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AI-Enabled Underwriting Brings New Challenges for Insurance

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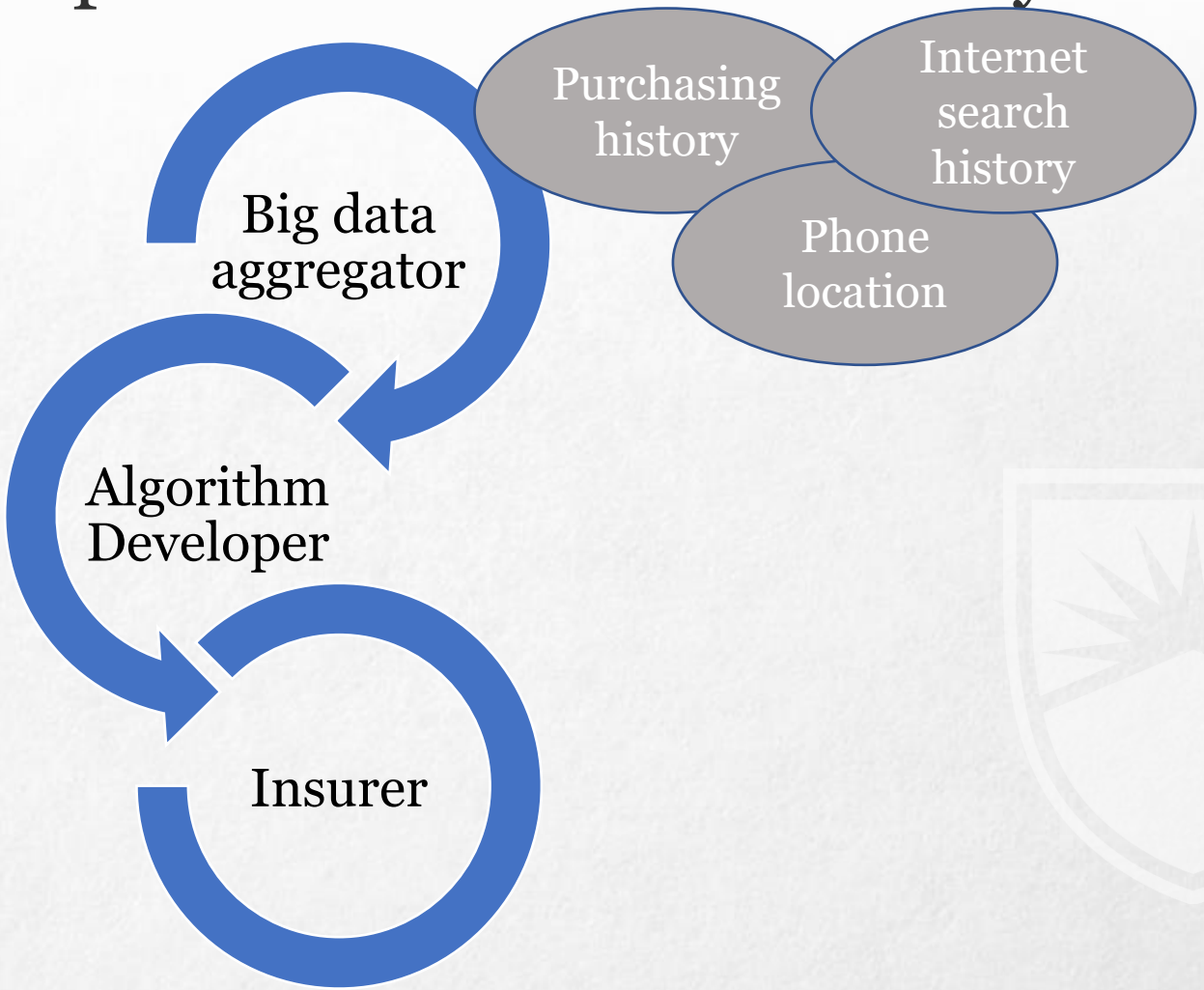
Overview

1. New Challenges, described
2. Regulatory approaches, and their limits
3. A multi-pronged approach
   - Standards; Certification; Testing
4. Discussion/Q&A

