



**9th Annual
Student Research and Scholarship
Symposium**

May 10, 2018

Technology and Health Promotion

Sponsored by:

*SHP Office of the Dean
&
SHP Office of Student Affairs and the SHP Rutgers Alumni Association*

Rutgers School of Health Professions (SHP)

9th Annual Student Research and Scholarship Symposium

Rutgers School of Health Professions (SHP) Student Research and Scholarship Symposium is an event sponsored by the **SHP Office of the Dean** and hosted by members of the **SHP Dean's Research Advisory Committee**. This year, the Student Research and Scholarship Symposium is supported by the **SHP Office of Student Affairs**, and **SHP Rutgers Alumni Association**.

The Research and Scholarship Symposium is a great networking opportunity for students and faculty members from different departments within our School and to augment faculty-student interactions through research and scholarship. This year, the symposium will kick off with our invited Keynote Speaker, Dr. Sherry Pagoto, UConn Institute for Collaboration in Health, Interventions, and Policy who will speak about leveraging social media for behavioral health change. Students will then present posters supported by their faculty mentor and in the afternoon selected students will provide an oral presentation on their research project. The day will conclude with a presentation by SHP's Department of Rehabilitation and Movement Sciences researcher Dr. Jean-Francois Daneault on his work in Mobile and Wearable Technology to Assist in the Management of Neurological Disorders followed by an award ceremony for best posters.

Theme:

Technology and Health Promotion

Great Hall & Main Lecture Hall
Robert Wood Johnson Medical School; Piscataway Campus

Acknowledgements for Program Support

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9th Annual SHP Student Research and Scholarship Symposium

Keynote Speaker

Sherry Pagoto, PhD

Director, UConn Center for mHealth and Social Media

President-Elect, Society of Behavioral Medicine

UConn Institute for Collaboration in Health, Interventions, and Policy

Professor, Department of Allied Health Sciences

University of Connecticut



Dr. Pagoto is a Professor in the Department of Allied Health Sciences at the University of Connecticut. She is also a licensed clinical psychologist and Director of the UConn Center for mHealth and Social Media. She is also the President-Elect of the Society of Behavioral Medicine and co-chair of the Indoor Tan-Free Skin Smart Campus Initiative. Her research focuses on leveraging technology in the development and delivery of behavioral interventions targeting diet, physical activity, and cancer prevention behaviors. She has had federal funding for her program of research for 14 consecutive years, totaling over \$11 million, and has published 177 papers in peer-reviewed journals. She has received several awards for her work including the UMass Medical School Women in Science and Health Achievement Award in 2015, The Obesity Society Pioneer in mHealth/eHealth Award in 2014, Society of Behavioral Medicine Early Career/Young Investigator Award in 2006, and the Western Michigan University Distinguished Alumni Award in 2011. Devoted to science communication she has 21K followers on Twitter and a contributor to US News and World Report, Chronicle of Higher Education, STAT News, Psychology Today, and KevinMD.com. Her work has been featured in major news outlets including CNN, NPR, NBC News, ABC News, and Good Morning America.

9th Annual SHP Student Research & Scholarship Symposium

PROGRAM

To listen to speakers via a distance: <https://shprutgers.zoom.us/j/274568998>

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|--------------------|---|
| 8:30 - 9:30 am | Poster Setup and Breakfast – Hosted by the Office of Student Affairs and the SHP RU Alumni Association |
| 9:30 - 9:40 am | Welcome to the 9th Annual SHP Research and Scholarship Symposium
Dr. Gwendolyn M. Mahon, M.Sc., PhD, Dean and Professor |
| 9:40 - 10:40 am | Keynote Speaker:
Sherry Pagoto, PhD
Director, UConn Center for mHealth and Social Media
UConn Institute for Collaboration in Health, Interventions, and Policy
Professor, Department of Allied Health Sciences,
University of Connecticut
<i>Leveraging Social Media for Health Behavior Change</i> |
| 10:40 - 12:00 noon | Poster Sessions and Judging
Authors must be present at their respective posters for a review by judges between 10:40 – 12:00 noon. The judging will be conducted by select SHP Faculty and an SHP alumnus. |
| 12:00 - 1:30 pm | Lunch and Career Fair
(Lunch provided for registrants)
Students who are presenting posters are encouraged to visit the career fair between 12:00 and 1:30 pm. |
| 1:30 – 3:00 pm | Student Presentations
<i>Introduced by Carrie Esopenko, PhD, Department of Rehabilitation and Movement Sciences</i>

Sukanya Panja
Department of Health Informatics
Integrative (epi) Genomic Analysis to Predict Response to Androgen-Deprivation Therapy in Prostate Cancer |

PROGRAM Cont'd

Neeka Tabatabaei

Department of Nutritional Sciences

Sensory Sensitivity as Predictive of Fruit and Vegetable Acceptance by Young Infants: Development of a Novel Questionnaire

Brian Eckenrode

Department of Rehabilitation and Movement Sciences

Chronic Achilles Tendinopathy is Associated with Signs of Central Sensitization

Carolyn Bazan

Department of Psychiatric Rehab and Counseling Professions

Post Traumatic Stress Disorder and Impact on Community Functioning

3:00 - 4:00 pm

Faculty Presentation

Jean-Francois Daneault, PhD

Assistant Professor

Department of Rehabilitation and Movement Sciences

Mobile and Wearable Technology to Assist in the Management of Neurological Disorders

4:00 - 4:15 pm

Closing Remarks and Winners of Research Poster Awards

Dr. Gwendolyn M. Mahon, M.Sc., PhD, Dean and Professor





Guest Alumnus Judge: Hetu Gadhia, PhD

Lead Clinical Scientist

Executive Member of the Rutgers SHP Alumni Association

Dr. Hetu Gadhia has been a clinical leader throughout her roles in multi-national pharmaceuticals, CROs as well as in other in healthcare facilities. She is currently a Lead Clinical Scientist at Novartis Pharmaceutical and has held several roles as an operational Manager, Associate director and Director of Data Management at multi-national pharmaceuticals including Eli Lilly.

Dr. Gadhia is an expert in Clinical trials operations and Data Sciences. Her career has been focused on developing and leading phase I-III clinical trials in several therapeutic areas. Dr. Gadhia holds a doctorate in biomedical informatics and a Masters in Health Informatics from Department of Biomedical Informatics at Rutgers University. Dr. Gadhia also holds a Bachelor of Science in Nutrition from Rutgers University and is a registered Nutritionist in the state of New Jersey. Her academic research is focused on understanding effect of clinical and environmental factors on prevalence of inflammatory diseases in diabetic populations.

Faculty Presentation: Jean-Francois Daneault, PhD

Department of Rehabilitation and Movement Sciences

Dr. Daneault obtained his BSc and MSc in Kinesiology at the University of Quebec in Montreal. He then completed a PhD in Neuroscience at McGill University and a postdoctoral fellowship in Physical Medicine & Rehabilitation at Harvard Medical School. His research focuses on better understanding of motor behavior in health and disease in order to improve/optimize movements of individuals with chronic diseases, such as Parkinson's disease, Huntington's disease, dystonia, cerebral palsy, and stroke, through physical therapy and exercise. His laboratory tools include motion capture, wearable sensors, electromyography, brain stimulation, and neuroimaging. The long-term goal is to develop tools based on quantitative evidence to personalize interventions for individuals with neurological disorders.



2017: 8th Annual SHP Research and Scholarship Symposium Award Recipients

These students were recognized at the 2017 SHP Convocation and presented with a certificate for their hard work, effort and excellence in research.

Undergraduate Student Case Study Award:

Dominique Califano: *Adenoid cystic carcinoma of salivary glands metastatic to the right lung*

Undergraduate Student Research Award:

Jaclyn Gido: *Qualitative interviews with physical therapy students working with individuals with serious mental illness*

Graduate Student Research Award:

Florence Odenkunle: *Association of PIK3CA and PTEN genetic alterations with cervical cancer mortality and tumor recurrence*

Undergraduate Systematic Review, Narrative Synthesis Award:

Melissa Khadhair: *Understanding the effects of physical activity on people with severe mental illness*

Graduate Systematic Review, Narrative Synthesis Award:

Gabriella DeMarco: *Exercise during pregnancy as a preventative measure for prenatal and postpartum depression*

List of Abstracts

Abstract titles are listed below. To download a booklet of complete abstracts, please go to:
<http://shrp.rutgers.edu/Faculty/Research/researchday.html>

Undergraduate Case Study

Poster Number	Title	Author	Co-Authors and Faculty Support
1	Hereditary Spherocytosis: A Case Report	Anam Rahman	Carolina Vilchez
2	A Case Study in Hemolytic Disease of the Fetus and Newborn in Twins	Indhira Montero Nunez	Dana Doyle, Giane Mentor, Lydia Mose Ruth Perez
3	A Case Study on Acanthamoeba Meningoencephalitis	Jannie Delos Reyes	E. Canubas, V. DiMaggio, K. Elnahrawi Dr. Deborah Jasko
4	Colorectal Cancer: A Case Study	Rina Patel	Zakee Conte-Smith, John Frederick, Quang Nguyen Dr. Shashi Mehta
5	Iron Deficiency Anemia and Hypoproteinemia in Children Due to Overconsumption of Cow's Milk	Shannon Delaney	B. Abalos, T. Ahmed, P. Chan Catherine Otto
6	A Case Study for Transfusion Related Acute Lung Injury (TRALI)	Upasana Parekh	H. Fennick, S. Keita, U. Parekh, J. Surti Ruth Perez
7	Cytodiagnosis of Angiosarcoma	Ayah Mikky	Dr. Cecilia Vallejo
8	Pancytopenia in An 8 Month Old Child Due To Folic Acid Deficiency	Clare Owen	H. Chaudhary, J. Mistry, W. Polanco Steven Bellows
9	Diagnosis and Prognosis of Chronic Myelomonocytic Leukemia Type -2	David Amankwah-Agyapong	M. Alam Khan, K. Pizzelanti, G. Rivera Carolina Vilchez
10	Spindle Cell Sarcoma Compatible with a Gastrointestinal Stromal Tumor	Johanna Dovale-Gomez	Lois Rockson
11	Cytologic and Histologic Features of Glioblastoma Multiforme	Kayla Mae Palabay	Dr. Cecilia Vallejo
12	Cytologic Diagnosis of Chondrosarcoma	Maareen Kineman	Lois Rockson

Undergraduate QA/QI Study

13	Confirming the Unofficial: Examining Student Disability Data within a Psychiatric Rehabilitation & Counseling Professions Department	Alexa Longano	Derek Malenczak
14	Psychiatric Rehabilitation: Contributors to the Field	Genesis Moran	Dr. Carolos Pratt
15	Caregiver Burden of a Family Member with Severe Mental Illness	Carissa Urbanski	Peter Basto, Michelle Zechner

Undergraduate Student Research

16	Assessing the Impact of Service Learning on Dental Hygiene Student's Attitudes and Knowledge about Individuals with Severe Mental Illness	Ivanna Lopez	S. Karyczak, M. Zechner, K. McMahon, V. Singhal, G. Vasilenko, Ann Murphy
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Undergraduate Description of Clinical/Educational Practice

17	A Bug in Their Ear: Exploring Student Listening Preferences of a Narrative Podcast in an Undergraduate Counseling Program	Melanie Nascimento	Derek Malenczak
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Undergraduate Systematic Review

18	Mindfulness, Self-Compassion and Cognitive Behavioral Therapy as a Treatment for Generalized Anxiety Disorder	Jennifer Garza	C. James Dr. William Waynor
19	Major Depressive Disorder and Effective Treatments	Jasmine Moran	Robert Sloane, Jasmine Tutt Dr. William Waynor
20	Borderline Personality Disorder Literature Review	Alannis Rojas	Christine Elassar, Jema Luna Dr. William Waynor
21	Clozapine as treatment for Schizophrenia	Maria Ciprian	K. Wright, V. Ngarambe, O. Reyes

Graduate Description of Clinical/Educational Practice

22	Implementation of a Diagnostics Consultation Program Reduces Costs and Improves Health Outcomes	Brandy Gunsolus	Singh, G; Savage, N Nadine A. Fydryszewski, Elizabeth Leibach
23	Accessing Mind-body Interventions for Adults with Serious Mental Illness on Medicaid	Sara Dobson	Dr. Amy Spagnolo

