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Little Bee Gold Cleave's Illustrated Metropolitan Police Act Big, Soft, Chewy Cookies The Saccharine Disease Maximizing Practice Non-technical Write-up of Summer Research for the Department of Homeland Security Maximizing Practice Volume 2 The Cleavage Mode of the Cre Recombinase Strategic Options for the Early Eighties Cleave Democracy is the Answer Philosophy of Logic Determination of Carbon in Steels and Irons by Direct Combustion in Oxygen at High Temperature Disruption of the Furin Cleavage Site in Mouse Notch 1 Results in Cardiovascular Malformations Due to Hypomorphic Notch 1 Signaling Creating The World We Want To Live In Therapeutic Potential of Furin Inhibition Characterizing the Endoribonuclease Activity of APE1 Selected Articles on the Open Versus Closed Shop Man Meddles with Nature The Least of These: Economic Development in the Contemporary Global Environment Cleave Notes RecA and Repressor: Working Together to Save Phage Janice VanCleave's 201 Awesome, Magical, Bizarre, & Incredible Experiments Cleaving Counterintelligence and National Strategy Big Cats Aquarium Fish 1 Peter The Effect of Lanthanum on Calcium Movements and Contractility in Single Muscle Fibers Dragon Tactical Nuclear Weapons Undead Inheritance Mechanical Resolution of Linguistic Problems Studies on Cell Constancy in Neorhynchus with Descriptions of New Species in that Genus Nuclear Weapons, Policies, and the Test Ban Issue On the Causation of Varicose Veins and Their Prevention and Arrest by Natural Means Separase Cleaves the Kinetochore Protein Meikin to Direct the Meiosis I/II Transition Reviews in Plasmonics 2010

Recent evidence shows that mRNA stability and turn-over is an integral control point in the regulation of gene expression. The stability of various mRNAs within a eukaryotic cell can differ and this results in a magnitude of difference in mRNA abundance. An enzyme known as APE1, apurinic/apyrimidinic DNA endonuclease 1, has recently been discovered to possess an endoribonuclease activity against c-myc messenger RNA (mRNA) in vitro. The identification of APE1 as an endoribonuclease warranted this research to further characterize this novel activity both in vitro and in vivo. Previous studies have discovered the residues constituting an active site for apurinic/aprymidinic [sic] DNA (AP-DNA) incision activity of APE1. Whether these residues are shared in the RNA-cleaving activity of APE1 was unknown. The first objective of this thesis was to assess the role of these amino acid residues in contributing to the endoribonuclease activity of APE1. Our results revealed that APE1 indeed shared these residues to cleave both RNA and AP-DNA. However, we also discovered certain differences in the activities of one mutant (D283N) in carrying out AP-DNA and RNA incisions. This suggested that the roles of active site residues in each reaction are not entirely identical. In addition, we have assessed the RNA-cleaving activities of APE1 variants identified in the human population. For a few variants, RNA-cleaving activities were severely reduced while its AP-DNA incision activities were functional. These results suggested a possible unrecognized link between the reductions in the RNA-cleaving activity of the variants and their reported association in certain diseases. The second objective of this thesis was to establish the RNA secondary structures and sequences that are preferentially cleaved by APE1. Our results revealed that APE1 has preference for cleaving the single stranded regions or weakly base paired regions of the RNA. Also, preferred sequences of cleavage were determined to be UA, UG, and CA dinucleotides. Prevalent A. For nearly forty years, U.S. deterrence policy has depended on nuclear weapons, making the modernization of those weapons a key goal of every administration. Nuclear Weapons, Policies,

and the Test Ban Issue presents a cogent discussion of the reasons why the United States should actively continue its nuclear weapons program. The authors claim that weapons testing and development has neither kept up with technological advances nor logically followed from professed U.S. policy. They attribute these shortcomings to such forces as budget limitations, alliance politics, domestic politics, and, most importantly, the signing of the Limited Test Ban Treaty. As the Egyptian revolution unfolded throughout 2011 and the ensuing years, no one was better positioned to comment on it—and try to push it in productive directions—than best-selling novelist and political commentator Alaa Al-Aswany. For years a leading critic of the Mubarak regime, Al-Aswany used his weekly newspaper column for Al-Masry Al-Youm to propound the revolution’s ideals and to confront