

**2017** YEAR IN REVIEW

# Annual Report



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# Enhancing the Role of Actuaries

**By Jeremy J. Brown, FSA, MAAA**  
**2016–2017 SOA President**

As president of the Society of Actuaries (SOA), my past year has been filled with many new faces, ideas and ways to advance both the organization and the profession. I have greatly appreciated the many opportunities to hear the perspectives of our global membership—from speaking with members in Asia to gathering with international peers for events overseas and in the United States to the local actuarial club meetings and university visits. It is wonderful to see everyone’s enthusiasm and dedication in strengthening and growing the profession.

I’ve often referred to actuaries as “lifelong learners,” as there is no better way to describe the continuous growth of our skills. As actuaries, we don’t stand still; we evolve how we examine the changing world and the many challenges (and opportunities) within it. I’m proud to see the volume and quality of research and education efforts, from research studies on mortality improvement, risk management and more to the curriculum updates and educational material on predictive modeling.

As part of my presidency, I had the privilege to work on the implementation of the SOA 2017–2021 Strategic Plan, which helps guide the organization’s decision-making and shape the future of our work. We have made significant developments with several parts of the Strategic Plan, including education, research, inclusion and diversity, emerging opportunities in new fields, and much more.

For instance, 2017 was a pivotal time to usher in the updated curriculum for the Associate of the SOA (ASA)

and the Chartered Enterprise Risk Analyst (CERA). These curriculum changes will help prepare actuaries to address future challenges and the needs of employers. On the learning front, the SOA also established two professional development outlets on predictive analytics for existing associates and fellows. We successfully developed and conducted our first Predictive Analytics Certificate pilot program, which in turn led to the SOA Board of Directors approving the continuation of this program. I also had the pleasure of attending the SOA’s inaugural Predictive Analytics Symposium,



“As actuaries, we don’t stand still; we evolve how we examine the changing world and the many challenges (and opportunities) within it.”

which brought together thought leaders on predictive modeling and data analytics—another program that will continue in 2018. On the topic of emerging opportunities for actuaries, the SOA hosted a contest to participate in Kaggle competitions to showcase the skills and models of actuaries, and sponsored actuarial internships with employers both inside and outside of the insurance industry. These are the types of experiences that will help employers and actuaries forge new and more long-term relationships.

Inclusion and diversity is another part of the Strategic Plan, as it is important to think about how we can support our members, partners, candidates and students—the future of the profession. One such example is the joint effort between the Casualty Actuarial Society (CAS) and the SOA to launch the Spanish

language version of [BeAnActuary.org](http://BeAnActuary.org) last year. I’m glad to see this outreach to the Latino audience. The SOA is committed to supporting inclusion and diversity, which helps to attract the best and brightest to the profession and to gain new perspectives.

In closing, I urge you to consider volunteering for one or more opportunities through our organization. I’m a long-time volunteer with the SOA, and I have gained so much from these interactions with members, candidates and others. Take the time to help others with their technical skills and careers by participating in, for example, exams, research, professional development events and professional interest sections. Your efforts can make a major impact on our organization, our profession and our future. Thank you.



### FIRST YEAR OF THE 2017–2021 STRATEGIC PLAN

[The 2017–2021 Strategic Plan](#) was built with feedback from members, along with thoughts from a wide range of stakeholders, including employers and future actuaries. Its 11 objectives covering stakeholders, organizational capabilities and strategies (broken down into knowledge and perspective, and insight and influence) were described in detail in the [2016 Annual Report](#). The SOA is constantly working to achieve all of these objectives, but this report highlights key projects from 2017 and how they moved the Strategic Plan forward.

# Giving Actuaries the Tools They Need

A primary objective of the Society of Actuaries (SOA) 2017–2021 Strategic Plan is to deliver education that anticipates stakeholders' changing expectations (objective 4). To meet this objective, the SOA worked on implementing several projects that were announced in 2016, including initiating a certificate program in predictive analytics, preparing to implement a new curriculum in 2018 and addressing stakeholder needs around the world.

## TEACHING PREDICTIVE ANALYTICS TECHNIQUES

Targeted at SOA fellows (FSAs) with some experience in the field, the [pilot certificate program in predictive analytics](#) had great success. Ninety-seven people applied to participate in the program, which launched in April 2017. The pilot was limited to 30 participants, who were chosen from different employers and practice areas. The six course modules were delivered as an online learning experience, with tests, exercises and opportunities to interact with the other participants via a private discussion forum. The final assessment—a six-hour

project involving the solution of a business problem—was given as part of a two-day seminar at the end of the course. Of the 30 participants, 20 passed.

Given the positive feedback from participants and employers, as well as demonstrated interest in the program, the SOA Board of Directors approved making the certificate program permanent. At least two courses will be offered for credentialed actuaries in 2018, and the SOA will research other possible topics for a second certificate program.

The SOA hosted meetings focused on the practical applications of predictive analytics to help its members improve their skills. The first annual Predictive Analytics Seminar, held in Chicago, gave nearly 250 attendees an opportunity for hands-on practice with a variety of predictive analytics techniques. In September, a predictive analytics seminar tailored to local interests was offered in Seoul, South Korea, with more than 50 attendees.



The average travel time from first exam attempt to last exam passed to earn the FSA is 8.2 years.

## EDUCATION

### GEARING UP FOR CHANGE

In 2016, the SOA announced a new curriculum for the Associate of the Society of Actuaries (ASA) designation and the Chartered Enterprise Risk Analyst (CERA) credential. Highlights of the changes were the addition of a predictive analytics exam and more balance between short- and long-term insurance topics. With the learning objectives and reading content finalized in 2017, the new curriculum will roll out in July 2018. The [transition rules](#) state that any candidates who have not attained the ASA/CERA by June 30 will need to take the new predictive analytics exam as well as a new exam on the basics of applied statistics. This requirement motivated thousands of candidates to complete their educational requirements before the deadline. In 2017 alone, more than 1,900 new ASAs and nearly 300 new CERAs joined the profession's ranks around the world. Those who meet the June 2018 deadline for the ASA will have four years to attain the FSA designation, without needing to complete the two new exams.