Graduate QA/QI Study

24	Post Traumatic Stress Disorder and Impact on Community Functioning	Carolyn Bazan	Gao, Carol Weili Lu, William Waynor, Giovanna Giaccobe
25	How War Time Acquired Disability Affects Service Members Self-Efficacy and Autonomy	Elizabeth Meyers	Dr. Samantha Herrick
26	Integrative (epi) genomic analysis to predict response to androgen-deprivation therapy in prostate cancer	Sukanya Panja	S. Hayati, N Epsi, JS Parrott, A. Mitrofanova

Graduate Research Study

27	Phosphorylation of Lipin 1 Beta Phosphatidate Phosphatase by Casein Kinase II	Meagan Hennessy	M. Granade., T. Harris, Dr. George Carman
28	Soft Skills Training	Alison Durante & Crystal Socha	Weili Lu, Ph.D., Samantha Herrick, Ph.D. & Janice Oursler, Ph.D.
29	Chronic Achilles Tendinopathy is Associated with Signs of Central Sensitization	Brian Eckenrode	Dave Kietrys (Rutgers-South); Scott Stackhouse (University of New England)
30	Sensory Sensitivity As Predictive of Fruit and Vegetable Acceptance by Young Infants: Development of a Novel Questionnaire	Neeka Tabatabaei	Dr. John Worobey
31	Disability IAT Images Study	Sharon Gbadamosi	Dr. Ann Murphy; Dr. Samatha Herrick
32	Early virtual reality based hand training post-stroke elicits better than expected outcomes.	Jigna Patel	Qinyin Qiu, Mathew Yarossi, Sergei Adamovich, Eugene Tunik Alma Merians and Gerard Fluet
33	Examining resting-state functional connectivity and binge drinking in college athletes	Nicola de Souza	N. Viagas, Carrie Esopenko, Suril Gohel, Jennifer Buckman

Graduate Systematic Review

34	What effect does spatiotemporal parameter manipulation have on running economy?	Danielle Kreda	J. Alorro, M. Balzotti, T. Drew, M. Mowers, E. Torkel, A. Tripodi, D. Waite, Allison Brown, PT, PhD
35	In critically ill adult patients with abdominal trauma, how does enteral nutrition support (EN) compared to oral feedings and parental nutrition (PN) impact mortality, length of stay and feeding tolerance?	Andrea Alario	Punnya Andrews, Courtney Lauro, Michelle Sweeney, Dr. Julie O'Sullivan-Maillet, PhD, RD
36	Predicting Caloric Needs of Critically Ill Patients Receiving Continuous Renal Replacement Therapy (CRRT).	Fatima Bahary	K. Davidson, S. Khan, A. Louloudis Dr. Julie O'Sullivan-Maillet, PhD, RD
37	In severely burned patients, what Methods of nutrition support reduces risk of wound infection, length of stay (LOS), and mortality rate?	Mariana Escate	M. Fernandes, L. Jimenez, B. Sullivan, Dr. Julie O'Sullivan-Maillet, PhD, RD

38	In Pediatric Patient with EoE, what effect do various elimination diets have on decreasing eosinophils?	Melissa Gallagher	Brittany Gleeson, Megan McCarthy, Alexandra Orlan, Dr. Julie O'Sullivan Maillet, PhD, RDN
39	In persons with skin of color, what is the presentation of three common skin cancers?	Amanda Kara	V. Cassell, M. Chambers, R. Kumar, A. Lentini, C. Lew, M. Restrepo, K. Wilkinson Dr. MJ Myslinski
40	Wilson's Disease	Brian Rader	Dr. Samantha Herrick
41	In adults with chronic stroke, does home-based robotic therapy improve upper extremity function?	Cynthia Diaz	Glenn Forsyth, Kristen Gasnick, Ileana Johnson, Monika Jurgowska, Meghan Lonergan, Gregory O'Connor, Gerard Fluet
42	Effects of Perioperative Administration of IV Ibuprofen or IV Parecoxib on Morphine Consumption	Sandra Kirollos	Frank Giannelli, MS, PA-C
43	The effects of electrical stimulation on gross motor function in children with cerebral palsy: a systematic review	Maria Spinosi and Raveena Dhruve	A Conklin, M. Galema, J. Indrikovic, M. McGillen, D. Mercurio, A. Toomer, J. Winter, Dr. Evan T. Cohen
44	The Effectiveness of TENS, PENS, and Electromagnetic Stimulation for Reducing Lower Extremity Pain Due to Diabetic Peripheral Neuropathy: A Systematic Review and Meta-analysis	Adrian Lopez	J. DaTorre, C. Gandhi, K. Kaczka, M. Kline, A. Lopez, D. Wills, David Kietrys.
45	Using Incentivized Depot Injection Programs to Improve Adherence: Patient Impact and Concerns, Considering Clinician Concerns, and Effects on Adherence and Quality of Life	Jettie Young	Dr. Ann Murphy and Dr. S. Parrott
46	Burnout interventions for the behavioral health workforce: A Meta Analysis.	Valerie Ferri	Dr. Ann Murphy
47	Trauma Informed Care for Women of Color with Co-Current Disorders	Taurean Williams	Amy Spagnolo
48	Sarcomatoid Carcinoma of the Pancreas	Shima Ghavimi	Dr. Sushil Ahlawat

Abstracts

Undergraduate Case Studies

Poster #1

Name	Anam Rahman
Department	Clinical Laboratory Science
Faculty Support	Carolina Vilchez
Title	Hereditary Spherocytosis: A Case Report

Introduction: Hereditary Spherocytosis (HS) is the most common type of red blood cell membrane defect caused by specific genetic mutations. The defect in HS leads to disruption of vertical membrane interactions, decrease in membrane elasticity and splenic red cell destruction. Patients with HS experience splenomegaly, gallstones, regenerative hemolytic anemia, jaundice, and the presence of spherocytes in the peripheral circulation.

Case presentation: A 2-month old infant was hospitalized due to HS complications. The infant's mother had been previously diagnosed with HS at age of 3, but was well due to splenectomy. At diagnosis, the infant was anemic with a Hb of 6 gm/dL, a high reticulocyte count, an abnormal newborn screen for possible metabolic disorder, and abnormal blood film findings, including spherocytes. The patient received 3 blood transfusions for immediate treatment. Later in life, the patient developed moderate splenomegaly.

Management and Outcome: Treatment for this patient included a daily dose of 0.5 mg folic acid. Follow up doctor visits with hematologic and chemistry tests on an average of 2-3 times a year were suggested by attending physicians. Prognosis is typically favorable after treatment, which ranges from blood transfusions to splenectomy.

Discussion: Diagnosis in HS may be difficult because of variable symptoms; however, it can be made from blood smear examinations, and from examining laboratory tests namely; mean cell volume (MCV), mean cell hemoglobin concentration (MCHC), red cell distribution width (RDW), reticulocyte count, direct antiglobulin (DAT) test, and Eosin 5-maleimide (EMA). Incorporation of genetic tests to confirm the diagnosis is imperative, especially, in cases with new mutations and unknown family history.

Poster #2

Name Indhira Montero Nunez
Department Clinical Laboratory Science
Faculty Support Ruth Perez
Co-Authors Doyle, Dana; Mentor, Giane; Mose, Lydia
Title A Case Study in Hemolytic Disease of the Fetus and Newborn in Twins

Introduction: Hemolytic disease of the Fetus and Newborn (HDFN), also known as erythroblastosis fetalis, is an antibody induced hemolytic anemia caused by incompatibility of blood groups between a mother and a fetus. This condition involves the maternal immunoglobulin G antibodies crossing the placenta in vivo and destroying the red cells of the fetus. This disease ranges from mild to severe manifestation persisting after birth which can cause anemia and eventually lead to fetal death. In most instances, the mother is Rh negative, and the fetus is Rh positive for the antigen in question. These antigens are foreign to the mother's immune system and antibodies are produced against those fetal antigens.

Case presentation: A 34-year-old female presented with a previous history of transfusion, is pregnant for the first time with twins. Her prenatal work up at 22 weeks showed that she is O negative with a negative antibody screen and Rh-immunoglobulin (RhIG) was administered as a precaution.

Management and Outcome: After giving birth, Baby Boy presented with slight jaundice and a weakly positive direct antiglobulin test (DAT). Baby Girl was severely jaundiced with hyperbilirubinemia and a positive DAT with an anti-Diáµf antigen. A post-natal work up for the mom resulted in a positive antibody screen where anti-D and anti-Diáµf were identified.

Discussion: RH-immunoglobulin is administered to woman who have had abortions, intrauterine transfusions, amniocentesis or trauma to prevent alloimmunization through Fetomaternal hemorrhage (FMH). The high levels of bilirubin can lead to Kernicterus. Therefore, the babies were both treated with phototherapy, where the bilirubin is broken down and excreted through the urine.

Poster #3

Name Jannie Delos Reyes
Department Clinical Laboratory Science
Faculty Support Dr. Deborah Josko
Co-Authors Canubas, E. DiMaggio, V. Elnahrawi, K.
Title A Case Study on Acanthamoeba Meningoencephalitis

Introduction: Acanthamoeba Meningoencephalitis (AME) is a severe infection of the central nervous system, primarily occurring in individuals that are immune compromised. It is caused by several Acanthamoeba species and occurs when the amoeba enters the host through skin lesions or nasal passages and travels to the brain and spinal cord. Clinical symptoms include changes in behavior, altered mental state, fever, stiff neck, seizures, increased intracranial pressure, coma, vision loss, photophobia, facial asymmetry, muscle weakness on one side of the body, and loss of coordination.

Case presentation: A 76 year old male presented with lethargy, seizures, and syncopal episodes. In addition, the patient experienced confusion for several weeks. Previous history revealed heavy alcohol consumption for many years. The patient traveled to Cuba 5 months prior to presentation. Physical examination revealed the patient was afebrile, hemodynamically stable, no papilledema, oriented to person and place, and no focal neurological deficits. MRI revealed contrast enhancement in right frontal lobe. CBC demonstrated mild anemia and thrombocytopenia with a normal white blood count. Lumbar puncture revealed elevated white blood cells, low glucose, and high protein, indicating infection. Laboratory diagnosis includes detection of trophozoites and cysts through microscopy, immunological tests, molecular techniques, and neuroimaging Methods: such as MRI and CT scans.

Management and Outcome: Due to the severity of the infection, the patient rapidly declined and expired in the hospital. Histopathological autopsy revealed leptomeningitis, encephalitis, and presence of trophozoites and cysts. Immunohistochemistry and PCR testing were positive for Acanthamoeba spp. The laboratory tests and tissue studies indicate the patient had Acanthamoeba meningoencephalitis.

Discussion: Prognosis is extremely poor with high mortality rates. About 2 to 3% of patients survive. Effective treatment is dependent on timely diagnosis and includes a combination of multiple antimicrobials and neurosurgical resection of lesions associated with the infection. Future directions are aimed at developing effective drugs and improved diagnostic tools.

Poster#4

Name	Rina Patel
Department	Clinical Laboratory Science
Faculty Support	Shashi Mehta, PhD
Co-Authors	Conte-Smith, Zake, Frederick, John, Nguyen, Quang
Title	Colorectal Cancer: A Case Study

Introduction: Colorectal cancer (CRC) is the third most common cancer worldwide. In our case, a 56 year old woman with symptoms of slight rectal bleeding and a family history of CRC goes in for her first colonoscopy exam, and the clinicians discover a rectal polyp that is identified as a tubulovillous adenoma with high grade dysplasia. Several molecular and genetic diagnostic procedures are then utilized to determine prognosis and pathophysiology.

Case presentation: Through immunohistochemistry testing, the patient is found to have a mutation in DNA repair genes MLH1 and PMS2, a defect seen in the hereditary disease known as Lynch Syndrome. These mutations cause an accumulation of mutations that lead to the formation of polyps around the in the colorectal area. Through next generation sequencing, the patient was then determined to have a BRAF V600E mutation, a diagnostic gene that is associated with poor prognosis and limited treatment options if the cancer progresses to later stages.

Management and Outcome: CRC with an identified mutation in BRAF V600E alone carries over a significantly poorer prognosis in patients compared to those without. This is only exacerbated when including the resistance to BRAF inhibitors seen in this mutation. Treatment, while scarce with the patient's prognosis, typically consists of the surgical resection of the tumor, chemo and radiation therapy, and targeted adjuvant therapy based on prognosis and staging of the tumor. Advancements in genetic sequencing and targeted therapy will allow for cost-effective, efficient diagnosis and treatment, thereby decreasing patient mortality rates.

