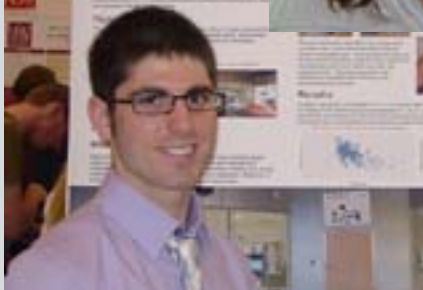




**College of Education &
Human Ecology
2nd Annual
Student Research
Forum**



**Friday, November 4, 2011
Nationwide and Ohio Farm Bureau 4-H Center
at
The Ohio State University**

Keynote Speaker

Cheryl Achterberg, Dean

Cheryl Achterberg, one of today's outstanding scholars in nutrition education and behavior change, is the dean of The Ohio State University College of Education and Human Ecology. She was appointed July 1, 2008.

A tenured professor in the Department of Human Nutrition, she was a member of the 2010 Dietary Guidelines Advisory Committee. She is one of only 13 experts who advised the U.S. departments of Agriculture and Health and Human Services about proper nutrition Americans need to stay healthy and fit.



Before coming to Ohio State, Dr. Achterberg was at Iowa State University, where she was the inaugural dean of the College of Human Sciences. Prior to joining the Iowa State faculty in 2005, Dr. Achterberg was on the faculty of The Pennsylvania State University, where she rose through the professional ranks, attaining tenure in 1991 and the rank of full professor in 1996. At Penn State, she also directed the Nutrition Center from 1992 to 1996 and, in 1997, became the founding dean of the Schreyer Honors College.

The author or co-author of many monographs, book chapters, and articles in the field of nutrition, Dr. Achterberg has also published in the area of higher education and research methodology and has delivered scores of invited lectures. Her research has received significant funding from the U.S. Department of Agriculture, the March of Dimes, the National Dairy Council, the H. J. Heinz Foundation, the National Institutes of Health, the United Nations Food and Agriculture Organization, and Kraft-General Foods.

An award-winning teacher, she has taught nutrition at all levels of the university curriculum, as well as courses in information science and technology, sociology, and higher education.

Dr. Achterberg has been an active program evaluator, both in the U.S. and abroad, and has served as a consultant to USAID/UNESCO, the National Dairy Council, and the Dairy Promotion Board of New Zealand, among others. She also has done considerable service as a member of national boards and committees of such groups as NASULGC, the Dannon Institute, and the Center for Strategic and International Studies.

She earned her bachelor's degree in biological sciences at California Polytechnic State University, her master's in human development at the University of Maine, and a Ph.D. in nutrition at Cornell University.

Schedule of Events

11:30 AM - 12:00 Noon	Poster Set-up
12:30 PM - 1:30 PM	Session 1: Oral and Poster Presentations
1:30 PM - 1:45 PM	Break - Atrium
1:45 PM - 2:45 PM	Session 2: Oral and Poster Presentations
2:45 PM - 3:00 PM	Break - Atrium
3:00 PM - 3:05 PM	Introductions - Bob Evans Memorial Hall
3:05 PM - 3:35 PM	Key Note Address: <i>Dean Cheryl Achterberg, PhD</i>
3:35 PM - 3:45 PM	Remarks: Graduate Student Planning Committee Members
3:45 PM - 4:30 PM	Networking Time: Meet Faculty, Students and Research Staff

Oral Presentations

Physical and Mental Health [Health and Wellness (physiological, psychological, and financial)]

Room 100, 12:30 – 1:30 PM

Facilitators: Shannon Titus and Chelsea Foster*

Blake Holderman, Physical Activity and Educational Services (Carmen B. Swain)

Meghan Lee, Human Development and Family Science (Amy Bonomi)

Elan Lieber, Physical Activity and Educational Services (Carmen Swain)

Hua Zan, Consumer Sciences (Kathryn Stafford and Robert Scharff)

Issues in High School Education [Educational Research with Implications]

Room 100, 1:45 – 2:45 PM

Facilitators: Robert Mitchell and Letitia Kotila*

DeLeon Gray, School of Educational Policy and Leadership (Eric M. Anderman)

Yin Lam Lee, School of Teaching and Learning (David Bloome and Alan Hirvela)

Erin Reilly-Sanders, School of Teaching and Learning (Barbara Lehman)

Jamie Rae Smith, School of Teaching and Learning (George E. Newell)

Issues in Higher Education [Educational Research with Implications]

Room 110, 12:30 – 1:30 PM

Facilitators: Jodi Letkiewicz and Manju Joseph

Mauriell Amechi, School of Educational Policy and Leadership (Antoinette Miranda)

Melinda Latas, School of Educational Policy and Leadership (Terrell Strayhorn)

Sylvia Rodriguez Vargas, School of Educational Policy and Leadership (Helen Marks)

Charles Saunders, Physical Activity and Educational Services (Christopher Zirkle)

Learning Tools I [Educational Research with Implications]

Room 110, 1:45 – 2:45 PM

Facilitators: Hua Zan and Rikki Patton*

Jennifer Czocher, School of Teaching and Learning (Azita Manouchehri)

Mary Kate Patterson, School of Teaching and Learning (Adrian Rodgers)

Meghan Rector, School of Teaching and Learning (Ross Nehm)

Allison Wynhoff Olsen, School of Teaching and Learning (David Bloome)

Financial Health [Health and Wellness (physiological, psychological, and financial)]

Room 220, 1:45 – 2:45 PM

Facilitators: Samantha Anzeljc and Hye Yoon Choi*

HoJun Ji, Consumer Sciences (Sherman D. Hanna)

Jodi Letkiewicz, Consumer Sciences (Jonathan Fox)

Travis Mountain, Consumer Sciences, (Caezilia Loibl)

Jiyeon Son, Consumer Sciences (Sherman D. Hanna)

Oral Presentations (con't)

Learning Tools II [Teaching, Learning and Instruction across the Lifespan]

Room 220, 12:30 – 1:30 PM

Facilitators: Yan Liu* and Amber Simmons

Elizabeth Beggrow, School of Teaching and Learning (Ross H. Nehm)

Letitia Kotila, Human Development and Family Science (Claire M. Kamp Dush)

Liping Su, School of Teaching and Learning (Leslie Moore)

Jennifer VanDerHeide, School of Teaching and Learning (George E. Newell)

Alternate Facilitators:

Ashley Hicks, 12:30-1:30 PM

Nicole Leach*, 12:30-1:30 PM or 1:45-2:45 PM

Jennifer Ludwin*, 1:45-2:45 PM

*Member - Student Research Forum Graduate Student Planning Committee

Poster Presentations in Atrium

Educational Research with Implications

1. Tami Augustine, School of Teaching and Learning (Merry Merryfield)
2. Jennifer Cooper, Physical Activity and Educational Services (Kisha Radliff)
3. Bree Frick, School of Educational Policy and Leadership (Lynley Anderman)
4. Jason Harshman, School of Teaching and Learning (Merry Merryfield)
5. Lauren Hensley and Kathryn Kirkpatrick, School of Educational Policy and Leadership (Eric Anderman)
6. Ashley Hicks, Human Development and Family Science (Deanna Wilkinson)
7. Eun Hye Hur, Human Department and Family Science (Cynthia Buettner)
8. Eun Hye Hur, Human Development and Family Science (Xin Feng)
10. Kathryn Kirkpatrick, School of Educational Policy and Leadership (Eric Anderman)
11. Kristen Leigh, School of Educational Policy and Leadership (Eric Anderman)

Health and Wellness (physiologic, psychological, and financial)

12. Fatima Al-Ghadban, Human Nutrition (Hugo Melgar-Quinonez)
13. Samantha Anzeljc, Interdisciplinary PhD Program in Nutrition - OSUN (Robert Murray, MD)
14. Mei-Fang Chiang, Consumer Sciences (Catherine Montalto)
15. Hye Yoon Choi, Consumer Sciences (Jay Kandampully)
16. Mark Ciolek, Physical Activity and Educational Services (Carmen B. Swain)
17. Keith Fluegge, Human Nutrition (Helen B. Everts)
18. Chelsea Foster, Physical Activity and Educational Services (Weidong Li)
19. Fabiola Gutierrez Orozco, Interdisciplinary PhD Program in Nutrition - OSUN (Mark Failla)
20. Erica Hartwell, Human Development and Family Science (Julianne Serovich)
21. Michael Holbrook, Human Nutrition (Ouliana Ziouzenkova)
22. Jessica Hyland, Physical Activity and Educational Services (Carmen B. Swain)
23. Jichul Jang, Consumer Science (Jay Kandampully)
24. Kom Kamonpatana, Interdisciplinary PhD Program in Nutrition - OSUN (Mark Failla)
25. Sarah Kessler, Physical Activity and Educational Services (Carmen B. Swain)
26. Kyoung Tae Kim, Consumer Science (Sherman D. Hanna)
27. Christine Knopp, Physical Activity and Educational Services (Carmen B. Swain)
28. Meghan Lee, Human Development and Family Science (Sarah Schoppe-Sullivan)
29. Ye Hoon Lee, Physical Activity and Educational Services (Packianathan Chelladurai)
30. Lauren Manganiello, Human Nutrition (Joyce McDowell)
31. Joseph Meyers, Human Nutrition (Ouliana Ziouzenkova)
32. Shayna Moratt, Physical Activity and Educational Services (Carmen B. Swain)

Poster Presentations in Atrium (con't)

33. Charles Okonkwo, School of Educational Policy and Leadership (Eric Anderman)
34. Jonathan Scott, School of Allied Medical Professions; Medical Dietetics (Jackie Buell)
35. Brian Stephens, Human Nutrition (Mark Failla)
36. Erica Toivonen, Physical Activity and Educational Services (Carmen B. Swain)
37. Gina Verhoff, Physical Activity and Educational Services (Carmen B. Swain)
38. Rumana Yasmeen, Interdisciplinary PhD Program in Nutrition - OSUN (Ouliana Ziouzenkova)
39. Lishu Zhang, Consumer Science (Sherman D. Hanna)
53. Lei Wan, Interdisciplinary PhD Program in Nutrition - OSUN (Steven Clinton)

Individuals within Social Context

40. Lauren Altenburger, Human Development and Family Science (Sarah Schoppe-Sullivan)
41. Soyeon Kim, Consumer Sciences (Jay Kandampully and Leslie Stoel)
42. Amy Kim, Physical Activity and Educational Services (Packianathan Chelladurai)
43. Robert Mitchell, School of Teaching and Learning (Dean Cristol)
44. Emily Nemeth, School of Teaching and Learning (Caroline Clark)
45. Boram Park, Consumer Sciences (Robert Scharff)
46. Boram Park, Consumer Sciences (Nancy A. Rudd)
47. Rikki Patton, Human Development and Family Science (Michael Glassman)
48. Hana Yoo, Human Development and Family Science (Sarah Schoppe-Sullivan)

Teaching, Learning and Instruction across the Lifespan

49. Ali Brian, Physical Activity and Educational Services (Susan Sutherland)
50. Emma Taylor, Physical Activity and Educational Services (Antoinette Miranda)
51. Seung Ho Chang, Physical Activity and Educational Services (Jackie Goodway)
52. Eman Tiba, Physical Activity and Educational Services (Antoinette Miranda)

Poster Presentations in Atrium

Poster Presentations – Alphabetical by Last Name

Al-Ghadban, Fatima - Poster # 12, Health and Wellness, Session 2
Altenburger, Lauren - Poster # 40, Individuals within Social Context, Session 2
Anzeljc, Samantha - Poster # 13, Health and Wellness, Session 1
Augustine, Tami - Poster # 1, Educational Research with Implications, Session 1
Brian, Ali - Poster # 49, Teaching, Learning and Instruction across the Lifespan, Session 1
Chang, Seung Ho - Poster # 51, Urban Environment, Economic Development and Diversity, Session 1
Chiang, Mei-Fang - Poster # 14, Health and Wellness, Session 2
Choi, Hye Yoon - Poster # 15, Health and Wellness, Session 1
Ciolek, Mark - Poster # 16, Health and Wellness, Session 1
Cooper, Jennifer - Poster # 2, Educational Research with Implications, Session 2
Fluegge, Keith - Poster # 17, Health and Wellness, Session 1
Foster, Chelsea - Poster # 18, Health and Wellness, Session 2
Frick, Bree - Poster # 3, Educational Research with Implications, Session 1
Gutierrez Orozco, Fabiola - Poster # 19, Health and Wellness, Session 1
Harshman, Jason - Poster # 4, Educational Research with Implications, Session 2
Hartwell, Erica - Poster # 20, Health and Wellness, Session 2
Hensley, Lauren and Kathryn Kirkpatrick - Poster # 5, Educational Research with Implications, Session 1
Hicks, Ashley - Poster # 6, Educational Research with Implications, Session 2
Holbrook, Michael - Poster # 21, Health and Wellness, Session 1
Hur, Eun Hye - Poster # 7, Educational Research with Implications, Session 1
Hur, Eun Hye - Poster # 8, Educational Research with Implications, Session 2
Hyland, Jessica - Poster # 22, Health and Wellness, Session 1
Jang, Jichul - Poster # 23, Health and Wellness, Session 1
Kamonpatana, Kom - Poster # 24, Health and Wellness, Session 2
Kessler, Sarah - Poster # 25, Health and Wellness, Session 1
Kim, Kyoung Tae - Poster # 26, Health and Wellness, Session 2
Kim, Soyeon - Poster # 41, Individuals within Social Context, Session 1
Kim, Amy - Poster # 42, Individuals within Social Context, Session 2
Kirkpatrick, Kathryn - Poster # 10, Educational Research with Implications, Session 2
Knopp, Christine - Poster # 27, Health and Wellness, Session 1
Lee, Meghan - Poster # 28, Health and Wellness, Session 2
Lee, Ye Hoon - Poster # 29, Health and Wellness, Session 1
Leigh, Kristen - Poster # 11, Educational Research with Implications, Session 1
Manganiello, Lauren - Poster # 30, Health and Wellness, Session 2

Poster Presentations in Atrium (con't)

Poster Presentations – Alphabetical by Last Name

Meyers, Joseph - Poster # 31, Health and Wellness, Session 1
Mitchell, Robert - Poster # 43, Individuals within Social Context, Session 1
Moratt, Shayna - Poster # 32, Health and Wellness, Session 2
Nemeth, Emily - Poster # 44, Individuals within Social Context, Session 2
Okonkwo, Charles - Poster # 33, Health and Wellness, Session 1
Park, Boram - Poster # 45, Individuals within Social Context, Session 1
Park, Boram - Poster # 46, Individuals within Social Context, Session 2
Patton, Rikki - Poster # 47, Individuals within Social Context, Session 1
Scott, Jonathan - Poster # 34, Health and Wellness, Session 2
Stephens, Brian - Poster # 35, Health and Wellness, Session 1
Taylor, Emma - Poster # 50, Teaching, Learning and Instruction across the Lifespan, Session 2
Tiba, Eman - Poster # 52, Urban Environment, Economic Development and Diversity, Session 2
Toivonen, Erica - Poster # 36, Health and Wellness, Session 1
Verhoff, Gina - Poster # 37, Health and Wellness, Session 1
Wan, Lei - Poster #53, Health and Wellness, Session 2
Yasmeen, Rumana - Poster # 38, Health and Wellness, Session 2
Yoo, Hana - Poster # 48, Individuals within Social Context, Session 2
Zhang, Lishu - Poster # 39, Health and Wellness, Session 1

Oral Presentation Session Leaders

Physical and Mental Health [Health and Wellness (physiological, psychological, and financial)]

Room 100, 12:30 – 1:30 PM



Shannon Titus,* School of Physical Activity and Educational Services



Chelsea Foster, School of Physical Activity and Educational Services

Issues in High School Education [Educational Research with Implications]

Room 100, 1:45 – 2:45 PM



Robert Mitchell,* School of Teaching and Learning



Letitia Kotila, Human Development and Family Science

Issues in Higher Education [Educational Research with Implications]

Room 110, 12:30 – 1:30 PM



Jodi Letkiewicz, Consumer Sciences



Manjula Joseph, School of Teaching and Learning

Learning Tools I [Educational Research with Implications]

Room 110, 1:45 – 2:45 PM



Hua Zan,* Consumer Sciences



Rikki Patton, Human Development and Family Science

Learning Tools II [Teaching, Learning and Instruction across the Lifespan]

Room 220, 12:30 – 1:30 PM



Yan Liu,* Consumer Sciences



Amber Simmons, OSUN, Interdisciplinary Nutrition Program

Oral Presentation Session Leaders (con't)

Financial Health [Health and Wellness (physiological, psychological, and financial)]

Room 220, 1:45 – 2:45 PM



Samantha Anzeljc,*OSUN, Interdisciplinary Nutrition Program



Hye Yoon Choi, Consumer Sciences

Alternate Facilitators:



12:30-1:30 PM - Ashley Hicks, Human Development and Family Sciences



12:30-1:30 PM or 1:45-2:45 PM - Nicole Leach,* School of Educational Policy and Leadership



