### Course Approval Form

**Action Requested:**
- [x] Create new course
- [ ] Inactivate existing course
- [ ] Modify existing course

**College/School:** COS  
**Submitted by:** ECM Parsons  
**Effective Term:** Fall

**Title:** Current Environmental & Conservation Science Communication Techniques  

**Credits:**
- [x] Fixed 3
- [ ] Variable to

**Repeat Status:**
- [x] Not Repeatable (NR)
- [ ] Repeatable within degree (RD)
- [ ] Repeatable within term (RT)
- [ ] Maximum credits allowed: 3

**Grade Mode:**
- [x] Regular (A, B, C, etc.)
- [ ] Satisfactory/No Credit
- [ ] Special (A, B C, etc. +IP)

**Schedule Type:**
- [x] Lecture (LEC)
- [ ] Lab (LAB)
- [ ] Recitation (RCT)
- [ ] Internship (INT)

**Prerequisite(s):**
- Completion of 60 credit hours

**Restrictions Enforced by System:** Major, College, Degree, Program, etc. (include code)

**Fulfills Mason Core Req? (undergrad only):** Currently fulfills requirement

**Catalog Copy for NEW Courses Only** (Consult University Catalog for models)

**Description** (No more than 60 words, use verb phrases and present tense)

Communicating environmental and conservation science is inherently challenging. The aim of this course is to expose students to the multiple ways environmental science and conservation issues can be communicated. Such exposure will be made both through a theoretical approach (science communication literature), as well as through hands-on activities and assignments.

**Notes** (List additional information for the course)

**Indicate number of contact hours:** Hours of Lecture or Seminar per week:
- [ ] 3

**When Offered:** (check all that apply)
- [x] Fall
- [ ] Summer

**Fees:**
- [ ] 100% face-to-face
- [ ] Hybrid: ≤ 50% electronically delivered
- [ ] 100% electronically delivered

**Equivalencies:** (check only as applicable)
- [x] YES, course is 100% equivalent to: EVPP 529
- [ ] YES, course is being renumbered to/will replace the following:

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### For Graduate Courses Only

**Graduate Council Member**

**Provost Office**

**Graduate Council Approval Date**

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**For Registrar Office’s Use Only:** Banner ____________ Catalog ____________  
revised 6/22/15
FOR ALL COURSES (required)
Course Number and Title: EVPP 429 Environmental Science Communication

Date of Departmental Approval:

FOR NEW COURSES (required if creating a new course)
• Reason for the New Course: There is an environmental science communication crisis. One can simply see this in policy makers and the general public by the proportion that deny the existence of climate change. This course provides students taking an environmental major or minor with the theoretical and practical knowledge to better communicate environmental science to target audiences whether these audiences are academics, policy makers or members of the general public.

• Relationship to Existing Programs: This course fits well with the BS in environmental science and BA in environmental and sustainability studies and environmental science, environmental policy and sustainability studies minors as an elective. The course also fits well as an elective for Global affairs and communications majors.

• Relationship to Existing Courses: There are several courses on science communication that are complimentary to this class (e.g. COMM 350 – Mass communication and public policy; COMM 639 Science communication and COMM 642 Science and the public) but there is minimal overlap in the content and this course has a unique concentration on conservation issues. There has been a recent COMM special topics class “Environmental Communication” (COMM 433) which again is complimentary to this class as it covers different environmental issues and is more theoretical, whereas this class has various activities and applied projects.

- The course is crosslisted with EVPP 529 (environmental science communication) and although both seniors and graduate students partake identical lectures and assignments, graduate students will be graded under a different rubric, level and standard to undergraduate students. Moreover allocation of points for assignments are different for graduate students and there is an additional, substantive, graduate assignment.

• Semester of Initial Offering: Spring 2016

• Proposed Instructors: Jenell Walsh-Thomas & Chris Parsons

• Insert Tentative Syllabus Below (see attached)
EVPP 429 / 529 Environmental Science Communication
Spring {Year}
{Date} 4:30 to 7:10PM
{Location}

Instructors:

Chris Parsons
Dept. of Environmental Science & Policy
David King Hall 3033
ecm-parsons@earthlink.net

Jenell M. Walsh-Thomas
Dept. of Environmental Science & Policy / Center for Climate Change Communication
Research Hall 256C
jwalshth@masonlive.gmu.edu

Objectives:

Communicating science is inherently challenging whether it is in academia (peer-reviewed journals, in the classroom, conferences, etc.), in the public policy realm, or to the general publics. Such challenges make it all the more important to examine the current state of science communication and the many avenues that are available for such communication. Additionally, encouraging both professional and budding scientists alike to actively explore the opportunities and issues of communicating scientific work is imperative. The aim of this course will be to expose undergraduate students to the multiple ways environmental science can be communicated. Such exposure will be made both through a theoretical approach by examining available and relevant science communication literature, as well as through practical, hands-on activities and assignments. Components that will be included to make the course well rounded are: academic literature, “learning by doing” activities, and a final project. This course will incorporate student-led presentations, hands-on projects, discussions and participant critiques.

