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Sweren Student Book Collection Submission:
Volumes of Wonder: From Fairy Tales to Faraday

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Growing up as the daughter of a Naval officer, my childhood was similar to that of any child who has experienced life as a military dependent. Our family frequently moved to the locations determined for us by the military, to postings ranging across the coasts from San Diego to Virginia Beach, and back again from Long Island to Monterey. While friendships amongst military families are quickly formed, they are often quickly lost with the constant shuffle of moving, new postings, reassignments, and retirements. At an early age, I found a kindred spirit of adventure in beloved fairy tales and classic children's literature and amongst life's backdrop of consistent changes, I found a sense of comfort in turning to the magical events buried amongst their pages.

The military bases to which my father was posted were often indistinguishable from one another, and facilities in Texas often seemed populated with the same interchangeable box-like structures found in Washington, Virginia, or Rhode Island. In elementary school, my idea of the industrial landscape of numbered stone structures ended when my father was sent to the Naval Postgraduate School, a military graduate facility tucked into the central coast of California. Sent to work as a managing officer for the aerospace engineering department at the school, my father often worked sixteen-hour days, and I relished in tagging along to see the models of flight paths and rotor diagrams papering the walls of his building. One such evening I accompanied him to work, and managed to sneak off to the school's library—a large structure boasting cavernous collections of military history, racks of military theses, maps of every campaign US military campaign imaginable, and multiple stories filled with technical manuals and engineering books.

Wandering through the library that evening, I imagined myself as a heroine in a great adventure surrounded by books that carried such history and meaning. However, as a young girl, few of the immensely thick volumes in the library were of interest to me—I was instead having more fun roaming and hiding amongst the rolling book stacks. Yet as I approached a back corner on one of the uppermost levels, my eye was drawn to two neat rows of brightly colored, hardbound books with silver engraved titles. The names sounded familiar to me, *Alice's Adventures in Wonderland, The Wizard of Oz, A Little Princess*—all titles that ring bells of nostalgia and childhood adventure to so many, though they were books that I had yet to discover as a young girl. Knowing that I had been gone from my father's office far too long, I picked up a handful and ran towards the exit of the library, hoping I could make it back to the aerospace engineering department before I would be in too much trouble. At the front desk, I begged the kind librarian to let me keep the books—if only for a few days—and with promises to take the *absolute best* care of them, I ran off with them safely nestled in the pocket of my denim backpack.

From then on, it became routine for me to accompany my father to the school, and while he remained hard at work, I would dart away to fit in as many valuable moments amongst my fairy tales and classics as I possibly could. The Naval Postgraduate School campus is centered around Hermann Hall, a beautifully appointed building in the style of old Spanish architecture. Prior to being gifted to the Navy for the development of a graduate school, Hermann Hall was a luxury hotel known as the Hotel Del Monte, frequented by the likes of Theodore Roosevelt, Ernest Hemingway, and Charlie Chaplin. It was in the historic ballroom of the old hotel where I would sit in the very back corner, and where I first read through *Alice in Wonderland,* in a single sitting. Amongst the beautiful historic setting, in a world that I felt to be constantly changing, Alice became my companion in adventures, and as I sought to make sense of the confusion of a new home, new friends, and a new town, so too did Alice as she sought to make sense of the paradoxical Wonderland.

In Wonderland, the fantastical and perplexing become normal, and as Alice ponders the absurdity of her situation, she also becomes more comfortable with what she does not know, what she cannot change, and her ability to be resilient in the face of overwhelming frustration. Her experiences allowed me explore my own creativity and to think up ways to endure the changes that followed throughout my childhood, taking delight in facing the unknown with an adventurous spirit. In that small corner of the ballroom, I continued to pore through pages upon pages of children's classics, getting lost in the beautiful

stories, from the emerald city of *The Wizard of Oz, to* the never-ending stories of *Arabian Nights* and the magical world of *Peter Pan.* The volumes were a comfort to me, and in reflection, what I have most loved throughout classic children's literature is the ability they grant the reader to look beyond what is known, to dream of worlds brimming with imagination and discovery.