1:45-2:45 PM - Jennifer Ludwin,* Human Development and Family Science

*Member - Student Research Forum, Graduate Student Planning Committee

Index of Abstracts

Student Presenter	Title	Page
Al-Ghadban, Fatima	Evaluating Face Validity of an Arabic Version of the Escala Latinoamericana y Caribeña de Seguridad Alimentaria (ELCSA) in Arabic-speaking Populations	23
Altenburger, Lauren	Coding Maternal Gatekeeping from Videotaped Observations	23
Amechi, Mauriell	MAN UP: A Descriptive Analysis on Mentoring Programs Serving African American Males	2
Anzeljc, Samantha	'A Pound of Cure' - Development and Pilot Study of a Primary Care Intervention on the Management of Childhood Obesity	24
Augustine, Tami and Brooke Harris Garad	Using Spirituality as a Lens to Enhance a Global Education Pedagogy	13
Beggrow, Elizabeth	The ACORNS: A New Tool for Assessing Student Evolutionary Reasoning	11
Brian, Ali	The Effects of Part Versus Whole Learning on Student Outcomes in Golf	35
Chang, Seung Ho	Promoting Physical Activity for Children in Low-Income Families: A Review	25
Chiang, Mei-Fang	Retirement-Consumption Behavior: Evidence from HRS CAMS 2001-2009	12
Choi, Hye Yoon	Effect of Emotion and Trust in the Presence of Servicescape towards Positive Wellness Experience in Health Care Service	26
Ciolek, Mark	Exergaming for Fitness: Xbox Kinect Outperforms Nintendo Wii Fit	15
Cooper, Jennifer	How to be a Peacemaker: Decreasing Anger in Female Elementary Students	28
Czocher, Jennifer	Examining the Relationship between Contextual Mathematics Instruction and Performance of Engineering Students	2
Fluegge, Keith	A Study of UV-induced Skin Carcinogenesis: The Role of Retinoids	22
Foster, Chelsea	Comparison of Moderate-to-Vigorous Physical Activity between Physical Education Class and Extracurricular Organizations in High School Students	36
Frick, Bree	Effects of High-Stakes Testing on Teacher Goal Orientation: Differences in Tested Versus Non-Tested Subject Areas	29
Gray, DeLeon	STEM High School Students' Perceptions of Academic Tasks as Helping Them Fit In and Stand Out at School	5

Index of Abstracts

Student Presenter	Title	Page
Gutierrez Orozco, Fabiola	Uptake and Metabolism of α -Mangostin (α -MG) by Human Liver HepG2, Macrophage-like THP-1 and Colon HT-29 Cell Lines	30
Harshman, Jason	Developing Informed, Engaged Students for a Globally Connected World	22
Hartwell, Erica	The Decision to Disclose HIV Status to Family	27
Hensley, Lauren and Kathryn Kirkpatrick	The Many Faces of Academic Dishonesty in College: Initial Findings and Implications	20
Hicks, Ashley	Bullying in Ohio Schools: The Status of Policy and Prevention	20
Holbrook, Michael	The Active Vitamin A Metabolic Effect on Mucosal Immunity	33
Holderman, J. Blake	RUN FOR GOOD: Cardiovascular and Behavioral Effects of a 10-week Intervention	38
Hur, Eun Hye	Preschool Teachers Can Make A Difference: Teacher's Autonomy-Support Predicts Preschool Children's Behavioral Self-Regulation	19
Hur, Eun Hye	The Moderating Effects of Self-Efficacy on the Prospective Association between Parental Belief on Child Academic Ability and Child School Performance	37
Hyland, Jessica	Barefoot Running: Does it Feel Easier?	14
Jang, Jichul	A Cross-cultural Examination of Green Hotel Customers' Decision Making: Applying the Extended Theory of Planned Behavior	25
Ji, HoJun	Analysis of the Financial Vulnerability of Small Business Owner-Manager Households	13
Kamonpatana, Kom	Metabolism and Uptake of Berry and Grape Anthocyanins in Human Oral Cavity	31
Kessler, Sarah	Back to the Basics: a Barefoot Running Study	17
Kim, Amy	Teamwork in Athletic Teams from Social Network Perspective	34
Kim, Kyoung Tae	Analysis of Retirement Adequacy with Retirement Income Stages; Evidence from Survey of Consumer Finance 1995-2007	30
Kim, Soyeon	Perceived Value of Loyalty Programs and its Impact on Customer Loyalty	26
Kirkpatrick, Kathryn	Students' Report of Somatic Symptoms and Perceived School Belonging and Competence	21

Index of Abstracts

Student Presenter	Title	Page
Knopp, Christine	ONE GOAL - To Prevent Cancer Incidences in Women through the Promotion of Physically Active Lifestyles	16
Kotila, Letitia	What Do Fathers Do? A Look into the Daily Activities of Fathers Using Time Diary Data	6
Lai, Mei-Chun	Nature of Science (NOS) Knowledge and Scientific Argumentation Skills in Taiwanese College Biology Students	38
Latas, Melinda	Exploring the Overrepresentation of Male Students among Campus Judicial Offenders through a Qualitative Study of Students at The Ohio State University	14
Lee, Meghan	I Don't Know What Made Me Snap: Perpetrator's Use of Minimizations Following a Violent Event	1
Lee, Meghan	Parenting Perfectionism and Parental Adjustment	19
Lee, Ye Hoon	A Model of Emotional Labor in Coaching Sports	34
Lee, Yin Lam	New Constructs of Socially Constructed Learning Opportunities among ESL Freshmen	7
Leigh, Kristen	Motivation in Schools: Optimal Environments for Teaching and Learning	18
Letkiewicz, Jodi	Assessing Student Expected Time to Degree Using the 2010 Ohio Student Financial Wellness Survey	10
Lieber, Elan	BODY PERCEPTION: Parents Poorly Perceive Children's Fitness Characteristics	4
Manganiello, Lauren	Validation of a Questionnaire Assessing Behavior Change in Vegetable and Fruit Consumption for Low-Income 3rd and 4th Graders	27
Meyers, Joseph	Effect of Fat in Diet on the Immunoglobulins Present in Plasma	33
Mitchell, Robert	Kingdom of the Future: Adolescent Views and Perceptions in the Contemporary Kingdom of Saudi Arabia	10
Moratt, Shayna	How Far Did Wii Run?	18
Mountain, Travis	Dual Life Insurance and Retirement Adequacy	3
Nemeth, Emily	Think College: Increasing College Access for First Generation Students	16
Okonkwo, Charles	The Role of Unwanted First Sexual Experience in Predicting Situational Efficacy in Risky Sexual Choices among Adolescents	21
Park, Boram	Appearance Evaluation: A Content Analysis of Comments of a Fashion Blog, The Sartorialist	32

Index of Abstracts

Student Presenter	Title	Page
Park, Boram	Impact of Social Comparison Motivations on Purchase Intention of Apparel with a Moderating Effect of Self-Esteem in Social Media	35
Patterson, Mary Kate	Kids Can Scaffold Too: Children's Peer Collaboration with Technology	1
Patton, Rikki	Conceptualizing "The Life" through Capability	31
Rector, Meghan	Effect of Item Order and Features on the Assessment of Students' Evolutionary Explanations	12
Reilly-Sanders, Erin	A Global Look to The Future: Young Adult Dystopian Fiction as a Universal and Universalizing Genre	3
Rodriguez Vargas, Sylvia	Women of Color Heads of Independent Schools	7
Saunders, Charles	Native American Tribal Colleges and Universities: Issues and Problems Impacting Students in the Achievement of Educational Goals	5
Scott, Jonathan	Male Endurance Athlete Tetrad	24
Smith, Jamie Rae	Teachers' Epistemologies for Teaching Argumentative Writing: A Case Study of a Teacher's Social Approach to Argumentation	8
Son, Jiyeon	The Relation between Internet Use and Financial Planner Use	11
Stephens, Brian	Inflammation Alters Phase II Metabolism of α -Mangostin in Caco-2 Human Intestinal Cells	29
Su, Liping	Exploring the Role of Communicative Activities in Bilingual Chinese Children's Code Choice in Preschool	9
Taylor, Emma	Self-Monitoring Intervention in an Urban Classroom: Consultation and Implementation	4
Tiba, Eman	Self Concept and Religion: Muslim Adolescent Girls in Central Ohio Schools	37
Toivonen, Erica	Reduce the Risk: Promoting Healthy Lifestyles in Males with an Increased Risk of Cancer	15
VanDerHeide, Jennifer	A Study of Teachers' Epistemologies for Teaching Argumentative Writing: A Case Study of a Teacher's Ideational Approach to Argumentation	9
Verhoff, Gina	Xbox 360: KINECTed with Fitness not with Expenditure	17
Wan, Lei	Dose Dependent Carotenoid Bioavailability from a Novel Tomato-Soy Juice Developed for Cancer Prevention Trials	39

Index of Abstracts

Student Presenter	Title	Page
Wynhoff Olsen, Allison	Considering Epistemologies for Teaching Argumentative Writing: A Case Study of a Teacher's Textual Approach	6
Yasmeen, Rumana	Diet-induced Visceral Obesity in Female Mice Depends on Autocrine Retinoic Acid Production	32
Yoo, Hana	Couple Relationships, Coparenting, and Parental Involvement during Infancy	36
Zan, Hua	Financial Burden of Care-giving to Chronically Ill Children	8
Zhang, Lishu	Planned Retirement Age	28

Abstracts

Kids Can Scaffold Too: Children's Peer Collaboration with Technology **Mary Kate Patterson**

The importance of scaffolding has increasingly become a subject of investigation. Four second grade students were observed as they interacted with a laptop computer and self-produced media in a teacherless setting. The children's oral language related to technology usage was analyzed and coded using six categories previously identified by Prescott-Griffin in a study of children's scaffolding functions. These functions included questioning, responding, affirming, clarifying, confirming, and conjecturing. Individual children entered into a complex interchange of scaffolding roles. Three of the four participants applied scaffolding moves during the observation. Although the children were still learning about the logistics of word processing, they were able to scaffold each other's learning. The presence of every category indicates the value of peer collaboration in regards to working with technology and points to the potential of young children's capability to use the computer as a Vygotskian tool rather than simply a sign. As they continue to use the computer to communicate a message, they will be able to see and use the computer as a tool. They will take control of how the message appears and sounds. Important questions still remain in order to maximize the potential of this learning arrangement. How should the pairs be formed? Should the children have similar interests or abilities? Should one child be more competent than the other? Is there a survey that might help show levels of competency with technology? The excitement of finding a valuable new resource for technology learning with young children is like a miner finding a diamond in the rough. The questions will continue to polish the potential of this diamond.

Category: Individuals within Social Context
Advisor: Adrian Rodgers

I Don't Know What Made Me Snap: Perpetrator's Use of Minimizations Following a Violent Event **Meghan A. Lee, Amy E. Bonomi, Christin Carotta, Jennifer M. Ludwin, Julianna M. Nemeth**

Minimization is a strategy used by domestic violence perpetrators to alter the victim's perception of the violent event and resist responsibility for their actions. Our study used a unique dataset involving telephone conversations between detained domestic violence perpetrators and their victims to fully document the range of minimizations that perpetrators used to repair and maintain their relationships with their victims. The most common strategies included: reminding the victim she was to blame for the violence ('You got a verbal abuse problem that makes me lose my temper'), and perpetrators' attribution of the violence to an out-of-mind and/or out-of-body experience ('I went off the chain, I don't know what possessed me'). In addition to Pence and Paymar's (1993) four types of minimizations, we detected specific subthemes present including: substance use, positive intentions, and expressing shared responsibility that emerged in interactions with the victim. Our study significantly expands upon prior studies by documenting a full range of minimization tactics used, ultimately, to control victims.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Amy Bonomi

MAN UP: A Descriptive Analysis on Mentoring Programs Serving African American Males
Mauriell Amechi

While college retention has declined for students in general, the alarming picture painted by national data reveals the severe attrition of African American men from higher education arenas. The National Center for Education Statistics revealed in 2005 that only 32.4% of African American men who start college graduate within six years. Since then, there has been no evidence of a reverse in this trend and only a few researchers have offered solutions to this problem. The relatively low attendance of African American men on college campuses, coupled with their high dropout rate, creates a major societal problem that also impacts post-secondary institutions. In fact, the spiraling decline of this population manifests in empirical evidence - high rates of unemployment, poverty, imprisonment, and absentee father among others. Mentoring in education - viewed as a support mechanism - is an area of research that has received much attention. Despite the prevalence of minority male mentoring programs, much remains to be learned from their effectiveness and outcomes on mentees, which has been rarely explored in empirical literature. This project includes a descriptive analysis on research, literature, and programs relevant to the mentorship of African American male students in the education pipeline. With a primary focus on secondary and post secondary students, this study will highlight mentoring strategies and methods being implemented to redress the plight in higher education. To further elucidate the experiences of minority men as mentors and mentees, as well as their successes and failures in education, an interview pilot study was conducted. Five African American males who identified themselves as either a mentor, mentee, or both were included. It is my hope that this project will better inform educational policy makers on the local, state, and national levels within higher education and government.

Category: Educational Research with Implications
Advisor: Antoinette Miranda

**Examining the Relationship between Contextual Mathematics Instruction
and Performance of Engineering Students**
Jennifer Czoher

Science and engineering students must succeed in prerequisite mathematics classes, but both faculty and students complain that the students' knowledge of mathematics is insufficient for their major coursework. Many of these service courses are taught abstractly, deductively, and disjointly from physical context. To address client departments' needs in a service course on differential equations, a new curriculum was developed in which mathematics is taught contextually, with particular reference to physical situations that are common to the sciences and to engineering. A quasi-experimental curriculum comparison study was conducted. The independent variable was which curriculum was used. Data for the dependent variable were generated from students' final exams. A fixed-effects ANCOVA was selected for analysis, with prior mathematics achievement as the covariate. Findings suggest that there is a positive relationship between contextual instruction in mathematics when accounting for prior mathematics achievement and student knowledge of mathematics. The research reported here provides empirical support for curricular materials that address a critical shortcoming in the mathematical education of engineers and scientists.

Category: Educational Research with Implications
Advisor: Azita Manouchehri

**A Global Look to The Future:
Young Adult Dystopian Fiction as a Universal and Universalizing Genre
Erin Reilly-Sanders**

“It is almost midnight. We must send out the message. People all around the world are waiting!”
(Robson, 1998, p. 22)

Young adults all around the world are waiting for their future to arrive - not only for their personal maturity and autonomy but for a better future in the books they read. These futures are explored in the global genre of dystopian fiction that reveals itself to be both universal and universalizing. The flourishing genre of young adult dystopian fiction includes not only the many books set in locations outside the United States and books written by international authors in unidentified settings, meeting Lehman, Scharer, and Freeman’s definition of ‘global literature,’ (2010, p. 16) but hundreds of other titles that present global conflicts, depict a global setting, and explore questions of humanity. These strains of globalism stem from the international phenomenon of young adult dystopian fiction as well as the worldwide applicability of this genre of literature.

The presence of the global within this genre and the force of globalization from this genre have the potential to influence teen readers in important ways. While few studies have been done on this relatively recent genre that provide evidence of the effects of these books, the area is rich for theoretical exploration. Some of the possible implications of finding elements of the global in young adult dystopian literature range from addressing individual developmental stages to identifying social problems to instigating action within a global community to reexamining modern and post modern paradigms within our culture. Attitudes toward teen development are also reflected in this genre, even as the dystopia becomes a metaphor for the troubles of adolescence.

Category: Educational Research with Implications
Advisor: Barbara Lehman

**Dual Life Insurance and Retirement Adequacy
Travis Mountain**

This exploratory research, using the 2004 Survey of Consumer Finances, focuses on the creation of a dual retirement and life insurance adequacy standard. Only 38.5% of all coupled households met the dual adequacy standard while 32.1% of households met neither the retirement nor life insurance adequacy standard. The retirement adequacy portion of this measurement is met if a household’s projected financial resources exceed a household’s expected needs. Life insurance adequacy is defined as adequate if the household is able to maintain its standard of living after the death of one of the two adult wage earners. After controlling for the effects of other variables using multinomial logistic regression, households 54 years old and older and households in the highest income quartile are more likely to meet the dual adequacy standard. Bivariate analysis indicates income, net worth, education, and child dependents are positively correlated to meeting the dual adequacy standard. White households are more likely to meet the dual adequacy standard when not controlling for other variables.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Caezilia Loibl

BODY PERCEPTION: Parents Poorly Perceive Children's Fitness Characteristics
Elan J. Lieber and Carmen B. Swain

INTRODUCTION: At least 155 million school-age children worldwide are overweight or obese. Body Mass Index (BMI) as a measurement of parental recognition of child's overweight status ranges from 6-73%. When examining overweight children, less than 50% of parents identify their child as such. PURPOSE: The purpose of this study was to examine parental ability to appropriately identify their child's BMI status and also measures of physical fitness (body composition, muscular strength, flexibility and aerobic fitness). METHODS: Subjects consisted of 133 males (10.8±2.1 years), 110 females (11.4±2.4 years) and their maternal parent. Males and females scores were compared to maternal perception of score: BMI, body composition, and fitness characteristics (muscular strength, aerobic fitness and flexibility) were categorized according to normative rankings. The maternal perception questionnaire was administered while subject's fitness characteristics were evaluated. Data associations were examined using descriptive statistics and bivariate correlation. RESULTS: BMI, body fat and fitness characteristics ranged from poor to excellent. Maternal parents ability to correctly identify fitness characteristics by categorical selection were: BMI (72.8%), body composition (49.4%), flexibility (26.3%), muscular strength (32.5%) and aerobic fitness (39.5%). The relationship between subjects scores and parental perception of scores was considered weak to moderate, as determined by Pearson correlation (BMI: $r=.618$, body composition: $r=.693$, muscular strength: $r=.268$, aerobic fitness: $r=.406$ and flexibility $r=.435$). CONCLUSION: In children ranging from under-weight to obese, parent's ability to predict characteristics relative to weight and body composition is substantially better than their ability to predict fitness characteristics. Parents have a strong influence on children's behavior and physical activity levels. Primary prevention is key in fighting the obesity epidemic, thus adult's awareness of their child's fitness status is imperative. As such, professional or school-based screening could be suggested as a necessary tool to identify children's fitness characteristics for parental informative purposes.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Carmen Swain

Self-Monitoring Intervention in an Urban Classroom: Consultation and Implementation
Emma Taylor

The results of a classroom intervention are presented in which a student self-monitored instances of on and off-task behaviors. I will outline the presenting problem, classroom demographics, the teacher consultation process, intervention plan and results. Results indicate that the intervention was effective, as the mean number of off-task behaviors decreased. Session attendees will learn about implementing a behavioral intervention in an urban elementary classroom setting. Obstacles regarding the consultation process will also be addressed.