New Challenge:
Chain of Data Ownership Obscures Accountability



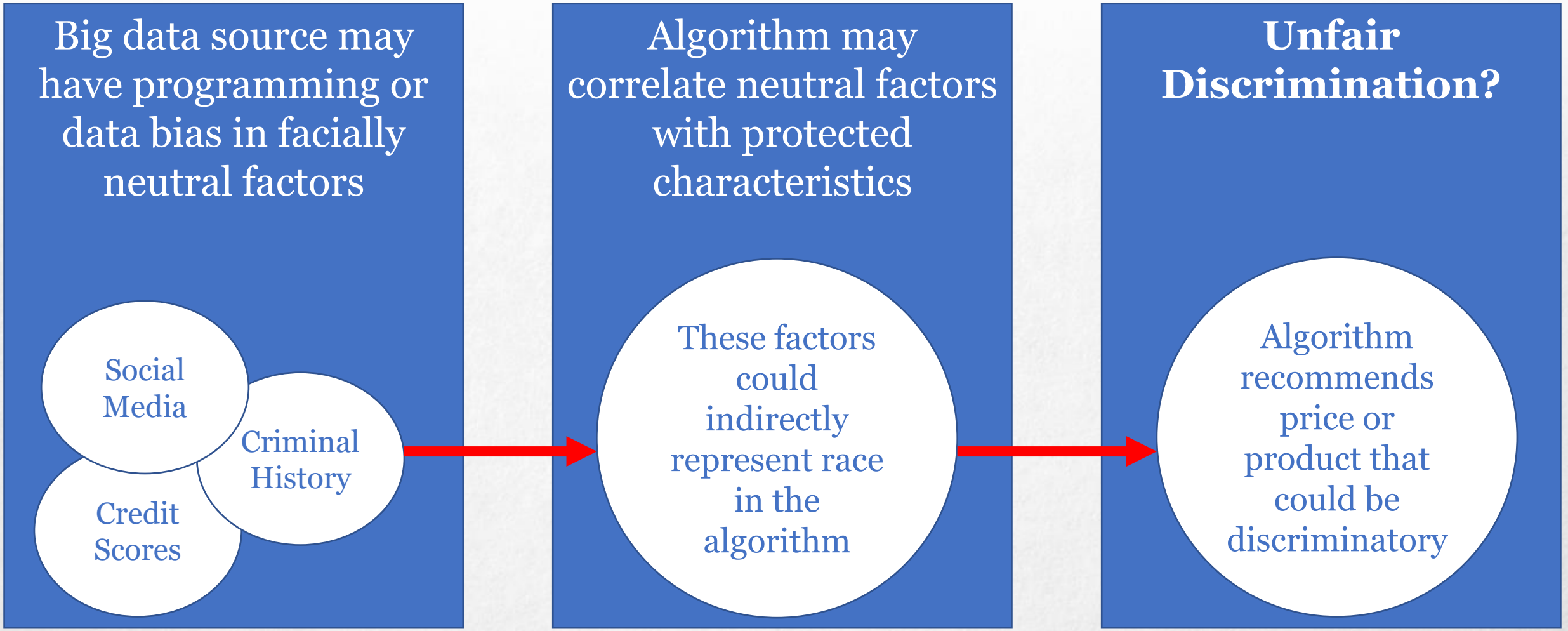
New Challenge:
Three Types of Algorithm Risks & "Mistakes"

Category Mistakes **Incorrect label/Misclassified Data**	**Process Mistakes** **Inappropriate Design**	**Social Implications** **Legal & Accurate, but…**
- False positives: facial recognition might falsely identify someone as a "smoker" when they are not - False negatives: credit score indicates that you are unlikely to repay debt	- Use of irrelevant data: Use of Social Media data: joining an African-American Breast Cancer Survivor Group - Use of unlawful data: race as a category for insurance decisions - Use of incorrect data: a credit card you never owned	- Ethical implications of outcomes; social impact considerations

Category mistakes and process mistakes with attribution to
Martin, K. (2018). Designing Ethical Algorithms. *MIS Quarterly Executive*

