



INTERDISCIPLINARY RESEARCH CONFERENCE:

FOCUS ON YOUR FUTURE

2014-2015

MARCH 25-26, 2015

PALM BEACH ATLANTIC UNIVERSITY

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Presented by:
Institutional Research and Effectiveness

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2014-2015 Interdisciplinary Research Conference

Focus on Your Future

The Interdisciplinary Research Conference was developed to recognize the scholarship of students and faculty in all disciplines. It provides our undergraduate and graduate students and faculty with the opportunity to present their scholarly work to the campus community. In this context, research is interpreted as any scholarly or creative activity ranging from scientific experimentation to artistic expressions, service-learning, literary criticism, or case-study designs.

The conference was designed to facilitate the exchange of ideas among all fields of inquiry, encourage scholarly investigation, and foster the educational function of research, broadly defined.

The theme, *Focus on Your Future*, was incorporated to provide students with an opportunity to use their scholarly work as leverage in exploring future career possibilities.

A complementary copy *Enlightening Minds: Research Review 2014* is available at the conference registration table.

Conference Keynote Speaker

Dr. Kimberly J. Reich
Texas A&M University at Galveston

Kimberly Reich, Ph.D., is assistant research scientist and director of the Trophic Ecology and Sea Turtle Research Lab, and a faculty member at Texas A&M University at Galveston.

Reich has written numerous publications, primarily on sea turtle diet and movements. Most of Reich's work utilizes stable isotopes of carbon and nitrogen to elicit a chronological sequence of a sea turtles diet and/or habitat during their time at sea.

Her manuscripts appear in journals: *Oecologia*, *Biology Letters*, *Marine Ecology Progress Series*, *Marine Biology*, *Physiological and Biochemical*



Zoology, Ecosphere, and Endangered Species Research among others.

Dr. Reich completed her Bachelor of Science degree in Biology with a concentration in Marine Biology and a minor in Oceanography at Palm Beach Atlantic University in 1998; her Master of Science degree in Wildlife and Fisheries Sciences was earned at Texas A&M University before she went on to conduct her doctoral studies in Zoology at the University of Florida.

Following the completion of her Ph.D., Dr. Reich did a Postdoctoral Research Fellowship at Texas A&M at Galveston in the Department of Marine Biology. Upon completion of the Fellowship, she was offered the Assistant Research Scientist position.

2014-2015 Conference Schedule

Wednesday, March 25, 2015
Conference Opening Session
Lassiter Rotunda - Warren Library
11 a.m. - 12 p.m.

Welcome and Opening Prayer

Dr. Gene C. Fant, Jr.
Provost and Chief Academic Officer

Introduction of
the Keynote Speaker

Dr. Gary Goss
Senior Professor of Biology
School of Arts and Sciences

Keynote Speaker

*"Courage, Faith, and Succeeding in Academia:
Insights from my Experiences"*

Dr. Kimberly J. Reich
Assistant Research Scientist
Texas A&M University at Galveston

Refreshments will be served on the Yeager Patio immediately following the Opening Session

A complementary copy of Enlightening Minds: Research Review 2014 is available at the conference registration table.

Student and Faculty Poster Presentations
Lassiter Rotunda - Warren Library
12 p.m. - 1 p.m.

Christina Baxter, Medicinal and Biological Chemistry major; **Andrea Hassler**, Psychology major; **Chris Conner**, Biology major; **Kelsey Taber**, Biology major; and **Vanessa Rowan**, Assistant Professor of Biology. "The Effects of Art Therapy on the Alpha Waves of Autistic Children." (p. 12)

Carly Chapman, Medicinal and Biological Chemistry major; **Dr. Cidya Grant**, Assistant Professor of Chemistry; and **Dr. Mireille Aleman**, Assistant Professor of Chemistry. "Providing Proof of Concept for Strengthening New Natural Products Research Group." (p. 13)

Psychology majors **Danielle Namour**, **Annette Custureri** and **Laura Duncan**; **Dr. Stephen Sylvester**, Assistant Professor of Exercise Science; and **Dr. Angie McDonald**, Associate Professor of Psychology. "Cancer-Related Fatigue and the Benefits of Exercise." (p. 13)

Biology majors **Jennifer Cutter**, **Doug Kreh**, and **Amanda Long**; and **Dr. Linda Sedlacek**, Assistant Professor of Earth Science and Oceanography. "Elemental Analysis of Various Types of Zooplankton in Lake Worth Lagoon, FL." (p. 13)

Biology majors **Amber Johnson** and **Maryssa Ellison**; **Dr. Suzanne Cardona**, Assistant Professor of Biology. "Generation of Rhodopsin cDNA Constructs with Mutations that Cause the Blinding Disease Retinitis Pigmentosa." (p. 13)

Kyra Kinnaman, History major; and **Dr. Elizabeth Stice**, Assistant Professor of History. "Empire and Sport in British Trench Papers of WWI." (p. 13)

Psychology majors **Brianna Marecki**, **Neisha Wilson '14**, **Kelli Strickler '14**, and **Danielle Hyatt '14**; and **Dr. Angie McDonald**, Associate Professor of Psychology. "Teacher-Child Attachment, Peer Relationships, Parental Relationship and Religiosity among Elementary School Children." (p. 14)

Pharmacy majors **Andrea Mezentsef**, **Paul Jackson**, and **Umima Baig**; **Dr. James Mitroka**, Associate Professor of Pharmaceutical Sciences; **Dr. Jamie L. Fairclough**, Assistant Dean for Assessment; and **Dr. Christine Brooks**, Associate Professor of Nursing. "Pharmacy and Nursing Students' Self-Perceptions of Stress and Corresponding Measured Hair Cortisol Levels." (p. 14)

Psychology majors **Kristin Moya** and **Elexenia Moya**; **Dr. Angie McDonald**, Associate Professor of Psychology; and **Dr. Claire Wolan-O'Connor**, Assistant Professor of Psychology. "Psychology Majors: Assessment of Preparedness and Worldview." (p. 14)

Sandra Ojurongbe, Assistant Professor of Nursing. "Exploring the Potential for Schizophrenia in at Risk Afro-Caribbeans in the United States: A Meta-Synthesis." (p. 14)

Nicholas Palm, Pharmacy major; **Dr. Elias Chahine**, Associate Professor of Pharmacy Practice; and **Wissam Kabbara**. "Four-Year Assessment of an Integrated Infectious Diseases Pharmacotherapy Course." (p. 15)

Biology majors **Kelsey Taber** and **Chris Conner**; **Taylor Anderson**, Medicinal and Biological Chemistry major; **Andrea Hassler**, Psychology major; **Christina Baxter**, Biology major; and **Dr. Vanessa Rowan**, Assistant Professor of Biology. "Understanding the Effects of Art Therapy on the Beta Waves of Autistic Children." (p. 15)

Kayla Vredeveld, Athletic Training major. "Reducing the Risk of Osteoporosis in Spinal Cord Injury Patients." (p. 15)

2014-2015 Conference Schedule

Wednesday, March 25, 2015 and Thursday, March 26, 2015

Student and Faculty Presentations

Hanley Classroom and Center for Teaching Excellence (CTE), room 208 - Warren Library

1 p.m. - 4:30 p.m.

