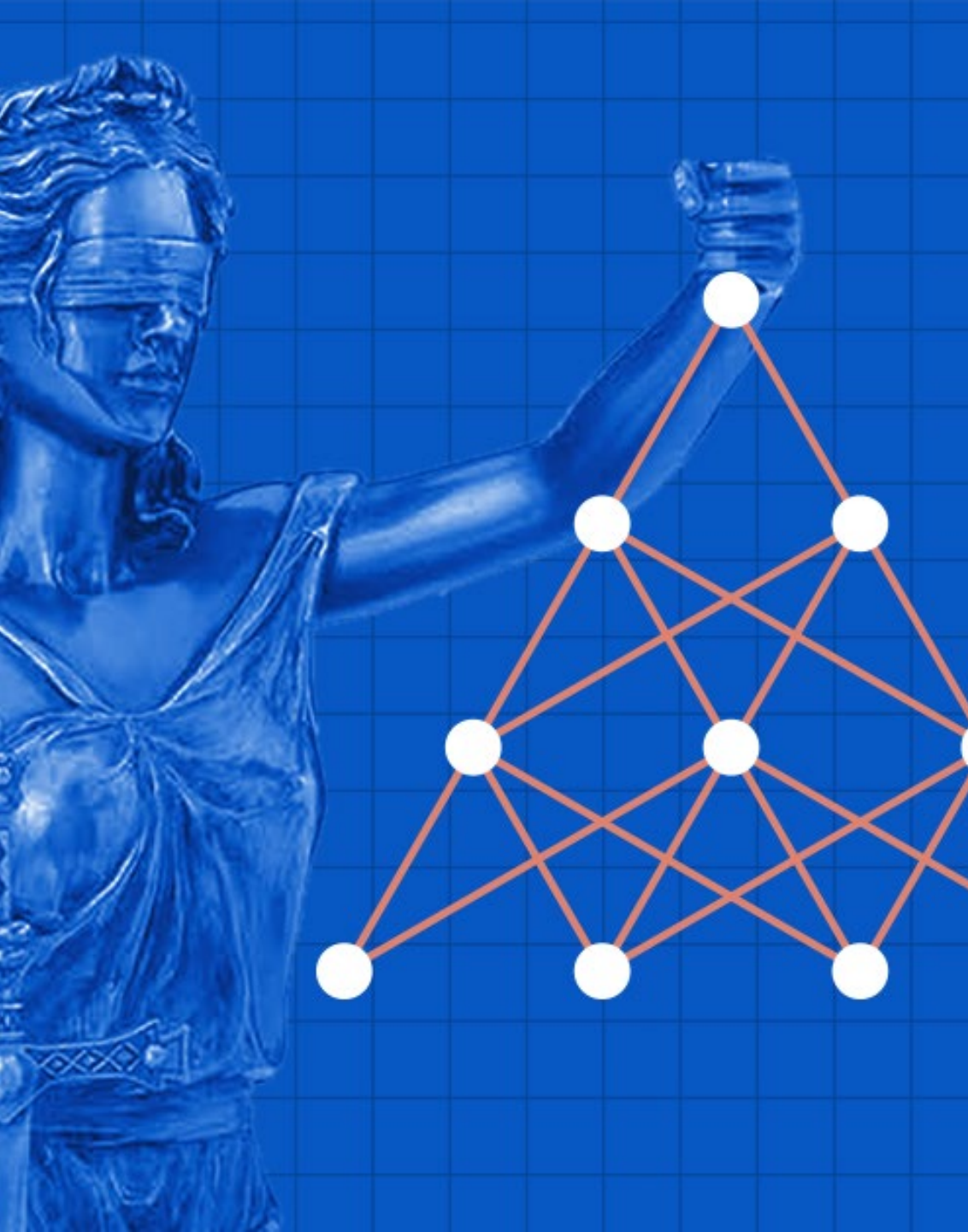
# CAS Responsible AI / Big Data

iCAS Course –

Managing the Impact of  
Unintentional Bias in  
Insurer Decision Making

<https://web.theinstitutes.org/managing-impact-unintentional-bias-insurer-decision-making>





# CAS Responsible AI / Big Data

## P&C AI Bundle (2022-2023)

- Applications in Data Science
- Interpretability and Transparent Machine Learning
- Bias, Risk, and Regulation
- A Primer on Algorithmic Fairness in Insurance



# CAS Responsible AI / Big Data

## Race and Insurance Pricing Series

- Defining Discrimination in Insurance
- Understanding Potential Influences of Racial Bias on P&C Insurance: Four Rating Factors Explored
- Approaches to Address Racial Bias in Financial Services: Lessons for the Insurance Industry
- Methods for Quantifying Discriminatory Effects on Protected Classes in Insurance