Discussion: Clinicians were able to detect and remove that patient's tumor because the patient took the initiative to attend her routine colonoscopy, which is significant in detecting polyps in high-risk patients. Because CRC is becoming more apparent in younger populations in developed countries and patient prognosis is significantly improved in the early detection and removal of the tumor, screening should be performed earlier and more frequently. Less invasive procedures such as fecal immunochemical tests may also aid in diagnosis and advances in next generation sequencing technology make molecular and genetic testing for mutations increasingly more accessible. Advancements in genetic sequencing and targeted therapy will allow for cost-effective, efficient diagnosis and treatment, thereby decreasing patient mortality rates.

Poster #5

Name	Shannon Delaney
Department	Clinical Laboratory Science
Faculty Support	Catherine Otto
Co-Authors	Abalos, B., Ahmed, T., Chan, P.
Title	Iron Deficiency Anemia and Hypoproteinemia in Children Due to Overconsumption of Cow's Milk

Introduction: Iron deficiency anemia (IDA) is the most common anemia in the world and highly prevalent in children. IDA is the result of a lack of iron needed to make viable red blood cells (RBCs), which Results: as an inadequate supply of oxygen to tissues throughout the body. Lack of iron can be the result of insufficient nutritional intake or loss through red cell destruction or bleeding (e.g. gastrointestinal bleeding). Hypoproteinemia, commonly associated with severe IDA, is an abnormally low concentration of protein in the blood and is often related to malnutrition. The goal of this case study is to bring awareness to the prevalence and symptoms of IDA and hypoproteinemia caused by the overconsumption of cow's milk, particularly for expecting mothers.

Case presentation: Parents of a 14 month old female visited their physician to evaluate Noticeable periorbital edema. The patient was breastfed for three months and then switched to formula until she was 12 months old. Following breastfeeding, the child received exclusively cow's milk without any further supplementation of iron. Clinical laboratory testing revealed that this child had severe iron deficiency anemia and hypoproteinemia. It was concluded that her iron deficiency anemia and hypoproteinemia was in relation to her cow's milk consumption.

Management and Outcome: The patient received a blood transfusion and was instructed to take oral iron supplementation. After three weeks, there was no evidence that her hemoglobin levels were increasing.

Discussion: Similar case studies have been reported in the literature in which patients presented with generalized swelling caused by hypoproteinemia and after additional analysis of the patient histories, overconsumption of cow's milk was identified as the cause of IDA in these cases. However, unlike our case, treatment in these cases included oral and/or IV iron without the need for transfusion. Awareness and prevention is crucial, given that IDA is the most prevalent anemia worldwide.

Poster #6

Name Upasana Parekh
Department Clinical Laboratory Science
Faculty Support Ruth Perez
Co-Authors Fennick, H., Keita, S., Parekh, U., Surti, J.
Title A Case Study for Transfusion Related Acute Lung Injury (TRALI)

Introduction: Transfusion-related acute lung injury (TRALI) is a rare condition that occurs as an acute reaction within twenty-four hours of a blood transfusion. About 47% of TRALI cases were reported in 2010 to FDA. The usual symptoms are respiratory distress, hypotension, and hypoxia. Anti-human leukocyte antigen (HLA) or anti-human neutrophil antigen (HNA) antibodies play major role in TRALI patients as they are found in large amounts in donor blood product, specifically in the plasma.

Case presentation: A forty-one year old female of Caucasian descent was admitted immediately into the ER upon arrival due to severe trauma following a motor vehicle accident. She presented internal bleeding and trauma to the head which caused a mild head injury. Due to emergency protocol, she was issued four units of O negative packed red blood cells and AB positive plasma. She was on Zolpidem, Xanax and Excedrin medications on a regular basis. She had one para and one gravida with no history of any previous transfusions.

Management and Outcome: Within six hours after the final transfusion, the patient developed respiratory distress with fever and hypotension, originally thought to be due to initial lung injury. Pre/post tests were performed as protocol to transfusion reaction. It showed that the patient was A positive, direct agglutination test (DAT) was negative, clerical check was negative, and antibody screen was positive for the antibody Dombrock (anti-Doa). A chest x-ray showed a white out appearance in the lung cavity. Patient was given oxygen and monitored frequently until symptoms subsided. The patient made a full recovery from TRALI and released from the hospital.

Discussion: TRALI was deduced as the cause of the patient's respiratory distress. The Results: showed no hemolysis with a positive antibody. The chest x-ray indicated bilateral infiltrates from an immune-mediated response. The oxygen helped relieve the symptoms and patient was able to leave after successful treatment.

Poster #7

Name Ayah Mikky
Department Clinical Laboratory Science
Faculty Support Dr. Cecilia Vallejo
Title Cytodiagnosis of Angiosarcoma

Introduction: Angiosarcoma is a rare soft tissue tumor that accounts for less than 1% of primary sarcomas. Angiosarcoma arises from the inner lining of the blood vessels. It affects men more than women and usually involves the elderly most likely in the 7th decade of life. It is very aggressive in nature and infiltrates the body steadfastly. Angiosarcoma is most often seen clinically as a palpable mass. Prognosis is very poor and a more than 5-year survival rate is very slim.

Case presentation: An 83-year-old female patient was admitted into Robert Wood Johnson University Hospital complaining of chest pain and arm pain. Past history of a breast mass was elicited several years prior to this admission. An FNA of the upper right humerus was performed and pleural fluid was obtained. Cytology confirmed the presence of a malignancy diagnostic of Angiosarcoma due to its cytological features. Cellular features are as follows: wispy, scanty cytoplasm with indistinct borders. Nuclear detail included dark coarse chromatin with inconspicuous nucleoli. Immunochemical stains tested positive CD-31.

Management and Outcome: Cytology with Histology concluded the presence of Angiosarcoma in the patient. No other follow up or treatment was noted in the patient.

Discussion: This case study showed that Angiosarcoma of the bone can be metastatic from a previous primary malignancy which in this case was Angiosarcoma of the breast. Treatment includes surgery and radiation, but these two methods can at times not work at all and lead to the death of the patient. The patient's history of breast malignancy helped in concluding that the bone lesion, in this case is indeed a metastasis of angiosarcoma from the breast to the bone. CD31 and other stains such as Factor VII and CD-34 can also be done to confirm Angiosarcoma.

Poster #8
Name Clare Owen
Department Clinical Laboratory Science
Faculty Support Steven Bellows
Co-Authors Chaudhary, H.; Mistry, J.; Polanco, W.
Title Pancytopenia in An 8 Month Old Child Due To Folic Acid Deficiency

Introduction: Effective hematopoiesis in the bone marrow requires an optimal microenvironment, free of tumor and leukemic processes, as well as the availability of nutrients to manufacture red cells, white cells and platelets. In the absence of folic acid, a necessary nutrient for normal cell division, ineffective hematopoiesis can result with declining numbers of peripheral cellular elements called pancytopenia. In addition to the lack of dietary intake, unavailability of folic acid to the bone marrow can be due to malabsorption in the small intestine, to include Celiac disease and Crohne's disease. Mutations to dihydrofolate reductase, exposure to drugs and chemicals and to increased demand for folic acid, as in pregnancy or multiple fetuses, are also causes.

Case presentation: In this case study, an 8 month old baby who was solely fed goat's milk for 7 months, presented to the ER with a viral illness of croup, fever, severe anemia, thrombocytopenia and non-bloody diarrhea. Schistocytes, marked anisocytosis, poikilocytosis and hypochromia were reported on the peripheral smear, RDW of 26, elevated LDH, very low creatinine and markedly reduced serum and RBC folate levels. These indicated a preliminary diagnosis of MAHA with iron and folic acid deficiencies, directly attributed to the lack of these nutrients in goat's milk. Developmental Delay and a Failure to Thrive were also noted.

Management and Outcome: The child was treated with prednisone for croup and with PRBC transfusions and folic acid. Although the anemia and white cell counts gradually improved, the platelet count remained low.

Discussion: To rule out a leukemic process to account for the thrombocytopenia, bone marrow aspirate examinations for cytogenetics, FISH study and cell markers were performed, all of which revealed no leukemic process, but did show a lack of megakaryocytes and a slight megaloblastic process. Inborn errors of metabolism testing were all within acceptable limits. The child steadily recovered and achieved a full recovery in nine months.

Poster #9

Name David, Amankwah-Agyapong
Department Clinical Laboratory Science
Faculty Support Vilchez, Carolina. MS, MLS (ASCP)CM, H (ASCP)CM
Co-Authors Alam Khan, M., Pizzelanti, K., Rivera, G.
Title Diagnosis and Prognosis of Chronic Myelomonocytic Leukemia Type -2

Introduction: Chronic Myelomonocytic Leukemia (CMML) is a hematopoietic stem cell malignancy that affects the monocytic cells of the myeloid lineage. The features in CMML can be both qualitative and quantitative in nature, combining both dysplastic and proliferative characteristics. When CMML presents as a myeloproliferative disorder, leukocytosis is observed in the peripheral blood as well as splenomegaly, hepatomegaly, fatigue, weight loss and bone pain. CMML patients with the myelodysplastic phenotype exhibit symptoms such as cytopenias of peripheral blood, general malaise, primary bleeding disorders, relapsing infections and transfusion dependence.

Case presentation: A 70-year-old female presented with black tarry stools, abdominal discomfort, anorexia, melena and general weakness. Patient suffered from recurrent gastric ulcers and was an ex-smoker. CBC and differential tests showed a hemoglobin of 7.4 g/dL, and the presence of immature blast-like cells on a peripheral smear with anemia and a high ESR. Bone Marrow analysis and immunophenotyping revealed megakaryocytic hyperplasia, monocytosis and increased immature cells.

Management and Outcome: Accordingly, the patient was diagnosed with CMML 2. Clinical symptoms indicated a predominant myelodysplastic phenotype. Treatment options available to CMML-2 patients include Hematopoietic stem cell transplantation and administration of general chemotherapeutic drugs such as Cytarabine. The specificity of presentation, myelodysplastic or myeloproliferative, may further indicate whether hypomethylating agents or myelosuppressive agents such as Hydroxyurea are appropriate.

Discussion: The World Health Organization (WHO) classifies CMML into 3 subgroups based on the blast count; CMML-0, CMML-1, and CMML-2. Our patient was classified into category 2 of CMML. CBC and differential counts along with bone marrow analysis and cytogenetic testing is necessary to distinguish CMML-2 from other similar disorders.

Poster #10

Name Johanna Dovale-Gomez
Department Clinical Laboratory Science
Faculty Support Lois Rockson
Title Spindle Cell Sarcoma Compatible with a Gastrointestinal Stromal Tumor

Introduction: Gastrointestinal stromal tumor (GIST) is a type of tumor that occurs in the gastrointestinal tract, more commonly in the stomach and small intestine. The tumor was believed to be a smooth muscle neoplasm but after the discovery of the c-KIT proto-oncogene, the tumor was distinguished from other mesenchymal tumors.

Case presentation: The patient involved in this case study is a 72-year-old African American male who presented to the doctor with a peritoneal mass. Imaging testing and biopsy were performed for cytological and histological evaluation. The tests revealed a large mass consistent with gastrointestinal stromal tumor. Cytologically, the cellular pattern showed hypercellularity and a monomorphic population of spindle shaped cells occurring in loose groupings. The cells had delicate cytoplasm, bland chromatin and inconspicuous nucleoli.

Management and Outcome: The patient denied blood in stool, dysphagia, decreased appetite, vomiting, diarrhea, constipation or abdominal pain. A subsequent CT guided biopsy revealed a 23x28x17cm oval heterogeneous mass that occupied nearly the entire abdomen, displacing the liver and compressing the pancreas. The patient was treated with Gleevec 400mg (imatinib mesylate) and further imaging studies showed improvement in the size reduction of the mass but also evidence of possible metastasis.

