Welcome to the course *Science and the Theater* offered as part of the College of Arts and Science First-Year Seminars. Arthur Miller, who wrote *Death of a Salesman, The Crucible* and other renowned plays, asserted the following: “Everything influences playwrights. A playwright who isn’t influenced is never of any use.” Science is among that ‘everything.’ Astronomy, medicine, mathematics, and biology have influenced the stories and themes of playwrights like Bertolt Brecht, Margaret Edson, Tom Stoppard, and Anna Ziegler. But how can complex scientific issues be addressed in a theatrical format without compromising the subject or the dramatic form? When a dramatic plot revolves around a scientific issue, how are the science and the scientists portrayed? What are the consequences of literary license when a playwright elects to take liberties with scientific matters to augment dramatic effect? How do such liberties enhance or challenge the veracity of the work? This course examines these issues. Relevant plays are read with an eye toward addressing science’s influence on theater and the theater’s influence on the perception of science as we seek to understand the complementary relationship between the two domains.

There is a significant amount of reading, writing, and presenting in this course. The intent is to develop a scholarly team spirit based on critical analysis and discussion, both formal and informal. Enhancing communication skills is a principal goal of the course as well. And we should have fun!

**Instructor**

David A. Scicchitano, Professor of Biology  
Office: Brown Building, 8th Floor (Part of the Silver Complex at 100 Washington Square East)  
E-mail: das2@nyu.edu  
Office Phone: 212-998-8229 (or 8-8229 when dialing from a campus phone)  
Office Hours: Monday and Wednesday from 4:00 PM until 5:00 PM, and by appointment
Aims of the Course

This course explores science through the lens of theater. The topics are not merely about science, though. The texts address scientific issues through their impact on individuals and society. Consider, for example, the play *Galileo* by Bertolt Brecht. In the early 17th century, the Roman Catholic Inquisition accused Galileo Galilei of heresy for the views he held on planetary motion, scientific views that were correct, especially when compared to the Ptolemaic portrait of the universe that was widely accepted as true at the time. While the play uses the story of Galileo’s conflict with religious authorities to drive the action, the issues of concern to Brecht were far deeper. Astronomical phenomena, which are intriguing, are used to question profound matters, including freedom of speech, the nature of scientific evidence, and intellectual rigidity in the face of contrary support.

This course explores the relationship between science and faith, the ethical quandaries of discovery, the role of women and minorities in the scientific endeavor, the inclusion of humans and animals as subjects in experiments, and the ever-present, potentially pre-apocalyptic implications of climate change. The plays include Bertolt Brecht’s *Galileo*, Jerome Lawrence’s and Robert E. Lee’s *Inherit the Wind*, Michael Frayn’s *Copenhagen*, Anna Ziegler’s *Photograph 51*, Margaret Edson’s *Wit*, Shelagh Stephenson’s *An Experiment with an Air Pump* and Steve Waters’ *The Contingency Plan*. The underlying scientific issues in each work are explored first, and the plays are read with an eye toward understanding the playwright’s response to those issues as well as his or her deeper concerns. This is followed by in-class activities designed to let you communicate your ideas in a variety of ways, including essays, team presentations, and discussions. Questions addressed include the following. How can complex scientific issues be addressed in a theatrical format without compromising the subject or the dramatic form? When a dramatic plot revolves around a scientific issue, how are the science and the scientists portrayed? What are the consequences of literary license when a playwright elects to take liberties with scientific matters to augment dramatic effect? How do such liberties enhance or challenge the veracity of the work?

In addition, a major focus of this course is to develop an ability to evaluate and communicate: first, learning to read texts closely, to pose complex questions, and to use evidence to think through those questions as a way of discovering and developing ideas; and second, learning how to express those ideas, crafting thoughts into compelling presentations and essays. Central to this work is the idea of the essay as inquiry. The essays you write for this course should allow you to explore a question you have. Remember, scholars examine evidence before arriving at a conclusion. They use reasoning to construct their thoughts into effective, valid arguments. You need to use logic and a solid command of facts to create an argument. Gathering the facts requires that you examine an issue from as many different viewpoints as possible, even from viewpoints that may well be contrary to your current thoughts or knowledge base.

Learning Objectives

The specific learning objectives of the course are:

1. to learn to read texts critically, which, in this case, applies to plays and related articles;
2. to understand the benefits and drawbacks of plays, and by analogy other works of fiction, in portraying historical and scientific principles;
3. to gain an understanding of literary license in conveying larger truths in plays
dealing with scientific principles; and
4. to appreciate the role that theater plays in creating awareness about scientific matters in today’s world.

The broader learning objectives of the course are:

1. to enhance communication skills, especially writing;
2. to foster teamwork as a means of delving into complex questions or problems;
3. to create healthy skepticism, resulting in the desire to look deeply at situations from various angles; and
4. to nurture open-mindedness and civility in engaging with others and their ideas.

Specific Course Items and Requirements

1. Required Texts:


Additional articles, book chapters, essays and other related material will be posted to the website for the course via NYU Classes.

2. Deliverable Due Dates and Attendance:

Submission of all papers and projects as well as the in-class presentations is mandatory! **Because of the nature of this course as a seminar, attendance is required at all meetings. All students are expected to be on time for class: Tardiness will not be tolerated.** If you have a schedule conflict involving other courses, religious obligations, or personal matters, please inform Professor Scicchitano at least one week ahead of time to discuss accommodations.
Work that is not submitted on time or presentations that are not made when scheduled will result in grades of “Failure” (F) for those assignments unless there are serious extenuating personal circumstances that are brought to the attention of the instructor. A grade of “Incomplete” (I) will not be given for this course unless it is warranted by circumstances like those described above. No extra credit opportunities will be given for this seminar.