As my family prepared to leave Monterey following my father's posting at the Naval Postgraduate School, it came time for me to return all of my favorite, very well-loved volumes to the library that had lent them to me (for far longer than any conventional system would allow). I later discovered that they had been donated to the library by the wife of a Hungarian military officer who had been posted at the military school, and that she had purchased them in hopes of aiding her children as they studied English. Yet they had remained untouched until my discovery of that bottom shelf, nearly twenty years later. After saying goodbye to Monterey, I began collecting my own personal copies of the books that I had come to cherish so dearly while reading them at the Naval Postgraduate School. Often, I found inexpensive versions of my favorite classics at yard sales and bargain fairs held at the various military bases where we lived and visited across the country. At Fort Hood, Texas, I purchased a well-worn copy of *A Little Princess* out of a cardboard box at the post thrift shop, while at Hickam Air Force Base in Honolulu, Hawaii, I found a beautifully bound copy of *The Nutcracker,* in a giveaway pile from the base's library.

As I grew older, I continued to add to my book collection of children's classics and fairytales, hoping to retain pieces of the moments of excitement and discovery I felt as a young girl, and looking forward to one day sharing those same moments with my own children. It was not until my first year at university, perusing the shelves of the campus library when I came across an interesting volume, *There are No Electrons: Electronics for Earthlings,* that I found my sense of wonder and curiosity reignited. *There are No Electrons* tackles the fundamental properties of electricity and magnetism, coupling the same quirkiness and adventure I remembered from Oz and Wonderland with a clear approach to quantitative physical properties. Having taken physics as a high school student, I remembered my physics class with seemingly endless exercises filled with dry material—a tedious introduction to inertia and thermodynamics. I saw my physics class as simply another check mark to be completed on my high school to-do list, and rarely thought back to the material after the course was completed.

After reading the book, *There are No Electrons*, I began to consider the physical world in a different light. No longer content with a cursory knowledge of the workings of the world's physical properties, I wanted to know how scientific discoveries had been determined, who they had been discovered by, how I could know that they were true, and what could be done with that material. I began with books that related Physics to things I knew and loved in my daily life—*The Physics of Dance* explained to me the angular momentum of pirouettes, while *The Physics of Christmas: From the Aerodynamics of Reindeer to the Thermodynamics of Turkey*, suggested with tongue-in-cheek perspective that perhaps Santa Claus' ability to travel the world in one evening could be explained by quantum gravity.

My interest had been piqued, and my curiosity to know and understand more about scientific discoveries seemed to become more insatiable with every new book that I read. Initially, I began university thinking that I might perhaps enjoy studying international relations or political science. By the end of my first year, I declared the applied physics major and immersed myself in exploring physical science by reading about past triumphs, and beginning my own baby-steps in research. With physics, I had found my new fairytales in an oft-unseen world filled with both startling symmetries and anomalies, definable only through the elegant language of mathematics. The first moments I learned of Schrodinger's equations, performed Zeeman splitting experiments, and began that initial course in quantum mechanics all mirrored the moments I first felt following Alice on her journey through that fateful rabbit hole.

My book collection then, has become a fitting juxtaposition of classic children's tales of wonder and fantasy, and more technical volumes in which I can find that same delight. During my time as a physics undergraduate student, and now, as a PhD student studying optics and photonics, my collection has expanded to include all of my favorite books of scientific discovery and the research adventures of some of the most brilliant scientific minds. Like many students of science and engineering, I first read Nobel Prize winner Richard Feynman's, *Feynman's Lectures on Physics* in my introductory physics course series. Yet it was the humor and wit found in his endlessly quotable autobiographical works, such as *Surely You're Joking, Mr. Feynman! (Adventure of a Curious Character),* upon which I drew inspiration, helping me to learn from his irreverence and stalwart commitment to pursuing clear truths in physics.

