

Volume 2 | Fall 2018



Inside English 1010

A Journal of First-Year Writing

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Inside English 1010

Volume 2

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Cover Photo: “Pink Focus” by Ankita Sawant

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ACKNOWLEDGEMENTS

Huzzah for our second volume! This publication builds off of the success of last year's inaugural *Inside English 1010*. Much gratitude is extended to Dr. Kelly Kinney, the publication's founding editor, as well as to the team of talented writers, editors, and designers who set us off on a clear path of excellence.

The 2018 edition of our undergraduate journal is the product of many people's hard work. To begin, I'm grateful to the 60+ students who submitted their essays to be considered for publication. The pool of submissions was strong, and making selections was challenging. Thank you also to the English 1010 instructors, whose dedication to supporting their students' development as writers is at the heart of our first year composition program. Our talented instructors help students grow into more confident and skilled academic writers. New to this second volume is the UW student photograph gracing the cover. Thank you to Ankita Sawant for sharing your work and further showcasing the talent of our UW family.

This year's board of reviewers included Caroline Fleischauer, Mary Hill, Francesca King, and Jennifer Thimell. I appreciate the careful reading, conversation, and consideration they put into selecting this volume's content. Special thanks also go to Lead Editor Nat Wischart, Production Editor Heather Holland, and Intern Bradley Horne. Together, they formed a leadership "dream team" for *Inside English 1010*'s production. They were smart planners and collaborators, and the organized, methodical way they developed this publication was exemplary. Thanks to their excellence, my main role was to ask a few questions as I watched the project come to fruition.

Cheers to our student authors and to all who worked hard to produce this volume.
Your work is a testament to the strength of our writing program!

Nancy Small,
Inside English 1010 Faculty Advisor
Director of Writing Programs
Assistant Professor of English
University of Wyoming
May 2018

HOW TO USE *INSIDE ENGLISH 1010*: AN INTRODUCTION FOR STUDENTS AND INSTRUCTORS

Inside English 1010 showcases work in the three main genres taught in English 1010: the Expos Essay, the Researched Argument, and the Opposite Editorial. The essays included in this journal were written by University of Wyoming students in the academic year preceding publication, and were recommended by instructors who feel that this work represents some of the best their students produced.

Reading this introduction, you are probably enrolled in English 1010, and likely haven't written in some—or even all—of these genres before. *Inside English 1010* is a resource designed for you; these essays will clarify evaluation criteria for the three major assignments and will model rhetorical strategies that you will learn and practice in your own writing this semester.

As you read the Expos Essays, pay particular attention to the writers' use of summary, paraphrase, and direct quotation. Can you follow the arguments of the articles being summarized? How do the writers indicate which points are most important? How do visuals and layouts contribute productively to the essays?

What topics have writers chosen for their Researched Arguments, and how have these topics been narrowed into specific arguments? What kind of evidence do the writers use to support their claims, and how do these claims build towards their theses? How are paragraphs organized? What make the introductions and conclusions effective?

How do the writers incorporate personal experience and pathos into their Opposite Editorials, and what other types of evidence do they use? How is the writing style of the Op-Eds different from the Researched Arguments'? How do the writers target a particular

audience in each essay?

Examining strong work in each of these genres will help you recognize what is and isn't effective in your own writing, and why. Use these essays as model and inspiration for your own writing, and know that there is not simply one way to write an extraordinary essay; *Inside English 1010* offers excellent examples of the different ways English 1010 students have been successful in communicating their interests and ideas.

Once you've revised your essays for the final portfolio, send your best work as Word documents to insideenglish1010@gmail.com to be considered for publication in the next issue of *Inside English 1010*.

The editorial board of *Inside English 1010* wishes you a semester filled with interesting reading, engaged discussion, and good writing. Work hard, have fun, and write on!

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Expos

INSIDE ENGLISH 1010

Expos | Summarizing the Experts on Issues that Matter

Quick Facts*:

- Whether it's worrying or fantasizing, all of us daydream – or let our minds escape from the task at hand.
- You daydream less as you get older.
- Daydreaming makes you forget what you were doing.
- Daydreaming turns off other parts of the brain.
- Your brain, not your mind, controls your daydreams. Daydreaming is reliant on the structure of the brain, rather than the concept of our conscious mind.

*source: news.nationalgeographic.com

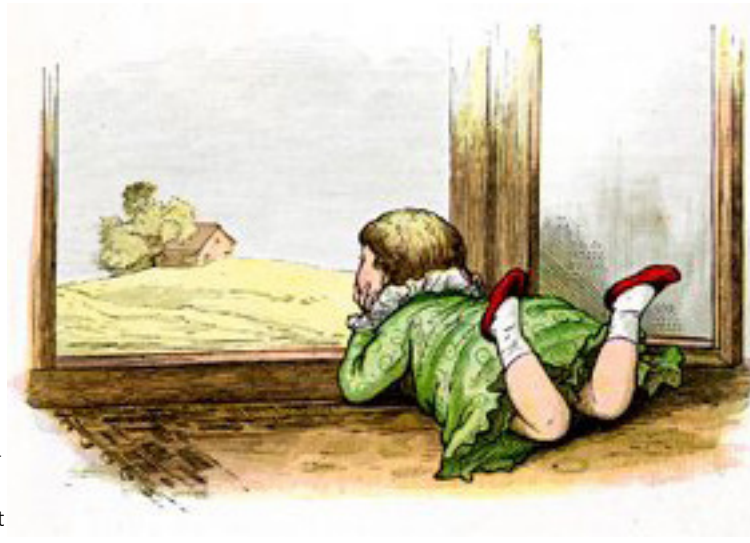


Image Credit: Ida Waugh

About Expos

Expos essays summarize a scholarly or professional article for a public audience, identifying main arguments and key information important to the academic community. We call these pieces "Expos" because they are written in the tradition of expository writing, which provides readers with research findings in order to inform and educate. Expository writing is found in many academic contexts, including our student journal Inside English 1010 and popular news publications such as Inside Higher Ed, which run feature stories on cutting edge scholarship for a general academic audience.

Daydreaming: Positive or Negative?

By Nina Anderson

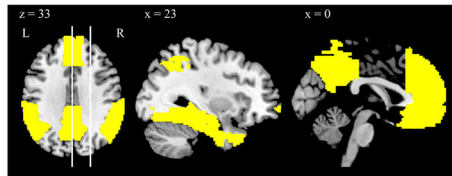
How important are social connections when it comes to the human mind? It is argued that "positive and lasting social relationships are vital for health and happiness" (Poerio and Smallwood 605). Throughout their article "Daydreaming to navigate the social world: What we know, what we don't know, and why it matters", Giulia Poerio and Jonathan Smallwood argue that daydreaming is essential to the process of navigating the social world because "it can facilitate the pursuit of the goals needed for social interaction" (Poerio and Smallwood 606). Daydreaming has been defined in a multitude of ways as psychology has progressed. Starting with the more negative connotation of daydreamer, describing a daydreamer as "lazy and inattentive" (Poerio and Smallwood 606), leading to the more adaptive nature of day-

DAYDREAMING: POSITIVE OR NEGATIVE?

dreaming, and its positive correlation to decreasing loneliness among humans. But the question is, how adaptive is daydreaming? Poerio and Smallwood explore this in their research and in their article.

Adaptive Aspects of Daydreaming

To get to the positive outcomes of daydreaming, one must first look at the psychological aspects. Daydreaming can be considered the default mode of thought, as it is psychologically associated with the DMN (default mode network), the state of the brain when not actively participating in motor skills or processing. It has been shown in recent studies that both daydreaming and spontaneous thought heavily involve the DMN, proving the psychological connection daydreaming has on the human mind. When it comes to daydreaming, there are many pros and cons. To discuss a few, daydreaming can be detrimental to completing tasks, as it can distract the mind from the task at hand. However,



The Default Mode Network
Image Credit: Yang, et al

it has also been studied that daydreaming can lead to an increase in happiness, allow one to explore the future, involve their creativity, and increase the ability to delay gratification as conveyed in the article by Poerio and Smallwood.

In the article, Poerio and Smallwood ask what it means for daydreaming to be adaptive. The response to this question is as follows; a process is adaptive if it pursues meaningful personal goals. That is, if one's daydream relates to goals they have set (instrumental or hedonic), it allows them to interact with their surrounding environment, resulting in better human connections and an increase in social cognition. (Poerio and Smallwood 608). It is argued that to achieve important goals, one must involve their brain in social cognition in a more offline state of mind, or through daydreaming. Poerio and Smallwood performed a meta-analysis in order to determine if there was overlap between social cognition and daydreaming. This study concluded there is "a pattern of spatial overlap in regions of the anterior temporal lobes and posterior cingulate cortex" (Poerio and Smallwood 609), meaning the concepts of social cognition and daydreaming share a dependence on similar neural processes. Therefore, Poerio and Smallwood have made connections that establish their argument that daydreaming is adaptive.



Writer's Bio:

Nina Anderson

Nina Anderson was born in Rock Springs, Wyoming, but moved away at the age of four and grew up in Loveland, Colorado. Nina is currently studying Political Science at the University of Wyoming, with hopes of attending law school one day and becoming a criminal prosecutor.

Law has always been an interest for Nina, attending Colorado Girls' State in 2016, and working with the Loveland Teen Court program for three of her four years in high school. Not only does she love law, she also has a passion for photography, with a love for specifically macro and portrait photography!

Nina hopes to one day become a partner in a prestigious law firm, while still keeping up with her photography, of course.

Want to Learn More about Daydreaming?

Read

Kuyci, A. & Davis, K.D. (2014). Dynamic Functional Connectivity of the Default Mode Network Tracks Daydreaming. *NeuroImage*, 100, 471-80. Doi: dx.doi.org/10.1016/j.neuroimage.2014.06.044

Gopnik, A. (2016, Nov 23). "The brain machinery behind daydreaming; new research shows how our brains make – and profit from – wandering thoughts." *Wall Street Journal (Online)* Retrieved from <http://libproxy.uwyo.edu/login?url=https://search.proquest.com/docview/1842650603?accountid=14793>

Watch & Listen

Bigthink. "Mindful Daydreaming Enhances Creativity, Not Meditation Alone." *Youtube*, Youtube, 20 Jan.2016, www.youtube.com/watch?v=heDUz4400BU. Accessed 25 Sept. 2017.



Image Credit: Jaka Ostrovrsnik

Outcomes of Daydreaming

Based on the argument made by Poerio and Smallwood, there are a multitude of positive outcomes associated with daydreaming. It can increase social interaction, allow one to further adapt to a new social environment, and increase the chances of personal goals being achieved. Daydreaming often consists of social interactions, where the brain plays out a scenario and the possible outcomes of said scenario. Research has been done to affirm that "imagined interactions" are a form of daydreaming where one imagines dialog with those close to them. It has been proven that "more frequent imagined interactions are associated with less loneliness" (Honeycutt, Edwards, & Zagacki, 1989 as referenced in Poerio and Smallwood 610), therefore daydreaming has an adaptive nature that relates back to an increase in happiness. Social daydreaming can in turn result in feelings of social connection, and furthering the achievement of personal goals. Another argument made by these two authors is that social daydreaming can help one become more adaptive to an unfamiliar environment. Through sampling social daydreamers going through a new transition in life – the move from home life to college life, Poerio and Smallwood were able to determine that social daydreamers showed an increase in involvement with others, as well as a decrease in loneliness and increase in the feeling of being connected, therefore representing a positive correlation to social daydreaming and adaptiveness. Finally, the connections between daydreaming and goal pursuit. A huge emphasis in the argument made by Poerio and Smallwood is that daydreaming should produce changes in the outcomes of goals. The two authors have two suggestions for further research to be completed, including the idea that more research should be focused on the outcomes of goal pursuit following

DAYDREAMING: POSITIVE OR NEGATIVE?

daydreaming, and examining the proximal and distal effects of daydreaming on goal pursuit and the achievement of said goals. The research done by Webb and Sheeran in 2007 has concluded that imagining goals through daydreaming has given opportunities to act on the goals, creating a more efficient way to achieve the goals (Poerio and Smallwood 613).

So, What Should We Do About It?

To conclude their article, Poerio and Smallwood examine the connections between daydreaming and social interaction as well as relationship behaviors. They discuss how directed imagination of social interaction reduces anxiety when the actual interaction occurs. Planning a social interaction allows one to have an idea of what is going to happen, in turn reducing their anxiety and increasing the success of said relation. When it comes to daydreaming and relationship behaviors, Poerio and Smallwood make another research suggestion; in which they convey that a study should be done to examine the relationship between social cognition and later relational behaviors and the effect on the outcomes of daydreaming on problem solving and conflict resolution.

However, one cannot study daydreaming in the same way one may study other topics because, “daydreaming must be observed and captured rather than manipulated by experimental instruction” (Smallwood, 2013 as referenced in Poerio and Smallwood 614). As a final statement, Poerio and Smallwood discuss the importance of integrating cognitive neuroscience and social psychological approaches. Here, they are calling for others to research daydreaming further. In which many possibilities could lead to endless possibilities in studies of how daydreaming affects the DMN, and how “the more unconstrained state of daydreaming is related to the realization of meaningful social goals in the real world” (Poerio and Smallwood 614). Daydreaming has always been seen as a negative, however, after extensive research has been done, may it one day be seen as a positive?