Much work has been done on developing an innovative type of learning experience. As part of registering for the new predictive analytics exam, candidates will receive free access to an accompanying e-Learning course. This course will

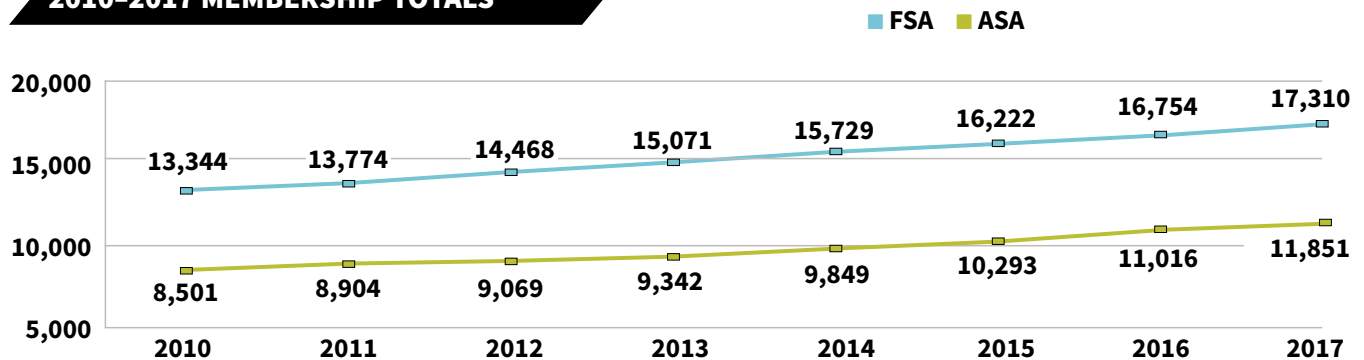
In 2017, the SOA administered more than 55,000 actuarial examinations to more than 38,000 candidates.

allow candidates to use software (such as Word, R Studio and Excel) to solve problems and communicate those solutions effectively. A beta test of the exam, which followed the same format as the course, was run with volunteers at five different sites around the world in late 2017 to identify any necessary changes to be made before the exam is finalized.

### ADAPTING SOA EDUCATION TO INTERNATIONAL MARKETS

As part of its goal to provide valued services to its global stakeholders (objective 5 of the Strategic Plan), the SOA began a study of how to adapt both its pre- and postqualification education to international markets, specifically those in China, greater Asia and Latin America. An SOA Board-appointed task force was formed in 2017 to investigate the issue and prepare recommendations for the Board to consider in 2018. The task force gathered feedback from members

### 2010-2017 MEMBERSHIP TOTALS



## EDUCATION

by fielding a survey to SOA members and candidates, and also conducted in-person interviews with more than 50 SOA members and other key stakeholders in each of the three targeted geographical areas. The interviews provided direct feedback about potential changes to the education system, and a number of consistent themes emerged. The task force is currently evaluating these themes and will use them as a basis for final recommendations to the SOA's Board of Directors in 2018.

### **WORKING WITH CAA GLOBAL**

In 2016, the SOA and the Institute and Faculty of Actuaries (IFoA) formed [CAA Global](#) to create structured education and professional qualification for people who work in actuarial support and technical analyst roles. The goal of the Certified Actuarial Analyst (CAA) qualification is to help these workers acquire sound technical skills and learn the main elements of professionalism. This will help ensure public confidence in their work and grow actuarial capacity, particularly in emerging markets.

Exams for the CAA, administered as part of CAA Global, began in 2017. Total registrations for the year were 746, an increase of 57 percent over 2016. Registrations for module 0 (the first step in the CAA pathway) increased by 38 percent. The United Kingdom saw the greatest number of registrations, as the credential is still very new to the U.S. market. The SOA and IFoA look forward to continue collaborating in building the brand and demand for the CAA qualification.

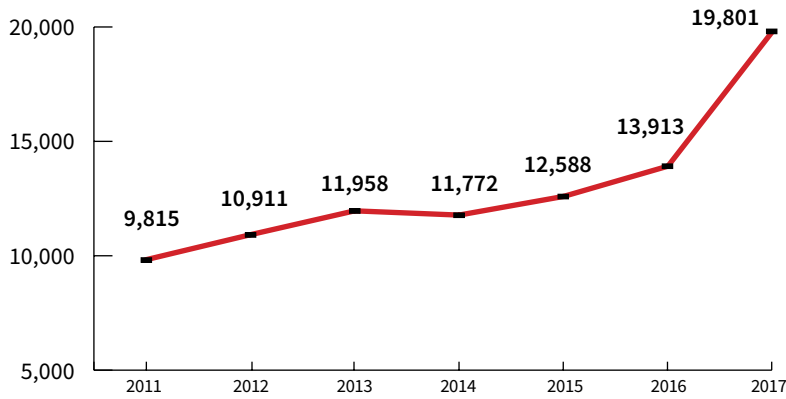
### **SOA CENTER FOR CERTIFIED ACTUARIAL ANALYSTS**

Formed as a subsidiary of the SOA, which remains the exclusive home of actuaries, the SOA Center was set up to offer the professionalism structure that maintains the value of the qualification by holding its affiliates to high standards of conduct and practice, while offering extensive professional development resources and networking opportunities. As part of the requirements of attaining the CAA, those who qualify will need to affiliate with the [SOA Center for Certified Actuarial Analysts](#) or the IFoA as their professional home.