In a scientific education, there is clearly no substitute for the time spent immersed in technical textbooks and manuals, becoming intimately familiar with equations and how they apply in our physical world; however, for me, the textbook education is augmented, and personalized, with the

contextualization that autobiographies, histories, and essays provide. With each new volume that I read, I became more interested and invested in the material, wanting to better understand the foundation upon which science is built. Each book that I read lead to noticeable connections and the threads of history begin to become interwoven with the mathematical equations that I studied in class. Feynman's discussions with Niels Bohr – the famed physicist who gave rise to our contemporary understanding of atomic structure – led me to an incredible biography (written by another physics professor), *Niels Bohr's Times in Physics, Philosophy, and Politics*, which detailed the history of Bohr's discoveries and his interaction with other physics greats, including Pauli and Rutherford.

Now, as a graduate student here at Johns Hopkins, my collection continues to grow as I seek to find answers to topics uncovered in each new course and research opportunity. In one of my first graduate courses here at JHU, an optics professor challenged the class by probing our historical understanding of electricity and magnetism, and our understanding of the sequence of experiments that led to our modern formulations. As our professor began to quiz us about Faraday, I realized that the value of Faraday's constant, its applications in electrochemistry, and the use of Faraday cages were all quite clear in my mind, but I had no knowledge of Michael Faraday or his world leading up to these discoveries. Once our class ended, I found myself at the Barnes & Nobles by the Inner Harbor, purchasing a book entitled *Faraday, Maxwell, and the Electromagnetic Field: How Two Men Revolutionized Physics*. This book paints an incredible portrait of two of the most influential scientists in optics, photonics, and electricity and magnetism, and the ways in which their lives indelibly shaped the field that I have come to Johns Hopkins to study.

Remembering back to my time as a little girl reading fairytales amongst technical volumes at a military engineering school, it is perhaps not so unexpected that I have ended up concentrating in physics and engineering throughout my academic studies. Though I certainly wouldn't go so far as to say that fairytales or children's classics should be required for scientific education, they allowed me the ability to foster my own creativity, develop a belief in the extraordinary, and question the complexities beyond the surface level of what is seen. While most people have a basic understanding and comfort level with introductory kinematics (we all know that gravity will act on a ball that has been thrown in the air), quantum mechanics, optics, and electricity and magnetism all require the ability to conceptualize physical phenomena that are often non-intuitive. Having moved from California to Maryland for graduate school, much of my ever-expanding book collection is tucked away into cardboard boxes and drawers, yet I keep those most special to me (*Alice in Wonderland, There are no Electrons, The Feynman Lectures, etc.)* in a place of honor on the shelf above my desk. Though a perhaps unconventional collection, my combination of children's classics, engineering volumes, and scientific commentaries remind me to maintain a sense of wonder and delight in the face of the increasing technical complexity in coursework and research, in hopes that my best discoveries are yet to come.

Annotated Bibliography:

Figure 1: A Small display of books from my collection in the annotated bibliography

1. Carroll, Lewis and Gardner, Michael, *The Annotated Alice: Alice's Adventures in Wonderland and Through the Looking Glass.* New York: Random House Publishing, 1993.
Alice in Wonderland was one of the very first children's classics that I can remember reading. It has become somewhat ubiquitous for children in America with numerous video adaptations and Disneyland rides. For me, it is truly one of the defining works for inspiring wonder and enchantment

for children and adults alike. Alice's adventures lead to a sense of confusing perplexity that allow the reader to better consider situations from unlikely angles. I obtained this volume at a Bargain Fair sale at the La Mesa military housing village. Additionally, I have a Czech translation of Alice in Wonderland that I obtained in Prague, while participating in a research program affiliated with the Czech Academy of Sciences.