Wednesday, March 25

Science and Health Care Track

Hanley Classroom (Room 115)

1 p.m.

Molly Michael, *Political Science major, School of Arts and Sciences*. "The Patient Protection and Affordable Care Act of 2010." (p. 6)

1:30 p.m.

Pharmacy majors **Jacqueline Walker** and **Andreina Ottman**, *Gregory School of Pharmacy*. "Facebook Utilization and Academic Performance Among Pharmacy Students." (p. 6)

2 p.m.

Danielle Namour, *Psychology major*; and **Dr. Stephen Sylvester**, *Assistant Professor of Exercise Science, School of Education and Behavioral Studies*. "Cancer-Related Fatigue and the Benefits of Exercise." (p. 6)

2:30 p.m.

Alyssa Claudio, *Pharmacy major*; and **Dr. Matthew DellaVecchia**, *Associate Professor*

of Pharmaceutical Sciences, Gregory School of Pharmacy. "Reflections on the Side-Effects of a Pharmacy Student's Teaching Assistant Experience in a Medicinal Chemistry Course." (p. 6)

3 p.m.

Carly Chapman, *Medicinal and Biological Chemistry major*; and **Dr. Cidya Grant**, *Assistant Professor of Chemistry, School of Arts and Sciences*. "Providing Proof of Concept for Strengthening New Natural Products Research Group." (p. 7)

3:30 p.m.

Psychology majors **Danielle Namour**, **Brianna Marecki**, **Friederike Luetzenberg**, and **Nathan Flores '14**; and **Dr. David Compton**, *Professor of Psychology, School of Education and Behavioral Studies*. "How to Succeed in the Graduate School Admission Process by Not Really Trying." (p. 7)

Liberal Arts and the Social Sciences Track

Room 208

1 p.m.

Dr. Sam Joeckel, *Associate Professor of English, School of Arts and Sciences*. "C.S. Lewis as Public Intellectual." (p. 7)

1:30 p.m.

English majors **Kristen Bolden**, **Skye Nosbisch**; **Micah Phipps**, *History major*; and **Dr. Carl Miller**, *Assistant Professor of English, School of Arts and Sciences*; **Thomas Lubben**, *Music major, School of Music and Fine Arts*; and **Arnaldo Garcia**, *Psychology major, School of Education and Behavioral Studies*. Group presentation on children's literature. (p. 7-8)

3:30 p.m.

Dr. David Horkott, *Associate Professor of Philosophy, School of Arts and Sciences*. "Nietzsche's Critique of Christian Morality." (p. 8-9)

4 p.m.

Ashley Taylor, *Music Education major, School of Music and Fine Arts*. "What's in a Name? Schumann's Embedded Narrative in Papillons, Op. 2" (p. 9).

Thursday, March 26

Science and Health Care Track

Hanley Classroom (Room 115)

1 p.m.

Dr. Suzanne Cardona, *Assistant Professor of Biology*; **Daniel Alvarado**, *Visiting Professor of Accounting*; **Dr. Patrick Heyman**, *Professor of Nursing*; **Dr. Jeremy Couch**, *Executive Director*; and **Jay Jackson**, *Assistant Professor of Pharmacy Practice*; and **Vanetta Bratcher**, *Director of Student Success Center (panel moderator)*. "Scholarly Life After PBA." (p. 9-10)

2 p.m.

Biology majors **Christina Baxter** and **Kelsey Taber**; and **Dr. Vanessa Rowan**, *Assistant Professor of Biology, School of Arts and Sciences*. "Understanding the Effects of Art on the Brainwaves of Autistic Children." (p. 10)

3 p.m.

Cameron Bullock, *Psychology major, School of Education and Behavioral Studies*. "Live from SeaWorld Orlando: Psi Chi Hosts Live Streamed Demo on Killer Whales." (p. 10)

3:30 p.m.

Drs. Dana Brown, *Associate Professor of*

Pharmacy Practice and **Jamie Fairclough**, *Assistant Dean for Assessment; Gregory School of Pharmacy*. "Medical Missions Efforts in the Gregory School of Pharmacy." (p. 10)

4 p.m.

Michael Weber, *Pharmacy major, Gregory School of Pharmacy*. "Role of Arginase and Ornithine Decarboxylase in Human Airway Smooth Muscle Migration." (p. 10-11)

Liberal Arts and the Social Sciences Track

Room 208

1 p.m.

Dr. Tom St. Antoine, *Professor of Communication*; **Dr. Phil Henry**, *Associate Professor of Counseling*; **Jeanny Alexandre**, *'10 Ministry major*; **Audy Johnston**, *Assistant Professor of Leadership and Management*; and **Kim Ladd**, *Director of Career Development (panel moderator)*. "Scholarly Life After PBA." (p. 11)

2 p.m.

Dr. David Lawson, *Professor of Counseling, School of Education and Behavioral Studies*.

"Logos and Splinters: The Impact of Self-Esteem, Self-Care, and Self-Medication in the Christian Community." (p. 11)

2:30 p.m.

Evan Berlanti, *History major, School of Arts and Sciences*. "Civic Discourse in American Society." (p. 11-12)

3 p.m.

Dr. Carmela Nanton, *Professor of Education, MacArthur School of Leadership*. "Rose Colored Glasses: A Prism for Malawian Women's Leadership for the Common Good." (p. 12)

3:30 p.m.

Dr. Kathy Maxwell, *Associate Professor of Biblical and Theological Studies, School of Ministry*. "Storytelling as Engaged Learning" The Science and Experience in the Classroom." (p. 12)

4 p.m.

Katie Gentry, *Communication major, School of Communication and Media*. "Gender Stereotypes and Moral Misconceptions in Axe Commercials." (p. 12)

Oral Presentations

Science and Health Care Track

1 p.m. - 4:30 p.m.

Wednesday, March 25

Hanley Classroom

1 - 1:30 p.m.

The Patient Protection and Affordable Care Act of 2010 **Molly Michael, Political Science Major, School** **of Arts and Sciences**

My research examines the recent federal healthcare legislation, known as the Patient Protection and Affordable Care Act of 2010, and the historical progression of American health care. The study addresses both qualitative and quantitative aspects of the recent legislation. Finally, the study explores the probable effects of the new program on actual patient care. The study examines the Affordable Care Act in the light of both economic theory and historical experience. In particular, it addresses various unintended negative consequences of the legislation. In sum, the research attempts to determine whether the Affordable Care Act facilitates or diminishes the flourishing of the American people and the preservation of the traditional American way of life. It explores whether the new legislation strengthens or undermines traditional American values and rights, including both individual rights and characteristic American institutions such as limited government and free-market capitalism.

