How can UCSF become a world leader on sustainability?

Linda Rudolph, MD, MPH
“Climate change threatens our fragile existence on this planet.”
Jim Kim, World Bank

“Climate change is affecting agriculture, water resources, human health, and ecosystems on land and in the oceans. It poses sweeping risks for economic stability and the security of nations. We can avert these risks if we take bold, decisive action now.”
Ban Ki-Moon

“Climate change is the biggest global health threat of the 21st century.”
The Lancet
Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future

6” by 2030, 12” by 2050, 36” by 2100
Higher Temperatures Worsen Air Pollution

Ozone versus Temperature

Riverside, 2003-2005

Fresno, 2003-2005
# Health-Care Costs of Climate Events

Knowlton, *Health Affairs*, 2011

<table>
<thead>
<tr>
<th>Climate-related health stressor</th>
<th>Premature Deaths</th>
<th>Hospitalizations</th>
<th>Total Health-care Costs $$ (thousands)</th>
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<tbody>
<tr>
<td>Ozone pollution</td>
<td>795</td>
<td>4,150</td>
<td>6,534,642</td>
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<tr>
<td>Heat wave</td>
<td>655</td>
<td>1,620</td>
<td>5,353,425</td>
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<td>Hurricane</td>
<td>144</td>
<td>2,197</td>
<td>1,392,833</td>
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<tr>
<td>Infectious disease</td>
<td>24</td>
<td>204</td>
<td>207,447</td>
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<tr>
<td>River flooding</td>
<td>2</td>
<td>43</td>
<td>20,357</td>
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<tr>
<td>Wildfires</td>
<td>69</td>
<td>778</td>
<td>578,640</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1,699</strong></td>
<td><strong>8,992</strong></td>
<td><strong>$14,087,344</strong></td>
</tr>
</tbody>
</table>

**Climate change could cost more than $100 billion a year**

*By By Ivana Kottasova, CNN*  
March 31, 2014 -- Updated 1303 GMT (2103 HKT)*
The Climate Gap
Climate Change and Health

- Climate change has direct impacts on health & well-being
- Climate change is a threat multiplier
  - Climate change exacerbates existing health challenges
- Climate change disproportionately impacts vulnerable populations and disadvantaged communities
- Climate change affects the systems on which human life depends – air, water, food, shelter, security.
- Co-benefits offer many opportunities to simultaneously improve health and address climate change
Climate Change & Health

• Causes of climate change and causes of poor population health are the same
  • Systems: agriculture, transportation, energy, economic, etc.

• Social determinants of health (living conditions) and health status are key to climate change vulnerability & resilience

• Many climate actions have huge health co-benefits
  • Active transportation, reduced meat consumption, clean energy production, urban greening
What is happening now?

- Greenhouse gas emissions increasing
- Current actions not consistent with temperature increase less than 2°C
- Require substantial cuts in emissions by mid-century through large-scale changes in energy systems and possibly land use
- Delay makes transition substantially more difficult and costly, and narrows options

http://www.ipcc.ch
Secret funding helped build vast network of climate denial thinktanks

Anonymous billionaires donated $120m to more than 100 anti-climate groups working to discredit climate change science

The Guardian
Health Sector has a Key Role

• Public places high value on health (& clean air & water, toxin-free, parks & green space)
• Health professionals are credible and trusted
• Health professionals touch everyone
• Our language – prevention, protection, health - resonates
• Health frame engenders interest in climate action
• Climate actions & health actions aligned
• Co-benefits provide hope and immediacy and better health
• Failure to act now will mean we have far less to offer later
So why aren’t we doing more?

- No funding, no resources
- No mandate, not our job, silos
  - How does this relate to what we do now?
- Competing priorities
  - Tyranny of the urgent
- Lack workforce capacity
  - Knowledge, expertise
  - What exactly can we do?
- Lack of leadership and political will
UCSF Mission

“to advance health worldwide”
UCSF Strengths

• Research
  • basic, clinical, social and behavioral, and population sciences

• Teaching
  • “tomorrow’s leaders in the life sciences, health care and health policy”

• Patient Care
  • “rapid translation of research to improvements in patient and community health”

• Public Service
  • “With an overarching mission of “advancing health worldwide,” UCSF is devoted at every level to serving the public.”
Global climate change is now recognised as an important concern for health and health policy. The Centre on Global Change and Health is one of the leading research groups on climate change and health in the world. Centre staffs have published extensively in the field, and the Centre is actively engaged in research, education, and policy development. Climate change strikes at the pillars of human health.
Culture change

• The “hidden” curriculum
  • Values & perspective imbued in education & training
  • What is valued and rewarded for students, faculty, staff?

• Example: “Caring Wisely” honors leaders in promoting health care value

• Can we honor people who promote health, equity, and sustainability in practice, teaching, service?
Clinical Services

• Screen for climate vulnerability
• Refer for climate relevant services
• Counsel on health/climate co-benefits
  • e.g. meat consumption, active transportation, trees
• Integrate relevant climate info into patient materials
  • e.g. asthma-heat-ozone, increased pollen
Heat Vulnerability

The information in the chart below corresponds to the selected area on the map (outlined in orange).

