

# Illinois State University Actuarial Program Overview: Fall 2016

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# Recognition

- Society of Actuaries Center of Actuarial Excellence (CAE)
  - Since 2009, from the very beginning of the existence of this recognition by the SOA
  - First CAE in the state of Illinois, one of the first nine in the U.S.
- Casualty Actuarial Society University Award in 2016

# Students

- Total of 220 students now
  - 177 undergraduate students
  - 43 graduate students
- Degrees:
  - B.S. in Mathematics: Actuarial Sequence
  - M.S. in Mathematics: Actuarial Sequence

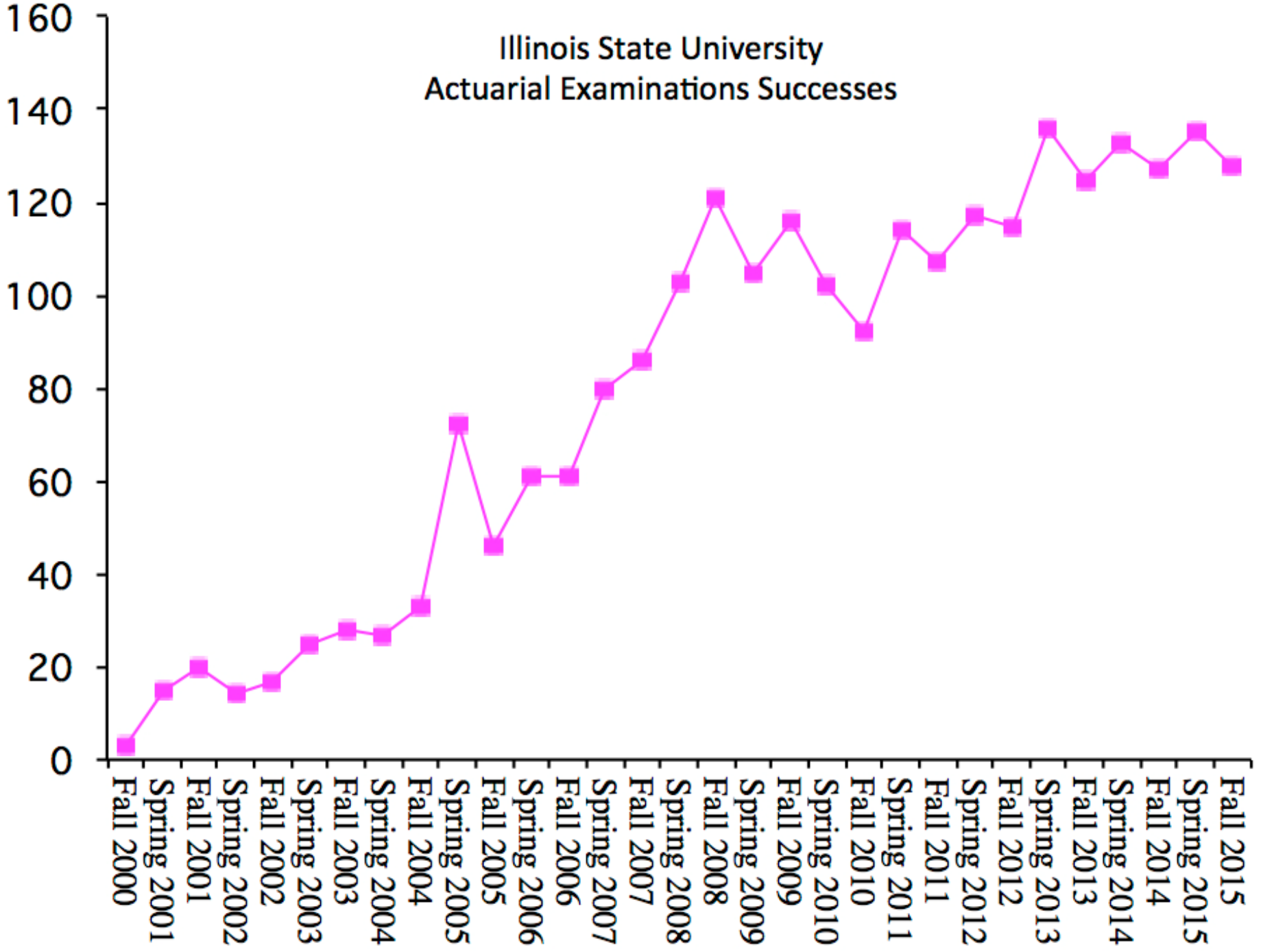
# Alumni

- Undergraduate major created in 1996.
- Graduate major created in 2001.
- 504 alumni.
- 210 alumni are credentialed actuaries.
- Slightly more than 50% of alumni work in the property/casualty insurance industry.
- Just under 50% work in life/health/pensions.
- Very few alumni do not work in the insurance industry.

# Administrative

- Actuarial Program located in the College of Arts and Sciences, Department of Mathematics.
- Katie School of Insurance and Financial Services located in the College of Business.
- Unlike at many other universities, at Illinois State University, there is harmony between business and mathematics.