2. L. Frank Baum and Hildebrandt, Greg, *The Wizard of Oz.* Morris Plains: Unicorn Publishing, 1985.
   I consider *The Wizard of Oz* and *Alice in Wonderland* to be "kindred" books, and they both bring to mind a sense of adventure and wonder. Both Alice and Dorothy set out on adventures through strange and unusual lands, encounter unlikely casts of characters, and discover strengths that they did not previously recognize. Though the wizard in *The Wizard of Oz* turns out to be merely a fraudulent man, I felt that his unmasking encourages readers to discover the magic and utility in everyday items (something engineers do every day!). This copy of the book was found in a giveaway book-bin at Travis Air Force in Northern California.
3. Juster, Norton, *The Phantom Tollbooth.* New York: Random House Publishing, 1993.
   In my opinion, *The Phantom Tollbooth* is the most exquisite version of a modern fairytale. The author, Norton Juster, fills the text with references to puns, dissections of classic idioms, and the reframing of everyday concepts—all of which aid the reader in considering everyday occurrences and words from a new perspective. My favorite character, and one of particular note to any physicists/mathematicians, is the ruler that the main character Milo meets, known as the Mathemagician. The Mathemagician wears robes filled with equations, and encourages Milo to consider the value and worth of ideas, as compared to material items.
4. Reisnick, Jane and Archipowa, Anastassija, *Original Fairy Tales from the Brothers Grimm: Classic Edition.* New York: Derrydale Books, 1991.
   Essential to any bibliophile or fairytale lover's collection, The Grimm brother's fairytale collection includes the original plots behind well-known stories ranging from Rapunzel to the Little Red Riding Hood. My favorite of these fairy tales was "The Peasant's Clever Daughter," a story in which a clever peasant girl marries the king after solving a series of riddles.
5. Haviland, Virginia, *Hans Christian Andersen: The Complete Fairy Tales and Stories (Anchor Folktale Library).* Anchor Publications, 1983.
   Another classic fairytale collection, Hans Christian Anderson's works also detail the original stories behind the popular commercial versions seen in Disney movies and children's books. Hans Christian Andersen's stories emphasize a sense of strength in the face of hardship and misfortune, which left a lasting impression on me as a young reader. Stories such as "The Emperor's New Clothes," remind readers to trust in their own abilities of perception, to prove things for themselves, and to retain a healthy skepticism when presented with information—all valuable skills for scientists as well. My father purchased this book for me while away at a military posting in Washington DC.
6. Detmold, E.J., *The Arabian Nights: Tales from One Thousand and One Nights.* London: Folio Society, 1999.
   One Thousand and One Nights is also a collection of fairytales, primarily with roots in the Middle East, North Africa, and south Asia. As a young girl, what I found most appealing about *One Thousand and One Nights* (as with "The Peasant's Clever Daughter") is the strength and cunning demonstrated by the narrator, and focal point of the main story, Scheherazade, while she weaves countless tales to save her own life.
7. Barrie, J.M. *The Annotated Peter Pan (The Centennial Edition).* New York: W.W. Norton and Company, 2011.
   Peter Pan, like *Alice in Wonderland,* was amongst the first children's classics that I read from the library at the Naval Postgraduate School. The classic tale of the young boy who never grows up, it can serve as a reminder to search for childlike delight as we continue through life. I recently purchased this Centennial Edition that includes insightful commentary commemorating the one-hundredth anniversary of its publication.
8. Hoffman, E.T.A. *Nutcracker and Mouse King and The Tale of the Nutcracker.* Philadelphia: Running Press Book Publishers, 1996.
   The book, *The Nutcracker and Mouse King and the Tale of the Nutcracker* provides a deeper look at the story behind the classic Christmas ballet, and focuses on the relationships between characters that play out in theatres across the world every holiday season. I acquired this hardbound version of the book at Hickam Air Force base, located in near Honolulu, HI. It is a story about a classic ballet, and so it sits

on my shelf next to *The Physics of Dance,* which describes the classical mechanics of ballet.