3. **Academic Integrity:**

Academic integrity means that the work you submit is original. Obviously, bringing answers into an examination or copying all or part of a paper straight from a book, the Internet, or a fellow student is a violation of this principle. But there are other forms of cheating or plagiarizing which are just as serious — for example, presenting an oral report drawn without attribution from other sources (oral or written); writing a sentence or paragraph which, despite being in different words, expresses someone else’s idea(s) without a reference to the source of the idea(s); or submitting essentially the same paper in two different courses, unless both instructors have given their permission in advance. Receiving or giving help on a take-home paper, examination, or quiz is also cheating, unless expressly permitted by the instructor, as in collaborative projects. For more information, see [https://cas.nyu.edu/content/nyuas/cas/academic-integrity.html](https://cas.nyu.edu/content/nyuas/cas/academic-integrity.html).

Violations of academic integrity will not be tolerated! When academic dishonesty is suspected, it will be dealt with in adherence to the official guidelines of New York University.

4. **Disability Disclosure:**

Academic accommodations are available for students with disabilities. If you need or plan to request academic accommodations related to this course, reach out to the Moses Center for Student Accessibility as early as possible in the semester by calling 212-998-4980 or sending an email to mosescsd@nyu.edu. The Moses Center website is www.nyu.edu/csd.

5. **Withdrawing from *Science and the Theater***:

It is a serious decision to withdraw from this course because it is a First-Year Seminar that is a requirement for graduation. Hence, you will need to obtain permission to withdraw. (You will not be able to withdraw via Albert.) You will need to consult with your College of Arts and Science Academic Adviser before dropping this seminar.

If you are granted permission to withdraw from the course, you may do so by the end of first two weeks of the term with no penalty and no record of the course on your transcript.

If you are given permission to withdraw from this seminar after the first two weeks of the term, you can do so up to the end of the ninth week of the term and receive a withdraw grade of W on your transcript. Again, you must consult with your adviser to obtain permission to do this, and you should speak with Financial Aid, if applicable, to ascertain any possible financial consequences.

To withdraw from this course after the ninth week of the term ends, you must present good reasons for doing
so in an official petition to the Office of Academic Standards, which is located at 726 Broadway, 7th Floor (phone 212-998-8140).

6. **Questions, Concerns, Assistance:**

Do not hesitate to make use of Professor Scicchitano’s office hours to ask questions or to obtain extra help to avoid confusion. You should approach him with a list of specific questions or concerns that have been prepared prior to your visit. It is much more useful for you if you are well organized. Likewise, a visit during office hours should be no longer than 10 or 15 minutes; this is to allow other students to have access to the instructor. If you need additional help, you are encouraged to make a special appointment.

7. **Grading:**

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<td>Acted Scenes</td>
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Participation (10%): As noted below, the course requires significant preparation prior to each class. This preparation will be reflected in part in your participation in discussions, peer review exercises and spontaneous writing exercises that you will share during class. For this reason, participation is a significant part of the grade. You should meet with the instructor at least once every two weeks. Note that a required meeting must be scheduled during “Intermission” at the mid-point of the course.

Lightening Presentations (10%): Lightening Presentations are concise summaries of a topic, usually factual in nature, that provide the class with essential context for the ensuing discussion of the day. They should be succinct and last no more than one minute. You should be prepared to answer basic questions or add information on the topic as needed during the discussion. Creating well-organized notes is a good idea. You will be graded based on the concise nature of the presentation and your ability to help with the discussion of the topic.

Acted Scenes (10%): The course is about plays, and plays are meant to be acted for an audience. In that spirit, particularly germane scenes will be acted in class. The instructor will choose the scenes and assign them in advance of the class in which they will be presented. You will not need to memorize the dialogue: You can have the script with you and read the scene with your fellow actors. But this still necessitates preparation, rehearsal and interpretation. Note that you and your fellow actors will be expected to provide the first question for discussion related to the scene. The grade will be based on clear preparation of the text as exemplified by a solid presentation of the work, and by the quality of the question(s) generated for discussion.

Essays (55%): Writing as a means of thinking, organizing thoughts and communicating them as a coherent
argument is a skill that is developed over time by practice, practice and more practice. It is also one that requires peer review: Everyone needs critiques and an editor to be an effective author. You will write three essays in this course that your classmates will review. (You will learn how to peer review in class.) The values of the essays increase over time as your skills as writers are honed.

Team Presentation (15%): The team presentations, which will concern climate change, will require you to investigate a claim related to the topic—perhaps a claim made in a play—and analyze it from several angles. Teams will need to codify the role of each member in creating the presentation and generating a discussion. Each student’s grade will be based on the team presentation over all (50%) and how well his or her specific section is executed (50%).

Refer to the attached appendix entitled “Class Deliverables: A Synopsis” for details concerning assigned readings, essays and presentations, and their due dates for class.
Syllabus

Prologue

Thursday, September 3, 2020
Meeting 1: Science and Theater

“Clearly, science works as theater. And theater can work at conveying the ideas of science.”

“One might say that the further science plays get from realism, the closer they get to real science; and the more compelling the science play, the more it tends to depart from straight realism.”

