Second Annual Breakthroughs in Engagement, Art, and Research

BEAR DAY
April 19, 2012
About the cover image...

This piece is from my senior exhibition, “The Face of Homelessness in Macon,” which features portraits of local homeless people. As an artist, I’m attracted to portraying the human figure in a way that will describe the emotional state of the subject. With Sandra I endeavored to do just that; to capture the sheer sadness in her facial expression while raising awareness on the issue of homelessness in Macon.

-Heather Phillips
BEAR DAY SCHEDULE
Thursday, April 19, 2012

9:00-9:50  Keynote Address, Willingham Auditorium

“The Mentoring Relationship as a Research Model”
Dr. Alan Smith
Kathryn Doornbos
Erica Henderson

10:00-11:50  CLA & SSBE Poster Presentations, Heritage Hall, University Center

11:00-1:00  Art Show Reception, Hardman Hall Gallery

11:30  Art Show Awards, Hardman Hall Gallery

11:30-1:30  Lunch on the Quad (Bear Card/meal plan accepted)

12:00-1:00  Music on the Quad, performed by Megan Delong

12:00-4:50  Paper Presentations, Knight Hall

3:00-5:00  Engineering Expo, University Center Arena
Welcome to BEAR Day 2012 at Mercer University!

Breakthroughs in Engagement, Arts and Research (BEAR) Day and the Engineering Expo Day showcase outstanding undergraduate student research and special projects from the College of Liberal Arts, Stetson School of Business and Economics, and the School of Engineering. BEAR Day starts in Willingham Auditorium with a keynote address by Dr. Alan Smith, Kathryn Doornbos, and Erica Henderson. The CLA & SSBE Poster Presentations will be in Heritage Hall at the University Center with Paper Presentations in Knight Hall. An art show reception featuring student work will be held in Hardman Hall Gallery. Engineering Expo Day events feature paper and poster presentations on research and design projects and the annual Freshman Design Competition in the University Center arena.

BEAR Day demonstrates and honors the achievements of students and highlights the depth and breadth of the academic experiences at Mercer. This year’s event has over 300 students presenting in the program. I know you will enjoy the presentations and trust that BEAR Day will spark intellectual curiosity and inspire further scholarly pursuits.

Sincerely,

Wayne C. Glasgow, Ph.D.
Senior Vice Provost for Research
Dean of Graduate Studies
A professor in the Biology Department, Dr. Alan Smith earned a Bachelor of Arts in Biology from Millersville University in Pennsylvania and taught high school biology and chemistry for several years in Harford County, Maryland before pursuing graduate studies. He was awarded a fellowship from Rutgers University where he received a Ph.D. in Entomology. Dr. Smith studied insect biochemistry and molecular biology at the University of Arizona before his arrival at Mercer University in 1995.
Kathryn Doornbos is a 2010 Mercer honors graduate with a Bachelor of Science in Biology and minors in Chemistry and English, with an emphasis in southern studies. As an active student researcher under the mentorship of Dr. Alan Smith she completed an honors thesis exploring the prevalence of the causative bacterium of Rocky Mountain Spotted Fever in the Great Smoky Mountains National Park. Her time at Mercer was punctuated by her coordination of the first annual Macon Empty Bowls event, her participation in the planning and execution of the Caring for Creation conference, and her service on the University Honor Council as a justice and Associate Chief. Upon graduation, she was awarded a prestigious Fulbright Research Fellowship to Thailand and spent eleven months living and working in Bangkok. While in Thailand she worked in coordination with Mahidol University, Faculty of Science and traveled extensively throughout Thailand and S.E. Asia. She is currently a Ph.D. seeking graduate student at the University of Alabama at Birmingham, Graduate Biomedical Sciences Program: Microbiology Theme.
Erica Henderson is both a Tift and Presidential Scholar who will be graduating this May with a Bachelor of Science in Biology with a minor in Chemistry. She has been active in research since her freshman year, studying the prevalence of Rocky Mountain Spotted Fever in dog ticks collected from the Great Smoky Mountains National Park. She has presented her research at the 2011 annual meeting of the Association of Southeastern Biologists and was one of two students selected to represent Mercer University in the Goldwater Scholarship Competition in 2011. She is currently serving as secretary of the Students for Environmental Action and is a founding member of Alpha Epsilon Delta. She has been awarded the T. P. Haines Outstanding Biology Major Award for 2012. Upon graduation, she will be attending Georgia Health Sciences University's Physician's Assistant program.
CLA & SSBE POSTER PRESENTATIONS
Heritage Hall, University Center
SESSION A: 10:00 – 10:50

