

SCHOLARS WEEK

MIDDLE
TENNESSEE
STATE UNIVERSITY

2012 UNIVERSITY EXPOSITION

FRIDAY, MARCH 30

Complete schedule of events, abstracts, and other information is available at www.mtsu.edu/research/scholars_week.shtml

Undergraduate Titles

UG1	Ramos, David	The Acute Effects of Static Stretching on Anaerobic Performance During the Wingate Anaerobic Test	UG19	Hall, Melissa	The Effects of Medicine Ball Training on Throwing Velocity
UG2	Everett, Kellum	Neandertal Mortuary Practices from Shanidar Cave	UG20	Heckert, Logan	The Effect of Order with Agility, Speed and Acceleration on Performance
UG3	Shaw, Courtney	The Relationship Between Intimate Partner Violence (IPV) and Mental Health Status Among Tennessee High School Students (Trend Analysis)	UG21	Deckert, Brandon	A Comparison of the Effectiveness of Two Training Methods on Vertical Jump Performance
UG4	Shaw, Courtney	School-based Violence: The Relationship Between Physical Fighting and Carrying Weapons Amongst High School Students in Tennessee	UG22	Dunlap, Norma	Synthesis of Cyclopropyl Peptidomimetics as Potential BACE and HCV NS3-4a Protease Inhibitors
UG5	Bonior, Daniel	Spectral and Polarization Entanglement Swapping in Two Pairs of Twin Photons	UG23	Janutolo, Courtney	The Acute Effects of Visual Stimulation on Heart Rate During Exercise
UG6	Mallett, Jaquelyn	Measuring the Contributions of Morphology and Prosody Word Reading and Comprehension	UG24	Longchamps, Daniel	Music's Effect on Heart Rate During Exercise
UG7	Williams, Matthew	Inattentive Deafness and Attentional Engagement	UG25	Hixson, Taylor	From the Middle East to the Southeast: How Universities Set the Agenda
UG8	Hart, Patrick	Comparison of Heart Rate Between One-on-One Personal Training and Video-Guided Exercise	UG26	Morgan, Robert	Stride Length Comparison of Shod vs. Barefoot Running
UG9	Tackett, Kathryn	Using Microscopic Invertebrates as Indicators of Environmental Change in Lakes in Tennessee and Virginia	UG27	Stumph, Jordan	The Acute Effects of Static Stretching on Balance
UG10	Ryder, Amber	Lethal and Nonlethal Scalping at the Arnold Site: Who Lived and Died?	UG28	Schwarz, Bridgette	Applying Research Protocols to a Design Proposal for Community Care of Rutherford County
UG11	VanHook, Eva	Music and Performance	UG29	Keasler, Joey	What Lies Beneath: Preliminary Archaeological Investigations of a Middle Tennessee Cave
UG12	Bogle, Katie	Counterbalancing Political Rhetoric in the New South: The Intersection of Policy Verses Perception in Middle Tennessee	UG30	Xu, Wei	"Way Too Music" - An Art Organization Plan
UG13	Brubaker, Brent	An Eco-Friendly Solar-Powered Boat	UG31	Beasley, Elizabeth	Consumer's Attitudes on Celebrity Endorsements and Fashion Brand Image
UG14	Emerson, Adam	Tricking Taste Buds: Examining Taste Confirmation Bias in Non-tasters and Supertasters	UG32	Bowman, Mark	Humans in Crisis Assists Abused Women at the Women's Foundation in Nepal
UG15	Henry, Cassandra	The Effect of Blood Parasite Load on WBC Counts in Cottonmouths (<i>Agkistrodon piscivorus</i>)	UG33	Bowman, Mark	School 2 School Program
UG16	Baudo, Robert	The Role of Pinna Features in Vertical Plane Localization	UG34	Schmuhl, Amber	Sex Determination: A Study of Sexual Dimorphism in Complete and Fragmentary Cuneiform Bones
UG17	Bates, Stacey	Child Life Specialist: Perceptions of Training Programs and Practitioners	UG35	Stubbs, Paige	African-American Students' Participation in STEM Majors: Factoring out Failure, Striving for Success
UG18	Jones, Andrew	Individual Differences in Embodiment	UG36	Pellizzaro, Aline	Response to Optical Trapping by Red Blood Cells from a Transfused Sickle Cell Patient
			UG37	Roberts, Michael	GIS Mapping of Forage Micronutrients
			UG38	Dodson, Jordan	A Computational Investigation of the Generalized Anomeric Effect
			UG39	Bastian, Antonio	Human in Crisis Updates School Library for Orphans in Nepal
			UG40	Bashman, Jacob	Approach to the Synthesis of Belactosin A

