

THE JACK H. BROWN COLLEGE, CSUSB, PRESENTS:

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Climate Change and Glacial Studies at CSUSB

(Please bring this to the attention of your students, as per our JHBC-PRME commitment to responsible management education, vis-à-vis environmental justice and sustainability)

CSUSB professor Dr. Claire Todd, a glacial geologist and Chair of the Department of Geological Sciences, studies glaciers--focusing on current and past climate change impacts on them.



Source: CSUSB, 2021

Professor Todd's research on glaciers brings to the forefront vital knowledge on the on-going planetary emergency of climate change and global warming, both vital to understanding that climate change will affect every living thing, in some way--be it changes in the weather, water availability, or rising global sea level. Glacial melt impacts coastal cities and has submerged small islands around the planet.

One such warming event in February 2021, created the break-off ice from the Himalayan

Nanda Devi Glacier. The resultant effect was

immense flooding in Uttarakhand province in India. It caused massive the loss of human lives, destruction of two dam developments, widespread damage to homes from water rocks, and slush, and water surges in rivers causing regional flash floods. <https://www.worldatlas.com/articles/>



Source: [Financialexpress.com](https://www.financialexpress.com) →

Dr. Claire Todd observed: "scientists like me who study the impact of past climate changes are trying to understand what impacts we might expect in the future so that communities can better prepare for climate changes to come."





The Dean of the College of Natural Sciences, **Dr. Sastry G. Pantula**, explained that, “As we wish to have healthy people living on a healthy planet for a long time, it is important to understand the history and causes of past climate change and work proactively for a better future. We are fortunate to have leaders like Dr. Todd to bring hands-on experiences to our students, whether it be in our own backyard at CSUSB, on Mount Rainier, or in Antarctica. Such experiences are transformative for our students.”

Thwaites, an Antarctic glacier larger than the UK that was found to have warm water flowing under it is a strong risk factor for the planet. The glacier, dubbed the “**Doomsday Glacier**” is a concern to glacier scientists because its colossal dimensions--and the massive west Antarctic ice sheet it supports--are the biggest unknown factors in future global sea level rise. The International Thwaites Glacier Collaboration say that melting glaciers in the Gulf of Alaska and in Himalayan area can be seen from space. Glacial shrinkage is now measured in years rather than decades. Scientists have calculated that between 2011 and 2019, 4% of the ice volume has disappeared (L. Millan, 2021, *Bloomberg Green*). Image above NASA/AFP/GETTY



Climate change causes shifts in temperatures and weather patterns. Since the 1800s, human activities have been the leading source of climate change, primarily due to burning fossil fuels like coal, oil and gas. Burning fossil fuels engenders greenhouse gas emissions that wrap around the Earth, trapping the sun’s heat and raising



temperatures. The geological age we live in today is called the **Anthropocene** because of these human activities. Carbon dioxide and methane primarily come from the use of gasoline. Other forces that cause global warming are: Landfills for garbage is another source for emission of methane gas. Industry, transport,

buildings, agriculture, and land use are major ways greenhouse gasses are released into the atmosphere in the Anthropocene.

The United Nations has 17 Sustainability Development Goals—one of which, Goal #13, is about **Climate Change**--and emphasizes urgent need for interventions by world communities by 2030. The work of **Dr. Todd** shows how the U.N.'s PRME values are embedded into research and teaching on the CSUSB campus. Under our UNPRME platform **The Jack H. Brown College of Business and Public Administration** has been bringing economic, social and environmental justice to the CSUSB campus community and beyond, since 2012.

