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This is a graded discussion: 10 points possible

Show Due Dates

D9(BH) Weekly Discussion

Erin O'Connor

Mar 13 at 12:44am

28

Due this week

First, be sure to do the reading and watch the lectures:
Assigned reading and lectures

Then answer the following questions in this discussion forum (and yes, you may look to see what others write, but try to find what they might have missed and you should go back to the original reading and lectures to get answers for yourself). Then post your own question at the end, and then answer someone else's question. If no question is available, go ahead and check back later until the due date. If nothing comes available you can then pick any question you wish.

We hope to emulate a seminar classroom environment where students can share ideas. Always be respectful with all communications you have with your esteemed fellow colleagues (your fellow students) in this course.

- 1. DISCUSS in some detail something you found unusually interesting or intriguing in the reading or lecture material. Are there new insights that you have gained (something you had not thought of or considered before)? Focus on one of the concepts and explain as best you can in your own words. (4 pts)
- 2. Post a question that you have about something you read. Be sincere. What do you want to know? Write the word QUESTION all in caps, so that your fellow classmates know what your proposed question to the class is. (3 pts)
- 3. ANSWER the question of another student according to what we discussed in the lectures or what you read in the assigned readings (don't just make something up). Try to answer a question that no one else has responded to yet (but not a hard and fast rule). A good way to respond to another student's question would be to say something like, "Good question! The answer can be found on page..." and give the quote from the reading. You are free to reference other sources outside of class material, but always consider the credibility of the source, state what the source is, and give the link. (3 pts)

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Reply

Abigail Jacobs (*She/Her*) (https://canvas.sbcc.edu/courses/46681/users/367167)

Mar 15, 2022

Discussion:

Marie Curie Historical Summary: She was such an inspirational woman, she didn't let anything stop her in her pursuit to find out more about radiation where she and her husband found 3 types. She would carry little vials in her pocket because she liked the green glowing color, she helped the war effort and was offered many awards from people that didn't recognize her at first and she declined. Her body was classified as radioactive and was buried in a led-lined coffin, her work also contains radiation so it has to be looked at very carefully and in a certain gear. She is probably my new favorite person in science not only is she a woman but she didn't let the fact that her research was dangerous to stop her. She fought through the stigma of women at the time and her background. I don't think you could get much cooler than her!

Question:

Did her children suffer any complications from her and her husband's exposure to so much radiation? Were they themselves exposed long enough to have an effect on their health as adults?

Reply

Luke Rutherford (https://canvas.sbcc.edu/courses/46681/users/373514)

Mar 21, 2022

Hi Abigail,

I'm not sure if Marie Curie's children suffered any complications from radiation exposure but she and her husband were affected by the radiation. On the second introduction page, x, it states "the radioactive samples she handled burned the tips of her fingers, clouded her eyes with cataracts, bent her spine with pain, and eventually killed her."

Reply

Sarah Savage (https://canvas.sbcc.edu/courses/46681/users/375381)

Mar 22, 2022

ANSWER:

Marie and Pierre had 2 daughters, Irene and Eve. Irene and her husband Frederic went on to become the 2nd married couple to earn a Nobel Prize for their work in Chemistry. They discovered the positron and neutron by shooting gamma rays at Marie's polonium, and discovered beta decay. Irene died of leukemia like her mother. https://en.wikipedia.org/wiki/Irène_Joliot-Curie (https://en.wikipedia.org/wiki/Irène_Joliot-Curie) Eve was well-known for writing her mother's biography and lived to be 102. https://www.britannica.com/biography/Eve-Curie (https://www.britannica.com/biography/Eve-Curie)

Reply

(http

Franco Diaz Campo (https://canvas.sbcc.edu/courses/46681/users/403036)

Mar 23, 2022

Hi Abigail,

I really don't know exactly the answer, but having so much exposure to radiation can be very dangerous, and it has effects for decades on all humans. A clear example is Nagasaki and Hiroshima, with all the atomic bombs in World War.

Thanks!

Franco Diaz

Reply

(http

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)

Apr 5, 2022

Yes, she is one of the most inspiring characters in science, male or female. She's the only person ever to win two Nobel prizes in two different fields, and her own daughter went on to win her own Nobel Prize in chemistry as well.

That's a very interesting question, if her children suffered adverse effects from radiation? The older daughter lived to be 58, studying radioactivity with her husband (and like her parents they also won the Nobel prize). She died from radiation related exposure, but probably due to their own work, not her parent's work. The younger daughter, Eve, the author of the book I talk about, lived to be over 100, so I think that shows she was not effected by the radiation exposure of her parents.