the increasingly troubled politics of its aftermath. This book presents, for the first time in English, all of Al-Aswany’s columns from the period, a comprehensive account of the turmoil of the post-revolutionary years, and a portrait of a country and a people in flux. Each column is presented along with a context-setting introduction, as well as notes and a glossary, all designed to give non-Egyptian readers the background they need to understand the events and figures that Al-Aswany chronicles. The result is a definitive portrait of Egypt today—how it got here, and where it might be headed. The proprotein convertase Furin is a serine endoprotease which cleaves protein precursors carboxyterminal of basic residues in motifs such as Arg–X–X–Arg and Lys/Arg–Arg. Cleavage usually results in activation of the proprotein but can also inactivate or modify the activity. Therefore, it is not surprising that it plays a major role in many physiological processes and pathologies, including cancer. The other proprotein convertases belonging to the same family, PC1/3, PC2, PACE4, PC4, PC5/6, and PC7, cleave at similar cleavage sites and provide partial redundancy. To unravel the specific role of Furin in vivo, knockout mouse models have been generated. Furin null mice die between e10.5 and e11.5 due to severe ventral closure defects and the failure of the heart tube to fuse and undergo looping morphogenesis. Therefore, a conditional Furin knockout mouse was generated to investigate the role of Furin in specific organs, such as pancreas, liver, T-cells, endothelial cells, and salivary glands, resulting in a severe or mild phenotype depending on the organ investigated. Partial or complete ablation of the Fur gene in salivary gland tumors significantly delayed tumorigenesis in mice. Therefore, Furin inhibition might be considered as a possible therapeutic strategy to treat certain pathologies, such as cancer. The physical demands for trumpet players have evolved so quickly in the last forty years, that trumpet players have not been able to keep up. The range and endurance required to perform today's music has turned playing the trumpet into an athletic event. Trumpet players need to address these physical demands in the same systematic and focused approach as athletes. Understanding the physical skills needed to play the trumpet correctly can be a frustrating search for answers. In my own search for these answers, I have studied with, and picked the brains of some great trumpet teachers and players. Some of these teachers are: Jerry Franks, Dominic Spera, Bill Adam, Claude Gordon, Jerome Callet, Don Jacoby, and Max Greer. My books: Maximizing Practice Volume 1: A Daily Practice Routine for Developing Trumpet Skills and Maximizing Practice Volume 2: Developing Trumpet Range, Power, and Endurance are a combination of information on how the trumpet "machine" works, and exercises that are focused on individual skills. The exercises in these methods are designed to change and improve your "machine." (In order for your "machine" to improve, it has to change). The exercises are focused in order to maximize results. There are many books with great exercises you can play, but how you practice them will determine your improvement. (A great exercise practiced wrong will not help you). These methods and way of thinking about trumpet practice have been of great help to me and to my students, and I sincerely hope that you will benefit from the information in these books. Presents a tale of a precarious friendship between an illegal Nigerian refugee and a recent widow from suburban London, a story told from the alternating and disparate perspectives of both women. Photographs and text profile the world's hunting cats, describing their physical characteristics, behavior, hunting styles, distribution, and role in maintaining prey animal populations. To

generate haploid gametes, meiotic cells must undergo two consecutive rounds of chromosome segregation without an intervening gap phase. Importantly, because homologous chromosomes are segregated in meiosis I, but sister chromatids are segregated in meiosis II, this requires a dramatic rewiring of the cell division machinery between the two divisions. How meiotic cells coordinate this rapid and substantial change to the cell division machinery is a central mystery at the heart of proper fertility and reproduction. Our work reveals a new paradigm that rewires key cell division processes at the meiosis I/II transition through the action of the protease Separase, which we demonstrate acts by cleaving the meiosis-specific kinetochore protein Meikin. Cleavage of Separase substrates such as cohesin results in their potent and complete inactivation. In contrast, we find that Separase cleavage