Reading

Writing
Prepare three of your own questions that the readings made you consider. You will share these questions during class.
Act 1

Scene 1
(Circa 1610 CE)

Of the earth, planets and stars...

*Galileo* by Bertolt Brecht

Tuesday, September 8, 2020

Meeting 2: The Trial of Galileo Galilei

“I do not feel obliged to believe that the same God who has endowed us with senses, reason, and intellect has intended us to forego their use.”


“The condemnation of Galileo Galilei (1564–1642) by the Inquisition in 1633 is perhaps the most significant episode in the long history of the interaction between science and Christianity.”


**Reading**


**Writing**

Identify a recent event in which science and religion were in agreement or in conflict. Write a short — no more than 200 words — paragraph that identifies the event, and succinctly articulate the reason you feel it is important. Be sure to prepare a list of citations for any literature you read or to which you refer concerning the event you choose. Feel free to submit an appropriate photo as well if you find one.

**Lightning Presentations (Partial List)**

- Ptolemy’s View of the Planets
- Nicolaus Copernicus

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1 Lightening Presentations are concise summaries of a topic, usually factual in nature, that provide the class with essential context for the ensuing discussion of the day. They should be no more than one minute in duration. Students must cite at least three different resources for the Lightning Presentations they’re assigned of which only one can be an encyclopedia or wiki.
Thursday, September 10, 2020
Meeting 3: Galileo

“Tonight the Holy Office has decided that the theory according to which the earth goes around the sun is foolish, absurd, and a heresy. I am charged, Mr. Galelei, with cautioning you to abandon these teachings.”


Reading

Acted Scenes for Meeting 3 from Galileo

Make sure your assigned scenes with teammates are prepared. Each team must craft a well-articulated question for discussion that is based on the assigned scene.

Scene 1 (pp. 47 – 49)
Scene 3 (pp. 59 – 60)
Scene 4 (pp. 66 – 68)
Scene 6 (pp. 77 – 80)
Scene 12 (pp. 111 – 114)
Scene 13 (pp. 123 – 124)

Tuesday, September 15, 2020
Meeting 4: Questions, Problems, Ideas, and Evidence

“...while playwrights and novelists depart from the facts of history, they still present the larger forces of history.”


“Galileo is so firmly grounded on historical re-creation that it is not always easy to separate the special pleading from the authenticity.”


Reading

2 Prior to the class, student teams will be asked to prepare brief scenes from the play that highlight challenging issues or concepts for discussion. The scenes will not require memorization, merely preparation by the team members. The scenes are presented in class.

Writing
You must identify a problem or question that Galileo inspires. You will discuss your initial thoughts with peers for critiques. Bring your written thoughts to class for Meeting 4 on September 15, 2020. They can be rough lists: You will not submit them, but you will discuss your thoughts with your classmates.

To complete the assignment, you will formulate the opening paragraphs of an essay that expresses the problem or question and describes its importance or relevance. From that, you must generate an idea that you can explore to answer the question or solve the problem. The two-to three-page draft is due at the beginning of Meeting 5, which is Thursday, September 17, 2020. The final draft of Essay 1 with evidence to support the idea and a conclusion will be due at Meeting 7, which is Thursday, September 24, 2020. The draft should be five to six pages in length, not including citations, tables and figures. The final, complete paper is due prior to Meeting 9 on October 1, 2020, and it must be submitted via Turnitin.

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3 Writing assignments must be double-spaced using an 11-point Calibri font. All final writing assignments are to be submitted via Turnitin.
Act 1

Scene 2
(Circa 1925 CE)

Of evolution and controversy...

_Inherit the Wind_ by Jerome Lawrence and Robert E. Lee

Thursday, September 17, 2020

Meeting 5: Evolution, Creationism, and the Scopes Trial

“...That it shall be unlawful for any teacher in any of the Universities, Normals and all other public schools of the State which are supported in whole or in part by the public school funds of the State, to teach any theory that denies the story of Devine Creation of man as taught in the Bible....”

From: Tennessee House Bill No. 185, Passed by the 64th General Assembly (March 13, 1925)

Reading


Writing

The opening of Essay 1 that expresses the problem or question you crafted based on _Galileo_ is due. You must describe the problem's or question's importance or relevance. You should also provide an idea that you can explore to answer the question or solve the problem. This should be a two- to three-page draft.4

Lightning Presentations (Partial List)

Charles Darwin: _The Origin of Species_ and _The Descent of Man_

Clarence Darrow

William Jennings Bryan

Butler Act: Tennessee House Bill No. 185 (1925)

McCarthyism and the McCarthy Trials

Tuesday, September 22, 2020

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4 All drafts for papers must be submitted before class starts as an email attachment to the instructor and as a printed copy in class. Only final versions of each of the three essays in the course must be submitted via Turnitin.
Meeting 6: *Inherit the Wind*

“...*Inherit the Wind* does not pretend to be journalism. It is theatre. It is not 1925. The stage directions set the time as “Not too long ago.” It might have been yesterday. It could be tomorrow.”


“I tell you, if this law is not upheld, this boy will become one of a generation, shorn of its faith by the teaching of Godless science!”