1. Federal taxation.
Student authors: Ashley Childress, Kayla Ott
Faculty author: Stephanie Morris

3. Music blogs and the role of the opinion leader in word of mouth marketing.
Student author: Jordan McGee
Faculty author: Steven McClung

5. Effects of adolescent fluoxetine exposure on female rat sexual behavior.
Student author: Rebecca Gregory
Faculty author: William Jenkins

7. Effects of internet dissemination of stress reduction techniques on stress, coping, and social support.
Student author: Laura McKenzie
Faculty author: Miranda Pratt

9. Effects of stimulus mode and mode congruency on degraded image identification for the picture superiority effect.
Student author: Thomaesa Brundage
Faculty author: Ami Spears

11. The effects of communication modality and emotionality on persuasion.
Student author: Tionna Crawford Harris
Faculty author: Keegan Greenier

Student author: Ayana Smith
Faculty author: Laura Beer

15. A yeast competition model and lab for teaching mathematical biology.
Student authors: Lyndssey Autrey, Belsy Garcia, Tiet Hoang
Faculty authors: Jeffrey Denny, Amy Wiles

17. Benchmarking individual computers and classroom/lab based clusters with Nvidia CUDA enabled devices.
Student author: Timothy Herold
Faculty author: Andrew Pounds

19. Using a honeypot to detect computer hackers.
Student authors: Rooshi Patel, Paul Sharon
Faculty author: Marshall Rich
21. The investigation of stability in Ag nanoparticle solutions using Zeta-Sizer measurements.
Student author: Andrew Weems
Faculty author: Caryn Seney

23. Biosurfactant discovery and characterization for environmental applications.
Student authors: Katherine Miller, Annika Sinha
Faculty author: Kathryn Kloepper

25. Functionalization of atomic force microscope cantilevers with enteroaggregative Escherichia coli.
Student author: Grant Geist
Faculty author: Bridget Trogden

27. Novel approaches to bromopyrrole marine alkaloids.
Student authors: Taylor Campbell, Vanessa Marie Breslin
Faculty authors: Adam Kiefer, David Goode

29. Epizoic cyanobacteria associated with a neotropical harvestman (Opiliones, Sclerosomatidae) from Tobago.
Student authors: Anna Coursey, Anna Henshaw, Madeline Olson, Ayana Smith
Faculty author: Virginia Young

31. The function of the focal adhesion protein vinculin in unicellular eukaryotes.
Student authors: Jonathan Myrthil, Alexandria Oliver
Faculty author: Linda Hensel

33. Untitled
Student authors: Ashley Bernard, Mariah Sappington, Immaculate Fernanades
Faculty author: Linda Hensel

35. Optimal transformation conditions observed in Escherichia coli.
Student author: Chinedu Egwu, Vianne Perdido
Faculty author: Linda Hensel

37. Mercury-free, small-scale artisanal gold mining in Mozambique: utilization of magnets to isolate gold at Clean Tech Mine.
Student authors: Ben Ascari, Matt K. Williams, Kassandra A. Knapper, Kaitlyn M. Logan, Vanessa M. Breslin, Ashley SkidmoreDaniel A. Bolt, Grant Geist, Lorlyn Reidy, James V. Cizdziel
Faculty authors: Kevin Drace, Adam Kiefer, Marcello M. Veiga

Student authors: Megan Beardsley, Ellen Maffeo
Faculty author: Heather Bowman Cutway
41. Optimizing methods for screening a gene knockout library.
Student author: Philip Coryell
Faculty author: Amy Wiles

43. Role of hyaluronic acid in Staphylococcal Enterotoxin B (SEB) induced inflammation.
Student author: Gabriela Law
Faculty author: Robert McKallip

45. Investigating the returns to two-year and four-year colleges for students of varying ability levels.
Student author: Alex Lockwood
Faculty author: Courtney Collins

