

Washington University in St. Louis

Washington University Open Scholarship

Spring 2017

Washington University
Senior Honors Thesis Abstracts

Spring 2017

Table of Contents, Washington University Senior Honors Thesis Abstracts (WUSHTA), Spring 2017

Office of Undergraduate Research

Follow this and additional works at: https://openscholarship.wustl.edu/wushta_spr2017

Recommended Citation

Office of Undergraduate Research, "Table of Contents, Washington University Senior Honors Thesis Abstracts (WUSHTA), Spring 2017" (2017). *Spring 2017*. 127.
https://openscholarship.wustl.edu/wushta_spr2017/127

This Table of Contents is brought to you for free and open access by the Washington University Senior Honors Thesis Abstracts at Washington University Open Scholarship. It has been accepted for inclusion in Spring 2017 by an authorized administrator of Washington University Open Scholarship. For more information, please contact digital@wumail.wustl.edu.



TABLE OF CONTENTS

FOREWORD		9
ABSTRACTS		
<u>COLLEGE OF ARTS & SCIENCES</u>		
AMERICAN CULTURE STUDIES		
The Mainstream and the Alternative: Understanding How <i>the St. Louis Post-Dispatch</i> and the <i>St. Louis Argus</i> Characterized the 1917 East St. Louis Race Riots	<i>Yash Bhatia</i>	12
“You Knew You Were Equal”: Black Women Constructing Place in Pruitt-Igoe	<i>Candace Borders</i>	13
Getting Out: Women in Transition	<i>Abigail Gordon</i>	14
Making the Myth: The Racialized Legacy of Voter Fraud in St. Louis, Missouri	<i>Natalie Kirchoff</i>	15
Before Forty Acres: Reparations for Slavery in the in the Revolutionary Era	<i>William Krueger</i>	16
Dreams Deferred: The Life and Death of Kinloch, Missouri	<i>Billie Mandelbaum</i>	17
Go Big or Go Home: Unpacking the Hierarchical Political Rhetoric of Donald Trump	<i>Jacob Metz</i>	18
ANTHROPOLOGY		
Salivary Secretory Immunoglobulin A Variation between Varsity Swimmers, Varsity Cross-Country Runners, and Non-Athletes	<i>Carlye Chaney</i>	19
Critical Dialogue as Standard Practice: Exploring Identity Politics and the Impact of Social Justice Education on St. Louis Area High School Students	<i>Lucy Chin</i>	20
Spatial Analysis of Debris from the Mound 34 Copper Workshop	<i>Emily Coco</i>	21
Centering Women’s Voices: Global Aid and Local Realities of Obstetric Fistula in Uganda	<i>Shivani Desai</i>	22

Balancing Survival and Democracy: Toxic Citizenship and Nuclear Waste in a St. Louis Landfill	<i>Elaine Emmerich</i>	23
Chinese Medicine in Uganda: Health, Wealth, and Globalization	<i>Amir Hassan</i>	24
Exercising Agency in Medical Decision-Making Processes: A Case Study of 67ha, Antananarivo	<i>Sakurako (Sakura) Oyama</i>	25
ART HISTORY AND ARCHAEOLOGY		
Material Problems: The Public Art Industrial Complex	<i>Amelia Farley</i>	26
BIOLOGY		
Postnatal Development of the Murine Notochord Structure Quantified by High-Resolution Contrast-Enhanced Microct	<i>Sameer Bhalla</i>	27
Novel Histone Deacetylase Inhibitors to Elucidate Repeat Associated Gene Silencing Mechanisms in <i>Drosophila</i>	<i>Emily Chi</i>	28
Examining Roles of Transposable Elements and DNA Methylation in Glioblastoma	<i>You Rim (Mikayla) Choi</i>	29
<i>Sorghum bicolor</i> , <i>Xanthomonas vasicola</i> , and the Environment: An Interdependent and Dynamic Relationship	<i>Diana C. Fasanello</i>	30
Site-Specific Epigenetic Manipulation in Stem Cells	<i>Gregory Fishberger</i>	31
Categorizing the Unintended Side Effects of Genetic Transformation	<i>Ryan Z. Friedman</i>	32
HER2 776insYVMA and 780insGSP Insertion Mutations Confer Resistance to Small Molecule HER2 Inhibitors	<i>Ari Gao</i>	33
Temporal Facilitation of ON Retinal Ganglion Cell Responses to Drifting Gratings	<i>Anurag R. Goel</i>	34
Comparison of JAWSII Cell Line and Bone Marrow-Derived Cells in Responsiveness to Tuberculosis Infection	<i>Suhas Gondi</i>	35
Analysis of Human HCCS-Mediated Cytochrome c Biogenesis	<i>Jennifer Hsu</i>	36
<i>In Vitro</i> and <i>In Silico</i> Evaluation of Novel <i>Ortho</i> -Substituted Phenols and Benzodiazepine Derivatives as Potent and Isoform-Specific Human and <i>Schistosoma mansoni</i> Lysine Deacetylase Inhibitors	<i>Rong Hu</i>	37
NR Delays Vincristine-Induced Axon Degeneration in Dorsal Root Ganglia Cultures	<i>Xin Huang</i>	38
Targeting Survival Signaling in T-ALL	<i>Matthew Jotte</i>	39
Characterizing the Physiological Impact of Carbon Starvation on the Model Bacterium <i>Escherichia coli</i>	<i>Jesse Kao</i>	40
Structural Basis for Mutant RXRA-Mediated Hyperactivity of PPARs in Bladder Cancer	<i>Chiraag Kapadia</i>	41
Identifying Kinase Genes Involved in Regulation of the Stem Cell versus Meiotic Fate Decision in the <i>C. elegans</i> Germline	<i>Vahag Kechejian</i>	42
Investigating Localization and Activity-Dependent Translation of Astrocyte mRNA	<i>Rohan Khazanchi</i>	43