Reply

Luke Rutherford (https://canvas.sbcc.edu/courses/46681/users/373514)

Mar 21, 2022

DISCUSSION:

Before reading the excerpts I knew about certain problems with women in science but after reading and watching the assigned content I was amazed at how unfair it was being a woman in that area. I had already known about Rachel Carson and had read "Silent Spring" but I was intrigued by Marie Curie the most. I find it astounding how selfless she was, how she achieved so much without her achievements intervening with her work. She is an inspiring scientist who only cared about her research and family.

QUESTION:

How many deserving woman scientists have gone unrecognized for incredible advancements in science, or any field?

Reply

Sarah Savage (https://canvas.sbcc.edu/courses/46681/users/375381)

Mar 22, 2022

ANSWER:

Sadly, the number is countless. It's happened in every country, in every field, and not only to women who have made incredible advancements to society. It's happened to virtually every woman, regardless of her type of work or place in society's hierarchy. It's happened to me in business, in school, in social settings, men have taken credit for my work and my ideas. Ask your mom, aunts, grandma, and I guarantee they each have at least one story of having their contributions go unrecognized, stolen, or swept under the rug, though perhaps not is as public a way as an attempted Nobel Prize snub would be. Hopefully this new generation of young adults will be the one to change that, now that there is more awareness around it.

Reply

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)

Apr 5, 2022

Yes, women have played very important roles in science, but in the past end in other cultures, their accomplishments have been unrecognized. the hope is to change that by talking about it in classes like this so that more people are aware and can honor and respect the contributions these women I made. Hopefully, with time, history will correct for the many women who's contributions have gone unnoticed. Several good books and films have come out in the past few years toward that end, for example, the movie Hidden Figures, about women computers at NASA (like the Harvard Computer women we talked about), who helped plot all the orbits for the astronauts.

Reply

Sarah Savage (https://canvas.sbcc.edu/courses/46681/users/375381)

Mar 22, 2022

DISCUSS:

The story of the Radium Girls is truly shocking. Those poor girls! Their stories are horrifying. The part about the dentist lifting half a girl's jawbone out of her mouth, and she was labeled as having died of syphilis yet the companies kept on telling the girls to lick the brushes. I am so appreciative that OSHA was created as a result of this to protect workers health and rights. Plus the fact that so many types of companies started incorporating radium into their products without safety oversight from our government...wow. I'm just imagining my grandmother, who was born in 1923, brushing her teeth with radium toothpaste as a 5 year old the year that the girls filed their lawsuit against the US Radium Corporation. Our society, has come extremely far in terms of public safety in the past 100 years.

QUESTION:

Is it possible that the public ingestion of radium during the 1920s was widespread enough and damaging enough to peoples' DNA that it could be an underlying cause for the rises in so many of the diseases, conditions, and disorders that we see today that didn't used to be so prevalent? (such as cancers, diabetes, learning disabilities, ADHD, Autism, etc - though I do think doctors have just gotten better at diagnosing these things.)

Reply

Brian Wolden (https://canvas.sbcc.edu/courses/46681/users/274832)

Mar 23, 2022

Hi Sarah,

Good question! I agree that for things like learning disabilities, ADHD and autism, doctors are simply better at diagnosing these things than they once were, though things like autism are still potentially under diagnosed in minorities, as this study seems to suggest: **https://link.springer.com/article/10.1007/s10803-008-0611-5) (https://link.springer.com/article/10.1007/s10803-008-0611-5)** as well as in women.

I did find this from the CDC about radium more generally in the environment, **https://wwwn.cdc.gov/TSP/PHS/PHS.aspx?phsid=789&toxid=154, (https://wwwn.cdc.gov/TSP/PHS/PHS.aspx?phsid=789&toxid=154)** and it seems like it is naturally occurring at very low (and likely harmless quantities) and that higher doses are, of course, capable of causing cancers, though it suggests that bone cancers are most prevalent. I don't know if that also has something to do with the method of exposure. In the material we reviewed on the radium girls, bone cancer seems to fit with some of their experiences, though a lot of that may have been a result of them ingesting it (which is absolutely terrifying)! I would also be interested in the long term affects these companies inflicted on us by putting profits before the good of their employees (and that of the general public).

