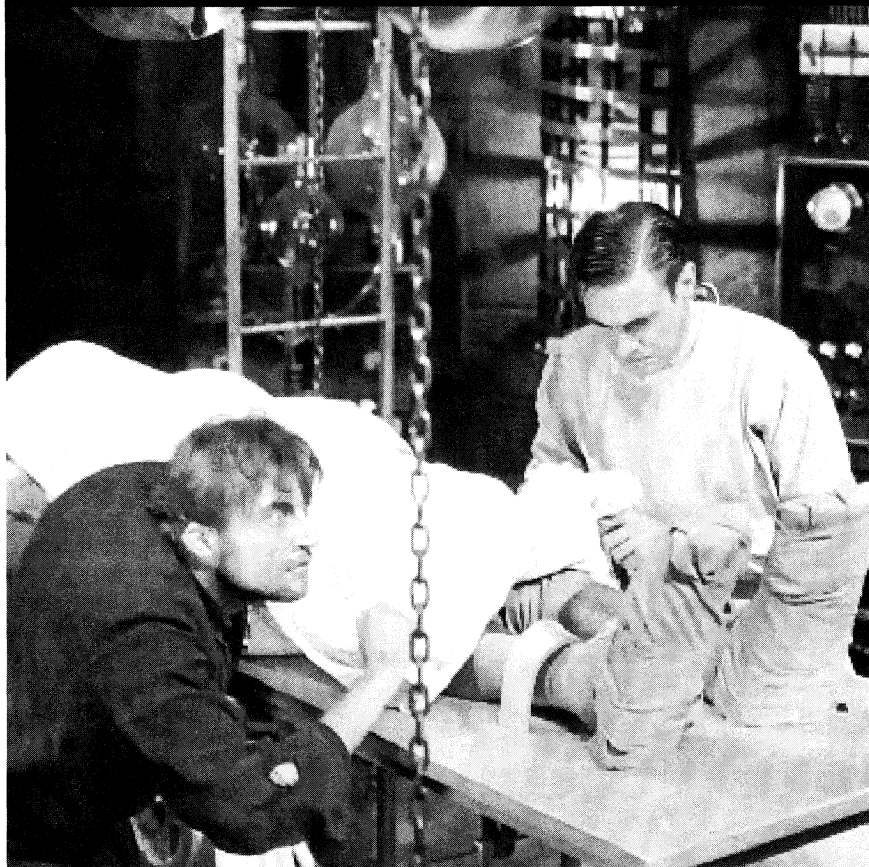


# GOOD HELP IS HARD TO FIND.



## UNTIL NOW.

Trust CBI for complete R&D project support - everything from "concept to clinic." At CBI, we have the most current technology base, continually updated to meet your project's changing needs, and fully supported by an assigned senior scientist and an outstanding technical staff. For a free consultation or quote, call 1-800-735-9224 or email [info@cbi-biotech.com](mailto:info@cbi-biotech.com).

**COMMONWEALTH  
BIOTECHNOLOGIES, INC.**

*From Concept to Clinic*

601 BIOTECH DRIVE RICHMOND, VA 23235  
[www.cbi-biotech.com](http://www.cbi-biotech.com)

DNA Sequencing · DNA/RNA/PNA Synthesis · Peptide Synthesis · Bio-organic Synthesis · Protein Sequencing (N- & C- Terminal) · Amino Acid Analysis · Monoclonal & Polyclonal Antibodies · Immunochemistry · Genome Services · Plasmid Preparation · Gene Synthesis · Cell Culture · Cloning & Overexpression · Human and Veterinary Genetic Analysis · Mass Spectrometry · Calorimetry

Circle No. 4 on Readers' Service Card

### SCIENCE'S COMPASS

sion that echoes a view long held by economists. And this decision also does not prejudice future action.

I am a regular reader of climate-related articles in *Science*, and it seems they tell us that while progress is being made, much more research remains to be done in the daunting task of understanding the climate system. *Science* should take a leading role in communicating this progress. It should not pollute this role by jumping into the political arena.

JAMES D. JOHNSTON

American Enterprise Institute, 1150 17th Street, NW, Washington, DC 20036, USA. E-mail: [jjohnston@aei.org](mailto:jjohnston@aei.org)

#### References

1. S. H. Schneider, *Science* **243**, 778 (1989).

## Or, Global Warming: A \$25-Billion Challenge?

WHETHER OR NOT GLOBAL WARMING IS AN identifiable phenomenon attributable to specific causes, including CO<sub>2</sub> generated largely from burning fossil fuels, is a question that has now exercised the judgment of innumerable experts in both the United States and Europe. Nevertheless, these studies have such profound policy implications that President Bush has recently appeared to modify his earlier unequivocal opposition to the Kyoto Protocol, and U.K. Ministers have come under pressure from their media and the "Green Movement" to persuade him to move even further in support of its provisions.

Because of entrenched prejudice against nuclear power, politicians are generally unwilling to accept the conclusions of virtually unanimous analyses indicating that it is the only available long-term substitute for fossil fuels. They avoid their obligations to humanity by supporting what are known to be grotesquely inadequate, unreliable, or uneconomic "renewable" sources, such as wind power in the United Kingdom. In the United States, because its dependence on fossil fuels is immense and the economic impact of foreseeable adjustments so large, the administration has sought justification for a "do nothing now" policy in the skepticism generated by a number of studies that question the existence of global warming or the ability of scientists to identify causes beyond reasonable doubt.

