

## Honors Thesis – The Reading List

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12/05/2023

## Introduction

A resource provided by the Honors College website offers the advice that the Reading List should “draw a picture of [the author] as an undergraduate”. Through descriptions of experience and the explanations of my thoughts, I plan to do just that.

While reading through the entries, the reader may notice there are sources present that require no “reading” at all. A movie, music, YouTube channel, professional experience, and even an email appears on this list. No matter the medium through which it was gained, each source carries with it an experience responsible for my personal development. I will cover a variety of principles I hold with high regard, situations I found myself in, choices I made, my analysis of various pieces of art and literature, and most importantly, the experience I gained from each along the way.

It may have reached redundancy after three years, but it remains true that my undergraduate career was nontraditional to say the least. The influence of life during a pandemic certainly separates my career from the usual “college experience”. Therefore, I firmly believe a nontraditional undergraduate experience should be celebrated in nontraditional fashion. The entries of this reading list are unusual by design. Each entry relates to the last creating a chain of my development and experiences.

It is fascinating to turn around after such a long time and observe the path that has formed. Often, I have no choice but to roll my eyes in disbelief as to why I would ever have chosen to do this or that. As frustrating as it may be, I have a keen understanding of what it means to undergo a “learning experience”. For four years, I have been part of a community that does not encourage these poor choices but rather the ways to avoid making them again. After all, fittingly the whole process is one big learning experience. I have found this to be the aspect of higher education that seems to say, “you’ll thank me later”. At this point in my undergraduate career, I finally understand why I should be thankful for *every* experience, not just the good ones.

Every entry on this list in some way contributed to the person I have become. If I were to have a conversation with the version of myself from August 2020, they in no way would be able to guess what my undergraduate career would have turned into. There is a lot of appreciation I feel now that I was lacking before coming to Maine. This list explains where this appreciation comes from; think of it as an explanation to my 18-year-old self.

So, indulge my tribute to four years of growth and development I could not have experienced anywhere else. I hope each story, sentence, description, and detail align to produce a picture of my life as an undergraduate.

## Working as a Maine Learning Assistant for Dr. Timothy Boester's Fall 2021 section of MAT122 (Precalculus)

Dr. Timothy Boester taught a section of MAT122, a Precalculus course, for the Fall 2021 semester. I was able to join his team for the course as a Maine Learning Assistant (MLA), and subsequently worked to help teach and explain course material to students. Dr. Boester's focus remains on finding successful and effective ways to convey mathematical concepts to students, to the extent he was originally hired to improve student experience in the MAT122 "Precalculus" course at the University of Maine.

Like many young adults, my initial intention for choosing to pursue a bachelor's degree was to make money. Choosing to work in this position was for money as well, I mean what college student doesn't love some extra cash? However, I yielded so much more than a paycheck from this experience: discovering my interest in the process of earning the degree, not just the degree itself. Sure, I'll graduate in May with a "ticket to a higher salary" just like I wanted from the start, but I will also graduate with a much greater appreciation for what goes into earning that degree.

While working for Dr. Boester, I immersed myself in the operations of his course, and was able to understand for myself just how important effective teaching is for student understanding. The explanations, activities, and extracurricular resources implemented by Dr. Boester inspired me to find my own collection of "tools" to help my audience understand me, no matter the situation. Most especially, I began to strive for finding the most effective methods for helping as an MLA, no matter the class. If thought and attention to detail can be implemented in this one course, why not all courses?

So, I found myself working as an MLA because I *liked* it, and the money I made was just a bonus. My grandparents always said, "If you love what you do, you'll never work a day in your life", which turns out to be a real thing. I have worked as an MLA every semester since Fall 2021. I have grown to learn I love working to improve education. Younger versions of me always dreamed about building cool and interesting things, but only ever considered material things. I have helped to build something *non*-material that is still cool and interesting: positive and beneficial environments for education. Younger me would roll his eyes because that last sentence sounded cheesy, but only because he hasn't experienced that yet.

Having an appreciation for the importance of education gives my *own* education so much more value. It no longer feels like the pursuit of just a higher salary. I have found questions to answer and problems to solve, questions and problems I am interested in learning about.