Category: Teaching, Learning and Instruction across the Lifespan
Advisor: Antoinette Miranda

**Native American Tribal Colleges and Universities:
Issues and Problems Impacting Students in the Achievement of Educational Goals
Charles Saunders**

This study explores the significant issues facing Tribal College and University students. Research questions formed the basis of the study: 1) What are tribal college students' perceptions of the issues facing TCUs? 2) Why do students choose to attend TCUs? 3) How do tribal college students view the importance of tribal college issues to students' ability to obtain a degree upon completion of their program of study? 4) How do tribal college students view the importance of tribal college issues to students' ability to obtain a job in their chosen career upon completion of study? 5) How do tribal college students view the importance of tribal college issues to students' ability to transfer to another university to complete their program? An online survey of TCU students measured 47 content variables. Variables were grouped into three categories: Planning for College, Choosing a College, and My Goals for Attending College. The reliability of the variables, as expressed by Cronbach's alpha, was .915. Exploratory factor analysis was used to analyze the data (N=398) and the relationships among the variables. Ten factors were extracted from 40 of the 47 variables, with 66.6% of total variance explained. The factors were: Self-Actualization, Qualities of TCU, Prepare for College, Culture/Beliefs/Values, Convenience of TCU, Livelihood While Student, Career/Work Expectations, Short-term Goals, General Education, and Paying for College. The results indicated the level of importance or agreement with various issues among TCU students. Students indicated that 40 of the 47 issues presented to them were Important or Very Important on a four-point Likert-type scale. The extracted factor Self-Actualization, which consisted of seven variables, was found to explain the most variance of all the extracted factors (38.5% of common variance, 15.8% of total variance).

Category: Educational Research with Implications
Advisor: Christopher Zirkle

**STEM High School Students' Perceptions of Academic Tasks as
Helping Them Fit In and Stand Out at School
DeLeon Gray**

The present study examines how students' needs to express commonalities and differences between themselves and their peers energize and direct academic behavior. Under the plausibility that any academic task may be simultaneously perceived as helping a student 'fit in' and 'stand out', variation in the importance students place on specific academic tasks was hypothesized to be explained by perceptions of whether engaging in each task helps satisfy students' assimilation and differentiation needs. High-school math teachers collaborated on generating a range of tasks students might do for class (e.g., taking notes, in-class assignments, tutor, others). Even when taking teachers' instructional emphases on mastery and performance into account, students' perceptions of task importance was still explained by perceptions of these tasks as social mediums for achieving optimal distinctiveness -suggesting that students may dedicate more motivational resources to academic tasks that helps them relate to their peers in an ideal way.

Category: Individuals within Social Context
Advisor: Eric M. Anderman

What Do Fathers Do? A Look into the Daily Activities of Fathers Using Time Diary Data **Letitia Kotila**

This study examined child-related time use in a sample of 182 dual-earner, first-time parents in a large, Midwestern city. Parental time use was explored in four involvement domains: positive engagement, responsibility, accessibility, and a sub-domain of routine childcare. At child age 3 and 9 months, time diaries from the participant's workday and non-workday were compared. Results indicated that while fathers were very involved with their children especially in the domain of positive engagement, the greatest discrepancies in parental time use were seen in the domain of routine childcare. This pattern of results remained consistent when breastfeeding and breast pumping were excluded from the routine childcare domain. Explanations and suggestions for future research utilizing time diaries follow.

Category: Individuals within Social Context

Advisor: Claire M. Kamp Dush

Considering Epistemologies for Teaching Argumentative Writing: A Case Study of a Teacher's Textual Approach **Allison Wynhoff Olsen**

The argumentative writing team, for which I am a field researcher, is studying how high school English language arts (ELA) teachers take up argumentation with students of diverse social and cultural backgrounds. Studies have explored the teaching of argumentation, yet our analysis foregrounds how teachers' epistemologies shape the teaching and learning of argumentative writing. Given the diversity of students and demands of school contexts, there is not a 'best practice' for teaching argumentation; rather, teachers rely on a multitude of pedagogical moves tied to varying epistemologies and contexts. Grounding our study in language use, we appropriated Halliday's three meta-functions of language: 1) ideational, 2) interpersonal, and 3) textual to describe the range of epistemologies. My research question assumes a teacher's writing instruction is grounded in beliefs about teaching and learning and context: How do these factors shape the teaching of argumentative writing? For a fifteen-day unit on argumentation and eight additional sessions throughout the year, I observed a 9th grade ELA class situated within a humanities course at an urban high school. A female teacher with thirteen years experience taught forty-three students. Though I collected a range of data, my focus is on teacher interviews: underlying beliefs and pedagogical moves, explanations of curriculum coherence, and a consideration of students' understandings. Counter to the notion that teachers only think in narrative forms (Clandinin & Connelly, 1996), early analysis reveals teachers are fluent in discussing their teaching using reasoning -claims, evidence, warrants (Fenstermacher & Richardson, 1993). It also suggests the ninth-grade teacher holds a textual epistemology that informed her teaching. Whether directly explaining argumentative structures, providing students with optional templates, sample essays, or a framework for peer review, the teacher emphasized text structure grounded in Toulmin's (1953) notion of argument.

Category: Teaching, Learning and Instruction across the Lifespan

Advisor: David Bloome

New Constructs of Socially Constructed Learning Opportunities among ESL Freshmen

Yin Lam Lee

‘Out-of-class learning opportunities’ is one of the overlooked areas among college-level ESL freshmen in the USA. (‘Learning opportunities’ is operationalized as social interactional events when the learners co-construct new knowledge together.) The research base mainly consists of studies conducted with native English speakers or immigrants living in poor socioeconomic conditions. Relevant studies targeting ESL students cover topics such as out-of-class reading and writing and the ‘negative identities’ among ESL students. Little is known about (i) what kinds of learning opportunities are provided, (ii) under what circumstances are such opportunities proposed, negotiated, contested, and taken up, and (iii) the boundaries and connections between out-of-class and in-class learning. This paper refers to an ethnographic study conducted with five ESL freshmen and twenty-two native speakers for one year at a college town in the Midwest. The theoretical framework is built upon Gumperz’s (1982) interactional sociolinguistics. The data collection methods include fieldnotes, interviews, diaries written by the participants, artifacts collected from the participants, and participant observations, which include audio and video recordings of social interactions apart from class time. This session explores the various kinds of learning opportunities (language/culture/identity related), the constructs of such opportunities (reciprocity, established trust, engagement in social relationships, shared identities, risk-taking/conformity to local rules), and how out-of-class learning is connected to the knowledge learned in-class. The presenter discusses the findings by showing video clips when various kinds of learning opportunities are socially constructed among the participants. The audience leaves the session equipped with new insights about how ESL students take up learning opportunities, which can be used to inform both research and practice.

Category: Educational Research with Implications

Advisors: David Bloome and Alan Hirvela

Women of Color Heads of Independent Schools

Sylvia Rodriguez Vargas and Helen Marks

The purpose of my study is to learn about the lived experience of women of color heads of independent schools and to explore their particular approaches to educational leadership. This is done through an examination of the intersections of race, class, and gender, and how these aspects of their identity have shaped their journeys in independent school headship. A phenomenological grounded theory methodology will guide this qualitative research study. Women and people of color remain underrepresented in school administration, particularly in the private independent schools that are members of the National Association of Independent Schools (NAIS, 2010). There are currently 56 heads of school of minority racial and ethnic backgrounds (NAIS, 2010). Approximately 4% of all heads of school are people of color. There are about 2.64% men of color and 1.35% women of color heads of the total number of independent school heads nationally. The literature regarding independent schools is scarce, and much of what has been written emphasizes the preparation of an exclusive socioeconomic and elite leading class (Baltzell, 1958; Cookson & Persell, 1985; Mills, 1956; Powell, 1996). With the exception of the work of Kane (1992), Peshkin (2001), and Kane and Orsini (2003) regarding independent schools, research specific to the leadership of women of color is lacking. The primary goals of my study are: 1) to contribute to the scholarship on women of color educational leaders, particularly heads of independent schools, and 2) to identify an emerging leadership framework specific to the experience of women of color heads of independent schools.

Category: Educational Research with Implications

Advisor: Helen Marks

**Teachers' Epistemologies for Teaching Argumentative Writing:
A Case Study of a Teacher's Social Approach to Argumentation
Jamie Rae Smith**

The ability to write a well-reasoned and logical argument is considered an important skill for the academic success of high school and college students (Graff, 2003; Kuhn, 2005). However, the ways in which teachers take up the notion of argumentative writing can vary from classroom to classroom, creating distinctive approaches to and experiences of argument and argumentative writing. Borrowing from Halliday's three meta-functions of language: textual, ideational, social, I will demonstrate how one teacher's assumptions about the nature and goals of argumentative writing shaped the instructional unit and classroom activities. As a field researcher on the Argumentative Writing Project, a large, three-year exploratory study of the teaching of argumentative writing, I collected qualitative data including video-recorded observations, teacher and student interviews, and field notes across an instructional unit. Primary data for my findings consist of multiple, recorded interviews with the teacher in which she discussed her reasoning behind the pedagogy of the unit. The participating teacher has been teaching for 23 years and has a reputation for excellence among her peers. The focal language arts class consisted of eighteen 11th and 12th grade students and was situated within an urban high school. Analyses of primary data show that the teacher's focus on the social nature of argumentation - engaging students in conversations and in debates about issues and quandaries the students may be facing in and out of school - demonstrates her epistemological orientation towards the social aspect of argumentation. Also revealed through the analysis is the early finding that teachers ground their epistemology and pedagogy in their training, experiences, and readings, and they will use reasoning and argumentation to talk about their instructional choices. This is counter to the assertion that teachers think about their teaching in narrative (Connelly and Clandinin, 1996).

Category: Teaching, Learning and Instruction across the Lifespan
Advisor: George E. Newell

**Financial Burden of Care-giving to Chronically Ill Children
Hua Zan**

This research aims to investigate the financial burden, specifically the health care costs of care-giving to children with chronic conditions. The 2004-2008 Medical Expenditure Panel Survey and 2003-2007 National Health Interview Survey data are used; and a sample of 6,667 families is pooled together. Financial burden is measured using three variables: the total health care cost (HCC), the out-of-pocket HCC, and HCC paid by others. HCC paid by others is defined as the difference between total HCC and the out-of-pocket costs. Over fifteen percent of the families reported zero cost on children's health care. Therefore, a Tobit regression model is used to account for censored dependent variables. The independent variables include chronic conditions, activity limitation, and other demographic variables of children such as age, gender, and race/ethnicity, and family characteristics such as family size and income. Controlling for the influences of other socio-demographic characteristics on financial burden, the results show that chronic conditions including ADHD/ADD and asthma are associated with higher out-of-pocket health care costs to families relative to that with healthy children, whereas conditions including developmental delay/autism and heart disease are associated with higher health care costs to the society relative to that with healthy children.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisors: Kathryn Stafford and Robert Scharff

**A Study of Teachers' Epistemologies for Teaching Argumentative Writing:
A Case Study of a Teacher's Ideational Approach to Argumentation
Jennifer VanDerHeide**

Written argumentation is an important skill for high school students as it is privileged in high-stakes testing and college classrooms (Graff, 2003). A team of researchers and myself are studying how forty-eight high school English teachers teach argumentative writing. Because these teachers teach in varied contexts and with a variety of methods, we ask, what are the teachers' epistemologies of the teaching and learning of argumentative writing, and how are these epistemologies enacted in these classrooms? Our work is grounded in sociocultural theory and draws on previous work on teachers' classroom epistemologies (Johnston, Woodside-Jiron, & Day, 2001) and teachers' practical reasoning (Fenstermacher & Richardson, 1993), and we borrow from Halliday's (1975) three categories of the meta-functions of language to describe teachers' primary orientations toward the teaching of argumentative writing: the ideational, the social, and the textual. I observed a three-week argumentative writing unit in an Advanced Placement Literature course at a high-achieving, suburban high school; the teacher, who has taught in the school for fifteen years, has a local reputation for excellent writing instruction. My data include video and audio recordings of lessons during the instructional unit, field notes of my observations, student writing samples, and interviews with four students. My primary data for this presentation are two interviews with the teacher, one forty-minute interview at the end of the instructional unit and a second three-hour interview in the summer following the unit. Discourse analysis of the teacher's reasoning process reveal that her primary orientation is ideational as she uses argument as a means of developing original ideas. This epistemology is influenced by values of the school and the community in which she teaches, the kind of thinking privileged by the Advanced Placement test, and the already well-developed knowledge and skills of the students she teaches.

Category: Teaching, Learning and Instruction across the Lifespan

Advisor: George E. Newell

**Exploring the Role of Communicative Activities in Bilingual Chinese Children's Code Choice in Preschool
Liping Su**

Research has shown bilingual children's code choice at school is often complicated by issues like language ideology (Fader, 2001; Pastor, 2008; Potowski, 2005) and learner identity (McKay & Wong, 1996; Pavlenko & Blackledge, 2004). So far, little is known about how classroom communicative activities influence students' code choice. This study will present findings from a longitudinal ethnographic research of Chinese children's code choice at preschool. Data was collected via participation observation, audio and video taping as well as interviews with parents and teachers. Code choice was studied based on the three levels of communicative activities (Hymes, 1972; Saville-Troike, 2003), including communicative act, event, and situation. In this study, communicative act refers to a single interactional function, like making a request; communicative event refers to a particular communicative activity in class like group story telling; while the communicative situation refers to the consistent structuring of activities in the class. The major research questions are: 1) How does their code choice relate to specific communicative act? 2) How does their code choice differ with various communicative events? 3) How does the structuring of class activities influence children's code choice? 4) How do classroom norms and values play a role in the children's code choice? The presentation will conclude with a discussion of the study's findings with respect to pedagogical issues of emergent bilinguals.

Category: Teaching, Learning and Instruction across the Lifespan

Advisor: Leslie Moore

Assessing Student Expected Time to Degree Using the 2010 Ohio Student Financial Wellness Survey
Jodi Letkiewicz, HanNa Lim, and Stuart Heckman

Research indicates that even though college enrollments have grown in the United States, completion rates are not keeping pace, especially among disadvantaged students (Bowen et al., 2009). This study utilizes a persistence model to assess expected time to degree and overall student financial wellness. Data for this study come from the 2010 Student Financial Wellness Survey, a study commissioned by the State of Ohio Commission on Personal Finance Education. The goal of the study was to provide a picture of the financial state of students across Ohio. Nineteen schools across Ohio participated with a resulting sample size of 5,729 students. Of the students completing the survey, 60% believe the institution should provide financial education, 70% feel stressed about personal finances in general, 45% worry about their ability to pay monthly expenses, and 27% are willing to take on \$40,000 or more to earn a bachelors degree. In terms of behaviors and practices, 80% pay bills on time every month, 60% follow a weekly or monthly budget, 20% spend more than they have by using credit cards, and 21% work more than 30 hours per week during the academic year. We find that students who expect completion of their undergraduate degree to take more than four years are more likely to be upperclassmen (juniors and seniors), work full or part time year round, and less likely to have a GPA of at least 3.0. Students who expect to complete the undergraduate degree in four years or less are more likely to have sound financial management practices and scholarship support. Students classified as ‘spenders’ and those stressed about debt are more likely to expect to complete their undergraduate degree in more than four years.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Jonathan Fox

**Kingdom of the Future: Adolescent Views and Perceptions in the
Contemporary Kingdom of Saudi Arabia**
Robert Mitchell

Recent events within the contemporary Middle East have brought new analysis and perspective to the role of young people throughout this critical region of the world. At the center of the changes affecting Southwest Asia is situated the Kingdom of Saudi Arabia and, more directly, the large population of young people residing in the large nation. As this population ages, pressures have been put upon the Kingdom’s leadership to provide stable employment, additional educational opportunities and enhanced social development - factors which impact both the Kingdom’s educational system as well as the nation’s collective structure. This proposed research looks to examine the process of the formation of Saudi Arabian youth perspectives with a specified focus on determining the attitudes and global opinions of Saudi Arabian youth. Included in this study will be the examination of how these opinions and beliefs are generated and solidified, and how technologically enhanced communication media impacts these views. Anticipated research call for a quantitative survey research methodology as an initial point of research, followed by additional mixed methods research to provide adequate depth of inquiry. Collaboration with scholars in both the Arabian Peninsula and the United States will provide the necessary logistical and academic support for this project slated to begin in early 2012.

Category: Individuals within Social Context

Advisor: Dean Cristol

The Relation Between Internet Use and Financial Planner Use **Jiyeon Son**

In an analysis of a combination of the 1998 to 2007 Survey of Consumer Finances datasets, the use of the Internet for savings and investment decisions grew much more rapidly than the use of financial planners for those decisions. A multivariate analysis of the use of financial planners showed that all other things being equal, use of the internet for savings and investment decisions had a negative effect on the likelihood of using a financial planner for savings and investment decisions. It is possible that increases in the client base for financial planners is limited by the growth of savings and investment resources on the Internet, although financial planners could adopt measures proposed for other professional services to deal with the competition in information resources.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Sherman D. Hanna

The ACORNS: A New Tool for Assessing Student Evolutionary Reasoning **Elizabeth P. Beggrow, Ross H. Nehm, John E. Opfer, and Minsu Ha**

In the life sciences, the concepts of evolution and natural selection remain problematic for students at all levels of education. Though many studies have elicited a variety of factors that contribute to evolutionary misunderstandings, remarkably few assessment tools are available for validly diagnosing students' evolutionary reasoning. This is problematic, particularly given the central role that quality assessments play in helping teachers foster meaningful science learning. Recent research on evolutionary thinking and problem solving has revealed that the evolutionary scenarios in which students reason significantly and meaningfully affect the deployment of both knowledge and misconceptions. However, existing assessments fail to include different contexts in which evolutionary change occurs nor are they designed for modification and thus their utility as diagnostic tools may degrade with time. These limitations have been addressed with a new diagnostic tool known as the ACORNS (Assessing COntextual Reasoning about Natural Selection). The ACORNS is an open response diagnostic test that standardizes taxon and trait familiarity and allows questions to be modified. This research provides evidence for the validity and reliability of the ACORNS and outlines a methodology for modifying its items. The investigations revealed that ACORNS scores produce valid ($p < 0.01$) and reliable (Cronbach's $\alpha = 0.75$) inferences about students' evolutionary reasoning. Students' evolutionary reasoning is constrained by the scenarios in which evolution occurs, and yet no diagnostic instruments have been developed that target context-specific reasoning abilities. This research introduced a new diagnostic instrument (the ACORNS) that addresses the limitations of previous assessments, including the ability to modify the questions as well as incorporating a variety of evolutionary contexts. This instrument has potential as a valuable tool for teachers at all levels of education for assessing and attending to their students' reasoning across a more extensive range of evolutionary contexts.

