

# 2016

CASUALTY ACTUARIAL SOCIETY **ANNUAL REPORT**



Expertise. Insight.  
Solutions.®

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# ● CAS's Mission, Vision and Core Values

## Mission Statement

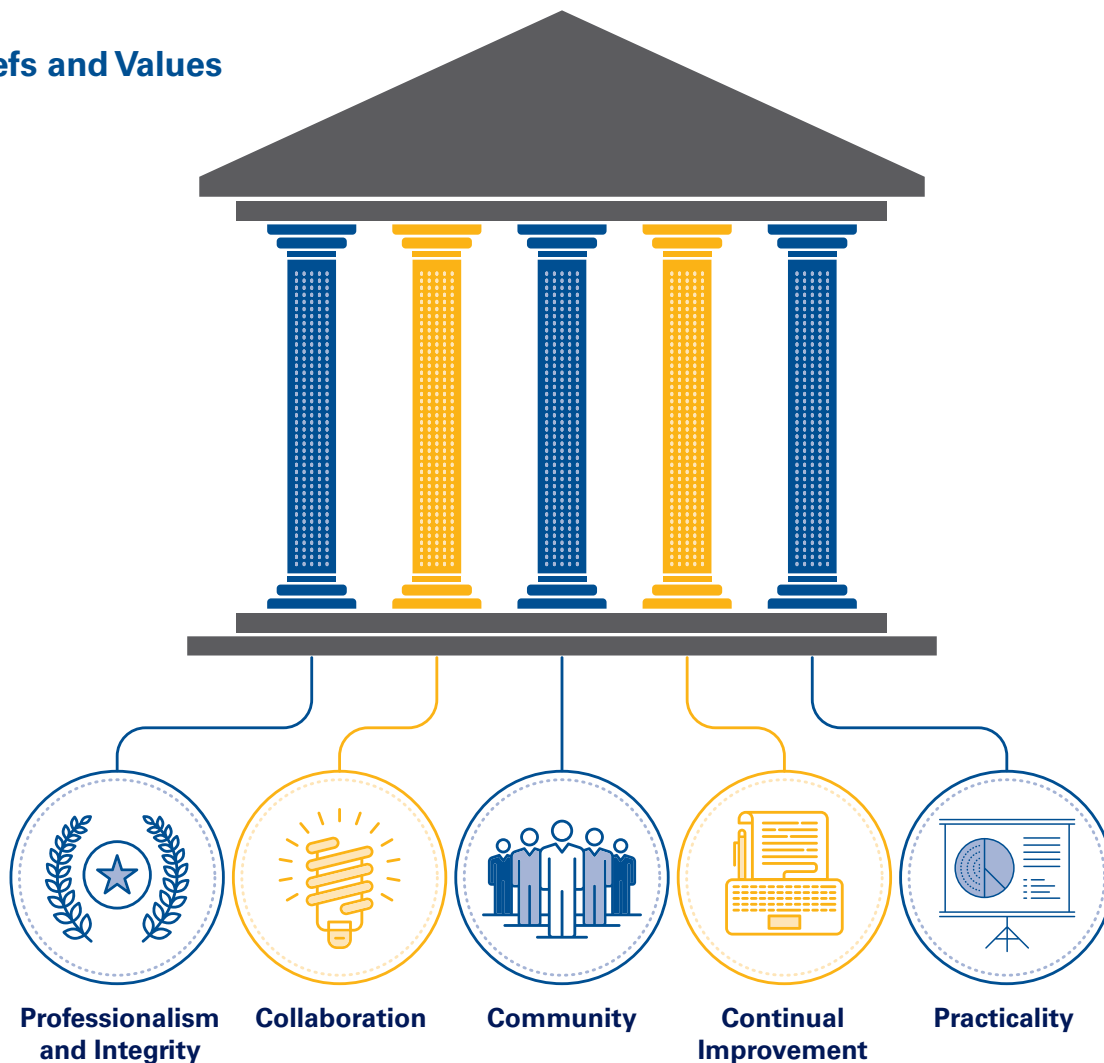
The purposes of the Casualty Actuarial Society are to:

- Advance the body of knowledge of actuarial science applied to general insurance, including property, casualty and similar risk exposures;
- Expand the application of actuarial science to enterprise risk and systemic risks;
- Establish and maintain standards of qualification for membership
- Promote and maintain high standards of conduct and competence;
- Increase the awareness of actuarial science
- Contribute to the well-being of society as a whole.

## Vision Statement

Actuaries are recognized for their authoritative advice and valued comment wherever there is financial risk and uncertainty.

## Core Beliefs and Values

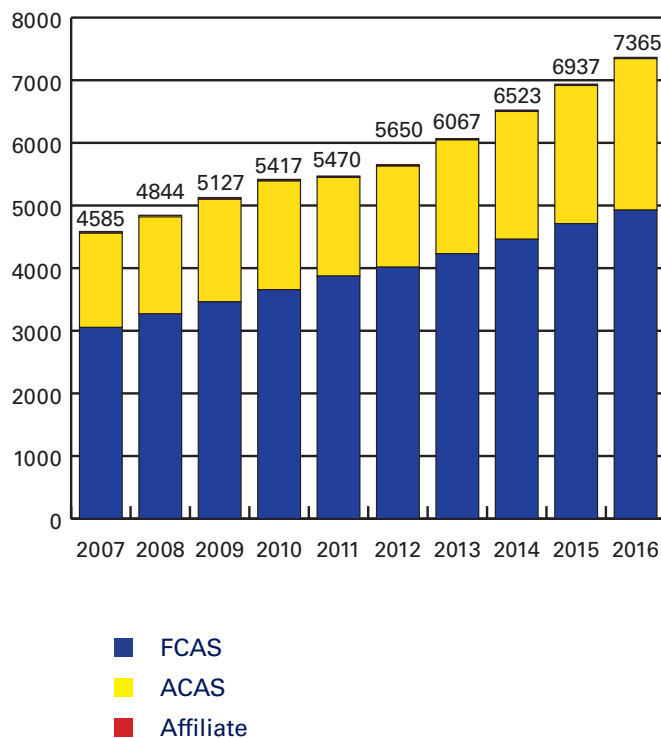


## ● Membership Demographics

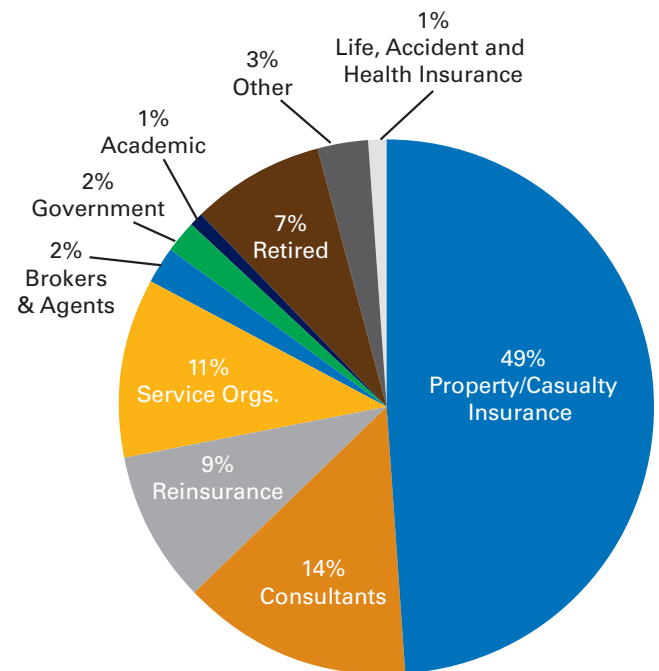
### 2016 Geographic Membership Distribution