1:30 - 2 p.m.

Facebook Utilization and Academic Performance **Among Pharmacy Students**

Pharmacy majors Jacqueline Walker, Andreina Ottman; Dr. Jamie Fairclough, Assistant Dean for Assessment; and Dr. Krisy Thornby, Assistant Professor of Pharmacy Practice; Gregory School of Pharmacy

The life of a current pharmacy student is in stark contrast to one of ten years ago. This is for a multitude of reasons, including but not limited to: development of new drugs, new practices, technology, and differing social norms. One such standard of society that was not as prevalent ten years ago was the massive utilization of the social media outlet Facebook. Facebook was heavily used a decade ago, but its utilization was not as broad and far reaching as it is today. It appears as though Facebook may be a great medium; enhancing communication, generating revenue, and overall connecting the world. But how does Facebook affect today's pharmacy student? Has Facebook created a new obstacle to

maintain focus while in pharmacy school or has it enhanced communication between students? With these questions in mind, the relationship between Facebook use and academic performance should be examined.

2 - 2:30 p.m.

Cancer-Related Fatigue and the Benefits of Exercise **Danielle Namour; Psychology Major;** **Dr. Stephen Sylvester, Assistant Professor** **of Exercise Science, School of Education** **and Behavioral Studies**

A program designed to reduce cancer-related fatigue with guided exercise was assessed in the current study. The patients performed guided exercises designed specifically for them three times a week for eight weeks. Fatigue was assessed weekly in 35 cancer patients. Results found a significant reduction of fatigue interference in the daily lives of participants.

2:30 - 3 p.m.

Reflections on the "Side-Effects" of a Pharmacy Student's Teaching Assistant Experience in a Medicinal Chemistry Course

Alyssa M. Claudio, Pharmacy Major;
Dr. Matthew J. DellaVecchia, Associate Professor
of Pharmaceutical Sciences, Gregory School
of Pharmacy

Performance enhancing drugs (PEDs) are ever present in the athletic world. They are abused at the professional and Olympic levels and as early on as middle school competitions. Legitimate prescription drugs can be utilized in an off-label manner in hopes of gaining an athletic advantage. Acknowledgement alone does little to help the public understand the complexities of how a drug might contribute to an athlete's advantage or how its improper usage may lead to adverse health outcomes or "side-effects." A pharmacy student's three year service as a teaching assistant in an undergraduate medicinal chemistry course led to several positive "side-effects" including: 1) the development of an active learning-teaching module related to PEDs, 2) the development of educational outreach programs targeting campus athletes as well as athletes in the community, and 3) identifying the potential for pharmacy students and pharmacists to serve as an educational resource to prevent PED abuse.

3 - 3:30 p.m.

Providing Proof of Concept for Strengthening New Natural Products Research Group

Carly Chapman, Medicinal and Biological Chemistry Major; Dr. Cidya Grant, Assistant Professor of Chemistry; Dr. Mireille Aleman, Assistant Professor of Chemistry; School of Arts and Sciences

A new natural products laboratory has been created at Palm Beach Atlantic University (PBA). In this laboratory students will learn the techniques required to isolate components of plants and animals native to South Florida, study the cytotoxic effects of these crude and fractionated extracts, and isolate and purify the most active fractions of the extracts in order to investigate their chemical composition and functionality. In this study, the crude extracts from the leaves of the Madagascar periwinkle (*Catharanthus roseus*) were used in cytotoxicity studies on estrogen receptor negative (MDA-MB-231) human breast cancer cell lines. We observed changes in the morphology the cell lines with treatment. Chromatographic purification of the crude extract and further spectroscopic analyses led to the isolation and identification of the fraction containing the known pharmacologically active component, Vincristine. Vincristine and Vinblastine are two pharmacologically active alkaloids from *C. roseus* that are currently used to treat leukemia and lymphomas.

3:30 - 4:30 p.m.

How to Succeed in the Graduate School Admission Process by ~~Not~~ Really Trying

**Danielle Namour, Psychology Major;
Nathan Flores '14
Brianna Marecki, Psychology Major;
Friederike Luetzenberg, Psychology Major;
Annette Custureri (moderator), Psychology Major,
School of Education and Behavioral Studies**

Getting into graduate school can be quite the grueling ordeal and a process that has terrified many a prospective student. Applications, standardized tests, letters of recommendation, and prayer, all while looking ahead to the looming deadlines. In other words -- there is considerable planning and work you need to do to ensure you get into a the graduate program of your choice. This panel consists of students who have successfully scaled the hurdles and have been accepted into one or more graduate programs. Having "been there, done that" each panelist is ready to share the good, the bad, and the ugly of graduate school admissions.

Liberal Arts and the Social Sciences Track

1 p.m. – 3:30 p.m.

Wednesday, March 26

CTE 208

1 - 1:30 p.m.

C.S. Lewis as Public Intellectual

Dr. Samuel Joeckel, Associate Professor of English, School of Arts and Sciences

C.S. Lewis is sometimes referred to as a "public intellectual." But what does that mean? How did he fill that role? How did that identity increase his cultural impact? What intellectual and creative compromises did that identity entail? This presentation explores these questions, concluding that the public-intellectual role was for Lewis both empowering and limiting.

1:30 - 3:30 p.m. - Group Presentation

Going Deeper Under the Sea: Identifying Mental Illness in the Little Mermaid

Kristen Bolden, English Major; and Dr. Carl Miller, Assistant Professor of English, School of Arts and Sciences

The purpose of this paper is to argue that Hans Christian Andersen's *The Little Mermaid* (1837) consists of issues such as depression, eating disorders and the mental state behind abusive relationships. The little mermaid undergoes self-harm to achieve an ideal lifestyle (such as feeling like she is walking on knives so that she can have legs), which is common among people suffering from mental illness. On top of those being able to be identified within the story, these complications could be a window into Andersen's life. The issues reflected also give more insight on why Scandinavian countries—while consistently ranking among the happiest nations—have some of the highest suicide rates. Using texts like Kenneth Kidd's *Freud in Oz* (2011) and Leland Spencer's "Performing Transgender Identity in *The Little Mermaid*" (2014), I will look deeper into the content of this tale through psychoanalysis and mental illness identification.

From Sea Foam to Celebrity: The Evolution of "The Little Mermaid"

Skye Nobsch, English Major; and Dr. Carl Miller, Assistant Professor of English, School of Arts and Sciences

This paper will explore the most significant differences between Hans Christian Andersen's original written version of "The Little Mermaid" ("Den lille havfrue," 1837) and Disney's animated film adaptation of the tale in 1989. In

doing so, this paper seeks to explain the inconsistencies by examining how the cultural context of both Andersen's 19th century Denmark and, 150 years later, late-1980s America come into play in the crafting of these respective versions. Thus, a portion of the paper will explore Denmark and Scandinavian culture as juxtaposed by American/Anglo culture, especially focusing on the family structure, education, and religious values of each period. The paper will focus on the influence of historical context, assuming that Disney films are not generated in a vacuum. This exploration will reveal how the genre of children's literature affects (and is affected by) societal temperaments, suggesting the importance of its thread in the fabric of society.