Reply

(http

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)

Apr 5, 2022

The story is horrific and exactly why it needs to be talked about more and discussed in classes and known more about by the general population. These girls suffered terribly and it was a heinous crime, avoidable and manipulative. All to make a company money. So horrible. Your second question, about the ingestion of trace amounts of radioactivity in general products, I'm not sure if they've done studies on this but certainly there is the possibility that for some people there might have been an effect but I think you're referring to the modern day high sensitivity to toxins, allergies, and other chronic health conditions that didn't seem to plague us in the past. These are due to perhaps a combination of increased longevity, we simply live long enough to have these problems that we didn't have in the past, advances in medical diagnosis, but also there is significant progress in understanding how humans have interfered with natural medical processes which have damaged our immune system and ability to adapt. I'm reading a book called the A Natural History of the future by Rob Dunn, and there's a whole chapter about this and it's really shocking.

Reply

Brian Wolden (https://canvas.sbcc.edu/courses/46681/users/274832)

Mar 23, 2022

DISCUSSION

One of the things I was most surprised about from this weeks lecture and material was the story of the Radium Girls. I had heard about the use of radium paint in the manufacture of glowing watch faces and new that it had stopped because of the harmful radiation that the radium produced. I did not know the details of this story and was appalled by the unchecked greed, as well as blatant sexism, involved in this story. The most disturbing and appalling examples is of the young woman who was one of the first to become ill, Amelia "Molly" Maggia. She began loosing teeth and, eventually her jaw was so thoroughly decayed from radiation that it broke at a touch and was apparently removed by just pulling it out of her mouth. When she died a few months later, instead of investigating what had happened to this poor woman, it was deemed "syphilis". Not only did the companies manufacturing these radium dials fail to pay medical bills, they even actively tried to hide the truth of the harm of radium and published studies contradicting the findings of more neutral parties. Additional evidence that the behavior of these companies towards their female companions was based, at least in part, on sexist beliefs was the fact that many male employees were given protective equipment (while women were encouraged to ingest it to form a better point on their brushes) and that an investigation into the potential harm was not implemented until a man died of radium poisoning. This is in line with similar behavior that persists, even today, where women's symptoms are dismissed or assumed exaggerated or imagined by some medical professionals. I found this whole story fascinating and disturbing and I look forward to reading the entire book.

QUESTION

Is the change in skin pigmentation for the man who turned himself blue through the use of colloidal silver permanent? Are there any other side effects from which he is suffering? If not, could he become a darker shade of blue if he continued to take colloidal silver in high doses?

Reply

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)

Apr 5, 2022

The Radium Girls story is horrifying. It's important that these books come out so that this period in history is talked about so that we are more aware and don't allow for this type of thing to happen again. It's difficult to read but sometimes things are unpleasant to hear about. Hopefully we will learn from the past.

Reply

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)

Apr 5, 2022

The colloidal silver man has passed away, but it's not thought that he died because of the colloidal silver. You can read about him on Wikipedia. I think his condition was permanent, similar to how they used silver in photography to fix the development of pigment to negatives. He sort of "developed" himself. I don't think he could have gotten much bluer. That was pretty blue!

Reply

Franco Diaz Campo (https://canvas.sbcc.edu/courses/46681/users/403036)

Mar 23, 2022

DISCUSSION

Hi!

I found exciting a lot of things this week! I understand many new concepts I didn't know before. One of the main concepts we watched this week was everything about the high mass stars; I liked that video. It explained all concepts well, and I would recommend it to everyone who hasn't watched it to enjoy that incredible video. I also have to say that the guy from Crash Course is excellent; he enjoyably explains physics. Also, I want to emphasize all videos from Marie Curie, she was a person who introduced us to a lot of new concepts, and she was a lovely woman.

QUESTION

How much do you think Marie Curie contributed to modern physics?

Reply

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)

Apr 5, 2022

Yes, we have to understand high mass stars to then understand collapse to neutron stars and black holes. Glad you find it interesting.

Reply

(http

Naomi Xu (https://canvas.sbcc.edu/courses/46681/users/27955)

Thursday

I mean, she isn't called "the Mother of Physics" for nothing. Not only did her work in radioactivity aid tremendously in war efforts, and i won't list everything that we just learned in this week's materials, but she is also an incredible trailblazer in furthering women's place in STEM, being the first of many accomplishments, that inspire countless others to pursue science and make more contributions.

Reply

(https:/

Alak Fryt (*He/Him*) (https://canvas.sbcc.edu/courses/46681/users/354278)

Mar 23, 2022

DISCUSSION:

Reading about the Radium Girls was honestly just really upsetting, seeing how their suffering was pretty much just ignored and how Luminous Processes basically pretended like it wasn't happening and moved on from it was hard to read. Like it was just hard to know that all these women had all sorts of horrible side effects from working with the radium in this company and it all just went unnoticed and unjustified. But reading how Kate Moore was able to do plenty of research on the cases of these women and write their story, it definitely made me happy. I was also glad to read how the families of these women also were cooperative in helping tell the stories of these women because that way, Moore wasn't doing anything that would be morally wrong in any way.