Count of Country		
Country	2015	2016
United States	5,840	6,147
Canada	657	733
Bermuda	110	108
China	66	72
United Kingdom	55	54
Hong Kong	32	36
Switzerland	32	32
Singapore	30	29
Other	115	132
<b>Grand Total</b>	<b>6,937</b>	<b>7,343</b>

### CAS Member Growth 2007-2016



### CAS Members by Type of Employment



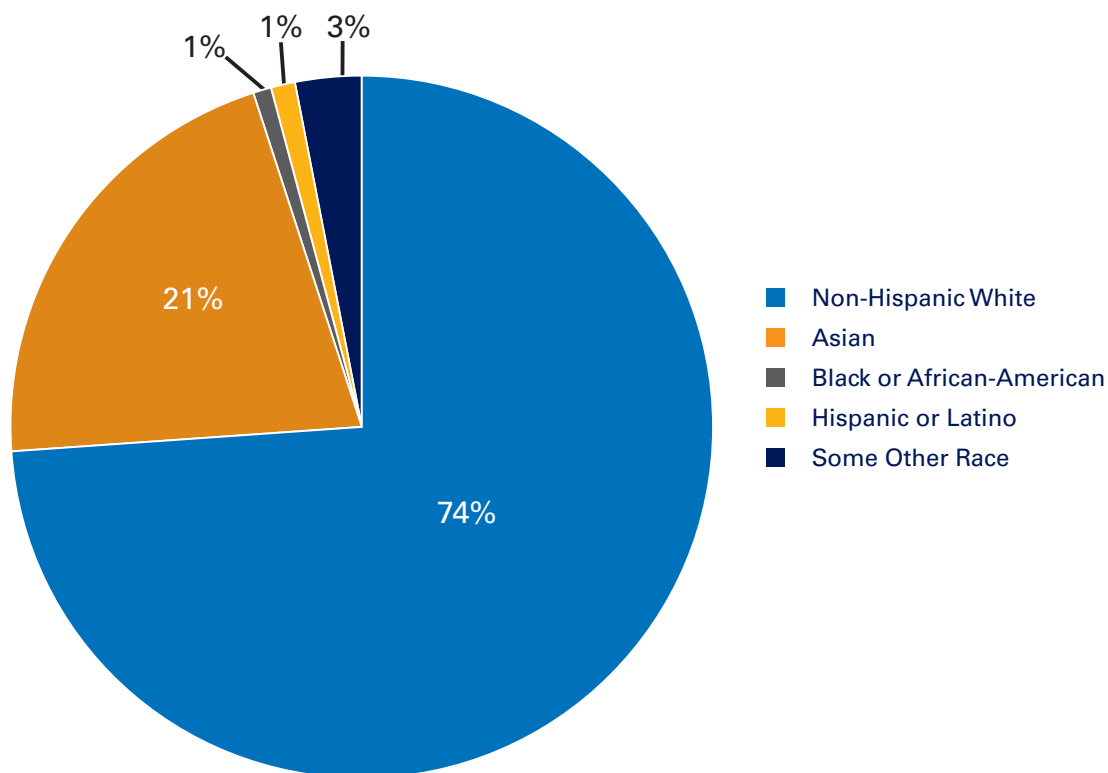


## Diversity

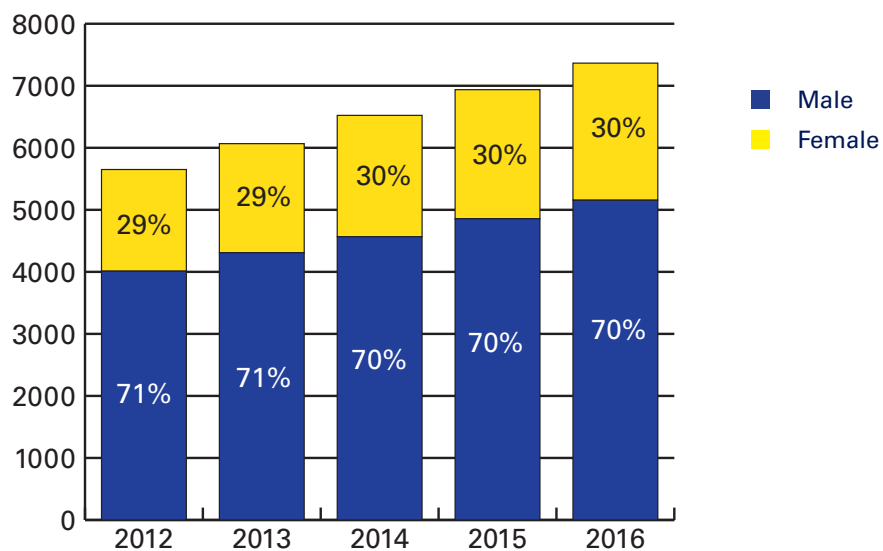
In 2015 the CAS Board of Directors adopted the CAS Diversity Strategy, formalizing the CAS's commitment to facilitating the evolution of a multidimensional property and casualty actuarial profession. The goal of the strategy is to increase the membership of under-represented groups in the CAS.

To create a baseline to measure progress on membership diversity, the Diversity Committee captured current CAS membership demographics.

### 2016 CAS Membership Demographics



### CAS Members by Gender



## Volunteerism

CAS members value our community and the relationships formed through volunteer activities. In FY 2016, 2,335 out of 7,040 CAS members served as volunteers. That's 31.5% of the membership! Volunteer contributions spanned the entire range of CAS activities, including examinations, research and development, and educational programs.

The CAS is grateful for the continued support of employers who encourage their actuaries to volunteer their time and effort to the CAS. We are proud to recognize some of these employers.

### Top Ten employers of CAS Volunteers:



### Large employers with at least 50% of members volunteering:

Milliman, Inc.  
Allstate Insurance Company  
Deloitte Consulting, LLP  
Pinnacle Actuarial  
Resources, Inc.