## EDUCATION

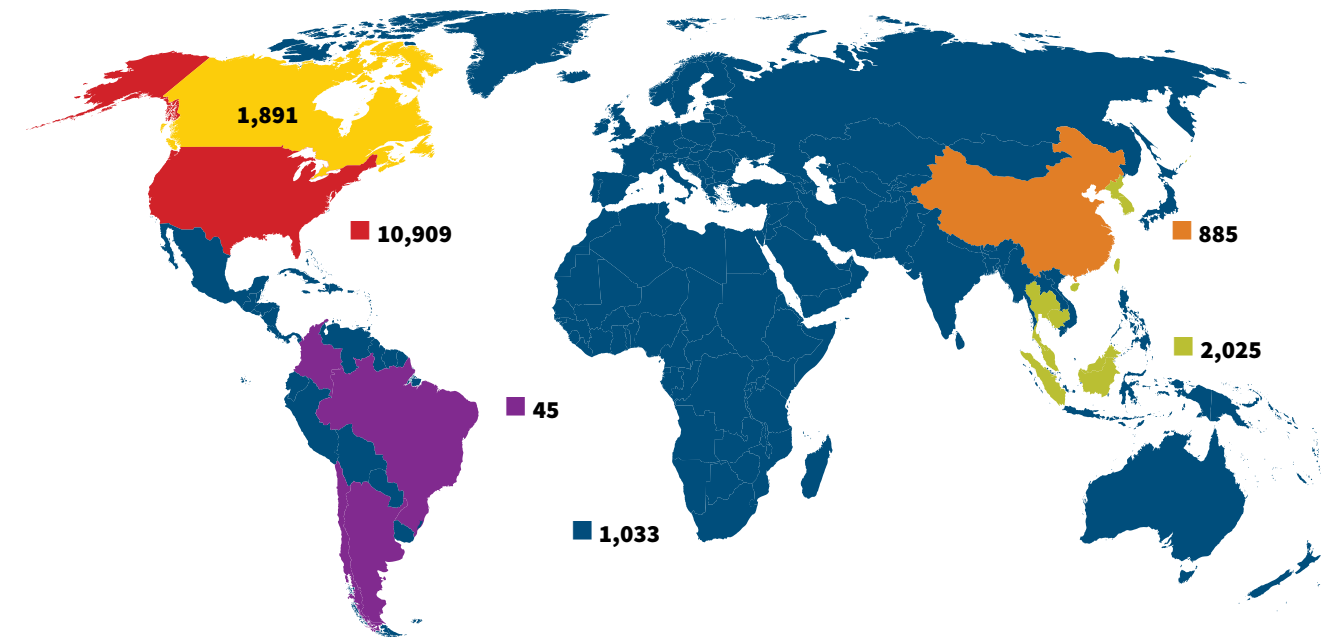
### FUNDAMENTALS OF ACTUARIAL PRACTICE (FAP) SUBMISSIONS SKYROCKET



The FAP e-Learning course teaches candidates about the business environment and exposes them to practical problem-solving in real-world situations. Successful completion of the FAP modules and assessments is required for candidates seeking to attain the ASA and FSA designations.

### FIRST-TIME EXAM TAKERS BY REGION

**16,788** TOTAL FOR 2017



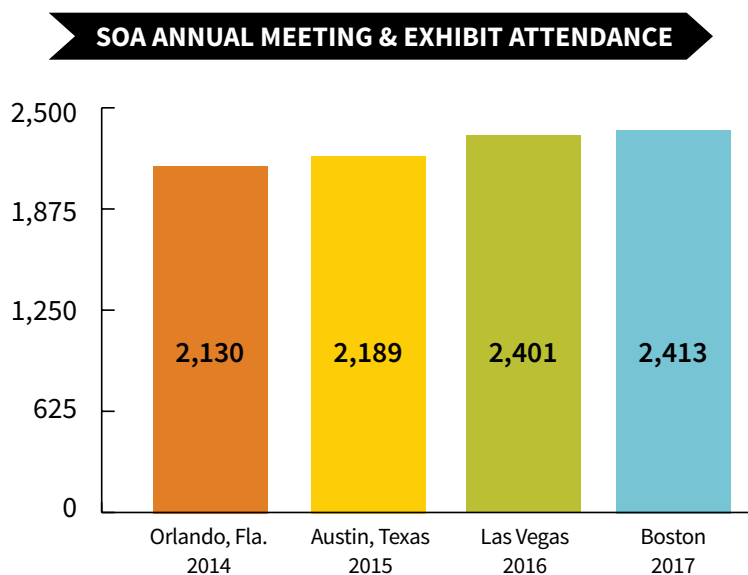
\*Argentina, Brazil, Chile and Colombia

A first-time candidate is defined as registering for an exam for the first time.

- United States
- Canada
- China
- Asia-Pacific
- Latin America\*
- Rest of the world



## EDUCATION



### IMPROVING THE VOLUNTEER EXPERIENCE

Every year, volunteers play a vital role helping the Society of Actuaries (SOA) meet its objectives. From writing newsletter articles and exam questions to developing webcasts and podcasts to sitting on committees to presenting at seminars and conferences, volunteers form the backbone of the SOA's support for the actuarial profession. Giving back to the profession benefits volunteers themselves as well—they can network with other actuaries, build leadership and communication skills, and gain practical experience working in areas of personal or professional interest.

In 2017, 11.35 percent of SOA members volunteered. To make the process easier, in January the SOA launched an [online database](#) of available opportunities that includes the type of work needed, the time commitment required, location and qualifications. In its first year of use, the site had more than 44,000 page views and posted more than 775 volunteer opportunities.

The SOA honors individuals who devote their time and energy to helping make the profession stronger, and several awards are given each year:

- ➔ The Annual [Outstanding Volunteer Award](#) was given to 11 recipients in 2017.
- ➔ The [SOA Distinguished Service Award](#) honors one volunteer each year.
- ➔ The [SOA Presidential Award](#) recognized four people in 2017.
- ➔ The [SOA Outstanding Session Awards](#) were presented to 42 recipients in 2017.

In addition to these awards, the SOA has established a member recognition program in which volunteers earn points for their efforts. They can keep track of their points through their My SOA account and receive recognition at the end of each year.

# Bringing Meaning to the Data

Research is not just about gathering data or reporting on various studies. It involves using data and studies to examine all sides of the issues that actuaries and their employers face. These issues require long-term strategies, and the Society of Actuaries (SOA) sponsored and conducted research to contribute to the knowledge base to develop these strategies.

## MAKING MEANINGFUL PREDICTIONS

As predictive analytics grows in importance, actuaries can benefit by learning about new examples and processes. For instance, the SOA conducted a [survey](#) of health executives to gain insights on future predictive analytics trends in the industry. Nearly 50 percent of the respondents use predictive analytics, and 93 percent of those say it is important to their future.