UG41	O'Connell, Mike	Optimization of a Genomic DNA Extraction Protocol for Development and Characterization of Molecular Markers for the Scleractinian Coral, <i>Porites Lichen</i>	UG71	Rigsby, Lauren	Simulating Superluminal Pulses Through Metamaterials Using Transmission-Line Matrix Modeling
UG42	Revalee, Jennifer	Comparative Statistical Study in the Physical Properties of Different Hemoglobin Variant in Sickle Cell Anemia	UG72	Nguyen, Duy Linh	Comparison of Methods for the Analysis of Biodiesel Composition
UG43	Sakhi, Naimatullah	FDCA Synthesis: An Environmentally Friendly Alternative to Producing Polymers	UG73	VanDalsem, Crystal	Constructing the "Illegals" Issue: Native Southern Response to Representations of Immigration in the American South
UG44	Threlkeld, Justin	Natural Gas Fueling Change Now	UG74	Israel, Michelle	The Facebook Frame
UG45	Dahmen, Aaron	A Modern Interpretation of the Acylglycerolipids of the Industrially Important Alga, <i>Haematococcus pluvialis</i> , Using Positive-Ion Electrospray/Mass Spectrometry	UG75	Taylor, Marshall	The Rob Zombie Brand: Collision at the Intersection of Cultural Branding, Fandom, and Identity
UG46	Sbenaty, Dima	Analysis of Synthetic Cannabinoids by Mass Spectrometric Methods Coupled with Accurate Mass Determination	UG76	Campbell, Lauren	Democratic Participation on Campus
UG47	Green, Robert	Isolation of Nucleoside Metabolizing Enzymes from Plant Seeds	UG77	Dunlap, Norma	Synthesis of Labeled Mevalonolactone
UG48	Meese, John	Public Debt and Income Inequality	UG78	Shores, Jarrod	Growth Trends of <i>Opuntia humifusa</i> in a Middle Tennessee Cedar Glade
UG49	Hannah, Bradley	Analysis of Mutants of Nucleoside Hydrolase from <i>Escherichia coli</i>	UG79	Kennedy, Joseph	Soil Composition of A Typical Cedar Glade Habitat in Middle Tennessee
UG50	Wilkins, Christopher	The Novelty Effect and Magic	UG80	Hunt, Ashley	The Effects of <i>Cladonia ragnifera</i> and <i>Nostoc commune</i> on Plant Growth in Cedar Glade Environments
UG51	Yates, Cooper	Developing a Test Method for Determination of Void Pspace on the Surface of Roller Compacted Concrete Specimens	UG81	Cooley, Victoria	Plant and Microbiological Crust Composition in a Cedar Glade Community
UG52	Brooks, Ashley	Examining the Relationship Between Intimate Partner Violence and Rape Among Tennessee's Male and Female Adolescents	*UG82	Amankwah, Justice	Computer Science Embedded in Aerospace
UG53	Cothorn, Amanda	Exploring Prehistoric Gastropod Use Along the Middle Cumberland River	*UG83	Martin, Casey	Scenic Design for <i>Sweeney Todd: The Demon Barber of Fleet Street</i> .
UG54	Dunlap, Norma	Synthesis of Cyclopropyl Peptidomimetics as Potential BACE and HIV Protease Inhibitors	*UG84	Hornback, Brad	Effects of Running Economy: Barefoot vs. Vibram Training
UG55	Ervin, Derek	An Examination of the Relationship Between Overweight/Obese BMI Status and Physical Activity Among Tennessee Adolescents	*UG85	Marshall, Bradley	Public Somebodies/ Places of Refuge: Photographs of Nashville's Lower Broadway
UG56	Hannah, LaKenya	"Retail Therapy" Needs Therapy	*UG86	Boom, Jordan	Safe Haven Law PSA
UG57	Black, Wendell	Development of a Disaccharide Identification Experiment for the Biochemical Teaching Laboratory	*UG87	Stewart, Keith	Operation Consolidation: File and Personnel Management Web Application
UG58	Daughters, Marleyna	Women and Science: The Bio Project	*UG88	Gilbert, Shay	MEDEA: An Emotional Spiral
UG59	Kremer, Victoria	The Effects of Maternally Transferred Methylmercury on Leukocyte Differentials in Northern Water Snake (<i>Nerodia Sipedon</i>) Neonates	*UG89	Tumpag, Laurence	A Discourse on the Clashing of Gender Performance Across Various Eastern and Western Cultures: A Literature Review
UG60	Tackett, Kathryn	Using Thecamoebians as Indicators of Environmental Change within Todds Lake, Murfreesboro, Tennessee	*UG90	James, Jonathon	Kinematics of a Projectile Paintball
UG61	Hurtado, Miguel	Analysis and Fermentation of the Sugars Derived from Kenaf Pulp	*UG91	Rice, Marcelene	Mame Residence: A Conceptual Interpretation
UG62	Butler, Collette	Right Choices: MTSU's Family and Consumer Sciences Education Pre-Service Teachers Assist in Teaching Leadership Skills at Patterson Park Community Center	*UG92	Throneberry, Victoria	Auntie Mame: Neo-classical Revival
UG63	Millay, Danielle	Acid Sphingomyelinase Involvement in Cholesterol Dependent Differentiation of N2A Neuroblastoma Cells	*UG93	Lynch, Nicole	Auntie Mame Residence: Using History to Design for Today
UG64	Cathey, Erica	Quantum Dot Synthesis	*UG94	Ayers, Brittany	Auntie Mame- Georgian Revival
UG65*	Martin, Casey	Scenic Design for <i>Sweeney Todd: The Demon Barber of Fleet Street</i>	*UG95	Walker, Kayla	Auntie Mame Moderne
UG66	Wise, Ashley	Survey of Bacterial Contamination in Ready-to-Eat Foods	*UG96	Sims, Haley	Auntie Mame Danish Modern
UG67	Brown, Matt	Alcohol, Sex and Condom Use Among Adolescents in Tennessee	*UG97	Raines, Felicia	Auntie Mame: Concepts and Inspiration
UG68	Mitchell, Samuel	Binding to Mesoporous SiO2 Films and Solids of Bovine Serum Albumin	*UG98	Hale, Megan	Neoclassical Revival
UG69	Cathey, Brandon	Coaxial Cable Metamaterial Based on a Sub-Wavelength Loading by Inductor-Capacitor Resonators	*UG99	Vassar, Sara	Neo-Classical Revival: Historic Precedence for a Design Solution
UG70	Fuqua, Kim	From the Ground Up: Universal Residential Design Promoting Sustainability	*UG100	Wells, Lisa	Auntie Mame Danish Modern Renovation
			*UG101	Lewis, Chloé	Auntie Mame Danish Modern Inspiration
			*UG102	Merchant, Christopher	Wrecked
			*UG105	Benford, Jacquelyn	"Mr. Fyre"

