JOURNAL OF
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Table of Contents

Editor's Report

It is with great pleasure that I present to you the 2014 issue of *Journal of Risk Education (JRE)*.

I never envisioned myself as a journal editor, but I have to say it's been very rewarding. Working with dedicated reviewers and talented authors is a pleasure and a joy. My editorial goal in 2015 is to publish two issues, and to continue with two issues a year after that. To achieve this goal I do need more paper submissions. The journal's acceptance rate, as reported to Cabell's, is now below 50%. Hopefully this will make *JRE* a more attractive outlet for your work. I also strive for a 45-60 day turnaround on submissions. I don't always achieve that, but I try my best. Thanks to the reviewers and associate editors who work so hard to achieve that goal.

As a reminder, I would like to have several different types of submissions to *JRE*. Please see the call for papers on the next page.

Here's wishing you a prosperous and productive new year in 2015!

Sincerely,

Brenda Wells, Ph.D., CPCU, AAI

Editor
Robert F. Bird Distinguished Scholar in Risk and Insurance
East Carolina University

2015 Call for Papers

The *Journal of Risk Education* (*JRE*) submissions of articles and other materials for its 2015 issues.

The journal offers several publication features:

Articles: double-blind peer reviewed articles related to risk management and insurance teaching and education. Both theoretical and pedagogical pieces are encouraged.

Editorials: editorially-reviewed commentary related to risk and insurance education.

Book Reviews: editorially-reviewed summaries of books and periodicals that pertain to risk management and insurance, with preference given to those items that have practical classroom applications.

Doctoral Perspectives: double-blind peer reviewed articles that are by or for doctoral students planning to become risk educators in the future. Any topic of relevance to doctoral candidates may be submitted.

Teaching Cases: cases for use in the risk management classroom. Teaching cases should be founded in the academic and practitioner literature, and will be double-blind peer reviewed.

To submit an article for consideration, please create an account on our website at www.jofriskeducation.org and follow our electronic submission process. If you are willing to serve as a reviewer for future papers, please contact the editor.

For questions and more information, please contact:

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Inclusiveness and the RMI Discipline: An Editorial

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Robert F. Bird Distinguished Scholar in Risk & Insurance
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In 1987 I wandered into my first risk management and insurance class at University of Georgia. Taught by the legendary Don Hardigree, I was hooked on the subject after the first week of class. By the end of that 10 week quarter, I was studying for the GMAT after having met Sandra Gustavson and E.J. Leverett, who encouraged me to apply to the doctoral program. In September 1988 I stepped into my first doctoral class, and in July 1992 I was a newly-minted Ph.D. Now, after over 20 years in academia, I feel pretty strongly that we need to have more respect for two words: "insurance" and "education."

Today, I still love the discipline of studying and teaching risk. Without risk we wouldn't need insurance, but I think we need to get real for a minute. There are plenty of academic elitists in other disciplines, many of whom don't think we are worth the oxygen we consume. We don't need to join their ranks by disrespecting the industry that funds our programs and hires our students. Don't forget that insurance has funded a lot of our professorships! Risk is definitely important—*but so is insurance!* Yet I hear that some academics in our discipline find insurance to be too pedestrian and lowly for respect or even consideration. All I can say is, "Are you kidding me?"

And, don't forget that education is why we have jobs in the first place. Ask any taxpayer or tuition-paying parent how much they really care about our research. I daresay the vast majority of them don't. Education is precisely the reason we have programs in which to work on research, yet it's hard to get paper submissions to this education journal!

I took a long hiatus from research many years ago, and I'll tell you why. There was a divorce and a two year old child to raise, sure, but that wasn't the main reason. It was the disdain that many of my finance peers[1] had for my publications in risk management and insurance journals. After working my fingers to the bone to get an acceptance at the "top" journal in our discipline, I was told that "anyone could do that." I was also told that anything less than a finance journal was merely "crap splat."[2] Plus after spending about seven years trying to get a particular paper in *Journal of Financial Economics* and then *Journal of Risk and Insurance*[3] with no success, I began to wonder if research was worth the energy I was expending.

Another problem was I never saw practical applications for the research I did that was considered to be "high quality." When my articles were published, I couldn't find anything relevant to say about them in my classes. I never got a letter or a note from anyone who read those journals saying, "Wow, this is important work that you did!"

With all of those factors combined, I decided my time was better spent doing just about anything. I raised a lot of money for my program. I built industry relationships. I did a little consulting. I never missed a play or a school event for my son. I tried gardening and failed pretty badly at it. I

[1] Some of them would resent my use of this word, since I was not considered a "peer" being a lowly insurance professor.
[2] The technical definition of this work is not found in any dictionary I have consulted, but it is a direct quote nonetheless.
[3] Three rounds of reviews at each journal, ultimately culminating in rejection at both outlets.

became an ordained minister,[4] a mediocre artist and a pretty decent bowler at one point. Then one day I went into the job market and found I was at a distinct disadvantage due to a lack of publications. Lesson learned, and my interest in research was reborn.

Things are different this time around because I do not choose research topics based on what's in vogue or what has the best chance of publication at a particular journal. I only write about things that I genuinely care about and find fascinating. There's a joy and a passion behind my work that has yielded some interesting and very enjoyable results for me. I've been invited, and even sometimes paid, to speak about my work across the country. I've presented some of my findings to undergraduate students with very positive results. I've received some feedback from peers that absolutely made my day.

For instance, I presented a paper at an academic meeting this year and one of my peers came up to me afterwards and said this: "I got more out of your paper than I did this entire conference." I traveled home on a cloud having received such high praise. It felt like what I wrote about actually *mattered* to someone. Truthfully? That was a fairly new feeling for me. Guess what that paper was about? *Insurance education.*

Programs in risk and insurance are popping up around the country, but some are dying, too. That's sad for us, and as a discipline I believe our survival hinges on being more inclusive. We should not view each other's work as "crap splat" just because it's not what we personally find fascinating. I think we should take a page from the insurance industry's book. In insurance there is a place for those who are introverts, and those who are extroverts. For the mathematically gifted and the mathematically challenged, there are opportunities. For the person who wants to travel the globe, and for the person who wants to be home by 5:30 p.m. every day, there are good careers. Risk *and insurance* academia would do well to mimic that diversity and inclusiveness.

Our scholarship takes many forms: risk research, insurance research, education research, theoretical research, empirical research, pedagogical research, textbook and monograph writing, and yes—even editorially-reviewed publications (gasp!) I believe that our future as a discipline depends in part on having a health and mutual respect for all of these forms of scholarship, rather than just that which interests us personally.

[4] I am available to officiate at weddings and funerals.

The Case Of The Severely Snakebit Arbitration

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Abstract

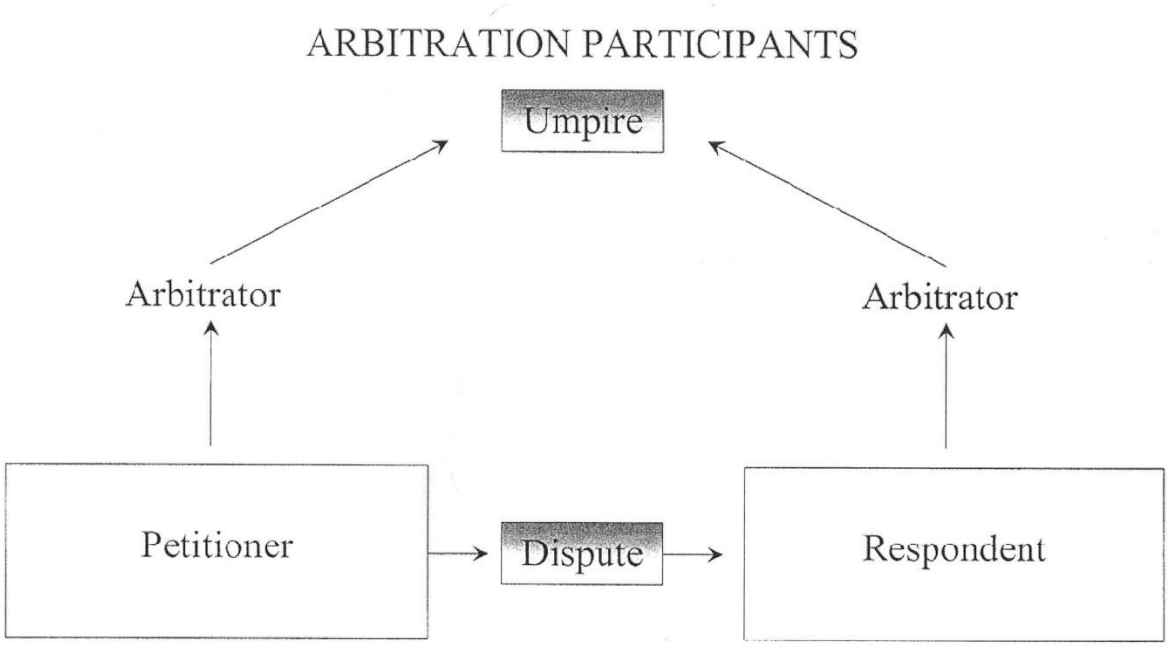
Students who seek knowledge about arbitration procedure can find basic information, but are sometimes surprised by a process that may contain some irregularities. The literature about arbitration is scattered. This article weaves both what should occur and what did not occur in proper form in an actual case as an effort to fill this void.