## MKBHD – YouTube Channel of Marques Brownlee

For several years now, a creator named Marques Brownlee has been gracing the presence of the internet with content focused on reviewing technology for the consumer. His channel started from humble beginnings in a college dormitory and has grown to become a high-quality production facility with a team of employees. Growing into such a successful figure in the tech industry was made possible by Brownlee's simple yet eloquent explanations about such complex technology. Critically, Brownlee can distill a lengthy list of specifications, updates, and design material down to a concise explanation for the consumer.

I have been a regular viewer of Brownlee's content for almost 5 years now. However, it was not until my time as a college student that I began to appreciate just how important his skill of simplification truly is. Brownlee can be easily classified as an expert in consumer electronics. However, he remains able to communicate with those who are *not* experts. Most importantly, if his explanation is not understood, he avoids frustration and tries another angle. This collection of skills is a mark of successful teaching.

*Seven Brief Lessons in Physics* – Carlo Rovelli

Carlo Rovelli's *Seven Brief Lessons in Physics* is a spectacular example of the level of seamlessness I would like to reach if I were to pursue education. In his work, Dr. Rovelli highlights exactly the reality I hope one day to achieve, by saying, "We not only learn, but we also learn to gradually change our conceptual framework and to adapt it to what we learn" (65).

I read this book after starting work as an MLA. It did not take me long to understand just how important educational improvement is. At the time of reading this, I felt two things. I was in awe of how well Rovelli was able to explain such complex topics. However, I was also jealous, longing for all the instructors who teach the classes I take to have this ability too.

Writing this reading list now I recognize that I was still early in the process of understanding the process of improving education. I was stuck in an ideal world where all instructors would improve without question if they just *tried* what I was suggesting. I have continued to think about this book and its example of near-perfect explanation. This book *is* an ideal, but the ideal is not something everyone will undoubtedly achieve.

The ideal is what educators should strive for, improving our skills and gathering experiences along the way. However, achieving the ideal should not be an *expectation* but a *goal*. Having the mindset that perfection is not only achievable but easily achievable is the wrong mindset to have. My expectations for how education can improve have mellowed with time and experience, but I still hope for a time when education can reach this ideal. If I can achieve this goal and reach my perceived ideal, I know I will have achieved all other goals along the way.

This book is my goal as an educator. I hope to continue gathering knowledge while refining my ability to explain it. Additionally, this book was a lesson for me. I will not stop working to help improve education in some capacity, but expecting my own personal ideal to be achieved by everyone else is naïve. I have a position as an MLA to practice, the contents of the internet to help inform me, and *Seven Brief Lessons in Physics* to motivate me.

*The Unreasonable Effectiveness of Mathematics in the Natural Sciences* – Eugene Wigner

I recognize that a significant portion of my reading list is composed of things related to my major, which I believe should be a probable outcome. As a defense, those texts are not only related to mathematics, but display an effort from the author for effective communication. This piece of literature builds on those attributes by emphasizing a third element: the thrill of curiosity.

The journey of earning a degree forces you to become familiar with the vast amount of information related to your field of study. I have always known the job of the student is to expand their skill set and search through discoveries in hopes to find an unanswered problem. Wigner's inspiration behind writing this piece is the array of unanswered questions that mathematics is riddled with. Some may find the mystery of mathematics daunting, but Wigner embraces its endless possibilities with bright-eyed optimism. His curiosity is meant to educate but also *invigorate* other mathematicians, sending out a call to remain on the search for breakthroughs and new frontiers. This attitude has been important to me for a long time, but recently has taken on a new level of importance.

I found very little invigoration during my time as a Mechanical Engineering major. I was becoming well-educated, but almost all inspiration came from classes in the Honors College. I am grateful for this, but I need to be interested in my discipline. The transition to Mathematics brought an air of philosophy back into the discipline I was studying. I have come to think of Mathematics as “applied philosophy” as it is able to preserve the creative thinking of philosophy while adjoining the modern focus of quantitative reasoning. Should I end up in industry, I will have a set of skills applicable to a vast array of areas. If I find myself in academia or research, I will have a history of discoveries to generate new problems to solve. The mystery of this discipline is my source of inspiration.

