OCN401 – Sept. 26, 2017

Today we will cover…

<u>Homework:</u>

- Extended essay peer reviews ≈ 20 min
- Revision plan of action ≈ 10 min
- Group discussion of peer review ≈ 15 min

<u>Term Paper:</u>

- Discuss term paper topic
- Discuss topic mini-presentations
- Discuss outline rubric

Extended Essay Peer Review Assignment

- In-class Peer review exercise includes:

  <u>For Reviewer:</u>

  - ✓ Annotated 1st draft of essay
  - ✓ Reviewer-completed rubric
  - ✓ Reviewer-completed grading template
  - ✓ Type-written review, including numbered list of critiques or suggestions for revisions

  <u>For Writer:</u>

  - ✓ Complete a Revision Plan of Action (RAP)
    - Key each entry in your RAP to the numbered critiques provided to you by your peer reviewer
    - If your peer reviewer did not number their critiques, number them yourself, in class, before beginning the RAP
    - Be as detailed as possible, as you will use this list as a reference to compose your type-written Response to Reviewer (RTR).

Extended Essay Peer Review Assignment

- Homework Revision:
  - ✓ Revise your essay using feedback from your peer-review
  - ✓ Compose a type-written Response to Reviewer (RTR):
    - You may elect to open your RTR with a summary statement if there was a theme to the critiques provided by your peer reviewer
    - Create an outline/list of how each critique has been addressed
    - If you disagree with a particular criticism, provide an explanation / justification for why that particular criticism was not heeded
    - You may find that you will work on these two documents in tandem, an iterative process.
    - Your RTR should be brief and concise, but must directly and thoroughly address each critique.

- Grading of your Final Draft
  - ✓ Your final essay grade will come from the Instructor
  - ✓ Part of your grade will be based on how:
    - effectively you dealt with the review to improve your essay
    - explicitly / carefully you documented how you modified your essay in your RTR

Additional Criteria Reflected in Instructor Grading Template

Student:					Reviewer:
% of Grade	**Category**	**Criteria**	**possible points**	**actual earned points**	**Comments**
40	Content	Scope is appropriate, facts are accurate	12		
		Facts & speculation clearly distinguished; Arguments presented in a balanced way	12		
		evidence is sufficient and appropriately used	10		
		quality, type, and use of references	6		
30	Organization	Each paragraph has a clear topic sentence	10		
		Ideas are ordered logically	10		
		Transitions from paragraph to paragraph are explicitly made	10		
21	Stucture and Style	Paragraph length is balanced	2		
		Word choice is appropriate	2		
		Writing is interesting, varied	2		
		Sentences and paragraphs are cohesive	3		
		Essay overall is effective	12		
9	Mechanics	correct grammar is used	4		
		spelling is error-free	3		
		writer followed instructions*	2		
100		**Total Points:**	100		

* Typed in correct font size, double-spaced, page limits observed, information in header.

Instructor evaluation of Peer Review activities:

25	Peer Review	• Are comments insightful and/or on point?	10		
		• Are constructive suggestions made?	15		
25	Revision	• Takes into account peer review comments to improve essay	15		
		• In a point-by-point summary, writer clearly states how each peer review comment/critique/suggestion was addressed in the revised essay, or clearly states reason(s) for not following reviewer's suggestion	10		
		Total Peer Review/Revision Points:	50		
		Total Points for Extended Essay Assignment:	150		

Final Extended Essay Draft

- Final Draft of extended Essay is due in 1 week: ***Tuesday 10/3/17***
- Your final essay draft must be accompanied by:
  - Your 1st draft (annotated)
  - The peer review of your essay
    - Type written peer review
    - Reviewer-completed rubric
    - Reviewer-completed grading template
  - Your RAP completed in class on 9/26/17
  - Your type-written RTR, which should track your RAP