This case study concerns the honored practice of resolving disputes in reinsurance relationships. For hundreds of years, when the reinsurance participants found themselves in a quagmire of conflicting opinions, they would engage the arbitration process to decide conflicting issues. Intended to be quicker and more cost efficient than litigation, this process has resolved the vast majority of industry issues.

Consistent with a societal shift away from litigation, and sourcing a US Supreme Court Justice, this remedy has been described as "more prompt, efficient and final, coping more effectively with complex business contracts."[i] Advice to improve the process of reaching settlement of reinsurance controversies has sometimes appeared in professional insurance journals. (e.g. refer to the list found on the final end note of this article).

In a recent edition of ARIAS US Quarterly, one author succinctly captures the essence of what to expect in a reinsurance arbitration proceeding. She wrote "that the twin goals of arbitration are expedition and economy."[ii] That quest is matched in several industry articles. For those individuals who are involved in such a dispute resolution process, we do expect the insurance company that seeks settlement (The Petitioner) to appoint an arbitrator on their behalf and alert the Respondent to promptly nominate in parallel fashion. Then we count on the two designated arbitrators to select a third arbitrator (commonly termed an umpire) and expect all three professionals to remain in their roles until all the expected procedural steps are completed. Each arbitration panel member is expected to be disinterested (no financial gain arising from the outcome and willing to consider all viewpoints). The umpire is expected to be disinterested and neutral..

These action components are to (a) hold an organizational meeting that includes legal representatives of the two insurers, (b) receive briefs of their positions, (c) conduct the arbitration hearing so that both participants have the opportunity to explain their positions and (d) finalize the arbitration board's judgment. In that sequence, we anticipate that the three person arbitration board should limit the time for legal discovery, expedite the meetings and contain both time and cost ingredients. That sequence, if followed, should reinforce our industry's goal of minimizing cost and expediting the dispute resolution process.



But sometimes, plans go astray.[iii] Few industry observers could have predicted the development of this twist-and-turns case study.

Follow along with my description of a reinsurance arbitration proceeding that earned my title: "the case of the severely snakebit arbitration." Here's what happened...

First, let's establish the characters (all disguised, per industry practice of course) in this proceeding. The Petitioner in this case notified the Respondent that arbitration was being formally filed. The Cedent insurance company in this case supplied the appropriate paperwork, which included the name of their arbitrator, Eugene. Twist number one: the Respondent reinsurer did not in fact name their arbitrator within the contractual time period.

So the arbitrator selection of Respondent reinsurer (Bill) was made by the Petitioner.

Eugene and Bill met, per standard practice, to discuss the merits of several candidate umpires. Their selection process boiled down to two names. Each nominee was contacted to clear any conflict of interest and immediate availability. Each was very well qualified. Both had served as an executive officer of an insurance company. The two arbitrators chose Ralph as the umpire, based on his greater arbitration experience although they could find no other distinguishable difference between their candidates. Twist number two was about to erupt because Eugene and Bill did not check up Ralph's medical history. As a point of departure, should arbitrators include an umpire's health record as an ingredient to their deliberations? If so, just how would this investigation unravel?

So Ralph, Eugene and Bill discussed the makeup of their initial arbitration conference, with both participants to be included, by telephone. They agreed on the agenda for that organizational meeting. Ralph preferred a joint telephone call for that purpose, so the legal counsel for the

Petitioner and Respondent were duly alerted. As an interesting point of departure, keep in mind that the umpire preferred a telephone call instead of an in person session. Everyone checked into the conference call, the arbitration panel was properly anointed, non-disclosure was assured and a standard immunity contract was created. The date for the actual arbitration hearing was set. The legal briefs would be expected one week prior to the hearing. Everything was ready to go.

Seven business days before the actual hearing date, Eugene and Bill learned from Ralph's son that his dad has been rushed to a local hospital for some undisclosed medical problem. The son added, "This problem has happened before". The medical emergency, being twist number three, was that reaching the hospital proved to be impossible ("sorry, but the patient has requested no visitors except for family members.") For reasons that were never disclosed, Ralph remained beyond the reach of his panel colleagues for seventeen days. Early in that time passage, Eugene and Bill alerted the two insurance company legal representatives that the originally set arbitration hearing date would have to be scrapped. Both legal counsel expressed sympathies and words of support for Ralph.

Ralph did emerge on the 18th day, indicating that he would require some added healing time. He did not hint or, much less offer the option of stepping down as umpire. Neither legal counsel contested the situation, so the time frame leaped forward for four months until the umpire announced he could resume his arbitration responsibilities. Once again by telephone, the panel members and legal counsel held a joint conference call, specified the replacement hearing date, and they discussed a new time table for the legal briefs to be rendered.

At about this time, Respondent's legal counsel (RLC) discovered that Eugene's former employer, a well respected legal firm, had been recently hired to provide legal expertise to Cedent. Could the effect of that discovery imperil Eugene's continuance on the panel? Within a day after that disclosure, Eugene composed a long email message to everyone involved, citing his retirement from that law firm before the subsequent legal assistance had been rendered. His comforting words (" I can assure you that work product by my former firm in which I had no involvement would not damage my credibility. ") Co-arbitrator Bill called Eugene and encouraged his decision not to resign from the panel. But here came twist #4. Cedent's legal counsel let it be known that "any subsequent appeal based on Eugene's qualification as our Party appropriated arbitrator could be dysfunctional." Respecting counsel's wishes, Eugene notified all parties of his resignation as arbitrator in this matter.

Several matters of procedure arose, surrounding the question if the decision to replace Eugene rests solely with Petitioner? If so, enter twist number five: how should the umpire and the opposing arbitrator react when more than 30 days passed without that nomination? In other words, since Respondent was originally penalized for not naming an arbitrator within thirty days, and since Cedent allowed more than thirty days for their selection, should (a) the remaining members of the panel appoint Cedent's replacement arbitrator ? Or (b) should Respondent appoint Cedent's arbitrator? For reasons that were never clarified, Respondent's legal counsel did not press the delay issue in the appointment of Eugene's successor. That being the situation, Ralph and Bill chose not to press the issue. On the 43rd day following Eugene's retirement, his replacement (Lionel) emerged as Cedent's chosen arbitrator. Lionel, Bill and Ralph spoke by phone, named a new hearing date and confirmed all the related issues, which included news of a fact witness from each side being called to the hearing. Finally, everyone

involved pointed to a closure of this matter. May my story note that neither Eugene, Bill nor Lionel ever met Ralph in person throughout this dialogue.

Exactly one day before the set hearing. Ralph issued a flaming email, indicating his displeasure that Petitioner's legal counsel sought an exception to having their expert witness appear in person. Instead, the expert was not available to travel to the arbitration hearing in person, but would be available by telephone conference call hookup. Ralph's message was blunt. Such a request diminished the professionalism of an arbitration hearing. Ralph's reaction, being twist number six, was to resign from the panel, based on this affront. Both Lionel and Bill composed well thought out rejoinders for Ralph to consider. But alas, within an hour, Ralph resigned as the arbitration umpire. The legal counsels were contacted and each confirmed receipt. Since both law firm representatives were already gathered at the designated arbitration site, Bill asked each side to consider a somewhat novel option; hold the hearing on schedule and rely on the arbitration clause wording. Being traced to the traditional Lloyd's form, if the two arbitrators can agree on a dispute resolution, the umpire's involvement is only a frill. Twist number seven was Respondent's buy in, but Petitioner's refusal. Cedent's explanation was well justified, in that revealing their strategies to a two person arbitration board would imperil their positioning if the two arbitrators did not, in fact, agree on an outcome.