Works Cited and Images Credited

“Five Surprising Facts about Daydreaming.” *National Geographic*, National Geographic Society, 16 July 2013, news.nationalgeographic.com/news/2013/07/130716-daydreaming-science-health-brain/. Accessed 25 Sept. 2017.

Ostrovnsnik, Jaka. “Daydreaming.” 2014, *Wikimedia Commons*, Wikimedia Foundation, commons.wikimedia.org/wiki/File:-Daydreaming_(14216809054).jpg. Accessed 25 September 2017.

Poerio, Giulia Lara and Jonathan Smallwood. “Daydreaming to Navigate the Social World: What We Know, What We Don’t Know, and Why It Matters.” *Social and Personality Psychology Compass*, vol. 10, 2016, pp. 605-618.

Wuagh, Ida. 1881, *Wikimedia Commons*, Wikimedia Foundation, [https://commons.wikimedia.org/wiki/File:Daydreaming_\(1\).jpg](https://commons.wikimedia.org/wiki/File:Daydreaming_(1).jpg). Accessed 25 September 2017.

Yang, X-F, Bossmann J, Schiffhauer B, Jordan M, and Immordino-Yang, MH. “Depiction of the anatomically defined DMN mask.” *Wikimedia Commons*, Wikimedia Foundation, commons.wikimedia.org/wiki/File:Anatomically_defined_Default_Mode_Network.jpg. Accessed 25 September 2017.

INSIDE ENGLISH 1010

Expos | Summarizing the Experts on Issues that Matter

Facts about Sketchnotes:

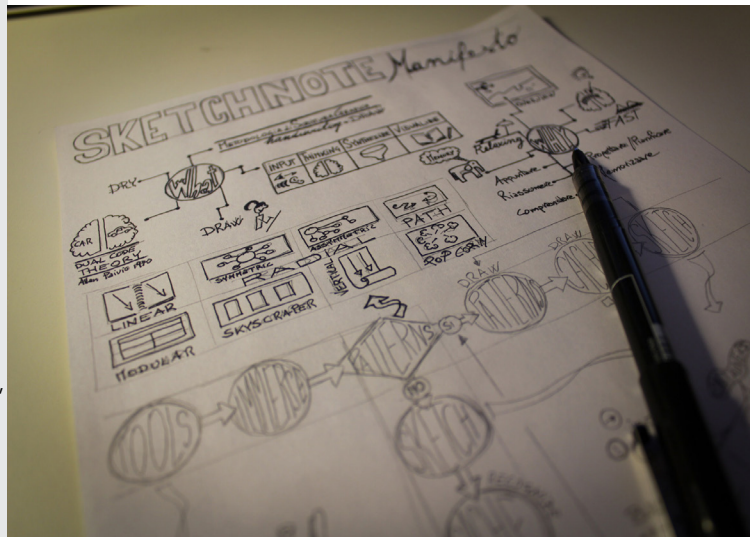
- Sketchnoting is a form of “visual note-taking” which, recently, has become popular at tech conferences (Magain).
- “Creating a sketchnote can be broken down into four basic categories: planning, listening, processing, and drawing” (Magain).
- “Sketchnotes are as much a method of note taking as they are a form of creative expression” (Rohde).
- You don’t have to be an artist to create a sketchnote (Rohde).

Sources:

- * “Sketchnoting 101: How to Create Awesome Visual Notes”
- * “About Sketchnotes”

About Expos

Expos essays summarize a scholarly or professional article for a public audience, identifying main arguments and key information important to the academic community. We call these pieces “Expos” because they are written in the tradition of expository writing, which provides readers with research findings in order to inform and educate. Expository writing is found in many academic contexts, including our student journal Inside English 1010 and popular news publications such as Inside Higher Ed, which run feature stories on cutting edge scholarship for a general academic audience.



Sketchnote Manifesto
Photo Credit: Luigi Mengato

An Interesting Way to Take Notes: Sketchnoting

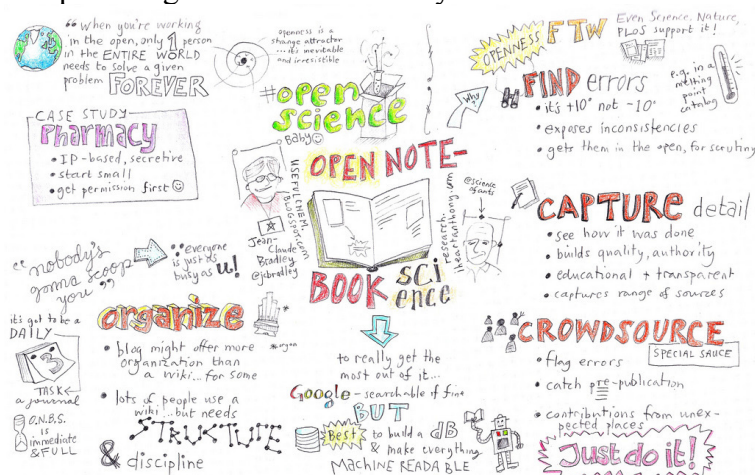
By Sarah Bridges

Have you ever found yourself struggling to read your notes after you’ve taken them? Maybe you keep telling yourself that you are going to go back and review your notes, but never quite get to it. Lucky for you, Robert Dimeo, Ph.D and “Director of the NIST Center for Neutron Research,” (NCNR) has found a solution to that problem. In his article, “Sketchnoting: An Analog Skill in the Digital Age,” Dimeo shares a method of taking visual notes through drawing and writing. He explains what sketchnoting is and what goes into a sketchnote. Dimeo also shares how to make a sketchnote, what tools are needed, and a 30-day experiment he made for himself to make one sketchnote every day.

AN INTERESTING WAY TO TAKE NOTES: SKETCHNOTING

What, Exactly, is a Sketchnote?

“Sketchnotes are ‘rich visual notes created from a mix of handwriting, drawings, hand-drawn typography, shapes, and visual elements like arrows, boxes and lines,’ according to Mike Rohde, author of *The Sketchnote Handbook*” (Dimeo 9). Basically, a sketchnote is a hand-drawn and written page of notes that are more interesting to go back to and look at or study than a traditional set of notes. A sketchnote usually contains a summary of information the note taker wants to remember. While it can be difficult to learn the skill of sketchnoting, it can be very helpful for people who never end up reading their notes after they take them.



Example Sketchnote
Image Credit: Matt

Sketchnoting can also help with memory more than other forms of taking notes. Note taking on a laptop doesn't help as much as written notes, as the act of writing has been shown to help with retention of information (Dimeo 10). Sketchnoting is even more helpful than simply writing because the way the brain is exercised makes it much easier to remember the content of the speech or meeting that the sketchnote is being made for. Dimeo states that “research supports the claim that drawing can be an effective learning strategy and has benefits for recall” (10). This shows that the drawing put into making a sketchnote helps you to retain the information better than just writing, as drawing and narrowing down information exercises the brain to help with memory.

Making a sketchnote is more for personal use than to share, as it is not very descriptive and will make more sense to the writer than to just anyone reading it. “Although a sketchnote might be made more accessible to a broad audience, that is not its purpose” (Dimeo 10). Sketchnotes are mainly created for the author's use, so more often than not, they don't make sense to anyone else.



Writer's Bio: Sarah Bridges

Sarah Bridges graduated as salutatorian from Campbell County High School and is now enrolled as a student at the University of Wyoming, pursuing a degree in architectural engineering. With this program comes a handful of difficult courses that can sometimes overload a student with new information. She is very interested in the article, “Sketchnoting,” as the art of sketchnoting could actually help her understand these more difficult classes. The idea that drawing can help with memory is very interesting to her, and she would like to perform her own experiment to see if it helps her retain information in school. If sketchnoting helps with her schoolwork, then it could help her in other life situations, such as meetings or presentations about difficult topics. This would be a great thing, as it would make it easier for her to remember important topics and events.

Read and Watch

Read

Schrock, Kathy. "Sketchnoting." *Kathy Schrock's Guide to Everything*, 17 Nov. 2013, www.schrockguide.net/sketchnoting.html.

Magain, Matthew. "Sketchnoting 101: How To Create Awesome Visual Notes - UX Mastery." *UX Mastery*, 17 Sept. 2012, uxmastery.com/sketchnoting-101-how-to-create-awesome-visual-notes/.

Watch & Listen

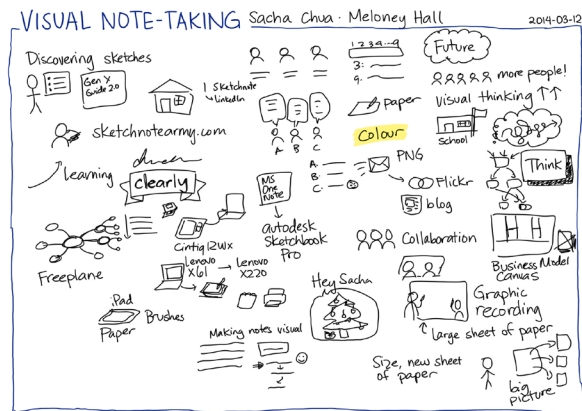
Slideintroduction. "Sketchnoting: 10 Tips to get Started." YouTube, YouTube, 8 Dec. 2015, www.youtube.com/watch?v=v0Dome8AvMk. Accessed 24 Sept. 2017.

Rohde, Mike. "Sketchnotes - Designer Mike Rohde." *Rohde-sign*, Feb. 2013, rohdesign.com/sketchnotes/. Accessed 24 Sept. 2017.

Verbal To Visual. "Sketchnoting For College Students." YouTube, YouTube, 1 Mar. 2016, www.youtube.com/watch?v=l8qT7zAPcKk. Accessed 24 Sept. 2017.

Breaking Down a Sketchnote

There are many elements to a sketchnote, and how they are used can vary from person to person or note to note. An important idea to remember, though, is that a sketchnote is a summary, so it "captures the main points of a body of information and it emphasizes those main points using simple drawings, words and type" (Dimeo 11). They are not meant to be detailed or include every part of a presentation, rather they emphasize important pieces or key quotes. Sketchnotes can be set up in many ways. Columnar follows columns, vertical goes from top to bottom, popcorn is scattered with number or other visual cues, path follows a line, and radial has points stretching out from a center idea. Everyone has their own preference to what kind of layout they want to use for their sketchnotes, and none of them are wrong, as they are meant to be for the author.



Visual Note-Taking
Photo Credit: Sacha Chua

Sketchnotes include drawings, but they don't have to be anything extravagant. Someone with mediocre art skills could easily make their own sketchnote, because stick figures and simple drawings are all that is necessary to get the point across. Dimeo explains that "some of the most effective and sophisticated sketchnotes contain the simplest of drawings but presented in a clear manner" (12). This just shows that it is not necessary to have exceptional drawing skills to make sketchnotes.

Content, Approach, and Tools

There are many different situations in which sketchnotes are useful to summarize information presentations. Some common sources for content are live presentations and meetings, but sketchnotes can be used to summarize any piece of work or information (Dimeo 13). It is different creating a sketchnote from a live presentation versus a document that you read, as summarizing a live presentation through writing and drawing requires the author to

AN INTERESTING WAY TO TAKE NOTES: SKETCHNOTING

listen closely and process the information quickly. Summarizing a written document is different, as the note taker can work at their own pace, which is a bit easier than trying to keep up with a speaker.

There are many tools available to people who want to sketchnote, all varying in price and practicality. A piece of paper and a simple pen are enough to do the job, although some like to use a notebook, a high-end pen, or even multiple pens with different colors. It is also possible to use a tablet with a stylus in a drawing app (Dimeo 13). There are all sorts of options available, with a different choice that suits each person.

Sketchnoting for 30 Days

In a thirty-day experiment a few years back, Robert Dimeo put sketchnoting to the test. Dimeo was searching for a way to improve his “understanding of information presented at highly technical seminars (mainly physics) that were far from [his] own particular research background” (13). After doing some web searches in hopes of finding a way of taking notes that he would later look at, he eventually landed upon sketchnoting. He was intrigued by the images he found and decided that he would try sketchnoting. Challenging himself to a thirty-day experiment to make one sketchnote every day, Dimeo, at first, found himself struggling. He had to learn to draw while listening to and processing information. He pushed through, and by the end, the presentations and meetings were more memorable, and his sketchnotes were getting better. To this day, Dimeo continues to practice by using various sources of highly technical information to sketchnote. This experiment shows how sketchnoting can be useful to anyone trying to understand difficult information.

The Advice

Sketchnotes are an extremely useful way to summarize information and can be very beneficial for personal use. Sketchnoting can help you remember information more clearly, or simply make it more enticing to go back and look at your notes. In his article, “Sketchnoting: An Analog Skill in the Digital Age,” Robert Dimeo advises anyone who struggles to remember information or to look at their notes after taking them to try sketchnoting. It is a very simple process, as it doesn’t require much skill or funding. Sketchnoting can help you and it isn’t too difficult, so why not give it a shot?