Through all the rigid rules and numerics, there is still an *interpretive* nature to math. Working in engineering provides outstanding stability; you apply without having to think conceptually. Mathematics can be both applied and theoretical, both industrial and philosophical. However nerdy it may be, I am *passionate* about Mathematics and its various subfields, something I do not think I would be able to achieve with Mechanical Engineering. This literature helped me look back on my decision to change majors and the changes it introduced. I think I made the right decision sacrificing some stability for curiosity.

*Rising Out of Hatred* – Eli Saslow

If there is one piece of the Honors curriculum to pay attention to, it's the annual Honors read. For the incoming Fall 2020 cohort, the book chosen was *Rising Out of Hatred* by Eli Saslow. This book is responsible for a few different details I would like to mention.

Originally, I was skeptical about agreeing to join the Honors College. Please understand that I am no quitter, so joining then leaving partway through was not an option. I earned several college credits from classes I took during high school and was not about to earn those credits again and discount my previous work. However, with the help of this book, I became aware of what separates the Honors experience from general education. General education credits must be earned by everyone, regardless of their interest in the subject matter. Those looking to graduate with Honors *chose* to be there.

While reading the titles of this list it may become apparent that I am not much of a recreational reader. Contrary to other media and even scientific literature, I cannot engage with books over a long period of time. However, I do recognize exceptions, and *Rising Out of Hatred* certainly is one. It is so empowering to hear a story about peace prevailing over hate-filled ideology, especially living through a time when it seems negativity runs the world. To top it all off, the opportunity to ask questions to the main character in real life felt almost unreal. I truly would choose to read this book again.

Most importantly, the setting of *Rising Out of Hatred* is based on a true story. The role of the higher education community in the story is such an inspiration for colleges everywhere, *and it actually happened*. I was able to read a story without trying to draw connections to the real world because the connections were already there for me. I feel this was a reason for the Honors College to choose this book. For a first-year college student with dreams of improving the world, reading this book established in my mind the Honors College as the place where change can happen. If the faculty cared enough to choose this book as the *centerpiece* of the Honors curriculum, then the community they oversee must abide by a similar ideology.

There simply would not be a high chance I would be writing this Reading List without my exposure to *Rising Out of Hatred*. The themes of the book, my interaction with its analysis, and the reason it was chosen are all contributing factors to the foundation I received from the very beginning as an Honors student. In summary, I feel my original ideologies have matured significantly due in part to earning a degree with Honors. All experiences highlighted in this list are supplemented in some capacity by the Honors College, including this book. I am glad I chose to accept my invitation, and importantly that feeling has *never changed since*.

## *The Coffin Quilt* — Ann Rinaldi

This entry isn't very fun to write, but it's necessary. For most of my life, I have tended to choose to be optimistic. I'm not a fan of negative outcomes, so I would be the first to tell someone to "look on the bright side". I examined a large portion of human history during the Civilizations sequence. History tells us to avoid past mistakes, but how often do humans choose rational thought over personal pride? *The Coffin Quilt* tells a story of violence ruining two families who couldn't settle peacefully. My perception of this book while reading it differs from my perception *after* reading it. Ultimately, this book taught me that a little pessimism is okay too.

The story is centered around the narrator Fanny McCoy and her relationship between the members of her family as well as their rival family. Her sister Roseanna "Ro" McCoy falls in love with Johnse Hatfield in a forbidden love story like *Romeo and Juliet*. After becoming pregnant with Johnse's child, the tension between the families boils over when the McCoy family launches an attack on the Hatfield house. What they fail to realize through the conflict is the deterioration of their own families.

Ro grows immensely depressed after each family refuses the marriage of her and Johnse. Ultimately, she kills herself to die out of grief and the story ends with her death. Throughout the progression of the story, Fanny details the relationships with her family members and how they *regress* with each event. While reading, I found myself rooting for eventual settlement. Surely someone would have some sense to realize violence isn't the solution. However, *after* reading the book, I reexamined my thoughts and wondered why I would believe violence could have been avoided.