So a new umpire (Shawn) was sought and secured, although he was not the original second choice (who had died in a tragic accident, being twist number eight). Perfectly acceptable to both disputants, Shawn steered the participants toward a newly set hearing date. Four days before that event was to take place, the two disputing parties agreed to a private settlement. Twist number nine; case closed. [iv]

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[i] U.S. Supreme Court in Prima Paint Corporation V Conklin Mfg. Co. 388 U.S. 395 (1967)
[ii] C.O' Mara, "dealing with the attorney – client privileged or work products documents in arbitration". ARIAS US Quarterly, volume 17, Number 1
[iii] See, for instance, "Reinsurance Arbitration: A Viewpoint, " in RISE, Volume 1, Number 2, Winter 1983

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Climate Change and Risk: A Multidisciplinary Risk Course

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Climate change is one of the biggest risks we face. It is studied worldwide across many disciplines, such as atmospheric science, meteorology, oceanography, biology, botany, political science, economics, finance, law, insurance, and ethics, to name some. Yet risk studies, which itself is an assembly of multiple disciplines focused on probabilities, uncertainty, consequences and their management, has not engaged the big questions. For example, see the April 2012 edition of the *Geneva Papers*, which focused on insurance on catastrophes, and a new journal called *Climate Change and Risk*. In the university curriculum, the subject can be addressed in many disciplines, but within a risk department it has the advantage of being studied in the multi-disciplinary method that is unique to the risk sciences. At Georgia State University, we did that in an honors college colloquium, in a course we called Climate Change and Risk.

This honors course was intended to appeal to high-achieving juniors and seniors with diverse majors. Our class included majors in anthropology, biology, economics, geology, journalism, philosophy, psychology, and sociology. We are each faculty within the Risk Management and Insurance Department of the Robinson College of Business.

TOPICS AND READINGS

Risk was a new subject to our students, so we began with the basics of risk and a preliminary inroad to its application to climate change and its implications. This meant introducing types of risk, risk perceptions, the standard economic definition of risk (uncertainty concerning a gain or loss), basics of risk probabilities, cost-benefit analysis, and risk aversion. We also introduced the concept of discount rates, a topic fundamental to the question of climate change costs spread over long periods time.

Thereafter the course assessed risk from disciplines of science, economics, international relations, public policy, law, insurance, and ethics.

For science, we started with an easy and obvious introduction, Al Gore's video *An Inconvenient Truth*. Foundational readings for the subject are of course Nicholas Stern's *The Stern Review: The Economics of Climate Change* (2007), and the Intergovernmental Panel on Climate Change *Fourth Assessment Report* (2007). *The Stern Review* was our textbook, more or less, and since this was an honors course we assigned much of the book, chapters 1 through 17, about two-thirds of the 640-page book, to be read with dispatch. Other readings on the science of climate change were available from various websites; several from *Allianz Insurance Company* are comprehensive and highly readable (the appendix provides a list of websites). We also had the benefit of material from *Munich Re* that we could use for in-class presentation. The idea was to give the students exposure to several types of scientific research at different levels. We led the science discussion ourselves, feeling comfortable that our command of the science was sufficient for this course, but this is a topic where a climate scientist as guest lecturer is an obvious recommendation when available.

From understanding the basic science of climate change, we moved to the history of the climate policy debates. This was an in-class account, without assigned readings, and mindful that our students

still had hundreds of pages of *The Stern Review* to get through. The history included past environmental legislation such as the Clean Air Act, Clean Water Act, and international environmental negotiations such as those associated with the Rio Conference, The Kyoto Accord, the Montreal Protocol, and various carbon tax and carbon trading market proposals. The discussion included the harms, costs, benefits and remediation that these enacted or proposed laws provided, and the politics and legitimate arguments advanced by various countries over climate change legalities. We also examined "carbon leakage" and cross-border effects, such as when developed countries reduce their own manufacturing, thus reducing their greenhouse gas emissions, while developing countries pick up the manufacturing often at less efficient energy levels and thus higher carbon emissions. The effect of this type of leakage is that the same goods are produced at higher greenhouse emissions, while the developed countries claim reduced greenhouse emissions.

Still firmly within risk science, we next took up decision making under uncertainty and cost-benefit analysis. Kenneth Arrow's classic articles on decision making under uncertainty were among the readings assigned: Kenneth Arrow, Anthony Fisher, "Environmental Preservation, Uncertainty and Irreversibility," *The Quarterly Journal of Economics*, Vol. 88, No. 2 (May 1974), pp. 312-319; Kenneth J. Arrow and Robert C. Lind, "Uncertainty and the Evaluation of Public Investment Decision," *The American Economic Review*, Vol. 60, No. 3 (Jun. 1970), pp. 364-378. We also introduced the concept of policy lotteries, whereby preferences and outcomes are never entirely known, and need to be evaluated by policy-makers, taking into account the risk aversion of affected individuals. Glenn Harrison, "Experimental Methods And The Welfare Evaluation Of Policy Lotteries," *European Review of Agricultural Economics*, vol. 38, no. 3 (2011), pp. 335-360. Policy lotteries is also a theme of William D. Nordhaus, *The Climate Casino: Risk, Uncertainty, and Economics for a Warming World* (2013); this book was not available for our class, but would be required reading in any future class.

The fifth week finally brought us to the IPCC Fourth Assessment Report. This may seem late to the subject, given that this is the core document for global analysis, but our scheme was to discuss climate change in the context of risk, not "merely" discuss climate change. And we viewed *The Stern Review* and the concepts of risk as necessary predicates to understanding this report in that broader context. The report deals with the science, risks, uncertainties, and potential costs of ever-rising greenhouse gas emissions. To put this in some context, we paired this class on the future climate change of rising temperatures with the last climate change to affect modern humans: falling temperatures during the Little Ice Age. The Little Ice Age occurred between 1300 and 1850 and dropped temperatures a few degrees Celsius – about the same amount down as is forecast now to go up with global warming. The effect was starvation, disease, death, civil unrest, revolutions, and economic collapse. We used an excerpt from Brian Fagan's book, *The Little Ice Age* (2000), and a video of the same title.

Fat-tailed catastrophe risks was next. Human nature is to put little store in very unlikely risks, but fat-tailed risks mean that, if such risks happen, the consequences are severe. This is a crucial question for climate change, because if the forecast risk comes to bear, the consequences for the planet will be severe. Recent economic experience has demonstrated this with the Great Recession, where highly unlikely risks that were highly unlikely to combine in fact brought did occur and down the world economy. Our readings on this were John Horowitz and Andreas Lange, "What's Wrong With Infinity. A Note on Weitzman's Dismal Theorem," http://faculty.arec.umd.edu/jhorowitz/weitzman_final.pdf;; Martin Weitzman, "On Modeling And Interpreting The Economics Of Catastrophic Climate Change," *Review of Economics and Statistics*, vol. 91, no. 1, (Feb. 2009), pp. 1-19; Antony Millner, "On Welfare Frameworks And Catastrophic Climate Risks," *Journal of Environmental Economics and Management*, vol. 65, no. 2 (March 2013), pp. 310-32. We brought this together with excerpts from Jared Diamond's book, *Collapse* (2005), which recounts past major environmental disasters and their consequential destruction of various societies.

A discussion of the concepts of welfare economics and public goods allowed us to explore why some goods such as clean air and water are public, and why investments in some goods are necessary to benefit

everyone in society. One person's clean air and water cannot stand in isolation if the neighbors are externalizing their pollution. Everyone benefits from a stable planetary environment. Inge Kaul's "Defining Public Goods" in Inge Kaul, Isabelle Grunberg and Mark A Stern, *Global Public Goods* (1999), was our assigned reading here.

We paired welfare economics with environmental ethics, which brought out the impacts, rights and duties of individuals to society itself. Our ethics were both specific to environmental ethics theories, and general to traditional ethics theories of deontology, utilitarianism, justice and virtue. The discussion showed that traditional ethics theories, while not usually applied to environmental questions, are entirely valid methodologies to the assess decisions towards the environment. We provided this general perspective on ethics by lecture, and then worked in more focused environmental ethics based on assigned readings of Stephen Gardiner, "Ethics and Global Climate Change," *Ethics*, vol. 114 (2004), pp. 555-600; and "A Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Moral Corruption," *Environmental Values*, vol. 15 (2006), pp. 397–413. (Gardiner's book, *A Perfect Moral Storm* (2011) could also be used, but we found the articles listed above better focused and easier to pair with the other readings we assigned, given that ethics was a component of the course and not the entire subject of the course.) We rounded this with Amarty Sen's *On Ethics and Economics* (1987) to show that ethics does not have to stand apart from economics. Additional readings were from C. Richard Cothern, *Handbook for Environmental Risk Decision Making* (1998) and Andrew Light and Holmes Rolston III, *Environmental Ethics – An Anthology* (2003).

We turned to an earlier topic we had briefly addressed, discounting, and now linked it with ethics, using Thomas Schelling, "Intergenerational Discounting," *Energy Policy*, vol. 23, No. 4/5 (1995), pp. 395-401. This way we used economics to assess whether an obligation is owed to future generations, and at what price to current generations. How much of a claim do the unborn future generations have on our current consumption of resources, and how much should the current generation pay to protect to protect the planet in more or less the same condition as it is now for future generations? Is discounting even an appropriate method to use for this question? We also brought back two other earlier topics now relevant to this discussion of what if anything is owed to future generations: expected utility of risks, and fat-tailed catastrophe risks.

