Federal Climate Change Legislation

May 13, 2009

To: Michigan's Congressional Delegation
From: Michigan College and University Researchers
RE: Legislation to address greenhouse gas emissions

As scientists living and working in colleges and universities in the state of Michigan, we urge the Michigan Congressional delegation to support strong federal policies for rapid and deep reductions in emissions of carbon dioxide and other greenhouse gases. We are convinced that immediate action is necessary to avoid the worst consequences of global warming on Michigan's economy and environment, including the Great Lakes. While slowing the damaging effects of climate change poses enormous challenges, we also believe such action presents Michigan with real opportunities to reinvigorate our economy and improve the quality of life for all Michiganders.

Controlling carbon emissions is critical to the energy future of our state and nation. It will help Michigan and the United States take full advantage of the clean renewable resources and energy efficient technologies that are available today. A workable federal policy to combat global warming will also encourage researchers, investors, and businesses to accelerate development and deployment of next generation energy technologies. Putting a price on carbon is a critical step toward building a clean energy future for the US and right here in Michigan.

Federal climate policy offers a unique opportunity to protect valuable natural resources and stimulate the economy - the benefits to Michigan will likely far exceed the costs. A comprehensive federal climate and energy policy can provide the stable regulatory framework, appropriate market signals, and long-term investment commitment necessary to jumpstart new business, transition core industries, and enhance our global competitiveness. Recent studies have shown that capping carbon pollution and promoting energy efficiency could create millions of new jobs nationally and more than 150,000 new jobs in Michigan, nearly 50,000 of them in manufacturing. Michigan already boasts one of the nation's largest solar components manufacturers, and will be one of the first states to produce advanced automotive batteries. Michigan universities are already partnering with major industries and suppliers, as well as Silicon valley funded start-ups, to deliver next generation vehicles and fuels technologies, while we also put idled manufacturing capacity to work building components for wind turbines. Sound climate policy will accelerate this transition – it is a critical part of the stimulus our struggling economy needs.

Doing nothing is not a viable option for Michigan. Our state faces serious economic, social, and ecological impacts from global warming. If climate change continues on its present course, not only will we miss out on the new economic opportunities outlined above, but two of Michigan's biggest industries, agriculture and tourism, could suffer. Additionally, climate change could seriously impact water quantity and quality in the Great Lakes, leading to greater conflicts over water resources in the region.

Agriculture is Michigan's second largest industry, contributing $60.1 billion to the state's economy annually and providing more than 1 million jobs, according to the Michigan State University Extension. About 24 percent of all Michigan workers are employed in the state's agriculture/food system. Many of the jobs and much of the economic impact provided by Michigan's agriculture industry could be lost if climate change continues on its present course. Conversely, Michigan universities are leaders in agriculture and bioenergy research, and Michigan farmers stand to gain from federal policy that promotes renewable energy and caps carbon pollution. Farmers, for instance, could realize new revenue by leasing land for wind turbines and assigning unproductive cropland to carbon offset programs and producing biomass for next generation renewable fuels.

Associated with warming temperatures, increased ozone concentrations can decrease crop production and damage one of Michigan's few economic bright spots. Intense rainstorms during spring planting season and summer droughts, both of which have increased in recent decades, will continue with greater intensity under "business as usual" carbon emissions and will likely reduce agricultural productivity and pollute our surface waters, including the Great Lakes. Hotter, drier summers and more droughts will require additional irrigation for crops that were previously rain-fed. Warmer winters will favor more southern insects, pests, and plant pathogens. Perennial fruit crops like Michigan's tart cherries are particularly vulnerable to increased climate variability caused by regional warming. All of these factors could dramatically reduce agricultural production and increase costs for farmers, agri-businesses, and others who have either direct or indirect ties to Michigan's important agriculture industry.

Left unchecked, climate change will also harm our state's tourism industry. Tourism contributes $17.5 billion each year to Michigan's economy and provides 200,000 jobs, according to the Michigan Economic Development Corp.

Winter sports, such as skiing, snowmobiling, ice fishing, and snowboarding will suffer due to shorter, warmer winters. Warmer Great Lakes, rivers, streams, and inland lakes will change the distribution of fish species, and many species of cool-water fish — including all four of our trout species (Brook, Lake, Rainbow and Brown Trout) — could disappear from our region. Bird-watching activities will slow due to a decline in bird diversity, particularly among waterfowl and songbirds. Longer, hotter summers could increase beach use, but beach recreation could see a decline in activities because of more volatile weather and potential increases in pollution and waterborne- and insect- diseases.