Structure:

Theoretical and practical frameworks will be covered. Course content and discussions will be centered on:

- The role communication plays in disseminating scientific information and knowledge (what is expert vs. lay knowledge)
- Understanding how communicated information is processed (experiential vs. analytical)
- How to use communication techniques which insure the information is well received
- Identify, compare, and contrast communication strategies to engage with the public about science and decision making
- How informed decision making is promoted through literacy, education, and citizen science
- How different channels facilitate engagement and communication
Using communication and engagement to affect policy change pertaining to environmental issues (and other areas of science such as health, technology and risk assessment)

What best practices are suggested, can be leveraged, or are used for communicating with different audiences (scientist to scientist, scientist to public, public to scientist)

Case studies, which will be shared to provide examples of public engagement and communication

Message creation: simple, clear messages repeated often by a variety of trusted sources

Practice, practice, practice! Improving environmental science communication takes a lot of practice and refinement. Readings and theories will be applied to real-world communication scenarios

Class crosslisting

The undergraduate class EVPP 429 and the graduate class EVPP 529 co-meet. Although the courses have largely the same lecture material, undergraduate students and graduate students are graded separately to a different rubric and standard. Some assignments have different contributions to the final grade depending on whether students are undergraduates or graduate students. Moreover, graduate students have an additional assignment.

Topics:

- Peer-to-peer communication
- Norms of science
- Science & politics
- Science & the media
- Science & the public
- Specific environmental science issues:
  - Climate change
  - Fracking
  - Sustainability
  - Biodiversity
  - Pollution (air, soil, water quality)
  - Energy (renewable/nonrenewable)
  - Environmental education

Assignments (in & out of class):

- 5% - Elevator speech
- 10% - Press release on an environmental science issue
- Undergraduate 10%; Graduate 5% - Letter to the editor
- Undergraduate 10%; Graduate 5% - Interview
- 10% - Environmental science outreach materials
- 5% - Social media: Twitter, Facebook micro-blog post on
- Undergraduate 20% (10% each); Graduate 10% (5% each)- Two Reflection papers
Only 1 can be on a selected documentary
2 - 3 pages in length for undergraduate students; 3-4 pages for graduate students
- Undergraduate 30%; Graduate 25% - Final presentation
  - Using the principles from Made to Stick and referencing other literature, design and articulate an informational campaign for an environmental issue of student’s choice (depending on class size, possibly complete in pairs)

Graduate students have an additional science-writing assignment:
- Graduate 20% (10% each) - Write two articles on environmental science topics in the format of a well-known science blog (e.g. Southern Fried Science) or science magazine format (e.g. Nature News, Conservation Magazine or The Washington Post Science & Health section) (1000-1500 words each). One of the articles can be on the preliminary results of the student’s graduate research, but this is not required.

Required Textbook & Readings:

We will supplement these readings with journal articles (to be posted on Blackboard), DVD videos, and other media. All required journal articles, etc. are listed in the course schedule.

Suggested/Optional Literature:
- Books

  - Peer reviewed literature – see list at the end of the syllabus (potentially helpful for citations in final project)

Suggested Content to Review throughout the Semester:
**Some content that is presented in the following blogs may help you with ideas for the final project.
- Blogs
  - http://www.newyorker.com/online/blogs/elements/2014/01/the-six-things-that-make-stories-go-viral-will-amaze-and-maybe-infuriate-
you.html?utm_source=tny&utm_campaign=generalsocial&utm_medium=facebook

- Radio/Podcasts (i.e. Science Friday, StartTalk Radio, Science Magazine)
## Course Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
<th>Readings (&amp; other media) for Discussion</th>
<th>Assignments Due &amp; Optional Reading</th>
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</thead>
</table>
| Week 1 | **Topic 1:** Introduction & Course Overview  
- Brainstorm: What do you know about (a) environmental issues and (b) how are they communicated?  
- Science communication  
**Science communication overview**  
**Topic 2:** Role of Scientists in Science Communication  
- Introduction to science communication (continued)  
- Norms of Science  
- Primary literature  
- Deficit model | Wikipedia - Norms of Science – the "Mertonian" approach  
**Should the "adapted" H1N1 Flu Genome be Published? A Case Study in Norms of Science**  
**Case studies** on how scientists (should) communicate science: Climategate and natural gas drilling  
| Week 2 | **Topic 3:** Media Portrayal of Science  
- Journalistic norms  
- False balance  
- Obligations of scientists  
Guest speaker: Samantha Oester (environmental/science communication from a journalism perspective (?) ~20 min talk, ~10 min Q&A? | We Speak For The Trees – Media Reporting On The Environment  
McComas, K., Shanahan, J., & Butler, J. (2001). Environmental content in prime-time network TV’s non news entertainment and fictional programs. Society and  
**DUE:** Elevator speeches  
| 1/20 |  |  |  |
| 1/27 | **Topic 4:** Mediums of Communication  
- TV/Radio/Film/Documentary |  |  |
<table>
<thead>
<tr>
<th>Week 3</th>
<th>2/3</th>
<th>Topic 5: Strategic Communication Planning Process</th>
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<tbody>
<tr>
<td></td>
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<td>“Simple, clear messages repeated often by a variety of trusted sources.”</td>
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<td><strong>Topic 6: Strategic Communication Planning Process</strong></td>
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<td>Made to Stick: Intro</td>
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<td>Made to Stick: Chapter 1</td>
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<th>Week 4</th>
<th>2/10</th>
<th>Topic 7: Media Portrayal of Environmental Science</th>
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<tr>
<td></td>
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<td>“Climategate”</td>
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<td>BP oil spill</td>
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<td>Topic 8: Media Portrayal of Environmental Science</td>
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<td>Popularization of science</td>
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<td>The Day After Tomorrow</td>
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<td>Promised Land</td>
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<td>Discovery’s “Shark Week”</td>
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<td>Documentaries</td>
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<td>Discuss – Press release, newspaper, or</td>
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**Discuss Final Projects & Paper Assignment**