- Historical Average: 63.1 °F
- Low-Emissions Scenario: 66.7 °F +3.6 °F
- High-Emissions Scenario: 69.5 °F +6.4 °F

Observed and Projected Temperatures

Heat & Climate in the Clinic

- Screen for heat illness vulnerability
  - Individual: age, obesity, DM, CVD, etc.
  - Neighborhood urban heat island risk
    - Too much pavement, not enough green

- Refer for climate-related services
  - Energy Savins Assistance Program no-cost weatherization for low income households
  - CA LIHEAP financial assistance for utilities
  - Legal referrals for housing quality issues or utility shut-off

- Inform/educate re: personal heat illness prevention
  - “beat the heat” – “keep cool” factsheets
  - location of cooling center? transport to cooling center?

- Support action for urban heat island mitigation
  - Cool roofs, cool pavements, green roofs, urban greening, energy efficiency
California's Drought Ripples Through Businesses, Then To Schools

Think about:
• Agricultural unemployment?
• Food insecurity?
• Housing instability?
• Medication access?
Teaching

• Students
  • Integrate climate change into all curricula
    • Medicine, Nursing, Pharmacy, Dentistry, xx,yy,zz

• Clinicians
  • Integrate climate change into clinical training
    • Grand Rounds
    • Conferences and continuing education opportunities
    • Informal training

• Patients
  • Integrate climate change in patient information
Teaching

- Public
- Community leaders
- Decision-makers
- Electeds
Community Service

- Work with CBOs/NGOs
- Inform/educate public
- Inform/educate policy makers
- Policy advocacy
• Coalition of students, faculty, staff, alumni
  - Support from California Student Sustainability Coalition & 350.org

• Raise awareness of the dangers of fossil fuel

• Pressure the UC Regents to vote for a full divestment of the General Endowment Pool (~$7 billion)

• Aid the administration in developing a socially responsible reinvestment adjusted for climate risk

• UC – upholding its mission - will no longer support the fossil fuel industry’s continuing mass environmental degradation and widespread societal harm, for the sake of its students, community, and world at large
The Petroleum Industry's Future Ambitions Made Clear

Bar chart showing billions invested in the last decade:
- Renewable energy: $0
- Developing tar sands technology: $300 billion

The Carbon Problem

Bar chart showing CO2 potential:
- Maximum amount of additional CO2 emissions to avoid the most severe consequences of Climate Change: 1000 gigatons CO2
- CO2 Potential in Fossil Fuel Reserves: 3000 gigatons CO2
"UC Berkeley and most institutions are financially invested in destroying our future. As a faculty member who understands deeply the challenge climate change poses and the urgency with which action must be taken, I call on my fellow faculty to stand with the students of Fossil Free Cal and Fossil Free UC in calling on Chancellor Dirks, President Napolitano and the president of the Berkeley Foundation to be on the right side of history by moving our endowments away from fossil fuels and reinvesting in a sustainable future."

Dr. Daniel Kammen, Distinguished Professor of Energy at the University of California, Berkeley & member of the Inter-Governmental Panel on Climate Change. December 3, 2014, the *Daily Californian*
Resolution to Support Divestment from Fossil Fuel Companies
Academic Senate Committee on Sustainability

Therefore, let it be resolved that the San Francisco Division of the University of California Academic Senate calls upon the Regents of the University of California, in its commitment to leadership in sustainability, to take the following actions regarding the General Endowment Pool:

1. Instruct asset managers to stop any new investment in fossil fuel companies; and

2. Take appropriate steps to ensure that, within 5 years, none of its directly held or commingled assets include holdings in fossil fuel public equities and corporate bonds as found on the Carbon Tracker list; and

3. Release quarterly updates, both detailing progress made towards full divestment and providing information on the holdings of the endowment pool and of index funds within the General Endowment Pool.
A new vision for planetary health

This manifesto for transforming public health calls for a social movement to support collective public health action at all levels of society. Our aim is to respond to the threats we face: threats to human health and wellbeing, threats to the sustainability of our civilisation, and threats to the natural and human-made systems that support us.

Our vision is for a planet that nourishes and sustains the diversity of life with which we co-exist and on which we depend. Our goal is to
Climate Change and Health

- We can take many actions to promote health, reduce health inequities, and address climate change
- The health voice & health message are key
- We need leadership, courage, & political will
- It is our professional and moral responsibility to act now
UCSF can become a world leader on sustainability!

Linda Rudolph, MD, MPH
Center for Climate Change and Health
Public Health Institute

linda.rudolph@phi.org
Climate Change and Health: A Framework for Action

Health Processes and Strategies

- Living Conditions
- Health Education
- Risk Reduction
- Health Risks and Exposures
- Medical Care / Case Management
- Public Health Preparedness
- Health & Inequities Impacts

Health Behaviors

- Individual and Community Climate Change Vulnerability or Resilience

Health Co-Benefits or Adverse Health Consequences

- Disability and Death
- Health and Social Costs

Climate Processes and Strategies

- Mitigation
- Climate Education
- Climate Behaviors
- Geo-engineering
- Adaptation
- Climate Preparedness
- Disaster Recovery

- Greenhouse Gas Emissions
- Other Environmental Impacts
- Global Climate Impacts
- Local Climate Impacts
- Intermediate Factors
- Climate Change Health & Inequities Impacts

Intervention strategies

Developed by the Public Health Institute's Center for Climate Change & Health © Public Health Institute 2014

L. Rudolph May 2014