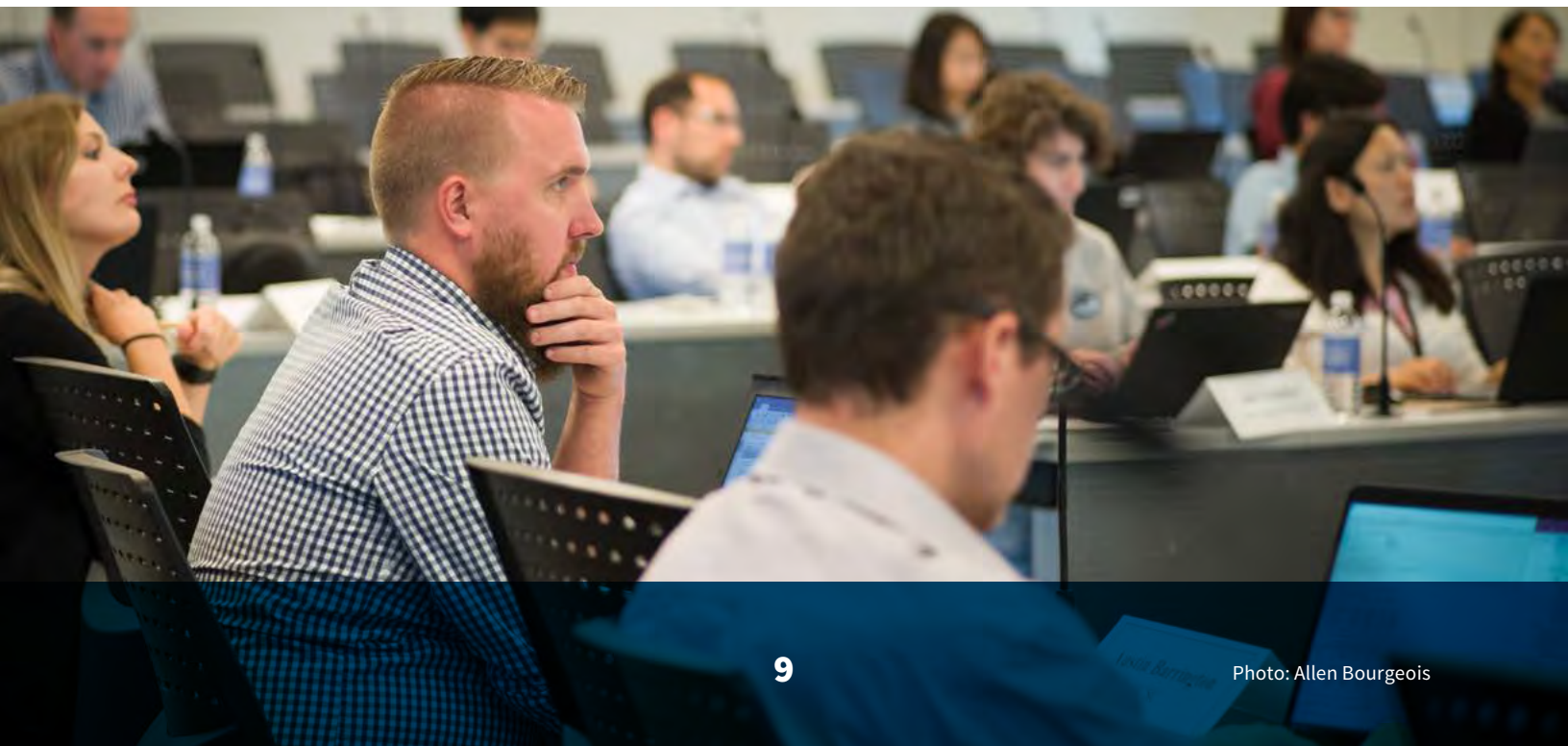
The SOA also published studies on predictive analytics in the field. One SOA study showed how predictive modeling provides a deeper understanding of the interaction between product design and policyholder

conversion. Another [report](#) examined tree modeling to develop mortality rates for long-term disability insurance.

## LOOKING AFTER THE NATION'S HEALTH

Ways of improving health care and reducing its costs are sources of continual debate. An SOA [report](#) explained the components for calculating capitation rates in Medicaid managed care organizations (MCOs). This study provided financial results analysis for MCOs across the United States and featured interviews with MCO executives.

The SOA also researched timely topics such as drug overdoses and influenza. The organization analyzed data from the Centers for Disease Control and Prevention (CDC) to understand the demographics and geography of the increasing number of [opioid deaths](#) in the United States. The SOA also produced [a report on the 2016–2017 flu season](#), with observations and commentary related to various mortality and morbidity measures available from the CDC. The research showed



## RESEARCH

that the impact of the 2016–2017 season was medium to high compared to earlier seasons.

### **PROVIDING INSIGHTS ON AGING AND RETIREMENT**

As baby boomers age, the impact is being felt in the social, financial, retirement and health care systems. The Living to 100 Symposium brings together a diverse range of professionals, scientists and academics from around the world to share ideas and knowledge on aging, increases in survival rates and the resulting increase in aging populations. In January 2017, the SOA co-sponsored the triennial event in Orlando, Florida. A [monograph of all the presentations](#) and podcasts of several sessions are available on the SOA website.

To better understand the common financial strategies used by retirees, the SOA published a [report based on in-depth interviews](#) with elderly people (age 85 or above) in the United States and Canada who retired voluntarily. When combined with earlier SOA research, this report provides a better understanding of the financial and physical challenges in retirement.

As part of continuing research efforts, the SOA contributed to several mortality studies in 2017. It produced [U.S. Population Mortality Rates 2000–2015](#),

which contains historical U.S. population crude mortality rates by gender and single year of age.

The Human Mortality Database (HMD) provides detailed population and mortality data for 39 countries and areas around the world. Support from the National Institutes of Health and the SOA allowed the HMD to begin including [cause-of-death information](#) for an initial set of eight populations, including Canada and the United States.

Finally, the SOA's [Mortality Improvement Scale](#) (MP-2017) for private pension plans reflects that U.S. life expectancies declined slightly for the first time since 2005. Preliminary estimates suggest that implementing the MP-2017 improvement scale could reduce a pension plan's obligations by 0.7–1.0 percent.

### **MOVING FORWARD**

The studies and reports from 2017 will help to inform five new strategic research programs approved by the SOA Board of Directors in October. These programs will focus on mortality and longevity, health care cost trends, aging and retirement, catastrophe and climate, and actuarial innovation and technology. Using different types of research methods, the SOA will also consider the applicability of the information gathered to stakeholders around the world.



# Giving Actuaries a Leading Role

An integral part of the Society of Actuaries (SOA) 2017–2021 Strategic Plan is keeping actuaries at the forefront of evolving methods for solving complex business problems and keeping employers, regulators and other stakeholders aware of how relevant the actuarial skill set is to both national and global issues (objectives 1 and 2). The Cultivate Opportunities Team (COT) did extensive work to further these objectives in 2017.

## HIGHLIGHTING PREDICTIVE ANALYTICS

The ever-growing interest in predictive analytics requires actuaries to stay on top of the flood of information about this topic. To further professional development in this area, the SOA held the first annual Predictive Analytics Symposium in Chicago. Nearly 250 participants attended the September symposium’s 35 sessions, which featured three tracks covering everything from a hands-on approach (beginner/ implementer) to a nontechnical overview of benefits (manager/supervisor) to cutting-edge techniques (advanced practitioner).

Expanding a marketing campaign and business development outreach begun in 2016, the COT worked to increase employer demand for and member awareness of the actuary’s role in predictive analytics within [health care](#) and [life insurance](#). Information and articles on this topic appeared on the SOA’s website and social media pages as well as in *The Actuary*, *SOA News Weekly* and blog posts. These supplemented an online media campaign that ran from March–November. The SOA also encouraged members to participate in Kaggle competitions—analytics and data science challenges in which competitors build models to solve real-world machine learning problems for organizations ranging from the Department of

Homeland Security to Intel. In 2017, 15 members and five candidates placed in the top 10th and 25th percentiles for their challenges.

A direct outreach through calls, emails and in-person visits to key decision-makers in predictive analytics—in addition to information disseminated through sponsoring and speaking engagements—generated heightened interest in actuaries for nontraditional roles. More than 600 employers submitted contact information on the campaign webpages; new recruiters and ad agencies created accounts in the SOA Job Center; and companies such as Carpe Data and Genesis Health agreed to seriously consider actuaries as they grow their teams.