Graduate Titles

G1	Nolan, Candice	Will Common Core Make Us "Standard"?
G2	Heath, Elena	Improving Reading Comprehension for ESL Students
G3	Bhatt, Harish	Mathematical Modeling for Temperature Distribution on the Upper Surface of a Jumla Design Metal Stove
G4	Majumder, Alauddin	Yunus' Idea of Social Business: Implications for Social Welfare
G5	Walker, Jill	Effects of Activity Breaks on Attention, Focus, and Academic Performance
G6	Chasteen, Michael	Using Gamification to Engage Generation X and Y CS Students in PeerSpace
G7	Carey, Alison	Communicating Science through Photography: An Analogue Perspective

G8	Banes, Brandon	Using Problem-Based Learning Experiences to Teach Mathematics to Elementary and Special Education Majors	G41	Khadka, Manoj	Sterol Composition and Biosynthetic Genes of the Recently Discovered Photosynthetic Alveolate, <i>Chromera velia</i> (Chromerida), a Close Relative of Apicomplexans
G9	Steele, Lisa	How Do Middle School Students Perceive Reading?	G42	Breland, Camille	An Analysis of Airport-Public Relationships on Social Media
G10	Traian, Anca	Unsecured Debt - An Alternative for Single Mother Families during Periods of Income Shortfall	G43	Hendon, Raymond	Verification of Los Alamos National Lab Production Hydrodynamics Code xRAGE
G11	Shah, Ankit	Computational Neuroscience - Modeling the Brain	G44	Brown, Mina	The Effects of Syllable Segmentation on Articulation
G12	Hatton, Roseanna	Predicting Test Anxiety Among College Students with Reading Difficulties	G45	Carter, Rose	Establishing Validity of a Unidimensional Weight Stigma Scale Using Rasch Model
G13	Keene, Samantha	Analysis of Various Swine Tissues and their Emitted Volatile Organic Compounds	G46	Cothron, Peter	The Use of TiO ₂ Thin Films for the Detection and Depletion of Chemical Weapons Models
G14	Hatcher, Sarah	Examination of Class Length and Its Effectiveness in the High School Setting	G47	Wang, Matthew	The Recent Solar Minimum and IRI Model Predictions and Improvements
G15	Maiti, Abhradeep	Rethinking the Fundamental Law of Road Congestion	G48	Al-Tobasei, Rafet	Design of a Wireless Heart Monitoring System
G16	Carey, Alison	Effects of Reproductive State on Innate Immunity, Hormones, and Behavior in Female Fence Lizards (<i>Sceloporus undulatus</i>)	G49	Stinson, Sirci	Teachers' Perceptions About Homework
G17	Nizamaddin, Shara	Investigating the Role of Oxidative Stress in Ag and ZnO Nanoparticle Toxicity in Developing Zebrafish (<i>Danio rerio</i>)	G50	Saul, Tiffany	Forensic Anthropology in the Classroom: A Bare Bones Method for Mentoring
G18	Cusaac, Patrick	Effects of Maternally Transferred Methylmercury Chloride on Oxidative Stress in <i>Nerodia sipedon</i> Neonates	G51	Dickson, Poliala	Current Sexual Behaviors of Tennessee Adolescents: Findings from the 2011 Youth Risk Behavior Surveillance System
G19	Alsahli, Sultan	Impact of Curriculum on Middle School Students' Enjoyment and Aerobic Fitness Levels	G52	Williams, Danny	Hedonic Price Analysis of Mules in Tennessee
G20	Alvis, Dustin	Correlates of Forced Sex among High School Students in a Southern State	G53	Spears, Zachary	Computational Modeling of Silica-Based Body Armor
G21	King, Ryann	Components of Effective Summer Reading Interventions	G54	Akhter, Farhana	The Formation of Melamine-Cyanurate and Melamine-Urate Complex in Aqueous and Physiological Matrices
G22	Meric, Robbin	Cognate Use in Promoting Second Language Acquisition in Beginning Level Adult ESL Students Whose L1 is Spanish	G55	Colgin, Zane	Modeling Noise in the Nervous System