Reading


*Acted Scenes for Meeting 6 from Inherit the Wind*

- Act I, Scene 1 (pp. 7 – 9)
- Act I, Scene 1 (pp. 15 – 16)
- Act I, Scene 3 (pp. 37 – 39)
- Act II, Scene 2 (pp. 68 – 72)
- Act II, Scene 2 (pp. 85 – 88)
- Act II, Scene 2 (pp. 94 – 98)

Thursday, September 24, 2020

Meeting 7: Controversy

“Argument

An argument is a mode of discourse that advances a thesis or claim about how an audience should view and respond to a problem. An argument nevertheless is not one-sided—it is capacious, thoroughly considering multiple views and a variety of evidence. Although an argument often appears to drive the essay’s presentation of evidence, analysis, and even structure, it develops from preceding rigorous, patient, and open-minded analysis.”


Reading

*Genesis*, Chapter 2


*Day Five: Transcript of Scopes Trial*, Thursday July 16, 1925, pp. 174 – 176. (Read from “Christian Believes Man from Above—Evolutionist from Below” up through and including “Reads from “Descent of Man”.”)

*Days Six and Seven: Transcript of Scopes Trial*, Friday July 17 and Monday July 20, 1925, pp. 251 – 254. (Read from “By Dr. Maynard M. Metcalf” up through and including “No Contest Between Bible and Fact of Evolution.”)
Days Six and Seven: Scopes Trial, Friday July 17 and Monday July 20, 1925, “Testimony of William Jennings Bryan.” (Testimony stricken from record. Read the entire document.)

Day Eight: Transcript of Scopes Trial, Tuesday July 21, 1925, pp. 312 – 313. (Read “Jury Out Nine Minutes” up through and including “Scopes Fined $100.”)


Writing

A complete draft of Essay 1 that is based on Galileo is due at the beginning of Meeting 7. It must be submitted as an email attachment to the instructor in MSWord format and as a printed copy that is brought to class. It will be peer reviewed. This draft should be five to six pages in length, not including citations, tables, and figures.
Act 1

Scene 3
(Circa 1941)

Of splitting the atom...

Copenhagen by Michael Frayn

Tuesday, September 29, 2020
Meeting 8: Nuclear Fission

“The quest for a war-free world has a basic purpose: survival. But if in the process we learn how to achieve it by love rather than by fear, by kindness rather than by compulsion; if in the process we learn to combine the essential with the enjoyable, the expedient with the benevolent, the practical with the beautiful, this will be an extra incentive to embark on this great task. Above all remember your humanity.”

From: Nobel Peace Prize Address, Sir Joseph Rotblat

Reading

Lightning Presentations (Partial List)
Niels Bohr
Werner Heisenberg
Chicago Pile-1
The Manhattan Project and Uranverein
Little Boy and Fat Man

Writing
Peer review critiques are due at the beginning of class.

Thursday, October 1, 2020
Meeting 9: Copenhagen

“There’s no mystery about it. There never was any mystery. I remember it absolutely clearly, because my life was at stake, and I chose my words very carefully. I simply asked you if as a physicist one had the moral right to work on the practical exploitation of atomic energy.”

“And this wonderful machine may yet kill every man, woman, and child in the world. And if we really are the centre of the universe, if we really are all that’s keeping it in being, what will be left?”


Viewing OR Reading


OR


Writing

The final version of Essay 1 is due prior to the beginning of Meeting 9 on October 1, 2020. It should be 5 to 6 pages in length. This version must be submitted via Turnitin.

Acted Scenes for Meeting 9 from *Copenhagen*

Act I (pp. 3 – 49)
Act I (pp. 10 – 12)
Act I (pp. 17 – 18)
Act I (pp. 36 – 38)
Act II (pp. 80 – 85)
Act II (p. 89)

Tuesday, October 6, 2020

Meeting 10: Consequences

“Some of the evidence undoubtedly appears to support Power’s thesis in its stronger form, that Heisenberg deliberately sabotaged the project.”


Reading


Activity

5 *Copenhagen* is an extraordinary play. In its London and Broadway productions, the set consisted of a circular stage with the audience surrounding the set. The backstage seats were suggestive of a jury box. Props consisted of a few chairs. The three-character action often involved two actors in dialogue with the third giving asides. The script has virtually no stage directions and reading it without having seen the play makes it a challenge to understand who is speaking to whom and who is engaged in asides. To avoid diminishing the play’s power, students will have the option of viewing the BBC production of *Copenhagen*. While it is a film in its own right—it is not a video recording of the play—it follows the play’s script very closely. This approach should make the work far more enjoyable and accessible.
Bring two photos to class: One that reflects a peaceful use of nuclear power and one that demonstrates its potential for harm. Be prepared to share your thoughts on this topic! Following a discussion of *Copenhagen*, you will spend time in class talking about the photos you chose. You will then think of a question or problem for your second essay, which must be related to *Copenhagen* or *Inherit the Wind*. A draft of the question or problem and associated idea is due at Meeting 12 on October 13, 2020; the draft should be two- to three pages in length. This will be the foundation of Essay 2. The final draft of Essay 2 with evidence to support the idea and a conclusion will be due before Meeting 14, which is Tuesday, October 20, 2020. The draft should be five to six pages in length, not including citations, tables and figures. The final, complete paper is due prior to Meeting 17 on October 29, 2020, and it must be submitted via Turnitin.
Act 1

Scene 4
(Circa 1952)

Of a woman in science...

*Photograph 51* by Anna Ziegler

**Thursday, October 8, 2020**

**Meeting 11: The Structure of DNA**

“In May 1952 Rosalind made an X-ray of the B-form of DNA. This picture clearly shows an X-shaped pattern, suggesting that the B-form is a helix (spiral).”