Works Cited and Images Credited

- Chua, Sacha. “Visual note-taking.” *Flickr*, 28 Jul. 2018, www.flickr.com/photos/sach-ac/13115112334.
- Dimeo, Robert. “Sketchnoting: An Analog Skill in the Digital Age.” *ACM Computers and Society*, vol. 46, no. 3, 2016, pp. 9-16.
- Lockard, Blake. “Brain.” Colorado Mountain College, 2017, isaacschools.org/our-program/graphic-design/.
- Magain, Matthew. “Sketchnoting 101: How to Create Awesome Visual Notes.” *UX Mastery*, 17 Sep. 2012, uxmastery.com.
- Matt. “Open notebook science.” *Flickr*, 28 Jul. 2018. www.flickr.com/photos/kwinkunks/6752095013/in/photostream/.
- Mengato, Luigi. “SketchNote Manifesto #5.” *Flickr*, 28 Jul. 2018. www.flickr.com/photos/luigimengato/8546777878/in/photostream/.
- NCNR. “Staff: Robert Dimeo.” NCNR, 15 Feb. 2017, ncnr.nist.gov/staff/dimeo/index.html.
- Rohde, Mike. “About Sketchnotes.” *Sketchnote Army*, Nov. 2009, sketchnotearmy.com/about/.

INSIDE ENGLISH 1010

Expos | Summarizing the Experts on Issues that Matter

Quick Facts*:

- "As a whole, America's K-12 students are more racially diverse than ever. The U.S. Department of Education projected that minorities would outnumber whites at public schools by fall 2014" (Kent).
- "Students today are more likely to stay in school. As of 2013, 7% of 18- to 24-year-olds that year had dropped out of high school, down from 12% in 2000" (Kent).

*Source: "Five Facts About America's Students"

- "UW is home to more than 13,500 students from all 50 states and 87 countries" (University of Wyoming Quick Facts).
- "UW Minority student enrollment: 10%" (University of Wyoming Quick Facts).

*Source: "University of Wyoming Quick Facts"

About Expos

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Free Speech = Reason = Progress
Photo Credit: Simon Gibbs

Free Speech and Learning from Differences: Insight on the Tension in College Settings

By Michaela Suter

In order to relieve pressure from the growing divide between the intellectual and community role in colleges, Ryan Muldoon claims that there needs to be a strong difference between speech and community approval. Muldoon, a professor at the University of Buffalo, explores the notion that if the habit of pursuing speech was in an exploratory sense compared to an explanatory sense, there is potential to narrow the gap between different groups. In his article "Free Speech and Learning from Difference," Muldoon addresses college oblations from the left and the right of the political spectrum that's hidden beneath the overall community at universities. By ultimately arguing that "the tension between the commu-

nity role and intellectual role of colleges can be resolved, or at least mitigated, if we make a clearer distinction between speech and community endorsement of speech” (Muldoon 2). According to Muldoon, the issues we face today can be decreased or eliminated by further drawing the limits between speech that is or is not endorsed by the community.

Constructing the Definitive Tension

In great detail, Muldoon mentions John Stuart Mill, an influential English language philosopher of the nineteenth century, whose ideas explained that society should allow free speech because it benefits society as a whole (Macleod). For instance, when listening to a speech the speaker is right and therefore the rest of us are wrong. The speech helps us adjust our views, or vice versa, in instances where the speaker is wrong, it makes us appreciate our opinion more. According to Mill, in order to get a full understanding, society first has to recognize why the view is correct. Progress towards mas-



Debating Topics
Image Credit: Niaz

tering a social grasp on the typical opinions of society can be made by challenging the ideas of different developing arguments, which allows a discussion about how good ideas and agreements triumph the bad ones. As Muldoon wrote, two key ideas have come to surface with this knowledge in a university: “first, it seeks to develop new knowledge and rigorously test new ideas, and second, it seeks to build up the capacities of students (and professors) so that they can be better consumers and producers of knowledge” (2). Free speech plays a crucial role in communities at universities due to the fact that it has the potential to challenge ideas and opposing arguments. It is necessary to test the backbone of various perspectives. On certain occasions, there could be pressure that administrators would have to address.



Writer's Bio:

Michaela Suter

Michaela Suter was born in the city of San Diego, California and moved to Sedalia, Colorado at 3 months old. As a freshman at the University of Wyoming, she is still investigating her options for a major considering she's only 18 and in debt, but nonetheless has interests in agriculture and environmental sustainability.

When she's not studying, she usually is stress eating, procrastinating, scraping together money for the smallest amount of groceries and gas, hitting small rabbits on the road (which may or may not be on accident), failing at having a social life (who needs an abundance of friends when you can relate to characters on Netflix) or she is at the farm and training her steer, which she plans to show later this year.

She used to have a difficult time in writing, especially in big papers. In high school, she had a teacher that changed that for her and taught her ways to push through the writer's block she often encounters. He taught her that writing a detailed plan is half of the fight, and once you crank that out, the paper is a piece of cake to finish.

Photo Credit: Personal Photo

Want to Learn More about Free Speech?

Read

Antonio, Anthony Lising. "Diversity and the Influence of Friendship Groups in College." *The Review of Higher Education*. The Johns Hopkins University Press, 01 Sept. 2001. Web. 26 Sept. 2017. muse.jhu.edu/article/30135/summary.

Cortes, Carlos E. "Pluribus & Unum." *Taylor & Francis*. N.p., 09 July 2010. Web. 26 Sept. 2017. www.tandfonline.com/doi/abs/10.1080/00091383.1991.9939874.

Rhoads, Robert A. "Freedom's Web: Student Activism in an Age of Cultural Diversity." *ERIC - Education Resources Information Center*. Johns Hopkins University Press, 30 Nov. 1997. Web. 26 Sept. 2017. eric.ed.gov/?id=ED426684.



Diverse World
Image Credit: PxHere

Should Speech Be Regulated?

A possible approach to the tension regarding free speech would be to administer speech on campus by possibly creating bylaws that "restrict speech that can have this undermining quality" (Muldoon 4). Muldoon believes that if those bylaws were created, the focus would switch from having controversy on speakers or subjects to regulating a perimeter of "acceptable speech," meaning administrators

of universities would have to go through a process of various topics deciding if they would be allowed to be discussed. Touching lightly on possible issues, regulation of free speech would then force universities to no longer take an unbiased stance on controversial issues; therefore, this is most likely an unrealistic approach. Muldoon then corresponds this approach with politics and how each side strays from arguing at a neutral standpoint in the article:

"Choosing sides in this dispute at the level of speech regulation is straying fairly far from any kind of account of liberal neutrality. Electing to block any kind of speech for which these kinds of worries would arise would surrender a huge portion of what we see as the province of campus debate" (Muldoon 4).

As Muldoon stated, debates on campus essentially revolve around very controversial issues and regulations. Those topics not only would be a pain for the universities to administer but would abolish juicy topics to dispute.

The Value of Diverse Settings

Usually, being in a diverse setting can make people feel uncomfortable. This is due to the fact that people like to be around other people that are similar to them because it keeps people from being confrontational. Muldoon elaborates the outlook on diverse settings in

his article:

“Diverse settings can often lack the pleasantries of more homogenous ones. People have different values, different perspectives, and potentially even different standards of evidence. When people are different from each other, they’re more likely to disagree” (Muldoon 5).

Nonetheless, Muldoon argues that diverse settings are valuable because it helps people learn new things and perspectives from new people that have different views. He demonstrates that it is surprisingly easier to learn from people who have different views and beliefs. Suggesting a trend in group settings or even in a work place, diverse organizations are substantially better at problem solving than groups with people who have the same views. Bringing different ideas to the table has a habit of challenging others to overall better one another, compared to a homogenous group who tend to think they are right when in fact that is rarely the case. So, in a sense, feeling uncomfortable can be beneficial towards a stronger learning environment. At a university standpoint, an uncomfortable feeling could be a good match for the scholarly goals of a university.

A Possible Solution

Covering a happy medium on both sides of the spectrum, there is a way to come to an intellectual and socially acceptable combination of free speech and how it should be addressed on campus. As Mill thought, keeping the “soil fertile” would help people attempt new ways of life even if you have no desire to try. Different types of people in groups can be challenging but beneficial in a group setting towards the development of new ideas and thoughts. In a college setting, if a student ends up disliking a group it can always be changed, but pushing through a new group setting could be beneficial for the student in the long run. Nevertheless, universities should aim to obtain different communities.

Muldoon states that in order for campuses to fulfill their mission statements there has to be some connection between these communities. There needs to be a form of cross fertilization of ideas. Free speech is essential at universities nationwide; in order to make the most of ideas, campus administrators should make a home for everyone and in turn “soften the blow of speech” to which people could take offence.

Works Cited and Images Credited

“Diverse World.” *PxHere*, 28 Jul. 2018, pxhere.com/en/photo/550323.

Gibbs, Simon. “Free speech = reason = progress.” *Flickr*, 28 Jul. 2018, www.flickr.com/photos/sjgibbs/117704119/in/photo-stream/.

Kent, Lauren. “5 Facts about America’s Students.” *Pew Research Center*. N.p., 10 Aug. 2015. Web. 26 Sept. 2017. www.pewresearch.org/fact-tank/2015/08/10/5-facts-about-americas-students/.

Macleod, Christopher. “John Stuart Mill.” *Stanford Encyclopedia of Philosophy*. Stanford University, 25 Aug. 2016. Web. 26 Sept. 2017. plato.stanford.edu/entries/mill/.

Muldoon, Ryan. “Free Speech and Learning from Difference.” *SpringerLink*. Springer US, 07 July 2017. Web. 26 Sept. 2017. link.springer.com/article/10.1007/s12115-017-0147-4.

Niaz. “Debate Logo.” *Wikipedia*, 28 Jul. 2018, en.wikipedia.org/wiki/File:Debate_Logo.svg#file.

“University of Wyoming Quick Facts.” *Quick Facts | Admissions | University of Wyoming*. N.p., n.d. Web. 26 Sept. 2017. www.uwyo.edu/admissions/quick-facts/index.html.

Researched Argument

ABOUT THE AUTHOR

Nicole Bonnar was born in Tulsa, Oklahoma though she was raised in Calgary, Alberta, Canada. She is currently a junior at University of Wyoming taking Petroleum Engineering. She previously attended and graduated from the Southern Alberta Institute of Technology (SAIT), becoming a Petroleum Engineering Technologist. She transferred to the University to complete her Petroleum Engineering Degree. She chose this field of study as she has been raised in a family of geologists and engineers, all of whom have some kind of tie with the oil and gas industry.

She cemented her lifelong love for travelling when she spent 4 months abroad in Southeast Asia and Australia. She hopes to continue travelling throughout her life.

SHOULD CALGARY OPEN A SAFE INJECTION CLINIC?

Nicole Bonnar

Safe Injection Clinic, Safe Consumption Facility or Supervised Injection Site (SIS) are all names for a medical clinic that allows drug users to inject or consume their drug of choice while under the medical supervision of doctors and nurses. These clinics provide both clean needles and medical guidance to users. The purpose of these clinics is to prevent the spread of diseases such as Hepatitis C (HCV) and Human Immunodeficiency Virus (HIV) and also to prevent overdoses. Once contracted, these diseases can be treated but never cured, can greatly shorten a person's lifespan and are a great cost to the health care system. Needle sharing is something that happens commonly between drug users and is one way that HCV and HIV can be transmitted. The SIS concept is based on an idea called "harm reduction" (Graham). This concept states that because drug use is a disease it will be inevitable that drug users will continue using, therefore creating a safe space in which they can inject is the best course of action. Not only will an SIS reduce the spread of diseases, it will help prevent overdoses as medical professionals will be on hand to provide care should it be required. Traditionally this kind of clinic targets drug users who use intravenous injection, but with the rise in opioid consumption it is important to broaden the SIS clinic guidelines to allow for all types of drug use. I argue in this paper that Calgary needs to open a safe consumption clinic, where all drug users can be protected and receive medical care.

The City of Calgary has a population of over 1.4 million people as of a 2016 census report and is one of the largest cities within Canada (Fletcher). The City of Calgary Eco-

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conomic Development department estimates that the population of Calgary and its surrounding area will increase to 1.6 million people by the year 2020 (Calgary Economic Development). With its increasing population, there has also been a rise in the number of drug overdoses and deaths in recent years. The increasing prevalence of the drug Fentanyl and even more powerful versions of this drug has greatly increased the number of overdoses and drug related deaths within the past several years. Dr. Eddy Lang was interviewed for an article by the Canadian Broadcasting Corporation (CBC) regarding the strain Calgary's health care system is feeling from the increased overdoses from the rise in fentanyl use stating, "This is consuming a great deal of resources, obviously" ("Alberta hospitals feel the strain..."). As CBC writes, "According to the CIHI report, Alberta youth between the ages of 15 and 24 had the fastest growing rate of emergency room visits for overdoses, with the number tripling in the past five years" (CBC Sep. 14th). There is a very clear need to find a solution to the problem of drug related deaths, especially with the predicted rise in population of the city in the next several years.

One way the City of Calgary has been dealing with overdoses that have occurred is to use a drug called Naloxone to counteract the opioid reaction. This drug can be injected when a person overdoses on an opioid drug and helps to block the opioid receptors, preventing an overdose ("Opioid Overdose Reversal..."). Naloxone is used only when a person has injected or ingested too much for their body to handle and is therefore only a reactionary response not a preventative measure. All Calgary paramedics now have this drug on hand for all calls as this drug is extremely effective if given to a person immediately after overdosing. The increasing numbers of Fentanyl overdoses paramedics respond to adds a greater strain to the medical system. It is also a greater strain on emergency rooms as each person who overdoses needs to be observed "for at least 2 hours by medical personnel after the last dose of naloxone to make sure breathing does not slow or stop" ("Opioid Overdose Reversal...").