G23	Duffie, Tara	The Memory May Be Forgotten but the Emotion Remains	G56	Kim, Youngdeok	Daytime Patterns of Time Spent in Sedentary Behaviors among US Middle-Aged Adults
G24	Hubbard, Tyler	Spatial Configuration of Word Pairs Affects N400 Component of EEG	G57	Ewool, Richard	Can We Fight Cancer by Attacking Its Blood Supply? An Analysis of the Effect of Angiostatin on Tumor Angiogenesis
G25	Ishikawa, Saori	Ambulatory Activity Monitoring of Children and Youth with Mobility Limitations	G58	Bettie, Erin	The Relationship Between Childhood Obesity and Sedentary Activities Among Tennessee High School Students
G26	Cole, Amanda R.	Exploratory Analysis of the Eating Attitudes Test (EAT-26) Category Function	G59	Suttle, Chasity	Determination of Barbiturates in Soil by Liquid Chromatography/Mass Spectrometry
G27	Alshaammari, Salem	Degree of Physical Activity in P.E. Class Among Elementary School Students, Al-Jahra City, Kuwait	G60	Baxter, Shatiqua	Depression and Eating Disorders...How are They Related?: An Examination of Both Among Tennessee's Adolescents
G28	Himmelreich, Mark	A Query into Possible Shared Neural Substrates for Melodic Pitch Processing and Visuo-Spatial Processing	G61	Vick, Eric	<i>Gardnerella vaginalis</i> Recruits the NLRP3 Inflammasome in Differentiated Monocytes
G29	Wrenn, Whitney	Response to Intervention and Its Relationship to School Psychologists' Job Satisfaction	G62	Roberson, Kristi	Lack of Access to Affordable and Healthy Foods Could be Linked to Obese Adults and Children
G30	Griffin, Larry	Achieving Proportional Education for the Academically-Advanced in the Mathematics Classroom	G63	Reece, Joel	Effects of Accumulated Short and Very Short Bouts of Exercise on Blood Pressure: A Meta-Analysis
G31	Hill, Joshua	Social Networking Ability and Labor Market Outcomes	G64	Molina, Paola	Mitochondrial Involvement in UV-Light Induced Cell Death in Neuro-2a
G32	Hudgins, Cristina	Preferred and Effective Reading Comprehension Strategies and the Use of Graphic Novels Amongst Practicing English as a Second Language Teachers	G65	Cole, Amanda R.	The Association Between Personal Health Status and the Use of the Internet for Health Information
G33	Routon, Philip	Military Service and Civilian Labor Outcomes	G66	Borodin, Volodymyr	Bifurcation Analysis of Tumor Growth Interacting with Immune System
G35	Killen, Lauren	Effects of Caffeine on Session Ratings of Perceived Exertion	G67	Greco, Patrick	Synthesis and Characterization of Donor-Acceptor Polyenes with Indoline and Trihydroquinoline Donors
G36	Boateng, Nana	Meshfree Methods for the Black-Scholes Partial Differential Equation	G68	Batorski, Deanne	Do College Students Understand that Cardiovascular Risk Factors Apply to Them?
G37	Hill, Luke	Classroom Teachers' Dispositions Regarding Music Integration	G69	Adongo, Jonathan	An Empirical Assessment of Assortative Matching for Venture Capital and Private Equity Markets in Africa
G38	Lay, Harold	An Agent-Based Simulation of a Heavy Equipment Rental Process	G70	Rost, Tamara	Hiding Behind the Concept of Justice: Are We Aware of the Discrimination in the U.S. Criminal Justice System?
G40	Xiong, Lu	Multi-resolution Analysis Method for IMS Data -- Biomarker Selection and Classification	G71	Smith, Katrina	An Integrated Approach in the Use of Surface-Enhanced Raman and Infrared Spectral Libraries for the Identification of Carcinogenic Aromatic Amines