Sentry Insurance  
Tokio Marine, HCC  
Westfield Insurance  
Country Financial

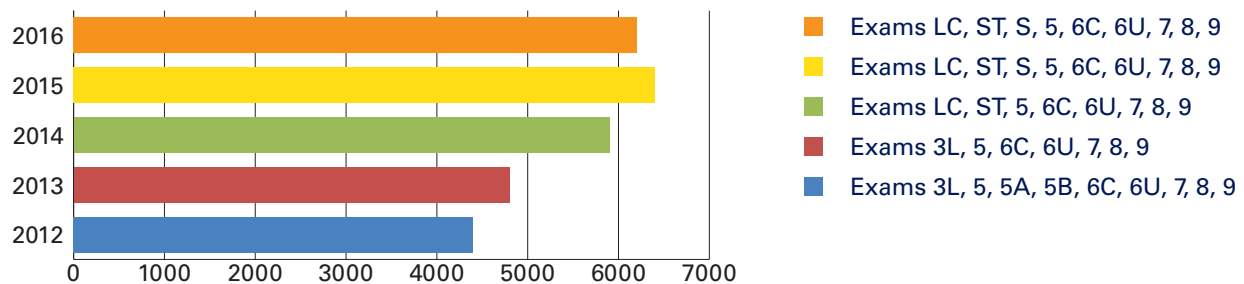
Wawanesa Mutual  
Insurance Company  
RSA Canada  
XL Insurance America

# ● Admissions and Examination Highlights

## CAS Examinations, Spring and Fall 2016

Summary for CAS-specific Exams LC, ST, S, 5, 6C, 6US, 7, 8, 9	Total
Exams in the U.S. and Canada	5560
Exams Outside of the U.S. and Canada	703
Total	6263
Total Pass Ratio	44%
New Fellows	222
New Associates	367

## Total Exam Registrants 2012-2016



\* Exams LC, ST, 5, 6C and 6U are given twice a year. Exam S was given for the first time in Fall 2015, but will be offered twice a year.

\*\* Exams 7, 8, and 9 are given once a year.

## The CAS Path to Success

In principle and in practice, the CAS is the gold standard for the property and casualty actuarial profession. With 100 years of experience and expertise, the CAS continues to focus on comprehensive exams and education that are uniquely relevant to property and casualty actuaries. Our CAS credentialing program is the program of choice for attracting top candidates and meeting employers' needs.



## University Engagement

The CAS's engagement with universities continued to flourish in 2016. CAS Student Central membership increased by 54% to 5,349 members, representing 485 universities, while Academic Central membership increased to 375 members, representing 205 universities.

### First Annual "Insurance Careers Month"

In support of the industry-wide inaugural Insurance Careers Month, the CAS created a Millennial Profile series, which featured young actuaries offering insights and advice about insurance careers for students.



#### Millennial Profile: Phil Natoli

Posted: February 18th, 2016

CAS member Phil Natoli, FCAS, MAAA is a manager in the actuarial services practice of Ernst & Young. [Read More](#)



#### Millennial Profile: Kelsey Thraen

Posted: February 18th, 2016

CAS member Kelsey Thraen, ACAS is an assistant actuary at Allstate Insurance Company. [Read More](#)

## New University Resources

### P/C RESOURCE LIBRARY

The Casualty Actuarial Society has developed a **Property and Casualty Resource Library**, created specifically for professors who teach actuarial science and related courses and are a **member of Academic Central**.

[Join the CAS Academic Central Community](#)

The library's purpose is to house materials that a professor can use to develop or enhance a course on property and casualty actuarial techniques at the university level. The materials can also be used to incorporate property and casualty concepts into a broader course. The library is organized around a set of three sample syllabi and a menu of supporting resources.

#### CAS SAMPLE SYLLABI

The CAS has developed three course syllabi that each span one semester and cover introductory property and casualty actuarial topics. The syllabi are available to support in the development of a new university course or as a reference to enhance an existing course.

[Introduction to Ratemaking Course Syllabus](#)

[Introduction to Reserving Course Syllabus](#)

[Introduction to Ratemaking and Reserving Course Syllabus](#)

#### ARTICLES AND TEXTS

The articles and texts referenced in the sample syllabi can be easily accessed and downloaded according to the specific course topic: ratemaking or reserving.

[+ Ratemaking Articles and Texts](#)

[+ Reserving Articles and Texts](#)

#### CAS RESOURCES

The Casualty Actuarial Society resources include a series of property and casualty case studies designed for use in the classroom, and information on CAS Exam learning objectives.

[+ CAS Case Study Materials](#)

[+ CAS Exams](#)

### UNIVERSITY LIAISON MOCK INTERVIEW TOOLKIT



This document is intended to be used by CAS University Liaisons, faculty, and Career Center staff at colleges and universities that want to assist students preparing for a career in the actuarial field.

The content of this mock interview toolkit is based heavily on material originally developed by the International Association of Black Actuaries (IABA). The CAS thanks the IABA for granting permission to the CAS to update and distribute the information in the form of a mock interview toolkit.

General guidance to make the most of this toolkit:

- 1) Numerous suggested interview questions are provided, and are divided into various skill categories that are important for actuarial candidates to develop. As you review the questions provided, select the categories and questions within those categories that you believe are most appropriate for your specific situation.
- 2) Be sure to ask probing questions that are intended to get at specific examples and details of situations that give the interviewee an opportunity to demonstrate that he/she has the particular skill being assessed.
  - A statement such as "I am highly motivated and have excellent time management skills" should be followed up by asking the candidate for specific examples where he/she has demonstrated these qualities, what obstacles were faced, and what the results were from his/her efforts.
- 3) When interviewing candidates, questions related to any of the following topics should **never** be asked:
  - Race
  - Gender
  - Age
  - Marital Status
  - Spouse/Children
  - Pregnancy status
  - Disabilities or Health Conditions
  - Medical Conditions
  - Native Country/National Origin
  - Birthplace
  - Housing
  - Religion/Religious Beliefs
  - Criminal/Arrest Record
  - Sexual Orientation
  - Military status/Veteran Status
- 4) A Mock Interview Feedback Form is included at the end of this toolkit. If the interviewer chooses, he/she may provide feedback in specific areas to the interviewee. A mock interview is intended to be a learning experience for the student, and this feedback can be the most valuable result of your efforts.