AI-enabled Underwriting and Unfair Discrimination

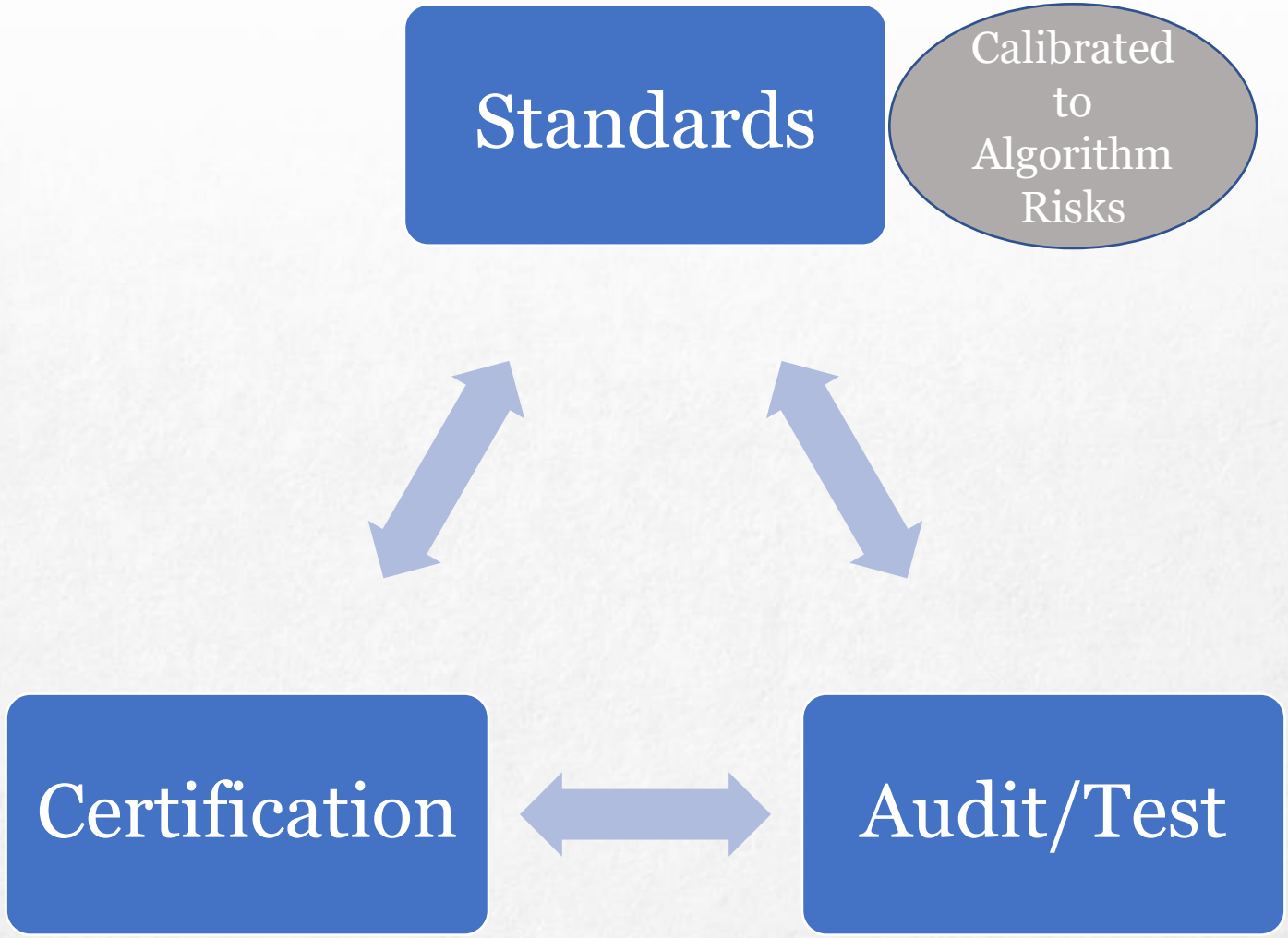
More advanced risks in processing data



Regulatory Approaches

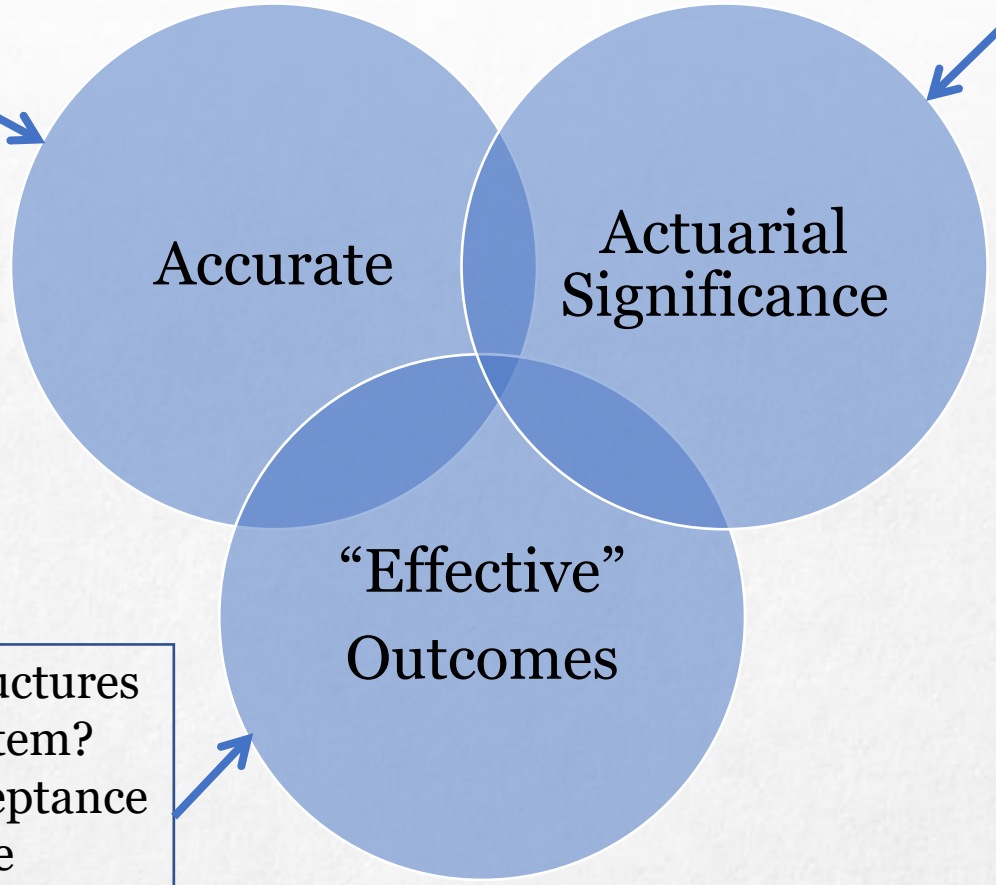
Approach	Challenges
Transparency: ➢ Mandate transparency to consumers when an adverse action occurs	➢ will the insurer know how the algorithm made its decision? ➢ the code may be owned by a third party, and proprietary to them
Factor-by-Factor Analysis: ➢ Prohibition of Certain Rating Factors (e.g., criminal arrests, credit scores)	➢ Big data growth…new rating factors regularly in development ➢ facially neutral rating factors could be problematic: stand-in for a prohibited characteristic. E.g., cell phone data could provide zip code information
Blanket Prohibitions: ➢ Prohibition against "unfair discrimination"	➢ good for "direct" use of data…. But what about the more advanced risks in processing data when race can be "inferred"
Testing: ➢ data should be tested to ensure that it is not "unfairly discriminatory"	Will need to further address: ➢ insurers don't collect race-based data ➢ need a standard for "unfair discrimination"

Multi-pronged approach



Categories of Standards

does it accurately reflect the actual behavior that is of interest?



how much does the input contribute to the evaluation of risk?

What decision processes and structures were used in designing the system? What anticipated offer rates, acceptance rates, etc., among disparate demographic groups?

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