Discussion: Most of gastrointestinal tumors are found incidentally in an endoscopy or CT scan. The clinical presentation varies from person to person depending on the tumor size, behavior of the tumor and location. Although complete resection of the tumor is the gold standard, since the discovery of tyrosine kinase inhibitors, the management of GISTs has changed dramatically to molecular targeted drug therapy. GISTs show a variety of cytological features. The tumor cells are spindle to epithelioid with uniform elongated nuclei, variable cytoplasm and chromatin. There is cellular dyscohesion, intranuclear pseudoinclusions and prominent nucleoli. The presence of mitosis and necrosis suggest malignant behavior.

Poster #11

Name Kayla Mae Palabay
Department Clinical Laboratory Science
Faculty Support Dr. Cecilia Vallejo
Title Cytologic and Histologic Features of Glioblastoma Multiforme

Introduction: Glioblastoma Multiforme is one of the most common malignant brain tumors that involve the cerebral hemispheres. The likelihood of survival is about 6 months to at least 1 year. Since this is an aggressive tumor, the combination of surgery, radiotherapy, and chemotherapy are highly recommended to slow down the progression of the tumor.

Case presentation: A 60-year-old female patient has a clinical history of a malignant brain neoplasm. Surgery was performed to remove a left temporal brain mass. Frozen sections were obtained to create cellblocks and immunostains were added on. Immunostains were positive for GFAP, Vimentin, and PTEN showing that the patient was diagnosed with a High-grade glioma, probable grade IV Glioblastoma Multiforme. A cytologic sample was prepared from the subdural fluid of the patient (7 ml of yellow tinged fluid). One thin prep slide was prepared. The final cytologic diagnosis showed atypical cells, cannot rule out Glioblastoma Multiforme. Treatment consisted of surgical resection of the tumor with radiation and chemotherapy.

Discussion: Glioblastoma multiforme is derived from glial cells (astrocytes, and oligodendrocyte progenitor cells have also been implicated). There are four different types of glioma (classical type, mesenchymal type, proneural and neural types) The classical type have an overexpression of EGFR (epidermal growth factor). Mesenchymal subtypes have gene expressions focused on mesenchymal and microglial markers. Proneural subtypes have proneural genes focused on oligodendrocyte patterns. Neural subtypes are mostly associated with normal brain tissue which has both astrocytic and oligodendrocytic markers. The use of FISH (BRAF as probe), molecular testing and immunostains were performed in this case. An interesting journal article was published regarding the decreased survival of Glioma patients with long-term use of mobile and cordless phones. Radiofrequency electromagnetic fields (RF-EMFs) from cellular devices is a human carcinogen that increases the likelihood of developing GBM.

Poster #12

Name Maareen Kineman
Department Clinical Laboratory Science
Faculty Support Lois Rockson
Title Cytologic Diagnosis of Chondrosarcoma

Introduction: Chondrosarcoma is a rare malignant bone tumor with cells of mesenchymal origin and cartilage differentiation. This is a case of chondrosarcoma occurring in the lumbar spine and diagnosed preoperatively by fine needle aspiration (FNA) and core needle biopsy (CNB).

Case presentation: Image-guided FNA and CNB procedures were performed on a 65 year old male presented with a 12 cm. lumbar spinal mass on the L2 position. From the thick bloody aspirate, smears were prepared and stained with Diff-Quick® and Papanicolaou stains. A cell block and a core biopsy block were also prepared. Cytological examination revealed abundant hypercellular chondroid material and malignant chondrocytes embedded in thick matrix. The cells were oval to polygonal with variable amount of cytoplasm showing vacuolization and granularity. Significant nuclear atypia was observed. The cell block also revealed atypical-looking chondrocytes inside the lacunae. The core biopsy block further revealed the malignant chondrocytes showing nuclear atypia and mitoses. A cytological diagnosis of chondrosarcoma was made.

Management and Outcome: Forty-three days after the FNA and CNB procedures, the patient underwent surgery for the excision of the mass. The excised mass was submitted for gross examination and cytogenetic testing. An abnormal male karyotype with loss or deletion of multiple chromosomes, gain of chromosomes and multiple structural abnormalities were observed.

Discussion: Histological grading is an important measure of local recurrence and metastasis. Treatment and therapy of bone and cartilage tumors may differ depending on the classification. For this reason, FNA and CNB played an important role in this case in the preoperative diagnosis of chondrosarcoma. This case was diagnosed as chondrosarcoma based on the initial finding of a spinal mass and finding malignant chondrocytes upon cytologic and histologic evaluation of aspirates. The final diagnosis of chondrosarcoma grade 2 was made after surgery and correlating the initial findings with gross examination of the excised tissue and confirmatory cytogenetics testing.

Undergraduate QA/QI Study

Poster #13

Name Alexa Longano
Department Psychiatric Rehab & Counseling Professions
Faculty Support Derek Malenczak
Title Confirming the Unofficial: Examining Student Disability Data Within a Psychiatric Rehabilitation & Counseling Professions Department

Background: The prevalence of college students who identify as having a disabling condition appears to be on the rise nationwide, especially those with mental health conditions. Historically, the Department of Psychiatric Rehabilitation & Counseling Professions has unofficially reported an estimate of 30% of their students as being openly in recovery from a psychiatric disability. Less is known, however about the actual student disability statistics, especially those outside of the mental/emotional realm. This study sought to confirm this 30% figure, as well as learn more about the broader disability needs of the student body.

Purpose: Our goal is to learn more about students in the Department who identify as having disabling conditions.

Methods: Surveys were distributed to all students (240) in the Department during the Spring 2016 semester, with 98 students completing it (40.8% response rate). The 8-question survey asked participants about their disabling condition(s), the nature of that condition(s), information about their affiliation with the Office of Disability Services, and perceived difficulty with common academic tasks.

Results: Overall, 28.5% of students reported a disabling condition, with mental/emotional conditions representing the most prominent disability type. About one quarter of those (27%) were registered with the Office of Disability Services. The top three academic tasks the students reported difficulty with were maintaining focus while completing assignments, followed by studying for exams and writing papers. Results: confirm that the historic 30% figure was in line with current student demographics.

Conclusions: It is recommended that students thoughtfully consider disclosing disabling conditions as they feel empowered to do so, as well as registering with the Office of Disability Services.

Poster #14**Name**

Genesis Moran

Department

Psychiatric Rehab & Counseling Professions

Faculty Support

Dr. Carlos Pratt

Title

Psychiatric Rehabilitation: Contributors to the Field

Background:

This study investigates the factors that influenced some of the early adherents psychiatric rehabilitation to establish the field in response to the deinstitutionalization movement of the 1960s and 70s. Psychiatric rehabilitation strives to assist persons with severe mental illness to achieve recovery, community integration and improved quality of life. Specifically, this study examined the values, experiences, and attitudes that motivated eight psychiatric rehabilitation pioneers of this emerging field.

Purpose:

This study seeks to further the understanding of the factors that influence an individual's primary exposure to the discipline of psychiatric rehabilitation, as well as their decision to remain affiliated with the field. More specifically, the research study seeks to examine the experiences and characteristics that led eight, well-established, psychiatric rehabilitation contributors to the field.

Methods:

Qualitative data, in the form of audio and video interviews, was obtained through Purposeful sampling. Participants, identified by the scholarly contributions they have made to the field, were asked to contribute to an IRB-approved oral history project. The study utilized a semi-structured interview method to obtain information on a number of topics. Interviews were recorded in person or with video-conferencing tools, such as SKYPE and Zoom. Interviews were, then, transcribed. Transcribed interviews were analyzed using NVivo software. Thematic analysis was used to identify prevalent themes within the participant's responses and, in particular, their response to the question: How did you come to the field of Psychiatric Rehabilitation? All collected material from the project will be contributed to the Rutgers Oral History archives.

Results:

Thematic analysis of the data presented a number of commonalities, as well as, differences between the participants. The majority of contributors stated that their primary exposure to the field took place between 1970 and 1980. The themes of personal concern regarding deinstitutionalization, and the excitement of involvement in the creation of the early advancements of psychiatric rehabilitation occurred throughout the analysis. Many participants attributed their first encounter with the field, to the unintentional acquisition of an employment position in a psychiatric rehabilitation oriented agency, program, or project. Most participants associated their compatibility with the culture of psychiatric rehabilitation and excitement for the advancements within the field to their decision to enter the field and remain affiliated with it as their lifetime profession.

Conclusions:

This study presents an analysis of the values, experiences and attitudes that motivated eight persons to help develop the field of psychiatric rehabilitation. Results: suggest that participants often became familiar with psychiatric rehabilitation, a field they previously knew little about, through serendipitous job opportunities. The study observed an association between the decision to enter the field and the excitement involved with developing a new knowledge base to assist persons with serious and persistent mental illness. As well as, an association between the participant's compatibility with psychiatric rehabilitation goals, values and principles and long-term commitment to the field. Through a historic exploration of the factors that led some of the most distinguished figures in psychiatric rehabilitation to the field, we may better understand some of the factors that may prompt individuals to obtain and maintain interest in the field today.

Poster #15

Name Carissa Urbanski
Department Psychiatric Rehab & Counseling Professions
Faculty Support Peter Basto, Michelle Zechner
Title Caregiver Burden of a Family Member with Severe Mental Illness

- Background:** Caregivers of a family member with severe mental illness are known to face burden. Not much information is available to address how to reduce faced burden, and to what extent it is faced by caregivers. As for psychiatric rehabilitation practitioners, this issue should be recognized and learned how to prevent extreme burden, to improve the quality of life for caretakers.
- Purpose:** The hypothesis of this study was that research would be focusing on the negative effects of care giving opposed to positive. The research proved the hypothesis to be true, and that many of the research compiled was about family members with schizophrenia opposed to other severe mental illnesses.
- Methods:** Articles were collected using Medline- OVID, Pubmed, and Cinahl. Search terms included care giving, schizophrenia, family, and burden. Individuals were all adults and family members who took on the role of care giving for a family member with severe mental illness. Participants included spouses, siblings, and mother daughter relationships.
- Results:** Results: found that caregivers are subjected to higher amounts of burden, anger, and lower quality of life, than those out in the community without the care giving role. It was found that anger and burden were associated, and that anger could possibly lead to abuse in the care giving role. Results: found that many of the studies focused on schizophrenia opposed to other severe mental illnesses. Results: also found cultural differences among family members when looking at ways to cope with burden spiritually.
- Conclusions:** From this research compiled, it is now known that caregivers of family members deal with lower quality of life, and burden when caring for a family relative with severe mental illness. Future research should examine anger and interventions to reduce anger levels among caregivers of a family member with severe mental illnesses. The articles reviewed were based off self-reported questionnaires, future research should include longitudinal studies to examine burden and coping strategies over time and eliminate the use of self-reporting questionnaires.

Undergraduate Student Research

Poster #16

Name Ivanna, Lopez
Department Psychiatric Rehab & Counseling Professions
Faculty Support Ann Murphy
Co-Authors Karyczak, S., Zechner, M., McMahon, K., Singhal, V., Vasilenko, G.
Title Assessing the Impact of Service Learning on Dental Hygiene Student's Attitudes and Knowledge about Individuals with Severe Mental Illness

Background: There are several barriers to accessing quality oral health care for individuals living with serious mental illness (SMI). One barrier is practitioner's lack of comfort working with and knowledge about the population. Service learning is a type of experiential learning with benefits that include increases in positive attitudes towards working with diverse populations, knowledge, and skill acquisition.

Purpose: The researchers of this study assessed the effects of a service learning intervention on the attitudes of current dental hygiene students.

Methods: A total of 42 dental hygiene students of Rutgers University, School of Health Professions were surveyed immediately before and after receiving an educational program and then six-weeks later after they had completed a service learning experience. Data collection assessed the attitudes dental hygiene students had regarding individuals with SMI. Three instruments were used to assess attitudes toward people with SMI

Results: For each of the three assessments there was a significant decrease in negative or stigmatizing attitudes overall. There was a significant decrease on all measures between baseline and the first follow-up. On the Attribution Questionnaire the scores then increased from the first follow-up to the second follow-up, but still remained significantly lower than at baseline. On two of the assessments the decrease in negative attitudes was maintained between baseline and the second follow-up.

Conclusions: The implementation of the educational program and service learning experience related to individuals with SMI into the dental hygiene programs was associated with a decrease in negative attitudes toward people with SMI. Findings of this study support previous research that implementation of service learning can bring positive benefits to providing quality oral health care to individuals with SMI.