Policymakers have a clear choice: allow climate change to continue on its present path and cause serious long-term damage to Michigan's natural resources and economy, or embrace an enlightened global warming solutions policy that will protect our air, water, land, and Great Lakes while spurring economic growth right here in Michigan.

For all these reasons, we urge the passage without further delay of reasonable global warming solutions policies that can give Michigan citizens, businesses, and farmers cost-effective, clean and affordable energy.

Sincerely,

Knute Nadelhoffer
University of Michigan

Donald Scavia
University of Michigan

George Kling
University of Michigan

Additional Signatures as conveyed via the Internet (file available) as of 9:00am, May 13, 2009 –

Paul Webb, *University of Michigan*

Cecilia Lewis, *Michigan State University*

Richard K Kobe, *Michigan State University*

Evelyne Cudel, *Michigan State University*

Nathaniel E. Ostrom, *Michigan State University*

Christopher F. Steiner, *Wayne State University*

Raymond Barbehenn, *University of Michigan*

Sarah Nicholls, *Michigan State University*

Chris Poulsen, *University of Michigan*

Kimberly R. Hall, *Michigan State University*

Harold Prince, *Michigan State University*

Deborah G. McCullough, *Michigan State University*

Li Xu, *University of Michigan*
Jennifer A. Cummings, *University of Michigan*
Carla Davidson, *Michigan State University*
Helen Perlstein Pollard, *Michigan State University*
Nathan Sheldon, *University of Michigan*
Evan S. Kane, *Michigan State University*
Christopher Dick, *University of Michigan*
Lynn Walter, *University of Michigan*
Carole Gibbs, *Michigan State University*
Tamara McDunn, *University of Michigan*
Steven Rogacki, *University of Michigan*
Julie Nieland, *Michigan State University*
Lorna Watt, *Michigan State University*
David E. Rothstein, *Michigan State University*
Stacie Auvenshine, *Michigan State University*
Aaron P. Wagner, *Michigan State University*
Eric Linton, *Central Michigan University*
Evan Oswald, *University of Michigan*
Michael Liemohn, *University of Michigan*
Erika Roesler, *University of Michigan*
Ilia Gelfand, *Michigan State University*
Aaron Smith, *Michigan State University*
Michele Johnson, *Michigan State University*
Robin M. Tinghitella, *Michigan State University*
Richard W. Hill, *Michigan State University*
Thomas M. Schmidt, *Michigan State University*
Tracy K. Teal, *Michigan State University*
Richard Lenski, *Michigan State University*
Bruce P. Block, *University of Michigan*
Elizabeth H. Schultheis, *Michigan State University*
Mark Axelrod, *Michigan State University*
Donna Kashian, *Wayne State University*
Mary Anne Carroll, *University of Michigan*
James Millington, *Michigan State University*
Neville Millar, *Michigan State University*
Jessica Schrader, *Michigan State University*
Terence L. Marsh, *Michigan State University*
Andrew Flies, *Michigan State University*
Scott M. Swinton, *Michigan State University*
Mustafa Mazher, *Michigan State University*
Rebecca Ives, *Michigan State University*
Susan E. Selke, *Michigan State University*
Jinhua Zhao, *Michigan State University*
Daniel Hayes, *Michigan State University*
David Hyndman, *Michigan State University*
Laura Schmitt Olabis, *Michigan State University*
Lutgarde Raskin, *University of Michigan*
Allison Goralnik, *Michigan State University*