Bales (2004) Communications for Social Good

**DUE: Reflection Paper #1 (choose 1 paper from weeks 1-3)**

Muralidharan, S. et al. (2011) The Gulf Coast oil spill: Extending the theory of image restoration discourse to the realm of social media and beyond petroleum


<table>
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<tr>
<th>Week 5 2/17</th>
<th>Topic 9: Strategic Communication Planning Process</th>
<th>Made to Stick: Chapter 2</th>
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<tr>
<td><strong>Discuss – Letter to the editor assignment</strong></td>
<td>USGCRP (2013) 3rd National Climate Assessment: Cover Letter + Executive Summary</td>
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<td>Research presentation: public perception of marine conservation in Scotland</td>
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<th>Week 6 2/24</th>
<th>Topic 11: Strategic Communication Planning Process</th>
<th>Made to Stick: Chapter 3</th>
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<tr>
<td><strong>DUE: Letter to the editor</strong></td>
<td>Dietz et al (2009) Household actions can provide a behavioral wedge to rapidly reduce US carbon emissions. PNAS</td>
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<tr>
<td>Topic 13: Strategic Communication Planning Process</td>
<td>Made to Stick: Chapter 4</td>
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| **Discuss – Final project topics** | Sommerville & Hassol (2011) Communicating the science of climate change  

**Week 7 3/3**

- **Discuss – Interview assignment**
  - Uncertainty about global climate change. *Public Understanding of Science, 9*(2), 85-103.

**DUE: List of interview questions – interviews will be done in class**


**Hot topic for discussion**

- "I'm not a scientist"  
  - "Shirt-gate"


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<tr>
<th>Week</th>
<th>Topic 15: Strategic Communication Planning Process</th>
<th>Made to Stick: Chapter 5</th>
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<tbody>
<tr>
<td>8</td>
<td>SPRING BREAK</td>
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<td>3/10</td>
<td>SPRING BREAK</td>
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<td>9</td>
<td>Topic 16: Controversial Communications: Examples &amp; Improving Communication</td>
<td>Made to Stick: Chapter 5</td>
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<td>3/17</td>
<td>Discuss – research poster related project topics</td>
<td>Climate Nexus (2012) Connecting the dots</td>
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<td>Final project outline &amp; list of at least 5 initial sources DUE Week 11</td>
<td>Maibach, Nisbet &amp; Weathers (2011) Conveying the human implications of climate change: A climate change communication primer for public health professionals.</td>
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Environmental Working Group (2011) Meat eaters guide to climate change and health

http://scienceonline.com/
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<tr>
<th>Date</th>
<th>Topic</th>
<th>Planning Process</th>
<th>Media imagery of environmental issues</th>
<th>Discussion about final project topics</th>
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<tbody>
<tr>
<td>3/24</td>
<td><strong>Topic 18:</strong> Media imagery of environmental issues</td>
<td>Final project outline &amp; list of at least 5 initial sources DUE next week</td>
<td><strong>mermaid documentary</strong></td>
<td>Social media – Twitter, Facebook</td>
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<td>3/31</td>
<td><strong>Week 11</strong></td>
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<td><strong>Topic 20:</strong> Discussion about final project topics</td>
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**Social marketing**  
**Cute & cuddly species names**


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<tr>
<th>Week 15</th>
<th>4/28</th>
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<tr>
<td><strong>Final presentations</strong></td>
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**Finals week – Graduate science writing assignment DUE**

*Tuesday, May 12, 2014 11:59PM*

*Late assignments will not be accepted.*
Suggested Peer Reviewed Literature:


Johnson, B.B. (2012). Climate change communication: A provocative inquiry into motives,


Nisbet, M.C., & Mooney, C. Framing science. *Science, 316*(5821), 56.