47. Predicting tennis tournament winners.
Student author: David Barton
Faculty author: Courtney Collins

**SESSION B: 11:00 – 11:50**

2. Finding Common Ground: Mercer University's campus climate and safe space program.
Student author: Anne Biggs
Faculty author: Natalie Bourdon

4. Valuing stocks.
Student author: Sarah Santana
Faculty author: Anitha Manohar

6. The relationships among affect, coping behaviors, personality and quality of life for patients with aneurysms.
Student author: Kishauna McDonald
Faculty author: Miranda Pratt

8. The effects of positive mirror exposure on male and female body satisfaction.
Student author: Sarah Harber
Faculty author: Miranda Pratt

10. Carryover effects of emotional regulation on decision-making under risk.
Student author: Leanne Holt
Faculty author: Tanya Sharon

12. The capacity of environmental justice in off-shore drilling.
Student author: Racquel Richards
Faculty author: Bryan Williams

Student author: Gloria Ananing
Faculty author: Jeffrey Denny
16. Building a better tomorrow: one brick at a time.
Student authors: Brianne Bower, Melina Hettiaratchi, Dallas Esquibel, Jeremy Reardon, Sterling Hill, Ternecia Daniels, Briana Williams, Jasmine Blakemore
Faculty author: Monika Sawhney

Student authors: Brittany Rigelwood, Jessica Kaylor
Faculty author: Brian Rood

Student author: Christopher Svidesskis
Faculty author: Marshall Rich

22. Characterization of active site mutants of the O-GlcNAcase enzyme.
Student authors: Jaynisha Patel, Gary Mythril
Faculty author: Garland Crawford

24. Quantification of metal desorption from industrial kaolin as a function of environmental conditions.
Student author: Kassandra Knapper
Faculty author: Kathryn Kloepper

Student authors: Kaitlyn Logan, David Michaeli
Faculty authors: Adam Kiefer, David Goode, Rudolfs Zalups

28. Integration of international service learning into the upper level biology curriculum.
Student author: Daniel Van Valkinburght
Faculty author: Virginia Young

30. Management of fish population structure in a Georgia piedmont pond.
Student authors: David Faulkner, Jacob Sloan
Faculty author: Michael Moore

32. Isolation, amplification, expression, and binding of Zinc Finger Nuclease 24 in *homo sapiens*.
Student author: Meghyn Welch
Faculty author: Linda Hensel

34. The effects of methylation of lambda DNA on restriction enzyme activity.
Student authors: Jasmine Fuller, Jordan Jackson, Brittany Onyeji
Faculty author: Linda Hensel

36. Mercury resistant bacteria isolated from artisanal gold mines.
Student authors: Tyler Harris, Ashlie Rubrecht, Fred Ojukwu, Richard Sarrell, Brittany Graham
Faculty author: Kevin Drace
38. The effects of an oxytocin receptor antagonist on play behavior in juvenile rats.
Student authors: Rebekah Hogg, Joseph Tanga, Gayle-Anne Hendricks
Faculty author: Katharine Northcutt

40. Troubleshooting transformations in Saccharomyces cerevisiae.
Student authors: Ellie Butler, Nina Shouse, Ronak Patel
Faculty author: Amy Wiles

42. The effect of 4-MU treatment on SEB induced spleen cells.
Student author: Clara Castillejo
Faculty author: Robert McKallip

44. Exploring how differences in state-level food stamp programs affect health outcomes of low-income individuals.
Student author: Tosha Dunn
Faculty author: Courtney Collins

46. Relationships between corruption and remittances.
Student author: Emily Stephens
Faculty author: Courtney Collins
CLA & SSBE POSTER PRESENTATION JUDGES