Finding a way to stop or prevent the overdose from happening in the first place is the best way to lessen the load on the already overtaxed medical system.

The first ever safe injection site of its kind in Canada was established in 2003 in downtown Vancouver. The Insite Clinic was originally designed as a research project to see if such a site would be beneficial and function in Canada (“Public Health Issues...”; Graham). At this site users could bring in drugs they had purchased to inject them in a safe environment under the supervision of medical professionals. The clinic provided clean needles for users and provided medical assistance should an overdose happen. There have been many studies conducted on the Insite Clinic to determine what effect it really had on reducing the number of drug-related diseases. One study conducted in 2008 by Dr. Ahmed M. Bayoumi and Dr. Gregory S. Zaric found that:

Focusing on the base assumption of decreased needle sharing as the only effect of the supervised injection facility, we found that the facility was associated with an incremental net savings of almost \$14 million and 920 life-years gained over 10 years. When we also considered the health effect of increased use of safe injection practices, the incremental net savings increased to more than \$20 million and the number of life-years gained to 1070. (Bayoumi and Zaric)

The results of this study show that this clinic is very cost effective compared with the health costs associated with overdoses and transmitted diseases from needle sharing. This clearly demonstrates how financially beneficial SIS’s are to the health care system.

Nurses and doctors are very strong advocates for the opening of this clinic. The support comes from overwhelming evidence for the effectiveness of these clinics. Irene Goldstone, a professor at the University of British Columbia, strongly supports the idea of an SIS and rejects the opinion that there is not enough evidence in support of its usefulness. Goldstone states, “Supervised injection is among the most researched public health

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interventions, and the evidence is ‘overwhelming’: it reduces infection rates and prevents overdoses, and engages people in health care” (“Public Health Issues...”). Dr. Thomas Kerr also discusses support for the Insite Clinic in an article in the Canadian Medical Association Journal. In it he discusses that “major medical and public health organizations across the country, including the Canadian Medical Association, supported Insite’s exemption request and the evidence that its services reduce overdose deaths and the transmission of infections” (Eggertson 2015). Opinions of support from professionals who deal with this problem first hand cannot be easily dismissed.

The raw numbers of those who have benefited from the opening of this Insite Clinic are significant. A study conducted by Aidan MacDonald reviewed dozens of previously conducted studies to determine the overall impact it has had on Vancouver. Of overdose deaths “there were zero recorded” in 2009 at the Insite clinic while “in the 10 years before Insite was in operation there were approximately 147 overdose deaths annually” (MacDonald). With 484 separate overdose cases being treated and zero fatalities resulting, the statistics strongly support the benefits of these clinics (MacDonald). Insite has worked to not just reduce overdoses but also to prevent the spread of HIV. The study discusses that “in the downtown eastside of Vancouver in 2006 there were just 30 new cases of HIV reported, compared to over 2,100 a decade earlier” (MacDonald). By providing clean needles and having medical professionals available to treat and provide care to the drug users in the community, the clinic is not only saving money but most importantly, lives. The positive results of these kind of clinics have in reducing the spread of diseases and overdose deaths could have a huge impact in Calgary.

One argument supporting these clinics is based upon the idea that the Insite Clinic has helped to reduce crime in the surrounding area. However, Former Chief of Police for the City of Vancouver, Jaime Graham, argues that along with the opening of the Insite Clin-

ic, there was a significant increase in the police presence in the area surrounding the clinic, which he argues is the majority reason for the decrease in crime. Chief Graham concludes that “Police crackdown on street level dealers and a focus on addicts who use or fix in or near parks and schools are prosecuted, and this has made a huge difference” (Graham). As Graham mentions in his article, the police presence surrounding the clinic was stepped up when it first opened. By giving users a legal place to use drugs, you are removing some of the crime from the street. Coinciding with this, a greater police presence enforcing laws in the area around it will force users to make use of the clinic or face the consequences of breaking the law. This increased police presence in the areas of Calgary where drug use is higher, mostly in the downtown core, would be safer and have reduced crime from this increase in patrols. Whether the clinic itself is the reason for the reduction in crime solely or in partnership with the police in the area, it is clearly beneficial for the community as a whole.

Some opponents argue on moral grounds against the opening of a SIS or safe consumption clinic; is this clinic providing a safe space where users are told it is okay to do what they are doing? Many people fundamentally do not agree with any scenario which allows drug users to keep using and does not assist in rehabilitation. As the Globe and Mail writes in their article summarizing the views of some people about the Insite Clinic, “there is still profound discomfort for many with any facility that gives addicts a green light to inject illegal drugs and flout the law” (Lehmann). Many people disagree with the idea of the Insite Clinic as governments “should not be facilitating illegal, dangerous activities” (Lehmann). Though technically the clinic does allow users to keep using, the concept is to prevent deaths from happening with people who would not be seeking assistance in stopping their drug use. The moral argument simply is not important enough when faced against the possible overdose deaths of drug users. Whether letting them continue to inject and consume illegal drugs is against your own personal ethics, supporting and saving human lives

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is that much more important. Whether or not a person is a drug user, all Calgarian's deserve treatment and help to prevent injury and death. As Dr. Lang states "If these sites are well accepted ... we could see a 50 to 75 per cent reduction, hopefully, in the number of cases that have to come to hospital" ("Alberta hospitals..."). This percentage in reduction of persons brought to the hospital because of drug related incidents shows how much it could lighten the strain on hospitals and emergency rooms. And with less resources being used to help treat overdoses, that public money can be put to better use.

Having more openness around drug use and the reasoning behind an SIS will help to change the public's view on these clinics and why they are important to have. In order to gain more public support for these clinics the fundamental idea needs to be taught that "addiction is not a life choice. Addiction is a health issue" ("Public health issues..."). The misconception that addicts choose to use and can simply stop if they "set their mind to it" is wrong as drug addiction is classified as a "chronic, relapsing brain disease" by the National Institute on Drug Abuse ("The Science of Drug Abuse..."). Having a series of public service announcements on major news networks based in Calgary would be one way for the City of Calgary to spread the message of the injection clinic and educate the public on what an SIS is. By educating residents of Calgary on the principles of the SIS, it will help to bring some public opinion towards supporting this clinic.

Legislation is leading the way to making it easier for safe injection and safe consumption sites to be opened up. Previously, the Controlled Drugs and Substances Act (CDSA) made it very difficult to get approval to open up a safe injection clinic in Canada. The process involved applying to the Minister Ministry? of Health for an exception to the law and it would be reviewed for approval (Eggertson 2013). A supreme court ruling overturned a government decision to deny the renewal of the Insite Clinic facility license in 2008, giving the government specific guidelines to review when deciding if this type of facility is appro-

priate (“Public Health Issues...”). Since then, Bill C-37 has been introduced and passed into law in May 2017. It amends the CDSA to “simplify the application process for communities who wish to open supervised consumption sites, while ensuring that community consultation continues to be an integral part of the process” (Health Canada). With the federal law easing the process to open an SIS, it shows provincial and municipal government the clear opinion of the federal governments that these clinics work. This legislation opens up an easier process for the City of Calgary to begin the process of planning its own injection clinic.

The benefit of these clinics is very clear, with many medical professionals as well as legislators showing their approval and agreement that these clinics work to prevent the spread of disease and reduce overdoses. The results from studies on the Insite Clinic show the positive effects it can have on both the health care system (by saving money) and the number of lives it can save. Whether or not the majority of people living in Calgary agree with the “morality” of these kinds of clinics, the benefits have been clearly proven. The City of Calgary, like many other North America urban centers, is suffering through an ever-expanding opioid crisis. Hundreds of Calgarian’s have already lost their lives and more are in jeopardy. The City of Calgary should be urged to embrace this research and open up an SIS immediately. They don’t just save money, they save lives.

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WORKS CITED

- “Alberta hospitals feel the strain as overdose-related ER visits skyrocket.” *CBC News*, September 14th 2017, www.cbc.ca/news/canada/calgary/alberta-opioid-emergency-room-visits-increase-1.4288714.
- Bayoumi AM, Zaric GS: The Cost-Effectiveness of Vancouver’s Supervised Injection Facility. *Can Med Assoc J*. 2008, 179 (11): 1143-1151. www.cmaj.ca/content/179/11/1143
- Calgary Economic Development, The City of Calgary. *Calgary and Region Economic Outlook: 2017-2022*. Spring 2017, www.calgaryeconomicdevelopment.com/research-and-reports/demographics-lp/demographics/.
- Eggertson, Laura. “Legislation Ignores Benefits of Safe Injection Sites, Say Doctors.” *CMAJ : Canadian Medical Association Journal = Journal De l’Association Medicale Canadienne*, vol. 185, no. 12, 2013, pp. E555.
- Eggertson, Laura. “Legislation Jeopardizes Safe Injection Sites.” *CMAJ : Canadian Medical Association Journal = Journal De l’Association Medicale Canadienne*, vol. 187, no. 8, 2015, pp. E225.
- Fletcher, Robson. “Calgary’s Population Grows by 0.3% in 2016 Despite Thousands of People Leaving the City.” *CBC News*, July 20th 2016, www.cbc.ca/news/canada/calgary/calgary-civic-census-results-2016-1.3687258
- Graham, Jamie. “Supervised Injection Sites—a View from Law Enforcement.” *Issue: BCMJ*, vol. 50, No. 3, April 2008, pp. 132-134, www.bcmj.org/premise/supervised-injection-sites—view-law-enforcement.
- Health Canada, Government of Canada. *Royal Assent of Bill C-37 - An Act to amend the Controlled Drugs and Substances Act and to make related amendments to other*

Acts. May 18th 2017, www.canada.ca/en/health-canada/news/2017/05/royal_as-sent_of_billc-37anacttoamendthecontrolleddrugsubstan.html.

Lehmann, John. "The Arguments For and Against Vancouver's Supervised Injection Site." *The Globe and Mail*, March 26, 2017, www.theglobeandmail.com/news/british-columbia/the-arguments-for-and-against-vancouvers-supervised-injection-site/article596153/.

Macdonald, Aidan. "Insite Or Outside the Law: Examining the Place of Safe Injection Sites within the Canadian Legal System." *Oñati Socio-Legal Series*, vol. 1, no. 1, 2011, pp. 10.

"Opioid Overdose Reversal with Naloxone (Narcan, Evzio)." *National Institute on Drug Abuse*, September 2016. www.drugabuse.gov/related-topics/opioid-overdose-reversal-naloxone-narcan-evzio

"Public Health Issues should Trump Politics, Advocates of Safe Injection Sites Urge." *The Canadian Nurse*, vol. 108, no. 6, 2012, pp. 8.

"The Science of Drug Abuse and Addiction: The Basics." *National Institute on Drug Abuse*, October 2016. www.drugabuse.gov/publications/media-guide/science-drug-abuse-addiction-basics.

ABOUT THE AUTHOR

University of Wyoming freshman, Autumn Knight, has always had an acute passion for writing and the world around her. Originally from Buffalo, Wyoming she often found inspiration in writing about nature and the beauty that surrounded her at the bottom of the Bighorns. Dedicated to put her best foot forward in all things, she is constantly driven to go above and beyond expectations.

AUTONOMOUS VEHICLES

Autumn Knight

“Did you ever think you’d see a man walk on the moon?” I asked my grandfather. “Not in my lifetime,” he replied. A similar question could be asked for my generation, “Did you ever think an Uber would pick you up without a driver in the front seat?” The answer to that question was ‘no’, until just recently. Numerous companies have made huge advancements and large pushes for autonomous vehicles or self-driving vehicles. Some of these companies include and are not limited to Uber, Google’s Waymo, Tesla, Otto, SARTRE, Honda, Toyota, Ford, Baidu, ZF, PSA, Volvo, BMW, Volkswagen, Daimler, and General Motors (Muio 1-21). One of former President Obama’s final budget proposals included a \$32 billion budget for innovations directed towards our country’s transportation system with a specific budget of \$3.9 billion to go towards the research, creation, and deployment of self-driving vehicles within the decade (“Self-Driving Cars” 1-2). The most prominent and society altering effects of autonomous vehicles would be when we reach the technology of level 5 automation. Level 5 automation would be the level in which the car would no longer require a human supervisor, steering wheel, gear shifts, pedals, and brakes in the car. All lesser levels (level 4, 3, 2 and 1) require some form of human driving. All of the companies listed above appear to be in a race for the creation and sustainability of a level 5 vehicle. Why the big push? Self-driving vehicles, in more ways than one, will change the world. Despite the loss of manual labor jobs and the ethical and law making conundrum of a self-driving vehicles, autonomous vehicles will offer huge advancements in every aspect

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of society and multiple industries, more than just road safety and saving lives.