**Reading**


**Lightning Presentations (Partial List)**

Francis Crick
James Watson
Maurice Wilkins
Women in Science: The Data
Ethnicities in Science: The Data

**Tuesday, October 13, 2020**

**Meeting 12: *Photograph 51***

“This is what it was like. We made the invisible visible. We could see atoms; not only see them—manipulate them, move them around. We were so powerful.”


**Reading**

**Writing**

The opening paragraphs of *Essay 2* that express the problem or question you crafted based on *Inherit the Wind* or *Copenhagen* is due. You must describe the problem’s or question’s importance or relevance. You should also provide an idea that you can explore to answer the question or solve the problem. This should be a two- to three-page draft. It must be submitted as an email attachment to Professor Scicchitano and as a printed copy in class.

**Acted Scenes for Meeting 12 from *Photograph 51***

pp. 12 – 14  
pp. 14 – 17  
pp. 33 – 35  
pp. 35 – 37  
pp. 54 – 56  
pp. 79 – 81

**Thursday, October 15, 2020**

**Meeting 13: Women in Science**

“This photo was, months later, surreptitiously conveyed to her competitor James Watson, working with Francis Crick in the Cavendish Laboratory in Cambridge, and was critically important to their evolving ideas and model building.”


“She did not know that [Watson and Crick] had seen either her X-ray photograph ..., showing unmistakable evidence of a helical structure, or her precise measurements of the unit cell (the smallest repeating unit) of the DNA crystal.”


“Without Franklin and Gosling’s data, Watson and Crick’s model would have been just another model.”


“... we must know who Rosalind Franklin was and the contributions she made to the [structural] model [of DNA]. We must also understand why it was so easy for her contributions to be incorporated in the work of her male colleagues and to go unacknowledged by them and by scientific history....”


**Reading**


**Activity**

Prepare a brief summary concerning Rosalind Franklin that addresses the following questions. You will not submit the summary, but you will need to share your thoughts succinctly and effectively with the class and be prepared to defend them.

1. Was Dr. Franklin mis-treated at Kings? Why or why not?
2. Did Dr. Franklin receive the recognition due her in the "race" for the double helix? Why or why not?
3. If Dr. Franklin had been alive when the Nobel Prize was awarded for the elucidation of the structure of DNA, should she have been a co-recipient? Why or why not?
Intermission

Tuesday, October 20, 2020
Meeting 14: Individual Student Meetings

You must schedule an individual meeting with the instructor to discuss your progress and final essay. There will be no class meeting. The complete draft of Essay 2—five to six pages in length—will be due prior to the start time of Meeting 14. The essay will be a talking point at the one-on-one meeting. The final version of Essay 2 is due prior to Meeting 17 on October 29, 2020. You will be encouraged to visit the instructor again to discuss the final paper as it progresses.
Act 2

Scene 1
(Circa 1993)

Of disease and suffering...

Wit by Margaret Edson

Thursday, October 22, 2020
Meeting 15: Cancer

“Cancer is the name given to a collection of related diseases. In all types of cancer, some of the body’s cells begin to divide without stopping and spread into surrounding tissues.”

From: https://www.cancer.gov/about-cancer/understanding/what-is-cancer, January 31, 2020

Reading

Viewing
Cancer
https://www.youtube.com/watch?v=46Xh7OFkkCE

Lightning Presentations (Partial List)
Ovarian Cancer: The Data
Testicular Cancer: The Data
hexamethophosphacil and vinplatin; cisplatin and paclitaxel
Do-Not-Resuscitate (DNR) Order
John Donne

Tuesday, October 27, 2020
Meeting 16: Wit

“One thing can be said for an eight-month course of cancer treatment: it is highly educational. I am learning to suffer.”


Viewing or Reading

6 Wit, like Copenhagen, was filmed for television. The film follows the play’s script almost verbatim. The
View: *Wit* (2001) Made for TV Film

OR


**Acted Scenes from *Wit* for Meeting 16**
- pp. 7 – 11
- pp. 14 -- 16
- pp. 27 – 30
- pp. 36 – 40
- pp. 55 – 58
- pp. 64 -- 69

**Thursday, October 29, 2020**
**Meeting 17: Humanism in Science and Medicine**

“I-Thou relationships—characterized by reciprocity or mutuality, spontaneity, acceptance and confirmation of otherness or uniqueness, immediacy, wholeness, exclusiveness, inclusion, and alternation of actuality and latency—are integral to humanhood, defining individuals. An individual is fully realized in a relationship with another unique being, a Thou.”


“Although 20th-century philosopher Martin Buber never wrote about medicine directly, his philosophy raises essential questions about how, at the most basic level, human beings relate to one another, and thus offers valuable insights into the doctor–patient relationship. In *I and Thou* (1923), Buber argues that there are two basic modes of human interaction: the ‘I–You’ and the ‘I–It’. The I–You is a dialogical relationship wherein human beings encounter one another in their holistic existence.”


**Reading**

**Writing**
The final version of *Essay 2* is due prior to the beginning of Meeting 17 on October 29, 2020. It should be 5 to 6 pages in length. This version must be submitted via Turnitin.

incomparable Mike Nichols, who directed the film, captured the humor, intelligence, pain, and suffering of Vivian Bearing, played by the extraordinary Emma Thompson, in a beautiful, poignant production. Although the script is quite readable, the film’s impact is nothing less than astonishing. Students will be encouraged to watch it.
Activity

Bring an example from recent events — a newspaper, journal, or magazine article — in which the quality of medical care is the topic. Bring a copy of the article and the citation to class.
Act 2

Scene 2
(Circa 1999)

Of animal rights...