of Meikin acts as a molecular "scalpel," providing an elegant mechanism to precisely and irreversibly modulate Meikin activity between the two meiotic divisions without inactivating Meikin function. Our results demonstrate that the C-terminal Meikin cleavage product generated by Separase proteolysis retains substantial activity such that it localizes to kinetochores, binds to Plk1 kinase, and promotes downstream activities such as the cleavage of the meiosis-specific cohesin subunit Rec8, similar to full length Meikin. Importantly, we demonstrate that both the failure to cleave Meikin or the complete inactivation of Meikin at the meiosis I/II transition each result in dramatic defects in the proper execution of meiosis II. Our functional analysis in mouse oocytes demonstrates that precise Meikin cleavage is critical to differentially control meiosis I and II. Thus, in contrast to previous models, Meikin is not just a regulator of meiosis I-specific activities, but differentially coordinates chromosome segregation across both meiotic divisions. Our discovery of Meikin as a new substrate for Separase cleavage represents a novel mechanism for the regulatory control of the meiosis I/II transition. The CI repressor protein of bacteriophage 434 is a transcriptional regulator of the life cycle of bacteriophage 434. 434 repressor directs transcription of its own gene while repressing transcription of genes that are required for lytic growth. In order for a prophage to enter the lytic pathway of its life cycle, 434 repressor's function must be altered. Through an interaction with the co-protease, active RecA (RecA*), 434 repressor is stimulated to auto-cleave. Auto-cleavage results in a switch of the phage life cycle from lysogenic growth to lytic growth due to the loss of repressor's ability to bind DNA. The preferred form of repressor for auto-proteolysis was identified in order to further understand the mechanism of auto-cleavage. This was done by examining the kinetics of repressor auto-cleavage as a function of repressor concentration and the sequence of added DNA. The results show that repressor bound to specific DNA is the preferred substrate for RecA* mediated auto-cleavage. These results also indicate that the preference for the repressor/OR1 complex is due to an increase in affinity for RecA*, not a change in the chemical mechanism of cleavage. The discovery that 434 repressor is preferentially cleaved as a dimer led to the question of whether each monomer in a dimer cuts itself (intra-molecular) or whether they cut each other (inter-molecular). Using specific repressor mutants we show that 434 repressor likely utilizes an intra-molecular mechanism of cleavage. The data can be fit to a model in which the operator bound repressor molecules assume a cleavage competent conformation favoring intramolecular autoproteolysis. Finally, the rate of RecA* mediated homologous strand exchange was measured as a function of repressor concentration. This experiment was performed in response to data that suggested that the operator DNA bound to repressor was not released into solution upon repressor cleavage rather it remained bound to RecA*. Surprisingly, the rate of exchange increased at low concentrations of repressor suggesting that there is an overall increase in RecA*'s affinity for DNA, leading to increased strand exchange. The results described throughout this thesis offer new insight into the way RecA*/repressor interactions are viewed. Reviews in Plasmonics 2010, the first volume of the new book serial from Springer, serves as a comprehensive collection of current trends and emerging hot topics in the field of Plasmonics and closely related disciplines. It summarizes the year’s progress in surface plasmon phenomena and its applications, with authoritative analytical reviews specialized enough to be attractive to professional researchers, yet also appealing to the wider

audience of scientists in related disciplines of Plasmonics. Reviews in Plasmonics offers an essential reference material for any lab working in the Plasmonics field and related areas. All academics, bench scientists, and industry professionals wishing to take advantage of the latest and greatest in the continuously emerging field of Plasmonics will find it an invaluable resource. Key features: Accessible utility in a single volume reference. Chapters authored by known leading figures in the Plasmonics field. New volume publishes annually. Comprehensive coverage of the year's hottest and emerging topics. Reviews in Plasmonics 2011 topics include: Metal Nanoparticles for Molecular Plasmonics. Surface Plasmon Resonance based Fiber Optic Sensors. Elastic Light Scattering of Biopolymer/Gold Nanoparticles Fractal Aggregates. Influence of electron