

BIG DATA: PROFESSIONAL AND ETHICAL CHALLENGES FROM THE PERSPECTIVE OF ACTUARIES, STATISTICIANS AND DATA SCIENTISTS *A PANEL DISCUSSION*

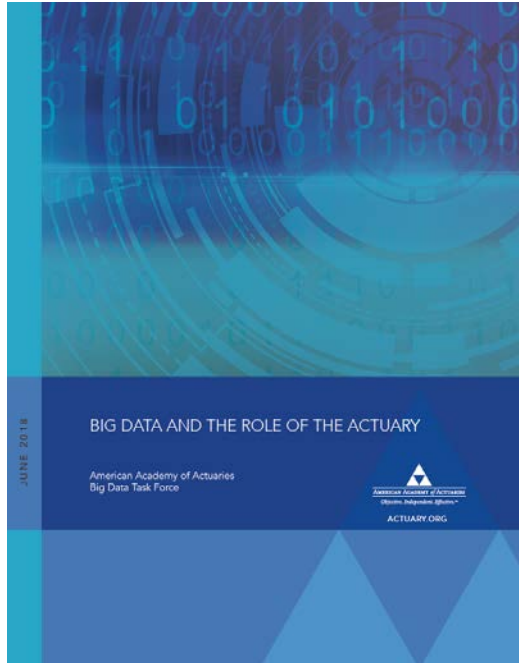


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Joint Statistical Meeting
August 2, 2018

Today's Purpose



Big Data and the Role of the Actuary

JUNE 2018

American Academy of Actuaries Big Data Task Force

Bob Beuerlein, MAAA, FSA, FCA, CERA—*Chairperson*
Dorothy Andrews, MAAA, ASA, CSPA—*Vice Chairperson*
Mary Bahna-Nolan, MAAA, FSA, CERA
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Patrick Causgrove, MAAA, ACAS
Robert Curry, MAAA, FCAS
Ian Duncan, MAAA, FSA, FCIA, FIA
Seong-Min Eom, MAAA, FSA
Andy Ferris, MAAA, FCA, FSA

Audrey Halvorson, MAAA, FSA
William Hines, MAAA, FSA
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Robert Miccolis, MAAA, FCA, FCAS
David Sandberg, MAAA, FSA, CERA
Martin Snow, MAAA, FSA
Jim Toole, MAAA, CERA, FSA
Jason VonBergen, MAAA, FSA

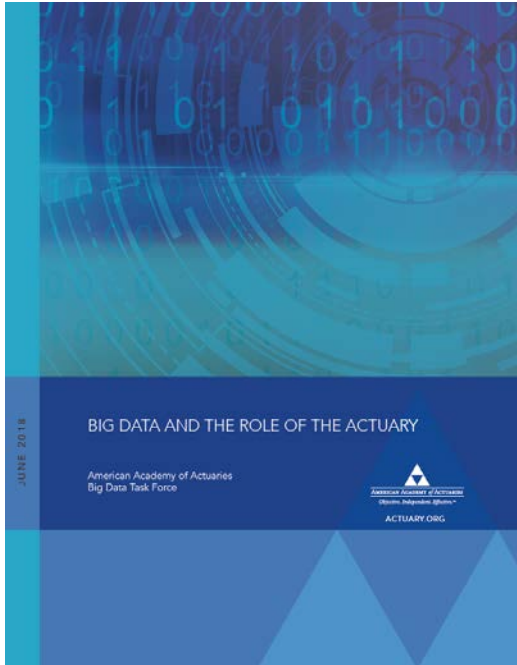


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Today's Purpose



- Two Issues Emerged:
 - Ethical and professional issues are emerging with the increasing use of Big Data
 - Actuaries, statisticians and data scientists are involved with projects using Big Data

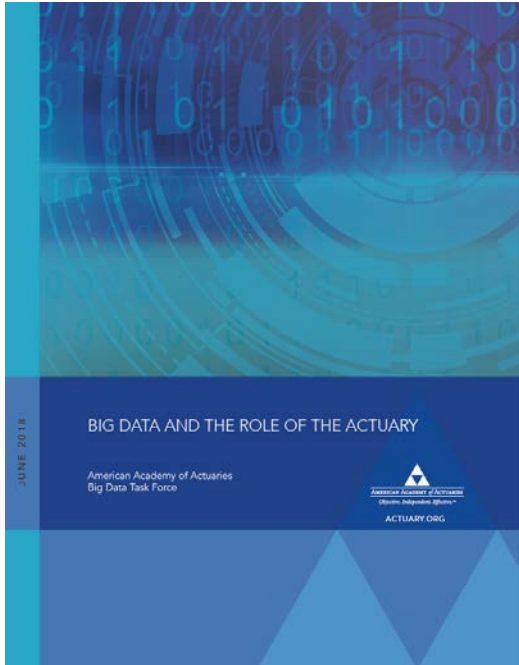


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The Monograph



Big Data generally includes the “5 V’s”:

- Volume*** Large amounts of data are collected and processed.
- Velocity*** Data is available and must be processed at lightning speed, frequently instantaneously
- Variety*** The data being used comes in different forms.
- Veracity*** The reliability of the data is not uniform.
- Value*** The data being extracted must be usable or be able to be monetized.