Law and insurance came in with a review of U.S. climate litigation, the potential exposure to insurers for past and present conduct of their insureds in emitting greenhouse gases, and the difficulties of insuring future property exposures against expected higher sea levels and more dangerous storms. We discussed recent case law dealing with regulation of carbon dioxide and other greenhouse gases: *Massachusetts v. EPA*, 549 U.S. 497, 127 S.Ct. 1438, (2007); *State of North Carolina v. Tennessee Valley Authority*, 615 F.3d 291 (4th Cir., 2010). And cases on asserted liability for to global warming: *American Electric Power v. Connecticut*, 131 S.Ct. 2527 (2011); *Native Village of Kivalina v. ExxonMobil Corp.*, 663 F.Supp.2d 863, 877–80 (N.D.Cal.2009). And the centuries-old remedy of nuisance for harms to property. Other important recent cases on greenhouse gas emissions can also be mentioned: *Comer v. Murphy Oil*, 839 F.Supp.2d 849 (S.D. Miss. 2012); *Bell v. Cheswick Generating Station*, 2013 WL 4408637 (3d Cir. (Pa.) 2013). As to insurance coverage, we examined the coverage grant of the commercial general liability insurance policy, the implementation of the sudden and accidental pollution exclusion in the 1970s and the absolute (so-called) pollution exclusion in 1980s, to claims of pollution-caused damage, the "triggers of coverage" that have been used for toxic tort claims, and market-share liability. The Virginia Supreme Court's decision in *AES Corp. v. Steadfast Ins. Co.* (2012) is the frequently cited recent case about insurance for climate change, which decided that insurance does not cover emissions for carbon emissions-caused damage.

Reinsurers such as Gen Re, Munich Re and Swiss Re have excellent reports on the property exposures available on their websites. Some reports are public, some require password access. Allianz also has excellent reports on its website.

Our last two lecture classes dealt with international trade and burden-sharing, carbon leakage and joint implementation; and politics and rent-seeking. These examined economic reasoning of why it is difficult to reach agreements addressing the problem of climate change.

STUDENT PROJECTS

Students had two projects to complete. One was a long paper on any aspect of climate change, such as particular risks and remediation, economic analysis, risk theory, ethics or public policy. We provided suggested topics but allowed students to pursue any topic they wanted, subject to our approval. Students were to present these papers to the class. Our suggested topics were:

- Rising sea levels and coastal communities (U.S., Europe, developing countries – any would be suitable foci)
- Alternative fuel investments and tax policy
- Hydrofracking risks and opportunities
- Role of non-governmental organizations
- Water and/or agricultural risks
- Past pollution reduction through pollution credit trading and lessons for addressing climate change
- Tax neutrality or tax subsidies/expenditure for carbon fuels, alternative energy, and efficiency
- Capturing carbon and other externalities
- Behavioral obstacles to planning for the future
- Can or should government plan for the future with 4-year election cycles and 24-hour news cycles?
- Resource stewardship in a resource extraction world
- Ethical questions of human-caused species loss
- Can limited government adequately address unlimited catastrophic risk other than annihilation from war?
- Reconciling first world past development and third world present development with an all world future
- Comparison of corporation decision making for investment versus decision making for risk reduction
- Is equitable taxation across generations possible: burden, investment or wealth transfer?
- Comparing utility, happiness and preferences with fuel usage and energy efficiency.

The second project was to self-select into three groups to prepare, present and debate in class an assigned topic. Topic 1 was rather straightforward: to present and debate different countries' positions on global warming. Our charge:

> Explore the challenges, conflicts and whatever unity there is on the issue of global warming from the perspective of countries with different economic status. The United States should be one of the

countries. A second might be China or some other major developing economy. A third should be a smaller country, whether economically advanced such Uruguay or Chile or the Netherlands, or economically distressed such as Bangladesh or Vietnam. Address how their current needs and future risks will make them advocates or obstacles to mitigating climate change, what they might demand now and in the future, whether compensation should be paid or received, etc. You should probably each represent a different country and argue that country's interests.

The topic worked well, with the students differentiating "their" country's perspectives on the costs and benefits of climate change mitigation.

Topic 2 was on risk communication of global warming. Our charge:

> Why can't we get people to accept the problem and fix global warming? Address current communications and journalism on climate change, with focus on the U.S. populace but feel free to also address it in other countries, whether it is better, worse, or otherwise. There seem to be many news stories, blogs and website. What is working, what is failing, what more should be done, what should be done differently and why might that work? How should objectivity, persuasion, action, self-interest and community interest be addressed? Should we even try – after all, if people aren't smart enough to understand the problem and solve it, then maybe we should burn up and suffer, and the human race should end due to its foolish short-sightedness!! You do not need to address these specific questions, and you may have other better questions to address. You might act as "media consultants" or rhetoricians, or debate without particular role playing.

Our journalism major in particular took to this topic, explaining how the mass media too often focus on making human interest stories or reducing complex information to simplistic controversies. She suggested how the media could and should do better, while being skeptical that the mass media would actually do so.

Topic 3 synthesized the economics and ethics into a wild finance question study we called Investing in Planets. The question was, should the present generation sell the planet to alien investors as if Earth was only a mismanaged company worth more broken up than as a going concern? Our charge:

> Galaxy Investors is a planet investment manager and broker. Headquartered in a more central part of our galaxy, its business is to manage and to invest in planets. Sometimes that means better utilization of assets through higher efficiency balanced against social utility and preferences. The inhabitants, directly or through their government, may hire Galaxy Investors to manage the planet. Through more than two centuries (in Earth years) of experience, Galaxy Investors has gained massive experience and expertise in managing planets throughout the central Milky Way galaxy, working with diverse cultures and societal goals, doing so profitably for the planets and Galaxy itself.
>
> Sometimes Galaxy Investors buys planets for its own account with a goal to turn them around and then sell them either back to the inhabitants, or it may use other strategies that are likely to lead to overall better return on investment. It has found that many planets are mismanaged and fail to achieve even decent returns over short and long terms. Sometimes it is a matter of bringing inter-solar system best practices to the resources. Galaxy Investors does not have a military force and will not take over a planet by force, unlike the old 17th century colonizing companies like the Dutch East India Company (Earth), which did have its own navy to rule and conquer. This is not conquest, this is investment management. But, Galaxy will buy uninhabited planets where possible, or will engage a private army in accordance with inter-solar system treaties, to take control of unclaimed planets, moons and planetoids, removing and selling off natural resources.
>
> Galaxy Investors has been studying the thousands of planets in the Milky Way spiral where Earth is. It has identified a few hundred "M" class planets, which have atmospheres of significant

amounts of oxygen and water, plus commodities desired and traded among planets. ("M class" is investment jargon for Monetize planets with habitable environments for oxygen breathing species. Other types of habitable environments for other species have other letter codes.) Galaxy Investors has studied Earth and decided it has a lot of potential value, but not in its present form of disastrous management. It therefore makes an offer to buy the planet. The offer is to pay to every inhabitant of Earth (US)$10,000,000 or equivalent in local currency, and will use macro-economic practices standard in the galaxy but not yet known on Earth to do so without inflation. In exchange, in 100 years after payment, Galaxy will take possession and control of the planet.

Galaxy's typical strategy in these kinds of offers is to break up the planet and sell off its valuable parts. There is a market for oxygen on planets where, for various reasons, oxygen is in short supply; similarly for nitrogen, etc. There are also markets for the huge amount of water on Earth, which can be sold as is or treated to remove minerals, as particular buyers may want. Other minerals, elements and gasses can all be sold through the galaxy. Thus at 100 years from date of sale, Galaxy will hire contractors to extract all the atmosphere, separate it into the tradable commodities, dispose of undesirable elements such as manufacturing wastes, remove all the water, mine and extract what is valuable, then tow the hot inner core to a solar system where the sun is weak so it serves as an auxiliary power source. And so on.

Galaxy believes this is a fair offer. The 100-year delay is to allow all living beings to live full life spans. Galaxy is prepared to negotiate on the deal; one common concession is to relocate up to about 500,000 inhabitants to other M class planets where the emigrants are likely to be accepted, provided they can pay the immigration fee on those other planets.

Evaluate this offer through debate and negotiations. Having one person advocate to accept the offer would be desirable. Does this meet all current needs and preferences to immediately raise living standards for the world including the poor, make everyone better off, and recognize that humans want to consume now rather than later? Do future generations have any right to a future planet or even a life, and who would have authority to advocate for that? If we will pretty much destroy the planet on our own, shouldn't we try to get the most value we can out of now? Evaluate the ethics – for example, doesn't this increase total "utility" and the (philosophical) good for the world population, or what is the good really?