Category: Teaching, Learning and Instruction across the Lifespan

Advisor: Ross H. Nehm

Retirement-Consumption Behavior: Evidence from HRS CAMS 2001-2009

Mei-Fang Chiang

Life cycle hypothesis predicts that rational agents (households) should smooth their marginal utility of consumption over the life cycle including during retirement, provided that retirement is a foreseeable event. The level of consumption may decline at retirement in correspondence to demographic changes associated with retirement. Therefore, the magnitude of the decline in consumption level should be insignificant, after controlling for these demographic changes. However, most empirical findings across countries reveal a significant consumption expenditure drop at retirement. Can this drop in consumption expenditure after retirement be attributed to household's inadequate saving? Before asserting that households are not saving enough for retirement, it is necessary to pin down the logistics behind this 'retirement consumption puzzle' such as whether this drop can fully be accounted for life style change, whether this drop is associated with involuntary early retirement due to serious sickness or unemployment, and whether there are other rational explanations for this phenomenon. This study will revisit this topic and provide the latest evidence using data from the Consumption and Activities Mail Survey (CAMS) 2001-2009, which is a supplementary data linked with Health and Retirement Study (HRS).

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Catherine Montalto

Effect of Item Order and Features on the Assessment of Students' Evolutionary Explanations

Meghan A. Rector, Ross H. Nehm, Dennis Pearl, and Minsu Ha

It is widely assumed that measurement of student performance will be higher when students respond to items sequenced from easy-to-hard (E-H) relative to other item orders. However, research supporting this assumption has been largely based in multiple-choice assessment. Other forms of assessment, such as open-response, have not been examined with regard to effects of item sequencing. We present two studies that examined the effects of item sequencing (order) and item features on the measurement of student performance on open-response items about evolution. Student explanations of evolutionary change were collected from introductory non-majors and majors evolution courses through an online Assessment Cascade System. Students were presented with a sequence of open-response items from the ACORNs (Nehm et al, in press). Responses were scored for seven key concepts (KC) and six naïve ideas (NI) (Nehm & Schonfeld, 2008). The first study examined the extent to which item order was associated with measurement of student performance. Analysis of our sample of student responses revealed a significant (*Wilcoxon Signed Rank Test, $p < 0.001$) decline in KC use from the first to fourth item in the sequence. Correspondingly, students' verbosity (length of response) declined across the item sequence. Use of NI was low in our sample and not significantly related to item sequencing or verbosity. The second study examined the interaction between item order and item difficulty (based on features). Students were presented with items of either increasing difficulty (E-H) or decreasing difficulty (H-E), in accordance with prior research. Student performance on E-H sequences significantly decreased with increasing item difficulty (*, $p < 0.001$), however performance on these sequences was consistently higher than performance on H-E sequences. Use of NIs was not correlated with order. Supporting the first study, declines in student performance corresponded with decreasing verbosity, suggesting that accurate student performance (KCs) is correlated with verbosity.

Category: Teaching, Learning and Instruction across the Lifespan

Advisor: Ross Nehm

Analysis of the Financial Vulnerability of Small Business Owner-Manager Households

HoJun Ji

According to the 2011 Small Business Economy Report, there were of about 27.3 million small businesses with fewer than 500 employees in 2008, accounting for about 49.6% of U.S. private-sector jobs. Almost all (99.7%) of employer firms having payrolls were small businesses, paying 44% of total U.S. private payroll and creating 65% of net new jobs over the past two decades. During the recent economic downturn, the report shows that small businesses accounted for almost 60% of net job losses. Due to their crucial roles for economic growth, small businesses have been actively studied by economists, financial professionals, and policy makers. Since small businesses are generally privately owned and operated, the financial health of business is closely related to the financial, physical, and even mental status of their owners or managers. Analyzing the factors affecting the financial vulnerability of households who own and manage small businesses may contribute to research in small business and related policies, suggesting more effective ways to support them. Therefore this study investigates financial vulnerability of households with small business owner managers, using Survey of Consumer Finances (SCF) datasets from 1992 to 2007. Based on regression analyses of the ratio of business assets to total household assets and the ratio of business income to total household income, this study finds that both ratios increase with age up to about age 60, then decrease. Black households are less vulnerable (have lower income ratios) than White households. Single female households are less vulnerable than married couple in terms of the business to household asset ratio whereas both single male and female households are more vulnerable than married couples in terms of the business to household income ratio. Those willing to take substantial investment risks have higher asset and income ratios than those unwilling to take any risks.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Sherman D. Hanna

Using Spirituality as a Lens to Enhance a Global Education Pedagogy

Tami Augustine and Brooke Harris Garad

The demand for people to be culturally aware and competent continues to increase as we become more connected through the global economy. Quality global education can enhance students' understanding, skills, and connection to the global society - and give them voice in that society. This paper examines how the use of spirituality as a lens through which to teach about the world can enhance global education pedagogy. Case (1993) writes: "Simply teaching more about the world is not the solution - much of what we notice and the inferences we draw depend upon the lenses through which we filter the raw data" (p. 319). Spirituality and global education intersect with the perceptual dimension of global education: open-mindedness; resistance to stereotypes; and empathy (Case, 1993), while substantive aspects: examining global issues and problems; cross-cultural understanding; perspective consciousness; and human beliefs and values (Merryfield, 2005) provide an important structure for teaching about the world. As teachers move away from a purely academic approach to global education and encourage students to remain open-minded and empathetic, we enter into the internal realm of a student's life. Within this inner-dimension lies the spirit of the student. While educators in the United States often shy away from spirituality in the classroom, this paper proposes that spirituality can serve to enhance the perceptual dimension of global education and aid the global educator in teaching about the world. When inner spiritual growth becomes an integral aspect of education, individuals can become more caring, loving, compassionate, and respectful (Brantmeier, 2010).

Category: Educational Research with Implications

Advisor: Merry Merryfield

**Exploring the Overrepresentation of Male Students Among Campus Judicial Offenders
through a Qualitative Study of Students at The Ohio State University
Melinda Latas**

Research in higher education consistently presents the reality that men in college and university environments violate institutional rules and reap disciplinary consequences at a rate that exceeds their female counterparts. Equally significant is the reality that male students tend to engage in more dangerous or aggressive instances of misconduct on college campuses than their female counterparts. Scholars in the fields of Reproductive Biology, Anthropology, Psychology, Sociology and Higher Education have theorized explanations for the difference in behavior between genders in a number of different ways. From the practitioner perspective, Judicial Affairs or Student Conduct is a vital function of every university, one that interacts with students at a moment of crisis. The decisive nature of these situations makes the judicial process arguably one of the most important and delicate functions of student affairs practice. As such, research that can shed light on the socializing experiences of judicial offenders or the factors that may contribute to deviant behavior has great potential to help students. Current literature proposes a number of explanations based on intersections of social, cultural, and interpersonal realities that may incline males toward higher rates of misconduct in University settings than their female counterparts. I hope in my research to approach the issue from a new angle by soliciting student opinions about some of these explanations from male students who have already engaged in deviant behavior while at Ohio State University. I am seeking to discover, by conducting conversations directly with judicial offenders, whether their experiences and thought processes align with the predictions of current theories. My research will hopefully help to illuminate best practices to accomplish educational outcomes, both to promote behavior that is consistent with codes of student conduct and to improve sanctioning practices for men who are found in violation of such codes.

Category: Individuals within Social Context

Advisor: Terrell Strayhorn

**Barefoot Running: Does it Feel Easier?
Jessica Hyland and Carmen B. Swain**

The phenomenon known as ‘barefoot running’ has made a recent comeback. In response to the barefoot running craze, a ‘shoe’ has been developed to allow runners to train ‘barefoot’ but provide some basic protection. Many runners have bought these shoes and claim improved performance and less injury. Previous research suggests barefoot running may alleviate injuries by altering biomechanics. The performance and psychological component of running in the minimalist shoe (BAREFOOT) compared to traditional shoes (SHOD) is less understood. **PURPOSE:** To examine any differences that may exist in performance and subjective ratings during a 2-mile time trial in the BAREFOOT and SHOD conditions. **METHODS:** Fifteen male, trained BAREFOOT participants will engage in a 2-mile time trial (RACE) to the best of their ability. They will randomly perform the RACE on the treadmill during two separate occasions, BAREFOOT and SHOD. Subjects will be blinded to running intensity and time to completion. Subjects will be asked every half-mile to respond to the Feeling Scale (FS) and Rating of Perceived Exertion Scale (RPE). A qualitative questionnaire will be administered to gather information related to motivation and subjective responses to running in the BAREFOOT condition. **RESULTS:** Significant differences in run time (BAREFOOT vs. SHOD) will be examined. Subjective differences in relation to FS and RPE will also be explored, between the two conditions. Qualitative data will be reported. **CONCLUSIONS:** A better understanding of the performance and subjective differences of running in the BAREFOOT and SHOD conditions will be revealed.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Carmen B. Swain

Reduce the Risk - Promoting Healthy Lifestyles in Males with an Increased Risk of Cancer **Erica Toivonen and Carmen B. Swain**

Research has shown that an increase in physical activity has the power to decrease one's risk in developing specific types of cancer. Reduce the Risk aims to prevent cancer in at-risk males by promoting physical activity through education and personalized feedback. Influencing individuals by decreasing a preventable risk factor, such as physical inactivity, is a powerful methodology for eliminating cancer incidences. **PURPOSE:** To determine if personalized feedback through fitness testing and counseling improves attitude toward physical activity and intent to be physically active in males predisposed to cancer. **METHODS:** Subjects consist of 100 males ages 18 to 65 with a genetic predisposition to colon, prostate, or kidney cancer. Subjects are administered the Theory of Planned Behavior pre-test questionnaire to determine physical activity attitude and intent. Subjects in the Body Awareness group (n=50) will receive a body composition analysis as determined by the Bod Pod and a comprehensive physical fitness test. Personalized feedback based on their test results will be provided, including and exercise prescription and the importance of physical activity to reduce cancer risk. Subjects in the Educational Awareness group (n=50) will receive educational programming related to the importance of a physically active lifestyle, general exercise recommendations, and risk of physical inactivity related to cancer. Each subject will then be administered the post-test Theory of Planned Behavior questionnaire. **RESULTS:** Study data will be examined for significant changes in attitude toward physical activity and intent to engage in physical activity from pre- to post- test between the Body Awareness and Educational Awareness groups. **CONCLUSIONS:** The effectiveness of Body Awareness programming for the promotion of physical activity participation in an at-risk population will be determined.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Carmen B. Swain

Exergaming for Fitness: Xbox Kinect Outperforms Nintendo Wii Fit **Mark Ciolek**

The recently developed concept of 'exergaming' (performing exercise utilizing an interactive video game) has become immensely popular in the past several years. As such, exergaming may be a new technological tool used to promote physical fitness. The Xbox Kinect (KINECT) is the most recent exergaming console on the market and it rivals the previously released, Nintendo Wii Fit (WiiFit). The KINECT is unique in that it offers hands-free control and realistic graphics. It is unclear if these developments influence exercise intensity or perception of work. **PURPOSE:** To examine the actual and perceived intensity elicited while performing an aerobic free run using the KINECT. These findings will be compared to previous investigations that monitor the same in the WiiFit. **METHODS:** Participants (male=114, female=74) ages 10-49 were asked to complete an aerobic free run by walking, jogging or running in place for 15 minutes, as they would in their home setting. Oxygen consumption (VO₂) was monitored continuously and perceived exertion (Borg's RPE scale) was requested every 5 minutes of testing. **RESULTS:** The VO₂ for KINECT subjects (26.8 ± 12.5 ml/kg/min) was substantially higher than that of WiiFit subjects (22.3 ± 5.8 ml/kg/min) completing a free run in previous investigations. Perceived exertion reported for KINECT was 13.6 ± 2.35 compared to 12.43 ± 2.46 for WiiFit participants. The deviation between RPE and VO₂ measurements show subjects underestimate their intensity in both exergaming systems. **CONCLUSIONS:** Both consoles elicit intensity sufficient to be considered vigorous by American College of Sports Medicine standards. However, the higher intensity elicited by the KINECT may make it a preferred choice of exergaming for those who wish to work at higher levels of intensity.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Carmen B. Swain

**ONE GOAL - To Prevent Cancer Incidences in Women through the
Promotion of Physically Active Lifestyles
Christine Knopp**

Research shows a strong correlation between an increase in physical activity and a decrease in breast, colon, and endometrial cancer. Unfortunately, far too many people are physically inactive. Approximately 49% of adults in the U.S. meet the minimum for the recommended amount of physical activity. **PURPOSE:** To determine if women who have a family history of cancer will improve their attitude towards physical activity and intent to engage in physical activity following physical fitness testing and a personalized consultation including exercise prescription and discussion of risks associated with physical inactivity and cancer. **METHODS:** Women (n = 100) between 18-65 years of age with an identified family history of breast, colon, or endometrial cancer will be randomly assigned to 1 of 2 conditions. In Condition 1 (n=50), Body Awareness Programming, subjects receive body composition analysis as determined by BodPod and a fitness test to assess skin folds, flexibility, strength, and aerobic capacity. Subjects receive a personalized consultation to review test results and the relationship of physical inactivity with specified cancer type. In Condition 2 (n=50), known as Educational Programming, subjects receive literature that describes the importance of a physically active lifestyle, the relationship of physical inactivity with specified cancer type, and also general exercise prescription suggestions. Pre- and post-test questionnaires will be used to measure attitude toward physical activity and intent to be physically active for each condition. **RESULTS:** Data will describe significant differences in subjects' attitude and intent in both conditions from pre- to post-testing. A mixed-model analysis will be used to examine any differences that may exist between conditions. **CONCLUSIONS:** Findings will reveal evidence to support or refute Body Awareness Programming as an effective tool, compared to literature dissemination, to promote physical activity participation in an at-risk population.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Carmen B. Swain

**Think College: Increasing College Access for First Generation Students
Emily Nemeth, Amy Baumgardner, Caroline Clark, Christina Misch**

I am engaged in an ongoing community-based research project at a local high school, which is attempting to increase the college going rate and retention of first-generation college students. The program began three years ago when a high school guidance counselor contacted the local, land-grant university explaining he had noticed a pattern that many of his students were not attending college and those who were, did not always persist through to graduation. The guidance counselor was interested in learning about ways he could support these students. The university responded by putting together a team of student volunteers who created a curriculum targeting specific activities related to the college search and first year experience including finding a college, taking the required standardized tests, filling out the FAFSA, and attending college-level classes. The curriculum nicely aligns with national approaches towards college access which include creating college awareness, developing social skills, campus visits, cultural activities and study-skills training (Swail & Perna, 2002). We are currently utilizing a near-to-peer model which positions the college students (18-24) as mentors for the high school juniors and seniors as they apply to, and enroll in college. Think College, a high school/university partnership, aims to improve college access for first generation students through near-to-peer mentoring. This poster presentation will highlight the infrastructure of the model and the initial data collection. Think College has proven to be a sustainable, effective, low-cost program for high schools and universities.

