

## **GEOG 598: Freshwater greenhouse gas processes**

**Spring 2023**

TR 12:30-1:45

Professor Amanda Gay DelVecchia

### Summary

Inland waters comprise a disproportionately important part of the global carbon cycle, transforming roughly half of the total carbon transported from the terrestrial to the aquatic environment. Much of this carbon is transformed to carbon dioxide and methane and released to the atmosphere. These processes can be amplified through anthropogenic alterations, such as watershed development, flow alterations and nutrient loading. This class will focus on freshwater greenhouse gas cycling in pristine and altered systems. We will (1) review and discuss scientific literature on freshwater greenhouse gas production and emissions in pristine and altered landscapes, (2) conduct a more extensive review of aquatic systems in urban landscapes, and (3) apply this literature review to develop a background and sampling plan for understanding urban river greenhouse gas emissions. A large component of the class will involve interpreting primary literature and applying it to the scientific method. If possible, we will also conduct field work mapping and/or sampling urban river sediments and gas flux. Students should have some comfort reading primary literature, but there will be abundant opportunity to learn these skills throughout the course. Instructor permission is required, and interested students are encouraged to contact Dr. DelVecchia at [amanda.delvecchia@unc.edu](mailto:amanda.delvecchia@unc.edu)