Quid est Quod et Quod est Quid?: Children's Literature Translated into Latin

Micah Phipps, History Major; and Dr. Carl Miller, Assistant Professor of English; School of Arts and Sciences

No other language is revered as high in scholarly usages as is *Lingua Romae*, or Latin. It is very scholarly to cite *The Aeneid* by Virgil or *The City of God* by St. Augustine from the original Latin texts. It is another thing to cite anything by Dr. Seuss or *Winnie-the-Pooh* by A. A. Milne. What is the merit to combine the two? What are the similarities in a translated song in Winnie the Pooh? Is it even possible to translate Lewis Carroll's "Jabberwocky" into Latin? These are some of the most important questions in the field of children's literature translated into Latin that I will provide strong analysis for the justification of this style of literature's existence, and I will also give a new insight into a field that has yet to have any important scholarly research.

Where Are the Wild Things? Periodization and the Picture Book

Dr. Carl Miller, Assistant Professor of English, School of Arts and Sciences

While the 2005 publication of the Norton Anthology of Children's Literature stands as a landmark achievement for children's literary studies, it is enigmatically also the only Norton anthology organized by genre instead of chronology, raising the question of how to effectively periodize children's literature. Taking Fredric Jameson's suggestion that we may actually have non-synchronous modernisms across various aesthetic forms, this presentation applies the concept of non-synchronous periodization to the development of the children's picture book. Such a genre necessitates entirely new period concepts to account for the potentially-belated thematic and stylistic boundaries often imposed on it by adult culture, with such period concepts essential to the further legitimation of children's literary studies. In developing this historical materialist analysis, I suggest that the period logic of children's literature is both genre specific and generationally contingent, in ways that both reflect and anticipate developments in general literature and culture.

"Could it all be dreaming?" The Many Worlds of George MacDonald

Thomas Lubben, Music Major, School of Music and Fine Arts; Dr. Carl Miller, Assistant Professor of English, School of Arts and Sciences

This presentation will explore some real and imagined worlds of the Scottish novelist, poet, and clergyman George MacDonald. By investigating the atmosphere of his busy family life, it will discuss the dynamic of storytelling in MacDonald's literature and the way family tradition shaped his creativity. It will also cover his relationship with Lewis Carroll to describe the similarities and differences of the two writers' approach to children's literature. The analysis of MacDonald's imaginary worlds in several of his books—besides leading to a discussion of conventions in children's literature such as adventure literature, fantasy, and fairy tales—will also provide an opportunity to investigate the symbolism and spirituality that define his fantastic locations. In the end, this presentation will consider the contrast of MacDonald's work to other children's writer's as well as describe the universe his writing flung open to any young reader willing to step inside it.

Honduran Children's Literature: Eduardo Bahr Arnaldo Garcia, Psychology Major, School of Education and Behavioral Studies; and Dr. Carl Miller, Assistant Professor of English, School of Arts and Sciences.

In the words of Emer O'Sullivan, Professor of English literature at Leuphana University in Luneburg, Germany; The field of Comparative Literature studies the cross-linguistic, cross-cultural, and transhistorical aspects of literature. In the South American country of Honduras, the field of children's literature is saturated with imported and translated works from the English/British language, not unlike most other third-world countries. As a result, what has rarely been explored is how local works can provide insight into the inborn children's culture of Honduras or -even further- a certain specific and culturally-unique region of the country. This presentation will specifically focus on the work of Eduardo Bähr, a writer, actor, and professor of Honduran and Latin-American Literature at the National University of Honduras. His works of children's literature *Mazapán* (1982) and *Malamuerte* (1997) are iconic local texts, rich in reflections of the Honduran youth and in the overall nature of comparative literature.

3:30 - 4 p.m.

Nietzsche's Critique of Christian Morality Dr. David Horkott, Associate Professor of Philosophy, School of Arts and Sciences

Sabbatical research: working toward a monograph on Nietzsche's morality By David Horkott My research aims to encourage and inspire Christians to learn more about Nietzsche's critique of Christian morality. Nietzsche's recon-

dite philosophy (and the world's sustained interest in it) creates the need for a Christian response to his moral philosophy. This book is for those who wish to encounter Nietzsche's philosophy for the sake of its illuminating power and spiritual edification. Nietzsche had much to say about Christian morality throughout his productive life. One of his books, published in 1887, has received a tremendous amount of scholarly attention. His *On the Genealogy of Morality* is a collection of three essays that testify to the fact that brilliant minds can be difficult to follow. My research will show that all three essays are unified by the psychology of blaming.

4 - 4:30 p.m.

What's in a Name? Schumann's Embedded Narrative in Papillons, Op.2

Ashley Taylor, Music Education Major; and Dr. Michael O'Connor, Associate Professor of Music, School of Music and Fine Arts

Robert Schumann's character and his abundant writings, both public and private, provide plenty of material for researchers to explore. This presentation takes an in-depth look at one of Schumann's earliest works, *Papillons Op. 2*, examining the relationship between Schumann and the writings of Jean Paul Richter, namely *Die Flegeljahre*, or "The Awkward Years," which inspired the creation of *Papillons*. By taking into account two established interpretations of *Papillons*, a close reading of the score, and the likely effects Richter had on Schumann's style, one may discover an embedded narrative that sequences the creation of movements and reveals a unifying motive in the score.

Science and Health Care Track

1 p.m. – 4:30 p.m.

Thursday, March 27

CTE 208

1-2 p.m. - Panel Discussion

Scholarly Life After PBA: Insights from PBA Faculty Alumni on Launching Your Career

The first of two sessions featuring panel discussions with selected faculty representing ten academic disciplines. Discussion will focus on the faculty's Palm Beach Atlantic University undergraduate experiences that both prepared them and set them apart for pursuit of an advanced degree. Question and answer opportunity at the end of the panelists' presentations. Panel discussion moderated by Vanetta Bratcher, director of the Student Success Center. The faculty participants are as follows:

Dr. Suzanne Cardona '99, Assistant Professor of Biology, School of Arts and Sciences

Dr. Cardona is currently a member of Association for Research in Vision and Ophthalmology and a former member of the American Physiological Society. Her general research interest is the characterization of protein mutations to understand normal protein function or protein dysfunction that leads to disease. She performed her graduate studies in Cell and Molecular Physiology at the University of Alabama at Birmingham where her doctoral thesis focused on probing the function of an acid/base transport protein.

Daniel Alvarado '06, Visiting Professor of Accounting, Rinker School of Business

Daniel Alvarado is a member of the American Institute of CPAs as well as the Florida Institute of CPAs. He was the outstanding graduate of the Rinker School of Business in 2006. He earned a Master's in Taxation from Florida Atlantic University in 2009.