Category: Individuals within Social Context
Advisor: Caroline Clark

Xbox 360: KINECTed with Fitness not with Expenditure
Gina Verhoff and Carmen B. Swain

Exergaming, the concept of performing exercise while playing an interactive video game, has become an increasingly popular trend as an alternative way to exercise. According to the Center for Disease Control, the national average meeting recommended amounts of physical activity is 48.8% for adults and 34.7% for children. The Xbox Kinect is one of the newest exergames on the market; it is unique because it offers the user hands free technology. However, data to support the effectiveness of this game to elicit adequate exercise intensity or the accuracy of its feedback is lacking. **PURPOSE:** To examine the calorie counter accuracy of the Xbox Kinect's EA Sports Active 2 (KINECT) and to examine the actual intensity (low, moderate, vigorous) elicited while performing the KINECT free run. **METHODS:** 188 participants (male=115, female=73) ages 10-49 were asked to complete the KINECT free run by walking/jogging/running or combination for 15 minutes as they would in their home setting. During the activity, oxygen consumption (VO₂) was measured. At post-test, average VO₂, predicted KINECT caloric expenditure and metabolic caloric expenditure was recorded. A one-sample t-test was used to examine differences between predicted KINECT calories and measured metabolic caloric expenditure. **RESULTS:** There was a significant difference ($p < .05$) in KINECT vs. measured caloric expenditure (141.7 ± 57.0 and 119.5 ± 46.1). The average intensity utilized in the Xbox Kinect's aerobic run was considered to be vigorous-level physical activity for males and females, respectively (28.8 ± 14.9 and 23.6 ± 5.5 ml/kg/min). **CONCLUSIONS:** The KINECT calorie counter proved to be inaccurate by over-estimating caloric expenditure. However, the average intensity of exercise performed when playing the KINECT game was sufficient to maintain and possibly improve fitness in many people.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Carmen B. Swain

Back to the Basics: a Barefoot Running Study
Sarah Kessler

In 2009, a national best selling book, examined a cultural phenomenon - a remote tribe of people who run barefoot. The author found young and old could run for miles on end without injury. He also discovered these runners could win races. The phenomenon of running barefoot has exploded in the running community across the United States. In an effort to simulate running barefoot, minimalist shoes have been produced called Vibram Five-Fingers. Many runners claim they run more efficiently, faster and with less injury with this minimalist shoe (BAREFOOT) compared to traditional running shoes (SHOD). However, there is little scientific evidence to support claims of running faster or more efficiently in the BAREFOOT condition. **PURPOSE:** To examine the physiological efficacy and running time in the BAREFOOT and SHOD conditions, in a 2-mile time trial. **METHODS:** Fifteen, male, trained BAREFOOT runners, ages 18-30, visit the lab on 2 occasions. On each visit, subjects randomly perform a 2-mile race in 1 of 2 conditions (BAREFOOT or SHOD). Subjects return to the lab in 5-10 days to repeat the same race in the alternate condition. Subjects perform the 2-mile time trial as a race on a treadmill. Subjects control treadmill speed using up and down arrows and are aware of distance traveled. Subjects do not see the numerical speed display nor are they given time to completion. Quantitative measures collected in this study include: time to completion, average velocity, VO₂, RER, and heart rate. **RESULTS:** Significant differences in run time (BAREFOOT or SHOD) will be examined. Physiological difference in VO₂, heart rate, and RER will also be explored. **CONCLUSIONS:** Scientific basis for the support or lack of support of the minimalist shoe to improve running performance in a 2-mile time trial will be determined.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Carmen B. Swain

How Far Did Wii Run? **Shayna Moratt**

The recently developed concept of ‘exergaming’ (performing exercise utilizing an interactive video game) has become immensely popular in the past several years. Currently, 25% of children spend 3 or more hours playing video or computer games per day. Similarly, screen time is substantial among the adult population. With increasing rates of physical inactivity among all ages, exergaming may be a new technological tool used to promote physical fitness. However, the data to support this effort is lacking. As such, we have designed a study to examine physiological and perceived characteristics found when performing the WiiFit aerobic free run. **PURPOSE:** To examine the run distance and exercise intensity elicited by the Wii Fit aerobic free run. **METHODS:** 500 participants (male= 258, female=242) ages 10-49 were asked to complete the WiiFit aerobic free run as they would in their home setting. During the activity, oxygen consumption was measured using a portable metabolic analyzer. Subjects rated perceived exertion using Borg’s scale and the average was calculated. Relative oxygen consumption values were used to determine estimated run distance based upon ACSM metabolic equations. **RESULTS:** The Wii Fit aerobic free run overestimated the distance by a mean percentage difference of 49.9 ± 15.7 in 500 subjects. The mean VO₂ for all subjects was 22.3 ± 5.8 ml/kg/min), which is considered moderate to vigorous intensity by ACSM standards. **CONCLUSIONS:** The Wii Fit displays an overestimated figure for distance on the aerobic free run, however, it is not discouraged for the sedentary population to engage in exer-gaming, as the Wii Fit did elicit a moderate to vigorous intensity level. Considering the aerobic capacity of a more experienced endurance athlete, this met level will elicit a relatively low intensity workout; therefore, exer-game running should not replace other modes of training in a more active population.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Carmen B. Swain

Motivation in Schools: Optimal Environments for Teaching and Learning **Kristen Leigh**

In the current context of increasingly ‘market-based’ education, high stakes testing, and curricular mandates, motivation in education is suffering. It is more important than ever to study the relations between teaching in such contexts and teacher and student motivation. In the present study, I explored relations between teacher perceptions of the school motivational climate and teacher instructional practices in the classroom. This study is descriptive, correlational survey research. Multilevel modeling was used to determine effects at the teacher and school levels. I sent an electronic questionnaire to teachers in seventy-five elementary schools. The survey measured teachers’ perceptions of the school goal structure, perceptions of support from principals, teachers’ goals for teaching, and instructional practices. At the school level of analysis, preliminary results suggest that a climate emphasizing support for teacher autonomy positively influences teachers’ use of instructional practices that support student mastery. In contrast, a school climate that places high emphasis on student performance is related to an increase in the use of controlling practices in the classroom. At the individual (teacher) level of analysis, preliminary results suggest that a school climate that supports student mastery positively influences teachers’ use of mastery practices in the classroom, and that females were more likely than males to hold a mastery orientation for teaching. In contrast, a school climate emphasizing student performance and demonstration of ability relative to others is related to teachers’ work avoidance motivations.

Category: Educational Research with Implications
Advisor: Eric Anderman

**Preschool Teachers Can Make A Difference:
Teacher's Autonomy-Support Predicts Preschool Children's Behavioral Self-Regulation
Eun Hye Hur and Cynthia Buettner**

Behavioral self-regulation has been recognized as an important predictor for school readiness (Ponitz et al., 2008) and academic achievement (McClelland et al., 2007). Self-Determination Theory (Ryan & Deci, 2000) argues that structure and autonomy-support are two important environment factors that promote children's self-regulation. Structure has not yet been studied in direct relation to preschool-age children's behavioral self-regulation and while parental autonomy support has been found to be a significant predictor (Golnick & Ryan, 1989), the influence of teachers' autonomy support on preschool-age children's behavioral self-regulation has also not yet been explored. Thus, the goal of this study was to explore the influence of teachers' autonomy-support and the structural environment of home and preschool classroom on children's behavioral self-regulation. The sample consisted of 612 children residing in the state of Ohio. Children were tested on behavioral self-regulation through Head-Toe-Knees-Shoulders (Ponitz et al., 2009), an observational task measure to examine inhibitory control, attention, and working memory. Teacher's autonomy support was measured by Modernity Scale adapted from the Parental Modernity Scale (Schaefer & Edgerton, 1985) measuring progressive (respecting children's choice) or traditional (authoritarian) attitudes toward children. Home structure was measured by the Confusion, Hubbub, and Order Scale (Petrill, Pike, Price, & Plomin, 2004) which measures the degree of disorganization at home. Classroom structure was measured by Early Language and Literacy Classroom Observation (Smith, Dickinson, Sangeorge, & Anastasopoulos, 2003). Income, mother's education, child age, gender, and length of attending the current classroom was controlled in order to account for the influences of the family and child characteristics. Hierarchical regression results showed that teachers' autonomy support did significantly predict child outcome ($B=-3.46$, $p=.03$). However, neither home nor preschool structure significantly predicted the outcome ($p>.05$). This study suggests that preschool teachers can make a difference in preschool children's behavioral self-regulation through autonomy-supportive instruction.

Category: Educational Research with Implications
Advisor: Cynthia Buettner

**Parenting Perfectionism and Parental Adjustment
Meghan A. Lee, Sarah J. Schoppe-Sullivan and Claire M. Kamp Dush**

The parental role is expected to be one of the most gratifying and rewarding roles in life. As expectations of parenting become ever higher, the implications of parenting perfectionism for parental adjustment warrant investigation. Using longitudinal data from 182 couples, this study examined the associations between societal- and self-oriented parenting perfectionism and new mothers' and fathers' parenting self-efficacy, stress, and satisfaction. For mothers, societal-oriented parenting perfectionism was associated with lower parenting self-efficacy, but self-oriented parenting perfectionism was associated with higher parenting satisfaction. For fathers, societal-oriented parenting perfectionism was associated with higher parenting stress, whereas higher levels of self-oriented parenting perfectionism were associated with higher parenting self efficacy, lower parenting stress, and greater parenting satisfaction. These findings support the distinction between societal- and self-oriented perfectionism, extend research on perfectionism to interpersonal adjustment in the parenting domain, and provide the first evidence for the potential consequences of holding excessively high standards for parenting.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Sarah Schoppe-Sullivan

The Many Faces of Academic Dishonesty in College: Initial Findings and Implications
Lauren Hensley and Kathryn Kirkpatrick

This study adds to the growing evidence that academic dishonesty - an issue related to both individual development and institutional integrity - is comprised of numerous behaviors related to different identity factors and academic demands. In spring 2011, undergraduates (N=292) enrolled in two courses at a large Midwestern university completed an anonymous, online survey about involvement in 16 distinct academically dishonest behaviors. In total, 57.19% of the students reported having engaged in some form of academic dishonesty in the past year. The frequency of different behaviors ranged from 1.03% to 41.10%, with the most common behaviors involving peers. From responses to individual items, we created composite variables to represent three underlying categories: cheating on tests, plagiarizing, and providing a false excuse to avoid schoolwork. Results indicated that plagiarizing and making false excuses were more likely for men than for women. Both plagiarism and false excuses were also significantly more likely for students in the study strategies course than in the prerequisite science course. Additionally, students with lower grade-point averages were more likely to make false excuses than students with higher grade-point averages. No between-group differences emerged for cheating on tests. In addition to contributing to the debate over differences in academic dishonesty related to gender and grades, we make a unique contribution through comparing the behaviors of students in two distinct courses. The present study, by offering insights into the nuances of academically dishonesty behavior, holds implications for university policies and teaching practices.

Category: Educational Research with Implications
Advisor: Eric Anderman

Bullying in Ohio Schools: The Status of Policy and Prevention
Ashley Hicks

The important question we are hoping to address through this project relates specifically to identifying the nature and scope of bullying prevention policy and programming for a representative sample of elementary and middle schools in Ohio. We will conduct the Ohio Bullying Prevention survey, to gather data on the types of prevention program curricula offered, the mode of prevention program delivery, whether programs are registered as an evidence-based practice, and the extent to which administrators believe the bullying prevention is effective in their school. The analysis will focus on similarities and differences in bullying prevention programming across the state. We will use geographic information systems software to plot these data on a map to give a visual representation of these programs across the state. To supplement the survey data, we will conduct internet research to find additional details about violence prevention programs in Ohio schools. We will also conduct a literature review on evidence-based practice in bullying prevention. Our analysis will focus on comparing the existing programs offered in Ohio to those recommended in prior research, in terms of which programs are effective and which programs are not. This project will provide useful information back to the school administrators about bullying prevention programming across the state. The knowledge gained from this project could help schools learn more about what works in bullying prevention programming. It could also promote knowledge sharing among school administrators which may ultimately improve programming. We will disseminate the results of the survey, the supplemental data and the literature review on our web-based knowledge center. We will also distribute a brief report to the study participants and make a limited number of presentations to school officials, if desired.

Category: Educational Research with Implications
Advisor: Deanna Wilkinson

Students' Report of Somatic Symptoms and Perceived School Belonging and Competence

Kathryn Kirkpatrick

When students report frequent somatic symptoms, they may be at increased risk to suffer both academically and socially (Beck, 2008). Students who must manage chronic illness on a daily basis are likely to be among those who experience frequent difficulties at school (Shaw & McCabe, 2008;). Another group of vulnerable students are those who experience emotional distress (Torrens-Armstrong, McCormack-Brown, Brindley, Coreil & McDermott, 2011). Educational researchers report links between perceived school belonging and positive academic outcomes (Anderman & Anderman, 1999). Perceived competence is also important for academic outcomes (Elliott, McGregor & Thrash, 2002). This study explored relations between frequency of somatic symptoms and levels of perceived school belonging and competence. A nationally representative sample of students in grades 7-12 completed the Longitudinal Study of Adolescent Health, Wave 1 survey during the 1994-95 school year (Harris, 2009). The public access version of that data set was used for this study (N= 6504). Latent factors were identified for a SEM measurement model of perceived belonging and competence. After confirmation of the measurement model, a structured means model was used to compare groups of students based on frequency of somatic complaints (high, middle, low). Differences in levels of perceived school belonging and competence between all groups were statistically significant; the group with the most symptoms had the lowest levels of belonging and competence. The middle group also had lower levels of belonging and competence than students in the lowest frequency group. Future research needs to explore variables that might be functioning as moderators or mediators to explain differences between students with various levels of somatic complaints. Future work also should look for interventions that might impact the perceptions of belonging and competence for vulnerable students.

Category: Educational Research with Implications

Advisor: Eric Anderman

The Role of Unwanted First Sexual Experience in Predicting Situational Efficacy in Risky Sexual Choices among Adolescents

Charles Okonkwo, Hui Jiang and Eric Anderman

There is continued high rate of HIV infection in the United States for adolescent populations (Centers for Disease Control, 2006). Educators and policymakers acknowledge that preventive efforts are extremely important in controlling the spread of this disease (Eng & Butler, 1997; Merson, 1993). It is clear that there is a great deal of sexual activity occurring among young people that is not consensual, or where consent is obtained through dishonest, manipulative or fear-arousing strategies (Ponton, 2000). An important human development skill that individuals can use in the prevention of the spread of HIV (or STDs and unwanted pregnancy) is the ability to make an effective and safe decision in a nuanced sexual situation; a skill some researchers have operationally captioned Situational Efficacy (SE) (Gwaltney et al. 2001). In the present study, we expand the work in this area by specifically examining the relations of adolescents' age of their first sexual experience and the incidence and risk factors of unwanted sexual activity among adolescents, as predictor variables of adolescents' situational efficacy (SE). Guided by the theory, that focuses on the subjective value of cost in decision making in any changing situation. We attempt to understand adolescents' situational efficacy (SE) in making a cost decision - cost defined as what one gives up to do a task and the anticipated effort needed to complete the task - in respect to their sexual behavior in the context of HIV/AIDS prevention. Our results were consistent with our hypothesis that those adolescents that initiated first sexual experience at an older age and cognitively expressed not wanting it, report high Situational Efficacy (SE), after controlling for gender, ethnicity, SES, sexual experience, impulsivity and sensation seeking behavior.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Eric Anderman

A Study of UV-induced Skin Carcinogenesis: The Role of Retinoids

Keith Fluegge

Nonmelanoma skin cancers are now the most common cancer worldwide and are more prevalent in men than in women. It was reported that retinoids exert protective effects against these skin cancers. Previous work in Dr. Everts' laboratory revealed that male mice have a lower expression of retinoic acid (RA) synthesis enzymes than female mice. The current study sought to determine whether this lower capacity to synthesize RA in male mice was contributing to this gender difference in squamous cell carcinoma. Eighty male and female SKH-1 mice were treated with or without a single UVB dose followed by acetone (control), 1.5, or 2.0 mg disulfiram/Kg body weight. Disulfiram is a non-specific aldehyde dehydrogenase inhibitor, shown to inhibit RA synthesis. Mice were sacrificed 48 hours later to examine the first inflammatory phase of cancer development. Immunohistochemistry and qPCR analysis were run for retinoic acid receptor beta (Rarb) to confirm that RA synthesis was altered as expected since Rarb is a classic target gene of RA. Rarb expression was significantly enhanced in the UVB treatment versus the no UVB treatment ($p < 0.01$). Interestingly, disulfiram significantly increased Rarb expression at both doses ($p < 0.005$ and $p < 0.002$, respectively) but only in the UVB treatment for both genders. In the no UVB group, there was a difference between genders in that disulfiram enhanced Rarb expression in males but decreased expression in females, although none of the no UVB results came to significance. Disulfiram did not inhibit RA synthesis in all of the groups as expected. Disulfiram was recently shown to inhibit DNA methyltransferase. If RA synthesis enzymes were methylated and silenced from UVB exposure, demethylation by disulfiram could potentially restore RA synthesis levels. The current researchers intend to perform a global genomic analysis of the sample population to learn if DNA methylation is involved in these unexpected results.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Helen B. Everts

Developing Informed, Engaged Students for a Globally Connected World

Jason Harshman

This presentation is based on a research study currently underway at OSU that involves one OSU Professor and three PhD students in Social Studies and Global Education and nearly 150 International Baccalaureate teachers from 40 countries. The International Baccalaureate (IB) Diploma Program was designed to teach about and for international mindedness in order to prepare students to be responsible and active global citizens. To investigate how IB teachers across the world work to accomplish these goals, this research project uses on-line discussion forums to collect reflections related to two essential questions: 1) What does it mean to be an active and engaged person in a globally interconnected world? and 2) How do you prepare students to be responsible and engaged citizens in a globally interconnected world? This study is based in research related to global citizenship and citizenship education (Parker & Mitchell, 2008; Rappoport, 2009; Dower, 2008) along with methodologies pertaining to on-line data collection (Gaiser, 2008; James & Busher, 2006). The objective of the study is to identify what participants believe constitutes international mindedness and how those beliefs are reflected in how they teach about and for global citizenship. The presentation will address best practices in teaching about and for global citizenship and international mindedness, issues related to on-line data gathering, and preliminary findings from the study.