## Case Competition Toolkit

Toolkit of ready-to-run case competition materials:

- Auto Safety Features Case Study and Workers Compensation Case Study
  - Description
  - Glossary
  - Data
- Presentation Introducing the Cas Competition
- Checklist and Sample Timeline
- Materials for Judges including Scoring Rubric and Grading Sheet
- Marketing Materials

### CAS AUTO SAFETY FEATURES CASE STUDY



#### Background

East Dakota University (EDU), tucked just to the right of North and South Dakota, is one of the premier public higher education organizations in the world. Over the years, EDU has come under increasing financial pressure due to diminishing funding from the State of East Dakota. Over the past 10 years state funding decreased 25%, while EDU enrollment grew 50%. In order to respond to these financial pressures while maintaining its ability to offer world-class education, EDU has instituted a series of initiatives to increase revenue (from donations, grants, tuition, and investments) and decrease expenses.

#### Case Study

Your actuarial firm, GoStats, provides property/casualty actuarial consulting services to EDU. EDU has a fleet of 950 aging autos, and happily a major donor (Frederica Firestone) just donated EDU money to replace its entire fleet. Unfortunately the donation is only enough to cover the purchase of standard model vehicles. EDU is aware that over the past several years there has been a lot of innovation related to auto safety, and these innovative safety features are not included in standard model vehicles. EDU has asked GoStats to investigate whether the new cars they purchase should include some of these safety features. The people who will be evaluating this decision include representatives from the following operations:

1. **Risk:** Responsible for student, visitor & employee safety as well as managing the cost of auto liability, auto physical damage, and other insurable risks. They are particularly interested in potential auto cost savings. In order for your recommendations to move forward they need to be convinced of the return on investment (ROI) of these safety features, and they need to understand the payback period.
2. **Operations:** These represent the areas of EDU that will purchase and use the vehicles. While the Risk Department would pay to cover the additional cost of new safety features, the Operations Department would need to pay for any driver training or increased repair costs resulting from the safety features.
3. **Finance:** Responsible for the overall finances of EDU. They are involved due to the size of this potential safety investment, and they will need to be convinced that the ROI is higher than what they could get if the money were otherwise invested (for example in conservative financial instruments).
4. **Marketing/Public Relations:** Marketing is interested to know if this safety initiative could further enhance EDU's renowned reputation as an innovative leader among universities that treats its employees and students with the utmost regard.

EDU is self-insured for auto exposures. This means that rather than purchasing coverage from an insurance company, EDU directly pays for costs associated with auto accidents involving EDU vehicles. Costs related to auto accidents are broken down into the following categories:

- Auto physical damage: generally the cost of replacing or repairing the EDU vehicle.
- Auto property damage liability: the cost associated with property (other than the EDU car) that is damaged in an EDU car accident. For example if an EDU car hits another car, the EDU driver is at fault, and the other car is damaged, then costs associated with repairing/replacing the other car fall under this category.
- Auto bodily injury liability: the cost associated with people who are injured in an EDU car accident. For example if an EDU car hits another car, the EDU driver is at fault, and the driver of the other car is injured, then costs associated with the other driver fall under this category.

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## CAS University Award Program



The Casualty Actuarial Society (CAS) awarded four universities the 2016 CAS University Award, an honor created to recognize schools doing exemplary work in preparing students for a career in the property and casualty insurance industry. The schools honored in the program's inaugural year includes:

- Illinois State University
- University of California, Santa Barbara
- University of Connecticut
- University of Illinois at Urbana-Champaign.



## CAS Student Programs and University Visits



The CAS hosted approximately 150 university students at five different student programs held in conjunction with 2016 CAS meetings and seminars.

## Participation in University Events

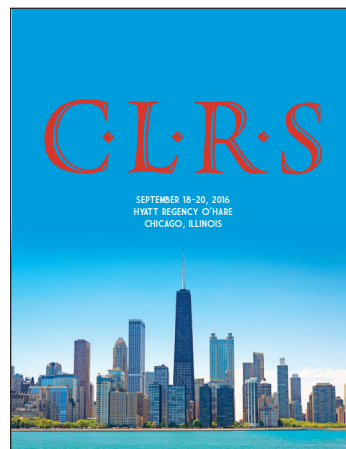
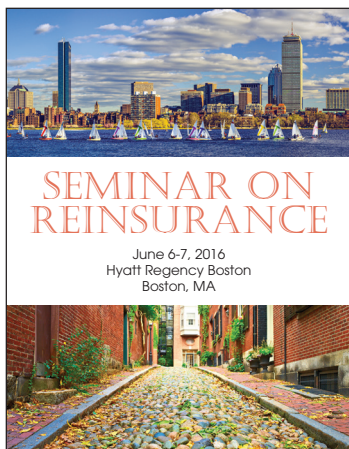
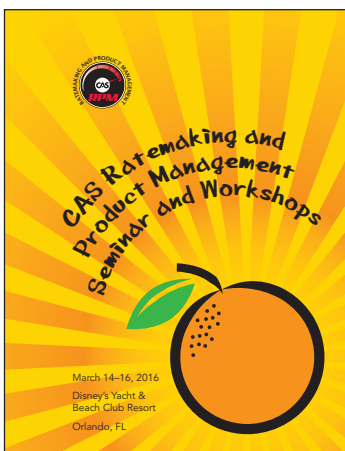
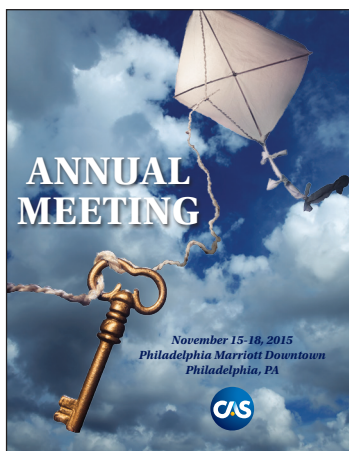
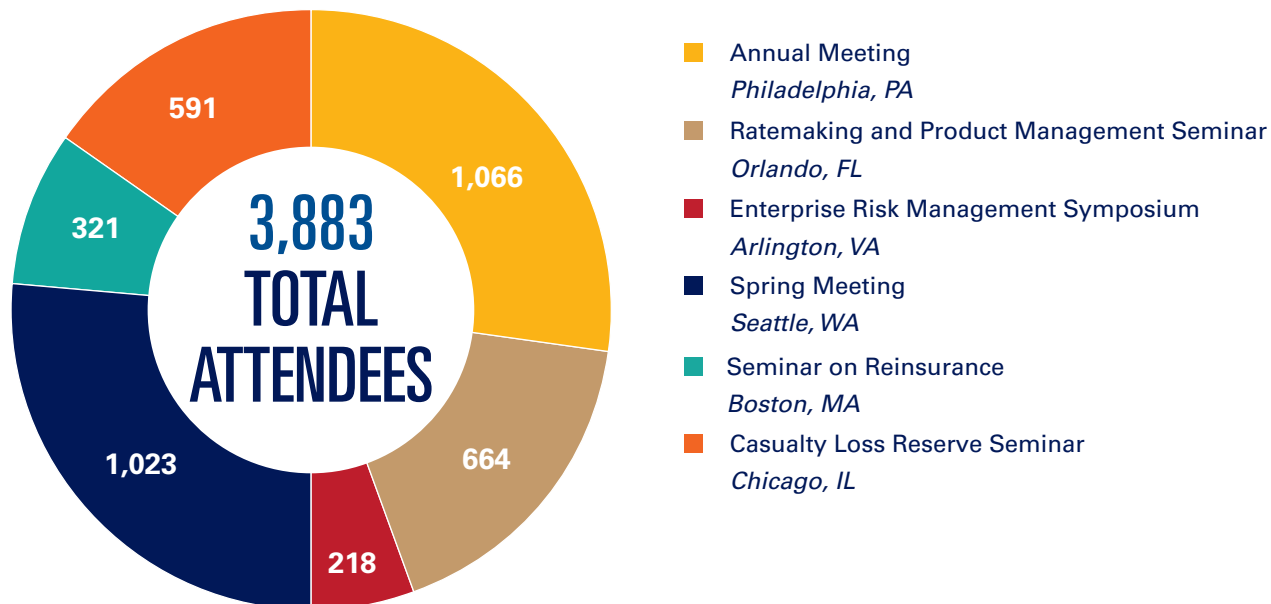