Dr. Patrick Heyman '94, Associate Dean, School of Nursing

Dr. Heyman has been active in the Palm Healthcare Foundation's Preceptor and Online Clinical Placement Initiatives, helping to ensure the quality of nursing and other healthcare workers in South Florida. Prior to coming back to PBA, he worked as a nurse practitioner in private practice. He received his Ph.D. from the University of Florida.

Dr. Jeremy Couch '01/'04, Executive Director of the Orlando Campus

Dr. Couch has been working in Christian higher education for over 11 years. He began his career at Palm Beach Atlantic University's main campus, where he served in a number of capacities before transitioning to PBA's Orlando Campus. After two years in the financial services industry, Couch returned to higher education as the director of admission for Belhaven University's Orlando Campus. In May 2011, he returned to Palm Beach Atlantic University to serve as campus director of the Orlando Campus. Couch graduated from PBA with a B.S. in Management and an M.B.A. He completed his Ed.D. in Organizational Leadership with an emphasis in higher education leadership from Grand Canyon University in May 2014.

Dr. Jay Jackson '12, Assistant Professor of Pharmacy Practice, Gregory School of Pharmacy

Dr. Jackson is involved in the integrated pharmacotherapy sequence, patient care skills with lab, and as a facilitator for both case studies and doctoral seminar. Dr. Jackson is an active member of the American Society of Health-System Pharmacists (ASHP) and the American College of Clinical Pharmacy (ACCP). He was

also inducted as a student and remains active in both the Rho Chi academic honor society and the Phi Lambda Sigma pharmacy leadership society. He received his Doctor of Pharmacy from PBA.

2 - 3 p.m.

Understanding the Effects of Art on the Brainwaves of Autistic Children

Christina Baxter, Biology Major;
Kelsey Taber, Biology Major;
Dr. Vanessa Rowan, Assistant Professor of Biology,
School of Arts and Sciences

Autism is a complex neurodevelopmental disorder which affects an individual's social interaction, communication, imagination and behavior. A hallmark feature of autism is unusual brain activity. As the frequency of diagnoses has increased in the last decade, now 1 in 68 children are affected, many therapies have been introduced in order to intervene with the effects of autism. Among these therapies, art therapy has proven to be an effective treatment among autistic children, but the extent to which this therapy affects brain activity is unclear. Thus, we hypothesized that art therapy would have a measurable effect on brainwaves in autistic children. Of particular interest in this study were alpha and beta waves as these are involved with alertness, focus, and motor behavior. To collect data, EEG's of the frontal lobe (F3 and F4), before and after art involvement (coloring or manipulating Play-Doh), were recorded and analyzed. Analysis revealed a change in the alpha brain waves of autistic children after art; and a change in the alpha and beta waves of autistic children! after play-doh manipulation, compared with non-autistic children. This manipulative form of art therapy seems to have a more positive effect in increasing the energy of both alpha and beta waves of autistic children, therefore possibly increasing mental preparation, alertness, active task engagement, and motor behavior.

3 - 3:30 p.m.

Live from SeaWorld Orlando: Psi Chi Hosts Live-Streamed Demo On Killer Whales

Cameron Bullock, Psychology Major,
School of Education and Behavioral Studies

Psi Chi will be sponsoring an educational Skype program put on SeaWorld Orlando. The educational program will include a 15-minute demonstration showing the way SeaWorld cares for their killer whales as well how they train husbandry and show behaviors. These behaviors will include a voluntary urine sample, blood draws and target pole training. Following the training demonstration will be a short question and answer period. This is a unique opportunity to not only see the applications of behavioral science

in a non-public setting, but will give audience members an opportunity to engage the topic of marine mammal care from an educated and first-hand perspective.

3:30 - 4 p.m.

Medical Missions Efforts in the Gregory School of Pharmacy

Dr. Dana Brown, Associate Professor of Pharmacy Practice;
Dr. Jamie Fairclough, Assistant Dean for Assessment, Gregory School of Pharmacy

Medical mission efforts have been ongoing in the Lloyd L. Gregory School of Pharmacy since 2003. Since then, logistical and research strategies have been employed to better execute and assess these efforts. This discussion will focus on domestic and international mission trips taken within the school of pharmacy. Results of research efforts will also be shared, along with the impact of the trips on our students and patients.

4 - 4:30 p.m.

Role of Arginase and Ornithine Decarboxylase in Human Airway Smooth Muscle Migration

Pharmacy majors Michael Weber and Adam Remick; Dr. Harm Marrsingh, Associate Professor of Pharmaceutical Sciences, Gregory School of Pharmacy; and Andrew Halayko, University of Manitoba, MB, Canada

The activity of arginase, which converts L-arginine into L-ornithine and urea, is increased in asthmatics. L-Ornithine is converted into putrescine by ornithine decarboxylase (ODC), the rate-limiting enzyme for polyamines synthesis. Since polyamines increase cell migration, which contributes to the pathophysiology of asthma, we investigated the role of arginase and ODC in human airway smooth muscle (hASM) cell migration using a scratch assay. Cultured hASM cells were pretreated for 3 days in the absence and presence of ABH (arginase inhibitor) or POB (ODC inhibitor) after which a uniform scratch was made. Cell migration, scratch area covered by hASM cells, to 10% FBS with or without ABH or POB was measured over time using camera-assisted microscopy. FBS time-dependently induced hASM cell migration, which was strongly inhibited by the ODC inhibitor POB and to a lesser extent by the arginase inhibitor ABH. In conclusion, arginase and particularly ODC contribute to hASM cell migration. The activity of arginase, which converts L-arginine into L-ornithine and urea, is increased in asthmatics. L-Ornithine is converted into putrescine by ornithine decarboxylase (ODC), the rate-limiting enzyme for polyamines synthesis. Since polyamines increase cell migration, which contributes to the pathophysiology of asthma, we investigated the role of arginase

and ODC in human airway smooth muscle (hASM) cell migration using a scratch assay. Cultured hASM cells were pretreated for 3 days in the absence and presence of ABH (arginase inhibitor) or POB (ODC inhibitor) after which a uniform scratch was made. Cell migration, scratch area covered by hASM cells, to 10% FBS with or without ABH or POB was measured over time using camera-assisted microscopy. FBS time-dependently induced hASM cell migration, which was strongly inhibited by the ODC inhibitor POB and to a lesser extent by the arginase inhibitor ABH. In conclusion, arginase and particularly ODC contribute to hASM cell migration.

Liberal Arts and the Social Sciences Track

1 p.m. - 4:30 p.m.

Thursday, March 27

CTE 208

1 - 2 p.m.