Category: Educational Research with Implications
Advisor: Merry Merryfield

Evaluating Face Validity of an Arabic Version of the Escala Latinoamericana y Caribeña de Seguridad Alimentaria (ELCSA) in Arabic-speaking Populations
Fatima Al-Ghadban

Food insecurity is a universal issue affecting at least 1 billion people worldwide. Institutions working against food insecurity need to identify populations at a higher risk and require accurate measurement tools. Great contributions have been made in validating household food security scale models in the Spanish language for use both internationally and among Spanish-speaking populations living in the United States. However, many of the affected populations are not predominantly Spanish or English-speaking and the use of these tools among worldwide populations is not practical. Currently, there is a gap in validated tools available in the Arabic language to be used among Arabic-speaking populations to assess food insecurity. The purpose of our study is to evaluate the face validity of an Arabic-language translation of the Escala Latinoamericana y Caribeña de Seguridad Alimentaria (ELCSA). The specific aims of our study are 1) to successfully translate the ELCSA into the Arabic language and 2) to examine the face validity of the translated instrument among head-of-household, Arabic-speaking populations. The tool will be translated into Arabic, and then crosschecked via back translation into the English language by native Arabic-speakers. Face validity will be assessed via a convenience sample of 24-30 participants divided into 4-6 groups following Kruger's focus group protocol. Sessions will focus on gathering participant's perceptions of food insecurity and language interpretations, specifically pertaining to the translation of questions, ease of language and word choice used in the translated tool. Data collected from focus groups will be coded into major and minor themes to allow for identification of key concepts. Similarities and differences in key concepts will help gain a better understanding of the tool for its adequate adaptation into the Arabic language. This study will support the further development of a global household food security scale.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Hugo Melgar-Quíñonez

Coding Maternal Gatekeeping from Videotaped Observations
Lauren Altenburger

Research on the importance of father-child relationships has increased because father involvement has a positive influence on the child's social, behavioral, and psychological outcomes. One of the largest influences on father involvement in childrearing may be the mother's beliefs and behaviors. In other words, mothers may act as 'gatekeepers' by controlling the father's interaction with the child. Previous research on maternal gatekeeping has mainly used self-reports and has made no attempt to validate these measures. The present study uses observational measures of maternal gatekeeping behavior, and will compare observations and self-reports of gatekeeping and examine predictors of both. This presentation will focus on the process of coding observations of mother-father-infant interaction episodes from a longitudinal study examining the transition to parenthood for 182 couples. In these episodes, parents were given two novel toys (jack-in-the-box and pop-up toy) and asked to introduce the new toys to their infant together for 5 minutes each. I have drafted a coding manual to interpret and score the interactions for maternal gatekeeping and related couple behaviors. This presentation will describe the coding scales used, examples of behaviors coded, and the training and reliability processes employed. This process is critical to further understanding of gatekeeping.

Category: Individuals within Social Context

Advisor: Sarah Schoppe-Sullivan

Male Endurance Athlete Tetrad
Jonathan Scott

Background: In 2009 more than 467,000 marathon finishing times were recorded in the USA, nearly 60% were male. It is commonly accepted that regular physical activity can promote bone health. However, available literature suggests male runners have a decreased bone mineral density (BMD), which may be the result of low testosterone levels. Unrelated studies found decreased testosterone levels in males engaged in prolonged endurance activities including running. Energy availability or the amount of dietary energy, Calories, remaining after exercise needed to sustain other metabolic processes may be the underpinning factor. Low energy availability in females leads to, physiological mechanisms reducing the amount of energy used for reproduction, growth and cellular maintenance. Low energy availability may be caused by restricting dietary energy intake, increasing exercise energy expenditure or both. To date, no study has explored the link between energy availability and testosterone level, or energy availability and BMD in male athletes. Methods: DXA scans for total body, non-dominant hip, lumbar spine, non-dominant wrist and body composition will be completed. Additionally, blood samples, nutrition attitudes questionnaires, and three-day food and activity records will be collected and analyzed. Expected Results: Runners completing high-mileage training maybe at increased risk for low energy availability. Chronic energy deficits over a sustained period of time may depress testosterone production leading to decreased bone mass, particularly in the trabecular sites (hip, lumbar spine and wrist). Previous research from our laboratory found that 62/125 recreational female runners had osteopenia or osteoporosis in their non-dominant wrist. From the results of our female runner study, we expect similar trends for male runners. Conclusion: The detriments of low bone density can be severe and irreversible. Consequently, it is important to gain more insight into the nutrition attitudes and behaviors that possibly elicit damaging behaviors to help future prevention and education efforts.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Jackie Buell

**‘A Pound of Cure’ - Development and Pilot Study of a Primary Care Intervention on
the Management of Childhood Obesity**
Samantha Anzeljc

Primary care clinicians, despite regular access to young families, lack a cohesive model for approaching office visits regarding excess weight. Using the 2007 Expert Committee’s Recommendations, a set of clinician guidelines on the standard of care for managing childhood obesity, we developed high quality intervention tools for clinician use to direct behavior modification in families with children 2 to 11 years old. We piloted the study in modular counseling sessions with supplemental resources. We have interviewed 77 families on the modular counseling sessions and resources. The feedback we obtained guided development and order of office visit modules and of educational materials for parents. On average, motivated families that returned to the clinic needed to complete only 3 to 4 modules, setting 3 goals per visit, to successfully incorporate recommendations into the child’s daily life. Of families that returned for follow up visits 41.5%, 37.7%, 13%, 5.2%, 1.3%, and 1.3% of families completed 2, 3, 4, 5, 6 or 7 office visits respectively. Additionally, of families that attended follow up visits 50%, 37.9%, 60% and 75% of children reduced their BMI percentile as they attended the 2nd, 3rd, 4th, and 5th office visits, respectively. In total, 47% of children attending office visits have either maintained or reduced their BMI. The average time between the initial visit and first follow up visit was 55 days and 60 days passed between consecutive follow up office visits.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Robert Murray, MD

Promoting Physical Activity for Children in Low-Income Families: A Review
Seung Ho Chang, Michael L. Norris, Jihyun Lee

Childhood obesity is one of the largest health concerns in the United States and worldwide. Eating habits, genetics, family life style and lack of exercise or physical activity are some of the underlying causes of childhood obesity. More than one-third of children and teens in the U.S are overweight or obese (CDC, 2010). Regular physical activity in children is one of the major recommendations to prevent or reduce the incidence of childhood obesity. Physical activity is associated with decreased risks for heart disease, hypertension, cancer, and diabetes mellitus as well as producing social and psychological health benefits. Despite this knowledge, segments of our population have little access to health enhancing levels of physical activity. One such group is underserved children from low-income families who are more likely to have less opportunities for participation in physical activity due to poor living conditions like such as unsafe streets and limited access to playgrounds (Branta & Goodway, 1996). These children often have parents with limited financial resources to be able to afford physical activity opportunities for their children, and parental work, school, or other caretaking demands limit the time that parents can interact with their children in activity related modeling. As a result of all of these and other factors interacting, we see a national trend in physical activity showing that as family income decreases, physical inactivity increases (USDHHS, 1996). Thus many children from low income and poor families struggle to achieve sufficient opportunities for health enhancing physical activity. This poster presentation will summarize the literature related to physical activity among low income families and identify factors believed to influence inactivity among this population. It will compare and contrast various studies examining these factors and identify potential ways to promote physical activity for poor children.

Category: Urban Environment, Economic Development and Diversity
Advisor: Jackie Goodway

**A Cross-cultural Examination of Green Hotel Customers' Decision Making:
Applying the Extended Theory of Planned Behavior**
Jichul Jang

Over the last few years, hotels have adopted a green strategy to provide them with a new opportunity to differentiate and to gain a competitive advantage. One of the reasons why green hotels have received recognition recently is because of consumers' growing awareness and concerns about environmental problems. Given the growing awareness of environmental concerns, consumers are showing an interest in purchasing eco-friendly products that do not have a detrimental impact on the environment. To date, previous studies on this topic have been devoted to examine the reasons consumers stay in a green hotel (Manaktola & Jauhari, 2007). However, cross-cultural factors that directly affect consumers' attitudes and behaviors toward a green hotel have been neglected. Given that cultural differences significantly influence consumer behaviors (Mooij, 2005), it is necessary to examine how cultural differences influence consumer intentions to visit a green hotel. Therefore, the purpose of this study is to test the modified theory of planned behaviors in predicting the intention of visiting a green hotel across cultures. More specifically, this study is to examine the effect of cultural differences on intention to visit a green hotel. Second, this study is to consider the roles of three factors (health consciousness, environmental consciousness, and trust) in predicting consumer attitudes towards the intention to visit a green hotel. Third, this study introduces past behaviors as one of the antecedents of intention to visit a green hotel. The findings of this study are especially important for both academics and practitioners. From a theoretical perspective, we will shed light on the role of cultural differences in predicting customers' intention to visit a green hotel. In terms of practical implications, our finding should help hotel managers in eastern and western settings develop and enhance effective marketing strategies focusing on satisfying potential customers' needs for green establishments.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Jay Kandampully

**Effect of Emotion and Trust in the presence of Servicescape towards
Positive Wellness Experience in Health Care Service
Hye Yoon Choi**

The term ‘experience’ is receiving increased attention. Managers have recognized the importance of creating value for their customers in the form of experiences (Berry, Carbone, & Haeckel, 2002). Consumers no longer want mere products or services, but rather they are seeking an optimal experience (Trauer, 2004). Health care industry is one of the rapidly growing industries among service sector (Andaleeb, 1998). It is also one of those domains where formation of experience is complex due to multifactorial point of encounters. These include relationship with medical personnel, physical surroundings, and the healthcare organization itself (Johansson et al, 2002). Today, there is a growing trend of the wellness as a component of the health care industry. With increasing demand for relaxation and higher standard, consumers (patients) are turning toward improving their wellness. So far, numerous studies have been conducted regarding patient’s health service such as patient satisfaction (Andaleeb, 1998), experience (Steine, Finset, & Laerum, 2001), emotion (Tugade, Fredrickson, Barrett, 2004) and trust (Thom, Ribisl, Stewart, & Luke, 1999). Based on these literature, it is suggested that emotion and trust variables are considered to be important components in determining positive wellness experience. So far, not much research has considered how both emotion and trust, interdependently, have influence on patient’s health service experience. This paper also proposes that there could be a possibility that presence of servicescape can either enhance or reduce emotion and trust in a wellness context as well. Two servicescapes, music and smell, will be incorporated to see whether they would have significant influence. Overall, the purpose of this paper is to examine how emotion and trust will be influenced in the presence of servicescape and whether this will positively or negatively impact patient’s experience.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Jay Kandampully

**Perceived Value of Loyalty Programs and its Impact on Customer Loyalty
Soyeon Kim**

Increasing customer loyalty is an important strategic objective of managers in today’s competitive service industry. One of the effective tools to build customer loyalty is reward or loyalty programs (Magi, 2003). Despite the popularity of such programs in the marketplace, studies investigating the effectiveness of the programs are few and provide mixed results. Some previous studies found positive effects of loyalty programs on customer purchasing (e.g. Magi, 2003; Yi & Cheon, 2006; Mimouni-Chaabane & Volle, 2010), whereas other studies argue that it is difficult to change established behavioral pattern of customers (e.g. Nunes & Dreze, 2006; Leenheer et al., 2007). Given that customers are value-driven (Sweeny & Soutar, 2001), managers need to understand what customers value and where they should focus their attention to achieve this needed market place advantage. Therefore, this research investigates perceived values of loyalty programs. More specifically, the author proposes an integrative model of three dimensions of perceived value (utilitarian, hedonic, and social value) of loyalty programs and customers’ loyalty intentions in a restaurant setting. Additional insight into the link between perceived value and customer intentions is provided by examining the moderating effect of customer characteristics (such as age, income, and gender) and customer’s level of involvement. We will employ a 2 X 2 X 2 between groups, quasi-experimental design, with two levels of utilitarian value (high and low), two levels of hedonic value (high and low), and two levels of social value (high and low). Respondents are asked to imagine themselves as the person in the scenario and indicate the extent to which they intend to be loyal to the restaurant. Structural equation modeling (SEM) will be conducted to test proposed relationships among three dimensions of perceived value and customer loyalty intentions.

Category: Individuals within Social Context

Advisors: Jay Kandampully and Leslie Stoel

Validation of a Questionnaire Assessing Behavior Change in Vegetable and Fruit Consumption for Low-Income 3rd and 4th Graders
Lauren Manganiello, Ana Claudia Zubieta and Joyce McDowell

BACKGROUND: Instruments for measuring behavioral outcomes are important for documenting the effectiveness of community nutrition education programs targeting elementary school children. Many questions that community nutrition programs use to gather behavioral outcome information do not have face validity or content validity. In addition, Dietary Guidelines 2010 (DG 2010) include new recommendations for which questions have not been developed or validated. **OBJECTIVE:** The objective of the proposed study is to evaluate the face validity and content validity of selected vegetable and fruit behavior questions intended for low-income 3rd and 4th graders from current publications, reported nutrition education questionnaires, and questions developed for DG 2010 recommendations. **METHODS:** Fifty-five questions measuring behavior changes in vegetable and fruit consumption were selected from those reported in the literature and from those developed by the research team in response to recommendations in DG 2010. The researchers will use an expert panel to evaluate the questions for content validity using 3 constructs: students will understand the question, students can answer the question, and the question will assess behavior change. After the results of the expert panel have been analyzed, questions that receive 80% or greater agreement among the constructs will be considered to have content validity. Those questions will then be presented to low-income 3rd and 4th graders to be assessed for face validity using a focus group interview (FGI) technique. Information gathered during the FGI about the children's understanding of the questions, the ease of language and word choice used in the questions will be analyzed using the constant comparative method. **EXPECTED RESULTS:** The results will be content and face validated questions assessing behavior changes in vegetable and fruit consumption in low-income 3rd and 4th graders.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Joyce McDowell

The Decision to Disclose HIV Status to Family
Erica Hartwell

The purpose of this research was to obtain feedback from participants of a disclosure to family intervention for HIV-positive men who have sex with men (MSM). The intervention was designed to assist HIV-positive MSM in developing skills to disclose their serostatus to family members. A total of 59 men, 21 to 62 years of age (M = 42.6) participated in the pilot study. As the intervention progressed, it became apparent that important aspects of the participants' experience of the intervention may not have been measured in the existing outcome measures. Therefore, the research team decided it would be meaningful to obtain qualitative data about participants' experiences in order to garner a more in-depth understanding of what they obtained from the intervention. A subsample of participants (n = 19) who had completed the intervention were selected to participate in a one-on-one, semi-structured interview. Interpretive qualitative methodology was employed to explore the participants' responses. Line-by-line, open-coding was used to analyze the data. Emergent themes identified what participants gained from the intervention; these themes revealed two core categories: 1) a space free from HIV stigma (themes: empowerment, comfort with self, control over their information, learning, the relationship with the facilitator), and 2) a space to think critically about disclosure to family decisions (themes: family dynamics, beliefs and characteristics, educating others, interpersonal relationships, and burden). These core categories are connected through the concept of a disclosure to family turning point, where participants' schemas about disclosing to family either changed or were reinforced. We will provide specific recommendations for clinicians who work with these clients that will enable them to more effectively discuss disclosure decisions and skills necessary to facilitate successful disclosure experiences.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Julianne Serovich

**How to be a Peacemaker:
Decreasing Anger in Female Elementary Students
Jennifer Cooper**

Anger and violence among school-aged girls is a salient concern - impacting not only their academic and behavioral functioning in schools, but also placing them at increased risk for other adverse outcomes such as associating with an aggressive peer group, choosing rebellious romantic partners, becoming teen mothers, and engaging in aggressive childrearing practices (Peplar, Craig, Yuile, & Connolly, 2004). In the past decade, nonphysical female-to-female aggression (such as bullying) has received widespread attention in the research literature as well as an increasing awareness by schools for the need for interventions. However, there continues to be little research on direct or physical aggression among school-aged girls, especially marginalized females (Adamshick, 2010). School psychologists are uniquely trained to deliver interventions focusing on teaching problem-solving and coping skills that decrease girls' anger and violence. However, the effective implementation of such interventions depends, in large part, on schools' willingness and ability to utilize these interventions in their schools. This poster will describe an intervention to address girls' anger and aggression within a school-based setting. The intervention included a manualized, group-based anger management curriculum that was modified for use within the allotted timeframe agreed upon by the school. The goals for the intervention included reducing female physical and verbal aggression, increasing respect for school staff and peers, and reducing the number of disciplinary infractions due to behavior problems.

The successful results (the students exhibited a decrease in aggressive behaviors post-intervention) of this group-based anger management intervention will be presented along with a discussion of practical significance and implications. The need for such interventions in school-based settings will also be briefly discussed. Survey data from students, teachers, and a guidance counselor will be presented in addition to an overview of the intervention used.

Category: Educational Research with Implications
Advisor: Kisha Radliff

**Planned Retirement Age
Lishu Zhang**

Montalto, Yuh and Hanna's article in 1995 analyzed the planned retirement age of respondents using the 1995 Survey of Consumer Finance. In their article, they analyzed the probability of working full-time as well as the planned retirement age by constructing two predictive equations. The two equations contained several variables they assumed to be predictive in estimating the probability of working full time and the planned retirement age. Several factors have impact on planned retirement age, for example, financial variables, education level, age and so forth. The research bears great practical meaning for the policymakers and the financial planners. The purpose of this paper is to partially replicate the planned retirement equation used in Montalto, Yuh and Hanna's article by using the SCF from 1995-2007. We want to see if there are new findings in SCF if multiple years are used. Moreover, by analyzing the planned retirement age in different time periods, we can have a clear picture of the trend of people's planned retirement age over the past 15 years.

Category: Health and Wellness (physiologic, psychological, and financial)
Advisor: Sherman D. Hanna

**Effects of High-Stakes Testing on Teacher Goal Orientation:
Differences in Tested Versus Non-Tested Subject Areas
Bree Frick**

Currently, Ohio schools are required to issue standardized tests in mathematics, language arts, social studies, and science. Standardized tests are not required in foreign language, fine arts, physical education, or vocational classes. Teachers of tested subject areas are responsible for preparing students for tests, administering tests, and evaluating results. Generally, teachers of non-tested subject areas are not asked to prepare students or evaluate test results. With the introduction of Value-Added analysis in Ohio schools, teachers of tested subject areas are increasingly evaluated on their teaching effectiveness by using student test scores. All teachers in Ohio, regardless of teaching tested or non-tested subject areas, are compensated on an equal pay scale. Data collection consists of hour-long interviews administered to five teachers each in tested subject areas and non-tested subject areas. Initial data indicates that 1) teachers of tested subject areas tend to promote performance learning orientations, while teachers of non-tested subject areas promote mastery learning orientations, 2) teacher ability to promote mastery goals may hinge on the amount of time dedicated to test preparation in the school day, 3) teacher motivation to teach their subject area varies based on the type of recognition offered to teachers based on student achievement, and 4) teacher professional relationships are impacted by high-stakes testing requirements. Initial findings indicate that teachers in non-tested subject areas may have more freedom and flexibility, and are more likely to promote student mastery goals, while teachers of tested subject areas tend to be more limited in their lesson planning and tend to promote student performance goals. Additionally, differing forms of evaluation and recognition between tested and non-tested subject areas could divide the profession. Continued research on this issue may help to alleviate professional tension, and help to inform our understanding of how high-stakes testing affects the way teachers do their job.