In 2016, the CAS was represented at more than 100 in-person events for university students across the world, ranging from career fairs and student conferences to presentations at student clubs and university classes.

## Continuing Education

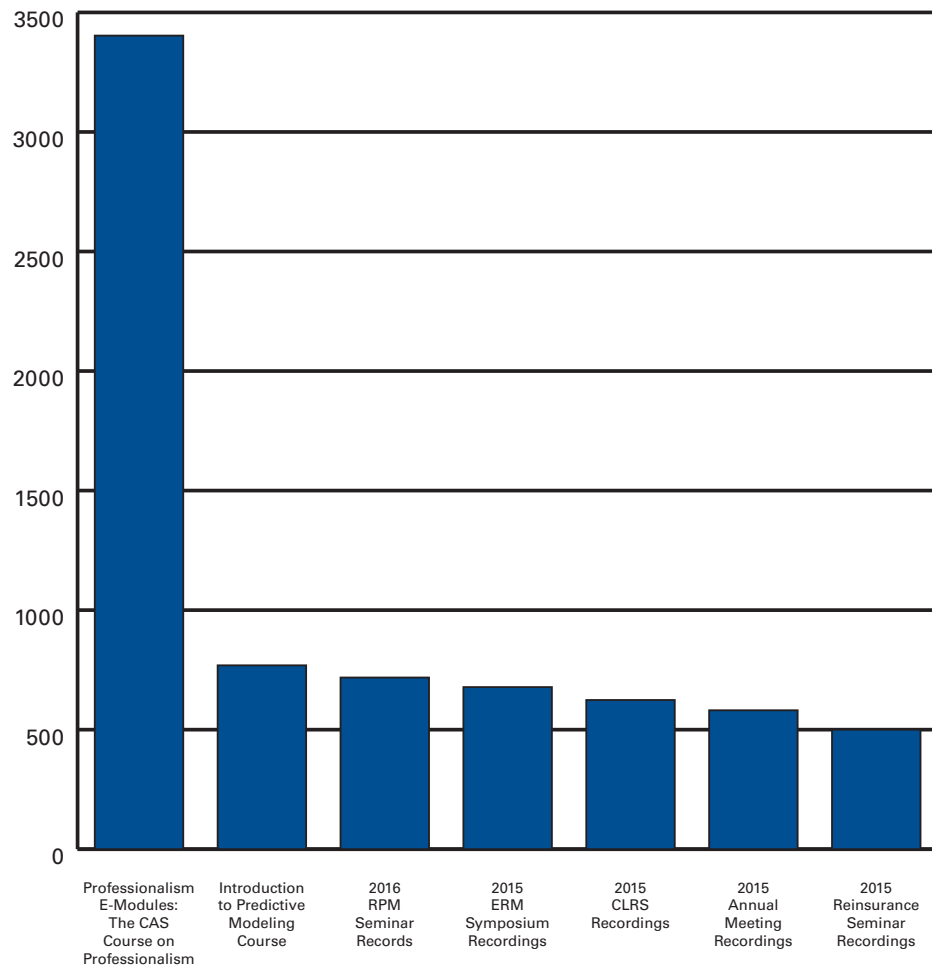
### Meetings and Seminars

The number and variety of CAS offerings represent an ongoing expansion to respond to member demand for high-quality, affordable continuing education opportunities. A total of 3,883 people attended the six largest CAS meetings and seminars.

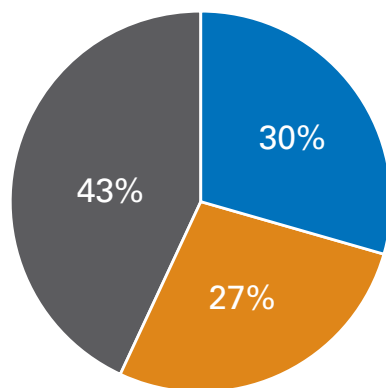


## Web and Online Offerings

### Most Viewed University of CAS (UCAS) Items



### UCAS Purchases by Type



- Webinar Recordings
- Interactive Online Courses
- Meeting and Seminar Recordings

### FY16 Live Stream Events

Meeting	Registrants	# Sessions
2015 Annual Meeting	45	3
2016 RPM	49	5
2016 RPM Complimentary	112	1
2016 ERM Symposium	16	5
2016 Spring	35	4
2016 Spring Complimentary	159	1
2016 Reinsurance	23	4
2016 CLRS	104	5
2016 CLRS Complimentary	103	1
<b>TOTAL</b>	<b>646</b>	<b>29</b>



# NEW INITIATIVE ASKS MEMBERS TO START THEIR OWN WORKING PARTIES ON PROJECTS IMPORTANT TO THEM – 7 UNDERWAY FROM RECRUITING AT ANNUAL MEETING AND CLRS


**11 Call Papers published from 2 reserving and 1 predictive modeling call paper programs**


**Five research projects awarded with funding from Individual Grants Competition**


**Joint Risk Management Section publishes two reports on risk, including annual Emerging Risk Survey**


## RISK ASSESSMENT DATABASE UPDATED WITH 2015 PAPERS


**Risk-Based Capital Working Party publishes two reports**


**Jointly funded CAS/SOA research project published on Spatio-Temporal Credibility Models**


**ASTIN Bulletin authors awarded Hachemeister Prize for paper on hierarchical Archimedean copulas**


**Working Party with IFoA surveyed reinsurers to report on information they most need regarding cedent submissions**


## ● Marketing and Communications

### Awards and Recognition

#### EXCEL Award for Video: "Attending Your First CAS Meeting"

In November 2015 the CAS New Members Committee (NMC) released "Attending Your First CAS Meeting," a video to help CAS members know the details of their first CAS meeting. Produced entirely by the NMC, the video earned a Silver EXCEL Award from Association Media & Publishing.