An Experiment with an Air Pump by Shelagh Stephenson

Tuesday, November 3, 2020
Meeting 18: Humans and Animals as Experimental Subjects

“...we argue that, even if human beings have higher moral status than nonhuman animals, animal research is morally permissible only if it satisfies (1) an expectation of sufficient net benefit, (2) a worthwhile-life condition, and (3) a no-unnecessary-harm/qualified-basic-needs condition.”


“...if poorly conducted studies produce unreliable findings, any suffering endured by animals loses its moral justification because their use cannot possibly contribute towards clinical benefit. Non-publication of animal studies is similarly unethical because the animals involved cannot contribute towards the accumulation of knowledge and because non-publication may result in further, unnecessary animal and human experiments.”


Reading

Viewing
Genomes and Genomics:
https://www.youtube.com/watch?v=2JUu1WqidC4

Lightning Presentations (Partial List)
Air Pumps
Joseph Wright’s “An Experiment on a Bird in the Air Pump.”
Animal Welfare Act
Institutional Review Board
Animal Use in Research and Development: The Data
Thursday, November 5, 2020  
Meeting 19: An Experiment with an Air Pump

“...if they can map your genes before you’re born, they’ll soon be wanting a little plastic card with your DNA details on. And if it says anything dodgy, it’ll be like you’re credit blacked. And then imagine this, people’ll say I can’t have this kid because it’ll never get a mortgage.”


Reading

Acted Scenes for Meeting 19 from *An Experiment with an Air Pump*

Act I, Scene 2 (pp. 36 – 38)  
Act I, Scene 3 (pp. 43 – 47)  
Act I, Scene 3 (pp. 50 – 52)  
Act II, Scene 2 (pp. 68 – 69)  
Act II, Scene 2 (pp. 70 – 72)  
Act II, Scene 4 (pp. 86 – 90)

Tuesday, November 10, 2020  
Meeting 20: Human and Animal Rights and Research

“... morally responsible animal research will produce ‘knowledge worth having,’ and that the prospective moral justification of animal research ought to rest on the value of the knowledge the experiment will produce.”


Reading


Writing
Bring questions or problems to class that will be the core of Essay 3. They will be reviewed and discussed. They should emanate from *Wit* or *An Experiment with an Air Pump*. Note that Essay 3 will be a 10- to 12-page
paper. You should not hesitate to bring in aspects of the prior plays and material from the course as you craft the paper. A complete draft of Essay 3 will be due before Meeting 24 on Tuesday, November 24. It should be submitted by email to Professor Scicchitano, and a printed copy should be brought to class. The final, complete Essay 3 is due before Meeting 28 on Thursday, December 10, and must be submitted via Turnitin.
Act 2

Scene 3
(The not-too-distant future...)

Of climate change and global warming...

The Contingency Plan by Steve Waters

Thursday, November 12, 2020
Meeting 21: The Challenge!

“Twenty-five years ago, the Union of Concerned Scientists and more than 1700 independent scientists, including the majority of living Nobel laureates in the sciences, penned the 1992 “World Scientists’ Warning to Humanity”. ... These concerned professionals called on humankind to curtail environmental destruction and cautioned that “a great change in our stewardship of the Earth and the life on it is required, if vast human misery is to be avoided.” ... The authors of the 1992 declaration feared that humanity was pushing Earth’s ecosystems beyond their capacities to support the web of life. ... They implored that we cut greenhouse gas (GHG) emissions and phase out fossil fuels, reduce deforestation, and reverse the trend of collapsing biodiversity. On the twenty-fifth anniversary of their call, we look back at their warning and evaluate the human response....”


“President Trump said Thursday that "nothing's a hoax" about climate change, the same day that he announced a rollback to a major environmental law.

"Nothing's a hoax about that. It's a very serious subject. I want clean air; I want clean water. I want the cleanest air with the cleanest water. The environment's very important to me," Trump told reporters.

"I also want jobs. I don't want to close up our industry because somebody said you have to go with wind or you have to go with something else that's not going to be able to have the capacity to do what we have to do," he added.”


Reading
https://climate.nasa.gov/evidence/
https://helpsavenature.com/arguments-against-global-warming

Lightning Presentations (Partial List)
Activity
Student teams will be formed. Each team will be assigned an aspect of climate change that it must research and present to the class at either Meeting 26 or Meeting 27.

Tuesday, November 17, 2020
Meeting 22: The Contingency Plan

“...in fact the Western Antarctic Ice Sheet is on the verge of collapse; that in fact sea-level rises of minimum five metres are imminent; and that in fact we are on the brink of a catastrophic event.”


Reading

Acted Scenes for Meeting 22 from The Contingency Plan: On the Beach
Act I, Scene 1 (pp. 18 – 21)
Act I, Scene 1 (pp. 22 – 23)
Act I, Scene 2 (pp. 53 – 56)
Act I, Scene 2 (pp. 62 – 64)
Act II, Scene 1 (pp. 68 – 69)
Act II, Scene 1 (pp. 83 – 84)

Thursday, November 19, 2020
Meeting 23: The Contingency Plan

“If you pour water into the bath it doesn’t stay under the tap, Minister; the equilibrium of the ocean, of all oceans everywhere is disrupted. I work on the West Antarctic Ice Sheet .... And the conventional wisdom, with one notable exception, is that its sheer bulk makes it immune to temperature rises, even when they are rising faster in the Antarctic than anywhere else on the planet....”