The Effects of Plant Community Diversity and Drought on Soil Microbial Communities and the Subsequent Effect on the Invasion Success of Common Exotic Species	<i>Karen Myers</i>	44
Investigating the Effects of Hypoxemia on Traumatic Brain Injury	<i>Umang Parikh</i>	45
Identifying Novel Regulators of Necroptosis	Vinay Penna	46
Elucidating the Role of Small Nucleolar RNA 114-12 in Acute Promyelocytic Leukemia	<i>Amrita Ramesh</i>	47
Effects of Endogenous and Human 4R to 3R Tau Splicing	<i>Smruti Rath</i>	48
Quantifying Pancreatic Islet Architecture: Endocrine Cell Type Distribution Effects on Hormone Secretion	<i>Courtney Richman</i>	49
The Relationship between Electoreceptor Anatomy and Signal Localization in Weakly Electric Fish	<i>Da Yeon Ryoo</i>	50
Circadian Rhythms of the Murine Placenta Change over Gestation	<i>Sarah Speck</i>	51
Local versus Global: A Characterization of Marrow Adipose Tissue in Two Models of MAGP1 Deficiency	<i>Sarah E. Turecamo</i>	52
Sparse SCN VIP Projections to the PVN Indicate Paracrine Signaling	<i>John Webb</i>	53
Feeling the Beat, in Rhythm and in Speech: Oscillatory Entrainment in Beat and Speech Perception	<i>Rebecca Yang</i>	54
EARTH AND PLANETARY SCIENCES		
Investigating the Impact of Trace Metals on Methanogenesis in Two Missouri Fens	<i>Addison Nakatani</i>	55
EAST ASIAN LANGUAGES AND CULTURES		
Eating Disorders as a Lens Social Change in China	<i>Mallory Giger</i>	56
ECONOMICS		
Does Domestic Intellectual Property Right Strength Affect Pharmaceutical Innovation?	<i>Jacob (Jay) Kaplan</i>	57
The Marginal Propensity Out of After-Tax Income and Implications for Tax Policy	<i>Isaac Norwich</i>	58
EDUCATION		
Policy and Practice: Discrepancies between the Law and Implementation of Intercultural Bilingual Education in Jujuy, Argentina	<i>Alena Antonowich</i>	59
Reworking Cohesion: The Uses and Limitations of Panethnic Labels for Asian Americans and African Americans	<i>Jaydee Lee</i>	60
ENGLISH		
When Race Does(n't) Matter: Forging a Collective Memory of 9/11 in Suzanne Collins' <i>The Hunger Games</i> Trilogy	<i>Andie Berry</i>	61
FILM AND MEDIA STUDIES		
Shamed	Jacob Nason	62
Mother Confessor	<i>Emma Quirk-Durben</i>	63

HISTORY

Neither Irish nor English: The Scottish Presence in Ulster	<i>Cira Danda</i>	64
When Development Goes Wrong: The Drainage of the Marshes of Southern Iraq in Historical Perspective	<i>Rahmi Elahiji</i>	65
The Ideology of Project <i>SUCCESS</i> : The Role of Cold War Anticommunism in the 1954 CIA Coup in Guatemala	<i>Benjamin (Ben) Greenho</i>	66
Saving the State through Enlightenment: <i>The Independent's</i> Statist View of Women's and Children's Education	<i>Keun Hee (Jeff) Kang</i>	67
Public Credit in the Early American Republic: An Examination of the Influences of Debt Policy and Debate on Institutional Government Relationships, 1790-1815	<i>Ari Moses</i>	68
The Body Catalogued: Public Anatomy Museums in Nineteenth-Century New York	<i>Rachel Multz</i>	69
Kurdish Women Rising: Gender Construction in Ideological Discourses from the PKK to Rojava	<i>Jenna Pearlson</i>	70
Lesioned Legacies: United States Mustard Gas Experiments During World War II	<i>Benjamin Pockros</i>	71
Lives of the Livestock Industry: Immigration in Kansas City's Railroad and Meatpacking Industry	<i>Roland Vaca</i>	72