I remember during middle school while playing in a playoff basketball game how parents from either side would interact. The same is true for when one of my baseball coaches got thrown out of a game for how he chose to cope with a poor call. I have witnessed adults in a grocery store berate employees just to save a few dollars. Even with this experience, I believed the families would settle. I remember finishing the chapter after the attack and staring for a few seconds before saying out loud, "I should have seen that coming".

I still think the glass is half full, but not without acknowledging that it *isn't full*. My opinions have become more realistic, and I see this as a good thing. It isn't fun losing a bit of faith in humanity, but it helps in the long run. My experiences throughout my life coupled with this book helped me open my eyes a bit more. It's ok to hope for things to work out, but don't expect that they always will.



## *The Highwaymen* (2019) – Netflix Original Film

The experience of being an undergraduate student can be quite tumultuous, but every moment we experience refines our character. The four-year rollercoaster of a student career leaves them not only with a degree but with a vast collection of memories to reference and inform their young professional lives. As indulgent as good memories can be it is important to also acknowledge the difficulties.

During the Spring 2021 semester, I was taking nineteen credits. I knew I could handle it in a traditional setting, but I was unaware of just how amplified the difficulty could become in a *nontraditional* setting. With the community's best interests at heart, the usual activity of campus was confined to residence halls. Though I tried my best, social interaction was insufficient. As a result, most of my time was spent focusing on one area of my life, removing a healthy balance and burning me out *very* quickly.

*The Highwaymen* tells the story of two retired Texas rangers, who were rehired to eliminate the threat of Bonnie and Clyde. The movie does an excellent job conveying the struggle of the Rangers tracking down the famously elusive pair. Ultimately, the Rangers catch their target, but not after enduring an exhausting chase across multiple southwestern states. I was stuck while working through a lab assignment for an engineering programming class with *The Highwaymen* playing in the background. No matter what I tried, I failed to get the intended result for the lab. Normally my frustration would fuel a relentless search for the solution, but in this case, I was close to mentally shutting down. There is a particular scene of the movie that emulates my feelings in this moment quite well. The rangers encounter Bonnie and Clyde on a road through dusty, midwestern farmland. There is an epic car chase, and the dust eventually hinders the Rangers' visibility so much that they lose sight of their target and know that Bonnie and Clyde have escaped again.

A potent combination of stress, minimal social interaction, desperation, lack of sleep, and hopelessness clouded my judgement. I was chasing the solution around in circles and getting lost in the dust. Fortunately, I found the solution in the end, but that does not mean it was not a frustrating journey to get there. During that semester I *yearned* for my friends, for my family, for some kind of interaction other than my personal academics. I know I would have been able to find the solution quicker given different circumstances. The importance of a social life in college cannot be understated. No matter how durable you may think you are, balance is a necessity.

## *Currents* – Tame Impala

Music accompanies my life like motor oil accompanies an engine. Many of my memories have a song attached to them, and I believe the connection between any person and their favorite music offers an amazing window into their personality. While there are many experiences I would love to talk about and the music that relates to them, this reading list highlights my experiences as an undergraduate student. To complete this synopsis, I must include the album *Currents* by Tame Impala as a tribute to my friends.

I would not have discovered this album without meeting such an invaluable group of people. It was apparent to all of us that “The Moment” we began our undergraduate lives, we thought to ourselves “Yes, I’m Changing”. The broad range of sounds and complex beat structure of this album analogizes the breadth of new experiences of my life in college. It was important to me that I choose to move on from my “Past Life” but not forget what I had learned from it. I was a “New Person”, looking to avoid making the “Same Old Mistakes”.

As classes started and set “Reality In Motion”, we all braved the uncharted territory of a new place and its reaction to a global pandemic with as much courage as we could. I began to trust them more each day. I learned to accept that if I needed to get something off my chest, I could “Let It Happen”, and they would be there to listen.

Naturally, I grew apart from some, and grew closer to others. With each day I strengthened my support system, and we helped each other grow into the people we are today. I believe firmly that I have built four years of my life around an irreplaceable group of people. Connected to each one of them are songs and pieces of music that will remind me of them until I can no longer remember.