This question, to our surprise, generated the most philosophical discussion of trade-offs between ethics and economics of the entire class.

WOULD WE DO IT AGAIN THE SAME OR DIFFERENTLY?

Yes, we would do it again. Having adjusted the materials and the topics as we went along, we are inclined to think we got it mostly right. We would add some additional articles as required readings that we had made optional. We would keep the course largely as we describe here, while seeing the value of flexibility in the coverage given specific topics depending on students and available guest speakers. Other instructors with different expertise should adjust the course with available guest speakers, or substitute in some of the other topics that can be included. For example, an instructor or speaker with expertise in international relations or treaties, or expertise in alternative energy or energy efficiency, or resource management, are excellent additions to the subject. The mix of students should also be considered in setting the particulars of the course. Thus a class with students concentrated in risk, economics, or the natural sciences might lead to more time on risk modeling; a class with students concentrated in insurance might lead to more time on insurance implications; a class with political science majors or public policy majors would lead to emphasis those subjects. Or at least we would encourage such students to pursue individual research on these topics.

We would update the readings with the latest research, such as the IPCC Fifth Assessment that is currently in final review, and Nordhaus' new book mentioned earlier.

One topic we emphasized and which went surprisingly well was ethics. Questions about obligations to others, as climate change requires of the current generation to future generations, requires ethics in the curriculum. Environmental ethics is often a warm, fuzzy topic for college students, so ethics with rigor could have met with resistance. We were relieved that the topic was received with serious discussion. We would actually put this topic earlier in the syllabus, given the student engagement.

This is not a course to be taught too often. We anticipate doing it every second year. This is a challenging course that is multi-disciplinary, thus well-suited for a risk course, and suitable for high-achieving students willing to do a lot of reading in diverse topics. The few videos we used enhanced the subjects, without being substitutes for challenging work.

APPENDIX OF WEBSITES

There are many excellent websites that address climate change, by government, non-governmental agencies, environmental groups, universities, insurers, and news media. Some deal with climate change, some with insurance, some with particular aspects of energy efficiency. Some are video presentations. Here is the list we compiled and provided to our students. The list can be expanded.

Ice sheets and sea-level rise, from Australian government
http://www.antarctica.gov.au/about-antarctica/fact-files/climate-change/ice-sheets-and-sea-level-rise

Sea level rise paper with links
http://papers.risingsea.net/index.html

Sea levels: Rising Sea Levels A Threat to U.S. in New York Times
http://www.nytimes.com/2012/03/14/science/earth/study-rising-sea-levels-a-risk-to-coastal-states.html?src=me&ref=general

Sea level rise and San Francisco, on Living on Earth
http://www.livingonearth.org/shows/segments.htm?programID=10-P13-00037&segmentID=6

Climate Watch (rising sea levels, mega-droughts, and more) on California Report
http://www.kqed.org/news/science/climatewatch/

Sea level rise map
http://www.npr.org/templates/story/story.php?storyId=121197147

Sea Walls, the good and bad, from Mother Jones & Climate Desk
http://motherjones.com/environment/2010/04/climate-desk-sea-level-rise-epa-wall

Global warming threatens California parks, from San Francisco Chronicle (SFGate)
http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/10/27/MN4F1G291R.DTL

Bus Rapid Transit is energy efficient, in World Watch
http://www.worldwatch.org/node/4660

Bus Rapid Transit in Bogata, Columbia, in New York Times
http://www.nytimes.com/2009/07/10/world/americas/10degrees.html
http://www.gobrt.org/Transmilenio.html

Energy Secretary Steven Chu on efficiency, with YouTube video interview, from New York Times
http://green.blogs.nytimes.com/2010/10/15/dr-chu-talks-efficiency/

Carbon Productivity, from McKinsey Global Consultants:
http://www.mckinsey.com/mgi/reports/pdfs/Carbon_Productivity/MGI_carbon_productivity_full_report.pdf

investing in green technology, and low carbon prosperity, from World Economic Forum publications
http://www.weforum.org/en/media/publications/ClimateReports/index.htm

White roofs and reflective asphalt in city of 1 m reduce GHG by 57 gigatons, from Lawrence Berkeley Labs
http://newscenter.lbl.gov/news-releases/2010/07/19/cool-roofs-offset-carbon-dioxide-emissions/

Atlanta inventor Lonnie Johnson, "fuel cell" engine that converts heat into electricity without moving parts, in The Atlantic
http://www.theatlantic.com/magazine/archive/2010/11/shooting-for-the-sun/8268/

Baseball stadiums add solar power, from NRDC
http://www.onearth.org/article/solar-powered-world-series

Amory Lovins – Rocky Mountain Institute
http://rmi.org/rmi/

Amory Lovins' lecture: Profitable Solutions for Climate, Oil and Proliferation
http://www.rmi.org/Default.aspx?Id=2318&vid=2351&cat=

Amory Lovins on radio program Forum, Sept. 30, 2009
http://www.kqed.org/a/forum/R909301000

Natural Resources Defense Counsel economic analysis of proposed American Clean Energy and Security Act
http://www.nrdc.org/globalWarming/cap2.0/files/ebargain.pdf

Natural Resources Defense Counsel blog on climate change
http://switchboard.nrdc.org/cgi-bin/mt/mt-search.cgi?tag=climatechange&limit=20

Weird Weather in a Warming World, New York Times Sept 8, 2010
http://www.nytimes.com/2010/09/08/opinion/08revkin.html?_r=1

Yale University Project on Climate Change (leads to pdf)
http://environment.yale.edu/climate/

University of Maryland: Hidden Costs of Climate Change (news release)
http://www.newsdesk.umd.edu/sociss/release.cfm?ArticleID=1521

University of Maryland: Hidden Costs of Climate Change (report)
http://www.cier.umd.edu/climateadaptation/

Massachusetts Institute of Technology Center for Global Change
http://web.mit.edu/cgcs/www/

University of California Television: Climate Change and Environmental Governance
http://www.uctv.tv/search-details.aspx?showID=17606

University of California Television: How Will Our Cities Cope With Climate Change
http://www.uctv.tv/search-details.aspx?showID=19386

University California San Diego - Presentation on global warming
http://lsmarr.calit2.net/presentations?slideshow=2924955

Earth Institute at Columbia University
http://www.earth.columbia.edu/articles/view/2124

Climate change law blog, from Columbia University Law School
http://blogs.law.columbia.edu/climatechange/

University of Washington: "Preparing for Climate Change: A Guidebook for Local, Regional and State Governments"
http://www.cses.washington.edu/db/pdf/snoveretalgb574.pdf

Climate change moral equivalent of slavery, per J Hansen, in Guardian
http://www.guardian.co.uk/environment/2012/apr/06/nasa-scientist-climate-change

University of Washington: "A Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Corruption"
http://www.hettingern.people.cofc.edu/Environmental_Philosophy_Sp_09/Gardner_Perfect_Moral_Storm.pdf

Air pollution stunts lung development, in New York Times
http://www.nytimes.com/2007/01/30/health/30lung.html

Air pollution, freeways, ultra-fine particles and asthma, UCLA study
http://www.eurekalert.org/pub_releases/2010-07/uoc--upi070110.php

Air pollution, freeways, childhood asthma, at University Southern California
http://www.usc.edu/uscnews/stories/11614.html

Air pollution, freeways and lung impairment, in Los Angeles Times
http://articles.latimes.com/2007/jan/26/science/sci-lungs26

Air pollution, diesel exhaust, and lung harm, on KQED
http://www.kqed.org/quest/about/diesel-extra-wa/

Coal-fired power plants link pollution to deaths and disease
http://fpn.advisen.com/fpnHomepagep.shtml?resource_id=12788093630538644 5&userEmail=hweston@gsu.edu#top

Coal-Burning Shortens Lives in China, New Study Shows, from National Geographic
http://news.nationalgeographic.com/news/energy/2013/07/130708-coal-burning-shortens-lives-in-china/

Ship pollutants kill 60,000, from Bloomberg
http://www.bloomberg.com/news/2012-04-04/ship-smog-seen-as-next-target-to-clear-hong-kong-skies.html

UC-Berkeley economic model: Clean Energy and Climate Policies
http://are.berkeley.edu/~dwrh/CERES_Web/Docs/EAGLE%20Fact%20Sheet%20on%20ACES.pdf

Insurer - Marsh: "Looking Forward and Back on Climate Change"
http://www.mmc.com/knowledgecenter/viewpoint/Looking_Forward_and_Back_on_Climate_Change.php

Insurance Implication of Climate Change, from Edwards Wildman
http://www.eapdlaw.com/events/detail.aspx?firmEvent=416