Description of Clinical/Educational Practice

Poster #17

Name Melanie Nascimento
Department Psychiatric Rehab & Counseling Professions
Faculty Support Derek Malenczak
Title A Bug in Their Ear: Exploring Student Listening Preferences of a Narrative Podcast in an Undergraduate Counseling Program

Background: CACREP requires instructors to cover basic community resources and entitlements that are available to people with disabilities, such as Social Security and Medicaid. This material has historically been difficult to engage learners with due to its dull nature and the fact that it was taught in an online format. Previous research has examined how podcast usage can positively impact student learning and attention to school material with mixed results. However, little research has shown how podcasts that employ digital storytelling may influence learning.

Purpose: This study aimed at examining the listening habits of a narrative-based audio series designed to teach students about Community Resources. Students choose to listen to the weekly audio assignments either via a link in their Learning Management System (LMS), or via a podcast feed iTunes. Hypotheses:

1. Students would access the audio as a podcast in similar numbers as those who would listen to the audio directly through the course LMS.
2. Students would listen from their smartphones in similar numbers as those listening on their computers.
3. Students would multi-task when listening to the audio assignments.
4. Students who accessed the audio as a podcast would subscribe to the podcast feed.
5. Students would make limited use of the transcripts provided.

Methods: Students enrolled in an online Community Resources course were surveyed over the course of 4 semesters. Twenty-three (n=23) participants elected to take a 10-question survey about their listening preferences. The survey was provided at the end of each semester to gain information about students' listening habits and experiences.

Results: Survey results indicated unequivocally that students preferred to listen via their LMS while on their computers, mostly without engaging in multi-tasking behavior except for taking notes about the assignment. Very few subscribed through iTunes, but more than expected did make use of the accompanying transcripts.

Conclusions: Major findings are presented with interpretation and implications/significance for the field. *What did we learn that we did not know before?*

Undergraduate Systematic Review

Poster #18

Name Jennifer Garza
Department Psychiatric Rehab & Counseling Professions
Faculty Support William Waynor
Co-Authors Garza, J, James, C
Title Mindfulness, Self-Compassion and Cognitive Behavioral Therapy as a treatment for Generalized Anxiety Disorder

Background: Generalized Anxiety Disorder (GAD) causes an impairment in intrapersonal and interpersonal relationships. DSM-V criteria for GAD includes excessive anxiety, difficulty controlling worry, restlessness, easily fatigued, difficulty concentrating, irritability, sleep disturbances and muscle tension. Mindfulness is a way to focus on the present and relive any stress and self-compassion is being kind towards one self and others. Cognitive Behavior Therapy (CBT) includes an exposure component which allows an adult or child to be exposed to what they fear.

Purpose: The overall goal is to improve the recovery process for children and adults diagnosed with Generalized Anxiety Disorder. Also, improving their intrapersonal and interpersonal life.

Methods: The current research study was done with 87 individuals that had been diagnosed with generalized anxiety disorder and 49 individuals without anxiety (Hoge, 2013). In all of the sub-scales people with anxiety scored low for self-kindness, common humanity, and mindfulness, and higher in self-judgment, isolation, and over-identification (Hoge, 2013, p.4). There was no difference in self compassion scores between men and women in either patients with or without anxiety (Hoge, 2013).

Results: Moreover, the research reveals that mindfulness and self-compassion levels are low in patients with anxiety. Practicing mindfulness demonstrated relief for individuals suffering with chronic pain (Hoge, 2013). The research also reveals that self-compassion was associated with resilience in adolescents and young adults. Recommended exposure in treatment manuals would be less frequently implemented. The hypothesis suggested were true, 1) recommended exposure in treatment manuals would be less frequently implemented, 2) anxiety specialists would use exposure more than non-specialists, and 3) anxiety specialist, and non-specialist differences would remain after controlling patient variables (Whiteside et al., 2016).

Conclusions: The therapeutic benefit that Results: from exposure will reduce problems and symptoms that can ultimately interfere with children socially, emotionally, and academically as adults. The study suggest that taking into consideration a treatment that focuses on mindfulness and self-compassion can possibly have a positive effect on with the quality of life of people with anxiety.

Poster #19

Name Jasmine Moran
Department Psychiatric Rehab & Counseling Professions
Faculty Support William Waynor Ph.D., CRC, CPRP
Co-Authors Robert Sloane , Jasmine Tutt
Title Major Depressive Disorder and Effective Treatments

Background: Major Depressive disorder is a persistent and serious illness that affects more than 16 million adults in the United states of America. Because of an increase in impaired functioning, depression has been considered debilitating to some. Fortunately, there are many newfound treatments that have shown promise. Evidence based treatments such as cognitive behavioral therapy, psychodynamic psychotherapy, cranial electrotherapy stimulation, and psychoeducation will all be explored in their effectiveness in treating Major Depressive disorder.

Purpose: It is important to understand each point of what Major Depressive disorder really is, and conducting your own research can help oneself reach a clearer conclusion.

Methods: It is interesting to note that more than eighty percent of people who receive some type of treatment for depression report to having experienced less symptoms, and an overall better quality of life. We will discuss more about the findings we came across in this research conduction.

Results: People who have received some form of treatment for Major depressive disorder report to having a better quality of life, and less symptoms.

Conclusions: We hope to find what treatment has the best overall effectiveness score.

Poster #20

Name Alannis Rojas
Department Psychiatric Rehab & Counseling Professions
Faculty Support William Waynor Ph.D., CRC, CPRP
Co-Authors Alannis L. Rojas, Christine Elassar, Jema Luna
Title Borderline Personality Disorder Literature Review

Background: Borderline Personality disorder can have detrimental consequences to an individual's life. Behavioral symptoms such as impulsive behavior, self-harm, social isolation and various forms of self destructive behaviors can cause great harm to an individual's work, schooling, family, and social life. Some of these symptoms can cause interference with important social setting in life such as work, school and home life and as a result make it difficult for these individuals to function in society.

Purpose: Our group will present forms of treatment that are available for individuals who have BPD such as Dialectical Behavioral Therapy and will focus on the impact BPD has on their social lives.

Methods: The method we will implement is a literature review based off the use of DBT, the individual's interpersonal relationships, and how these individuals are negatively impacted by the symptoms of BPD in their lives.

Results: Based on the Results: of the articles we have reviewed, there is a significance between BPD symptoms and an individual's ability to function in their every-day lives and treatments such as DBT are implemented to help combat those symptoms and allow those with BPD to create strong and meaningful relationships within the workforce, their families and love life.

Conclusions: With the understanding of DBT to be the only widely used treatment method for those diagnosed with BPD, research should be conducted that is heavily focused on furthering the treatment approaches for BPD to increase the likelihood of recovery for these individuals.

Poster #21

Name Maria Ciprian
Department Psychiatric Rehab & Counseling Professions
Faculty Support Dr. William Waynor
Co-Authors Wright, K , Ngarambe, V , Reyes, O
Title Clozapine as treatment for Schizophrenia

Background: Individuals diagnosed with treatment-resistant schizophrenia are often prescribed Clozapine, an antipsychotic, as a last resort. It is usually prescribed as a last resort, because of the side-effects that are involved in taking this medication. This is significant because of the abundance of people who are given numerous options for treatment of their diagnosis and this has led to treatment-resistant schizophrenia. The period of time deferred from treatment with Clozapine may have an impact on an individual's resistance to treatment, which can lead to the prescription of a combination of medication such as Clozapine with Risperidone.

Purpose: The Purpose: of this research is to examine how effective the anti-psychotic medication, Clozapine, is on people who have schizophrenia. Particularly, on those who have been diagnosed with treatment-resistant schizophrenia. Also, to examine the combination of other medication such as Risperidone with Clozapine and its overall effect on treat-resistant schizophrenia.

Methods: The Brief Psychiatric Rating Scale (BPRS) which examines the amount a symptom is present with a 1-7 scale. The Global Impressions and Improvement Scale were also used and consist of analyzing four different symptoms related to schizophrenia's psychotic symptoms (Yoshimura et al., 2017). For the analysis of the time period of deferment from Clozapine and its impact on an individual 105 individuals that were initially part of the study, 11 ended use of clozapine as a result of side effects, 3 rejected treatment, and 1 did not follow routine checkup. In total, there were 90 consensual participants who had not tested clozapine as a treatment for their TRS (Yoshimura et al., 2017). They were all observed as typical clinical follow-ups. For the examination of the combination of Risperidone with Clozapine the method that was used was a randomized, double-blind, placebo-controlled 12-week trial with 40 patients. The BPRS and Assessment of Negative Symptoms (SANS) were also used to determine patient psychotherapy at different interval (Josiassen et al., 2005).

Results: The research shows, 7 of the 20 patients who were administered Risperidone and Clozapine showed improvement in symptoms as measured using the Brief Psychiatric Rating Scale (BPRS) (Josiassen et al., 2005). There was a significant reduction in SANS scores as well, for individuals given the combination of Clozapine and Risperidone. Also, Results: concluded that 3 years was the suggested time in which treatment with clozapine was the most beneficial for individuals with treatment-resistant schizophrenia (TRS) (Yoshimura et al., 2017). Scores from the BPRS also improved through time, with individuals progressively reporting that psychotic symptoms were minimally present.

Conclusions: Overall the treatment of TRS with Clozapine has a major impact, however, if combined with Risperidone the outcome is much more effective (Josiassen et al., 2005). It was also found that 3 years of deferment from treatment with clozapine was the time limit in which symptom improvement was not affected by the delay. Individuals who were prescribed clozapine after the 3-year cutoff date were more than likely to require electroconvulsive therapy in addition to the clozapine treatment (Yoshimura et al., 2017). These conclusive findings resulted in individuals deciding to stay on clozapine despite its side effects, considering how beneficial it was to symptom improvement in general (Yoshimura et al., 2017).

Graduate Description of Clinical/Educational Practice

Poster #22

Name Brandy Gunsolus
Department Clinical Laboratory Science
Faculty Support Nadine A. Fydryszewski, Elizabeth Leibach
Co-Authors Singh, G; Savage, N
Title Implementation of a Diagnostics Consultation Program Reduces Costs and Improves Health Outcomes

Background: Doctorate clinical laboratory science (DCLS) practitioner's consultations are documented to improve health outcomes and reduce costs in all healthcare services delivery areas assessed to date. The impact of consultations in distinct healthcare settings will be described.

Purpose: To document the consultation characteristics and outcomes associated with doctorate in clinical laboratory science clinical laboratory consultations.

Methods: A DCLS resident provided clinical laboratory consultations as part of a patient care rounding team (PCRT), a DMT (diagnostic management team), and performed utilization review (UR) in a tertiary medical center. These consultations characteristics were documented as well as the patient outcomes following consultations. Descriptive and frequency analyses were performed on the resulting data.

Results: Details of two cases to be presented, a hyperkalemia and a drug-resistant tracheal aspirate culture, will illustrate the clinical effectiveness of patient care rounding team diagnostics consultation and improved patient outcomes. Consultation on two additional cases for diagnostic management team, a hypercoagulation work-up and inappropriate hypoglycemia testing, will demonstrate significant direct cost savings. Data collections analyzed occurred over a period of only 15 days in inpatient rounds, 15 days in clinical laboratory consultation, and 15 days of utilization review. During these periods, there were 187 total consultations resulting in direct cost savings of \$290,710.80 and improved outcomes.

Conclusions: The cost savings and improved patient outcomes identified offer preliminary justification for implementation of clinical laboratory consultation services.

Poster #23**Name**

Sara, Dobson

Department

Psychiatric Rehab & Counseling Professions

Faculty Support

Dr. Amy Spagnolo

Title

Accessing Mind-body Interventions for Adults with Serious Mental Illness on Medicaid

Background:

Adults with serious mental illness (SMI) served by public insurance (Medicaid) die 25 years earlier than adults without SMI. Recently, there have been increased efforts to eliminate health disparities using integrated physical and mental health innovations to improve health and wellness for people with SMI. As the mental health field continues embracing a recovery-oriented and holistic view of personhood, mind-body interventions (i.e. yoga, Tai-chi, mindfulness) are of particular interest. These practices may increase life expectancy, improve quality of life, and reduce healthcare spending. Moreover, integrative wellness interventions are understudied in persons with SMI and often inaccessible to publicly-insured persons due to cost.

Purpose:

This project aims to examine recent efforts to implement innovative integrated care and adjunctive mind-body practices into state Medicaid plans, identify benefits and barriers to implementation, provide suggestions for access to integrative interventions, and review existing policy.