Both the House of Commons committee, which reported on this issue in 1990 (1), and the Royal Society and the Royal Academy of Engineering, which issued two reports in 1999 and 2000 (2), were convinced that the phenomenon was real, the causes identifiable, and the consequences of inaction likely to be at best serious and at worst catastrophic. Both suggested that

\$25 billion (1% of the world's annual energy budget) should be spent on research and development to remove any lingering doubts.

This may seem an expensive insurance premium, but no price can realistically be set on the importance of confronting what is likely to be the major challenge of the 21st century. The recent experience of California suggests what consequence to an energy-dependent world could result from our collective failure to meet this challenge.

SIR IAN LLOYD\*

Bakers House, Priors Dean, Petersfield, Hants, UK.  
E-mail: [ian@sirianlloyd.com](mailto:ian@sirianlloyd.com), [freeserve.co.uk](http://freeserve.co.uk) \*Past president, U. K. Parliamentary and Scientific Committee, and chairman, Select Committee on Energy, 1980-90

#### References and Notes

1. U.K. House of Commons Energy Committee, *6th Report: Energy Policy Implications of the Greenhouse Effect*, HMSO 192, vols. 1 to 111, 4.7.1989.
2. Royal Society and Royal Academy of Engineering, *Nuclear Energy—The Future Climate*, June 1999 ([www.royalsoc.ac.uk/policy/index.html](http://www.royalsoc.ac.uk/policy/index.html)); *The Role of the Renewables Directive in Meeting Kyoto Targets*, October 2000 ([www.raeng.org.uk/Statements/Statements.htm](http://www.raeng.org.uk/Statements/Statements.htm)).

## Health Impacts of Climate Change

ON 3 APRIL, THE NATIONAL ACADEMY OF Sciences (NAS) released a report on the potential impacts of climate change on infectious diseases entitled "Under the Weather: Climate, Ecosystems, and Infectious Disease" (1). News articles on the report implied that the study findings contradict or at least are much less alarming than those recently reported from the Intergovernmental Panel on Climate Change (IPCC) (2) (released 18 March). This general conclusion is inappropriate, for a number of reasons.

First, the two studies had a different purpose. The NAS study is foremost an assessment of the capability of predictive models and early warning systems to forecast infectious diseases. The main purpose of the IPCC study was to review the peer-reviewed and published literature on the entire range of

potential health impacts of global warming and to assess both the severity of that threat and the state of the science about human health impacts from climate change.

Second, the scope of the two reports is significantly different. The NAS study centers on infectious diseases only. IPCC experts, on the other hand, reviewed studies that examined the actual (that is, historically observed) and potential impacts of climate variability and change on many aspects of human health, including heat stress, air pollution, health threats from storms and floods, and infectious diseases.

Third, the IPCC emphasis on vulnerability and adaptation is stronger than that in the NAS report. Both the IPCC and the NAS reports, however, go beyond a mere discussion of the direct links among climate, the environment, and health. Each report places potential health impacts into the broader context of societal capacity to cope with health challenges of any source.

Having clarified the differences between the two reports, it is instructive to compare the key findings of both, revealing significant congruence. The health experts writing the NAS and IPCC reports agree that a changing climate affects the spread of infectious diseases and that the geographic range of infectious diseases such as malaria and dengue fever might expand. Both reports note that vulnerability and the ability to cope with the threat from infectious diseases ultimately determine the severity of the impact on human populations. They also acknowledge that, although we know that climate change affects the spread of infectious diseases, the world health community cannot yet predict when or where exactly this will happen or how large the threat of these diseases will be to particular populations.

However, there is a strong sense in both reports that the uncertainties related to the health impacts of climate change warn us that we should take the issue seriously. Neither suggests that the inability to predict exactly when and how infectious diseases will spread should be used as an excuse for inaction on human health or climate change. Mitigating climate change through emission reductions will reduce a significant source of health stressors, while limiting the extent to which disease vectors and agents are forced into unknown territory. Likewise, common sense preventive actions such as better sanitation, access to health care, and new vaccines and drugs will strengthen the capacity of populations to contain the spread of infectious diseases or to treat them more effectively when they occur.

PIM MARTENS,<sup>1</sup> SUSANNE C. MOSER<sup>2</sup>

<sup>1</sup>International Centre for Integrative Studies, Maastricht University, P.O. Box 616 6200 MD Maastricht, the Netherlands. E-mail: [p.martens@](mailto:p.martens@)

# Custom Shotgun Libraries



- Custom Libraries from Cosmids, BACs and Genomes
- M13 or pUC Vectors
- Ready in 1-2 Weeks
- Clones Shipped in 96 or 384-Well Plates



## Custom Gridding & Arraying

- Arraying of Libraries to Nylon Filters
- Up to 29,000 Double Spotted Clones/Filter



## Shotgun Sequencing

- Clones Picked & Prepped
- High Throughput Sequencing & Assembly
- Full-Length Sequencing

Call For Pricing on Your Project Today

SEQWRIGHT  
DNA SEQUENCING

THE FASTEST SERVICE IN THE INDUSTRY, WITH GUARANTEED RESULTS.

Tel: 1-800-720-4363  
Web: [www.seqwright.com](http://www.seqwright.com)

## Letters to the Editor

Letters (~300 words) discuss material published in *Science* in the previous 6 months or issues of general interest. They can be submitted by e-mail ([science\\_letters@aaas.org](mailto:science_letters@aaas.org)), the Web ([www.letter2science.org](http://www.letter2science.org)), or regular mail (1200 New York Ave., NW, Washington, DC 20005, USA). Letters are not acknowledged upon receipt, nor are authors generally consulted before publication. Whether published in full or in part, letters are subject to editing for clarity and space.