The most obvious solution to car accidents is eliminating human error with self-driving vehicles. Close to 30,000 American lives will be saved with the advancement and application of this new driving technology by the elimination of human-error car accidents. “Autonomous vehicles, which could reduce traffic fatalities by up to 90% by eliminating accidents caused by human error—estimated to be 94% of fatalities—could save more than 29 000 lives per year in the United States alone,” (Fleetwood 532). The reality is: humans were not made to drive. We are flawed creatures with short attention spans, and with the creation of portable technology, easily distracted. We text, we read emails, check Facebook, Twitter, Instagram, take selfies, shoot video, and video chat. The US Department of Transportation reported, “In 2011, 3,331 people were killed in crashes involving distracted drivers and an estimated additional 387,000 were injured in motor vehicle crashes involving distracted drivers,” (“Distracted Driving 2011”). In an AT&T survey of more than 2000 respondents between the ages of 16 and 65, respondents admitted to: 61% text, 33% email, 28% surf the net, 27% use Facebook, 17% snap a selfie/photo, 14% use twitter, 14% use instagram, 12% shoot videos, 11% snapchat, and 10% video chat (Davies 2). Having a vehicle that removes the need for complete operation would ease the pressure on humans to not participate in more stimulating activities, like cell phone use, while also participating in a dangerous and full-attention demanding activity: driving.

Alongside the epidemic of distracted driving there is also the epidemic of driving under the influence which leads to more human error accidents which can be eliminated by automated autos. “Alcohol-related highway crashes accounted for 13,365 deaths in 2010. In addition, alcohol-related highway crashes annually cost Americans an estimated \$37 billion,” (Chambers et al. 1). Alcohol is also the highest ranking cause of car accidents resulting in death at 40% (Car Accident Statistics in the U.S.). The one thing all drunk drivers

have in common is that they made the decision to get behind the wheel under the influence. Why they chose to drive drunk ranges everything from not having money for cab, thinking they weren't as drunk as they were, and/or not having a designated driver. The underlying theme is that they were too mentally incapacitated to make a safe decision. It is obvious that taking away an intoxicated person's ability to drive is a solution, but in the near future instead of having a designated driver you now have a self-driving vehicle.

Autonomous vehicles will go beyond just saving lives by eliminating car accidents, they can continue to save lives in other areas. Self-driving vehicles will free up hospital and trauma centers to invest their time in other useful ways. As I already stated, 30,000 lives will be saved by eliminating car accidents but another 3 million people are injured every year in the U.S alone, 2 million of those victims suffering permanent damage for the rest of their lives (Car Accident Statistics in the U.S.). With the elimination of car accidents we eliminate millions of potentially fatal hospital visits yearly. How many more lives will be saved by allowing ER doctors and nurses more time to prevent sickness and help other medical emergencies? What advancement could be made and cures discovered with this new technology taking away an incredible burden on our healthcare system? The number of lives saved and number of diseases cured could be countless.

This drop of injured and killed Americans will go one step further to affect insurance premiums for the rest of us. With millions of Americans requiring lengthy stays and expensive healthcare, insurance companies charge us large premiums in order to cover the millions if not billions of dollars paid to hospitals and trauma centers and still profit. The average monthly premium expensive for a single individual without government subsidy is \$321 while premiums for family plans average \$833 per month ("How Much Does Health Insurance Cost"). For an average individual that is around \$3,850 a year and for an average family almost \$10,000 yearly. When the estimated millions if not billions of dollars are no

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longer required to be paid to healthcare facilities by insurance companies to cover the cost of car accidents we will see a huge drop in healthcare insurance premiums. Car insurance premiums will also drop for many of the same reasons. The majority of the expenses paid for car insurance premiums is to pay for liability. In 2014, Wyoming's average expenditure, "the total premium collected in each state for liability, comprehensive and collision coverage divided by the number of insured vehicles," was \$669 for a single Wyoming resident ("Cost of Auto Insurance"). Yearly that is a little more than \$8,000. As auto repair shops do not see nearly as many car accidents, insurance companies will not have to pay out as much therein dropping premiums for us. That is if you even own a vehicle; it's highly suggestive a large majority of people will forego owning a vehicle for better public transportation.

Public transportation will have a completely new and better role in societies with self-driving vehicles despite job loss. Ryan Snyder, of the Autonomous Vehicle Task force of the National Uniform Traffic Device Committee while also serving on the faculty at the University of California, Los Angeles Urban Planning Department, looks forward to the potential these vehicles have for public transportation. He writes, "As an urban planner, I am particularly interested in what Automated technology can do for our transportation systems and our cities"(25). One of the first technology possibilities he brings up is the possibility of "Lane Clearance". Lane clearance is the concept of vehicles in a sense being able to "talk" to one another and having the ability to recognize priority vehicles. Priority vehicles could include emergency vehicles and public transit busses. How would this affect public transit? Snyder suggests that faster service could be provided with high speed busses that would travel in a designated lane and other vehicles would provide lane clearance. Another aspect that is included is the possibility of increased service. The APTA's Public Transportation Fact Book in their 2015 66th edition lists that the cost of the operator is 35.2% of all capital and operating expenses. With the opportunity to have public transit vehicles one third of the

price, it provides the opportunity for transit operators to offer more vehicles. This idea could also be transferred to the concept of companies like Uber or Lyft. Companies could lower operating costs by no longer needing a hourly paid driver, thus creating the opportunity to put more vehicles on the road. As I mentioned before, with more public transit vehicles the need for a personal vehicles will decrease and as a result could see a decrease in greenhouse emissions. This ideal easily is transferred over to freight trucks.

Trucking is still one of the most popular form of delivery for products and packages and isn't going anywhere anytime soon, however automation, or car machinery's equivalent to artificial intelligence in the simplest definition, can have a huge impact on the industry. According to the Bureau of Labor Statistics there are 1.7 million truck drivers. When we look at an overview of what autonomous vehicles will affect, safety is the first to come to mind, however these advancements can stretch as far as affecting companies and jobs. Otto, a company started and built by 40 people who had originally worked on similar technology for Google, Tesla, Cruise Automation, Apple and other companies, has been the most prominent leader in trucking automation by producing technology and hardware kits for already existing trucks ("Hybrid Cars"). "Last October an Otto-outfitted self-driving truck carried 2,000 cases of Budweiser beer 200 kilometers down Interstate 25 in Colorado from Fort Collins to Colorado Springs—while the truck's only human driver sat in the sleeper berth at the back of the cab without touching the vehicle's controls," (Freedman 68) Autonomous trucks would provide more opportunities to trucking in various ways. One way includes that legally truck drivers can only drive eleven hours a day and a total of 60 hours a week (Freedman 68). With autonomous vehicles they could have the opportunity to haul freight 24/7 and in some cases a driver would only need to be in the vehicle to monitor it. The driver could also engage in other activities like relaxing, working, or even learning a new trade. David H. Freeman, a dedicated analyst and writer of new technology, summariz-

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es what one driver said in response to continuous automated driving, “Drivers could use the time away from the wheel to catch up on trucking’s heavy paperwork, locate a ‘backhaul’ load that would pay for the return trip, chat with family and friends, learn a second trade, or run a business,”(70). So while the job’s requirements would vastly change, the opportunity for growth and career is still available. Trucking job loss will occur. However in the time between trucks requiring some manual takeover by a driver and to complete automation, truckers will have the time to prepare and train for other jobs even while driving.

There is also the opportunity for the environment to feel the positive effects of self-driving vehicles. Otto programs their vehicle to stay at optimal speeds and acceleration for lower fuel usage; saving money and carbon emissions (Freedman 68). There is also the concept that with 24/7 trucking there will be less trucking vehicles, therein decreasing greenhouse emissions as well.

Many American drivers fear the rising technology as it becomes more and more apparent that automation threatens their job. As I stated before, eventually autonomous vehicles will reach the point of level 5 automation: a vehicle with no need for any kind of human driver. Not just truck drivers worry about their jobs, numerous industries are preparing for serious job loss. The heaviest losses would be manual labor jobs. Truck drivers, public transportation drivers including taxis, car repair mechanics, will see the most job loss. Another job that could potentially see unemployment would be traffic police, as self-driving vehicles do not break laws. There is also the debate of whether or not hotel industries will suffer from self-driving vehicles. A driver could fall asleep while their car drove it’s passenger’s to their destination, drivers would no longer have to stop and rent a hotel room to rest for the night (Barbier). Although this suggested, others suggest that it will not hurt the industry as hotels are used for other reasons like vacations.

Another important obstacle is the ethics to be debated and regulated in autonomous

vehicles. This new technology is facing questions in production that have never existed before in product making. One of the major questions that is brought up is: what will happen in an emergency situation with two parties involved? Will the car be programmed to take the path of most safety for its passenger, even if that means more destruction for the other party? An example would be the car choosing to hit a pedestrian that crossed the road in front of the car without looking, instead of the vehicle veering off the road. Or will the car be programmed to look for the path with the least amount of destruction for all parties even though it may cause more damage to the passenger? For example, the car hitting a light pole instead of a pedestrian. Another question asked is could someone with enough money, pay for their car to be programmed to protect themselves above all else? Then you must debate at what age is allowable for people to be able to control the vehicles. Does it stay at sixteen years old or can a four year old hop in and tell it to travel to home (or Disneyland)? A lot of ethical questions are being asked and companies are asking for public responses. Most companies would like the input of the public on their product, just like any product producer.

With so many ethical questions lawmakers are asked one final one, who will be at fault in an accident? The passenger? The car company? The computer programming company? In 1967 the US government first made car regulations when they instated that cars must have seat belts (Beene). Since then, the regulation of cars has grown to a whopping 900 pages of regulations (Beene). Everything from electronic stability to rear-view cameras is included in the 900 pages, however this regulation book will soon become out-dated with the creation of automated autos (Beene). We simply do not know the answer for this question yet. As more self-driving vehicles hit the road, regulations continue to be created and eventually this question of liability will have a direct answer.

Self-driving vehicle are on the rise, and are on the roads now. There is no stopping this new technology. There are many questions still to be asked though, lawmakers and

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regulations are not keeping speed with the advancement of the technology. Will the public plateau at level 4 automation for a while, or will it skyrocket straight into level 5? Will the vehicles hit consumers markets sooner or later than prediction? Despite job loss and ethical questions to still be discovered, autonomous vehicles will create dramatic and beneficial changes to the world to an extent we have never seen before. No longer will we have to question our ability of driving or other drivers for our safety. We will lower the burden on our healthcare system. We will see a drop in insurance premiums both for cars and healthcare. Industries of every kind will see major changes across the globe. It is very well possible that you may need to only renew your driver's license once more after public transit will become so much more affordable or after purchasing a fully autonomous vehicle. Even package and freight shipping will see a drop in prices thanks to 24/7 trucking. America has a bright, driverless future. My only question still left to ask: when will I get to ride in one?

WORKS CITED

- Barbier, Joel. "Op-Ed: Self-Driving Cars Will Disrupt More than the Auto Industry." *CNBC*, 3 May 2017, www.cnbc.com/2017/05/03/self-driving-cars-will-disrupt-10-industries-commentary.html.
- Beene, Ryan. "Driverless Cars of the Future Confront Rules Written for Drivers." *Bloomberg*, 24 Aug. 2017, www.bloomberg.com/news/articles/2017-08-24/driverless-cars-of-the-future-confront-regs-written-for-drivers.
- "Car Accident Statistics in the U.S." *DriverKnowledge*, www.driverknowledge.com/car-accident-statistics/.
- Chambers, Matthew, et al. "Drunk Driving by the Numbers." *Bureau of Transportation Statistics, United States Department of Transportation*, Apr. 2013, www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/by_the_numbers/drunken_driving/index.html.
- "Cost of Auto Insurance." *Rocky Mountain Insurance Information Association*, 2015, www.rmiiia.org/auto/steering_through_your_auto_policy/Cost_of_Auto_Insurance.asp.
- Davies, Alex. "Oh Look, More Evidence Humans Shouldn't Be Driving." *Wired*, 6 June 2017, www.wired.com/2015/05/oh-look-evidence-humans-shouldnt-driving/.
- "Distracted Driving 2011." *Traffic Safety Facts: Summary of Statistical Findings*, US Department of Transportation, Apr. 2013, crashstats.nhtsa.dot.gov/Api/Public/View-Publication/811737.
- Fleetwood, J. "Public Health, Ethics, and Autonomous Vehicles." *American Journal of Public Health*, vol. 107, no. 4, 2017, pp. 532-537.
- Freedman, David H. "Self-Driving Trucks." *MIT Technology Review*, vol. 120, no. 02,

AUTONOMOUS VEHICLES

Mar. 2017, pp. 63–71.

Hergeth, Sebastian, et al. “Keep Your Scanners Peeled: Gaze Behavior as a Measure of Automation Trust during Highly Automated Driving.” *Human Factors: The Journal of Human Factors and Ergonomics Society*, vol. 58, no. 3, 2016, pp. 509-519.

“How Much Does Health Insurance Cost Without A Subsidy?” *EHealth Insurance Resource Center*, 28 Nov. 2017, resources.ehealthinsurance.com/affordable-care-act/much-health-insurance-cost-without-subsidy.

“Hybrid Cars: Self-Driving Car Experts Form Autonomous Trucking Startup.” *Newstex, Chatham*, May 17, 2016, Business Premium Collection; Entrepreneurship Database; ProQuest Central, [libproxy.uwyo.edu/login/?url=https://search.proquest.com/docview/1789308274?accountid=14793](https://libproxy.uwyo.edu/login?url=https://search.proquest.com/docview/1789308274?accountid=14793).

Kirslis, Julia. “Personal Insurance Blog.” *Drunk Driving: Why Do People Do It?*, Gordon Atlantic Insurance, 2 Sept. 2013, www.agordon.com/blog/bid/184751/Drunk-Driving-Why-Do-People-Do-It.