Marsh (insurance brokerage and consulting): Climate Change, A New World of Risk (video)
http://solutions.marsh.com/climates/ClimateChangebriefing/index.htm

Climate - Major Tipping Points, by Allianz Insurance
http://knowledge.allianz.com/climate_tipping_points/climate_en.html

Climate Fundamentals, History and Projections, from Allianz Insurance
https://www.allianz.com/static-resources/en/about_allianz/sustainability/media/documents/v_1250777706000/allianz_climate_brochure.pdf

Geneva Reports: The Insurance Industry and Climate Change
https://www.allianz.com/static-resources/en/about_allianz/sustainability/media/documents/v_1250779866000/geneva_report2009.pdf

Climate Economics of Climate Change - Shaping Climate Resilient Development, by Swiss Rehttp://media.swissre.com/documents/rethinking_shaping_climate_resilent_development_en.pdf

Insurer - Swiss Re on climate change
http://www.swissre.com/rethinking/climate/

National Academy of Sciences: "America's Climate Choices" (video)
http://www.americasclimatechoices.org/study-video.shtml

National Oceanic and Atmospheric Administration on global warming
http://www.ncdc.noaa.gov/paleo/globalwarming/climate.html

National Oceanic and Atmospheric Agency on climate change
http://coastalmanagement.noaa.gov/climate.html

National Geographic on Climate Change
http://www.youtube.com/watch?v=oJAbATJCugs&feature=fvw

U.S. Global Change Research
http://www.globalchange.gov/

Natural Resources Defense Counsel on climate change (multiple links to articles & videos)
http://www.nrdc.org/globalwarming/

National Academy of Sciences reports on climate change
http://www.americasclimatechoices.org/panelscience.shtml

Pew Center on Global Climate Change (many reports, articles, links)
http://www.pewclimate.org/

Climate Change NYC 2010, Sept. 20 - 26, at the United Nations (videos)
http://www.climateweeknyc2010.org/news/videos

The Tragedy of the Commons (on Google Scholar)

http://books.google.com/books?id=kQt9Kg-chXAC&ots=seG5YwF8I5&dq=Two%20Lectures%20on%20the%20Checks%20to%20Population&lr&pg=PP1#v=onepage&q&f=false

Climate Change: Risk and Opportunities for Global Financial Services, by Oliver Wyman (Marsh)
http://www.mmc.com/knowledgecenter/ClimateChangeRisksOpportunitiesFinancialServices.pdf

Climate Change: A New World of Risk by Marsh
http://solutions.marsh.com/climates/ClimateChangebriefing/index.htm

Will Insurers Be Burned by the Climate Change Phenomenon?, by Aon
http://www.aon.com/about-aon/intellectual-capital/attachments/risk-services/will_insurers_be_burned_by_the_climate_change_phenomenon.pdf

New Challenges to Broadening Undergraduate Risk Management & Insurance Education in Japan: Effective Use of Seminar Classes on a Nationwide Scale

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ABSTRACT

The purpose of this paper is to introduce and explain the motivation behind the Risk and Insurance Seminar (RIS) and the design of its educational courses. Furthermore, we will describe contacts with people in industry through the RIS and the expected outcomes for participating students. Since the 1990s, the risk management and insurance (RMI) education system for undergraduates has faced a crisis in Japan. To find a way out of the crisis, dozens of universities have collectively embarked on a course of action. One of the most important actions is the RIS, which is a joint educational program to enhance students' abilities through seminar classes at the participating universities. The key issue is how a major/minor in RMI can have significant appeal for both students and businesses. The most important thing is for academics and members of industry in the RMI education field to know each other. The RIS can play an important role in facilitating their relationships.

KEY WORDS: risk management, insurance, education, program building, Japan

BACKGROUND TO RMI EDUCATION IN JAPAN

In recent years, teaching methods for undergraduates at Japanese universities have changed drastically. For example, the Japanese government promotes the introduction of small classes to enhance each student's ability to discuss and derive his/her own opinion. In this context, there have been attempts in the field of social science, which includes economics and management, to apply several educational methods such as problem-based learning (PBL). According to Hmelo-Silver (2004, p. 236), "In PBL, students work in small collaborative groups and learn what they need to know in order to solve a problem. The teacher acts as a facilitator to guide student learning." Here, it is important to note that PBL is conducted through small collaborative groups, and the role of the teacher is not to supply information but to facilitate discussion.

However, many lecture classes at Japanese universities are very large, so it is not practical to implement student-centered pedagogy such as the PBL approach. Instead, there are seminar classes at almost all Japanese universities in which mentors instruct students in writing their theses. Seminar classes began at Humboldt University of Berlin in 1812.[5] Few students participated, and the seminar classes were conducted in a combined classroom and library because one of the main activities was for the students to research and present papers. Although seminar classes at present-day Japanese

[5] The following explanation is indebted to Ushiogi (2008, pp. 22–26).

universities are not conducted in such rooms, research remains the main purpose. Moreover, in general, seminar classes are small at Japanese universities; therefore, it is possible to achieve a degree of student-centered teaching. For example, the average size of a risk management and insurance (RMI) class at one of the authors' universities is 250 students, while that of seminar classes is about 10 students. In this context, teaching methods for seminar classes are an important issue in enhancing students' abilities.

Although small classes stimulate discussion and provide good opportunities to develop students' abilities, there remains the question of how students can present their research and/or discuss it with outsiders such as students from other universities and people in industry. The problem is compounded by the fact that most Japanese universities offer only one seminar class specializing in the RMI field.

Given this background, we believe that one way to enhance students' abilities, which may include holding discussions in small classes and presentations to diverse audiences, is to create a Risk and Insurance Seminar (RIS) that invites participation from students from all Japanese universities.

The purpose of this paper is to introduce and explain the motivation behind the RIS and the design of its educational courses. Furthermore, we will describe contacts with people in industry through the RIS and the expected outcomes for participating students.

LITERATURE REVIEW

The importance of RMI education is not a new topic. For example, Harold D. Skipper, Jr., when he was president of the American Risk and Insurance Association (ARIA), gave an address titled "Risk Management and Insurance Education: Will We Miss the Boat?" (Skipper, 1994). He insisted that improving RMI education for fitting the demands of the public and students is our task. Gardner and Schmit (1995) surveyed changes in the number of RMI programs in the United States and Canada. Ferguson et al. (2000) indicated the current and future status of RMI education in the United States through a survey. Dorfman et al. (2006) also conducted a survey on RMI education programs. Wells (2013) identified four pillars that she argued are the key to success in RMI programs: RMI industry, university administration, RMI faculty, and students. Mikolaj and DePaolo (2006) and Acharyya and Brandy (2014) described a curriculum for enterprise risk management. Garvey and Buckley (2011) discussed the effectiveness of prediction market technology and how to introduce this technology to RMI education.

Although these studies have addressed the improvement of RMI curricula in North America, little attention has been given to the RMI education system in the rest of the world (Kwon, 2014).[6] Furthermore, most of the previous studies have not focused on a collaboration program between higher education institutions, even though they have discussed the RMI curricula within a particular university. This study offers information on how multiple universities can cooperate to conduct effective RMI education, based on a case study of a recent challenge in the insurance academic society.

CRISIS OF THE HIGHER EDUCATION SYSTEM FOR RMI

Japan is the country with the longest-established system of higher education in the Asia-Pacific region. In 1886, the first lecture on insurance, "Law of marine insurance," was offered by Tokyo

[6] Kwon (2014) provides a comprehensive analysis of RMI education from historical, present, and future perspectives around the world.

Commercial School (now Hitotsubashi University). Afterward, RMI-related subjects were developed within Japan's higher education system. However, the number of RMI-related subjects being offered has drastically decreased over the past few decades. This is a crisis in the higher education system.

In 1998 and 2006, the Japanese Society of Insurance Science (JSIS) conducted a questionnaire survey to investigate the situation of insurance education at Japanese universities in cooperation with the Non-Life Insurance Institute of Japan (NLIIJ) and Japan Institute of Life Insurance (JILI). JSIS et al. (2008) summarizes the survey results.[7]

Japanese universities, in fact, have no independent departments specializing in RMI. This is why JSIS et al. (2008) asked 541 universities to offer lectures on topics related to insurance (e.g., fundamentals of insurance, risk management, social security, social welfare, insurance law, or actuarial mathematics) for the questionnaire survey. As a result, their survey covered a total of 843 departments offering such lectures.