## 2017 KAGGLE INVOLVEMENT PROGRAM

SOA members and candidates accepted the challenge to create solutions for unique data science challenges through Kaggle competitions. [Winners of the program](#) placed within the top 10–25 percent of their respective competitions:

- ➔ Data Science Bowl 2017: Can You Improve Lung Cancer Detection?
- ➔ Intel & Mobile ODT Cervical Cancer Screening: Which Cancer Treatment Will be Most Effective?
- ➔ Planet: Understanding the Amazon From Space: Use Satellite Data to Track the Human Footprint in the Amazon Rainforest
- ➔ The Nature Conservancy Fisheries Monitoring: Can You Detect and Classify Species of Fish?

## CULTIVATING OPPORTUNITIES

### NAVIGATING THE JOB SEARCH

Finding a new position—whether you have 20 years’ experience or a brand-new associate designation—can be challenging. Opportunities exist in both traditional and nontraditional fields, and identifying where these opportunities are can require some help. This is where the [SOA Job Center](#) comes in. It facilitates connections between actuaries (who can post their resumes and look for jobs) and employers that post available positions.

In 2017, the COT performed market research and collected Job Center user feedback and usage patterns to determine how the value of the Job Center could be enhanced for both employers and job seekers. Staff also met with current and potential Job Center vendors to assess their service capabilities. Based on all of these activities, several actions are being developed for implementation in 2018, including the following:

- ➔ Create resources to give job seekers examples of how to market their actuarial skills for positions in predictive analytics.

- ➔ Add value for job seekers with improvements such as optimized filtered search functions and a virtual career fair.
- ➔ Improve the employer experience by adding new features such as a questionnaire to help filter applicants.

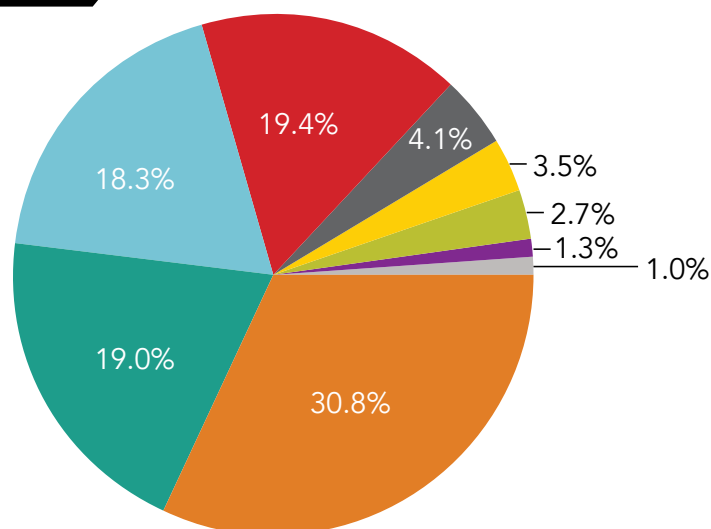
The SOA will also work to increase the number of job postings for predictive analytics positions.

### EXHIBITING SKILLS

The SOA used a variety of techniques to demonstrate the value of actuarial skills to employers. Building on the work done in 2016, the SOA’s summer internship program placed 11 interns in nontraditional roles with traditional and nontraditional employers (double the number from the previous year). These employers included Blue Cross Blue Shield of Massachusetts, NeuStar and Nationwide.

To determine the success of the program, new standardized feedback forms were given to both employers and interns. Based on the results of this feedback, the program will continue in 2018. The COT will conduct further analysis in 2018 to determine how to make the placement strategy more effective and scalable.

### 2017 PRIMARY AREAS OF PRACTICE



# Expanding Awareness of the Profession

Communications activities are a large part of how the Society of Actuaries (SOA) meets many of its objectives from the 2017–2021 Strategic Plan. From promoting the value of the profession and the organization to disseminating important information to the field and the public, the SOA achieved outstanding results in 2017.

## MAKING AN IMPRESSION

The SOA's research and thought leadership programs regarding today's biggest societal and business challenges received much media attention in 2017. National reporters from outlets such as Bloomberg News, *The New York Times*, Reuters and *The Wall Street Journal* look to the SOA on a regular basis for insights about and analysis of national and global issues, including:

- ➔ Actuarial insight on health care reform proposals
- ➔ Mortality improvement research
- ➔ 2018 insurance rate-setting period
- ➔ Pension plan research

The SOA achieved more than 1.4 billion media impressions (the number of times articles are seen) in 2017. More than 200,000 social media posts shared this media coverage about the SOA.

A survey of employers conducted at the end of the year to determine the effectiveness of communications efforts showed that of those who were exposed to the SOA through the news or social media, 95 percent would be likely to look to the SOA for industry news. Exposure to SOA-generated news also enhanced employers' perceptions of actuaries' value to their

businesses. For example, 88 percent of employers who had seen SOA-generated news had also interviewed actuaries in 2017 for nontraditional jobs; only 46 percent of other employers had done the same.

## PUBLISHING NEWS

The SOA's many member volunteer editors and contributing authors met the challenges of informing the profession and the public of important facts and figures, analysis and insights about the subjects of most importance to actuaries. The organization's flagship publication, *The Actuary*, won several awards for design:

- ➔ A Platinum Hermes Creative Award
- ➔ Two Ozzie Awards—one for microsite design and one for the overall design of the February/March 2017 issue
- ➔ A Silver Excel Award for microsite design

Plans for 2018 will build upon this year's successes and continue to grow the reputation and prestige of the SOA and the actuarial profession.

In 2017, there were more than 73,000 visits to [TheActuaryMagazine.org](http://TheActuaryMagazine.org) and more than 124,000 total page views.

# Bringing Everyone Into the Fold

The actuarial profession, like any other, is enriched when its members contribute knowledge from a wide variety of backgrounds and perspectives. One of the objectives of the Society of Actuaries (SOA) 2017–2021 Strategic Plan is to cultivate a diverse membership and position it to succeed in existing, expanded and new roles (objective 8). This includes recognizing and promoting the importance of minorities, women and members of the LGBTQ community to the profession.

## **STARTING EARLY**

A part of the science, technology, engineering and mathematics (STEM) field, the actuarial profession is expected to grow by about 22 percent over the next 10 years. However, it is not as familiar a career choice as other STEM-related jobs such as accountancy or

information technology. In the United States, women, African-Americans and Latinos are underrepresented in STEM careers.