9. Ryan, Brittney, *The Legend of Holly Claus.* New York: Harper Collins Publishers, 2004.
   I received *The Legend of Holly Claus* as a holiday gift from a family member familiar with my collection of children's classics and fairy tales. It tells the story of Holly Claus—daughter of Santa himself—and her fantastical adventures in Victorian New York city working for a young toymaker. One of the few contemporary pieces of fiction that seems to fit seamlessly with the nostalgic whimsy of *Alice in Wonderland* or *The Wizard of Oz,* and adds to the collection with the sense of authentic seasonal spirit. The whimsical enchantment of the toymaker's inventions within the book is simply an added benefit to spur the creativity of future engineers.
10. Amdahl, Kenn, *There are No Electrons: Electronics for Earthlings.* Broomfield: Clear Water Publishing, 2006.
    This was the first topical physics book that I read, outside of my high school physics textbook. It provides a memorable overview to the physics of electricity by personifying electrons and providing humorous depictions of electrical properties. Amdahl touches on basic units, the function of radios, oscillators, and integrated circuits all while using unforgettably silly examples that help the reader develop an intuition for electron behavior. I credit this book with sparking my initial interest in physics and electrical engineering, and highly recommend it to anyone with a topical interest in science, struggling undergraduate physics students, and even my professors.
11. Laws, Kenneth, *The Physics of Dance.* London: Macmillan Publishing, 1986.
    Throughout my childhood and young adult years, my primary interest outside of reading was to dance ballet. After my interest in physics was ignited as a first year undergraduate student, I was delighted to find a book that so clearly and thoroughly explains all of the properties of physics observable in a ballet class. The author, Kenneth Laws, is a physics professor at Dickinson College, and followed this volume with an equally delightful book, *Physics, Dance, and the Pas de Deux.* For anyone with an interest in understanding the angles of grand jete (leap) or the proper positioning of the center of gravity in an arabesque, this is a must-read. Having taught as a teaching assistant, course instructor, and individual tutor, I also enjoy using pieces from this book to help spark the interest of students as they learn basic kinematics.
12. Stewart, Ian, *Professor Stewart's Cabinet of Mathematical Curiosities.* New York: Basic Books Publishing, 2009.
    This was the first book recommended to me by a physics professor at my undergraduate university. After presenting a lecture in which he had discussed Feynman's treatment of Fermat's last theorem (contested by mathematicians), he recommended reading this for a deeper understanding of the theorem, and a broader treatment of multiple topics in mathematics. It offers an incredibly rich introduction to the world of mathematics and was a wonderful purchase for a curious first year physics student.
13. Highfield, Roger. *The Physics of Christmas: From the Aerodynamics of Reindeer to the Thermodynamics of Turkey.* New York: Back Bay Books, 2008.
    Another topical science book that can appeal to a broader audience, *The Physics of Christmas* is an enjoyable look at how physics (amongst other scientific fields including nutrition and genetics) can be applied to explain all of our favorite holiday phenomena. I have also used this book as a jumping point for student projects to complete holiday-themed physics experiments ranging from a pumpkin catapult (Halloween) to a turkey pendulum (Thanksgiving).
14. Gamow, George, *One Two Three...Infinity: Facts and Speculations of Science (Dover Books on Mathematics).* New York: Dover Publications, 1988.
    Like many young physics students, I grappled with the concept of infinity both in its mathematical limits, its conceptualizations, and the approximations made throughout physics classes. After one particularly bewildering lecture section in which my professor continuously referenced Aristotle's musings on the infinite, I purchased this volume in attempts to provide a clearer understanding. This volume takes the reader along an adventure of some of the most intriguing dilemmas and discoveries of contemporary physics. Though perhaps a wide glimpse into fascinating realms of physics and mathematics than a specific treatment of how we work with the infinite, it remains one of my favorite popular science books to date.
15. Feynman, Richard P. *The Feynman Lectures on Physics, boxed set: The New Millennium Edition.* New York: Basic Books Publishing, 2011
    A staple for any student studying physics or engineering, *The Feynman Lectures* cover the content of an

introductory physics course series in a set of three clear, concise, and interesting volumes. Refined from Feynman's teachings at Caltech, the set was invaluable to me in clarifying and illuminating important pieces of information throughout my first year of study (and for hundreds of references thereafter). This boxed set was given to me as a graduation present upon completion of university.