quantum confinement on the electronic response of metal/metal interfaces. Melting Transitions of DNA-Capped Gold Nanoparticle Assemblies. Nanomaterial Based Long Range Optical Ruler for Monitoring Biomolecular Activities. Plasmonic Gold and Silver Films: Selective Enhancement of Chromophore Raman Scattering or Plasmon-Assisted Fluorescence. How do honeybees find their way home? Why is Venus so hot? How can you measure the speed of the wind? What makes a sound loud or soft? Discover the awesome answers to these and other fascinating mysteries in biology, chemistry, physics, earth science, and astronomy. Just try these 201 fun, safe, low-cost experiments at home or in the classroom. You'll look through a drop of water to find out how a magnifying lens works. Using a Styrofoam ball, a pencil, and a lamp, you'll learn why the Moon appears and disappears. With just a jar and some ice cubes, you can demonstrate how rain is formed. Each experiment includes an illustration and easy to follow step-by-step instructions. This companion volume to the enormously popular 200 Gooey, Slippery, Slimy, Weird, and Fun Experiments brings together magical projects from Janice VanCleave's Science for Every Kid and Spectacular Science Projects series--plus 40 all-new experiments that make science come to life. Children Ages 8-12 Over the past three decades, place branding has emerged as a strategy for local economic development for municipalities in Canada and globally, as communities seek to (re)assert themselves in a dynamic global economic market. Due to the infancy of the research domain-as it has only been in the last 15 years that place branding has received critical academic attention-there are several major la cunae within the existing scholarship: (i) current research is primarily focussed on Europe; (ii) research has mainly focused on nation branding and the largest urban centres, so place branding within 'typical' municipalities is not well understood; (iii) there are few testable models or hypotheses that have been developed; (iv) most is conducted through one-off case studies, and therefore it is difficult to make generalizations or conclusions; and (v) most place branding privileges tourism attraction as the context of study. To expand existing research, a mixed-method approach was adopted drawing on statistical, spatial, and qualitative methods to explore the breadth and depth of the place branding issue in Ontario. Statistical analysis was used to examine the usage and message of place branding in Ontario's municipalities (n = 414). Spatial analysis examined the underlying spatial pattern of the place brands, and attempted to find potential locations for municipal collaborations. Finally, in-depth intervie ws were conducted with key stakeholders connected with place branding process to gain insight into the background, rationale, process, and utility of place branding. The results of the three phases of research show that place branding is occurring in a majority of Ontario's municipalities (in well over 90% municipalities). The distribution of place brands show that they are not random, and that municipalities with similar brands tend to cluster together, providing an opportunity for inter-regional collabora tions. Finally, the results show that municipalities are using similar approaches to ensure economic advancement and that place branding is seen as critical component of local development. The findings call for the inclusion of place branding as a local strategy for econom ic growth; however, it requires readjustment in the brand positioning to allow greater effectiveness in attraction of target audiences. 'Gold' follows two friends and professional cycling rivals, Kate and Zoe, through their lives until the London Olympics. Their lives are knit together from the age of 19 when they are trained by the same coach. 'Gold' captures the

extraordinary effort and dedication that go into the pursuit of victory. In her debut collection, Tiana Nobile grapples with the history of transnational adoption, both her own from South Korea and the broader, collective experience. In conversation with psychologist Harry Harlow's monkey experiments and utilizing fragments of a highly personal cache of documents from her own adoption, these poems explore dislocation, familial relationships, and the science of love and attachment. A Rona Jaffe Foundation award winner, Nobile is a glimmering new talent. Cleave attempts to unknot the complexities of adoptee childhood, revealing a nature of opposites--"the child cleaved to her mother / the child cleaved from her mother"-- while reckoning with the histories that make us. Julie Powell thought cooking her way through Julia Child's Mastering the Art of French Cooking was the