Topic Assignments

Date	Topic	Guiding questions	Person
10/16 - Hazards: Volcanoes and Earthquakes	Hawaiian volcanic risk	What is the risk? How has the risk been managed? Is risk management successful here? Be sure to look at the homeowner's insurance issue on the Big Island.	Navneet
	Mt Rainier (Washington) volcanic risk	What is the risk? How has the risk been managed? Is risk management successful here? Be sure to address the lahar issue.	
	Long Valley Caldera (California) volcanic risk	What is the risk? How has the risk been managed? Is risk management successful here? Was the USGS correct to issue a volcanic warning in the 1980's? Should they issue another warning?	Tyler
	Indonesia volcanic risk	Indonesia has more dangerous volcanoes than anywhere else in the world. What is the risk? How has the risk been managed? Is risk management successful here? Should other countries be contributing more to managing the risk here?	Aman
	Japanese earthquake engineering v. California earthquake engineering	Japan has some of the strongest earthquake engineering requirements in the world. Did these standards help reduce damage in the earthquake? How do California standards compare?	
	California earthquake warning vs Japanese earthquake warning systems	There are now electronic earthquake warning systems in place in many countries including Japan, but not in California. How did the Japanese system perform during the 2011 earthquake? How would a California system work? How would it be financed?	Brennan
	Risks of prediction: Italian geologists	Several Italian geologists were recently convicted of a crime due to their failure to issue a warning of a large earthquake. What does their case tell us about the responsibility of prediction? You can also include issues of volcanic prediction or Iben Browning and his false prediction of an earthquake in Missouri.	
	Preparing for risk: Indian Ocean tsunamis	The 2004 tsunami illustrated the lack of preparation for tsunamis in the Indian Ocean. Has the situation improved? Compare preparation around the Indian Ocean with preparation around the Pacific Ocean.	Joyti

10/16 - Hazards: Volcanoes and Earthquakes	Earthquake hazard in developing countries	Haiti and Chile had similar-sized earthquakes in the same year. Haiti was devastated. Chile was not. What factors determine whether a developing country can successfully manage earthquake risk?	Brooke
	Earthquake history and hazard in Northern California	What does the history of earthquakes in Northern California tell us about future risk? Is Northern California prepared for a large earthquake? You can focus in to a particular part of Northern California (the Bay Area or the North Coast would be the best areas to look at)	
	Earthquake history and hazard in Southern California	What does the history of earthquakes in Southern California tell us about future risk? Is Southern California prepared for a large earthquake? You can focus in to a particular part of Southern California (the LA Basin or the Inland Empire would be the best areas to look at)	
	Earthquakes, social vulnerability & migration	Earthquakes and tsunamis often have the greatest impact on the poor, and marginalized ethnic groups. Choose one of these disasters and analyze which groups were most impacted by the earthquake and why, and how that affected the outcome of the disaster: 2004 Indonesian earthquake and tsunami, 2011 Japanese earthquake and tsunami, 2010 Haitian earthquake.	
10/30: Flooding and Coastal Issues	Flooding - balancing risk and benefit: Natomas	The Natomas area of Sacramento is one the most at-risk urban areas in the nation for flooding. How did we get here? What is currently being done about the risk? Is the benefit worth the risk?	Bobby
	Flooding - balancing risk and benefit: Mississippi Basin	Areas of the Mississippi basin flood every year. Pick a region and analyze the flood risk there. What is being done to manage that risk? Is it working?	
	Flooding - balancing risk and benefit: Asian countries	In recent years, major floods have inundated Pakistan, India, China and Thailand. In each of these countries a specific set of physical and social conditions contribute to the flood risk. Choose a country and analyze the flood risk there. What is being done to manage that risk? Is it working?	Bhavika
	Flooding – social vulnerability and economic impact: Asia	Recent floods in Asia have had severe impacts on poor and marginalized groups. Asia is also a global center of manufacturing, and these floods have revealed risks in concentrating specific industries in specific countries. Choose a specific Asian region to analyze. How have floods in that region impacted the population and economy of the region?	Max

10/30: Flooding and Coastal Issues	Flooding – social vulnerability and migration: California	Who is most at risk of flooding in California? You may want to look at a specific region – Sacramento, Bay Area, LA basin – or look at a specific historic flood disaster in California: Baldwin Hills dam disaster, Central Valley flooding of 1986, 1995 or 1997	Elizabeth
	Coastlines – projecting little known risks: California coastal cliffs	California's cliff erosion is accelerating as sea level changes and the oceans warm. How great is the problem of coastal cliff erosion in California? What are the causes? Are there any potential solutions?	Jean
	Coastlines – projecting little known risks: Alaska and climate change	Alaska's coast has been hard hit by climate change. What changes are occurring? What are the economic and social costs? What plans exist to manage the risk?	Diane
	Coastlines – projecting little known risks: Gulf Coast wetlands	Human activities have already led to the destruction of huge areas of wetlands around the Gulf of Mexico. Rising sea levels will accelerate this process. Why are wetlands important? Are there potential solutions to this problem?	Jazmine
	Coastlines – projecting little known risks: New York	As Superstorm Sandy showed, rising sea levels threaten NYC. What are potential solutions? How much will it cost, and who will pay?	Jacqueline
	Coastlines – projecting little known risks: New Orleans	New Orleans suffered billions of dollars of damage from Hurricane Katrina, a category III storm. Can New Orleans be protected against a larger hurricane? Have the changes made since Katrina raised protection levels for New Orleans? What else could be done, and what will it cost?	
	Social vulnerability due to hurricanes: Katrina	Who suffered most in Katrina? Was the risk evenly spread across social class and age? Has the recovery been successful for everyone, or are some groups lagging behind? Have there been changes in New Orleans to mitigate the risk?	Chris M.
	Migration due to hurricanes: Katrina	From 2005 to 2008, New Orleans lost 100,000 residents. How did the post-Katrina migration affect the social fabric of the city and the lives of those who left? Who left? Where did they go? What was the impact on surrounding areas? How has New Orleans changed as a consequence of the migration?	Gaomee
	Social vulnerability and migration due to rising sea level: island nations	Many island nations will be completely inundated by rising sea level. Who is most impacted? Where will these people go? What arrangements have already been made? What happens to a nation when it is absorbed into another country due to environmental migration?	Matt Y