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Introductions

- **Dorothy Andrews, ASA, MAAA, CSPA**

Consulting Actuary, Merlinos & Associates

- **Jed Frees, PhD, FSA, Fellow of ASA**

Professor of Risk & Insurance, Wisconsin School of Business

- **Jim Guscza, PhD, FCAS**

Chief Data Scientist, Deloitte Analytics

- **Victoria Stodden, PhD**

Assistant Professor, Columbia University

Agenda

- Overview of the Academy Report
- Discuss issues raised by the application of Insurance Technology a.k.a InsurTech



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Chief Data Scientist, Deloitte Analytics

□ **Victoria Stodden, PhD**

Assistant Professor of statistics, Columbia University

Agenda

- Discuss the leading challenges seen emerging in life insurance underwriting methodologies



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Chief Data Scientist, Deloitte Analytics

□ **Victoria Stodden, PhD**

Assistant Professor, Columbia University

Agenda

- Discuss the leading challenges seen emerging in group policies, such as Worker's Compensation



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□ Jim Guscza, PhD, FCAS

Chief Data Scientist, Deloitte Analytics

□ Victoria Stodden, PhD

Associate Professor of Statistics, Illinois School of Information Sciences

Agenda

- Discuss the leading challenges seen emerging with regard to privacy concerns in using big data in insurance practice areas



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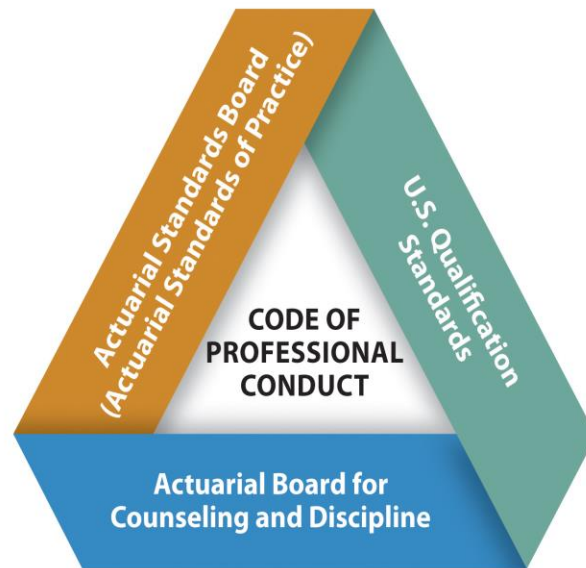


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Professionalism for Actuaries

- The Code of Professional Conduct
- U.S. Qualification Standards (USQS)
- Actuarial Standards of Practice (ASOPs)
- Actuarial Board for Counseling and Discipline (ABCD)



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REGULATORY CONSIDERATIONS

Existing Regulatory Framework

- Two categories of regulatory requirements to govern the use of Big Data:
 - ▣ To protect consumers in general
 - ▣ To prohibit discrimination against certain protected classes of individuals



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REGULATORY CONSIDERATIONS

Emerging Regulatory Developments

- NAIC Big Data (EX) Working Group
- Regulatory Sandboxes – A regulatory environment designed to encourage innovation in a regulated industry



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PRIVACY AND BIG DATA

Existing Regulations

Two Protected Areas:

- ▣ Financial Data
- ▣ Health Data

Insurance Data Security Model Law

Draft Approved 2017



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Chief Media Ethicist

- Independent Agent
- Develop Ethical Brand
- Incorporate Universal Standards
- Operationalize Brand Ethics
- Monitor Company Ethical Behavior
- Identify Ethics Violations
- Remedy Ethics Violations
- Continually Evolve the Brand



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The Future of Insurance Is Predictive

BY DOROTHY L. ANDREWS

Media  FIELDING
Graduate University
Psychology
Where technology
meets human
experience



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InsurTech Observations

Observation 1: The Rules of Engagement have changed

Observation 2: New areas of risk have emerged

Observation 3: Advanced technology may present conflicts



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InsurTech Observations

Observation 4: Simplified U/W viewed as post-claim U/W

Observation 5: Increase in regulatory market conduct scrutiny

Observation 6: Regulators have a steep learning curve



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InsurTech Applications



Source: <https://pixabay.com/en/wearables-trackers-fitness-2316471/>



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The Psychology

The Vitality program operates as a **health model rather than a disease model** using mobile devices mediated via a technology platform.

By linking wearable devices to the Vitality program, John Hancock tied a **powerful tool to self-efficacy** to drive the desired outcome, improved health.

- Albert Bandura, Ph.D., Social Psychology
- Pamela Rutledge, Ph.D., Media Psychology



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InsurTech Applications



Source: <https://byte-technology.com/blog/tis-the-season-making-it-easy-to-give-year-end-donations/>



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The Psychology

Dr. Robert Cialdini would likely say this relationship is one of reciprocity intrinsically linked to social validation. Millennials solicit brands that invest in social causes they care about.

- Robert Cialdini, Ph.D., Social Psychology



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Chatbots give “the illusion of companionship without the demands of friendship.”

- Liraz Margalit, Ph.D.
Social Psychology

INSURANCENEXUS

Results-Driven Innovation: AI, Machine Learning and Chatbots Improving Insurance Profitability & CX



Paul Travers
MetLife
Senior Vice President of Finance Technology,
Data and Process



Andrew Pelcin
Chubb
Vice President, Claims Data Analytics
Implementation



Amish Amin
Nationwide Insurance
Director Claims Data Analytics

#insuranceAI

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The Panel Discussion



Jim Guszczka



Jed Frees



Victoria Stodden



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Questions



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