Scholarly Life After PBA: Insights from PBA Faculty Alumni on Launching Your Career

The second of two sessions featuring panel discussions with selected faculty representing ten academic disciplines. Discussion will focus on the faculty's Palm Beach Atlantic University undergraduate experiences that both prepared them and set them apart for pursuit of an advanced degree. Question and answer opportunity at the end of the panelists' presentations. Panel discussion moderated by Kim Ladd, director of Career Development. The faculty participants are as follows:

Dr. Tom St. Antoine '93, Professor of Communication, School of Communication and Media

Dr. St. Antoine is the director of the Frederick M. Super Honors Program at PBA. He has conducted research in the areas of rhetoric and public address, and in organizational communication and has also published articles in several communication journals specializing in Christian higher education. He also has presented his research at national and regional conferences and served as an editorial assistant for the *Quarterly Journal of Speech*. He received his Ph.D. from Louisiana State University.

Dr. Phil Henry '79, Associate Professor of Counseling, School of Education and Behavioral Studies

Dr. Henry is a licensed psychologist who has been in private practice with Diane Langberg and Associates, focusing on the treatment of addictions, school-related problems, marriage and family counseling, and issues relating to physical and sexual abuse. He is the author of a recent book on the practical integration of Christian counseling called, "The Christian Therapist Notebook: Homework, Handouts and Activities for Use in Christian Counseling," Haworth Press. He received his Ph.D. from Temple University.

Ms. Jeanny Alexandre '10 Ministry graduate

Jeanny leads the Chapel praise and worship team of more than 30 students at PBA. Growing up as a pastor's child in a ministry family, the Lord has consistently used her in music ministry. She also serves as a worship leader at Family Church Downtown West Palm Beach Florida. Jeanny is currently pursuing a master's in counseling from PBA in mental health and marriage, couple, and family counseling as this is her long-term career aspiration. "I'm a firm believer in instructing and equipping families (specifically those involved in music ministry) with different tools to keep their families spiritually and emotionally healthy," she said.

Ms. Audy Johnston '99/'02, Assistant Professor of Leadership and Management, MacArthur School of Leadership

Professor Johnston has more than 30 years' experience as a certified paralegal in various facets of the legal field and worked for many years at one of Florida's premier law firms. She is a member of the International Leadership Association, Association of Adult and Community Educators, American Association for Adults and Continuing Education, Society for Human Resource Management, and the National Association of Legal Assistants. Professor Johnston is currently pursuing Ph.D. studies in leadership and change at Antioch University.

2 - 2:30 p.m.

Logs and Splinters: The Impact of Self-Esteem, Self-Care, and Self-Medication in the Christian Community

Dr. David Lawson, Professor of Counseling, School of Education and Behavioral Studies

The Christian community is replete with self-help books and manuals covering a plethora of "How To" topics extolling the virtues of everything from self-negation to the popular "oils" therapy. These books and popular icons underscore the need for Christian "self-care" but frequently trigger our fears of self-aggrandizement or arrogance. The question of self-esteem is often flirted with in the Christian community. But many struggle to see the benefit of self-work and suffer in silence praying for the next novel idea being propagated in the Christian community. This presentation reviews the current research on self-esteem and the impact on the Christian view of self-care.

2:30 - 3 p.m.

Civic Discourse in American Society

Evan Berlanti, History Major, School of Arts and Sciences

My research with Senator LeMieux as a Fellow is an ongoing analysis of civic discourse in American Society. Specific

cally, I am examining the trends in debate and discussion regarding contemporary social issues and the rhetorical frameworks used in those debates. Every social argument involves a "window" of debate, with each side seeking to "reframe" that window in a favorable way. By examining the philosophical underpinnings of these frameworks, I think we may uncover a fracture in the way we as Americans are engaging in civic discourse, preventing constructive action and encouraging a more deconstructionist approach that rhetorically isolates disagreeing sides. We can start to identify some of these frameworks by examining a relevant modern debate, the legalization of marijuana. Examining the rhetorical arguments and underlying philosophical positions in these debates will allow us to better assess the current state of American discourse, and help us start the conversations that can lead toward more productive social relationships in the future.

3 - 3:30 p.m.

Rose Colored Glasses: A Prism for Malawian Women's Leadership for the Common Good

**Dr. Carmela Nanton, Professor of Education,
MacArthur School of Leadership**

In a land that is replete with fascinatingly rich cultural contrasts, a panorama of natural resources, and enterprising individuals Malawian women face extraordinary obstacles as indigenous leaders in a patriarchal society. Rather than using Rose-colored glasses, this sample of women used the lenses of socialized cultural practices as a prism through which emancipatory leadership strategies were developed. The research drew on a qualitative, interpretivist, grounded theoretical approach to identify emergent themes. The results of the Authentic Leadership Questionnaire, and a constant comparative method of cross-case analysis, were used to develop unique portraits of these participant's transformational leadership for the common good of their communities.

3:30 - 4 p.m.

Storytelling as Engaged Learning: The Science and Experience in the Classroom

Dr. Kathy Maxwell, Associate Professor of Biblical and Theological Studies, School of Ministry

Storytelling is an age-old practice that we often relegate to the realm of entertainment and children's activities. Recent studies are showing, however, that storytelling has a powerful effect on brain chemistry, behavior, and memory. This presentation, involving a paper, a performance, and a discussion, will explore the pedagogical effectiveness of storytelling. While biblical storytelling will be used as the main example, this discussion is applicable to any number of subjects. Storytelling in the university classroom, practiced both by instructor and student, is an effective pedagogical tool that fosters holistic and life-long learning.

4 - 4:30 p.m.

Gender Stereotypes and Moral Misconceptions in Axe Commercials

**Katie Gentry, Communication Major,
School of Communication and Media**

This research explores a commercial message that reinforces a misconception about sexuality and moral understanding. Unilever Global's product line Axe creates commercials for their products which employ oversimplified stereotypes of men and women, distorting the basis of inter-gender relationships. Axe's marketing strategy focuses on young people and uses excessive humor to mask the damaging results of objectifying men and women. The research concludes that Axe's marketing philosophy skews young people's moral framework by advocating an emphasis on physical appearance in relationships and portraying "good" qualities as valuable for the expected reward they will bring, rather than for the sake of goodness in itself.

Poster Presentations by our Campus Community

"The Effects of Art Therapy on the Alpha Waves of Autistic Children."

Christina Baxter, Medicinal and Biological Chemistry major; Andrea Hassler, Psychology major; Chris Conner, Biology major; Kelsey Taber, Biology major; and Vanessa Rowan, Assistant Professor of Biology, School of Arts and Sciences.