Muoio, Danielle. “The 18 Companies Most Likely to Get Self-Driving Cars on the Road First.” *Business Insider*, 27 Sept. 2017, www.businessinsider.com/the-companies-most-likely-to-get-driverless-cars-on-the-road-first-2017-4/#1-ford-18.

“Safety.” *Drugged Driving*, Colorado Department of Transportation, 23 May 2017, www.codot.gov/safety/alcohol-and-impaired-driving/druggeddriving.

“Self-Driving Cars.” *Congressional Digest*, vol. 95, no. 3, 2016, pp. 11, libproxy.uwyo.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=her&AN=113047338&site=ehost-live.

Snyder, Ryan. “Implications of Autonomous Vehicles: A Planner’s Perspective.” *Institute of Transportation Engineers. ITE Journal*, vol. 86, no. 12, 2016, pp. 25-28, ABI/INFORM Collection; Political Science Database; ProQuest Central, libproxy.uwyo.edu/login?url=https://search.proquest.com/docview/1789308274?accountid=14793.

uwyo.edu/login/?url=https://search.proquest.com/docview/1849709760?accountid=14793.

Dickens, N., Dickens, J., & Dickens, M. *APTA Public Transportation Fact Book*. 2015, 66th ed., American Public Transportation Association, 2015, pp. 1–70, www.apta.com/resources/statistics/Documents/FactBook/2015-APTA-Fact-Book.pdf.

Wright, Alex. *Automotive Autonomy*. vol. 54, ACM, New York, 2011, doi:10.1145/1965724.1965731.

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Stephen Nash was born in the city of Harare, located in Zimbabwe. He resided in Africa until the age of seven when he moved to Canada. Since moving to Canada, he graduated high school and went on to pursue a Petroleum Engineering Technology Diploma from the Southern Alberta Institute of Technology. After doing so he decided to challenge himself further and pursue a degree in Petroleum Engineering. This lead Stephen to his most recent educational institute, The University of Wyoming; and of course English 1010. Including his time at SAIT, Stephen is a junior and expects to graduate in Spring of 2019.

OCEAN NOISE POLLUTION: THE NEED FOR CHANGE

Stephen Nash

Sound is one of the most crucial forms of perception to almost all life on earth. While industrial areas and cities become increasingly noisy, many fail to recognize the relationship between maritime operations and noise in the ocean. According to a study by Eric Cheng the ocean covers over 70% of the world's surface, making it the single largest medium for sound travel (The Physics Factbook). Just as municipalities have stringent regulations over noise production, one would think that the ocean (home to hundreds of thousands of mammals) would be regulated by similar policies, yet little to no regulation exists. Over the past 50 years, the number of cargo ships charting ocean waters has sky rocketed (Andrew et al, 67). During this same time period, ocean ambient noise has roughly doubled each decade. Ocean use is exponentially increasing, yet research on the effects of this usage has only been recognized as a significant scientific issue within the last 20 years (Simmonds et al, 71). While cargo ships may contribute to a broad increase in noise across the entire ocean, technologies used in oil and gas exploration as well as military operations create small bursts of high intensity sound much stronger than that of a cargo ship (Rossi-Santos, 184). The combinations of these operations may be having a detrimental impact on marine mammals such as the whale and dolphin. While noise pollution from cargo ship operations can cause long term effects on these species such as a change in breeding, migration, or feeding patterns, high intensity sound can have immediate life-threatening effects on these mammals (Reeve, 73). This paper will argue that although maritime operations may be integral to the world's

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operability, ocean noise needs increased international regulation in order to prevent further impacts on marine life.

In order to understand why these effects are so severe, it is important to first outline the varying properties of sound through different mediums such as water and air. In its simplest form, sound can be described as a summation of the individual vibrations of particles. For sound to travel, it requires some sort of medium to propagate this vibration energy through. Therefore, the distance between molecules is a function of how fast sound will travel through said medium. The distance between molecules of air at standard conditions has been estimated to be 3 nanometers; this space is much larger than that of water which has been estimated to 0.31 nanometers (Physics Stackexchange). While air is an impeccable medium for light, water is the ultimate medium for sound. This property was observed in a 1990's study that sought to measure the maximum possible distance sound would travel through the ocean. In this experiment, a noise making device was lowered into the southern Indian Ocean with signal receivers (hydrophones) placed all around the world. To the scientist's surprise, the generated sounds travelled to their furthest measuring device located off the Washington State coast; a distance of over 17,000 km ("Sonic Sea"). These critical observations of sound are of utmost importance when analyzing the far-reaching effects of cargo ship transport, the greatest noise polluter in its field.

Commercial transport is at the heart of modern ambient ocean noise. Much of the evidence in support of this claim is supported in Dougherty's and Hinderfield's Sonic Sea. At any given moment, there are an estimated 60,000 commercial ships traversing the world's oceans, some vessels being even larger than the Empire State Building ("Sonic Sea"). While these complex systems need extremely large engines to propel themselves through ocean waters, this is surprisingly not the primary source of noise created by these vessels. Noise created by large cargo ships comes directly from their propellers through a process called

cavitation. When a turbine spins in water it creates an environment with an extremely large pressure differential. This reduction of pressure actually allows water to boil instantaneously based on the extremely low pressure developed with the drag of the propeller. This process creates a bubble of steam which quickly collapses back in on itself. Though the noise generated by one of these bubbles is relatively insignificant, the combination of millions of these collapsing bubbles creates a consistent hissing sound with frequencies matching the immediate range of whale and dolphin communication (Wittekind & Schuster, 116). With the sheer number of vessels charting ocean waters, this cavitation alone would be enough to increase ambient ocean noise however there are many more factors to consider. Engine noise is only slightly subordinate to cavitation. In most modern ships, engines still are bolted straight to the hull of the ship subsequently transmitting the majority of engine vibration into ocean waters. On-site studies have been successful in measuring statistically significant correlations to the number of vessels in service compared to overall ambient noise. A longitudinal study off of the California coast found that ambient noise has doubled every decade for the past 40 years; a trend that closely matches that of commercial vessel growth (Andrew et al, 69). Ocean noise levels are rising dramatically, and it is no coincidence that this increase is directly proportional to the number of vessels currently in service.

Although it may be elementary to point out the flaws of commercial vessels, it is a far more challenging task to outline ways that these vessels can be improved. The commercial vessels seen today are a product of decades of ambitious engineering. Historically, engineers have focused on designing commercial vessels with the largest possible payload and the highest fuel efficiency. It is not only possible to construct propellant systems that reduce cavitation with today's technology, but these advances would lead to even more efficiency in vessels ("Sonic Sea"). This solution seems to be the ultimate win-win for both the shipping industry, the ocean, and the affected mammals. Upgrading numerous fleets of vessels

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would be nearly impossible without halting the transport of some number of goods. Today's world is far too heavily reliant on imports and exports for any downtime to be acceptable within the trade industry. Propellant modifications will in fact be a painstakingly slow process, one that is necessary in order to prevent further damage to the ocean's ecosystem as well as the mammals contained within it.

Continued use of conventional propellant systems will surely have devastating effects on marine mammal populations with a potential for complete species extinction. Since the era of whaling, whale populations have struggled to find their way back to a reasonable medium (Reeve, 129). This phenomenon coincides with the exponential increase of ocean vessels. For species like the whale and dolphin, sound is a fundamental sensory feature necessary for communication and echolocation ("Sonic Sea"). The deprivation of these sensory features will certainly have implications on their ability to feed, mate, and navigate throughout the ocean (Reeve, 133). As described by Lora Reeve:

The underwater noise pollution generated by these large commercial vessels overlaps with the low-frequency range that is the probable dominant acoustic range where the mysticetes [a classification grouping 14 whale species] hear and produce sounds. Ship sounds can mask the whales' ability to hear and be heard, much like the difficulty of having a human conversation at an earsplitting rock concert or while standing near a roaring jet engine. (138) While humans have the ability to escape prolonged exposure to constant noise, whales have nowhere to go; the noise is always there.

This continued interference in whales' routines not only effects the way they feed, mate, and navigate, but acts as a constant stimulus for chronic stress. In the late summer of 2001, scientists from the New England Aquarium as well as another set of marine scientists conducted two sets of studies on the critically endangered North Atlantic right whale. The first study sought to monitor the stress level of these whales by analyzing fecal matter while

the second monitored the acoustic signals and social behavior of said whales (Reeve, 129). These experiments took place in the wake of the September 11th attacks on the eastern seaboard and as a result of these attacks, the majority of shipping activities in U.S. waters were halted. This reduction of shipping activity could not have provided a better opportunity to analyze the impact that commercial vessels have on marine mammals. The results of these experiments before and after September 11th yielded two conclusions: “1) there was a ‘noticeable’ decrease in the low-frequency background noise of the type that would mask communication among the right whales; and 2) this drop in the background noise level showed a statistically significant relationship to the reduction in the stress hormones in the whales” (Reeves, 130). These experiments may be one of the most convincing and measurable results to ever be recorded in the studies of ocean noise. They provide explicit evidence proving a relationship between ocean ambient noise and stress in the North Atlantic right whale species. If ambient ocean noise acts as a chronic stressor to the right whale, is there any reason to believe it wouldn’t have the same effects on other whales? Ambient noise has been proven to have devastating effects on marine mammals, but it is just one of many major contributors to ocean noise pollution.

Operations conducted by the U.S. Navy are another contributor to high intensity ocean noise; more specifically their implementation of sonar. Sonar as used in the navy is the broadcast of high frequency, high intensity sound waves into the void of the ocean. The purpose of this technology is primarily for submarine detection in the case of an attack. In the last decade the U.S. Navy has developed a type of sonar which they dubbed, “Active Sonar,” (“Sonic Sea”). This type of sonar varies from conventional sonar in the sense that it is continuous and acts in a 360 motion, scanning every minute (“Sonic Sea”). While ocean ambient noise was problematic due to its interference with whales’ ability to communicate and echolocate, sonar operations have much more devastating effects that apply not only

to whales, but dolphins too. The high frequency sounds that are generated by sonar operations are extremely traumatic and often lead to death after long exposure (Simmonds et al, 71). Kenneth Balcomb, Executive Director and Senior Scientist at the Center for Whale Research, was the leader of a law suit against the U.S. Navy over an incident now known as the “Bahamas Stranding.” In his paper, A Mass Stranding of Cetaceans Caused by Naval Sonar in the Bahamas, Balcomb outlines the events that lead to this lawsuit. On March 15th, 2000, Kenneth Balcomb woke up to find a mass stranding of over 17 beached dolphins on the Bahamas shore. The same day that the U.S. Navy had been conducting training exercises just miles off shore (Balcomb, 4). Although there were physical signs of trauma to these animals such as bleeding ears, Balcomb rushed samples to Harvard Medical School where he confirmed the presence of subarachnoid hemorrhaging (bleeding in the brain caused by a blood vessel burst). The sonar systems used in the training mission had caused these dolphins to flee their feeding environment; unable to escape the bay, the dolphins beached themselves and succumbed to their injuries. This event leads to an important dilemma; the balance between national security and marine protection.

The national security of the United States as well as its navy cannot be completely undermined through the protection of marine habitat; rather, the U.S. Navy needs to use sonar systems sparingly. The damage done by the U.S. Navy in the Bahamas Stranding could have been avoided with a more careful approach to sonar use; after all, the operations being conducted were only for a training exercise. This can be done through the implementation of both regulatory limits on sonar use as well as stringent regulations on the type of sonar that is being used. While limiting the applications of sonar use would be an incremental benefit to marine habitats, the U.S. Navy needs to invest in developing new technologies that are less destructive throughout their operations.

The application of new technology could not only be beneficial in the naval industry,

but also the next leading contributor to high intensity ocean noise; the oil exploration industry. As land reserves of oil are being used up, the search for new sources of hydrocarbons has transitioned to the ocean; home to far more lucrative reserves. Currently, oil exploration operations utilize a device called an air gun. This air gun produces a large volume of air from its nozzles which, similar to cavitation bubbles, quickly collapses on themselves (“Sonic Sea”). These air guns have the potential to produce implosion sounds greater than 230 dB; a magnitude great enough to scatter clusters of dolphins and whales (Nowacek, 378). To rationalize that number, most concerts produce sounds ranging between 100 to 120 dB. Just as national defense must be balanced with protection of marine habitats, the necessity of portable energy must also be considered when analyzing these effects. However, contrary to sonar used by the navy, seismic surveys can be completely replaced by a technology known as marine vibroseis (“Sonic Sea”). This technology does not produce an explosion, is thousands of times less intense than air guns, and surprisingly provides a much higher resolution image of earth’s crust. So why isn’t marine vibroseis being used by all energy industries across the globe? The answer is simple: a lack of regulation.

The regulation of international waters is a challenging dilemma that can only be solved by international participation and cooperation. Thus far, international cooperation has been successful but has had limited ability to create any change. The current implementation of an international law for ocean pollution is encompassed within the United Nations Convention on the Law of the Sea. This convention, signed on December 10, 1982, identifies noise pollution within a broad description of general pollution (“UNTC”). Rather than attempting to implement international law through this convention itself, each category of international law is guided to its respective authority; in this case, the International Maritime Organization. While this hierarchy is setup in such a way that would stimulate successful results, international engagement has been less than desirable (Gillespie, 138). This lack

of engagement combined with the dismissive attitude embodied by the IMO (International Maritime Organization) are two of the biggest reasons that no action has been taken towards ocean noise pollution (Gillespie, 138). In order to prevent further damage to the oceans habitat, the IMO as well as its participating UN countries need to demonstrate their commitment to maintaining the world's biggest common resource. Failure to do so may one day cause a catastrophic food chain event.