New Members Video: Attending Your First CAS Meeting

Link: <https://www.youtube.com/watch?v=fOwV3YRoTlo&feature=youtu.be>



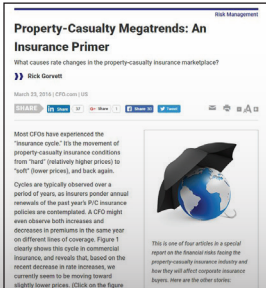
#### All-Media Contest Award for CAS Society Partners Program brochure

The Casualty Actuarial Society (CAS) was honored with a bronze in Association TRENDS' 2015 All-Media Contest for its Society Partners Program brochure. Winning in the category of Exhibitor Sales Kit, the 2015-2016 brochure highlights the array of sponsor, exhibitor and advertising opportunities available to CAS's corporate partners. The entry was one of nearly 400 submissions in the association communications contest.



## Property-Casualty Mega Trends: An Insurance Primer

March 23, 2016  
CFO Magazine



CAS staff actuary Rick Gorvett, FCAS, gives CFOs insight into property and casualty megatrends.

## Self-Driving Vehicles: Dealership Opportunities

April 29, 2016  
CBT Automotive

CAS Automated Vehicles Task Force vice chair Jonathan Charak, FCAS, explains why new technologies will require dealers to consider new insurance coverages and risk management strategies.

## Myth Busters: Understanding the Innovation Mindset

June 1, 2016  
Claims Magazine



Members of the CAS Innovation Council, Susan Cross, FCAS, Aaron Halpert, ACAS, and Brad Monterio, CAS Board of Directors, advise insurers on how to embrace change and innovation.

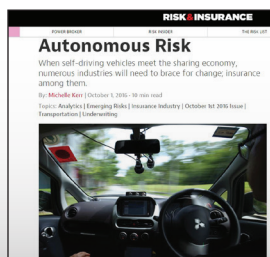
## How Risk Management Can Fuel Innovation

August 29, 2016  
Carrier Management

Aaron Halpert, ACAS, Chair of the CAS Innovation Council, explains how bold, new ideas can be in harmony with risk management strategies.

## Autonomous Risk


October 1, 2016  
Risk & Insurance Magazine




CAS staff actuary Rick Gorvett, FCAS, describes some of the complexities involved in the rollout of fully autonomous vehicles on the road.



## CAS Community Growth

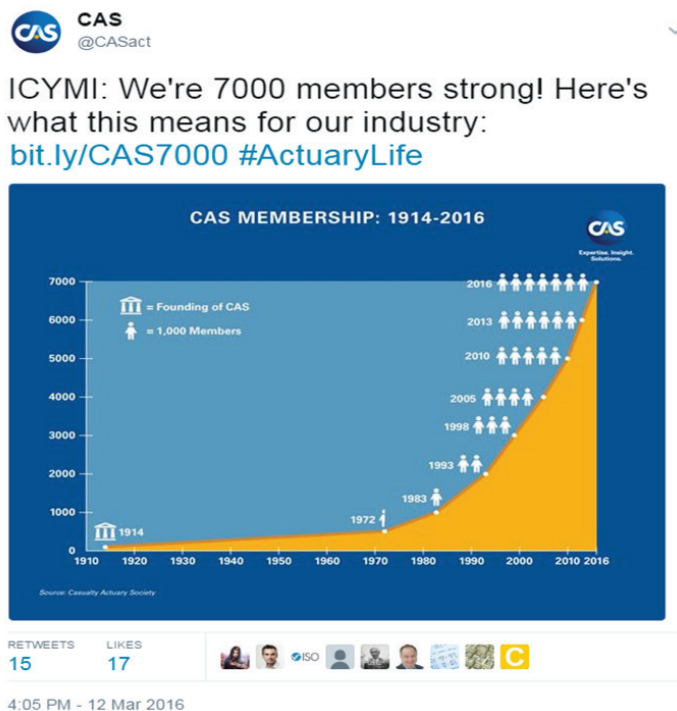
	Community	Baseline Followers (2/1/16)	Followers (9/30/16)	Percent Growth
	CAS Facebook	3,311	4,192	37.9%
	@CASact Twitter	9,500	10,716	12.8%
	CAS LinkedIn	6,509	7,345	12.8%

## CAS Student Community Growth

 STUDENT CENTRAL	Community	Baseline Followers (2/1/16)	Followers (9/30/16)	Percent Growth
	CAS Student Central Facebook	648	1,146	76.9%
	@CASstudent Twitter	339	445	31.3%
	CAS Student Central LinkedIn	213	349	63.8%



## Best-Performing @CASact Twitter Post



## Best-Performing @CASstudent Twitter Post



## Best-Performing CAS Facebook Post



## Best-Performing Student Central Facebook Post



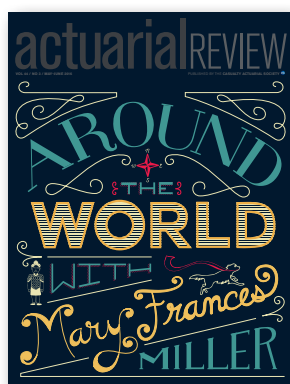
## Publications

Each year the CAS's many publications enlarge the rich trove of actuarial literature.



### CAS Monograph Series

The CAS Monographs Series is making profound contributions to actuarial literature. These peer-reviewed, authoritative works encompass significant subjects in casualty actuarial science. In 2016 the Series included three works: **"Stochastic Loss Reserving Using Generalized Linear Models"** by Greg Taylor and Gráinne McGuire; **"Using the ODP Bootstrap Model: A Practitioner's Guide"** by Mark Shapland; and **"Generalized Linear Models for Insurance Rating"** by Mark Goldburd, Anand Khare and Dan Tevet.



### Actuarial Review

An in-depth actuarial news source, *Actuarial Review* keeps CAS members and candidates informed of the latest in science and technology, business ethics and professionalism, as well as the achievements of CAS members and committees. In 2016 the AR featured articles on Dodd-Frank, predictive modeling, personal auto pricing and CAS research initiatives.



### Variance

The mission of *Variance* is to disseminate practical and theoretical research of interest to casualty actuaries worldwide. In 2016 the CAS published volume 9, numbers 1 and 2, and awarded the Variance Prize to Gary Venter and Rajesh Sahasrabuddhe for their paper "A Note on Parameter Risk," which is published in *Variance* 9:1.

