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PRESS RELEASE

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Sobering Iowa weather extremes predicted to bring hotter heat waves and more widespread intense rainfall

In 1991, climate scientists believed that climate change in the Midwest would lead to a warmer, wetter climate, including warmer winters and more rain in spring and early summer. They were right.

Now U.S. climate scientists are projecting that by mid-century, 5-day heat wave temperatures in Iowa will increase by about 7 °F for the average year and by 13 °F once per decade compared to heat waves in the late 20th century. Currently, the Iowa average annual 5-day maximum temperature during a heat wave is in the range of 90-95 °F.

Scientists also suggest that the strongest rainfall events of the year (annual maximum daily widespread precipitation) covering areas as large as a third of Iowa are projected to double in intensity (daily total rainfall) by mid-century, with most of this change coming before 2025.

“These are really scary numbers which will have negative consequences for the elderly, the economy, for corn and soybeans, as well as beef, hogs and poultry even under sheltered confinement. We must start now to *adapt* our built environment, including buildings and flood mitigation systems, to this changing climate,” said **Jerry Schnoor**, Co-director, UI Center for Global and Regional Environmental Research.

“Buildings in Iowa must withstand a hotter, more humid climate, with more frequent and extreme rain storms and dry spells,” said **Ulrike Passe**, Associate Professor of Architecture, Director, Center for Building Energy Research, Iowa State University.

“Building can be designed to withstand heavier driving rain by integrating rain screens, larger gutters and downspouts, and steeper roof slopes. Water will also enter buildings from the foundation or basement walls. In particular, heavier rain events and higher water tables affect foundations, and standards going forward must reflect that,” said Passe.

“Keeping building occupants comfortable during hot summer periods will require strategies including greater insulation of buildings, more controlled ventilation, planting of shade trees and weatherizing buildings now to control air conditioning costs under the effects of a warmer climate,” continued Passe.

Iowa had a brief heat wave over Memorial Day weekend and has had its share of extreme rainfall this summer and continuing in to this fall. “Warming over the Gulf of Mexico is helping feed large rain events in Iowa and the Midwest, Schnoor said: “That’s why we’re prone to intense downpours and major flooding like Des Moines saw on June 30 and

like eastern Iowa has been experiencing for the past six weeks,” “People’s homes and businesses are being flooded that have never been flooded before,” said Schnoor.

The eighth annual statement, “**Iowa Climate Statement 2018: Designing Buildings and Communities for Iowa’s Future Climate,**” released Thursday, October 11 was signed by a record **201 science faculty and researchers from 37 Iowa colleges and universities.** The statement describes the urgent need to fortify our building and public infrastructure from heat and precipitation. .

More widespread extreme rainfall will also challenge Iowa community storm water control efforts. “Iowa communities would benefit from adopting localized plans that invest in smart runoff management to reduce the effects of flooding by infiltrating the rain where it falls and slowing the runoff from infrastructure. Green infrastructure like bioswales, rain gardens, urban forestry and permeable pavement can all reduce the impact of heavy rain downpours,” stated Passe.

“Ultimately, reducing carbon emissions remains the best long-term strategy to mitigate additional climate change damage, but adaptation now is necessary in today’s changed climate. Changing our built environment to be more sustainable and resilient can help reduce future climate change while protecting us from the changes that have already occurred. The time to act is now,” stated Schnoor.

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This eighth annual Iowa climate statement was written by a group of Iowa science faculty and researchers and edited with input of science faculty from across the state. The lead authors of the 2018 statement include **Ulrike Passe**, Associate Professor of Architecture, Director, Center for Building Energy Research, Iowa State University, **Gene Takle**, Emeritus Professor of Agronomy at Iowa State University and **Jerry Schnoor**, Co-director, Center for Global and Regional Environmental Research.

Also contributing to the statement were, **David Courard-Hauri**, Professor, Director, Environmental Science and Policy Program, Drake University; **Peter S. Thorne**, Professor and Head, Occupational & Environmental Health, Director, Environmental Health Sciences Research Center, College of Public Health, University of Iowa; **David Osterberg**, Emeritus Professor, College of Public Health, University of Iowa. Editing assistance from **Nancy G. Wyland**, Center Coordinator, Environmental Health Sciences Research Center, University of Iowa College of Public Health.

The 37 Colleges and Universities of statement endorsers:

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