Methods:

State Medicaid plans were reviewed for inclusion of mind-body practices, and browser searches were conducted to understand existing efforts to advocate for coverage. The Cochrane Database of Systematic Reviews was searched for reviews of research examining effects of mind-body interventions for adults with SMI.

Results:

There is a dearth of research on mind-body practices for individuals with SMI. Additionally, research is limited by small sample sizes and inconsistency in methodology. As such, mind-body interventions lack supporting evidence, limiting inclusion in behavioral health policy.

Conclusions:

At present, there is no indication that mind-body interventions will be covered as stand-alone services, and there is no specific coverage for mind-body practices within existing Medicaid funding. Providers must utilize creative strategies to bill for these practices. A promising path may be through peer provided and psychiatric rehabilitation services, which embrace the Eight Dimensions of Wellness model focused on billable services that improve an individual's wellness.

Graduate QA/QI Study

Poster #24

Name	Carolyn Bazan
Department	Psychiatric Rehab & Counseling Professions
Faculty Support	Weili Lu, William Waynor, Giovanna Giaccobe
Co-Authors	Gao, Carol
Title	Post-Traumatic Stress Disorder and Impact on Community Functioning

Background: Individuals with psychiatric disabilities commonly experience trauma (Mueser et al., 2004a). The prevalence of PTSD among persons with psychiatric disabilities ranges from 19 to 43% (Mueser et al., 1998; Criane, et. al, 1988; Howgego et. Al., 2005; Mueser et al., 2004a; Switzer et al., 1999). PTSD often causes functional impairment, leading to lower levels of employment (Howgego et al., 2005; Mueser et al., 2004b). Individuals with PTSD experience a range of symptoms that can result in a reduction of job obtainment and maintenance (Mueser, et al., 2004b).

Purpose: Our presentation will focus on qualitative data collected from participants who have PTSD and co-morbid mental health conditions enrolled in Supported Employment (SE) programs. Through compiling the personal narratives of respondents, we have found common themes in how PTSD negatively affects individuals in the process of reaching their employment goals. In addition, we have also found common themes in how employment assists individuals with the management of symptoms.

Methods: Study recruitment sites included twelve SE programs located throughout NJ, PA, and NY. A total of 539 participants completed the Traumatic Life Events Questionnaire (TLEQ) and the PTSD Checklist (PCL-5). Individuals with screenings that indicated presence of probable PTSD were asked to return for eligibility interview. Interviewers used the Clinician Administered PTSD Scale (CAPS-5) to confirm that participants met all diagnostic criteria for PTSD. Interviewers also administered instruments that measured general functional status. This analysis focuses on the qualitative data collected in a measure developed by the research team to track employment activities. A total of 132 participants met the diagnostic criteria as outlined by the CAPS-5. The following analysis outlines the common themes in responses to questions asked during the eligibility and exit interviews. These questions include:

1. In what ways are PTSD symptoms interfering with employment, or the search for employment?
2. If employed, is working helping you manage PTSD symptoms?

The analysis was conducted by coding key words used by participants to answer the two questions. Two research assistants independently reviewed the responses, and generated categories based on similar themes in the responses. The research assistants then coded all responses into the appropriate categories independently to ensure inter-rater reliability.

Results:

Participants most commonly reported feeling depressed and lacking motivation (36.4%), followed by experiencing anxiety over their performance, as well as anxiety over the social interactions (28.8%). Other themes include general stress (16.9%), trouble trusting or hypervigilance (16.1%), issues with concentration (16.1%), anxieties over applying or interviewing (15.3%), anger or irritation (13.6%), triggers (9.3%), flashbacks (4.2%), and other complications (16.1%). A minority of participants reported no symptoms to be interfering (11.9%). Of the 132 participants in the study, 72 participants were employed, or attained employment throughout the study. A majority of participants reported that working helped them manage PTSD symptoms (90.3%). Participants most commonly reported that working helped increase positive moods (34.7%), and helped them maintain a routine (34.7%). This is followed by an increase in social engagement (23.6), an increase in their sense of self-worth (22.2%), and a decrease in financial stress (22.2%). Three participants reported that work helped, but did not clarify in what ways (4.2%). A minority of participants reported no improvements (9.7%).

Conclusions:

Participants most commonly reported that working improved their mood and decreased negative ruminations. Employment also offered participants a sense of self-worth, a routine, and a social outlet. Employment often played a crucial role in socializing, as participants often reported feeling socially isolated in their personal lives. In addition, employment improved finances, which was usually a major source of stress. However, despite the positive effects, participants still struggled with employment. Participants often experienced depression or lacked motivation, affecting attendance and performance at work. They also reported feeling anxious about how others perceived their performance. More disruptive symptoms include encountering triggers at work, and flashbacks. Although most participants reported experiencing positive benefits from employment, PTSD symptoms still affected them. If these concerns are not properly addressed, the negative effects of PTSD may still outweigh the positive benefits of employment, contributing to the loss of employment.

Poster #25

Name Elizabeth Meyers
Department Psychiatric Rehab & Counseling Professions
Faculty Support Dr. Samantha Herrick
Title How War Time Acquired Disability Affects Service Members Self-Efficacy and Autonomy

Background: Since the American Revolutionary war, service members have sustained spinal cord injuries. Spinal cord injuries adversely affected the lives of service members. The service member experiences a dramatic lifestyle transformation after a spinal cord injury. There is health, financial, family and emotional implications that encompasses the issues of a service member's spinal cord injury.

Purpose: The Purpose: of this proposal is to outline the prevalence of spinal cord injuries that has affected service members that served during Operation Enduring Freedom. A review of how service members' lives are negatively affected when discharged from Walter Reed Hospital where medical equipment and health care supports were available. These service members return to the realities of their new life with a disability, often lacking physical intervention and medical resources to address a service member's issues lack of self-efficacy.

Methods: Utilizing a literature review, the effect of spinal cord injuries and the service member's lack of autonomy will be presented. As well as how it can adversely affect the service member's ability to accept the spinal cord injury as a disability.

Results: The issues that service members encounter with spinal cord injuries, will produce awareness for American society and require the government to create programs for service members with spinal cord injuries. The programs will provide physical interventions and financial supports to improve environmental factors for service members with spinal cord injuries.

Conclusions: Service members that acquired spinal cord injuries during wartime and receive physical interventions and medical resources will have autonomy and less difficulty accepting their disability.

Poster #26

Name Sukanya, Panja
Department Health Informatics
Faculty Support Antonina Mitrofanova, James Scott Parrott
Co-Authors Hayati, S. Epsi, N, Parrott, JS, Mitrofanova, A
Title Integrative (epi) genomic analysis to predict response to androgen-deprivation therapy in prostate cancer

Background: Therapeutic resistance is a central problem in clinical oncology. Since prostate cancer progression and maintenance depend on androgen, androgen-deprivation therapy (ADT) has been a mainstay of treatment for advanced prostate cancer. Even though patients initially respond to the therapy, majority develop resistance and progress to castration-resistant disease, which is nearly always metastatic and lethal.

Purpose: We have developed a systematic genome-wide computational methodology to identify markers of resistance to androgen-deprivation therapy, which allow prioritization of patients with favorable and poor therapeutic response, even prior to therapy administration.

Methods: Our method identified DNA methylation events that differentiate poor and favorable ADT response and subsequently utilized linear regression analysis to identify DNA methylation sites that can explain mRNA expression changes of their site-harboring genes.

Results: Our method identified a 5 site-gene marker panel, which included TTC27, STMN1, FOSB, FKBP6, and CSPG5. We demonstrated the ability of this panel to predict primary resistance to androgen-deprivation therapy using Kaplan-Meier survival analysis in The Cancer Genome Atlas (TCGA) prostate cancer patient cohort (hazard ratio = 4.37) and across independent non-overlapping patient datasets, using ROC (AUROC = 0.83, AUROC = 0.98) and sensitivity analysis (at 100%). We confirmed significant non-random predictive ability of the identified 5 site-gene panel and its robustness to increased false positive and false negative rates. Furthermore, we have demonstrated that the ability of this panel to predict therapeutic response does not depend on commonly used prognostic variables, such as pathological and clinical T-stage, Gleason score, age, and therapy subtypes.

Conclusions: We propose that this panel could be utilized to prioritize patients who would benefit from ADT and patients at risk of resistance that should be offered an alternative regimen. Such approach holds a long-term objective to build an adaptable accurate platform for precision therapeutics.

Graduate Research Study

Poster #27

Name Meagan Hennessy
Department Nutritional Sciences
Faculty Support Dr. George Carman
Co-Authors Granade, M., Harris, T.
Title Phosphorylation of Lipin 1 Beta Phosphatidate Phosphatase by Casein Kinase II

Background: Lipin 1 phosphatidate (PA) phosphatase is an enzyme that plays a critical role in mammalian lipid metabolism. It catalyzes the penultimate step in triacylglycerol synthesis, the dephosphorylation of PA to diacylglycerol, and also serves as a transcriptional regulator of lipid metabolism. It is known that the phosphorylation state of lipin 1 controls its subcellular localization. Phosphorylation favors a cytosolic location, whereas dephosphorylation favors an ER membrane location. Thus, the phosphorylation governs the ability of the enzyme to carry out its catalytic function at the ER membrane.

Purpose: Over 20 phosphorylation sites have been identified in lipin 1, but the identity of the protein kinases involved is largely unclear. The Purpose: of this work was to determine the protein kinases that phosphorylate lipin 1 and the specific amino acid residue sites at which it is being phosphorylated.

Methods: This study used phosphorylation analysis with radioactive P32 to determine rates of phosphorylation as well as the specific phosphorylation sites at which the protein was being phosphorylated.

Results: In this work, we demonstrate that murine lipin 1 beta is a bona fide substrate for casein kinase II (CKII), a mammalian serine/threonine protein kinase. The phosphorylation was dependent on the amount of CKII and the time of the reaction, as well as the concentrations of ATP and lipin 1. To identify the site(s) of phosphorylation, we examined as substrate a peptide (amino acids 279-300) derived from the polybasic domain of lipin 1 that contains putative sites of phosphorylation. We showed that this peptide is a substrate for CKII. A muta-genesis analysis of the peptide showed that the alanine mutation of Ser-285 abolished the phosphorylation of the peptide. This indicated that Ser-285 is a CKII phosphorylation site in lipin 1.

Conclusions: This study concluded that lipin 1 beta is a substrate for casein kinase II, and That serine-285 is a CKII phosphorylation site. Studies to examine the phosphorylation of Ser-285 in full-length lipin 1 and its physiological relevance are currently under investigation.

Poster #28

Name Alison Durante & Crystal Socha
Department Psychiatric Rehab & Counseling Professions
Faculty Sponsor Weili Lu, Ph.D., Samantha Herrick, Ph.D., & Janice Oursler, Ph.D.
Co-Authors Alison Durante
Title Soft Skills Training

Background: Soft skills are personality traits, social graces, as well as one's emotional, interpersonal, adaptive, and problem solving skills. Soft skills empower individuals in the workplace to effectively communicate and collaborate with coworkers and supervisors. By enhancing an individual's soft skill capabilities, individual may experience increased rates of employment and obtain the support they need to remain successful in the workplace.

Purpose: Improvements in vocational rehabilitation for adults with disabilities render Hope for consumers and their families to achieve employment equity like their counterparts. The Purpose: of this research targets adults with disabilities age 18-70 who experience barriers in employment due to a lack of soft skills. This study only targets transition-age individuals, ranging from 18-70 due to several reasons: it would remove the barriers in obtaining parental consent; it would provide a more homogenous group at a similar developmental stage; an assist in seeking consistent and full-time employment.

Methods: In this quasi-experimental pilot study, 146 individuals were recruited from more than five vocational programs primarily in the state of New Jersey. The programs serve a wide range of disabilities, including psychiatric, developmental, neurological, physical, and co-occurring disorders. The curriculum for interview skills was structured using Boston University's Direct Skill Teaching (DST) approach. Data was entered and analyzed using SPSS19. Paired sample T-tests were used to examine the simple treatment effects at each post-treatment assessment point.

Results: The data for this study is currently being analyzed. Results: of the study will be presented.

Conclusions: The implications of the findings will be discussed.