G72	Sowah, Samuel	Examining The Relationship Between Sleep Difficulties and Academic Performance Among MTSU Students	F18	Blake, Ken	Partisanship and Income as Predictors of Knowledge about Tennessee's New Voter ID Law
G73	Kim, Kyungtae	The Effects of Inter-Trait Correlation on Model Recovery in Multidimensional Item Response Theory (MIRT)	F19	Guttman, Sharon	Effect of Clicker Use on Class Attendance, Attitude, and Performance
G74	Pitigala, Sachintha	Personalized Article Retrieval System – A Preliminary Study	F20	Abolins, Mark	Space Grant Undergraduate Land Cover/Land Use Mapping Project, Mobile Bay, Alabama
G75	Chamberlain, Nicholas	Inhibition of Acid Sphingomyelinase Activity by Intracellular Cholesterol	F21	Manning, Brian	Developing an Artificial Intelligence-Driven Platform for Biomolecular Research
G76	Oliver, Brittany	Electronic Bullying and Mental Health Among Tennessee Adolescents	F22	Farwell, Tricia	Incorporating Blogs in the Classroom: Using Blogging to Assess Writing, Facilitate Engagement and Evaluate Student Attitudes
G77	Jones, Zack	Mathematics and Cancer: A Study on How Mammalian Cell Cycle Entry through a Bistable Mechanism Can Be Explained Mathematically	*F23	Valcarcel Craig, Dorothy	Shouts, Echos, and Cries from the Field: An Examination of Field-Based Practice in Graduate Education Classes
G78	Rionero, Giuseppe	High School Employment and the Economic Assimilation of the Children of Immigrants	*F24	Hansen, Richard	Old Nashville Area Theatres and Sites
G79	Kiri, Ja'be	Dendronic Surfaces for Vapor Sensors	*F25	Donnell, Virginia	MTSU Theatre in Second Life: A Virtual Laboratory
G80	Anderson, Michael	Herpetological Surveying in Middle Tennessee			
G81	Bloodworth, Linda	Healthy Seniors			
*G82	Huether, Andrew	Recorded History: Studio Techniques and their Effects on Music			
*G83	King, Evalee	Experimental Vehicles: Innovation and Creativity in Engineering			
*G84	Cooper, Joseph	Meteorological Impacts on Universal E-Lines Operations			
*G85	Jinkerson, Shanna	Predictors of Aerospace Team Performance			