John L. Hesse, *Michigan State University*
David Wiley, *Michigan State University*
Stephen K. Hamilton, *Michigan State University*
Alvin Smucker, *Michigan State University*
Satish Joshi, *Michigan State University*
Vanessa Hull, *Michigan State University*
Christopher Oliver, *Michigan State University*
Rafael Auras, *Michigan State University*
Orlando Sarnelle, *Michigan State University*
Richard W. Merritt, *Michigan State University*
Scot Libants, *Michigan State University*
Dana M. Infante, *Michigan State University*
Brian Langseth, *Michigan State University*
David J. Campbell, *Michigan State University*
Joshua Booker, *Michigan State University*
Jeffrey Conner, *Michigan State University*
Michael P. Nelson, *Michigan State University*
Michael L. Jones, *Michigan State University*
John V. Stone, *Michigan State University*
Maria Lapinski, *Michigan State University*
Craig Harris, *Michigan State University*
G. Philip Robertson, *Michigan State University*
Daniel Steel, *Michigan State University*
Tracy Dobson, *Michigan State University*
James R. Bence, *Michigan State University*
Thomas Dietz, *Michigan State University*
R. Jan Stevenson, *Michigan State University*
G. Allen Burton, *University of Michigan*
Peter Bednekoff, *Eastern Michigan University*
William W. Branford, *Wayne State University*
Ines Ibanez, *University of Michigan*
Jodi Nachtwey, *Wayne State University*
Marilynn Rashid, *Wayne State University*
Ann Sodja, *Wayne State University*
David K. Pitts, *Wayne State University*
Aaron Liepman, *Eastern Michigan University*
Susan McMahon, *Eastern Michigan University*
Daniel M. Kashian, *Wayne State University*
Earl E.Werner, *University of Michigan*
Debra Linton, *Central Michigan University*
Radka Wildova, *University of Michigan*
Michael Grant, *University of Michigan*
Donald G. Uzarski, *Central Michigan University*
Matthew Chatfield, *University of Michigan*
Charles Ide, *Western Michigan University*
E. Binney Girdler, *Kalamazoo College*
Philip Myers, *University of Michigan*
Ulrich Reinhardt, *Eastern Michigan University*

Glenn Walker, *Eastern Michigan University*
James M. Le Moine, *University of Michigan*
Charles Novitski, *Central Michigan University*
Daelyn Woolnough, *Central Michigan University*
Steve Bertman, *Western Michigan University*
Dan Brown, *University of Michigan*
A. Scott McNaught, *Central Michigan University*
Margaret R. Gale, *Michigan Technological Univ.*
David Karowe, *Western Michigan University*
Norman Tyler, *Eastern Michigan University*
Cathy Bach, *Eastern Michigan University*
James S. Diana, *University of Michigan*
Michael J. Wiley, *University of Michigan*
Catherine Badgley, *University of Michigan*
Curtis L. Blankespoor, *Calvin College*
Heather Adams, *University of Michigan*
Karel Rogers, *Grand Valley State University*
Catherine Riseng, *University of Michigan*
Gyorgy Barabas, *University of Michigan*
Peggy Ostrom, *Michigan State University*
Stephen Kaplan, *University of Michigan*
Emily Farrer, *University of Michigan*
Jeri L. Parrent, *University of Michigan*
Gerald R. Smith, *University of Michigan*
Edward Baskerville, *University of Michigan*
Thomas Peyton Lyon, *University of Michigan*
Mark Hunter, *University of Michigan*
Florence S. Wagner, *University of Michigan*
Rachel Kaplan, *University of Michigan*
Donald R. Zak, *University of Michigan*
Elizabeth Wason, *University of Michigan*
Katherine A. DeCelles, *University of Michigan*
Duncan Callaway, *University of Michigan*
Lucas Nave, *University of Michigan*
Al Steinman, *Grand Valley State University*
Robyn Burnham, *University of Michigan*
Rachel Vannette, *University of Michigan*
Qixin He, *University of Michigan*
Tim James, *University of Michigan*
Elizabeth Tibbetts, *University of Michigan*
Sarah Barbrow, *University of Michigan*
Yong Liu, *University of Michigan*
Sarah Cobey, *University of Michigan*
Hongyan Zhang, *University of Michigan*
Manja Holland, *University of Michigan*
Susanna Messinger, *University of Michigan*
Deborah Goldberg, *University of Michigan*
David Marvin, *University of Michigan*

Aaron A. King, *University of Michigan*
Lynn Anderson, *University of Michigan*
Raymond De Young, *University of Michigan*
Andrew J. Hoffman, *University of Michigan*

SIGNATURES ADDED AFTER MAY 13
Christopher Swanston, *Michigan Technological University*
J. David Allan, *University of Michigan*
Henry Pollack, *University of Michigan*
Andrew J Burton, *Michigan Technological University*
Joan Iverson Nassauer, *University of Michigan*
Michael R. Moore, *University of Michigan*
Brian Bodenbender, *Hope College*
K. Greg Murray*, Hope College*
Dmitry Beletsky, *University of Michigan*
Haejin Han, *University of Michigan*
Sara Adlerstein, *University of Michigan*
David C. Michener, *University of Michigan*
Edward A Parson, *University of Michigan*
Scott Herron, *Ferris State University*
Arika Ligmann-Zielinska, *Michigan State University*