**FUTURE CAS FELLOWS**

### Future Fellows

Published quarterly, *Future Fellows* is a vital resource for those sitting for CAS Exams. This popular print and online newsletter gives CAS Candidates access to all they need to know about examinations, study methods, career development, continuing education, and new CAS initiatives.



### CAS E-Forum

In 2016, the CAS *E-Forum* posted the critical work of CAS Committees and Working Parties and CAS-sponsored research. *E-Forum* is also a platform for independent authors to publish their research.

# ● CAS Governance— Board of Directors and Executive Council

## Executive Council



**Steve Lowe\***  
President



**Nancy Braithwaite\***  
President-Elect



**Sean P. McDermott**  
Vice President—  
Administration



**Steven D. Armstrong**  
Vice President—  
Admissions



**Jeffrey Courchene**  
Vice President—  
International



**Roosevelt Mosley**  
Vice President—  
Marketing &  
Communications



**Julia Stenberg**  
Vice President—  
Professional  
Education



**A. David Cumming**  
Vice President—  
Research &  
Development



**Cynthia R. Ziegler**  
CAS Executive  
Director,  
Secretary/Treasurer

\*Also a member of the Board of Directors



## Board of Directors



**Bob Miccolis**  
Immediate Past President



**Steve Lowe**  
President



**Nancy Braithwaite**  
President-Elect



**Wesley Griffiths**  
2016



**Jessica (Weng  
Kah) Leong**  
2016



**Donald F. Mango**  
2016



**Brad J. Monteriot**  
2016



**Frank Majorst**  
2016



**Robert F. Wolf**  
2016



**Kendra M. Felisky**  
2017



**Barry A. Franklin**  
2017



**Camille Minogue**  
2017



**Hemant Shah†**  
2017



**Robert J. Walling III**  
2017



**Jim Guszcza**  
2018



**Mary T. Hosford**  
2018



**G. Chris Nyce**  
2018



**Larry Haefner**  
2018

† Appointed



# FY 2016 Financial Highlights

## Membership Dues Dollars Allocation

The fiscal year ending September 30, 2016 resulted in an audited net income of \$576,152 compared to a budgeted net income of \$98,677.

## Income Statement

<b>FUNCTION</b>	<b>REVENUE</b>		<b>EXPENSE</b>		<b>DIFFERENCE</b>
Membership Services	\$4,113,625		\$4,633,432		(\$519,807)
Seminars	2,832,848		2,652,885		179,963
Meetings	1,849,160		1,619,708		229,452
Exams	10,986,678	(a)	10,410,206	(a)	576,472
Publications	3,438		23,949		(20,511)
<b>TOTALS FROM OPERATIONS</b>	<b>\$19,785,749</b>		<b>\$19,340,180</b>		<b>\$445,569</b>
Unrealized Gain/(Loss) and Change in Pension Liability					779,090
Change in Pension Liability					(648,507)
<b>TOTAL NET INCOME (LOSS)</b>					<b>\$576,152</b>

NOTE: (a) Includes \$7,363,356 of Volunteer Services for income and expense (SFAS 116).

## Balance Sheet

<b>ASSETS</b>	<b>9/30/2015</b>	<b>9/30/2016</b>	<b>DIFFERENCE</b>
Cash and Cash Equivalents	\$2,039,219	\$1,422,025	(\$617,194)
T-Bill/Notes, Marketable Securities	12,036,483	14,210,248	2,173,765
Other Assets	275,302	966,691	691,389
<b>TOTAL ASSETS</b>	<b>\$14,351,004</b>	<b>\$16,598,964</b>	<b>\$2,247,960</b>
<b>LIABILITIES</b>	<b>9/30/2015</b>	<b>9/30/2016</b>	<b>DIFFERENCE</b>
Exam Fees Deferred	\$1,592,744	\$1,666,344	\$73,600
Seminar and Meeting Fees Deferred	834,550	1,137,762	303,212
Accounts Payable and Accrued Expenses	1,031,193	1,085,643	54,450
Accrued Pension	924,734	1,565,238	640,504
Other Deferred	178,982	779,023	600,041
<b>TOTAL LIABILITIES</b>	<b>\$4,562,203</b>	<b>\$6,234,010</b>	<b>\$1,671,807</b>
<b>MEMBERS' EQUITY</b>	<b>\$9,788,802</b>	<b>\$10,364,954</b>	<b>\$576,152</b>

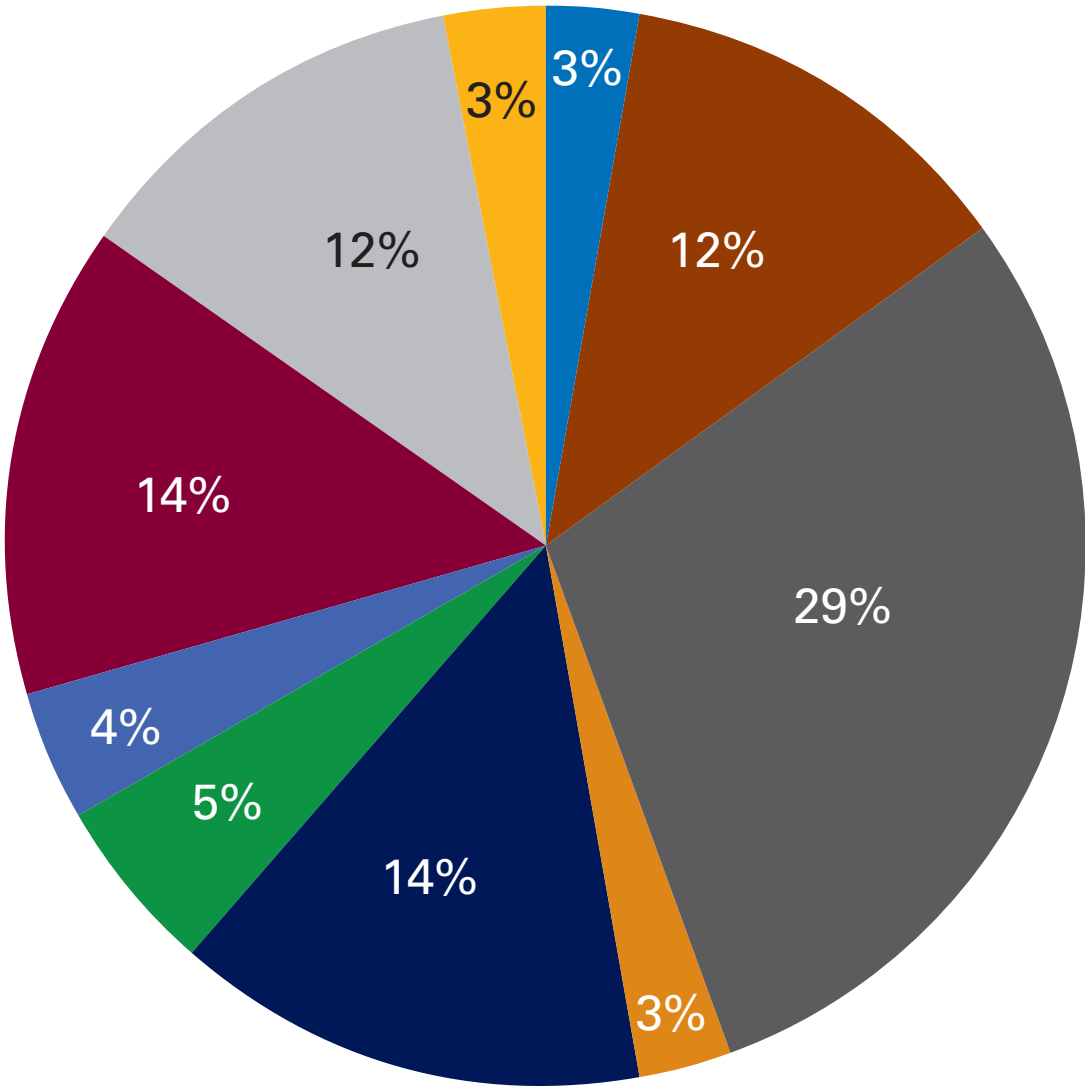
Sean McDermott, Vice President - Administration