Reading

Acted Scenes for Meeting 23 from The Contingency Plan: Resilience
Act I, Scene 1 (pp. 90 – 92)
Tuesday, November 24, 2020
Meeting 24: The Challenge Continued!

“While it is too late to avert some dangerous consequences of climate change, it is not “all-or-nothing” and our actions can still make a difference.”


Reading

During this class, you will discuss options for combatting climate change. By this stage in the course, it is expected that you will research this topic prior to class and read more than the assigned papers.

Writing
A complete draft of Essay 3 that is based on Wit or An Experiment with an Air Pump is due by 11:00 AM on November 24, 2020. It should be brought to class and submitted to Professor Scicchitano via email. The draft will be peer reviewed during Meeting 25.

Tuesday, December 1, 2020
Meeting 25: Peer Review

Activity
Classmates will peer review your draft. You will have the opportunity to address the comments by revising the final draft prior to submission at Meeting 28.

Activity
The articles you want your classmates to read regarding climate change are due.

Thursday, December 3, 2020
Meeting 26: Climate Change 1: The Challenge

Activity
Teams will present their findings concerning climate change regarding the topic they chose in Meeting 21.

Tuesday, December 8, 2020
Meeting 27: Climate Change 2: The Challenge

Activity
Teams will present their findings concerning climate change regarding the topic they chose in Meeting 21.
Epilogue

Thursday, December 10, 2020
Meeting 28: Final Course Discussion and Summary

Writing
The final version of Essay 3 is due prior to the beginning of Meeting 28. It should be 10 to 12 pages in length. This version must be submitted via Turnitin.
Appendix

Class Deliverables: A Synopsis
<table>
<thead>
<tr>
<th>Week</th>
<th>Meeting</th>
<th>Play</th>
<th>Readings</th>
<th>Viewing</th>
<th>Writing</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9/8</td>
<td>Galileo</td>
<td>Galilei, G. (1615) “Letter to the Grand Duchess Christina,” an Essay. Finocchiaro, M. (2012) “The Copernican Revolution and the Galileo Affair.” In: The Blackwell Companion to Science and Christianity (Eds.: Stump, J. B. and Padgett, A. G.), John Wiley and Sons, Inc., New York, pp. 14 – 25. TOTAL: 21 pages of technical reading</td>
<td>Identify a recent event in which science and religion were in agreement or in conflict. Write a short – no more than 200 words – paragraph that identifies the event, and succinctly articulate the reason you feel it is important. Be sure to prepare a list of citations for any literature you read or to which you refer concerning the event you choose. Feel free to submit an appropriate photo as well if you find one.</td>
<td>Have your assigned Lightning Presentation prepared.</td>
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<td>2 (Th)</td>
<td>9/10</td>
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<td>Brecht, B. (1966) Galileo In: Galileo (Ed. Bentley, E.) Grove Press, New York, pp. 43 – 129. TOTAL: 86 pages</td>
<td>Identify a problem or question that Galileo inspires. You will discuss your initial thoughts with peers for critiques. Bring your written thoughts to class: They can be rough lists, and they will not be submitted.</td>
<td>Make sure your assigned scenes with teammates are prepared. Each team must craft a well-articulated question for discussion that is based on the assigned scene.</td>
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<td>3 (Th)</td>
<td>9/17</td>
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<td>Bleckmann, C. A. (2006) “Evolution and Creationism in Science: 1880 – 2000.” BioScience, 56, 151 – 158. Davis, Edward B. (2012) “Science Falsely So Called: Fundamentalism and Science.” In: The Blackwell Companion to Science and Christianity (Eds.: Stump, J. B. and Padgett, A. G.), John Wiley and Sons, Inc., New York, pp. 50 – 60. TOTAL: 17 pages of technical reading</td>
<td>The opening paragraphs of Essay 1 that express the problem or question you crafted based on Galileo is due. You must describe the problem’s or question’s importance or relevance. You should also provide an idea that you can explore to answer the question or solve the problem. This should be a two- to three-page draft.</td>
<td>Have your assigned Lightning Presentation prepared.</td>
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<td>3</td>
<td>9/22</td>
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<td>Lawrence, J. and Lee, R. E. (1955) Inherit the Wind, Ballantine Books, New York, Introductory Note and pp. 3 – 129. TOTAL: 127 pages</td>
<td>Make sure your assigned scenes with teammates are prepared. Each team must craft a well-articulated question for discussion that is based on the assigned scene.</td>
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<td>Week</td>
<td>Date</td>
<td>Reading Assignment</td>
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<td>4</td>
<td>9/24</td>
<td>Genesis, Chapter 2</td>
<td>A complete draft of Essay 1 that is based on Galileo is due at the beginning of Meeting 7. It will be peer reviewed. This draft should be five to six pages in length, not including citations, tables and figures.</td>
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<td><em>Day Five: Transcript of Scopes Trial</em>, Thursday July 16, 1925, pp. 174 – 176. (Read from “Christian Believes Man from Above—Evolutionist from Below” up through and including “Reads from “Descent of Man””.)</td>
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<td><em>Days Six and Seven: Transcript of Scopes Trial</em>, Friday July 17 and Monday July 20, 1925, pp. 251 – 254. (Read from “By Dr. Maynard M. Metcalf” up through and including “No Contest Between Bible and Fact of Evolution”.)</td>
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<td><em>Days Six and Seven: Scopes Trial</em>, Friday July 17 and Monday July 20, 1925, “Testimony of William Jennings Bryan.” (Testimony stricken from record.)</td>
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<td><em>Day Eight: Transcript of Scopes Trial, Tuesday July 21, 1925</em>, pp. 312 – 313. (Read “Jury Out Nine Minutes” up through and including “Scopes Fined $100”.)</td>
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<td><strong>TOTAL: 49 pages of technical reading</strong></td>
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<td><strong>TOTAL: 20 pages of technical reading</strong></td>
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<td>6</td>
<td>10/1</td>
<td>Frayn, M. (1998) <em>Copenhagen</em>, Anchor Books, New York, pp. 2 – 94. <em>(You have the option to read the play OR to watch the video.)</em></td>
<td>Make sure your assigned scenes with teammates are prepared. Each team must craft a well-articulated question for discussion that is based on the assigned scene.</td>
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<td>Copenhagen (2002) Produced by BBC Fictionlab for BBC Four, in association with KCET <em>(You have the option to watch the video OR to read the play.)</em></td>
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<td><strong>TOTAL: 92 pages</strong></td>
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<td>7</td>
<td>10/6</td>
<td>Frayn, M. (1998) <em>Copenhagen</em>, Anchor Books, New York, pp. 95 – 132.</td>
<td>Bring two photos to class: One that reflects a peaceful use of nuclear power and one that demonstrates its potential for harm. Be prepared to share your thoughts on this topic!</td>
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<td><strong>TOTAL: 55 pages of technical reading</strong></td>
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<tr>
<td>Date</td>
<td>Pages</td>
<td>Reading Material</td>
<td>Notes</td>
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<td>14 (Tu) 10/20</td>
<td>7</td>
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<td>Intermission</td>
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<tr>
<td>10/20</td>
<td>7</td>
<td>A complete draft of Essay 2 that is based on <em>Inherit the Wind</em> or <em>Copenhagen</em> is due by 11:00 AM on October 20, 2020. It should be submitted to Professor Scicchitano via email. The draft will be a discussion point during the meeting with Professor Scicchitano during Intermission.</td>
<td>Prepare a brief summary concerning Rosalind Franklin that addresses the following. You will not submit the summary, but you will need to share your thoughts succinctly and effectively with the class. 1. Was Dr. Franklin mis-treated at Kings? Why or why not? 2. Did Dr. Franklin receive the recognition due her in the &quot;race&quot; for the double helix? Why or why not? 3. If Dr. Franklin had been alive when the Nobel Prize was awarded for the elucidation of the structure of DNA, should she have been a co-recipient? Why or why not?</td>
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TOTAL: 12 pages of technical reading