Operations conducted in the ocean are among some of the most important in the entire world. They provide a pathway for intercontinental trade, allow for the exploit of out of reach hydrocarbons, and play an integral role in the protection of sovereign nations. These operations are the three largest contributors to ocean noise pollution and reap havoc on marine mammals. Effects of these activities come in the form of high intensity, high amplitude noise as well as constant ambient noise. Each of these types of ocean noise have detrimental effects on marine mammals including the inability to communicate, echolocate, and in some cases even fatality. The effects of ocean noise pollution are not instantaneous which allow for even more procrastination from the global community. These slow effects should not be confused with the severity of this issue. A catastrophic ocean food chain event would leave the world with a dramatically reduced supply of oxygen that has the potential to cause human extinction. Vessels that chart ocean waters need to be upgraded with new technologies to reduce their overall impact on the ocean; something that can only be achieved through the stringent regulations. Implementation of new methods and technologies will be a painstakingly slow process and for this reason, international authorities as well as the International Maritime Organization need to begin working together to implement higher standards in ocean noise regulation. The implantation of said standards will not only reduce the traumatizing effects of maritime operations on marine mammals, but also prevent the biggest food chain collapse the world has ever seen.

WORKS CITED

- Andrew, Rex K., et al. "Ocean Ambient Sound: Comparing the 1960s with the 1990s for a Receiver Off the California Coast." *Acoustics Research Letters Online*, vol. 3, no. 2, 2002, pp. 65.
- Balcomb, Kenneth, and Diane Claridge. "A Mass Stranding Of The Cetaceans Caused By Naval Sonar In The Bahamas." *Bahamas Journal Of Science*, 2001, pp. 2-12.
- Cheng, Eric. "Area Of Earth's Oceans." Hypertextbook.Com, 2017, hypertextbook.com/facts/1997/EricCheng.shtml.
- Gillespie, A. "Noise Pollution, the Oceans, and the Limits of International Law." *Yearbook of International Environmental Law*, vol. 21, no. 1, 2011;2010;, pp. 114-139.
- Hinerfeld, Daniel, and Michelle Dougherty, director. "Sonic Sea." 2016,.
- Nowacek, Douglas P., et al. "Marine Seismic Surveys and Ocean Noise: Time for Coordinated and Prudent Planning." *Frontiers in Ecology and the Environment*, vol. 13, no. 7, 2015, pp. 378-386.
- Reeve, Lora L. N. "Of Whales and Ships: Impacts on the Great Whales of Underwater Noise Pollution from Commercial Shipping and Proposals for Regulation Under International Law." *Ocean and Coastal Law Journal*, vol. 18, no. 1, 2012, pp. 127.
- Rossi-Santos, Marcos R. "Oil Industry and Noise Pollution in the Humpback Whale (Megaptera Novaeangliae) Soundscape Ecology of the Southwestern Atlantic Breeding Ground." *Journal of Coastal Research*, vol. 31, no. 1, 2015, pp. 184-195.
- Sank, Daniel. "Finding The Approximate Distance Between Molecules In A Gas." *Physics*. Stackexchange.Com, 2017, physics.stackexchange.com/questions/202381/finding-the-approximate-distance-between-molecules-in-a-gas.
- Simmonds, Mark et al. "Marine Noise Pollution - Increasing Recognition But Need For

OCEAN NOISE POLLUTION: THE NEED FOR CHANGE

More Practical Action.” *Journal Of Ocean Technology*, vol 9, no. 1, 2014, pp. 71-90.

“UNTC.” *Treaties.Un.Org*, 2017, treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en.

Wittekind, Dietrich, and Max Schuster. “Propeller Cavitation Noise and Background Noise in the Sea.” *Ocean Engineering*, vol. 120, 2016, pp. 116-121.

OpEd



THE FIGHT FOR ALL-INCLUSIVE SEX EDUCATION

Erin Buckles

Sex-ed: most people cringe at the thought of it. Those terribly awkward middle school classes we all had to suffer through, endlessly watching the clock until it was over and we could escape the uncomfortable silence when the teacher would ask, “Are there any more questions?” Sex can’t be avoided. As a natural part of life, we talk about it. However embarrassing it may be growing up, it’s important for all young people to understand how to be safe “when a man and a woman love each other very much.” But what about

when a man loves a man, or a woman loves a woman? Of course, there are still risks and precautions that need to be taken, so shouldn’t we include the LGBTQ+ community in sex-ed class?

LGBTQ+ sex is often times perceived to be less dangerous than straight sex because the risk of unwanted pregnancies is no longer there. However, sexually transmitted infections (STI’s) and sexually transmitted diseases (STD’s) can still be shared, and young people need to be educated on the risks that

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come along with any sexual interaction they have, regardless of their partner's gender identity. Safe sex is preached, over and over again, by parents and by teachers. Condoms are handed out for free and birth control is very easily accessible for young women. But we only preach safe straight sex. STD's and STI's are still extremely common within the LGBTQ+ community. Gay men are at a higher risk for syphilis as well as a higher risk for HIV/AIDS ("Sexually Transmitted Diseases"). Chlamydia and HPV (human papillomavirus) are most common among lesbian women ("5 Common Lesbian Sexually Transmitted Diseases"). Giving teens an education that is inclusive of all sexual orientations will help to greatly diminish the STI and STD rates among teens and adults, a rate that has increased by 16% in persons ages 15-24 since 2012 (2016 Sexually Transmitted Disease Surveillance).

The severe lack of representation in current sex-ed classes is severely detrimental to a well-rounded education of students everywhere. Kids start to discover their sexuali-

ty around the adolescent ages which is why sex-ed is typically taught in middle school to begin with (American Psychological Association 3). But kids are also starting to discover different sexual orientations which is why it is important to include LGBTQ+ topics in sex-ed (American Psychological Association 3). For young people struggling through what can be a confusing stage of life, adding representation of the LGBTQ+ community can help break the barrier between straight and LGBTQ+ relationships and give the representation that all love is love. The lack of representation of their own emotions can make them feel as if they have to deny who they truly are, that being "different" isn't okay.

An inclusive sexual education program would provide information and understanding of sexual identity and orientation as well as positive examples of LGBTQ+ relationships and families. Since the goal of sex-ed is to provide an understanding to students about how families are safely created, all types of families need to be shared, even if

those families are deemed unconventional (Human Rights Campaign). Informing youth that they can have a family in more ways than one, whether it be through a surrogate, a donor, or adoption, will not only help LGBTQ+ youth but also provide a better education for all students. It is crucial that youth are exposed to positive examples of all family types and all types of love in order to ensure happiness and well-being in their future.

Providing an all-inclusive sex education experience doesn't only benefit LGBTQ+ youth. Teaching all youth in an inclusive and accepting environment will allow for more acceptance and inclusion of the LGBTQ+ community in the future (Human Rights Campaign). As a member of the LGBTQ+ community, I often get asked how "it" works, which commonly leads to a lot of discomfort for both parties involved in that conversation. If we educate everyone on all of these topics, then we can prevent a lot of unnecessary distress and naivety in the future. Creating a normalcy for the LGBTQ+

community will increase the happiness of so many people throughout the world. Often times, members of the community feel like they didn't have any other choice than to be straight. They commonly ignore their feelings because they are not educated on the reality that they can be in a relationship with someone of the same sex. With gay marriage being legalized only 2 years ago (History.com Staff), the topic of accepting LGBTQ+ relationships is relatively new. If we begin raising future generations in such an inclusive and accepting environment, it will prevent the fear that most people in the LGBTQ+ community have when being themselves.

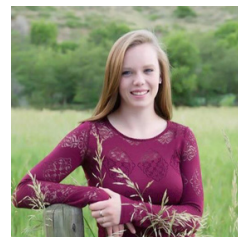
According to the Gay, Lesbian & Straight Education Network's 2013 National School Climate Survey, fewer than five percent of schools have inclusive and positive sex-ed programs (71). According to a survey conducted by the Public Religion Research Institute in 2015, only 12% of millennials said that their sex education included same sex topics (15). A study conducted by the

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Human Rights Campaign showed that 85% of parents support inclusive sex education classes at the high school level and 78% of parents support it at the middle school level (1). It can be extremely dangerous to send kids into high school, where sex is very common, without a full understanding of what the consequences are. If kids start experimenting, which can occur often, it could lead to serious illnesses if they don't do it safely. Experimentation doesn't only happen in high school either. Often times once students reach the collegiate level, and they add alcohol or drugs to the mix, experimentation can become even more common.

Changing school curriculum to include LGBTQ+ sex education with straight sex education will benefit our entire society. Youth will no longer feel like they have to hide who they are, people will be more understanding to LGBTQ+ relationships, and safe sex rates will increase drastically. We can decrease the amount of sexually transmitted infections and sexually transmitted diseases that are spread throughout the younger gen-

eration. We could improve the happiness of several members of our society and promote a more friendly environment and culture for future generations to grow up in. Allowing for youth to discover themselves safely is so important to the future happiness and well-being of our country. LGBTQ+ members walk around in hiding because of the fear that they won't be accepted. And being in hiding prevents them from finding the resources that they need to be engaging in safe sexual interactions. Educating all youth with an inclusive sexual education curriculum allows for the LGBTQ+ youth that are scared to come out to still safely be themselves. It will allow for a better world in the future.

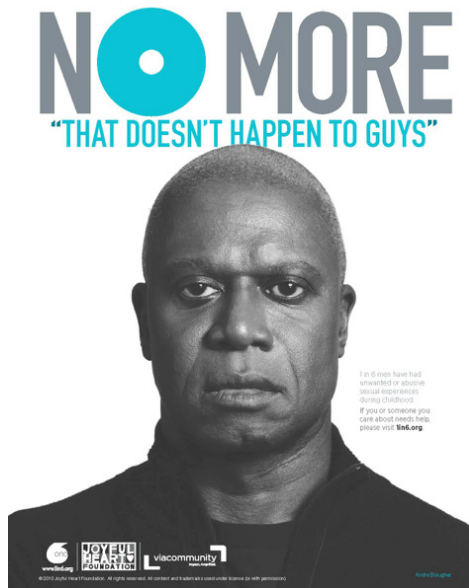


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When she is not studying, she enjoys making music. She plays flute, piano, guitar, and baritone. She is really close to her parents and her older brother; they enjoy hiking and spending time together when they can. She also enjoys spending time with her dog.

WORKS CITED

- American Psychological Association. "Answers to Your Questions for a Better Understanding of Sexual Orientation & Homosexuality." *American Psychological Association*, 2008, www.apa.org/topics/lgbt/orientation.pdf.
- "5 Common Lesbian Sexually Transmitted Diseases." *At Home STD Tests*, 20 Sept. 2016, www.athomestdtests.com/std-symptoms/lesbian-sexually-transmitted-diseases/.
- Human Rights Campaign. "LGBTQ Youth Need Inclusive Sex Education." *Human Rights Campaign*, www.hrc.org/resources/a-call-to-action-lgbtq-youth-need-inclusive-sex-education.
- History.com Staff. "Gay Marriage." *History.com*, A&E Television Networks, 2017, www.history.com/topics/gay-marriage.
- Jones, Robert P, and Daniel Cox. "How Race and Religion Shape Millennial Attitudes on Sexuality and Reproductive Health." *Public Religion Research Institute*, 27 Mar. 2015, pp. 15–22.
- Key, Michael. "Washington Blade." *Washington Blade*, 14 August 2013, www.washingtonblade.com/2013/08/14/california-sex-ed-lawsuit-gets-addendum-alleges-anti-lgbt-bias-misinformation-about-stds-gay-health-news/.
- Kosciw, Joseph G., et al. "The 2013 National School Climate Survey." *Gay, Lesbian, & Straight Education Network*, 2014, pp. 68–71.
- "Sexually Transmitted Diseases." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 26 Sept. 2017, www.cdc.gov/std/life-stages-populations/stdfact-msm.htm.
- "2016 Sexually Transmitted Diseases Surveillance." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 26 September 2017, www.cdc.gov/std/stats16/adolescents.htm.



SEXUAL ASSAULT DOESN'T DISCRIMINATE

Rory Kershaw

Sexual harassment and rape are terrible things. We've agreed upon that as a society. That isn't to say that we've fully eradicated the problem, but we seem to be getting better at making victims feel more comfortable about coming forward about their assaults. However, there is still a large stigma surrounding the topic of rape and sexual harassment perpetrated against men. It exists, it happens, but why don't we like to talk about it?

Recently amid all the controversy re-

garding film producer Harvey Weinstein, actor Terry Crews recently went public with a sexual assault he endured in 2016 at a party. When someone thinks of a victim, one doesn't generally envision a 6'3" 245lb former NFL football linebacker. While attending the party with his wife and friends, Crews was approached by agent Adam Venit, who is head of the motion picture department at William Morris Endeavor, one of the biggest agencies in the world. Venit then proceeded to grope Crews in the middle

of the party while making lewd suggestive faces at Crews. Smartly, Crews maintained composure and told fellow party goers that knew Venit to get him away from him and Crews and his wife left the party.