Panel (A) in Table 1 shows the number of subjects related to insurance offered at Japanese universities between 1998 and 2006. The table shows that the total number of subjects decreased drastically from 1,062 in 1998 to 656 in 2006. Because the nation's birth rate is in decline, most Japanese universities are decreasing the number of classes they offer. For this reason, competition to attract undergraduates to courses has recently increased. Because the RMI may seem, at first glance, to be an unpopular area for young undergraduates, the classes related to RMI are uncompetitive. At worst, they are discontinued following the retirement of a full-time professor of RMI. Note that while the number of RMI-related subjects has decreased, finance (financial economics) and insurance subjects have become more common. Panel (B) in Table 1 shows the number of departments offering subjects related to insurance at Japanese universities. We can see the number of subjects has drastically decreased in all departments other than commercial science. Panel (C) in Table 1 shows the number of faculty members in fields related to RMI. The number of faculty members shows the same trend as the number of subjects and departments. The number of full-time professors and part-time lecturers in RMI-related fields drastically decreased between 1998 and 2006. This means that academic posts for graduates in RMI-related fields are very difficult to obtain in Japan.

How can we reverse this difficult situation? We believe that the RIS provides an opportunity for ordinary students to gain an interest in RMI. Eventually, the RIS may have an impact by expanding the horizons of the RMI research field at Japanese universities.

[7] The JSIS is a nonprofit, professional organization whose objective is to advance the scholarly study of insurance and to foster cooperation and communication among its academic members, while providing an effective forum for the exchange of information with other insurance professionals in Japan and abroad. The details are on its website (http://www.js-is.org/eng/). The NLIIJ is a public interest incorporated foundation authorized by the prime minister. The purpose is to promote the theoretical study of non-life insurance, the harmonization of its theory and practice, and the continuing education of non-life insurance experts. The NLIIJ changed its name to the General Insurance Institute of Japan in 2014. The details are on its website (https://www.sonposoken.or.jp/home). The JILI is an independent organization established as a general information center on life insurance. It aims to understand consumer needs for life insurance and to provide accurate information from a neutral standpoint, thus promoting mutual understanding between consumers and the life insurance industry. The details are on its website (in Japanese) (http://www.jili.or.jp/).

Table 1: Shrinking the RMI education in Japanese University

Panel (A) The Number of Related Subject to the RMI

Subject	2006		1998		Increase-Decrease Rate
Fundamentals of Insurance	77	11.7%	163	15.3%	-53%
Life Insurance	21	3.2%	25	2.4%	-16%
Non-Life Insurance	23	3.5%	49	4.6%	-53%
Insurance Law	51	7.8%	138	13.0%	-63%
Social Security	123	18.8%	529	49.8%	-77%
Social Welfare	186	28.4%		0.0%	-
Social Security Law	29	4.4%	84	7.9%	-65%
Risk Management	37	5.6%	40	3.8%	-8%
Actuarial Mathematics	14	2.1%	17	1.6%	-18%
Theory of Cooperative Association	5	0.8%		0.0%	-
Finance and Insurance	73	11.1%		0.0%	-
Others	17	2.6%	17	1.6%	0%
	656	100.0%	1,062	100.0%	-38%

Panel (B) The Number of Department offering the RMI

Department	2006		1998		Increase-Decrease Rate
Commercial Science	114	17.4%	140	13.2%	-19%
Business Administration	33	5.0%	67	6.3%	-51%
Economics	130	19.8%	264	24.9%	-51%
Law	89	13.6%	220	20.7%	-60%
Sociology	61	9.3%	121	11.4%	-50%
Literature	31	4.7%	141	13.3%	-78%
Home Economics	36	5.5%	64	6.0%	-44%
Others	162	24.7%	45	4.2%	260%
	656	100.0%	1,062	100.0%	-38.2%

Panel (C) The Number of Faculty in the RMI related Fields

Number of Fuculty	2006	1998	Increase-Decrease Rate
Professor	310	511	-39%
Associate Professor	153	126	21%
Assistant Professor/Lecturer	84	51	65%
Part-Time Lecturer	87	319	-73%
Total	634	1,007	-37%

(Source) JSIS et.al (2008)

PURPOSE AND MOTIVATION OF THE RIS

The RIS has the following three main purposes. The first is to increase participating students' interest in the RMI field. The second is to enhance the quality and number of people who are active not only in industry but also in academia in the field. The third is to strengthen the ties between academics and those in industry in the field.

To achieve these purposes, the RIS provides opportunities to educate students interested in RMI by including students in activities, not only in their own university, but also in other participants' universities. The availability of activities across universities is dependent on a structural problem of higher education in Japan. Because of the low birth rate, it is impossible to avoid downsizing universities. Under these circumstances, in recent years, many courses—including insurance-related courses—have decreased in number; this trend also applies to the number of tenured professors in RMI. Given this situation, each RMI professor working in isolation at each university finds it difficult to provide sound teaching for students interested in such fields, as they lack the support of colleagues.

However, some professors also believe that it is important to continue teaching students in these fields because the insurance industry is one of the largest and most important in Japan, and they are thus motivated to build a system that can provide opportunities to teach RMI more effectively and energetically with the collaboration of various universities. Furthermore, these professors are convinced that the ability of participating students would be greatly enhanced if an effective educational system existed.

DESIGN OF THE RIS

The first Annual RIS Conference was held in October 2004, with six universities participating. The conference is now generally held every December, and the ninth conference (2012) attracted 28 presentations from 17 universities (see Table 1). The numbers of participating universities at each conference (2004–2012) are shown in Table 2. Although RIS stands for Risk and Insurance Seminar, it welcomes participants from a wide range of related fields such as corporate finance and social security. In seminar classes in these fields, the RIS mainly focuses on university students in their junior year.

April is the time for students to begin searching for appropriate topics for presentations and publication of research. Although an annual meeting is held in December, preliminary and midterm meetings are held in June and October to encourage a fruitful educational process.

Table2: The Numbers of Presentations and Participating Universities in 2012

No.	University/College	Faculty	Location	Number of Presentation	Designated Area	Major of the Seminar
1	Chuo Univ.	Commerce	Tokyo	2	Kanto (eastern Japan)	RMI
2	Hitotsubashi Univ.	Commerce	Tokyo	2	Kanto (eastern Japan)	RMI
3	Meiji Univ.	Commerce	Tokyo	2	Kanto (eastern Japan)	RMI
4	Musashi Univ.	Economics	Tokyo	2	Kanto (eastern Japan)	Finance
5	Nihon Univ.	Commerce	Tokyo	2	Kanto (eastern Japan)	RMI
6	Sophia Univ.	Economics	Tokyo	1	Kanto (eastern Japan)	Finance
7	Takushoku Univ.	Commerce	Tokyo	2	Kanto (eastern Japan)	RMI
8	Tokyo Keizai Univ.	Business Administration	Tokyo	2	Kanto (eastern Japan)	RMI
9	Univ. of Shizuoka	Management and Information	Shizuoka	1	Kanto (eastern Japan)	Accounting
10	Waseda Univ.	Commerce	Tokyo	2	Kanto (eastern Japan)	RMI
11	Kansai Univ.	Commerce	Osaka	1	Kansai (central Japan)	RMI
12	Kwansei Gakuin Univ.	Commerce	Hyogo	1	Kansai (central Japan)	RMI
13	Ritumeikan Univ.	Business Administration	Shiga	1	Kansai (central Japan)	Finance
14	Fukuoka Univ.	Commerce	Fukuoka	2	Kyushu–Chugoku (western Japan)	RMI
15	Kyushu Sangyo Univ.	Commerce	Fukuoka	2	Kyushu–Chugoku (western Japan)	RMI
16	Nagasaki Univ.	Economics	Nagasaki	2	Kyushu–Chugoku (western Japan)	RMI
17	Univ. of Nagasaki	Economics	Nagasaki	1	Kyushu–Chugoku (western Japan)	RMI

The objective of the preliminary meeting in June is to increase the incentives for student participation by reminding the students of the competition between participating universities. The midterm meeting has the following objectives. First, as with the preliminary meeting, it offers opportunities to present research to participating students. Second, it is a good opportunity to gauge the students' progress. Third, the participating students can receive focused, meaningful comments from students from other universities and people in industry. Because some time remains (1–2 months) before they present at the Annual RIS Conference in December, such comments provide a good basis on which to discuss and improve the quality of their research. Both preliminary and midterm meetings are held in separate areas—Kanto (eastern Japan), Kansai (central Japan), and Kyushu-Chugoku (western Japan)—because it is difficult, for geographic and economic reasons, to gather students from universities around the country. These two meetings serve not only to improve each presentation but also to foster exchanges between students from universities in relative proximity.