Citations and Bibliographies

chain of info/ citations

mid-sentence

end-of-sentence

There is currently only a limited knowledge of the details of the cycling of dissolved methane (CH_4) in riverine and estuarine waters or on the effects of this CH_4 on the CH_4 cycle of the open ocean. This is somewhat surprising in light of the importance of atmospheric CH_4 on global radiative heat budgets [e.g., *Rasmussen and Khalil*, 1981; *Cicerone and Oremland*, 1988; *Lelieveld et al.*, 1993] the ongoing increase in atmospheric CH_4 levels [e.g., *Khalil et al.*, 1989; *Etheridge et al.*, 1992], and the potential for estuarine and oceanic systems to be significant factors in the global CH_4 budget [e.g., *Ehhalt*, 1974; *Quay et al.*, 1988]. In particular, existing information is unsatisfactory in explaining why atmospheric CH_4 is increasing because of significant uncertainties in the estimated rates of production and consumption of CH_4 in many natural environments. For example, wetlands and the oceans have long been known to be sources of CH_4 to the atmosphere [e.g., *Ehhalt*, 1974] but processes controlling the origins and distribution of CH_4 in marine and estuarine environments are not presently well understood. This limitation has significantly restricted our understanding of the role of the ocean, bays, and estuaries on the global CH_4 cycle.

The presence of elevated dissolved CH_4 concentrations in rivers and bays has been noted ever since the first CH_4 measurements were made in aquatic systems [e.g., *Lamontagne et al.*, 1973]. It has been established that even rivers without anthropogenic sources of CH_4 have dissolved CH_4 concentrations 1-2 orders of magnitude higher than typical open ocean seawater [e.g., *Lamontagne et al.*, 1973; *Wilkness et al.*, 1978; *de Angelis and Lilley*, 1987; *Lilley et al.*, 1996]. As a result, natural riverine CH_4 has been tracked for distances of 750 km into the open ocean [*Jones and Amador*, 1993]. However, published estimates of global atmospheric methane fluxes have not considered the specific contributions of rivers or estuaries [e.g., *Watson et al.*, 1992; *Prather et al.*, 1995].

In general, it appears that CH_4 in advectively dominated estuaries is largely from riverine input, while in more stagnant systems there can be significant inputs from estuarine sediments and wetlands [e.g., *King and Wiebe*, 1978; *de Angelis and Lilley*, 1987; *Harriss et al.*, 1982; *Sansone et al.*, 1998]. However, the source of CH_4 in river water is not well established, although it is possible that groundwater from organic rich forest soils may be important [*Lilley et al.*, 1996].

The stable carbon isotopic composition of CH_4 ($\delta^{13}C$-CH_4) in a system is dependent on the mechanisms and rates of CH_4 production and consumption and thus can be useful in efforts to elucidate CH_4 cycling [e.g., *Whiticar et al.*, 1986; *Martens et al.*, 1986; *Burke and Sackett*, 1986; *Lansdown et al.*, 1992]. In addition, the isotopic signature of atmospheric CH_4 sources are important parameters in constraining global atmospheric CH_4 models [e.g., *Hein et al.*, 1997; *Tans*, 1997]. Unfortunately, stable isotopic measurement techniques have not until recently been sufficiently sensitive for accurate determination of $\delta^{13}C$-CH_4 in surface waters, that typically have CH_4 concentrations in the nanomolar range. This limitation has prevented the use of $\delta^{13}C$-CH_4 measurements as a tool for studies of surface water CH_4 cycling; to our knowledge, there have been no published measurements of $\delta^{13}C$-CH_4 for riverine or estuarine surface waters. However, recent analytical advances [*Popp et al.*, 1995; *Sansone et al.*, 1997] have made possible the measurement of $\delta^{13}C$-CH_4 in fresh and marine surface waters using sample volumes <250 mL, thereby allowing the use of samples collected using conventional techniques.

Methane carbon stable isotopic ratios ($\delta^{13}C$-CH_4) were measured (±0.5 per mil) using the methods of *Popp et al.* [1995] and *Sansone et al.* [1997]. Isotopic ratios are reported here versus the Pee Dee belemnite (PDB) standard using conventional delta notation [*Craig*, 1957]. Methane concentrations were determined (±1%) by purge-and-trap techniques in combination with gas chromatography and flame ionization detection. The salinity of the Columbia River and Kaneohe Bay samples was measured (±0.05 psu) using an AGE model 2100 induction salinometer; the salinity of other samples was determined (±0.35 psu) using a Oakton WD-35607-10 conductivity meter calibrated with seawater that had been previously analyzed by the induction salinometer.

Citations and Bibliographies

Can also place citation at beginning of sentence, e.g.,

> "Jones et al. (2013) speculate that the moon is made of green cheese."

Within text, ***ALWAYS*** need:

- Author (last name only): Jones (2011)
- 2 authors, list both: Jones and Smith (2012)
- Year of publication
- Do not cite journal, institution, in lieu of author name

Citing websites: Need url, author, date