It's mid-december in San Francisco, the holiday decorations and lights are out everywhere. Skaters zip around the ice rink set up in Union Square, and as happens every year, thousands of scientists descend on the city, geophysicists specifically for the big annual meeting of the American Geophysical Union or AGU. I'm Steve Cole, with NASA geophysicist study. Everything in the solar system from the earth to the other planets and the Sun. I'll be introducing you to a few of the scientists here at the meeting, who are...
involved with NASA research my name is Galen McKinley I'm a professor of atmospheric and oceanic sciences at the University of Wisconsin-Madison in Madison Wisconsin the post time presenting today is focused on Lake Superior we've been working for several years on building a computer model to simulate the carbon cycle of Lake Superior that includes the physical circulation of the lake the biology of the lake that the phytoplankton and zooplankton level my research focuses on understanding how large aquatic bodies
that is the oceans and also the Great

Lakes take up carbon from the atmosphere

carbon in the atmosphere is the major

cause a CO2 in particular of global

warming the planet and right now

the oceans as a whole take about twenty

five percent of that which humans put in

the atmosphere so we need to understand

how the oceans take up that carbon how

that that that uptake changes with time

and space in order to improve our

predictions of the future state of the

carbon cycle and therefore the future

state of the climate system
so coming to a GU meetings is great

because you get to see so many different

kinds of signs that are being done in

areas that I know very little about you

get a chance to be exposed to those

there are about 19,000 registrants for

this meeting so two large degree it's

drinking from a firehose mine as a new

investigator work is a similar to the

poster I'm presenting today on Lake

Superior but there were focused on the

North Atlantic so we're focused on

understanding how the carbon sink in the

North Atlantic and then eventually the

globe how it is responding over the last
30 years to changing atmospheric levels of carbon dioxide so I think that our research matters to everyone out there largely because we're trying to understand the global carbon cycle and that's something that humans are changing a lot every time we burn fossil fuels every time we make cement every time we cut down a tree we put more CO2 in the atmosphere and that's driving a warming climate and a lot of changes around the world that have been observed for example declining sea ice in the Arctic so if we're going to understand
all those processes we need to
understand the fundamental forcing of it
so understanding the global carbon cycle
and the role of large bodies of water
like the Great Lakes or the global
oceans in that carbon cycle is really
critical for predicting what future
climate is going to be like I started
out in civil engineering as an
undergraduate and got very interested in
how we use computers to understand
natural systems
then when I worked for a while as an
environmental engineer I realized that
the people with the phd's in the lab
really did the most of the thinking and
they had the most interesting jobs
because they were able to really be
thinking about a process and not just
for example filling out the reports and
doing sort of the grunt work so that's
what motivated me to go ahead and get a
PhD and now as a professor and and
continuing on that track for for more
than a decade I really am so glad that
I'm in this career because I can think
every day my my work is to think my work
is to go into work and learn something
my work is to come to a meeting like

101
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this and talk to people and learn what

102
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they're doing