10/30	Social vulnerability and migration due to rising sea level: low-lying nations	Several Asian countries have extensive areas of land at very low elevation. What will happen to the people who live there as sea level rises? Who is most at risk? What plans have already been made? How will this migration affect neighboring countries?	Ryoturo
11/20: Water issues	Resource sustainability: Climate change and California water	What effect will changing climate have on both water supplies and potential flooding in California. What has the state already done to deal with the problem?	Chris T
	Resource sustainability: Groundwater supply and regulation	Most Californians drink groundwater. How stable is this water resource? How is groundwater regulated in California?	Christina
	Resource sustainability: Colorado River	How is the water from the Colorado River used? What are the challenges of using this water resource into the future?	Tong
	Resource sustainability: Las Vegas water	Las Vegas is a rapidly growing city in the desert that has set a goal of water sustainability. How is the city working toward that goal? Will they be able to achieve the goal?	Imaez
	Resource sustainability: Agricultural practices	The great majority of water use in California is for agriculture. Is California already using sustainable agricultural practices? Are California crops compatible with our low rainfall? Are there more efficient techniques that could be used?	Dmitry
	Resource sustainability: Desalination	In the Middle East, desalination is widely used to produce drinking water from seawater. Is this technology a good choice to provide drinking water for California?	Blake
	Social vulnerability and migration: Water marketing	Recently, private water markets have opened in California, with individuals and companies purchasing Northern California water for sale in the southern part of the state. Does water marketing lead to the equitable distribution of water? Is it likely to promote migration as water resources are shifted between regions?	Zhong
	Social vulnerability and migration: Africa	Climate scientists project dangerous levels of water insufficiency in Africa as the climate warms. Who is most likely to be impacted? How will migration from water-poor areas of Africa affect other regions?	

11/20	Social vulnerability and migration: High Plains aquifer	The US wheat supply is largely grown with water pumped from a major aquifer below the High Plains. That aquifer is being depleted at an alarming rate. What solutions have been suggested? As climate belts shift and water sources disappear, how will the population of the High Plains be affected?	
12/11: Energy resources	Balancing current benefit and future costs: Regulating fracking	Implementation of fracking technology has outstripped regulation, especially in California. What regulation currently exists? What barriers are there to regulation?	Ismael
	Balancing current benefit and future costs: Nuclear power after the Fukushima disaster	The nuclear disaster in Japan in 2011 disrupted the nuclear power industry across the globe. Where is nuclear power likely to expand, and where has it been substantially curtailed? Are there safe ways to expand nuclear power?	Michael
	Balancing current benefit and future costs: Canadian Oil Sands	Canada has become the world's second largest producer of petroleum in the last decade. What have been the benefits and costs to Canada of the development of the oil sands?	Sumera
	Balancing current benefit and future costs: Environmental and health costs of coal	What are the economic, health, and environmental costs of coal? Is the US likely to continue to rely on coal for electricity production?	Alyssa
	Balancing current benefit and future costs: offshore oil	What are the challenges and risks of offshore oil production? How does the US regulate this industry? Should offshore oil production be expanded?	Katie
	Subsidy v market forces: solar energy and government subsidies	Subsidies for solar power have become politicized over the past few years. Can solar power in the US survive without government subsidies? Are those subsides justified? How have Chinese subsidies impacted the global market for solar power?	Elena
	Subsidy v market forces: Wind power in the US and Europe	Wind power in the US is supported by tax credits, which have enabled expansion of the technology. Should the US continue to subsidize wind power? Are subsidies interfering with the transition of wind power to a market-driven industry? Does Europe approach the development of wind power differently?	Matt B
	Subsidy v market forces: Creating a market for ocean power	Technologies for extracting energy from the ocean - from tides and waves - are advancing faster in Europe than in the US. What will it take to create a viable market for ocean-generated electricity? Can this technology be used to generate a significant portion of our electrical demand?	Cameron
	Subsidy v market forces: ethanol subsidies	About 40% of American corn is used to produce ethanol, supported by federal subsidies. Is this a good idea? What impacts do these subsidies have on energy markets and on food supply?	