In 2017, the SOA joined with the Casualty Actuarial Society (CAS), the International Association of Black Actuaries (IABA) and The Actuarial Foundation to research how to support diversity and inclusion within the actuarial profession. This research combined online surveys with in-person focus group meetings that included high school and college students, actuarial candidates and members of the actuarial organizations. The results showed that only 12 percent of surveyed African-American and Latino college freshmen were aware of the actuarial profession. However, of that group, 92 percent were likely to



## DIVERSITY AND INCLUSION

consider an actuarial career. These findings highlighted the continued need to help both high school and college students understand the profession, identify the necessary skills for it and recognize the benefits of becoming an actuary. A few of the key opportunities noted were:

- ➔ Since family encouragement is a major driver when students consider careers, awareness of the profession needs to be raised among parents, teachers and guidance counselors.
- ➔ Students need role models, so the participating organizations are working with their members to reach out to local minority students and serve as mentors to these young people.
- ➔ The cost of college is a major concern for both students and parents, so networking events can help encourage minority students to pursue an actuarial career by informing them of available scholarships and other financial support.

### **KNOCKING DOWN BARRIERS**

In recognition of how important this issue is, the SOA's Inclusion and Diversity Committee (IDC) determines the best ways to increase the number of diverse candidates and members, to provide equitable opportunities for advancement and leadership, and to advance research in support of all short- and long-term programs to build diversity and inclusion.

The SOA and IDC made significant efforts to advance these goals in 2017. On the home front, the annual Women's Leadership Forum and sessions on diversity and inclusion were included in SOA meetings such

as the Health Meeting, Actuarial Teaching Conference and SOA Annual Meeting & Exhibit. An LGBTQ panel and networking reception also took place at the SOA Annual Meeting & Exhibit. Finally, several articles on diversity and inclusion were published in the Leadership and Development Section newsletter.

Sponsoring other organizations' activities took the effort farther afield. The IABA had an exhibit at the fall SOA Candidate Connect event in 2017, and the SOA continued to sponsor the IABA's annual meeting. The SOA also supported the creation of the Organization of Latino Actuaries (OLA) by providing advice and support for incorporation and sponsoring an OLA networking event at the SOA Health Meeting. The SOA also sponsors The Actuarial Foundation's Math Motivators program, a volunteer-driven math tutoring program that pairs low-income high school students with professional actuaries and college students majoring in actuarial science, mathematics or math education.

Collaborating with other organizations brought even more strength to the SOA's activities. The SOA and CAS Joint Committee on Career Encouragement and Actuarial Diversity (JCCEAD) undertook a variety of activities, including sponsoring and exhibiting [BeAnActuary.org](http://BeAnActuary.org) at conferences focused on math students and teachers and on African-American, Native American, Latino and LGBTQ organizations. It also launched a Spanish version of [BeAnActuary.org](http://BeAnActuary.org).

Efforts to broaden the scope of diversity and inclusion activities continue in 2018.



# Taking a Global Perspective

As part of its 2017–2021 Strategic Plan to support actuaries in obtaining global perspectives and knowledge (objective 6), the Society of Actuaries (SOA) sent delegates to the October council and committee meetings of the International Actuarial Association (IAA) in Chicago and co-sponsored some events. This allowed the SOA to network with other international actuarial associations, present results of SOA research and obtain information about how issues such as health care and big data are handled in other countries.

The SOA serves stakeholders far beyond the borders of North America. Objective 5 of the Strategic Plan focuses on providing valued services to these global stakeholders. A great deal of work was done in 2017 in the three target areas of China, Asia-Pacific and Latin America.

## **CELEBRATING LANDMARKS IN CHINA**

This year marked the 30th anniversary of the SOA's relationship with Nankai University. In 1987, the SOA sent a group of young academics to teach a concentrated, three-week actuarial course; at the time, actuarial science was in its infancy in China. Among the educators who participated in this venture were Stuart Klugman, now SOA Senior Education Fellow, and Harry Panjer, former SOA president. The 16 students who attended those first classes are now senior actuaries in industry, government and academia. SOA leadership and many of the professors and students from the original classes shared memories in a celebratory event and dinner in Tianjin, China.

The SOA reached another milestone this year when the Second Annual SOA China Symposium, held in



## INTERNATIONAL DEVELOPMENT

Shanghai, recorded record-breaking attendance with 270 attendees (up from 172 in 2016). Sessions covered topics such as stages of China’s insurance sector and economic development, the China Risk Oriented Solvency System (C-ROSS) and the evolution of actuaries’ roles in China. The SOA Professionalism in Practice Course was held after the symposium and consisted of two sessions: a general lecture and case study discussion followed by a session addressing China-specific professionalism issues.

To improve services for its members and stakeholders in Asia, the SOA hired a customer service representative in Beijing to deal specifically with issues in that region.

### AIDING PROFESSIONAL DEVELOPMENT IN ASIA-PACIFIC MARKETS

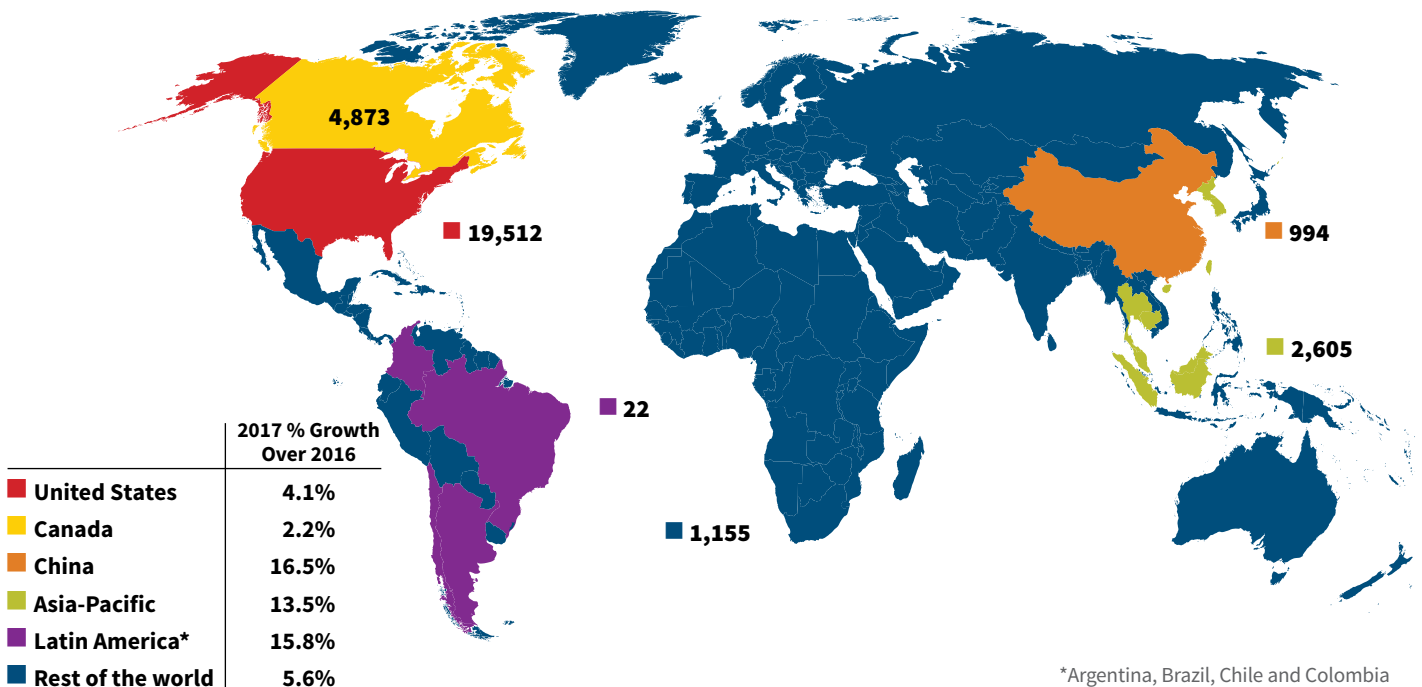
The SOA worked closely with local actuarial associations, regulators, and property casualty,