Category: Educational Research with Implications

Advisor: Lynley Anderman

**Inflammation Alters Phase II Metabolism of α -Mangostin in Caco-2 Human Intestinal Cells
Brian Stephens**

The absorption of xenobiotics into systemic circulation is impacted by phase II metabolism in the small and large intestine. Enterocytes are absorptive cells in the gut that are involved in the metabolism and transport of nutrients and xenobiotics from the intestinal lumen to systemic circulation. The inflammatory condition is known to affect endogenous nutrient metabolism and xenobiotic metabolism in the liver. In contrast, minimal attention has been given to the impact of inflammation on the digestion and absorption of dietary phytochemicals. This study examined the influence of an inflammatory environment on the metabolism and distribution of α -mangostin in enterocyte-like Caco-2 cells grown on porous membrane inserts. α -Mangostin belongs to a family of prenylated polyphenols referred to as xanthones that are relatively abundant in the pericarp of the mangosteen fruit. Exposure of highly differentiated Caco-2 cells to inflammatory cytokines was associated with decreased expression of uridine diphosphate glucuronosyltransferases 1A (UGT1A) and increased β -glucuronidase activity in Caco-2 cells. Incubation of cultures with Tween micelles containing α -mangostin for 4 hours altered the metabolism and distribution of α -mangostin in the culture system. The inflammatory state was associated with an increase in free α -mangostin in the intracellular and basolateral compartments compared to control. Exposure to pro-inflammatory cytokines also decreased the amount of phase II metabolites (glucuronidated/sulfated) of α -mangostin in Caco-2 cells and basolateral media. This reduction in phase II metabolites of α -mangostin is explained, in part, by reduced expression of UGT1A and increased activity of β -glucuronidase in Caco-2 cells. Collectively, these findings suggest that inflammation increases the relative absorption of the ingested compound. The impact this may have on the efficacy of ingested xanthones requires further investigation.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Mark Failla

**Uptake and Metabolism of α -Mangostin (α -MG) by Human Liver HepG2,
Macrophage-like THP-1 and Colon HT-29 Cell Lines**
Fabiola Gutierrez Orozco^{1,2,3}, Chureeporn Chitchumroonchokchai^{2,3} and Mark L. Failla^{1,2,3}

¹OSU Interdisciplinary PhD Program in Nutrition, ²Department of Human Nutrition, ³OSU Food Innovation Center

Xanthenes are a family of compounds in mangosteen fruit (*Garcinia mangostana* L.) that possess a distinct isoprenylated tricyclic structure. In vitro evidence suggests they have potent anti-oxidant and anti-inflammatory activities. However, the absorption, metabolism and in vivo efficacy of xanthenes remain elusive. Our lab has demonstrated that xanthenes are partially transformed in intestinal cells to glucuronidated and sulfated conjugates. In vivo results also showed that xanthenes and their metabolites are present in the plasma of healthy adults after consumption of mangosteen juice. Furthermore, presence of 0.1% xanthenes in diet significantly reduced tumor growth in a mouse xenograft model. These data suggest that xanthenes and/or their metabolites reach different tissues where they may be taken up and further metabolized. Here we report on the uptake and metabolism of α -MG by human liver, macrophage-like and colon cell lines. Our results suggest that HepG2, HT-29, and THP-1 macrophage-like cells take up and metabolize α -MG in a cell-specific manner. In addition to glucuronidation/sulfation of α -MG, conversion to other xanthenes was observed. Conjugated xanthenes were detected in media and cells, or only in cells depending on the cell type. Furthermore, degree of retention of α -MG or its metabolites was found to be cell type dependant. Collectively, these data suggest that α -MG is taken up by distinct types of cells and that the extent of metabolism, types of metabolic products and intracellular retention differ according to cell type. Such differences are expected to affect bioactivities. Modulation of the pro-inflammatory response by α -MG and their metabolites is currently under study.

Supported by OSU Food Innovation Center and Conacyt Fellowship (Mexico).

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Mark Failla

**Analysis of Retirement Adequacy with Retirement Income Stages;
Evidence from Survey of Consumer Finance 1995-2007**
Kyoung Tae Kim

The life cycle hypothesis (Ando and Modigliani 1963) implies that households should plan to smooth consumption over the rest of life despite fluctuations in current income. The plausibility of this assumption depends partly on whether households can approximate the complex calculations for retirement and other changes in income. Some households face even greater complexity, because retirement represents more than one state in terms of inflation-adjusted income flows, but previous researchers have assumed only one stage and have not differentiated between households with one retirement stage and those expecting multiple stages. This study explores the following research question: Does the complexity of retirement planning, as measured by whether multiple retirement income states are expected, influence the likelihood of obtaining retirement adequacy, as measured by whether optimal consumption smoothing will be achieved? Based on Funderberg's (2006) model of bounded rationality, greater complexity should result in households being less likely to achieve rational outcomes. This study analyzes the effect of taking stages into account at retirement, and also calculates the change of U.S. retirement adequacy from 1995 to 2007. The Survey of Consumer Finance datasets were used. The sample consisted of those households currently working, and with a head of household aged 35 to 70. Since our dependent variable, retirement adequacy, is dichotomous, logistic regression is a good method for multivariate analysis.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Sherman D. Hanna

Metabolism and Uptake of Berry and Grape Anthocyanins in Human Oral Cavity
Kom Kamonpatana, M. MorenoCruz, P. Kumar, M.M. Giusti, M.L. Failla

Chemopreventive and chemotherapeutic activities of anthocyanins (ACN) have been reported in human oral squamous carcinoma cells, the hamster cheek pouch model and human subjects. ACN are a large class of flavonoids (>600 distinct structures) that appear to be highly degraded in the small and large intestines. However, little is known about the impact of ACN structure on their uptake, metabolism and efficacy in oral epithelium. Here, juices prepared from chokeberry and red grape were retained in oral cavity of 12 healthy human subjects for 5 min in a random crossover design. Retained juice, oral washings and buccal scrapings were collected. Buccal scrapings were washed thrice with Na:P buffer and centrifuged to separate mucus and buccal epithelial cells. ACN in samples were analyzed by HPLC-PDA-ESI-MS to evaluate ACN extent of loss in oral cavity, binding to mucus, and uptake into buccal epithelium. Loss of delphinidin (Dp) glucosides in retained red grape juice significantly ($P<0.05$) exceeded that of petunidin (Pt), cyanidin (Cy), peonidin (Pn) and malvidin (Mv) glucosides. Increased saliva volume was associated with greater loss of Dp and Pt glucosides, but not Cy, Pn, and Mv glycosides. There also was less abundance of Dp and Pt glucosides in mucus ($P<0.05$) and cell fractions ($P<0.10$), suggesting that instability of Dp and Pt in oral cavity resulted in limited accessibility to buccal epithelium. Cy glucoside in chokeberry juice appeared to preferentially accumulate in buccal epithelium ($P<0.05$) compared to Cy galactoside, Cy arabinoside and Cy xyloside. Loss of ACN in chokeberry juice was not reduced by pre-rinsing with antibacterial chlorhexidine suggesting limited microbial degradation of ACN during 5 min retention. These results suggest that ACN structure affects stability and buccal cell uptake in the mouth and, thus, potential efficacy of ACN-rich products for the promotion of oral health.

Supported by the Ohio Agricultural Research and Development Center, OARDC.

Category: Health and Wellness (physiologic, psychological, and financial)
Co-Advisors: Mark Failla and M. Monica Giusti

Conceptualizing The Life through Capability
Rikki Patton

An estimated two million adult women and 400,000 youth are currently involved in prostitution in the United States alone. The sex work population is diverse and includes an array of people with differing motivations driving their involvement in sex work. No matter what their pathway into ‘the life,’ though, women involved in prostitution (WIIPs) are particularly vulnerable to experiencing a reduced quality of life. Yet, efforts to systemically understand and intervene in ‘the life’ have been minimal. Prostitution is intricately related to many humanistic issues, including labor, livelihood, gender, social rights, justice, health and well-being, stigma, social exclusion and marginalization. Yet, these issues are often overshadowed by framing research on prostitution/sex work through the lens of 1) deviance, 2) morality, 3) legal and political agendas, and 4) and risk factors of the individual women selling sex. By ignoring the humanistic experience of these women, human rights issues, including choice about life issues, are largely ignored, leaving a large gap in the comprehensive conceptualization of prostitution. Of particular focus within the current paper is the need to understand how quality of life affects women’s choices and the possibilities in their lives as they enter into and maintain ‘the life. The Capability Approach (CA), a humanistic framework about what it means to be human, has great potential for understanding why women involved in prostitution make the choices they make, which consequently impact their quality of life. By reviewing the challenges that WIIPs face in obtaining and maintaining the basic human capabilities set forth by Martha Nussbaum (2001), it can be shown that WIIPs are not experiencing a life of quality that involves true choice and freedom in their live trajectories. This discussion will open the door to discussing strategies for giving WIIPs a greater opportunity for experiencing a true life of quality.

Category: Individuals within Social Context
Advisor: Michael Glassman

**Appearance Evaluation:
A Content Analysis of Comments of a Fashion Blog, The Sartorialist
Boram Park and Nancy A. Rudd**

With the explosion of Web 3.0 platforms, blogs have emerged as a popular social media, by which consumers actively engage in multiple communication experiences in appearance related behavior. Voted one of the Top 10 Design Influencers by Time magazine in 2007, The Sartorialist (thesartorialist.blogspot.com) is a fascinating street-style photoblog that displays snapshots of well-dressed individuals in their natural habitats and chosen adornments around the world. The Sartorialist was chosen to scrutinize how blog-viewers (who visit blogs created by blog-authors and leave comments) analyze the public presentation of appearance of others. To fill the gap in the social media literature, the purposes were: 1) to examine how appearance is critically evaluated by blog-viewers based on Hillestad's (1980) model of appearance; 2) to identify unique characteristics of blog-viewers as active creators and managers of fashion information consumption. A content analysis was conducted using a purposive sample of eight blog posts with 1,025 comments that were published within two months (December 15, 2010 - February 15, 2011) from The Sartorialist. Hillestad (1980) suggests that appearance has an underlying structure comprised of body (i.e., forms, surfaces, motions) and dress (i.e., clothing, adornment) which can be examined as a total concept. The breadth and depth of comments reflected that blog-viewers were responsive to both dress and body cues examining appearance. Moreover, blog-viewers considered dress cues most frequently, suggesting the potential for blogs to serve as a source of fashion inspiration that stimulates purchase intention. Four themes emerged regarding blog-viewer characteristics; 1) globalization, 2) purchase intention, 3) self-expression and impression management, and 4) social comparison in the social media setting. Insights from this study will allow companies in fashion industry to increase their business profitability through the utilization of blogs as public persuasion tactics or as mediums of communication with a diverse blogger population.

Category: Individuals within Social Context

Advisor: Nancy A. Rudd

**Diet-induced Visceral Obesity in Female Mice Depends on Autocrine Retinoic Acid Production
Rumana Yasmeen, Alisha Lynch, Fangping Yang, Kichoon Lee, Gregg Duester, Ouliana Ziouzenkova**

Mechanisms for sex- and depot-specific fat formation are unclear. We investigated the role of autocrine retinoic acid (RA) production in high-fat (HF) diet-induced fat formation in transgenic mice expressing RA receptor response element (RAREtg) beta-galactosidase reporter. Quantitative Taqman analysis of beta-galactosidase expression indicating intrinsic RA production revealed that formation of subcutaneous fat (261% and 221% in RAREtg males and females, respectively) was accompanied by an increase in endogenous RA production in both male (363%) and female (495%) RAREtg mice receiving HF diet vs. regular chow for 5 months. Strikingly, visceral fat formation (478%) in RAREtg male mice was not associated with RA production, whereas visceral fat formation in RAREtg female mice (354%) was accompanied by 860% increase in RA generation. The causative role of autocrine RA production in sex-specific fat formation on a HF diet was demonstrated in mice deficient in Aldh1a1, a major RA producing enzyme in white adipose tissue. Female Aldh1a1 knock out mice but not males, were resistant to high-fat (HF) diet-induced visceral adipose formation while subcutaneous fat remained similar in both groups. Differential sex-specific accumulation of visceral fat was attributable to the higher adipose triglyceride lipase (Atgl) protein expression localized in clusters of multilocular cells in Aldh1a1 knock out female, but not male mice. Atgl expression was indirectly regulated by estrogen via reduction in Aldh1a3 expression, thereby limiting retinaldehyde (Rald) conversion to RA. Rald was an effective inducer of Atgl levels via non-genomic mechanisms. Our data suggest that HF diet mediates visceral fat formation through a sex-specific autocrine Aldh1 switch, in which Rald-mediated lipolysis is replaced by RA-mediated lipid accumulation. Aldh1 could be a target for sex-specific anti-obesity therapy.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Ouliana Ziouzenkova

Effect of Fat in Diet on the Immunoglobulins Present in Plasma

Joseph Meyers

Abnormal immunoglobulin (Ig) production underlines many diseases, including hematological cancers with a higher prevalence in males than females. Although clinical studies show association of hematological cancers with obesity it remains unclear whether obesogenic high fat diets dysregulate concentrations of specific Ig classes in the circulation. We used C57-BI/6 mice, 5 wild type (WT) males, and 4 WT females aged 59 weeks and fed on a regular diet composed of 5.67% saturated fat of total caloric content. These were compared to 3 WT males and 3 WT females aged 62 weeks and fed on a high fat diet composed of 45% saturated fat of total caloric content for 42 weeks. Using enzyme-linked immuno-sorbent assays developed to determine the monoclonal class of immunoglobulin's produced by a select group of plasma cells, we determined how the relative quantity of and class of Ig's present in plasma is altered by a change in fat content in the diet. By determining relative absorbance between IgG1, IgG2a, IgG2b, IgG3, IgA, IgM, Ig λ and Ig κ in plasma samples. The intra assay variation of this ELISA assay was 2-12% and an inter-assay variation of 5-30% for different Ig classes. We found that both diets in mice produce similar proportion of Ig classes. The exception was, an increase in the production of Ig κ chains in the high fat fed group in both males and females. Remarkably, there was a significant quantitative increase of 200 to over 500% in Ig's of every class present in plasma from mice fed on high fat diets. Furthermore, females fed on high fat diets had a relative 200% greater increase than the males on the same diet in quantity of IgG2b Ig's produced. We conclude that increases in fat in the diet increases the total concentrations of Ig's present in plasma.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Ouliana Ziouzenkova

The Active Vitamin A Metabolic Effect on Mucosal Immunity

Michael Holbrook

Though vitamin A has long been linked to having an effect on the immune system, much less is understood about its endogenous role in mucosal immunity. Stemming from the involvement in the development of endothelial tissues from potentially deleterious pathogens, this system impacts all individuals and is a vital process for the health of a neonatal being. Our experiment aims at deciphering how vitamin A is converted to its active metabolites, retinaldehyde and retinoic acid - the compounds that provide this mucosal protection, most specifically in the tissues of organs known to have a contributive immune effect. The conversion of retinaldehyde to retinoic acid occurs through a family of dehydrogenases known as retinaldehyde dehydrogenase family 1. While the germ-free pig model was used for its similarities to the human model, the primers for these two enzymes (Aldh1a1 and Aldh1a2) were designed from the human model and expressed on pig liver tissue samples. Using Taqman, samples from vitamin A deficient, vitamin A sufficient, non-vaccinated and vaccinated pigs were assayed and normalized against a known pig primer, GAPDH. After comparison, there is a definite preference of Aldh1a1 over Aldh1a2 for all subsets. Though the liver is known as the storage center for vitamin A, experimental evidence suggests that the cytokines used for an immune response derive from the small intestine. It is in this light that further experimentation will involve comparing the expression levels of these two critical enzymes in the liver with their expression in specific locations of the small intestine (the duodenum and the ileum) as well as the spleen, another organ known for its role in the immune system. The successful completion of this study will aim at targeting the main locations for gene regulation of these enzymes and hopefully contribute some insight to their impact on mucosal immunity.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Ouliana Ziouzenkova

A Model of Emotional Labor in Coaching Sports

Ye Hoon Lee

Emotional labor, defined as the regulation of both feelings and emotions to be effective in jobs (Hochschild, 1983), have received growing attentions because service quality is largely determined by employees' regulations of emotions in the employee-client interface. Previous research studies have continuously shown that different kinds of emotional labor result in different individual outcomes such as employee's emotional exhaustion and job satisfaction. The significance of emotional labor is even greater in the case of those service providers who are also in leadership positions as in the case of leaders and followers. However, there has been little research on this topic in the sport setting and coach-athlete relationship. Subsequently, it is not clear how emotional labor in the coaching context affects coaches' well-being either positively or negatively. With a view to examine the dynamics of emotional labor in coaching, and as a preliminary step toward that end, a model of emotional labor is presented below. This model starts with the affective events (Weiss & Cropanzo, 1996) including winning or losing. Each of these affective events undergo a cognitive evaluation of the events (i.e., appraisal) by coaches, which results in aroused emotions. As coaches are expected to regulate these emotions, they engage in emotional labor including either surface acting (the process of modifying one's expressions such as smiling as expected by display rules without changing inner feelings), deep acting (the process of actually trying to change one's feelings required by the display rules), or automatic regulation (the process of experiencing and displaying felt emotions spontaneously and genuinely). The outcomes could be job satisfaction and job burnout. Our model also includes individual difference variables of emotional intelligence, affectivity, and past experience as moderators. The theories and research behind the proposed the model, future research directions, and its practical implications will be discussed.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Packianathan Chelladurai

Teamwork in Athletic Teams from Social Network Perspective

Amy Kim

Phil Jackson, a former head coach of LA Lakers once said that 'The strength of the team is each individual member, the strength of each member is team'. In sports context, the concept of 'teamwork' has been essential factor for positive team outcomes such as performance, satisfaction, and commitment. Even scholars from diverse fields have used sports metaphors to comprehend and explain teamwork in management and organization theory, educational setting, and business practices. Given the significance and distinctiveness of teamwork in sports, it is critical to explore the dynamics of teamwork. As many scholars have agreed, teamwork requires a certain level of participation, collaboration, cooperation, and coordination. All of these requirements for teamwork cannot be pursued and achieved if each team member is independent. In order to meet these requirements successfully, each member of team needs to create diverse types of relationships with other members. Social network analysis has been popular in almost every academic discipline in that it enables us to analyze relational structures. While most traditional quantitative methodologies focus on individual attributes, social network analysis focuses on patterns and implications of relationships among social entities and provides structural and relational information. This paper suggests how we can explore the structural pattern and dynamics of relationships among athletes by employing social network analysis as a methodology. Future research can involve a series of studies that investigate if specific patterns of relationship affect teamwork and team success. In addition, the effects of gender, type of sport (i.e., individual or team sports), level of competition (e.g., Divisions I, II, & III) on patterns of relationships, teamwork, and performance can also be investigated.