16. Feynman, Richard P., *The Pleasure of Finding Things Out: The Best Short Works of Richard P. Feynman.* New York: Basic Books Publishing, 2005.
    As a physics student, I am not sure what I have appreciated more, Feynman's illuminating presentation of physics fundamentals through his lectures, or his dry wit and detailed stories found throughout his autobiographical works. Feynman's personal writings cover a wide range of topics, including such things as personal relationships, his interest in picking combination locks, his time at Los Alamos, and even a detailed examination of the disaster of the Challenger disaster.
17. Pais, Abraham, *Niels Bohr's Times, In Physics, Philosophy, and Polity.* London: Oxford University Press, 1991.
    I purchased this biography of Niels Bohr after reading about his conversations with Feynman in another Feynman work, *Surely You're Joking, Mr. Feynman.* Most physics students are familiar with the Bohr radius, and associated energy levels, but this book provided insight into the personal life of a talented physicist including his mentoring programs, courageous acts in World War II, and his delights in smaller pleasures including books and crossword puzzles.
18. Dyson, George. *Turing's Cathedral: The Origins of the Digital Universe.* London: Vintage Books, 2012.
    The work of Alan Turing, who is often considered the father of modern computer science, is explored throughout this book with particular emphasis on the results and technologies it has inspired throughout the "digital revolution." First exposed to some of Turing's formulations in an undergraduate biophysics course, I purchased this volume in hopes of discovering more about Turing's Principle can be used to explain the pattern markings on animals. Though this was not the correct volume for that topic, it provided a comprehensive and compelling overview of the lasting impact of Turing's work.
19. Des Jardins, Julie. *The Madame Curie Complex: The Hidden History of Women in Science.* New York: The Feminist Press at CUNY, 2010.
    As an undergraduate student, I did not have any female professors in the fields of mathematics, physics, and engineering. Like many young women, I was interested in the reasons behind the disproportionate statistics of women in technical fields, particularly in academia. This book was recommended to me while attending a Women in Physics conference, and it explores many of the most significant contributions women have made in contemporary science.
20. Frenkel, Edward, *Love and Math: The Heart of Hidden Reality.* New York: Basic Books, 2013.
    Edward Frenkel is a professor of mathematics at UC Berkeley, and this book reads like a beautifully written love letter to the field of mathematics a whole. Frenkel details his journey through his studies of mathematics and the struggles he encountered in pursuit of his professional degrees, his own research work, and clearly compiled explanations to many of math's most interesting problems.
21. Fortnow, Lance, *The Golden Ticket: P, NP, and the Search for the Impossible.* Princeton: Princeton University Press, 2013.
    I was first introduced to the P versus NP problem in an electrical engineering course that touched on quantum computing. I purchased *The Golden Ticket: P, NP, and the Search for the Impossible* in hopes of understanding more about how the question could be answered, what the application would be, and the implications that this would have in fields outside of computing. Fortnow provides the reader with intriguing insight to the attempts made to answer the P/NP problem, and his writing is easy to follow for readers (like me) who are not well versed in algorithm development and computing.
22. Forbes, Nancy, and Mahon, Basil, *Faraday, Maxwell, and the Electromagnetic Field: How Two Men Revolutionized Physics.* Amherst: Prometheus Books, 2014.
    I was inspired to read this book after attending an electricity and magnetism course here at Johns Hopkins that forced me to confront the gaps in my knowledge and understanding of the history of the experimentation of the works of researchers such as Volta, Faraday, Maxwell, Coulomb, etc. It has since become one of the works that I recommend most highly to other graduate students because its detailed biographies of Faraday and Maxwell and their interwoven contributions to the field are so clearly explained throughout the volume. Faraday's rigorous commitment to pursuing a scientific education and working in a lab under any circumstance is also great inspiration for any graduate student to "buckle-down" on research work.