craziest thing she'd ever do -- until she embarked on the voyage recounted in her memoir, Cleaving. Her marriage challenged by an insane, irresistible love affair, Julie decides to leave town and immerse herself in a new obsession: butchery. She finds her way to Fleischer's, a butcher shop where she buries herself in the details of food. She learns how to break down a side of beef and French a rack of ribs -- tough physical work that only sometimes distracts her from thoughts of afternoon trysts. The camaraderie at Fleischer's leads Julie to search out fellow butchers around the world -- from South America to Europe to Africa. At the end of her odyssey, she has learned a new art and perhaps even mastered her unruly heart. Cleave Notes is a book about communication in marriage. Women interested in improving their relationships and having a happier marriage are encouraged to read this first volume of the original series - Cleave Notes. Men are directed by God to leave and cleave. What are women directed to do? The bible is the ultimate book about communication. It is timeless and applicable at any stage in life. Cleave Notes provides this same guarantee because it is based on scripture. Whether you are a new or a seasoned bride, Cleave Notes will improve the manner in which you communicate with your husband. Your calling as a wife is to help your husband cleave to you. This action can be successful or a failure as a result of communication. Similar to the Cliffnotes of the 60's, you'll only pass your test if you read the actual textbook (the Bible). The physical demands for trumpet players have evolved so quickly in the last forty years, that trumpet players have not been able to keep up. The range and endurance required to perform today's music has turned playing the trumpet into an athletic event. Trumpet players need to address these physical demands in the same systematic and focused approach as athletes. Understanding the physical skills needed to play the trumpet correctly can be a frustrating search for answers. In my own search for these answers, I have studied with, and picked the brains of some great trumpet teachers and players. Some of these teachers are: Jerry Franks, Dominic Spera, Bill Adam, Claude Gordon, Jerome Callet, Don Jacoby, and Max Greer. My books: Maximizing Practice Volume 1: A Daily Practice Routine for Developing Trumpet Skills and Maximizing Practice Volume 2: Developing Trumpet Range, Power, and Endurance are a combination of information on how the trumpet "machine" works, and exercises that are focused on individual skills. The exercises in these methods are designed to change and improve your "machine." (In order for your "machine" to improve, it has to change). The exercises are focused in order to maximize results. There are many books with great exercises you can play, but how you practice them will determine your improvement. (A great exercise practiced wrong will not help you). These methods and way of thinking about trumpet practice have been of great help to me and to my students, and I sincerely hope that you will benefit from the information in these books. This book is about hope and a call to action to make the world the kind of place we want to live in. Our hope is to provoke conversation, and gently challenge possibly long-held views, beliefs, and ideologies about the way the world works and the people in that world. Written by eminent researchers and experienced practitioners, the book explores the principles that underpin living well, and gives examples of how this can be achieved not just in our own lives, but across communities and the planet we share. Chapters cover the stages of life from childhood to ageing, the foundations of everyday flourishing, including health and relationships, and finally wellbeing in the wider world, addressing issues such as economics, politics and the

environment. Based in the scientific evidence of what works and supported by illustrations of good practice, this book is both ambitious and aspirational. The book is designed for a wide audience – anyone seeking to create positive change in the world, their institutions or communities. 