Dr. Katherine Northcutt, Assistant Professor of Biology
Dr. Ami Spears, Associate Professor of Psychology
Dr. Kathryn Kloepper, Assistant Professor of Chemistry
Dr. Tanya Sharon, Associate Professor of Psychology
Dr. Carolyn Yackel, Associate Professor of Mathematics
Dr. Alan Smith, Professor of Biology
Dr. William Jenkins, Assistant Professor of Psychology
Dr. Craig Byron, Assistant Professor of Biology
Dr. Kevin Drace, Assistant Professor of Biology
Dr. Virginia Young, Assistant Professor of Biology
Dr. Linda Brennan, Professor/Accreditation Strategic Planning Director
Dr. Jeremiah Reinkoester, Assistant Professor of Mathematics
Dr. Adam Kiefer, Assistant Professor of Chemistry
Dr. David Nelson, Associate Professor of Mathematics
Dr. Garland Crawford, Assistant Professor of Chemistry
Dr. Heather Bowman Cutway, Associate Professor of Biology
Dr. Marshall Rich, Assistant Professor of Computer Science
Dr. Susan Cline, School of Medicine
Dr. Miranda Pratt, Professor of Psychology
1. An Uncertain Future, Knight 203, Moderator: Dr. Robert Good, Associate Professor of History
   - Jennifer Lada, “International Law: Effective Tool to Combat Transnational Corruption?”
   - Shelby Hall, “From Al Qaeda to Fukushima: Are We Prepared for Nuclear Security Threats”

2. Enhancing Mercer’s Mission, Knight 207, Moderator: Theresa Rhodes, Associate Director of Public Service Collections, Tarver Library
   - Audra Jones, “Making Student-Alumni Connections: The International Affairs Program at Mercer University”

3. Assay Tests, Knight 100, Moderator: Dr. Natalie Bourdon, Assistant Professor of Women & Gender Studies
   - Tiet Hoang and Belsy Garcia, “Development of Competition Assay between Saccharomyces cerevisiae and Schizosaccharomyces pombe for Mathematical Biology Classroom Use”

4. Politics in the Old South, Knight 106, Moderator: Dr. David Davis, Assistant Professor of English

5. Environmental Justice, Knight 108, Moderator: Dr. Margaret Symington, Associate Professor of Math
   - Bolivar Gil, “Is the City of Macon Environmentally Just?”

6. Education and Agency, Knight 304, Moderator: Dr. Marshall Rich, Assistant Professor of Computer Science
   - Massa T. Mamey, “Students’ Attitudes toward Mandatory Comprehensive Sex Education”
   - Levi Lewis, “Virtual Campus Tour of a University”
7. Training for Peace, Knight 303, Moderator: Dr. Charlotte Thomas, Professor of Philosophy
   Steven Sparks, “Training for Victory at Pointe du Hoc”
   Ryan Tyler Thompson, “Military Security: Before and After a Sudden Homeland Attack”

**1:00-1:50**

8. The Ethics of Medicine, Knight 203, Moderator: Dr. Paul Lewis, Associate Professor of Christianity
   Nand Patel, “Decisive Authority in Medicine”
   Rebecca Webb, “The Unveiling of a Horrible Truth: The Role and the Motivation of the Media”

9. Influence and Power, Knight 207, Moderator: Dr. Eimad Houry, Professor of Political Science
   Christopher Kennedy, “Is Soft Power Durable? An Examination of the Economic Tools to Achieve Political Ends”
   Marissa Hartert, “People for the American Way”

10. Mining for Solutions, Knight 100, Moderator: Dr. Garland Crawford, Assistant Professor of Chemistry
    Ashlie Rubrecht, “Identification and Characterization of Mercury Resistant Bacteria from Artisanal Gold Mining Camps in Mozambique”
    Justin Pritchard, “Environmental Justice in the Mining Industry”

11. A More Secure Future, Knight 106, Moderator: Dr. Fernando Palacios, Assistant Professor of Foreign Languages & Literature
    Maddison Cooper, “Terrorizing Terrorists: The Correlation between Terrorism and National Security”
    Amiee Frutchey, “Is It Time to Stop Sitting on the Sideline?: Cooperative Security and the Millennium Development Goals”

12. The Ends of Autobiography, Knight 108, Moderator: Dr. Anna Silver, Associate Professor of English
    Sabina Constantin, “Rainer Maria Rilke: The Person and the Poet”
    Matthew Gorgans, “Formed for Labour, Not for Love: Portrayals of Religion in Jane Eyre”