23. Lindley, David, *Boltzmann's Atom: The Great Debate that Launched a Revolution in Physics.* New York: Free Press, Simon & Schuster, 2001.
    Ludwig Boltzmann was a brilliant Austrian physicist whose work constitutes most of the basis for statistical mechanics (nearly all physics students know the Boltzmann constant by memory). The tragedies of Boltzmann's life are often addressed in physics courses as anecdotal side-notes; however, I was interested in gaining a deeper understanding as to how he developed his initial formulations, and the reasons behind the decisions that he made.
24. Lang, Andrew. *Fairy Tales from Around the World.* New York: Barnes and Nobles Collectible Editions, 2014.
    This collection of fairy tales was given to me by a former student who was familiar with my love of fairytales and physics, and my enjoyment in drawing parallels between the two. It is a beautifully bound copy with stunning illustrations and stories from over fifty different countries.
25. Brockman, Max, *Future Science: Essays from the Cutting Edge.* London: Vintage Press, 2011.
    I purchased this volume due to my particular interest in an essay on the implications of infinity, written by Anthony Aguirre. Professor Aguirre is a researcher at the University of Santa Cruz, my undergraduate institution, and poses thought-provoking questions about the nature of infinity and its impact on our understanding of the world in his essay. The other seventeen essays in the book also cover an interesting range of topics relating to topics at the forefront of science today and the way in which society must engage and grapple with these ideas.
26. Gilmore, Robert, *Alice in Quantumland: An Allegory of Quantum Physics.* Gottingen: Copernicus Publications, 1995.
    Perhaps the cornerstone piece that ties the divisions of my book collection together, *Alice in Quantumland* is an absolute treasure for the reader who finds delight in the whimsy of fairytales and the complexities of physics and mathematics. Throughout the book, Robert Gilmore guides the reader through the basics of quantum mechanics; however, in this version, electrons replace the "*Drink me*" potions, and the Cheshire cat is familiar with particle-antiparticle production.

Book I hope to add to my collection:

27. Johnson, George, *Miss Leavitt's Stars: The Untold Story of the Woman who Discovered How to Measure the Universe.* New York: W.W. Norton & Company, 2013.
    I am always deeply interested in both historical viewpoints of scientific discoveries, and the contributions of women in field of physics, astronomy, and mathematics. This book tells the story of Henrietta Leavitt, who worked as an astronomer at the Harvard University Observatory in the early 1900s. A female physics professor at a Women in Physics conference recommended it to me.
28. Gribbin, John, *Deep Simplicity: Bringing Order to Chaos and Complexity*. New York: Random House Publishing, 2005.
    My collection of physics textbooks, popular science books and physics biographies contains few works that provide a clear discussion of the historical impact of the study of complex systems, and so for that reason, I am interested in reading Gribbin's treatment of the topic.
29. Gilmore, Robert, *The Wizard of Quarks: A Fantasy of Particle Physics.* Gottingen: Copernicus Publications, 2001.
    Alice in Quantumland: An Allegory of Quantum Physics is one of the most treasured pieces of my fairytale/physics book collection, so I am not sure how I only recently became aware of a second book by the same author. This book appears to transform the landscape of Oz into an exploration of particle physics, and I look forward to accompanying Dorothy on this adventure.
30. Farmelo, Graham, *The Strangest Man: The Hidden Life of Paul Dirac, Mystic of the Atom.* New York: Basic Books Publishing, 2011.
    I am familiar with Nobel Prize-winning physicist Paul Dirac's contributions to particle physics after studying the Fermi-Dirac distribution throughout my statistical and solid-state physics courses. However, as was my experience with Faraday, I know little about Dirac himself, and am very curious about his path to becoming a physicist and the processes behind his discoveries.