

Alexander Gershunov – *Ph.D., Associate Research Scientist, Scripps Institution of Oceanography*

- Daytime and nighttime heat wave trends and projections
 - Dry daytime heat waves: most concentrated in the 1950s-1960s; Nighttime heat waves: most concentrated 2000's → nighttime heat waves pose a greater threat to public health
 - 2006: 147 deaths in California due to hypothermia; the poor are the most impacted by these extremes
 - Future Heat Wave Projections: Nighttime humid events will be much stronger than daytime humidity events
 - 2006 night time event temperature stronger than all prior heat events in both the morning and afternoon.
- Coastal heat waves
 - Projected to become hotter relative to future average summertime temperatures, even though the climate is less variable
- Public health implications
 - Comparison of temperature and number of emergency department visit data → temperature and the number of ER visits peak at the same time

Rupa Basu – *Ph.D., MPH, Research Scientist/Epidemiologist, Office of Environmental Health Hazard Assessment (OEHA), Air Pollution Epidemiology Section*

- Focus of Dr. Basu's research:
 - Effects of temperature on human health
 - Past heat wave studies underestimate its effects on human health
- Background: What is the effect of heat on the human body?
 - Higher sweating threshold (people do not feel the heat even though they are at risk)
 - Elevated cholesterol ; stress on heart and blood circulation shift
 - Decreased uterine blood flow → increased oxytocin → pre-term delivery
- Questions and Objectives
 - How does temperature affect mortality in CA?
 - Are temperature effects independent of air pollution effects?
 - How do temperatures affect the number of hospital and ER visits?
 - Relating the number of hospital visits, temperature trends, and socioeconomic status
- Research Results
 - Temperature has a significant impact on mortality independent of air pollutant effects
 - Temperature effects on health are predominantly cardiovascular
 - Greater mortality for African Americans and Asians
 - Children had the greatest risk for cardiovascular mortality, compared to current focus on the impacts of heat on the elderly
- Other conclusions:
 - July 2006 heat wave: effects on death per degree are 4x greater than non-heat wave study
 - Risk for pre-term birth: greatest effects for the younger mothers, African Americans and Asians
- Areas for follow up: temperature and adverse birth outcomes, and heat waves +health effects

Brian Moy – MPH, Doctoral Student, Environmental Health Sciences, UCLA Fielding School of Public Health, UCLA General Education Teaching Fellow

- Adaptation must be applied at the local level, national level, and international level
- Lack of literature motivating innovation for coping with natural change (i.e.: natural disaster response)
- Strategies: Adaptive management, dealing with management choices, system dynamics, stakeholder involvement, and system responses
 - these should be integrated into policy-making
- Adaptation Framework: assessment → planning → implementation → monitoring → evaluation → adjustment
 - Planning: there are many problems for access
 - Useful tools include: Decision Support Tool and Integrated Assessment Tool (Tyndall Center) for projecting effects of certain plans on the community
 - Implementation example: early warning systems for heat waves
 - Monitoring systems include: syndromic surveillance ; remote sensing

Paula Daniels – Senior Advisor on Food Policy, Office of Mayor Antonio Villaraigosa

- Los Angeles field crops
 - A lot of acreage in CA goes to field crops
 - 80% of the water in CA goes into producing these field crops (goes into livestock production, which have the least production value)
 - GHG emissions from livestock are #1, with automobile production #2; the type of food production we support is critical!
- Farm ownership
 - Majority of farm ownership= small farmers, but most of farm production= large farmers
 - Loss of agricultural land → consolidation of farmlands to increase production → increase in GHG emissions
 - Food system driven by subsidies and economics → cheapest food is the food that takes the most water to produce (i.e.: a burger versus fresh vegetables)
- Work of the Los Angeles Food Policy Council (LAFPC)
 - Representatives from different sectors who are connected to food, working to create strategies for a healthier food system
 - Developments include: recommendations for urban aquaculture, good food procurement policies (influence major institutions to shift their purchasing practices to local suppliers), small store conversions to offer healthier food, food hub (creating delivery and aggregation infrastructure for Good Food availability)
- Conclusion: Procurement policies are critical for shifting our food system, which is integral to making an impact for our climate change problems

Cristina Tirado – DVM, Ph.D., MPH, Director, Center for Public Health & Climate Change, Public Health Institute

- Primary impact on health due to climate change is under-nutrition for children in impoverished countries
- Impact of climate change on world systems
 - By 2050, climate change is predicted to collapse agricultural capacity, increasing the dependence of countries (especially developing countries) on food imports
 - Fisheries: countries that produce 20% of the world's fish exports (which are also some of the world's poorest countries) are vulnerable to climate change's impact on fisheries
 - Coastal Flooding
 - Infectious diseases (food and water contamination):
 - Diarrheal diseases increase 8% for each 1°C temperature increase
 - Increase in marine toxins due to ocean warming and acidification → shellfish poisoning, present in many Mediterranean climate areas throughout Europe; micro-toxin increase
- Biofuel production: actually caused environmental degradation, water use, and nutrition insecurity in poor countries
- Dietary changes
 - Response to UNEP conference → for instance, Sweden pushed dietary recommendation to eat locally grown, seasonal, and pesticide free foods
- International poll results: people wanted food systems that are sustainable and promote health
 - Rio +20 Conference results for health
 - Health indicators for sustainable agriculture, food, and nutrition security: health outcomes, food access and dietary quality, food market/trade policies that support health and sustainability

Questions and Discussion

- Adopting adaptation and mitigation strategies can simultaneously lead to negative environmental impacts (i.e.: use of air conditioning decreases public health risk, but increases energy use)
- Question: Are regulations in the food area something that would help with obesity and food choices?
 - Answer: Taxes are used as a regulatory method for unhealthy junk food in the EU. There should be both incentives and disincentives such as taxes for changing behavior. There are times when education cannot get you far enough. Future concerns include: what should the tax revenue go toward?
- Demand drives change: As demand for organic foods increases, organic production increases
 - Want the same trend for sustainable food systems (in addition to organic)
- Good resource: NRDC stewardship index for specialty crops