13. Food Insecurity, Knight 308, Dr. Leona Kanter, Associate Professor of Sociology
    Trenton White, “Urban Demography and Social Determinants of Nutrition in Brazilian Children”
14. Repressed Texts, Knight 304, Moderator: Dr. Janell Johnson, Associate Professor of Christianity
   Kyle Shook, “Glitter and Be Gay: Queer Images and Sodomy Metaphor in The Little Mermaid”
   Josh Coleman, “Lawrentian Provocative Literature: Misperceptions about Obscenity and Pornography in Lady Chatterly’s Lover”

15. To the Death, Knight 303, Moderator: Julia Huskey, Catalog Librarian
   Kalie Frank, “The ‘Bloodying’ of Mary I”

2:00-2:50

16. Divergent Policies, Knight 203, Moderator: Dr. Robert Good, Associate Professor of History

17. Chemical Changes, Knight 207, Moderator: Dr. Garland Crawford, Assistant Professor of Chemistry
   Daniel Bolt, “An Examination of the Effect of Protein Denaturation on UV Absorption and Calculation of the Equilibrium Constant of Denaturation”
   Danielle Montanari, “Separation and Characterization of Biosurfactants Produced by Bacteria”

18. Reading for Pleasure, Knight 210, Moderator: Dr. Deneen Senasi, Assistant Professor of English
   George Williams, “‘Leisure Readers’: Examining Social Factors that Influence Students to Read for Pleasure”
   Michelle Meredith, “The Sanctification of ‘All Things, Seen and Unseen’ Through Communion and Transubstantiation in Tim O’Brien’s The Things They Carried”

19. Religion and Peace, Knight 100, Moderator: Dr. Darlene Flaming, Associate Professor of Christianity
   Maaz Sheikh, Bailee Kitchens, and Zachry Laursdorf, “All are Welcome: Our Group’s Journey to Interfaith Discussion”
   Samantha Henan, “Christianity: Antithetical to Violence”

20. Rapprochements, Knight 106, Moderator: Dr. Tom Scott, Professor of History
   David Ellis, “Russo-German Relations During the Interwar Years”
   Liza Dye, “Will Iraq be a Success in the Long Term?”
21. Aperitifs, Knight 108, Moderator: Dr. Mary Raschko, Assistant Professor of English
   Lee Adcock, “Don’t Eat with Your Eyes Open”
   Brittany Crosby, “From the Wheat Field”

22. Asian Studies Initiatives, Knight 308, Moderator: Dr. Monika Sawhney, Assistant Professor of Interdisciplinary Studies
   Thomas Holmes, Jessica Arthur, and Lauren Spradley, “Mercer on Mission: Cambodia 2011”
   Elizabeth Goodman, “The Trouble with China: China’s Responsibility toward Global Environmental Justice”

23. Metaphors and Meaning I, Knight 304, Moderator: Theresa Rhodes, Associate Director for Public Services/Collections
   Briana Mitchell, “An Uphill Battle: Deciphering the Importance of Metaphor”
   Kendra Grant, “Literature Speaks to Us”

24. Text and Gender, Knight 307, Moderator: Dr. David Davis, assistant Professor of English
   Noah Maier, “The F is for Feminism; Exploring Lil’ Wayne through Rhetorical Feminist Analysis”
   Mairin J. O’Steen, “Illuminating Reality: Literature’s Role for Humanity”

25. Metaphors and Meaning II, Knight 203, Moderator: Dr. Rosalind Simson, Associate Professor of Philosophy
   Shianne Quick, “Evading Truths: Are Words Enough?”
   Tenica Williams, “What Gives Us Literature?”

26. Gold/Protein Conjugates, Knight 207, Moderator: Dr. Caryn Seney, Professor of Chemistry
   Lara Smith, “Determination of Binding Properties of Protein/Au Conjugates using Calorimetry”
   Shanna Smith, “The Use of SERRS to Probe Interactions between Gold/Protein Conjugates”

27. Young America, Knight 210, Moderator: Dr. Bob Allen, Professor of Computer Science
   Sean Kennedy, “Front-Loading in the 2008 Primaries and the Possible Effects of a Single-Day National Primary”

28. Self and Others, Knight 100, Moderator: Dr. Fletcher Winston, Associate Professor of Sociology
   Emily Garrott, “Nietzsche and Emerson: Theorists on ‘The Self’”
   Chelsea Flieger, “Local Engagement Against Poverty, A Student-Led Initiative”
29. Infrastructural Challenges, Knight 106, Moderator: Dr. Chris Grant, Associate Professor of Political Science
   Patrick Walters, “Bringing Microfinance to Macon”
   McCabe Olsen, “Assessing the Environmental Justice of the Trucking Industry”