Autism is an unexplained spectrum disorder that affects an individual's mentality, behavior, and social skills; it is often categorized by unusual brain activity. Via scientific research, art therapy has been shown to reduce anxiety, increase self-esteem, and

assist in the development of social skills. However, what effect art therapy has on brainwaves remains unclear. Beta waves are of interest in this study since these waves are the state that most of brain is in when we have our eyes open and are thinking. The purpose of this pilot study was to observe the effects of art therapy on the beta waves of autistic children compared to non-autistic controls. Before and after art involvement (coloring or manipulating Play-Doh), EEG's of the frontal lobe (F3 and F4) were recorded and analyzed. The beta-type waves were then filtered for artifact and analyzed to observe any significant changes. Interestingly, after analysis there was a significant increase in the energies of the beta waves on the right side of the

brain (F4) of non-autistic children after coloring, compared with only some slight significant differences in the autistic children. However, after manipulating Play-Doh, there was a significant increase of beta wave energies on both sides of the brain (F3 and F4) of autistic children compared with non-autistic controls. This more manipulative form of art therapy seems to have a more positive effect in increasing the energy of beta waves of autistic children, therefore, increasing alertness, active task engagement, and motor behavior.

Providing Proof of Concept for Strengthening New Natural Products Research Group.

Carly Chapman, Medicinal and Biological Chemistry major; Dr. Cidya Grant, Assistant Professor of Chemistry; and Dr. Mireille Aleman, Assistant Professor of Chemistry, School of Arts and Sciences

A new natural products laboratory has been created at Palm Beach Atlantic University (PBA). In this laboratory students will learn the techniques required to isolate components of plants and animals native to South Florida, study the cytotoxic effects of these crude and fractionated extracts, and isolate and purify the most active fractions of the extracts in order to investigate their chemical composition and functionality. In this study, the crude extracts from the leaves of the Madagascar periwinkle (*Catharanthus roseus*) were used in cytotoxicity studies on estrogen receptor negative (MDA-MB-231) human breast cancer cell lines. We observed changes in the morphology the cell lines with treatment. Chromatographic purification of the crude extract and further spectroscopic analyses led to the isolation and identification of the fraction containing the known pharmacologically active component, Vincristine. Vincristine and Vinblastine are two pharmacologically active alkaloids from *C. roseus* that are currently used to treat leukemia and lymphomas.

Cancer-Related Fatigue & the Benefits of Exercise

Psychology majors Danielle Namour, Annette Custureri and Laura Duncan; Dr. Stephen Sylvester, Assistant Professor of Exercise Science; and Dr. Angie McDonald, Associate Professor of Psychology School of Education and Behavioral Studies

A program designed to reduce cancer-related fatigue with guided exercise was assessed in the current study. The patients performed guided exercises designed specifically for them three times a week for eight weeks. Fatigue was assessed weekly in 35 cancer patients. Results found a significant reduction of fatigue interference in the daily lives of participants.

Elemental Analysis of Various Types of Zooplankton in Lake Worth Lagoon, FL.

Biology majors Jennifer Cutter, Doug Kreh, and Amanda Long; and Dr. Linda Sedlacek, Assistant Professor of Earth Science and Oceanography, School of Arts and Sciences

Heavy metals are a concern in Lake Worth Lagoon, Florida,

due to bio-accumulation. It is important to identify what potentially toxic elements are present in lower-level organisms that could be bio-accumulated and/or biomagnified up the food chain potentially impacting human health. These kinds of elemental analyses have not been previously conducted on zooplankton in Lake Worth Lagoon. We looked at the concentration of those metals in the dominant zooplankton during the summer months. The most abundant zooplankton were three species of copepod (*Oithona nana*, *Acartia tonsa*, and *Euterpina acutifrons*), polychaete larvae, and the veliger stage of mollusk larvae. All observed groups had common elements present (chloride, potassium, calcium, iron, and bromide), but the percentages varied with each species/group. The most interesting result was found in *E. acutifrons* and *O. nana*. The two species contained observable levels of titanium, an unexpected contaminant.

“Generation of Rhodopsin cDNA Constructs with Mutations that Cause the Blinding Disease Retinitis Pigmentosa.”

Biology majors Amber Johnson and Maryssa Ellison; Dr. Suzanne Cardona, Assistant Professor of Biology, School of Arts and Sciences

Retinitis Pigmentosa (RP) is a degenerative retinal disease causing visual impairments and eventual blindness in humans. There are more than 150 known rhodopsin mutations associated with inherited autosomal dominant (ad) RP. Two novel mutations in Chinese families with adRP were recently characterized. These mutations cause the following amino acid substitutions in the rhodopsin (dim-light photoreceptor) protein, A169P and P347Q. To investigate why these mutations lead to adRP, we generated a mutant cDNA construct of bovine rhodopsin (brho). Primers were designed to generate each mutation through PCR-based mutagenesis or cassette-based mutagenesis. Sequence data confirmed the appropriate nucleotide changes were present to produce the bovine rhodopsin A169P mutant cDNA construct. Future studies will include expression of the A169P mutant rhodopsin protein in mammalian cells in vitro for characterization. Absorbance measurements of brhoA169P rhodopsin (opsin + 11-cis retinal) will reveal if improper folding causes the disease phenotype. Research of these adRP-causing mutations will bring researchers one step closer to understanding the disease and possibly finding therapies.

Empire and Sport in British Trench Papers of WWI.

Kyra Kinnaman, History major; and Dr. Elizabeth Stice, Assistant Professor of History, School of Arts and Sciences

The primary purpose of this research project was to log and analyze data about imperial experience and sport in British trench newspapers of World War I. The student researcher analyzed twelve different trench paper titles extensively cataloging references to empire and sport. References to empire were documented and categorized, according to geographic references, indirect and direct commentary, and degree of personal involvement. Records of sport-

ing events were extremely common and yielded significant data on participation and attendance rates. The research brought documentation of the imperial experiences of soldiers and gave insight into how they viewed their own participation in WWI and its relation to empire. The documentation of sport is evidence of how pervasive sport culture was for the soldiers and the overlap of martial and sporting values in Britain. Research into the trench papers provides historians a new way into the minds and lives of those participating in WWI.

Teacher-Child Attachment, Peer Relationships, Parental Relationship and Religiosity among Elementary School Children.

Psychology majors Brianna Marecki, Neisha Wilson '14, Kelli Strickler '14, and Danielle Hyatt '14; and Dr. Angie McDonald, Associate Professor of Psychology, School of Education and Behavioral Studies

In the current study, relationships between elementary school students and their teachers, parents, and peers, as well as the impact of religiosity in the home, were investigated. Significant correlations were found between children's relationships with their teacher and their peer interactions, but parent and teacher relationships, or religiosity, were not related.

Pharmacy and Nursing Students' Self-Perceptions of Stress and Corresponding Measured Hair Cortisol Levels.

Pharmacy majors Andrea Mezentsef, Paul Jackson, and Umima Baig; Dr. James Mitroka, Associate Professor of Pharmaceutical Sciences; Dr. Jamie L. Fairclough, Assistant Dean for Assessment, Gregory School of Pharmacy; and Dr. Christine Brooks, Associate Professor of Nursing, School of Nursing.