1st Peter was written by the Apostle Peter to encourage believers for whom the storm clouds of persecution were gathering, just because they were Christians. To encourage them he first reminds them that suffering is temporary, and that faithful living in times of suffering will produce eternal benefits. He develops this theme to show that such a lifestyle, lived out in difficult and dangerous circumstances, is an effective witness to unbelievers, and will result in church growth - the very opposite effect intended by those who persecuted them. In The Island Chronicles Book 1: Conscious, William is drawn by the Music to the mysterious woman, Eleutheria, who lives in the house overlooking Bourani Cove and the ancient lime kiln which still burns hot for those who know how and where to look. There, she tells him about trapping time in the old tower, inadvertently creating the dragon, and how he must contain the monster while she searches the world for a solution. In Book 2: Chopping Water—part mystery, part philosophy, and part historical fiction—William tells Lexi the story of how Eleutheria came to America three hundred years ago, eventually sailing to Orcas Island in search of ultimate freedom. He also continues to struggle with the return of Nadezhda Retovna, who died many years ago, and confronts an evil that threatens to destroy him and those he loves. In Book 3: Dragon, Eleutheria travels to Venice, Italy, and learns the secrets of the nuns at Convent San Zaccaria, before going to Cambridge, England, and discovering the last, vital piece of information she needs to vanquish the dragon. On the island, William supports the building of a new hospital, championed by Cortland and Mary Beth Van Cleave, a brother and sister with an unusual relationship. Their salvation may be William’s ruin, however, since, once again, he must use, or abuse, the darkest of powers to protect those who serve his purpose. Finally, William learns the truth about the woman only he can see, Nadezhda Retovna, and her relationship with alter ego Julien Darville. More importantly, he learns why she is here, now. When Eleutheria returns, the final confrontation ensues, and we see who she has always been. We learn who survives the final battle, and who has been telling us the story all along. The Cre protein, encoded by the bacteriophage P1, and the Flp protein, encoded by the 2 [mu]M plasmid found in budding yeast, belong to the Integrase family of site-specific recombinases. Cre and Flp recombinases each bind specifically to recombination targets comprised of inverted repeats of their cognate DNA binding sites, the 'lox' and FRT symmetry elements, respectively, that flank a central 8 bp spacer region. Like all integrases, both recombinases cleave one strand of the target site through a nucleophilic attack of the scissile phosphate by a conserved catalytic tyrosine residue. Cleavage generates a covalent attachment of the tyrosine to the 3'-phosphate and a free 5'-OH end. Association of two recombinase-bound target sites that have been cleaved into a synaptic complex provides the framework for the exchange of the crossing (cleaved) strands. The 3'-covalent linkage is subsequently destroyed by the nucleophilic attack of the incoming 5'-end and the DNA strands made continuous through a recombinase-mediated ligation that results in the formation of a Holliday intermediate. This Holliday junction is resolved into linear DNA products through a second set of recombinase-mediated cleavages, strand exchanges and ligations. An important issue in the chemistry of the recombination reaction is the location of the recombinase molecule that provides the catalytic nucleophile in the synapse. The mode of cleavage by a recombinase has been denoted as either occurring in 'cis,' where the cleaving monomer is bound adjacent to the scissile phosphate, or in 'trans,' where the cleaving monomer is bound elsewhere in the synaptic complex. Studies of a number of integrases have shown that the [lambda]Int and XerC/D proteins cleave in 'cis,' while the Flp recombinase cleaves in 'trans. ' I used half-site complementation to show that Cre cleaves its ' lox' target site in 'trans.' Following publication of this report, the crystal structure of the Cre synapse showed 'cis '-cleavage by Cre. To resolve this discrepancy and to answer whether my use of conditionally active sites and Cre proteins biased the results in favor of 'trans'-cleavage, I constructed novel

recombinases, Fre and Clp, that were functional chimeras of the Cre and Flp proteins. I showed that these chimeric proteins had altered binding specificities compared to their respective native recombinase and designed novel specific target sites for these chimeric proteins. I used hybrid recombination sites that combined the target sites of a chimeric and native recombinase to test the mode of cleavage by Cre and Flp in conditions that did not exclude either ' cis'- or 'trans'-cleavage from occurring. I found that consistent with previous reports, Cre cleaved in 'cis' and Flp cleaved in 'trans.' This illustrated book describes the hobby of fish-keeping, including the feeding, care, and breeding of aquarium fish. Result of a conference sponsored by the National Strategy Information Center, June 27-29, 1978. Newly revised, this bestseller now boasts even more to chew on with 25 additional