TOTAL: 72 pages

TOTAL: 18 pages of technical reading

Make sure your assigned scenes with teammates are prepared. Each team must craft a well-articulated question for discussion that is based on the assigned scene.

Have your assigned Lightning Presentation prepared.
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Reading</th>
<th>Video Link</th>
<th>Assignment</th>
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</table>
TOTAL: Circa 30 pages | Have your assigned Lightning Presentation prepared. |
(You have the option to read the play OR to watch the video.)  
TOTAL: Total 84 pages | Make sure your assigned scenes with teammates are prepared. Each team must craft a well-articulated question for discussion that is based on the assigned scene. |
TOTAL: 13 pages of technical reading | The final version of Essay 2 is due prior to the beginning of Meeting 17. It should be 5 to 6 pages in length. This version must be submitted via Turnitin. |
TOTAL: 13 pages of technical reading | Have your assigned Lightning Presentation prepared. |
TOTAL: 95 pages | Make sure your assigned scenes with teammates are prepared. Each team must craft a well-articulated question for discussion that is based on the assigned scene. |
Camb. Q. Healthc. Ethics, 29, 131 – 143.  
TOTAL: 26 pages of technical reading | Bring questions or problems to class that will be the core of Essay 3. They will be reviewed and discussed. They should emanate from Wit or An Experiment with an Air Pump. Note that essay three will be a 10 to 12 page paper. You should not hesitate to bring in aspects of the prior plays and material from the course as you craft the paper. |
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<th>Week</th>
<th>Date</th>
<th>Assignment</th>
<th>Reading/Notes</th>
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<td><a href="https://climate.nasa.gov/evidence/">https://climate.nasa.gov/evidence/</a></td>
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<td><a href="https://helpsavenature.com/arguments-against-global-warming">https://helpsavenature.com/arguments-against-global-warming</a></td>
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<td>TOTAL: Circa 10 pages</td>
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<td>TOTAL: 77 pages</td>
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<td>TOTAL: 97 pages</td>
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<td>TOTAL: 8 pages of technical reading</td>
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<td>12</td>
<td>25 (Tu) 12/1</td>
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<td>A complete draft of Essay 3 that is based on Wit or An Experiment with an Air Pump is due by 11:00 AM on November 24, 2020. It should be brought to class and submitted to Professor Scicchitano via email. The draft will be peer reviewed during Meeting 25.</td>
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<td>13</td>
<td>26 (Th) 12/3</td>
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<td>Peer Review</td>
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<td>Team Presentations</td>
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<td>27 (Tu) 12/8</td>
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<td>Team Presentations</td>
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<tr>
<td>14</td>
<td>28 (Th) 12/10</td>
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<td>The final version of Essay 3 is due prior to the beginning of Meeting 28. It should be 10 to 12 pages in length. This version must be submitted via Turnitin.</td>
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