INTERDISCIPLINARY PROJECT IN THE HUMANITIES

Identities at Stake: How Empathetic Virtual Reality Reshapes Personal Identity	<i>Jin Seok Park</i>	73
Origen For or Against Plato? An Analysis of Origen of Alexandria's Engagement with Non-Christian Philosophy	<i>Natalie Runkle</i>	74
Unboxing the Casket: A History of the Sixteenth-Century Limoges Enameled Jewel Box in the Saint Louis Art Museum	<i>Yusi (Joyce) Zhou</i>	75

INTERNATIONAL AND AREA STUDIES

Advise and Rule: Foreign Experts and Advisers in the Independence of the Levant	<i>Aaron Christensen</i>	76
The Voice of Kenya: Competing Visions of Nationhood in a Post-Colonial State	<i>Shaun Kai Ern Ee</i>	77
Treasures in the Salt Flats: Bolivian Perspectives on Lithium Extraction	<i>Gillian Greenberg</i>	78
" <i>Weile Zhengyi</i> " ("Strive for Justice"): The Role and Impact of Chinese NGOs in Legal Aid Provision and the Protection of Migrant Workers' Rights	<i>Carl Hooks</i>	79
The NPO-Public School Partnership: An Alternative, Short-Term Solution to South Africa's Failing Education System	<i>Emma Milford</i>	80
Econometric Modeling of the 2016 U.S. Presidential Election: Why the Results are Far from Unusual	<i>Alexandra Orsky</i>	81
Emerging Nuclear Threats: Preventing Non-State Terror Groups from Pursuing Nuclear Programs	<i>Samantha Pitz</i>	82
The Politics of Plague: Neoliberalism, Hindutva, and the Exploitation of an Emerging Civil Society	<i>Jessica Thea</i>	83

LINGUISTICS

Phenomenal Accent Patterns: A Computational Approach to Exploring the Application of Theoretical Frameworks from Music Theory to Linguistics *Alicia Chatten* 84

Auxiliary Contraction in English: Syntactic and Prosodic Constraints in a Large Set of Data *Grant Shillington* 85

MATHEMATICS

Discrete Morse Theory and Some Applications *Conner Basich* 86

Manifesting Polynomials with Small Galois Group as Rational Points *Philip Bonneville* 87

Two Partitioned Numerical Methods for Solving the Hodgkin-Huxley Equations *Zhengdao Chen* 88

On Solutions to $\varphi(n) + s = \varphi(n + s)$ *Ethan Farber* 89

The Multivariate Extension of the von Neumann Inequality *Anna Gautier* 90

Nonabelian Group Based Cryptography *Timothy (Tim) Huber* 91

Analysis of Peer-Led Team Learning (PLTL) Data for Calculus Using Linear Mixed Effects Models *Youngsuk Kim* 92

A Lexicographic Ordering on Simply-Connected, Non-Hausdorff 1-Manifolds *Kwok Hao Lee* 93

Generating Functions for Enumerating Chains of Partitions with Distinct Parts *Renee Mirka* 94

PERFORMING ARTS

(Re)Sounding Evil: Aural Infection in *Macbeth* *Daniel Washelesky* 95

PHILOSOPHY

An Alternative Understanding of the Amoralist *Jaeyoung Lee* 96

Conceptualizations of Quality of Life in Geriatric Medicine: Utilizing Quality of Life as a Measure of Effectiveness of Care *Helena Xeros* 97

PHILOSOPHY-NEUROSCIENCE-PSYCHOLOGY

The Role of Episodic Memory in the Experience of a Sameness of Self *Meghan Bach* 98

On the Moral and Legal Responsibility of Dissociative Amnesiacs *Elias R. Feldman* 99

PHYSICS

Random Measurement for Multipartite Entanglement Detection *Fan Chen* 100

Changing U.S. Extreme Temperature Statistics *Justin M. Finkel* 101

Classical Magnetic Frustration *Eugene J. Tsao* 102

Forecasting Cryptocurrency Volatility *Daniel Wasserman* 103

POLITICAL SCIENCE

The Effect of Symbols and Media Framing on Emotion, Attitude Change, and Attribution of Responsibility *Antonia Drummond* 104