annuity, and retirement associations to hold the Seventh SOA Asia-Pacific Annual Symposium in Kuala Lumpur, Malaysia. The meeting welcomed 183 participants (up from 89 in 2016) from Asia-Pacific, China, Canada, the United States and the United Arab Emirates. Sessions covered all six SOA specialty tracks as well as innovation, professionalism and soft skills. One of the highlights of the symposium was an hour-long session presented by the deputy chief regulator from the local financial services oversight agency, who is an actuary. He spoke at length about the importance of the area’s market growth and having the actuarial skill set embedded into every company doing business.

As part of a strong professional development program throughout Asia-Pacific, SOA staff members made presentations in Kuala Lumpur, Jakarta and Bangkok that combined professionalism courses and technical topics. One of the aims was to increase awareness of

#### MEMBERS BY REGION

**29,161** TOTAL MEMBERSHIP COUNT FOR 2017



## INTERNATIONAL DEVELOPMENT

the General Insurance (GI) track, which members had suggested was needed.

### SUPPORTING THE PROFESSION'S GROWTH IN LATIN AMERICA

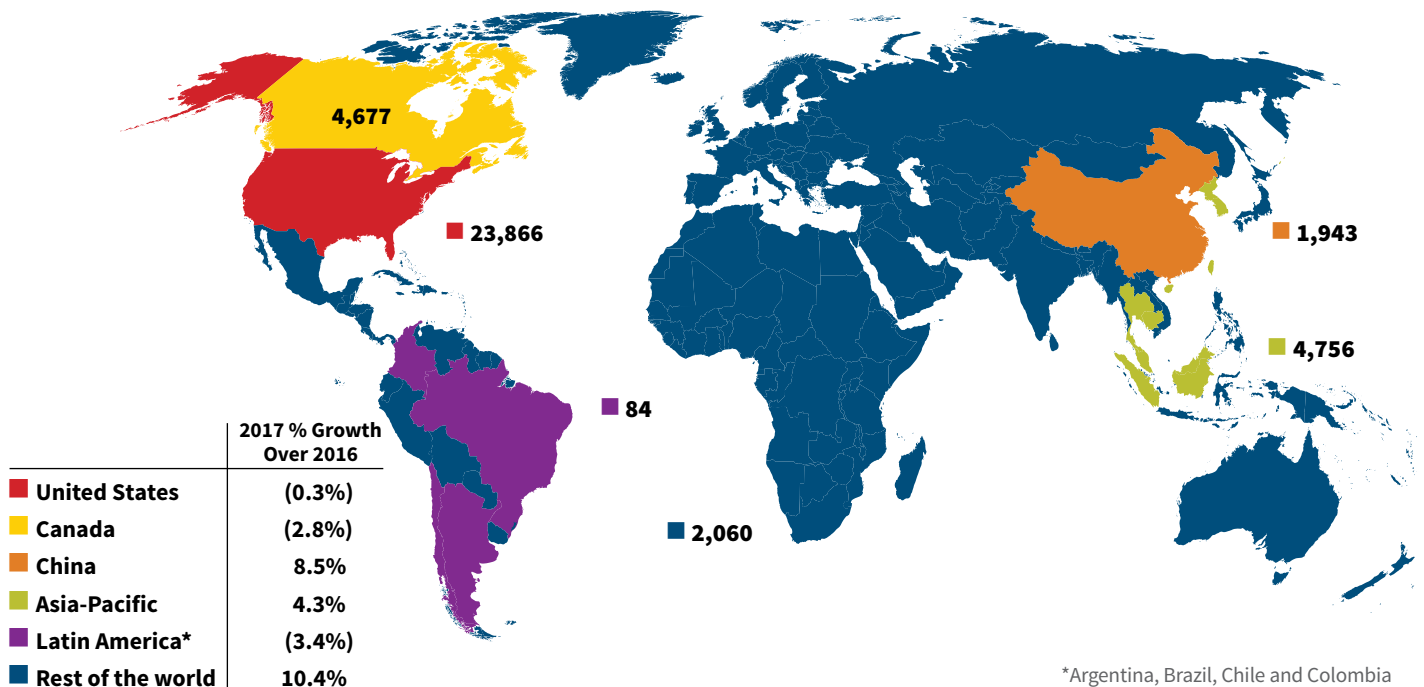
The goal of the Latin America strategy, approved in 2016, is to identify opportunities for the SOA to participate in and strengthen the actuarial profession. The initial three-year phase of the strategy focuses on Argentina, Brazil, Chile and Colombia. In 2017, members of the Latin America Committee (LAC) completed in-depth needs assessments for each country, including interviews with local actuaries, in-country requirements and topics of interest for continuing professional development.

In October, LAC members visited Colombia to hold their annual face-to-face meeting. Five members gave presentations at the local association's symposium and visited local employers, regulators and universities. The SOA also hosted a large-scale networking reception to promote the profession.

Work will continue in 2018 to build relationships with universities, employers, regulators and local associations and to lend resources for professional development in the region. The LAC will also look for ways to promote the profession and the SOA in target countries and to identify possible relevant research projects.

### CANDIDATES BY REGION

**37,386** CURRENT CANDIDATES FOR 2017



# 2016–2017 Financial Results

As a 501(c)(3) tax-exempt organization, the Society of Actuaries (SOA) must manage its yearly income and expenditures to ensure that it has sufficient resources to achieve its mission and core objectives now and in the future.

The annual budget takes into account the revenue received from member dues, fees for examinations and professional development offerings, sponsorships, fees for experience studies and research, and miscellaneous revenue and investment income.