Poster #29

Name Brian Eckenrode
Department Rehab & Movement Sciences
Faculty Sponsor Dave Kietrys (Rutgers-South); Scott Stackhouse (University of New England)
Title Chronic Achilles Tendinopathy is Associated with Signs of Central Sensitization

Background: Achilles tendinopathy is a common overuse injury sustained by athletes including runners which can often become chronic. There is emerging evidence that chronic musculoskeletal pain conditions exhibit signs of central sensitization.

Purpose: The objective of this study was to quantify and compare quantitative sensory testing between healthy controls and individuals with chronic Achilles tendinopathy through assessment of pressure pain threshold (PPT), heat pain threshold (HPT), and heat temporal summation (HTS).

Methods: Seventeen participants with chronic (3 months) Achilles tendinopathy (mean age 39.0 years $\bar{x} \pm 10.81$) and 24 healthy controls (mean age 31.83 years $\bar{x} \pm 8.92$) were included. Tendinopathy participants completed pain catastrophizing (PCS), functional (LEFS), and Achilles specific pain/function (VISA-A) questionnaires. Pain processing was quantified using PPT, HPT and HTS tests.

Results: Primary hyperalgesia (decreased pain threshold at injury site) was detected in the Achilles tendinopathy group, as evidenced by lower PPT ($p < 0.0001$) and lower HPT ($p = 0.028$). There is also evidence for mechanical secondary hyperalgesia (decreased pain thresholds distant from injury site) in the Achilles tendinopathy group at the tibialis anterior ($p = 0.033$) and non-involved Achilles ($p < 0.0001$). No between group differences were found in PPT at the thenar eminence ($p = 0.310$) and HTS ($p = 0.722$).

Conclusions: Individuals with chronic Achilles tendinopathy exhibit signs of central sensitization through decreases in mechanical pain thresholds at sites distant to the tendinopathy. The finding of primary hyperalgesia is consistent with other tendinopathy studies. Rehabilitation strategies for individuals with chronic tendinopathy may need to include interventions to address central sensitization.

Poster #30

Name Neeka, Tabatabaei
Department Nutritional Sciences
Faculty Support Dr. John Worobey

Title Sensory Sensitivity As Predictive of Fruit and Vegetable Acceptance by Young Infants: Development of a Novel Questionnaire

Background: The early introduction of fruits and vegetables to infants is an area gaining interest due to the rapid rise of childhood obesity. Sensory factors such as taste, smell, temperature, and texture may play a role in fruit and vegetable acceptance in infants who may be oversensitive. A number of sensitivity and temperament scales have been developed, but none have explored the relationship between actual fruit and vegetable consumption by infants and specific sensory properties of foods.

Purpose: To develop and validate a novel questionnaire using both previously developed, tested instruments and new questions in order to assess the relationship between infant fruit and vegetable consumption and temperament and sensory sensitivity.

Methods: A thorough literature review was conducted to evaluate current measurement tools for fruit and vegetable intake, temperament, food responsiveness, and sensory sensitivity in the infant population. Questions regarding sensory properties were constructed in order to address any properties not included in the available instruments. The questionnaire was administered to mothers of infants at the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) office.

Results: 120 mothers of 3- to 12- month-old infants completed the questionnaire. Content validity of the questionnaire was conducted by consulting an expert panel and receiving feedback. Reliability was determined by running a Cronbach's alpha with the result of 0.733. A factor analysis was conducted on the twelve items of the questionnaire regarding sensory sensitivity to assess the novel questions added. With the removal of one question, three factors were found within this construct.

Conclusions: This questionnaire assessing sensory sensitivity of young infants and its relation to fruit and vegetable acceptance presents a novel instrument in the field, which has been evaluated for validity and reliability.

Poster #31

Name Sharon Gbadamosi
Department Psychiatric Rehab & Counseling Professions
Faculty Support Dr. Ann Murphy; Dr. Samatha Herrick
Title Disability IAT Images Study

Background: Implicit Association Tests (IAT) attempt to capture the unconscious biases of respondents toward a group of people without the influence of social desirability (Banaji & Greenwald, 2013). Utilizing the Implicit Association Test (IAT) strategy created by Greenwald, Nosek, and Banaji (1998), the Disability Implicit Attitude Test uses reaction time latency of sorting stimuli representing individuals with disabilities and disabled persons and a set of positive and negative terms to measure implicit bias.

Purpose: The current Project Implicit test uses four disability images. These images only represent a limited number of physical disabilities and do not capture other types of non-physical disabilities. As Project Implicit purports to be an assessment of implicit bias toward disabilities in general, it is important to understand how people interpret the images used in the current test, how they interpret potential new images, and what might influence the way they interpret these images. This study assesses how individuals interpret the current four images and six new images representing a variety of disabilities. Additionally, this study assesses the influence having a disability/being close to someone with a disability and informing participants that the images are disability-related (as Project Implicit does) may play in the image interpretation.

Methods: This mixed method study will use a 10-15 minute, paper-based survey to elicit undergraduate student associations with 10 disability images, whether their associations are more positive or negative, and whether knowing these are meant to be disability representations, changes their interpretations of the images. In addition, demographic information and amount of participant contact with people with disabilities will be collected and analyzed with relation to participant image associations.

Results: The data for this study is currently being collected. Results: of the study will be presented.

Conclusions: The implications of the findings will be discussed.

Poster #32

Name Jigna Patel
Department Rehab & Movement Sciences
Faculty Support Alma Merians and Gerard Fluet
Co-Authors Qinyin Qiu, Mathew Yarossi, Sergei Adamovich, Eugene Tunik
Title Early virtual reality based hand training post-stroke elicits better than expected outcomes.

Background: Decreased upper extremity function post-stroke has a substantial negative impact on quality of life. Thus it is critical to develop effective upper extremity rehabilitation interventions that can exceed expected outcomes. One predictive algorithm that utilizes the presence of distal upper extremity motor evoked potentials (MEPs) and active finger extension and shoulder abduction (SAFE score) is the Predicted Recovery Potential algorithm 2 (PREP2) (Stinear et al., SFN 2016). Data from 11 subjects recruited for a more expansive pilot study was collected for sub-analysis to determine whether early and intense hand-focused virtual reality and robotic training could improve expected upper extremity function.

Purpose: To determine whether early and intense hand-focused virtual reality and robotic training could improve expected upper extremity function beyond that predicted by the PREP2 algorithm.

Methods: Data from 11 subjects recruited for a more expansive pilot study was collected for sub-analysis to determine whether early and intense hand-focused virtual reality and robotic training could improve expected upper extremity function. Subjects (mean age, 58 years) were 30 days post first time stroke and had moderate to severe hemiparesis (UEFMA range, 2-44). All subjects received eight 1-hour sessions of hand-focused training in addition to standard acute rehabilitation. MEPs from the affected first dorsal interosseous muscle and SAFE scores (excluding corticospinal tract lesion load) were obtained at baseline (5-29 days). Clinical outcomes obtained at baseline, post training, and 6 months later included the UEFMA and Action Research Arm Test (ARAT). Subjects were categorized into either an MEP negative group (N=7, never regained MEPs) or a convert group (N=4, MEPs regained after training).

Results: Data on the PREP2 algorithm predicts that people with SAFE scores ≤ 5 (within 72 hours of stroke) and without MEPs at two weeks post-stroke will have limited to poor upper extremity functional outcomes (ARAT score ≤ 32) 3 months post-stroke. Ten of our 11 subjects met these criteria and of interest 7 of them (including all of the convert group) had better than predicted recovery at 6 months (ARAT 33-54, UEFMA 43-66), suggesting effectiveness of early and intense hand-focused training. Greater improvement on the ARAT and UEFMA from baseline to 6 months post training in the convert group compared to the negative group [convert group: mean change ARAT=31, UEFMA=34.8, negative group: mean change ARAT=17.1, UEFMA=24.1] likely reflects recovery of corticospinal tract function. Notably, 3 subjects in the negative group also exceeded PREP2 outcomes, perhaps due to the early and intense hand-focused training.

Conclusions: Our data suggest that early and intensive hand-focused training featuring virtual reality and robotics may be safe and beneficial to stroke patients with moderate to severe impairment. Additionally, we suggest predictive algorithms should be assessed at later stages of recovery to reflect potential longer-term changes in neural reorganization that may benefit restitution of function.

Poster #33

Name Nicola de Souza
Department Rehab & Movement Sciences
Faculty Support Carrie Esopenko, Suril Gohel, Jennifer Buckman
Co-Author Viagas, N
Title Examining resting-state functional connectivity and binge drinking in college athletes

Background: Collegiate athletes report more occasions of binge drinking (BD) than non-athletes (Nelson & Wechsler, 2001; Yusko et al., 2008). However, few studies have examined if BD is associated with altered intrinsic functional brain connectivity in college athletes.

Purpose: The objective of the current study was to determine if there were differences in resting-state functional connectivity (rsFC) between athletes based on BD history.

Methods: Twenty-eight university athletes (39% female; age: M = 19.43 years) completed self-report questionnaires to assess substance use history, including the number of BD occasions in the past year. Participants also completed resting-state functional magnetic resonance imaging (rsfMRI) to examine rsFC. An independent components analysis was used to determine regions of interest based on known resting-state networks. RsFC was compared between low-risk users (LRU; n = 10), who either did not drink or reported no occasions of bingeing, to higher-risk users (HRU; n = 18), who reported at least one binge episode in the last year (mean response was 3-5 occasions).

Results: Increased rsFC was noted in the frontal regions for the HRU relative to LRU. Specifically, we found increased connectivity between the left inferior frontal gyrus and right middle frontal gyrus, and between anterior and posterior seeds in the inferior frontal gyrus for the HRU. In posterior regions, HRU showed decreased rsFC between the right inferior parietal lobule and left superior temporal gyrus.

Conclusions: These Results: are similar to those noted in aging studies, whereby increased frontal connectivity and reduced posterior connectivity have been noted (Cabeza et al., 2002; Mowinckel et al., 2012). It is possible that BD may be associated with damage to frontal regions resulting in altered intrinsic functional connectivity. However, this is a small sample with limited variability. As such, future research should examine a larger sample of college athletes with a more varied history of BD.

Graduate Systematic Review

Poster #34

Name	Danielle Kreda
Department	Rehab & Movement Sciences
Faculty Support	Allison Brown, PT, PhD
Co-Authors	Alorro, J., Balzotti, M., Drew, T., Kreda, D., Mowers, M., Torkel, E., Tripodi, A., Waite, D
Title	What effect does spatiotemporal parameter manipulation have on running economy?
Background:	Manipulation of spatiotemporal parameters has been proposed to influence repetitive running injuries (Schubert et al., 2014) and modify kinematic and kinetic behaviors known to associate with running injury (Heiderscheidt et al., 2014). The effect of these modifications on running economy is, however, unclear. Running economy, defined as the steady-state oxygen consumption at a given running velocity (Barnes et al., 2014), is an important component of performance in middle and long-distance running. The Purpose: of this review is to analyze the effects of spatiotemporal parameter manipulation on running economy in runners.
Purpose:	Manipulation of spatiotemporal parameters has been proposed to influence repetitive running injuries and modify kinematic and kinetic behaviors known to associate with running injury. The Purpose: of this of this review is to evaluate the evidence to determine the effect that spatiotemporal parameter manipulation has on running economy.
Methods:	PubMed and Ovid-MedLine databases were searched within the time frame of January 1, 2005 - November 1, 2017 using the search terms: "Stride Rate" AND "Running Economy", "Step Rate" OR "Cadence" OR "Stride Frequency" and "Running Economy", "Step Rate" and "VO2", ((Running) AND (Efficiency OR Economy)) AND ((Step OR Stride) AND (Frequency OR Rate)), (Self-optimization) AND (running), (Stride* OR Cadence OR Step L* OR Step R*) AND (Oxygen Up* OR Oxygen Con* OR VO2* OR Running Eco* OR Running Eff*). Studies investigating the effect of stride length(SL) and stride frequency(SF) manipulation on running economy(RE) were included if: participants ran ≥ 15 miles per week, subject age range of 18-50 years old, and studies examining human subjects.
Results:	The following five articles met the inclusion criteria and therefore were extracted: (Connick et al., de Ruiter et al., Hunter et al. (2017), Hunter et al. (2007), Lieberman et al.). Two articles focused on trained versus untrained runners. Three articles focused on only trained runners. Two articles had only male subjects, one study did not specify genders and two studies had a mix of male and female but predominantly male subjects. Subjects' ages varied from 18 - 48 years old. Height and weight normalization were inconclusive due to varying normalization between articles. The included studies collectively found that preferred stride frequencies (PSF) and preferred stride length (PSL) are the most economical, suggesting that runners tend to naturally self-optimize with a high level of accuracy. Additionally, multiple studies found a curvilinear relationship between SF and RE (DeRuiter et al, Hunter et al (2007), Lieberman et al), with a SF of approximately 85 strides per minute being optimal (Lieberman et al). Hunter et al (2007) found that subjects' PSF was within 4-8% of their optimal SF.