This album is woven into many core memories of my undergraduate career and the people I was fortunate enough to experience them with. I believe that each one of us will achieve successful and fulfilling lives, “Eventually”. My appreciation for music and its connection to the human soul cannot be understated, and my undergraduate career exemplifies this in a delightfully unique way because of the people I met along the way. I hope to grow old alongside these friends and witness their accomplishments, and to always think of them whenever I listen to this album.

## Pass / Fail and Withdrawal Options for Spring 2021 – University of Maine

While the Reading List is often a place where complex pieces of literature dominate, the important theme is the *development* of the student over the course of their undergraduate career. This “piece of literature” offers little intellectual value, but rather the experience that came with one of the most significant decisions of my career at UMaine.

During the Spring 2021 semester, the student government advocated to extend the deadline to choose Pass/Fail grading for a course. Being a Mechanical Engineering major at the time, I found myself struggling with Statics, a prerequisite for many higher-level courses. My unfavorable mental state was not helping my misunderstanding of the material. When it arrived in my inbox, I read this email with genuine consideration as if it were a way out.

I knew that my current major did not have to remain for my entire undergraduate career. At this point I was actively considering other options. My poor performance in Statics was decreasing my confidence in engineering, and I was also feeling a lack of enthusiasm for it as something I wanted to do for the rest of my life. So, I decided to choose the Pass/Fail option for Statics and begin the process of changing my major.

The only problem was *choosing* my new major. This required some deep soul searching and an evaluation of my interests and abilities. I gathered all the experience I could to inform my change to ensure I would not have to go through this process more than once. I consulted with my friends, parents, academic advisor, and anyone I felt could offer advice. Ultimately, I landed on Mathematics as my new major and have been more than happy ever since. It is evident how this experience changed me. Not only did it physically alter my degree path, but it introduced sources of inspiration that led me to write this Reading List and construct my thesis project.

Often, I like to build a chain in my mind of just where I came from to have ended up at this moment in time. Most major experiences of my undergraduate career would never have happened had it not been for the student government and their choice to pursue the change of the Pass/Fail policy. The two hundred words of this email hold more importance to the progression of my undergraduate career than any other piece of text. An email may not be seen as formal literature but this one must be included to understand where it all began *for the second time*.

## Jazz Ensemble Spring 2023 – Collins Center for the Arts

I will not hesitate to admit I like familiarity. When something goes “according to plan” I take a second to smile and enjoy the predictability. However, among the most important entries on the list of things I have learned during my career as a student is the art of navigating unpredictability. Furthermore, *embracing* unpredictability can add enjoyment to life in ways the “same-old, same-old” could never.

I had the pleasure of attending an ensemble performed by the UMaine Jazz Club during the Spring 2023 semester. Like many people, I walked into Minski Recital Hall with preconceptions about jazz music. Some might go as far as to say jazz isn’t music at all, that it follows no pattern, or that it sounds like the musicians are playing notes at random. I consider it music, but I had never liked it. This was primarily because I had never given it a chance, which I recognized as my own fault. So, I decided to “face the music”.

It turned out I had been missing out for a long time. There may not be a pattern to the notes, but the beat makes up for it. The smoothness of the music reminds me of the passing of each day, like an unstoppable march. Over this beat, the musicians combined predetermined patterns with improvisation to create an epic sound. I found my disdain for jazz melting away and an appreciation growing in its place.

One of the most common pieces of advice I received from family before starting my undergraduate career was to “never be afraid to try something new”. While to an extent that has always been a consideration of mine, I had a list of things I had chosen to be stubborn about which included jazz. I am glad my maturity has increased to the point where I no longer choose not to try something “just because I don’t want to”. I would not have experienced this wonderful concert without such a shift.

I now live with a welcoming attitude towards the unpredictability of life. I believe it is the combination of our habits and life’s reaction to them that produces the enjoyment of the everyday. The music produced by the Jazz Ensemble emulated this reality with a unique grace and boldness. It was a tribute to the unpredictability of life, and all the beauty that comes with it.