<https://www.casact.org/publications-research/research/research-paper-series-race-and-insurance-pricing>

CAS RESEARCH PAPER  
SERIES ON RACE AND INSURANCE PRICING

## DEFINING DISCRIMINATION IN INSURANCE

*Kudakwashe F. Chibanda, FCAS*

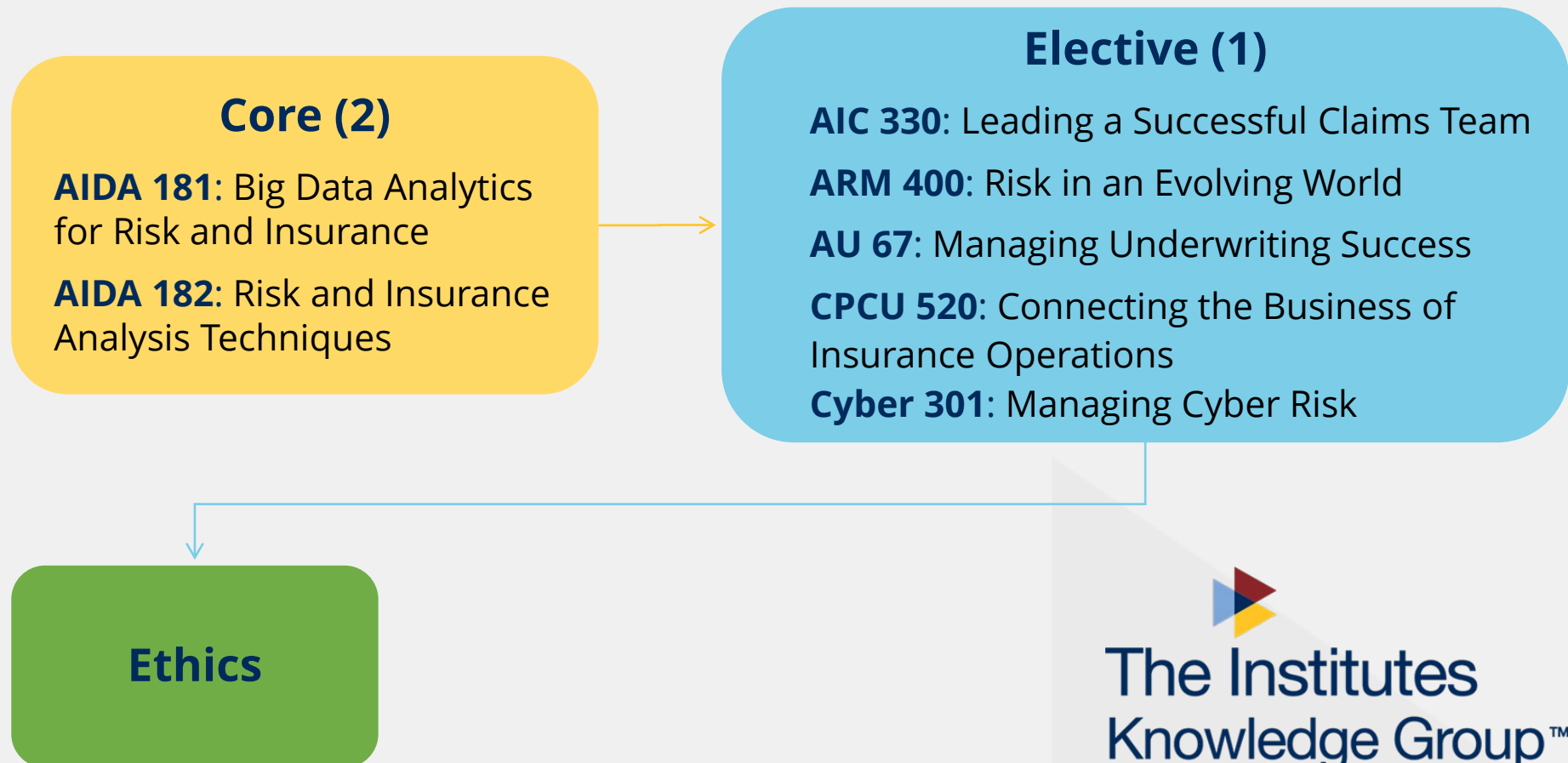


# Associate in Insurance Data Analytics (AIDA®)

AIDA is for anyone looking to understand more about the impact of data on the risk management and insurance landscape. This can apply to a variety of risk management and insurance roles, including claims and underwriting professionals, and more.

## SKILLS You Will Gain:

- Predictive Modeling
- Exposure Assessment
- Big Data Analytics
- Loss Reserving
- Business Performance Management
- Strategic Data Analysis





**NAIIC**

**NATIONAL ASSOCIATION OF  
INSURANCE COMMISSIONERS**