30. Church and Capitalism, Knight 108, Moderator: Dr. Richard Wilson, Professor
   Matthew Jordan, “Americans United for Separation of Church and State in America’s Democracy”
   Alvin Huff, “Beyond Smith’s Wealth: Ethics and Economics within Adam Smith”

31. Faith in Action, Knight 308, Moderator: Laura Botts, Head of Special Collections, Tarver Library
   Caitlin Childers, “Do Christians Really Care?: An Examination of Factors that Affect Christian Service”

32. Epic Odysseys, Knight 303, Moderator: Dr. Scott Nash, Professor of Christianity
   Mercedes Mixon, “Born in Troy or Italy?: The Legend of Ascanius as Influenced by Augustan Propaganda”

33. Rights to Life, Knight 304, Dr. Randall Harshbarger, Associate Professor of Interdisciplinary Studies
   Kareena McNeill, “The Green Mile: An Examination of Death Penalty Support”
   Ashley Price, “The Principles of Bioethics and the Fulfillment of the Sanctity of Life Principle”

4:00-4:50
34. The Word(s) of God, Knight 203, Moderator: Laura Botts, Head of Special Collections, Tarver Library
   Barbara S. Windom, “Whose Faith and Does it Make a Difference?”
   Sarah Stitt, “Justification: From Division to Unity”

35. Sugar Chemistry, Knight 207, Dr. Bridget Trogden, Associate Professor of Chemistry
   Kelly Ferrill, “Applying Chemistry to Biological Problems: Synthesis of Protected D-Galactose and Gluronic Acid”
   Jamesa Hogges, “Manipulation of Glucuronic Acid to Form a Carbohydrate-Polymer Conjugate”
36. Globalization and the Environment, Knight 108, Moderator: Laurie White, Professor of Computer Science
   Jessica Byers, “Big Manufacturer, Big Injustice? Environmental Justice in China
   Edmond Z. Cooper, “Africa, The Dump Site for the West”
   Samuel Johnson, “China's Investments in West African Resources—What Africa Gains”

37. Representing the College, Knight 210, Moderator: Dr. Hope McIlwain, Associate Professor of Math
   Dakota Gregory and Karmel Keeton, “The Workout Habits of Mercer University’s Student Body”
   Matt Townsend, “The Impact and Importance of a Student Government”

38. Metaphors and Meaning III, Knight 106, Moderator: Dr. Shawn Loht,
   Jamel Tyree Johnson, “The Death of the Limitation called Literature”
   Christopher Smith, “Literature’s Functions to Give Insight into the Hidden Struggles of Existence”

39. For the People, Knight 308, Moderator: Dr. Fernando Palacios, Assistant Professor of Foreign Language & Literature
   Sharpe Sablon, “Does Democracy Promote Sustainable Peace?”
   Stephen Finney, “Interest Groups and Democracy”
   Randyl Cochran, “The Idea of Freedom in Contemporary Political Thought”

40. Acting Locally, Knight 303, Moderator: Dr. Tom Scott, Professor of History
   Tyler Bishop, “Finding Republican Voters in Macon: An Introductory Study”
   Lorin Sullivan, “Seeing the Pain: Mercer Student Awareness of Child Abuse”

41. Contemporary Political Questions, Knight 304, Moderator: Dr. Edward Weintraut, Professor of Foreign Language & Literature
   Randyl Cochran, “The Idea of Freedom in Contemporary Political Thought”
   Phillip York, “The Arab Spring and the Role of Social Media in Fostering Democratization”
BEAR Day Planning Committee

Ellen Begley, student representative
Kevin Bucholtz, Director of Undergraduate Research
   David A. Davis
   Kimberly Freeman
   Sinjae Hyun
   Samantha Murfree
   John Thomas Scott
   Eric Spears
   Renee Thigpen
   Amy Wiles
   Fletcher Winston, Chair

Special Thanks to Jennifer Look for helping to coordinate the CLA & SSBE Poster Presentations

Mercer University is an institutional member of the Council on Undergraduate Research