## Trip to Glacier National Park in Montana, July 2021

The United States is enormous. Comparisons between the size of other countries (even continents!) with the size of the US are fascinating the say the least. However, it's easy to feel as though you're missing out on seeing the country unless you take the time and effort to pay some visits. In the summer of 2021, I was fortunate to have visited Glacier National Park in Montana. I returned knowing I had many other places I *had* to see.

Every permanent or semi-permanent place I have lived so far has been east of the Mississippi river. I truly love the Appalachian Mountains and have grown to specifically love Maine, but there is so much I *haven't* seen that I really need to try to. It's different out west, everything from the animals and vegetation to the perception of the atmosphere. I have spent the past four years gathering experiences and new information. My next steps should include seeing, visiting, witnessing as much as I can.

As an undergraduate it is very easy to keep your head down for much longer than you think. You find yourself at the end of the week, the month, the semester and realize a *lot* of time has gone by but it doesn't feel like it. I have a feeling professional life is going to be the same if not more extreme. At this point, more than two years after I have visited Glacier National Park, I know if I don't try to do it soon, when am I going to be able to? I hope to find myself in a situation where I am able to find time to see our nation's natural beauty. I wish I were able to *guarantee* I will be in such a situation. There is too much to see with too little time.

While in Montana, a member of a local Native American tribe offered to drive us from a lodge to East Glacier and back. She told us about the history of the land and its value for her community. She has a passion for Glacier, and more importantly a complete understanding of its natural importance. If there is one thing I took with me from that trip, it is the knowledge she as an expert chose to pass to us as visitors. Very few times have I witnessed someone care for something so intensely.

Her passion is instilled in me as a desire to see the country and learn the value it holds to its people. I have some experience of this under my belt, but there is so much more to see. This entry represents my awestruck understanding that I need to do it. It doesn't matter when, I just *need* to at some point. I hope I am able to share in the experiences of those who care greatly about the places I am visiting, so that I am able to gather a deeper understanding just as I did at Glacier.

## *Drawdown: The Most Comprehensive Plan Ever to Reverse Global Warming*

I hope I am able to witness this natural beauty before the inevitable threat of a regressing climate. This is some pessimism at work, but it serves as motivation nonetheless. Places like Glacier and Acadia National Parks are particularly vulnerable to significant change due to increasing temperatures. I find myself wanting to see these places not only because they are spectacular, but because *they might not exist in their current state for much longer*.

I have always been aware of climate change and just how powerful it is. As a side note, it was interesting being able to live through the pandemic witnessing how lockdowns lead to some *positive* climate change. However, the experience of talking with those at Glacier National Park and listening to many people express their concern over losing nature they love has empowered me to contribute *in some way* to the fight against climate change.

*Drawdown* introduces many ideas and potential implementations to help the fight against climate change. It acknowledges past mistakes while offering possible solutions to them. It ranks the severity of various contributing factors so priority can be focused accordingly. It is a crucial tool for STEM professionals of the 21<sup>st</sup> century and is a perfect ending entry for this Reading List.

*Drawdown* contributes to potential solutions to climate change so that natural beauty and its societal value is preserved. It may shake most people out of familiarity, but most will be able to find that it will be for the better. It bears a decision humanity needs to make to switch paths, while doing its best to show that the current path will lead to disastrous consequences. It calls for comradery among all humans to work together to fight this issue. This may lead to disagreements along the way, and the patience of humanity will be tested. However, we have done incredible things together. Who says we can't do it again?

I appreciate science for all it has contributed to the advancement of humanity. I appreciate *Drawdown* for introducing a new direction for science to follow. Advancement can be achieved *while considering its potential consequences*. This entire ideology surrounds what I would hope to study in graduate school by using statistics. I chose to place *Drawdown* at the end of the list because it most eloquently represents the combination of features that make up the person I am today: a proponent of science for the preservation of humanity with a focus and passion for informing and educating. I have become a very different person based on a host of decisions I made all within just four years! Who knows where our world and I will be four more years from now. I *do* know that my experience at the University of Maine will guide me to where I need to be.