The aforementioned incident occurred in February 2016 and Crews didn't come forward until a couple days ago, almost two full years later. He said that the women speaking out against Harvey Weinstein had empowered him to come forward. What societal pressures and stigmas exist that would have caused a former NFL linebacker and a fairly prominent film and television star need to feel empowered to talk about this in the first place?

It couldn't be that bad if it took you so long to come forward about it:

After watching the interview of Crews, I did something no sane person should ever do, I went to the comment section and started reading people's opinions on what they just watched. While there were a few encouraging remarks of support for Crews and assault victims and a few thoughtful discus-

sions taking place, it didn't take long to find what I was looking for.

In a statement that clearly proves ignorance doesn't see gender, the age-old argument of, "why Crews didn't come forward about this incident sooner" kept popping up. In a sentiment that seems to be clearly held by people that have never experienced an assault of this nature, they can't understand why someone wouldn't immediately come forward and out their assaulter.

There are a few issues at play here. First off many victims don't believe they will be taken seriously. A survey in the UK, found that 80% of women don't report a rape case because they don't feel the legal system, the media, and society at large is unsympathetic to rape victims. Secondly, and perhaps more pertinent to the Crews situation, many people forget that many of these assaults are done by people of power. Akin to the Weinstein and Louis CK incidents, Crews was assaulted by a major player in the film and entertainment industry, the very industry he works in. Coming forward against people in

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such powerful positions can often be viewed by the victims as either hopeless as no one will take them seriously, or as career suicide. One needs to look no further than the NFL and Colin Kaepernick's situation to get an idea of the dangers in upsetting the powerful in your field. Instead of questioning the victims, who have already been through an assault, why isn't our immediate instinct to ask why the assault was allowed to happen in the first place?

One of the most controversial topics that came up in the comments was the general consensus that had this occurred to a woman, no one would bat an eyelash. The only reason people were discussing this incident was because it happened to a man. Now the very idea of this argument seems odd giving the recent exposure of Weinstein and Louis CK assaulting women. Statistically speaking, women and transwomen are more likely to be sexually assaulted than a man is, but cases should be looked at individually not in a lump sum manner. The bigger issue in my mind is that people are taking away from

the actual incident at hand by turning a sexual assault into an issue of sexism. Trying to create a tiered system of whether an assault on a woman or a man doesn't help anyone, it just creates division amongst people and takes the focus off the victims.

Inevitably I came across the classic why didn't Crews just beat the living shit out of the guy. When sexual assaults against men are discussed it's impossible to avoid getting this rebuttal. Men are generally the stronger sex, so by this mindset a woman should almost never be able to sexually assault a man. This completely avoids the point that many times sexual assaults are a mental situation as much as it is a physical one. The national institute of justice reports that 85 to 90 percent of sexual assaults are committed by someone the victim knows. How likely is it that the victim is going to be very ready and willing to beat the shit out of someone they know and possibly care for? Also, as in the cases we're finding these days, how likely are you to fight a superior at work and put your career on the line?

While Crews didn't know the man that assaulted him, he knew how bad the media could spin a body building, former pro athlete African American assaulting a much smaller Caucasian man at a party.

Putting the cart before the horse:

Racism and emotional connections aside, it's 2017, we shouldn't have to be resorting to violence in these situations. In fact, these situations shouldn't be happening in the first place.

Admitting to being a male victim of sexual assault needs to stop being seen as a weakness. We need to stop blaming victims and asking questions of how they handled or responded to an assault and start asking why we live in a society that allows these assaults to happen in the first place.



Rory Kershaw is from the small town of Cobble Hill on Vancouver Island, British Columbia, Can-

ada. He is currently majoring in Petroleum Engineering at the University of Wyoming. He is an avid soccer and squash player and

enjoys going to the gym. While he has never experienced sexual assault first hand, he knows people who have and hopes to bring awareness to the situation.

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WORKS CITED

BallRoomStars1. "Terry Crews: Speaks Out On Being Victim Of Sexual Harassment - GMA." *YouTube*, YouTube, 15 Nov. 2017, www.youtube.com/watch?v=2jNFymV3J-M&feature=youtu.be.

Beckford, Martin. "80% of women don't report rape or sexual assault, survey claims." *The Telegraph*, Telegraph Media Group, 12 Mar. 2012, www.telegraph.co.uk/news/uknews/crime/9134799/Sexual-assault-survey-80-of-women-dont-report-rape-or-sexual-assault-survey-claims.html.

Joyfulheartfoundation.org, www.joyfulheartfoundation.org/programs/education/no-more/psa-campaign/no-more-excuses-male-survivors-series.

Kindelan, Katie, and Sabina Ghebremedhin. "Terry Crews names alleged sexual assaulter: 'I will not be shamed'." *ABC News*, ABC News Network, abcnews.go.com/Entertainment/terry-crews-names-alleged-sexual-assaulter-shamed/story?id=51146972.

ry-crews-names-alleged-sexual-assaulter-shamed/story?id=51146972.

"Most Victims Know Their Attacker."

National Institute of Justice, www.nij.gov/topics/crime/rape-sexual-violence/campus/Pages/know-attacker.aspx.

"Terry Crews speaks out on being a victim of sexual assault • r/Videos."

Reddit, www.reddit.com/r/videos/comments/7d4w69/terry_crews_speaks_out_on_being_a_victim_of/?sort=controversial.



WYOMING IS DEPENDENT ON ITS FOSSIL FUEL ECONOMY,
BUT FOSSIL FUELS ARE GOING THE WAY OF THE DODO.
IT'S TIME TO START EXPANDING THE ENERGY ECONOMY.

Donovan Peterson

Growing up in Wyoming one hears about energy is bringing. oil and energy quite often. It is common to even have a rig worker or coal miner in your family. I happen to be one of those people. Oil and coal were very important to my state growing up, and they continue to be, but the problem with the energy industry is that it experiences boom and bust cycles. These cycles are bad for the economy and even worse for the young men who typically work in the energy industry here in Wyoming. As a state, we must embrace the change green

energy is bringing. When I was young, my uncle went to work in the oil field. He was gone for weeks at a time moving rigs and drilling for oil. He also made much more money than he knew what to do with. He bought his own house, had multiple cars, multiple ATVs, and ate at the best restaurants frequently. While he was working he had the money to keep up with these payments and afford this lifestyle. Then a bust cycle came around again, and he lost his job. He could no longer afford the

payments on all his nice stuff and his house.

My uncle now lives in a 5th wheel camper parked outside my aunt's house with his wife and infant son.

My uncle's story is not an uncommon scenario in my part of Wyoming. Young men will go to work in the oil field right out of high school and will make more money than they know how to handle. Most of the time these boys do not have the inclination to save a part of the money they make or create rainy day funds, they simply live to the maximum of their means. When the bust hits, they have no backup other than returning to low-paying jobs. Now, in addition to the classic cycle, the entire fossil fuel industry is seeing its usage decline, including both coal and oil. An increasing number of people are losing energy jobs with no chance of getting them back because of this, and the lack of income from the fossil fuel industry is wrecking the state government's budget, putting our education spending at risk. Now, as fossil fuels spiral towards marginalization on a global scale, Wyoming must start expanding its en-

ergy economy into renewables.

Wyoming has the land and workers to sustain both the current state of the fossil fuel industry, and expand its renewable industries. The oil, gas, and coal energy income are at a low point, and stabilizing after years of plummeting. Though it has recently stabilized, it is not at a level the state is used to, still causing budget concerns. Energy is Wyoming's largest money maker, and it only consumes 6% of the energy it produces. Instead of using the rest, it exports the rest, paying our teachers and paving our roads. But this fossil fuel exportation may slowly dwindle to nothingness.

States like California have committed to powering itself using 100% green energy by 2045, and other states are considering following suit. Countries all around the world have committed to reducing their fossil fuel consumption, and France will ban all gas and diesel using cars by 2040. While we are still able to reap the benefits of oil, gas, and coal, average citizens and lawmakers need to first realize the change on the near horizon

and then embrace it.

Windy Wyoming, as it is comically referred to, however, is not stuck completely in the past or resistant to change. Driving across most of the state will reveal wind turbine farms scattered in plain view. While some of the largest wind projects in the U.S. are underway or being considered for Wyoming, the state government is considering hiking wind energy taxes and has even debated bills on outlawing the use of renewable energies in Wyoming. Free wind training is being offered in Casper, however, offering those who are out of a job in the fossil fuel industry, or any other, an alternative in the coming energy industry. Now it is cheaper than ever to build wind farms. One may think that is not enough to eventually replace the big three money makers, since oil, coal, and gas can be shipped to power plants anywhere, and the wind turbines are stuck to the ground here in Wyoming. The awesome reality is that technology has advanced enough that we now have the ability to send electricity generated by Wyoming turbines hun-

dreds of miles. Proof of this is shown by the massive wind farm project being worked on with the intent to send the energy generated to the clean-power hungry California, over 700 miles away. Solar energy in Wyoming is marketed mostly to individual consumers. While it has a high energy potential, it faces resistance from utility companies and the government to expand into commercial use.

Too many in Wyoming are fearful or skeptical of green energy, or believe that fossil fuels and green energy must be an either-or debate. The former is misplaced and the latter is just wrong. The plummet of fossil fuels has stabilized and shown little improvement, wind energy is cheaper than ever and poised to make great strides, and solar is being held back. Continue to support the oil and coal workers you know, but go out and get information on renewable energy in your area, and let your local representatives know your opinion on renewable energy. Do not let Wyoming's economy suffer the same slow death as fossil fuels. Next time there is conversation on the decline of fossil fuels or

WYOMING IS DEPENDENT ON ITS FOSSIL FUEL ECONOMY

how green energy is destroying mining and rigs, remind people that it does not have to be one or the other, but that we can embrace both, so we are not left penniless when, inevitably, the fossil fuel power plants join actual fossils in museums.



Donovan Peterson was born and raised in Riverton Wyoming, and spent much of his time in the Oil City itself, Casper, Wyoming. He has uncles and cousins that work in the energy industry.

He grew up knowing men who went into the oilfield, and he knew many of my high school classmates who went to work for the oilfields to “make big money.” After graduating from Riverton High School, he came to the University of Wyoming to further pursue his education and spread his passions. Though he is still open for options on a degree, science is his path for the future. When he is not attending class or doing homework, he enjoys spending time in the community lounge of his dorm, being a friend and welcoming presence to any who venture by! He is also active in the Community Senate, trying to make his dorm the best place to live.

- Farand, Chloe. "France will 'ban all petrol and diesel vehicles by 2040'." *The Independent*, Independent Digital News and Media, 6 July 2017, www.independent.co.uk/environment/france-petrol-diesel-ban-vehicles-cars-2040-a7826831.html.
- Hirji, Zahra, et al. "Wyoming bill would all but outlaw clean energy, by forbidding utilities from using it." *Inside Climate News*, 12 Apr. 2017, insideclimatenews.org/news/12012017/wyoming-coal-wind-energy-solar-energy-climate-change-denial.
- Nace, Trevor. "California Goes All In -- 100% Renewable Energy By 2045." *Forbes Magazine*, 14 Aug. 2017, www.forbes.com/sites/trevornace/2017/08/01/california-goes-all-in-100-percent-renewable-energy-by-2045/#1c1a7c0d570f.
- Richards, Heather. "Free wind training begins in Casper, an adventure for some, a lifeboat for others." *Casper Star-Tribune Online*, 30 Oct. 2017, trib.com/business/energy/free-wind-training-begins-in-casper-an-adventure-for-some/article_cdfb1d58-d756-5405-9055-54a07f239a68.html.
- Richards, Heather. "In a snap shot, Wyoming energy industries steady after rocky decline." *Casper Star-Tribune Online*, 28 Aug. 2017, trib.com/business/energy/in-a-snap-shot-wyoming-energy-industries-steady-after-rocky/article_cf9b824b-8db7-5cbb-a680-6b94a6b5f637.html.
- Richards, Heather. "Report: Developing a wind farm is cheaper than ever." *Casper Star-Tribune Online*, 5 Nov. 2017, trib.com/business/energy/report-developing-a-wind-farm-is-cheaper-than-ever/article_4b2f45b5-8814-577d-8841-810003a93493.html.
- Roth, Sammy. "As Trump ditches Paris, California is one step closer to getting wind power from Wyoming." *The Desert Sun*, 2 June 2017, www.desertsun.com/story/tech/science/

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energy/2017/06/01/trump-ditch-es-paris-deal-california-looks-wyoming-wind-power/362736001/.

Storrow, Benjamin. “While solar booms nationally, it struggles in sunny Wyoming.” *Casper Star-Tribune Online*, 10 June 2016, trib.com/business/energy/while-solar-booms-nationally-it-struggles-in-sunny-wyoming/article_af-0aea52-e4ae-51ea-a311-13c6ec4b0681.html.

“The Largest Wind Farm In The US Is Being Built In Wyoming, And Lawmakers Want To Raise Wind Tax.” *CleanTechnica*, 15 July 2017, cleantechnica.com/2017/07/15/largest-wind-farm-us-built-wyoming-lawmakers-want-raise-wind-tax/.

“U.S. Energy Information Administration - EIA - Independent Statistics and Analysis.” *Wyoming - State Energy Profile Analysis - U.S. Energy Information Administration (EIA)*, 15 Dec. 2016, www.eia.gov/state/analysis.php?sid=WY.

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