The Politics of Capacity: No Child Left Behind	<i>Sophia Keskey</i>	105
Can Human Rights Treaty Ratifications Influence Neighboring Country Practices?	<i>Matthew Malis</i>	106
Political Rhetoric and Media Partisanship: Language Resemblance versus Media Bias	<i>Erica Sloan</i>	107
Greener Grass: Exploring Enviro-Chemical Injustices Posed to Migrant Farm Workers	<i>Neil Stein</i>	108
A Candidate by Any Other Name: Religious Identity and Electoral Outcomes	<i>Max Yanowitz</i>	109
PSYCHOLOGICAL AND BRAIN SCIENCES		
Overcontrol Tendencies and Development of Psychopathology	<i>Margot Barclay</i>	110
The Influence of Social Dialogue on Mental Health Help Seeking	<i>Samantha Breen</i>	111
Interaction between Genetic Risk for Anxiety Disorders and Future Anxiety	<i>Kimberly Johnson</i>	112
Comparisons of Intrinsic Motivation of Novel Stroke Rehabilitation Interventions for Upper Extremities (UE)	<i>Dorothy Kalmbach</i>	113
Prior Perceived Difficulty and Its Effect on Eventual Performance	<i>Nicholas Kohler</i>	114
Training Self-Control? A Meta-Analysis	<i>Amanda Kube</i>	115
Examining the Intergenerational Stake Hypothesis: Relationships and Closeness in Grandparent-Grandchild Dyads	<i>Rachael Spalding</i>	116
Speech-Reading Comprehension in Impaired Audiovisual Environments	<i>Jessica Williams</i>	117
Teacher-Child Relationship Quality and Development of Depression from Preschool to Late Childhood	<i>Julia Winemiller</i>	118
Social Comparison, Subjective Socioeconomic Status, and Entertainment Television	<i>Yuru Zhang</i>	119
RELIGIOUS STUDIES		
Histories of the Secular: Medical Mindfulness Meditation in the United States	<i>Matthew Drew</i>	120
ROMANCE LANGUAGES AND LITERATURES		
Effects of Grammatical Gender on Developing Lexical Representations in a Second Language	<i>Rebecca Feltman-Frank</i>	122
Rupture of All Convention: The Dehumanized Art and Particularistic Politics of the Avant-Garde in Spain	<i>Courtney Richman</i>	124
URBAN STUDIES		
Automobility and Racial Injustice in Spatial Production	<i>Julia Curbera</i>	126
The American Nightmare: Sexism, Xenophobia, and the Treatment of Domestic Workers in Urban America	<i>Hannah Lacava</i>	127
More than Gates: The Physical and Invisible Barriers to Gated Communities and Their Consequences on the Broader Community	<i>Hailey Oliff</i>	128

Urban Green Spaces: Who Benefits? The Integration of Nature in Urban Communities	<i>Sarah Taylor</i>	129
--	---------------------	-----

WOMEN, GENDER, AND SEXUALITY STUDIES

Widening the Scope: Exploring Student Experiences Responding to Sexual Violence on Campus	<i>Katherine (Katie) Chew</i>	130
Trouble in Paradise: Investigating Rape-Collusive Attitudes, Beliefs, and Practices on a Boarding School Campus	<i>Gaelyn Golde</i>	131
Invisible Violence: Battered South Asian Women's Experiences in the American Legal System	<i>Bianca Jahnavi Kaushal</i>	132
Elevating Spaces, Changing Communities: Black Women's Participation in the Metropolitan Chicago YWCA, 1915-1925	<i>Ryan Paige</i>	133

OLIN BUSINESS SCHOOL

BUSINESS

Gender Equality Champions: Investigating the Impact of Cognitive Dissonance on Negotiation Outcomes for Female Employees	<i>Suzanna Deng and Ricardo Perez</i>	136
The Effects of Pro-Marijuana Legislation on Opioid Mortality Rates in the United States	<i>Eduardo Jacobo, Varun Parekh, and Jackson Smith</i>	137
When Does Size Matter? An Empirical Study of Consumer Demographics and Product Package Choices	<i>Miranda Lan, Lillian Ross, Laura Torres-Ruiz, Yuchen (Christina) Ye, and Tianqi (Tony) Zhu</i>	138
Garbage In, Garbage Out: Model Uncertainty in Wealth Simulations	<i>Daniel Schleien, James Larkin Smith, and James Soldati</i>	139

SCHOOL OF ENGINEERING AND APPLIED SCIENCE

CHEMICAL ENGINEERING

A NO _x Denuder: Using GroG Impregnated with Cobalt Oxide to Strip NO _x	<i>Blake Actkinson and Stone Yan</i>	142
--	--------------------------------------	-----