Category: Individuals within Social Context

Advisor: Packianathan Chelladurai

**Impact of Social Comparison Motivations on Purchase Intention of Apparel
with a Moderating Effect of Self-Esteem in Social Media
Boram Park, KyungTae Kim and Robert Scharff**

One interesting aspect of the exponentially evolving social media (e.g., Facebook) is that consumers implicitly or explicitly compare themselves with appearance and lifestyles of close others from images or comments posted. Yet, little is known about appearance comparisons conducted in the context of social media. Extending the social comparison theory (Festinger, 1954), the purpose of this study is to explicate the social media experience of female college-age consumers in exposure to same-sexed peers of varying levels of appearance. It examines the relationship between the social comparison motivations and purchase intention of apparel and accessories products with the moderating impact of self-esteem. Two specific objectives are to: 1) to confirm the determinant dimensions of social comparison motivations and self-esteem; and 2) to investigate the seven hypothesized relationships between social comparison motivations and purchase intention of appearance related products given the moderating role of self-esteem. Social comparison theory suggests that individuals have a drive to evaluate their appearance against others. Social comparison encompasses three types of motivations: self-evaluation, self-improvement and self-enhancement. Self-esteem describes one's feeling about the level of one's physical appearance, developed by examining oneself and comparing one's appearance with others and by learning the reaction of others to one's appearance. Purchase intention as a function of social comparison and self-esteem has been generally supported. A minimum of 400 self-administered questionnaires will be developed and collected from female college students at a major Midwestern university. The results are expected to support all seven hypotheses. Social media contributes to reinforcing the influence of social comparison and a preoccupation with appearance and influences female consumer perceptions of what constitutes an acceptable level of appearance. Social comparison consistently appears to be a determinant contributor to self-esteem. Social comparison plays a major role in the continual management of appearance through apparel and accessories product purchases.

Category: Individuals within Social Context
Advisor: Robert Scharff

**The Effects of Part Versus Whole Learning on Student Outcomes in Golf
Ali Brian**

The golf swing is a complex skill that requires multiple degrees of freedom within both major and minor muscle groups and very specific timing mechanisms (Kochno, 2007; Smith, Taylor & Withers, 1997). Motor learning, physical education pedagogy, and professional golf association instructors all offer different guidelines for teaching the golf swing. Within the motor learning literature, Schmidt (2007) refers to the golf swing as a task that is low in complexity but highly organized. Magill (1997) claims that high complexity and low organized skills should be taught in parts, and low complexity and highly organized skills should be taught as a whole motion. Physical education pedagogists (Rink, Hall & Webster, 2008; Siedentop & Tannehill, 2000) state that the golf swing should be taught as a whole skill, while a sample of four PGA and LPGA golf professionals claim that the swing should be taught in part to whole progressions. The purpose of this research study was to measure the effects of part practice versus whole practice on student learning of a complex skill that is highly organized, the golf swing. A quasi-experimental design was employed with a sample size of 2 groups, 36 students. Each group was assigned to experimental (part practice) or comparison (whole practice) groups. Two instructors administered the treatment and each instructor was randomly assigned to either treatment or comparison groups. Subjects were pre-tested to record their current level of performance in three areas: psychomotor skill (ability to swing the golf club, hit a golf ball straight and gain distance), level of kinesthesia (ability to detect/feel errors in the swing) and self-perception. After 18, 48 minutes long lessons, students were post-tested on the same three areas.

Category: Teaching, Learning and Instruction across the Lifespan
Advisor: Susan Sutherland

Couple Relationships, Coparenting, and Parental Involvement During Infancy
Hana Yoo, Sarah Schoppe-Sullivan, Claire Camp Dush and Letitia Kotila

Research has demonstrated that the quality of parents' romantic relationship and the quality of their coparenting relationship both predict parental involvement in childrearing (e.g., Schoppe-Sullivan et al., 2008; Volling & Belsky, 1991). In this study, we propose that parents' couple relationship quality prior to their infant's birth affects the initial quality of their coparenting relationship at 3 months postpartum, which in turn affects levels of maternal and paternal involvement at 9 months postpartum. Participants were 182 couples expecting their first child. Parents' perceived relationship quality was assessed in the third trimester of pregnancy using the Relationships Questionnaire (Stanley et al., 2002). Their perceptions of the quality of their coparenting relationship at 3 months postpartum were assessed using the Your Coparenting Team measure (Feinberg et al., 2008). Lastly, a 24-hour time diary, in which parents provided a minute-to-minute record of their daily activities on workdays and non-workdays, was used to assess the quantity of parental involvement in childrearing at 9 months postpartum. Four types of involvement were examined: routine childcare, accessibility, responsibility, and engagement (Pleck, 2010). The mediation model predicting parental involvement in childrearing was tested for workdays and non-workdays separately using SEM. The model fit was acceptable for both workdays ($\chi^2(124)=209.90$; CFI=.889; RMSEA=.062) and non-workdays ($\chi^2(124)=197.30$; CFI=.910; RMSEA=.057). Both parents' perceived relationship quality prior to their infant's birth predicted their own perceptions of coparenting relationship quality at 3 months postpartum. Also, parents' positive perceptions of their coparenting relationship were associated with greater parental involvement in childrearing. For example, fathers' positive perceptions of the coparenting relationship were associated with his greater accessibility to the infant. These preliminary results indicate that the coparenting relationship may be an important link between the couple relationship and parental involvement for mothers and fathers.

Category: Individuals within Social Context

Advisor: Suzanne Bartle-Haring

**Comparison of Moderate-to-Vigorous Physical Activity between Physical Education Class
and Extracurricular Organizations in High School Students**
Chelsea Foster

Currently 1 in 3 Americans are classified as being overweight or obese and the obesity rate continues to rise. The impact of physical activity on obesity and overall physical fitness has been widely accepted. Dramatic declines in physical activity have been observed across a person's life with a dramatic decline occurring as they enter high school. Therefore, the purpose of this study was to assess the difference in physical activity levels in students enrolled in physical education classes and other programs that are 'approved' by the state of Texas to substitute for physical education classes. High school students enrolled in drill team (n=33) (an approved substitute for physical education credits) and physical education (n=36) were recruited for participation in this study. Participants completed a brief survey, physical measurements, and wore an ActiTrainer Accelerometer, which is a valid and objective method of continuously recording physical activity, for a seven-day period. The groups were compared in two areas: 1) total physical activity and 2) time spent in moderate to vigorous physical activity (MVPA) during class. The drill team group participated in a significantly ($P<0.01$) greater amount of MVPA during class than the PE group. However, the overall weekly MVPA did not differ significantly between the two groups. These findings suggest that a greater amount of moderate to vigorous physical activity occurs in the drill team classes compared to the physical education classes that were examined in this study. The findings of this study suggest that approved substitutes for physical education that result in increases in physical activity should be encouraged as options for students to enroll in as a means of combating the prevalence of sedentary behavior in high school students. Further research is needed to examine other extracurricular activities' impact on physical activity in students.

Category: Health and Wellness (physiologic, psychological, and financial)

Advisor: Weidong Li

**The Moderating Effects of Self-Efficacy on the Prospective Association between
Parental Belief on Child Academic Ability and Child School Performance**
Eun Hye Hur

Self-efficacy theory posits that an individual's ability belief influences his performance (Bandura, 1977). Child academic self-efficacy has been widely studied and found significant regarding their school performance (Schunk, 1995). Little research, however, has focused on the impact of parental beliefs about child academic ability on children's actual school performance (Davis-Kean, 2005). Moreover, the joint contribution of child self-efficacy and parental beliefs to children's academic achievement has not been explored. The goal of this study was to explore if the parents' beliefs and attitude would predict child academic achievement and if child self-efficacy would moderate this predictive association. Data from the NICHD Study of Early Child Care and Youth Development was used for this study (N = 873). Parental belief on child academic ability was measured at 3rd grade using Child's School Preference and Ability scale (Jacobs & Eccles, 1992). Parental attitude toward children was measured at 4th grade using Parental Modernity Scale (Shaefer & Edgerton, 1985), assessing parents' child-centered attitude. Child self-efficacy was measured through self-report on questions adapted from Self and Task Perception Questionnaire (Jacobs et al., 2002). Child academic achievement was measured by teacher-reported Mock Report Card (Pierce & Hamm, 1999) at 6th grade. Family income and child academic achievement at 3rd grade were measured as control variables. In the first hierarchical regression analysis, parental belief and attitude were regressed on child outcome and both were found to be significant predictors. Next, child self-efficacy and the product terms with each parental belief and attitude were added to test interaction effects. Results showed that child self-efficacy only moderated the association between parental belief and child achievement. Specifically, parental belief about child ability at 3rd grade was positively associated with children's school performance at 6th grade, and this association was stronger for children with higher levels of self-efficacy.

Category: Educational Research with Implications
Advisor: Xin Feng

Self Concept and Religion: Muslim Adolescent Girls in Central Ohio Schools
Eman Tiba and Antoinette Miranda

The hijab (head covering) worn by Muslim women has been defined broadly as; a sign of liberation or a constraint, obligation to God or submissiveness to men, equality or oppression, and freedom or exploitation/objectification and degradation by criticism of men. The interpretation of the hijab has generated confusion and ignorance within the Western mainstream society, media and school curriculum. Instead of giving a voice to Muslim women, they have allowed themselves to speak on behalf of Muslim women and the hijab. The general public who perceive Muslim women who wear the hijab as oppressed, terrorist, and backwards, form these stereotypes with little knowledge as to how their lives are really lived. The researcher wishes to understand how the interpretation of the hijab can be determined by speaking with Muslim women and assessing their self-concept (i.e. self-image and self-esteem). This will be measured by Susan Harter's (1989) Self-Perception Profile for Adolescents Assessment on Self-Concept, a Religious Affiliation/Demographic Questionnaire and demonstrated by giving a voice in a focus group. This study will attempt to dig deeper into the misinformation and misconceptions that have been laid on Muslim woman and the hijab. By doing so, the researcher's purpose of this study is to determine the relationship between self-concept and the hijab in Muslim adolescents (14-18 years of age) who attend Central Ohio schools. The researcher will investigate multiple domains of self-concept in Muslim girls in relation to their school experiences, self-perceived social support from classmates, self-perceived social support from teachers, and experiences of discrimination.

Category: Urban Environment, Economic Development and Diversity
Advisor: Antoinette Miranda

RUN FOR GOOD: Cardiovascular and Behavioral Effects of a 10-week Intervention
J. Blake Holderman and Carmen B. Swain

INTRODUCTION: Lack of physical activity is a major factor contributing to increasing obesity rates in children. Obese children are likely to become obese adults, who are at risk for many chronic conditions such as diabetes, cardiovascular disease, and certain cancers. Cardiovascular fitness (VO₂max) has been shown to be inversely linked to such diseases. **PURPOSE:** To determine the influence of a fitness and behavioral intervention on VO₂max and physical activity participation in underactive youth. **METHODS:** Twenty-eight underactive volunteers (ages 13-17) were recruited to perform a submaximal treadmill test to determine aerobic fitness. An eight-week personalized exercise plan was prescribed based upon the results of the test. During programming, subjects met weekly for exercise and behavioral counseling sessions. Subjects were also asked to complete exercise on their own time, increasing in duration and time over the eight weeks, according to their exercise prescription. After completion of the program, subjects performed a post-submaximal treadmill test. Subjects' physical activity behavior was examined via the Stage of Change Questionnaire and questions from the Youth Risk Behavior Survey (YRBS). Questionnaires were completed before the eight-week programming, immediately after, and again as a 15-week follow-up to track changes in physical activity. Data will be examined using repeated measures ANOVA. **RESULTS:** Preliminary results from nine subjects (16.4±0.7 yr, 134±23.6 lb) show significant improvement ($p < 0.05$) in time on submaximal protocol (377±75 sec vs. 486±181 sec) and VO₂max (36.0±6.1 ml/kg/min vs. 40.3±7.0 ml/kg/min). Subjects reported exercising significantly more ($p < 0.05$) immediately following programming and at the 15-week follow-up when compared with baseline data (Pre: 1.8±1.3 days vs. Post: 3.7±1.0 days vs. Follow-up: 3.22±1.39 days). **CONCLUSIONS:** Findings to date suggest that the programming intervention utilizing fitness testing and behavioral interventions is an effective programming tool that shows promise for use with underactive children.

Category: Health and Wellness
Advisor: Carmen B. Swain

Nature of Science (NOS) Knowledge and Scientific Argumentation Skills in Taiwanese College Biology Students
Mei-Chun Lai and Karen E. Irving

Although many believe that students with mature understanding of NOS engage in argumentation more, mixed results were found in empirical studies. In argumentation studies, consensus assessment was lacking and most researchers only evaluated the structural aspects of argumentation. However in the science classroom, an assessment that examines the "content correctness" in addition to the "structural complexity" is necessary because scientific argumentation that is structurally complicated but full of misconceptions cannot be considered strong. Therefore, the goal of this study was first to develop a method to evaluate the quality of students' scientific argumentation in both the content and structure aspects. The second goal was to examine to what extent NOS knowledge and argumentation skills correlate. Furthermore, through semi-structured interview, this study documented how students manifest their epistemic thinking in argumentation construction. Significant correlation between NOS and argumentation was found in the first year of the study (2010); no correlation was found in follow-up study (2011). The preliminary analysis of students' NOS interview revealed that students with strong argumentation skills view science as an open entity that may be challenged and discussed. Additionally, students shed light on how Taiwanese scientific education system changed their understanding of the NOS.

Category: Teaching, Learning and Instruction across the Lifespan
Advisor: Karen Irving

**Dose Dependent Carotenoid Bioavailability from a Novel Tomato-Soy Juice Developed for
Cancer Prevention Trials
Lei Wan**

Background: We developed a tomato-soy juice (TSJ) with carotenoid-rich tomato (FG99-218) and soy germ to create a standardized, easily consumed food and to investigate its impact on primary prostate cancer. This study describes an initial test of TSJ for compliance, phytochemical bioavailability, and prostate specific antigen.

Methods: One can of TSJ provides 30 mg of carotenoids (20 mg of lycopene) and 2500 mg of soy polyphenol (80 mg of isoflavones -aglycone and glycosides). Sixty men consumed 0, 1 or 2 cans of TSJ/day for approximately 4 weeks. Serum, urine, and prostate tissue were procured for analysis. Serum carotenoids (including lycopene and its isomers, phytoene, and phytofluene) and polyphenols were analyzed by HPLC.

Results: Fifty-seven men completed the trial with excellent adherence to TSJ. We observed one episode of grade II toxicity: diarrhea. Lycopene is the most abundant tomato carotenoid in serum, followed by phytofluene and phytoene. Serum total lycopene increased by 27% (1.19umol/L vs 1.51umol/L, $P<0.01$) and by 73% (1.08 umol/L vs 1.87 umol/L, $P<0.01$) in men consuming 1 or 2 cans/day. In contrast, men consuming 0 can/day the concentration decreased by 20% (1.27 umol/L vs 1.02 umol/L, $P=0.01$). The ratio of all-trans to cis lycopene in serum is approximately 6:4 even though all-trans lycopene is nearly 90% of the ingested lycopene. In men consuming 1 or 2 cans/day the phytofluene concentration was significantly increased by 45% (0.23umol/L vs 0.33 umol/L, $P=0.002$) or by 100% (0.20 umol/L vs 0.41 umol/L, $P<0.01$), respectively. The phytoene concentration increased by 14 % (0.17 umol/L vs 0.20 umol/L, $P=0.08$) and by 89 % (0.13 umol/L vs 0.24 umol/L, $P<0.01$) in those consuming 1 or 2 cans/day. Urinary soy isoflavones and additional biomarkers of exposure and impact on the prostate are being evaluated.

Conclusions: A well-characterized TSJ can be produced in large scale for multi-institutional long-term cancer prevention trials and shows excellent compliance with minimal toxicity, while demonstrating absorption of biologically active phytochemicals.

Category: Health and Wellness (physiologic, psychological and financial)

Advisor: Steven K. Clinton, MD

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Special thanks to:

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EHE Office of Advancement
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Janet Ciccone
Andrea Bowlin, Director

Office of Student Life and Coca-Cola
Deborah Cunningham

Nationwide and Ohio Farm Bureau 4-H Center
Allen Auck, Building Coordinator

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