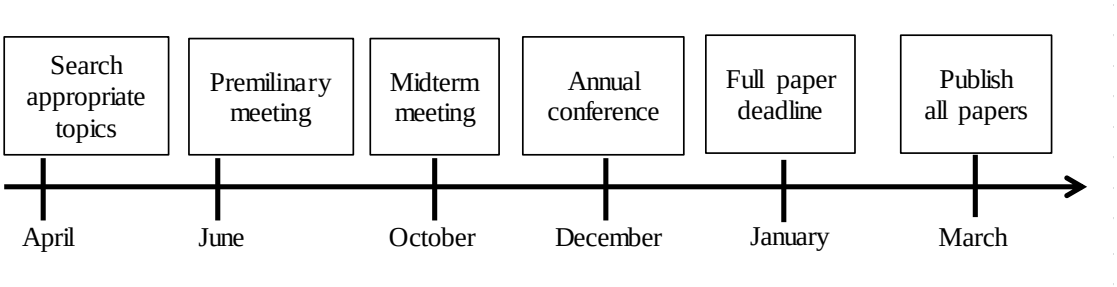
The Annual RIS Conference is held over two days (Saturday and Sunday) in December. Each presentation lasts 45 minutes (30 minutes for the presentation, 10 minutes for discussion, and 5 minutes for free Q&A). It is a characteristic of conference presentations that students from participating universities must discuss each presentation. In other words, universities not only present their research but also discuss other universities' presentations and ask questions. This opportunity to take part in discussions encourages students to consider other research fields in greater depth and learn how to discuss and/or derive better solutions. In addition, students participating in the conference can receive comments from people in industry during the free Q&A time. Furthermore, because all universities are represented at the annual conference, it is a good forum for students to exchange ideas in all research fields.

The final task for participating students is to write and submit a full paper in response to the comments they received, mainly from the annual conference. The submission deadline is generally at the

end of January. Although students who are part of a small research group may find it difficult to complete a full paper, the experience is very important for them to understand and summarize their opinions and arguments. Finally, all papers are published in March.

The timeline of the RIS educational process is shown in Figure 1.

Figure 1: Summary of the timeline about educational process in RIS



As mentioned above, the educational process of the RIS starts in April and ends the following March. In other words, participants are committed to the RIS all year round. This point is very important for the enhancement of students' abilities. Some similar annual conferences in Japan do not have a clear educational process like the RIS and merely hold meetings with the students and conduct presentations. It is likely that this is insufficient to improve the participating students' abilities because they lack the knowledge to conduct their research in an appropriate manner. Moreover, the students who present have no chance to respond to comments from the conference because there is only one opportunity to present. To solve this problem, the RIS has a very clear educational process and gives participants multiple opportunities to present.

Table 3 shows the categories of each RIS presentation. This table reveals the following four characteristics. First, approximately one-third of presentations focus on insurance. In addition, more than 20 presentations are categorized as risk management. This trend appears to reflect the fact that the main research theme in many RIS seminars is RMI. Second, the aged society, low birth rate, and social securities including pension are very interesting to the students. We suspect that the students are very aware of the current situation in Japan, where the rate of ageing is increasing, the birth rate is decreasing, and the cost of social securities is becoming enormous. Third, disaster is an important theme in RIS. This trend seems to correspond to the occasional occurrence of severe disasters in Japan, especially the Great East Japan Earthquake and subsequent problems with nuclear power plants. Fourth, some presentations cover other finance topics such as banks and derivatives. We find this trend mainly appearing since 2009. It seems that this phenomenon comes from participating in diverse research areas in the RIS, especially in recent years.

Table 3: Categories of Each Presentation

	1	2	3	4	5	6	7	8	9	Total
	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Insurance	N/A	4	4	8	7	8	9	8	11	59
Disaster (e.g. Earthquake)	N/A	2	3		1		5	2	3	16
Pension	N/A	6	4		1	3	1	4	1	20
Aged Society, Law Birth Rate and Security Systems	N/A		4	2	3	4	6	3	2	24
Risk Management	N/A	4	2	3		3	3	3	3	21
Environment	N/A	1	1		2			1	2	7
Corporate Governance (including CSR)	N/A	1		1	2				1	5
Other Finance Topics (e.g. Banks, Derivatives)	N/A		1	1		5	4	5	3	19
Others	N/A			1					2	3
Total	N/A	18	19	16	16	23	28	26	28	174

CONTACTS WITH INDUSTRY

One of the purposes of the RIS is to strengthen the ties between academics and industry in the insurance field in terms of education on insurance.

Traditionally, major Japanese firms, including insurance companies, have built strong in-house training programs to cultivate a "firm-specific generalist," that is, an employee with a wide array of knowledge of that particular company, the opposite of which is a specialist for a specific operation. As a result, specialized education has played only a minor role for undergraduates. In fact, most students have found jobs with no relation to their undergraduate major or minor.

Against this background, it does not matter in job-hunting activities whether an undergraduate student has an RMI major/minor. In other words, most Japanese insurance companies have no expectations for the outcomes of insurance education in undergraduate courses. Even though actuarial work requires highly professional skills, the in-house training systems of Japanese insurance companies have cultivated human resources suitable for the actuarial profession. There are no independent departments specializing in actuarial science at Japanese universities. Moreover, in Japan, there is no specialized qualification system related to the insurance business, such as Chartered Property Casualty Underwriter (CPCU) in the United States. Thus, a major/minor in RMI has no appeal for either students or businesses in terms of the acquisition of qualifications.

How can we generate change in the above situation? The most important method is for academics in the RMI education field and people in industry to understand each other. We believe that the RIS may play an important role in facilitating dialogue and relationships between them. Generally, at Japanese universities, the success of an undergraduate student with a major/minor in RMI is highly dependent on the seminar class that he/she attends. In the annual schedule of the RIS, students are involved in research on RMI. Interestingly, students often conduct interviews with business people (e.g., managers of insurance companies, insurance agents/brokers) to improve their research. In other words, students with a major/minor in RMI have many opportunities to communicate directly with business people in the process of their RMI research. At the final stage of the RIS, the students present their research in front of a large group (e.g., over 250 people from both academia and industry in 2012). Moreover, they write research papers after the final presentations, and then the collection of papers is published. Throughout the process (i.e., interviews, presentations, and publication), the business people become well acquainted with what and how the students study in their RMI major/minor. They also learn what outcomes to expect from insurance education. In this regard, we believe that the RIS is an extremely significant first step by academics and industry to build a common infrastructure for RMI education.

In addition, there are three important institutions that financially support the activity of the RIS: the NLIIJ, JILI, and National Federation of University Co-operative Associations (NFUCA). These institutions not only function as hubs to connect human networks between academics and industry, but also provide important financial aid for some activities (e.g., publication of student research papers).

EXPECTED OUTCOMES FOR PARTICIPATING STUDENTS

The expected student outcomes can be summarized in the following three points. First, the RIS increases incentives for the students to choose their seminar class (*de facto* selection of an undergraduate major) with a view to seeking employment in the industry. Second, it provides an opportunity for them to establish collaborative relationships with other participating students (at various universities nationwide), which may even continue after their graduation. Finally, it provides an opportunity for students who do not have an RMI major/minor to become interested in the RMI field.

As mentioned in the previous section, the RIS has the potential to provide opportunities for business people to confirm directly the quality of students through the whole RIS process. This is attractive to a number of motivated students. When companies do not consider the results of academic education, there are no incentives for students to be diligent in the study of their major/minor subjects. Instead, a more important point for students seeking a good job is the university/college they attend, not what/how well they study. However, if the RIS provides an opportunity for business people to become well acquainted with university students' academic records, the students may have a significant incentive to choose their seminar class (*de facto* selection of an undergraduate major), and then be diligent in studying. Moreover, as a consequence of collaboration throughout the schedule, students become aware of each other as "stablemates," even though they study at different universities in different areas. The strong ties they establish may continue even after graduation. Eventually, the RIS has the potential to expand the horizons of the RMI research field at Japanese universities.

CONCLUDING REMARKS

This paper introduced the educational structure of the Risk and Insurance Seminar (RIS) in which various Japanese universities participate. The main purposes of the RIS are to increase interest in the field of risk management and insurance (RMI) among participating students to enhance the quality and quantity of people who are active, not only in industry, but also in academic work in the field, and to strengthen the ties between academics and those in industry. Furthermore, through the educational program of the RIS, participating students seeking employment in the industry gain incentives to choose an appropriate seminar class. This provides an opportunity for them to establish collaborative relationships with other participating students that may continue after graduation and an opportunity for students who do not have an RMI major/minor to become interested in the RMI field.

Also, we argue that the education program introduced in this paper may be applied to other countries' insurance educators. For example, in the United States, some universities have RMI courses whereas others do not. Through joint educational programs such as RIS, the students in RMI courses can be affected by the students in non-RMI courses and vice versa. In Europe, joint educational programs can be run at many universities in various countries. Such international educational programs can contribute not only to enhancing the knowledge of RMI principles and theory but also to creating good opportunities to learn about the relationship between RMI practices and cultural differences.

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