This revenue sustains the human and financial resources to:

- ➔ Develop and administer credentialing exams
- ➔ Educate members through meetings and communications
- ➔ Conduct and sponsor research projects
- ➔ Promote the actuarial profession around the world
- ➔ Provide a host of other activities based on members' and candidates' needs

The financial results, which exclude section activity, reflect how much the SOA has invested in its strategic initiatives and the profession as a whole.

The accompanying chart shows a comparison of the actual 2016 results, the SOA Board–approved 2017 budget and the actual 2017 results.

Total revenues in 2016 and 2017 were \$52.7 million and \$58.7 million, respectively. The SOA 2017 financial results showed a management-basis increase in net assets of \$7.9 million.

Membership equity is measured against the following year's expenses, standing at 76 percent at the end of 2016. The current membership equity position of \$50.9 million is 89 percent of the SOA Board–approved 2018 budget. The target range of membership equity established by the Board is 50 to 100 percent.

Under the Board's leadership, the strength of the SOA's financial position will move strategic ideas forward and enhance our focus on the future of the profession.

## FINANCIALS

Revenues	(in 1,000s)
2016 Actual	\$52,745
2017 Budget	\$54,612
2017 Actual	\$58,666
2017 Revenue Details	(in 1,000s)
Examinations	\$33,686
Dues	\$13,932
Professional Development	\$7,430
Other	\$3,618
<b>Total</b>	<b>\$58,666</b>
Change in Net Assets	(in 1,000s)
2016 Actual	\$1,497
2017 Budget	<\$644>
2017 Actual	\$7,923
Membership Equity	(in 1,000s)
2016 Actual	\$43,020
2017 Budget	\$42,376
2017 Actual	\$50,943

# A Paradigm Shift in Decision-Making

One of the primary duties of the Society of Actuaries (SOA) Board of Directors is to set strategy for the organization so it can help members and other stakeholders meet the challenges of the changing environment. Objectives 9 and 10 of the SOA 2017–2021 Strategic Plan set goals for identifying key environmental changes important to the SOA and developing strategy in response to those changes.

## **IDENTIFYING EMERGING ISSUES**

To enable the SOA to continuously identify, analyze and prioritize responses to environmental changes in a timely manner (objective 9), the organization initiated an enhanced environmental scanning process in 2017. This process involves collecting observations from key volunteers, staff and members about critical changes affecting the public, employers and other stakeholders served by actuaries' expertise. Members can use an [online observations form](#) to submit information about

changes, trends or developments they are seeing in the industry, economic, national and global environments. Gathering information from a wide variety of sources ensures that diverse views are represented and taken into account. A triage model is used to rank observations based on likelihood and impact. Key observations may be discussed by the SOA Board or directed to volunteers and staff for immediate action.

Critical issues are often complex; the problems they pose have no obvious answers and multiple potential paths. Such issues present many different options, with no clear indication of the preferred option. They require consideration of the pros and cons of each path and how it prepares actuaries for multiple future scenarios.

## **ADOPTING DECISION GOVERNANCE**

Given the speed and complexity of the changes actuaries are facing, the SOA recognized that its



## GOVERNANCE

decision-making processes needed to be improved to handle the intricacy of the issues coming out of environmental scanning (objective 10). To make room for these strategic discussions, both the structure and the perspective of the SOA Board and other groups began to change in 2017.

First, shrinking the size of the SOA Board allows for more active participation of all members. The Board now has 19 members and will reach its target of 18 members in 2019. There are no longer vice presidents, and 2018 will be the last year for a penultimate president.

Second, the SOA Board clarified the responsibilities it holds directly and those delegated to key volunteer committees and staff. One way to make room for complexity is to ensure more routine decisions are not being passed through multiple committees. A clearly defined group is empowered to make a decision about more routine issues, leaving the SOA Board free to address strategy.

Finally, the SOA Board has begun to develop new methods for working as a group to understand what the complex issues are and how to address them in new and innovative ways. Traditionally, information on a specific problem was presented and decisions were aimed at solving that problem. Starting in 2017, new generative discussions were launched. These discussions explore the possibilities of a complicated issue or problem with many unknowns; the goal is to understand the unknowns and how different strategies might affect them. These open-ended discussions allow the SOA Board to think through and plan scenarios for each possibility. SOA Board members talk about what these scenarios might mean for the profession and how to respond to potential problems at an early stage.

For example, a discussion that began in 2017 and will continue in 2018 has focused on the many forces driving InsurTech—the combination of new technologies and new players—that may change opportunities for actuaries. In June, the Board reviewed and discussed a report issued by the International Association of Insurance Supervisors that considers how the combination of emerging technologies and new business models might change the insurance industry. SOA Board members explored the three scenarios presented in the report, discussed how each scenario might affect actuaries, considered what opportunities might emerge or end and raised a number of questions. Future discussions will look at more InsurTech-related issues such as how all the sources of artificial intelligence, machine learning and the rapidly shifting insurance model could change the long-term environment for actuaries going forward.

As we move into 2018, the SOA Board will focus on working with problems in more depth to clearly understand their complexities. The goal is to set resilient strategies and create a dynamic response to what's changing for the profession, SOA members and stakeholders.

### 2017 SOA MEMBERSHIP BY AGE

Age	Members
< 26	833
26–35	9,416
36–45	6,952
46–55	6,014
56–65	3,686
66+	2,251
Unknown	9
<b>Totals</b>	<b>29,161</b>

GOVERNANCE

# 2016–2017 Board of Directors

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Jeremy J. Brown, FSA, MAAA

**PRESIDENT-ELECT**

Mike Lombardi, FSA, CERA, FCIA, MAAA

**SECRETARY/TREASURER**

Andrew D. Rallis, FSA, MAAA

**PAST PRESIDENTS**

Craig W. Reynolds, FSA, MAAA

Errol Cramer, FSA, MAAA



Jeremy J. Brown  
FSA, MAAA



Mike Lombardi  
FSA, CERA,  
FCIA, MAAA



Andrew D. Rallis  
FSA, MAAA



Craig W. Reynolds  
FSA, MAAA



Errol Cramer  
FSA, MAAA

# Elected Board Members



Andrea Bykerk  
Christopherson  
FSA, FCA, MAAA



August C. Chow  
FSA, CERA, FCIA



Karen J. DeToro  
FSA, MAAA



William B. Fornia  
FSA, EA, FCA,  
MAAA



Sara Wiese  
Goldberg  
FSA, MAAA



Roy Goldman  
FSA, CERA,  
MAAA



Paula M. Hodges  
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Olga T. Jacobs  
FSA, MAAA



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Eileen F. Luxton  
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**SOCIETY OF  
ACTUARIES®**

475 N. Martingale Road, Suite 600  
Schaumburg, Illinois 60173  
p: 847.706.3500 f: 847.706.3599  
w: [www.soa.org](http://www.soa.org)