### Illinois State University Actuarial Examinations Successes



# Opportunities for minorities

- The actuarial profession has very low participation by African-Americans, Hispanic-Americans and Native-Americans, only about 2%.
- We have 44 students from these underrepresented groups, representing 20% of our student population. And yes, they are successful in passing actuarial exams.
- For example, in the period since July 1, 2016, 35% of our actuarial exams successes were by students from underrepresented groups.
- We are the only university in the nation to have run a Summer program for underrepresented groups of high school students introducing them to the actuarial profession continuously for the last 21 years.

# Connection to industry

- We are a practical actuarial program, with a strong connection to the industry.
- Overwhelming majority of our students graduate with internship experience.
- Our students work on research projects with the Katie School, special projects in the Pinnacle University program, and participate in an annual Statistical Projects Competition.



# Pinnacle U: joint program with Pinnacle Actuarial Resources, 2016

- "Comparison of Workers Compensation programs—United States vs Germany" by Tanja Burkhart, supervised by Nick Easley and Aaron Minnis.
- "Terrorism Insurance" by Judy Cheng, supervised by Tom Montgomery and Lilli Kiel.
- "Assignment of Benefits" by Amanda Conklin, supervised by Nicholas Alicea and Danielle Ireton.
- "Micro-Insurance" by Katja Grothmann, supervised by Lee Xiong and Nick Gurgone.
- "Illustrating Actuarial Concepts Through Baseball" by Christopher Audino, supervised by Jordan Paszek and Matthew Meade.
- "The Bornhuetter-Ferguson Method: Explanations and Modifications of a Useful Tool" by Ishmael Asamoah, supervised by Christina Henry and Nicole McArdle.
- "Solvency Regulation for P&C Insurers: US vs Canada" by Tao Huang, supervised by Daniel Teuma.
- "Telematics and Usage-Based Insurance" by Uktamjan Kamilov, supervised by Ryan Hoch and Stacy Hoefert.

# Pinnacle U: joint program with Pinnacle Actuarial Resources, 2015

- "Earthquake Insurance" by Deng Pan, supervised by Ashley Smith and Nicholas Alicea
- "Estimating the Probability of Financial Distress" by Haoxiu Yang, supervised by Christina Henry and Andrew Kubiak
- "Tail Policy for Claims-Made Professional Liability, Death, Disability, and Retirement " by Tyler Shalitis supervised by Matt Meade
- "Correlation of Reserve Development Between Lines of Business" by Christopher Swindell supervised by Aaron Minnis
- "Measles -- The Virus Strikes Back" by Dale Day, supervised by Leslie Simmons and Lee Xiong
- "Pricing Cyber Insurance with Introduction to Copulas" by Adolph Okine, supervised by Zach Dietz
- "Overview of the Cape Cod, Benktander, and Case Outstanding Development Techniques" by Anjelic Owens, supervised by Patrick Newell and Nick Easley

# Students working on Katie School research projects

- Recent Katie School research projects
  - “The Economic Impact of Insurance Industry on the State of Illinois”
  - “The Risk Management Implications of UAVs and Drones”
  - “The Role of Large Deductibles for PEOs in the Failures of Small Workers' Compensation Insurers”
- Recent Master degree projects
  - “Modeling rear-end car crash fatalities" by Ms. Elizabeth Luft, supervised by Dr. Krzysztof Ostaszewski
  - "Pricing of index insurance using Black-Scholes framework: A Case study of Ghana" by Mr. Adolph Okine, supervised by Dr. Krzysztof Ostaszewski
  - "Analysis of the National Flood Insurance Program" by Mr. Ronald Otoo, supervised by Dr. Krzysztof Ostaszewski

# Statistical Projects Competition: 2015

- "Major League Baseball Pitchers and the Disabled List" by Ms. Holly Hart, supervised by Dr. Nan Zhu and submitted to the 2014/2015 Statistical Project Competition
- "Predicting the probability that someone will experience financial distress in the next two years" by Mr. Adolph Okine, supervised by Dr. Nan Zhu, this project received a prize in the 2014/2015 Statistical Project Competition
- "Whether to Intervene: The Case for the Allee Effect in Global Terrorism Data" by Mr. Collin S. Philipps, supervised by Dr. Nan Zhu, this project received a prize in the 2014/2015 Statistical Project Competition
- "Global earthquake frequency prediction: time series regression approach" by Ms. Yan Jin, supervised by Dr. Nan Zhu, this project received a prize in the 2014/2015 Statistical Project Competition

# Statistical Projects Competition: 2016

- Richard Haar, “Analysis of U.S. and European stock market indices”
- Syed Hussain, “Capital Mobility in Germany”
- Jiale Wu, “Predicting energy efficiency of a building”

# A parting suggestion

- Please do a Google search on the phrase: “How to pass actuarial exams” and see what you get.
- Hope you enjoy it.