recipes for colossal cookie creations. While it's clear--from malls to vending machines to grocery stores--that big, old-fashioned cookies are incredibly popular, many cookbook recipes still produce bite-size, crunchy results. EnterBig, Soft, Chewy Cookies to right this wrong with more than75 recipes for enormous, gooey cookies to sink your teeth into. Readers will find traditional and new favorites like: Coconut Bars Chocolate Chips Apricot Pillows Oatmeal White Chocolates... and more Big, Soft Chewy Cookies has a cookie for every palette. Easy to-follow recipes for bar, drop, and holiday treats make this tasty tome a staple for every kitchen. My project at LLNL this past summer was to improve upon the available methodology for synthesis of C-terminal polypeptide {alpha}-thioesters (all of which methods suffer from certain disadvantages requiring too much detail to discuss herein). Our initial approach to synthesis of {alpha}-thioesters is outlined in Figure 2. The approach utilizes a resin containing an aryl hydrazine linker to which the growing polypeptide chain is attached. The aryl hydrazine linker can be oxidized under mild conditions to the corresponding diazene. Our objective was to use the weak N-nucleophile benzotriazole to cleave the peptide from the resin. The acyl benzotriazole formed by the cleavage may be thiolyzed using ethanethiol and triethylamine to form the corresponding C-terminal polypeptide {alpha}-thioester, which can then be employed in NCL. My initial experiments failed to result in formation of any {alpha}-thioester. Instead, the exclusive product of acyl diazene cleavage was the peptide hydrolysis product. A number of experiments were performed to identify the stage at which hydrolysis was occurring. It was found that hydrolysis occurred during the benzotriazole-mediated cleavage of the acyl diazene. After extensive experimentation, I discovered that C-terminal polypeptide {alpha}-thioesters could, in fact, be formed by performing the acyl diazene cleavage in the absence of diisopropylethylamine (DIEA). I performed other experiments to study the variables that could improve the ratio of the hydrolysis product to the thiolysis product and was able to obtain replicable results in which the product mixture was 30% {alpha}-thioester and 70% hydrolysis. While the yield must still be improved for this to represent a viable method of peptide {alpha}-thioester synthesis, it does represent significant progress towards development of such a method. I was able to effect a three- to five-fold improvement in the yield of {alpha}-thioester relative to the {alpha}-thioester yield when ethanethiol was used to cleave the acyl diazene, a promising result which merits further investigation. I performed some experiments utilizing alternative N-nucleophiles such as imidazole to cleave the acyl diazene, as benzotriazole appears to compete poorly with water in the cleavage reaction. Some promising results were obtained, suggesting that use of a slightly stronger N-nucleophile may increase the yield of C-terminal polypeptide {alpha}-thioester. The Least of These speaks directly to the hearts of those who truly care about children. It is a tribute to those who dedicate their lives to education. Mary Van Cleave tells her story from the perspective of an elementary school principal whose school is located in a poor, urban neighborhood. Van Cleave shares a fictionalized, yet all-too-real, year in the life of the school. The daily struggles of the children, teachers, and principal come alive as Van Cleave details the stories of chaos and violence, the battles with bureaucracy and unions, and the sad acceptance that inevitably comes to educators forced to face limitations, both personal and external. Readers will probably recognize their own schools, their own students. Van Cleave's poignant story is a metaphor for the frustrations and triumphs

common to most urban schools. Here, in this unusual and elegantly written book, the true gravity of our schools' problems and the imperative need for reform become acutely apparent. Advocates of school reform will rejoice in Van Cleave's effort. She exposes the issues at the heart of our school system's troubles. She reveals those elements that work against our educational goals and compellingly brings before us the one element in the educational equation we can least afford to ignore - The Least of These, the children. Van Cleave puts the "human factor" - students, teachers, and principals - back into the concept of school reform. Along with the pain of Van Cleave's message comes a promise and a reaffirmation of the reasons educators choose their profession in the first place. There is hope for our educational system, and The Least of These is a brilliant spark.