Faculty Titles

F1	Jih, Wen-Jang (Kenny)	Exploring the Effects of Blog Visit Experience on Relationship Quality: An Empirical Investigation with a Cardiac Surgery Medical Blog Site
F2	Kim, Yang Soo	Ethnic Proximity, Host Communication Competence, and Psychological Health: A Study of Cross-Cultural Adaptation Among International Students in the U.S.
F3	Yang, Zhifu	Development of Concrete Patching Materials
F4	Yang, Zhifu	Cracking Repair of Concrete Structures
F5	Wang, Chengshan	α -Synuclein in α -Helical Conformation at Air-Water Interface: Implication of α -Synuclein Conformation, Orientation, and Accumulation around the Vesicles in Presynaptic Terminals of Neuronal Cells
F6	Foss, Katie	Disseminating "Deafenstein": Constructions of Hearing Loss and Deafness in Entertainment Television
F7	Graeff, Timothy	Faculty and Student Perceptions of Online Versus Traditional Courses: A Comparative Study
F8	Rowell, Ginger	Mathematics as a First STEP to Success in STEM
F9	Klein, Christopher	Music Sales, Chart Turnover, and the Random Copying Hypothesis
F10	Loubere, Philip	Newspapers vs Websites: Which Presents Nation/World News Better
F11	Asbury, Mary Beth	Looking Beyond Numbers and Body Mass Index (BMI): A Communicative Approach to Understanding Obesity
F12	Farone, Anthony	Scientist-in-Residence: Teaching, Research, and Industry Applications to Deepen Scientific Understanding in Middle Tennessee
F13	Kendrick, Donald	Anxiety and Sensation Seeking in Scuba Divers
F14	Clayton, Maria	Behind the Scenes: A Course Delivery Decision Tree [CDDT]
F15	McCormick, Janet	Online Myth-Busting
F16	Fayissa, Bichaka	The Long-Run Relationship between Financial Development and Remittances: Evidence from Africa and Latin America
F17	Yang, Hui	Development of a Fleshed-out Antibiotic Pharmacophore with Subatomic Resolution

Centers, Institutes, and Program Titles

C1	Cockrell, Dale	The Center for Popular Music
C2	Edwards, Jo	Adams Chair of Excellence in Health Care Services and Center for Health and Human Services Work to Improve the Health and Well Being of Tennesseans
C3	Miller, Joyce	MTSU Interdisciplinary Microanalysis and Imaging Center
C4	Kim Sadler	The MTSU Center for Environmental Education and Cedar Glade Studies: Online Resources for Formal and Informal Educators
C5	Kim Sadler	Thiking Inside the Box During Out-of-School Time with Club Neutron
C6	Iriarte-Gross, Judith	Women In STEM (WISTEM) Center
C7	Branch, Lindsey	WISE (Women In Science and Engineering) at Middle Tennessee State University
C8	Taylor, Jamie	MTSU SMAACS Activities 2011-12: There's An App for that!
C9	Harvey, Ashley	Tennessee History and Science: An Innovative Learning Community Which Works to Improve Student Learning in History and Science
C10	Miller, Lindsey	MSPS Graduate Program Ongoing Partnership with Industry Leaders

Scholars Week Organizing Committee

Michael Allen Dean and Vice Provost for Research	Brad Bartel Provost
Emily Born Compliance/FRC/URC	Beverly Boulware Education
Dorothy Craig Education	Peter Cunningham Graduate Studies
Richard Farley Behavioral and Health Sciences	Troy Festervand Business
Saeed Foroudastan Basic and Applied Sciences	Andrienne Friedli Basic and Applied Sciences
Connie Huddleston Liberal Arts	Will Langston Behavioral and Health Sciences
Dan Pfeifer Mass Communication	Wasimuddin Qureshi Office of Research
Kevin E. Smith Liberal Arts	Nathanael Smith Basic and Applied Sciences
Jason Vance Library	