AUDITED

CAS Audit Committee: Barry Franklin, Chairperson

Mary Hosford, Vice-Chairperson, Lisa Chanzit,  
Ronald Kuehn, Mark Shapland, and Sean McDermott (ex-officio)

Membership Service Expenses



- ASB/ABCD - 3%
- Communications and Marketing - 12%
- Governance - 29%
- Insurance - 3%
- International Travel/Activities - 14%
- Miscellaneous - 5%
- Professional Fees - 4%
- Publications and Online Services - 14%
- Research 12%
- The Actuarial Foundation Support - 3%

## CAS Society Partner's Program

The CAS Society Partner's Program is designed to help firms build and maintain year-round relationships with the influential group of insurance professionals that are CAS members.

In FY 2016, the CAS maintained corporate partnerships with 18 organizations.

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### Five Centennial Partners - \$20,000 Commitment

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EzraPenland.com



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**Five Platinum Partners - \$15,000 Commitment**

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**Seven Gold Partners - \$10,000 Commitment**

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**Banking & Insurance Group**  
MORE INFORMATION. BETTER DECISIONS.



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**1 Silver Partner - \$5,000 Commitment**

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# ● The Launch of The CAS Institute

## A New CAS Endeavor

At the 2015 Annual Meeting, the CAS announced the launch of The CAS Institute (iCAS), a subsidiary organization offering new credentials and specialized professional education for quantitative professionals.



## Specialty Certification in Predictive Analytics

The CAS Institute's initial offering, the Certified Specialist in Predictive Analytics (CSPA) credential, provides evidence of practical knowledge in applied predictive analytics and data science as used in data-intensive industry sectors.

Professionals holding the credentials can leverage this recognition in order to enhance their skills, secure additional job duties, attract premium compensation, and advance their careers.



## Creating New Strategic Partnerships

In November 2015, the CAS also announced a strategic partnership with The Institutes – the partnership will support and promote professional designation programs and other educational opportunities for insurance and risk professionals.



## Gathering Industry Experts

The CAS Institute is overseen by the iCAS Leadership Advisory Council, which provides oversight of iCAS activities, including not only its credential offerings, but also its membership, continuing education, and other benefits and policies. Members of the iCAS Leadership Advisory Council include:

- Robert S. Miccolis, FCAS, MAAA, FCA, Chairperson; former Managing Director, Deloitte Consulting LLP
- Peter T. Bothwell, FCAS; VP, Data Science, The Hartford
- Ann M. Conway, FCAS, MAAA, CERA; Managing Director, Willis Towers Watson
- Wayne H. Fisher, FCAS, CERA, MAAA, FIA, ASA; former Group Chief Risk Officer, Zurich Financial
- Gary R. Josephson, FCAS; former Consulting Actuary, Milliman Inc.
- Todd W. Lehmann, FCAS; Vice President & Chief Actuary, Quincy Mutual Group
- Leslie R. Marlo, FCAS; Consulting Actuary, Madison Consulting Group
- James R. Merz, FCAS; Group Actuarial and Analytics Leader, Westfield Insurance
- Stephen J. Mildenhall, FCAS, CERA, PhD, MAAA, ASA; Assistant Professor, St. John's University
- Brad J. Monterio, Managing Director, Colcomgroup, Inc.
- Arlie J. Proctor, FCAS, MAAA; Senior Actuarial Manager, Munich Re America

In February 2016 iCAS announced the formation of a panel of leading practitioners in data science and predictive analytics, who would define the curriculum and requirements for the organization's inaugural credentialing program. The iCAS Subject Matter Expert Panel for Data Science and Predictive Analytics included:

- Todd W. Lehmann, FCAS, MAAA, Chairperson, Vice President & Chief Actuary Quincy Mutual Fire Insurance
- Peter T. Bothwell, FCAS, VP, Data Science, The Hartford
- Louise A. Francis, FCAS, MAAA, Consulting Principal, Francis Analytics & Actuarial Data Mining Inc.
- James C. Guszczka, FCAS, Ph.D., US Chief Data Scientist, Deloitte Consulting, LLP
- Ravi Kumar, ACAS, MAAA, VP, Managing Actuary, QBE North America
- Glenn G. Meyers, FCAS, MAAA, CERA, Ph.D. Retired, formerly with ISO Innovative Analytics
- Stephen J. Mildenhall, FCAS, MAAA, CERA, ASA, Ph.D., Aon Benfield Analytics
- Christopher J. Monsour, FCAS, MAAA, VP & Actuary, Predictive Business Applications, CNA Insurance Companies
- Cheng-Sheng Peter Wu, FCAS, MAAA, ASA, Director, Deloitte Consulting, LLP

## A New Predictive Analytics Curriculum

In July 2016, iCAS released the general requirements necessary to attain the CSPA credential. Candidates are required to complete four components, which will demonstrate their knowledge and competencies in data science and predictive analytics.

Topic	Assessment Method
1. P&C Insurance Principles	Online module and exam
2. Data Concepts, Tools, and Visualization	Computer-based exam
3. Predictive Modeling – Methods and Techniques	Computer-based exam
4. Predictive Modeling Application Project	Individual project with advisor and review panel
5. Ethics and Professionalism	Online Course