QUESTION:

I'm guessing that it has to do with the time period that this was all set in as well as the way that women were treated and disregarded, but I'm curious as to how all these things could've happened to the Radium Girls and yet all of it would go unpunished and pretty much forgotten about. How could all these terrible things happen to these women and all of it just go unnoticed?

Reply

(http

Sarah Savage (https://canvas.sbcc.edu/courses/46681/users/375381)

Mar 27, 2022

ANSWER:
Back when the radium girls were painting those clocks, The only methods for spreading information like this, other than word of mouth, were radio and newspaper. Both of which would have been local companies that could have easily been paid off and controlled by the radium company and politicians to not report on that story.

Reply

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)
Apr 5, 2022

Yes, the story of the radium girls is very upsetting. I'm glad you were upset because because humans who care for each other on this planet should never use and manipulate and take advantage of others in this way. Kate Moore by publishing her book draws attention to these women's stories so that they may not have lived in vain. It is estimated that millions of people were saved by the courage and strength of these women, in the development of employer protections and legal structures for holding companies account. But you are right. This should never have happened in the first place.

Reply

Malcolm Tircuit (https://canvas.sbcc.edu/courses/46681/users/427388)
May 4, 2022

DISCUSS:

It was really interesting hearing about Marie Curie and the radium girls. It was very inspiring to me to see how Marie Curie stayed away from fame and fortune to do her work and make her discoveries. It's also kind of ironic that the thing she was studying was the thing that killed her. The story of the radium girls was very moving. I find it so disturbing that the company didn't do anything or take responsibility for what happened.

QUESTION:

How many people died as a result of the Chernobyl disaster?

Reply

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)
Wednesday

Yes, history is sometimes not kind. Hopefully we learn from our mistakes, though that doesn't always seem to be the case.

Regarding Chernobyl,... The official death toll directly attributed to Chernobyl that is recognized by the international community is just 31 people with the UN saying it could be 50. However, hundreds of thousands of “liquidators” were sent in to put out the fire at the nuclear power plant and clean up the Chernobyl site afterwards, and their lives were perhaps greatly shortened. Taking into consideration the indirect effects, and considering deaths over a longer time period, you could perhaps make a case for a number in the thousands.

Reply

(https:/

Naomi Xu (https://canvas.sbcc.edu/courses/46681/users/27955)

Tuesday

a show I think you would like, called Love, Death and Robots

This clip is from the episode 3 robots, and it's about them traveling through a post-apocalyptic earth. It touches upon nuclear war and the current state of our world which I think ties in really well with this week's materials.

https://www.youtube.com/watch?v=lCmS27Dj4xc (https://www.youtube.com/watch?v=lCmS27Dj4xc)

(https://www.youtube.com/watch?v=lCmS27Dj4xc)

Reply

(http

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)

Wednesday

I never saw this movie. What an ending. I like the part in the clip where they think it's nuclear warheads that wiped out the human race, and then one of the robots says, "no", it's their own hubress, they destroyed their own planet by not taking care of it. And yes, I have always thought cats to be superior to humans. Garfield to the end!

Reply

(http

Naomi Xu (https://canvas.sbcc.edu/courses/46681/users/27955)

Thursday

QUSTION

If intelligence is always at threat of being used for evil, should intelligent (I'm using this term loosely) people be held accountable for the damage that is caused?

Reply

(http

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)

Thursday

Oooh... I like how you suggest "intelligent" people should be held accountable for the damage that they cause.

Reply

(http

Malcolm Tircuit (https://canvas.sbcc.edu/courses/46681/users/427388)

Yesterday

I personally think that everybody should be held accountable for what they do no matter how intelligent they are. In most cases the ends don't justify the means. However, this raises the question that if there will be a point in human history where someone must do something horrible for the good of the human race as a whole should they do it? These are hard questions that I really like pondering the moral implications of.

Reply

(http

Erin O'Connor (https://canvas.sbcc.edu/courses/46681/users/24247)

Yesterday

Yes, that's a tough one. Sometimes in war, a commander will sacrifice some troops (like a suicide mission) but save millions in the end. Is that ethical? I don't know how to respond, but this poses a challenge for the great thinkers of history.

Reply