The objective of this study was to evaluate stress in PBA health-studies students over time periods when classes are not in session (Summer) and are in session (Fall). Cortisol is produced by the adrenal cortex in response to stress. Chronic elevations in cortisol are associated with adverse effects on the cardiovascular, musculoskeletal, and central nervous system. As such, cortisol levels can serve as a biomarker for stress. Hair is a particularly useful matrix for measuring cortisol in the body since it grows at a uniform rate, about 1 cm/month, and thereby provides a time-averaged index of exposure to cortisol. A small bundle of hair (about 50 strands) was collected as close to the scalp as possible from volunteers at the beginning and again at the end of Fall semester. Volunteers consisted of students from the PBA pharmacy and nursing programs. A three cm-portion of each hair bundle, representing hair grown over the Summer and Fall timeframes, was cut from the scalp end, ground, extracted, and analyzed by LC/MS/MS. The students also completed a validated survey tool to provide subjective feedback about perceived stress levels. These

surveys were completed at the time of the hair collections. The analytical results showed no differences in hair cortisol levels between Summer and Fall or between Pharmacy and Nursing students. Perceived stress levels, however, were higher in Fall than Summer and somewhat higher in pharmacy students than nursing students during the Fall. These results suggest that students experience psychological stress during the time classes are in session, but this perceived stress might not result in adverse physiological effects on the body from elevations in cortisol.

Psychology Majors: Assessment of Preparedness and Worldview.

Psychology majors Kristin Moya and Elexenia Moya; Dr. Angie McDonald, Associate Professor of Psychology; and Dr. Claire Wolan-O'Connor, Assistant Professor of Psychology, School of Education and Behavioral Studies

The current study assessed 109 undergraduate psychology majors at a small, Christian university to determine their confidence level in psychological areas, preparation for post-graduation, and integration level of their worldview and psychology. For many believers, it is rather hard to integrate religious orientation backgrounds within their professional lives. In the profession of Psychology, it is important to understand you may encounter different worldviews throughout your career. Research studies are indicative that many disorders and issues predominantly seen in psychology are not always faith integrated. As a result of our study, *The Integration of Christian Values and its Impact on Psychology Majors*, conducted at Palm Beach Atlantic University, we have found that the Psychology majors at PBAU did not experience difficulties involving the integration of their Christian Faith within their major. Keywords: Christian Values, Psychology, Integration, Disorder, Faith, Worldviews.

Exploring the Potential for Schizophrenia in at-risk Afro-Caribbeans in the United States: A Meta-Synthesis **Sandra Ojurongbe, Assistant Professor of Nursing, School of Nursing**

Abstract Aim: This meta-synthesis explores the potential for schizophrenia in at risk Afro-Caribbeans in the United States (U.S.). **Background:** African Americans are diagnosed with schizophrenia 9% to 32% more than Caucasians. However, this statistic is not specific to Afro-Caribbeans. Studies conducted in the United Kingdom (U.K.) reported higher rates of schizophrenia in Caribbean Blacks in Britain when compared to White British citizens. However, there is a paucity of information about schizophrenia in Caribbean Blacks in the U.S. **Method:** The results of four qualitative studies were analyzed using thematic synthesis. **Results:** Six themes emerged; racism and drug use were consistent with primary studies. Effects of migration, disintegration of family, powerlessness, and a rush to diagnose were new themes. **Discussion:** The emergent themes exposed socio-

political and economic factors that possibly potentiated schizophrenia in U.K. Afro-Caribbeans. Research in the U.S. is needed to explore the risk factors for schizophrenia in Afro-Caribbean communities. Keywords: Schizophreni*, Caribbean, immigrant, qualitative.

Four-Year Assessment of an Integrated Infectious Diseases Pharmacotherapy Course.

Nicholas Palm, Pharmacy major; Dr. Elias Chahine, Associate Professor of Pharmacy Practice; and Wissam Kabbara, Gregory School of Pharmacy

Objectives: The goal of this study was to assess a didactic course using four metrics: summative assessments, course evaluations, standardized and comparative assessments, and student readiness to enter practice. **Methods:** Students' grades, course evaluations, and students' performance on the microbiology section of the PCOA exam were collected and analyzed over four years. The one sample T-test and the paired T-test were used for statistical analyses. **Results:** The mean students' score on the course was 81.02. The mean course evaluation was 4.66 out of 5. The mean PCOA scores for the third year students were 73.05. Student cohorts showed statistically significant improvements from the previous year on the PCOA exam. The mean students' score on the infectious diseases APPE was 96.49. **Conclusions:** Students were very satisfied with the infectious diseases pharmacotherapy course. The course improved their performance on the PCOA exam and prepared them for the infectious diseases APPE.

Understanding the Effects of Art Therapy on the Beta Waves of Autistic Children.

Biology majors Kelsey Taber and Chris Conner; Taylor Anderson, Medicinal and Biological Chemistry major; Andrea Hassler, Psychology major; Christina Baxter, Biology major; and Dr. Vanessa Rowan, Assistant Professor of Biology, School of Arts and Sciences

Autism is a neurodevelopmental disorder marked by deficits in social interaction, communication and restricted repetitive behavior. As the frequency of diagnoses has increased in the last decade, a myriad of therapies have been introduced with the intention to reverse or stop the progression of autism as the brain matures. Art therapy, in particular, often reduces anxiety, increases self-esteem, and assists in the development of social skills. The question remains, however, what effects this therapy has within the brain itself. It has been found that the alpha frequency is abnormal in autistic children in that the intensity does not decrease when engaged in some activity, and therefore, this frequency is of particular interest in this study. The purpose of this pilot study was to examine the effect that art has on the alpha waves of autistic children, in comparison with non-autistic children. To do so, EEGs of the frontal lobe (F3 and F4) were recorded before and after art

(coloring or manipulating Play-Doh) in both autistic and non-autistic participants. Analysis showed a significant change in the alpha brain waves of some of the autistic children after coloring; however, after Play-Doh activities, there was a significant difference in the energies of the alpha waves of all the autistic children compared with non-autistic controls. The significant increase in alpha waves could indicate that coloring and play-doh activities have positive effects on the alpha waves of autistic children, such increased precise cognitive inhibition allowing for better focus on the task at hand.

Reducing the Risk of Osteoporosis in Spinal Cord Injury Patients.

Kayla Vredevel, Athletic Training major, School of Education and Behavioral Studies

Spinal cord injuries are debilitating, leaving patients at risk for developing other major health problems such as osteoporosis. Their inability to bear weight leaves the osteoblasts without a stimulation to cause growth and strengthening in the bone. The bone density and bone mineral content decline and the risk of osteoporosis increases over time. A common rehabilitation technique that has proven effective in reducing the risk of osteoporosis is body weight supported treadmill training. Literature has shown that bone loss after injury steadily declines for the first year, but that this intervention is able to produce physiological changes when used long term. It is often assumed that earlier treatment is more beneficial, but previous studies fail to look specifically at the timing of the treatment, so it is not yet proven that immediate treatment is more effective than delayed treatment.



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