Conclusions: While clinicians often use spatiotemporal manipulation, such as cadence retraining, as a method of treating injured runners, current evidence has demonstrated that any manipulation of spatiotemporal parameters leads to a decrease in RE, however this was not found to be significant. Given that multiple studies demonstrated runners' self-selected SF's being at or close to OSF changes to these self-selected frequencies should be recognized for their potential to cause detrimental changes to a runner's RE. Application to Physical Therapy: Current trends in research show that manipulation of spatiotemporal parameters can decrease the lower body forces associated with running, which may be protective against lower extremity injury. Because PSF's appear to be at or near optimal across runners of all levels of experience and both increases and decreases in SF were associated with decreased RE, clinicians should take caution when considering the use of spatiotemporal parameter manipulation as an intervention with patients who run.

Poster #35

Name Andrea, Alario

Department Nutritional Sciences

Faculty Support Dr. Julie O'Sullivan-Maillet, PhD, RD

Co-Authors Andrews, Punnya; Lauro, Courtney; Sweeney, Michelle

Title In critically ill adult patients with abdominal trauma, how does enteral nutrition support (EN) compared to oral feedings and parental nutrition (PN) impact mortality, length of stay and feeding tolerance?

Background: In critically ill patients with abdominal trauma, provision of nutrition needs includes oral, enteral and parenteral feedings. Assessment of the gastrointestinal integrity and function can influence the choice of feeding and potentially the patient outcome.

Purpose: The PICO question being examined evaluates the impact of enteral nutrition support (EN) compared to oral feedings and parenteral nutrition (PN) on mortality, length of stay (LOS) and feeding tolerance in critically ill adult patients with abdominal trauma.

Methods: In February 2018, a systematic review was performed using PubMed, CINAHL EBSCOhost and ClinicalKey using search key and MESH terms, to identify appropriate articles published within the years of 2012-2018. MESH terms included abdominal wounds, abdominal trauma and nutrition support. After applying the inclusion criteria, the Evidence Analysis Library Quality Criteria Checklist from the Academy of Nutrition and Dietetics was used to assess quality of six articles.

Results: Five of the articles reviewed were rated neutral and one was rated positive. Five articles supported the administration of early EN over other feeding Methods: due to improved clinical outcomes. Three of the articles noted reduction in feeding intolerance with EN. These outcomes support EN as a feasible and safe method of feeding in critically ill adults with abdominal trauma.

Conclusions: The use of EN in abdominal trauma adults resulted in improved clinical outcomes in LOS, feeding tolerance and mortality. Results: varied based on the type, location, and severity of the abdominal wound. Further research is needed to determine timing, site of administration and rate of administration of EN in critically ill adults.

Poster #36

Name Fatima Bahary
Department Nutritional Sciences
Faculty Support Dr. Julie O'Sullivan-Maillet, PhD, RD
Co-Authors K. Davidson, S. Khan, A. Louloudis
Title Predicting Caloric Needs of Critically Ill Patients Receiving Continuous Renal Replacement Therapy (CRRT).

Background: Critically ill patients in the ICU setting who suffer from an acute kidney injury (AKI) often undergo CRRT. Assessing and determining nutritional needs of these patients can be challenging. The gold standard for calculating energy needs is indirect calorimetry (IC). However, due to inaccessibility of IC, hospitals typically use various predictive equations (Harris-Benedict, Penn State, etc.) to estimate energy needs. Patients are therefore at increased risk for being over or underfed, which can lead to adverse outcomes.

Purpose: The aim of this review is to evaluate current standard practices of estimating energy needs of critically ill patients receiving CRRT and to answer the question How do standardized Methods: of predicting caloric needs affect under or overfeeding in critically ill patients receiving CRRT?

Methods: In January 2018, a systematic review was conducted using PubMed. MeSH terms and boolean phrases were used to identify appropriate articles published between 2012 and 2018. After applying inclusion criteria, the quality of 6 articles was assessed using the Academy of Nutrition and Dietetics Evidence Analysis Library Quality Criteria Checklist.

Results: Two of the articles were rated positive and four of the articles were rated neutral. According to one positively rated study, 38% for Harris Benedict, 40% for Penn State were within +/-10% of resting energy expenditure measured by IC. ESPEN guidelines and Faisy Fagon equations did not predict caloric needs within this range. Majority of the articles noted that the contribution of calories from dialysate content was not accounted for.

Conclusions: The study outcomes further strengthen the notion that IC is the gold standard for measuring resting energy expenditure. Institutions should increase the accessibility of IC for health professionals, as it can improve the accuracy of nutrition assessments. Overall, when measuring caloric intake in this population, dialysate content should be taken into account.

Poster #37**Name** Mariana, Escate**Department** Nutritional Sciences**Faculty Support** Dr. Julie O'Sullivan-Maillet, PhD, RD**Co-Authors** Fernandes, M. Gimenez, L. Sullivan, B.**Title** In severely burned patients, what Methods: of nutrition support reduces risk of wound infection, length of stay (LOS), and mortality rate?

Background: Following injury, severely burned patients are in a hypermetabolic state, resulting in a dramatically increased resting energy expenditure. If nutritional provision is insufficient, catabolism and subsequent complications may occur.

Purpose: The Purpose: of this review was to compare Methods: of feeding in severely burned patients in the intensive care setting to identify the preferred method that reduces complications.

Methods: A systematic review of original research between 2007-2017 was conducted through CINAHL and PubMed using MESH terms. Articles compared feeding Methods: such as enteral nutrition (EN), parenteral nutrition (PN), oral feeding, intraoperative feedings, and timing of initiation. Six articles were examined using the Quality Criteria Checklist (QCC) from the Academy of Nutrition and Dietetics (AND).

Results: Using the QCC, five articles (83%) were rated positive and 1 article (17%) was rated neutral. In 1 article, early enteral nutrition (EEN) was statistically significant in lowering the risk of wound infection. EEN was also statistically significant in reducing LOS in 2 articles, and mortality rate in 4 articles. In 1 article, intraoperative feeding was statistically insignificant in decreasing wound infection, LOS, and mortality rate.

Conclusions: Overall, the Results: showed a correlation of EN, specifically early initiation of EN, with improved clinical outcomes such as decreased risk of wound infection, LOS, and mortality rate in burned patients.

Poster #38**Name** Melissa Gallagher**Department** Nutritional Sciences**Faculty Support** Dr. Julie O'Sullivan Maillet, PhD, RDN**Co-Authors** Brittany Gleeson, Megan McCarthy, Alexandra Orlan**Title** In Pediatric Patient with EoE, what effect do various elimination diets have on decreasing eosinophils?

Background: EoE is defined by the American Academy of Allergy Asthma and Immunology (AAAAI) as a chronic allergic and immune condition characterized by inflammation and excess eosinophils in the esophagus. There is controversy over the effectiveness of diet therapies relating to treatment of EoE. Patient compliance often makes it difficult to determine the best course of treatment.

Purpose: The PICO question studied: compare the effectiveness of diet therapies in pediatric patients with EoE as it relates to inflammation and immune response.

Methods: A literature search of PubMed and TRIP was conducted in February 2018. A second literature review was conducted from 2011- 2012 because there is limited primary research in this area. Studies comparing two, four, and six food elimination, modified elimination, and elemental diets for treatment of EoE were included. The reviewers assessed the quality of six articles using the Academy of Nutrition and Dietetics Evidence Analysis Library Quality Criteria Checklist (QCC).

Results: The QCC ranking was 50% (3) of the included articles were rated positive, 33% (2) neutral, and 16% (1) negative. Active allergic inflammation of the esophagus included histologic biopsy of 15 eosinophils per high power field (HPF), and remission was defined as <15 eosinophils per HPF. Trigger foods included milk, wheat, eggs, soy, nuts, legumes and seafood. Studies incorporated the elimination of foods eliciting an allergic reaction based on atopy patch testing, IgE, or both. Results: showed a decrease in number of eosinophils in all studies after diet therapy.

Conclusions: Research is moving towards combining medical approaches and diet modifications. The elimination diet has shown to be an accepted method in the pediatric population to help reduce eosinophils. Diet therapy can be the first step taken to improve quality of life. More research is needed to determine the appropriate method of treatment in patients with EoE and achieve complete remission.

Poster #39

Name Amanda Kara
Department Rehab & Movement Sciences
Faculty Support Dr. MJ Myslinski
Co-Authors V. Cassell, M. Chambers, R. Kumar, A. Lentini, C. Lew, M. Restrepo, K. Wilkinson
Title In persons with skin of color, what is the presentation of three common skin cancers?

Background: Research has shown that the prevalence of skin cancer is higher in patients with Caucasian skin compared to patients with skin of color (SOC), however, due to late detection, mortality rates are higher in individuals with skin of color. In Physical Therapy literature, there is limited information regarding SOC clinical examination, but there is ample information for Caucasian skin.

Purpose: The Purpose: of this review is to describe the clinical presentation of basal cell carcinoma (BCC), squamous cell carcinoma (SCC), and malignant melanoma (MM) in skin of color (SOC) compared to Caucasian skin.

Methods: PubMed and CINAHL databases were searched during the time frame of September 2017 - October 2017 using the search terms ethnic skin AND cancer, dark skin AND cancer and African American AND skin cancer AND presentation. Interprofessional outreach involving dermatology and nursing disciplines were also utilized for further information. Inclusion criteria consisted of basal cell carcinoma, squamous cell carcinoma, and malignant melanoma. All other types of skin cancer were excluded from our search.

Results: Four articles of 2b level of evidence met the inclusion criteria (Abreo et al., Camain et al., Cormier et al., McCall et al.). For SCC in SOC, it is most common on the lower extremities, anogenital areas, and other sun-protected areas; whereas, in Caucasian skin it is most common on the head, neck, and other sun-exposed areas. The observable characteristics for SCC in SOC are mottled skin, cutaneous horns, nodules, perilesional and hyperkeratotic lesions, and plaques (Camain et al., McCall et al.). Observable characteristics for SCC in Caucasian skin were not found in any of the studies. For BCC in SOC, it is most common on the face, neck, scalp, and lower extremities; however, in Caucasian skin it is most common on the face and scalp. The observable characteristics for BCC in SOC are pigmented nodular scars, keloids, and ulcers (Abreo et al., Camain et al.). Observable characteristics for BCC in Caucasian skin were not stated in any of the studies. For MM in SOC, it is most common on the soles of the feet and palms of the hands; whereas, in Caucasian skin it is more commonly seen as an even distribution on the truncal region. The observable characteristics for MM in SOC are raised, dark, and thick lesions; whereas, in Caucasian skin the lesions are more shallow (Camain et al., Cormier et al.).

Conclusions:

The evidence suggests that the clinical presentation of skin cancer differs in SOC compared to Caucasian skin. The most notable differences are as follows: nodular scars, hyperkeratotic lesions, hyperpigmentation, and skin thickness. These observable characteristics are more likely to occur in areas protected from the sun in SOC; whereas in Caucasian skin, lesions often appear on sun-exposed areas.

Previous research has shown that there are physiological differences in the integumentary system of SOC compared to Caucasian skin, which may account for the variations in skin cancer presentation. The findings in this study are limited by the paucity of data surrounding the topic.

Application to Physical Therapy: Based on the evidence, skin cancer location and observable characteristics varies between SOC and Caucasian skin. It is imperative that physical therapists note these variations when examining patients with darker skin tones, and refer to other healthcare professionals when necessary.

Poster #40

Name Brian Rader
Department Psychiatric Rehab & Counseling Professions
Faculty Support Dr. Samantha Herrick
Title Wilson's Disease

Background: Wilson's disease was first described in 1912 by Kinnear Wilson as a "progressive lenticular degeneration". Wilson's disease adversely affects individuals with the disease in various ways. Lifestyle changes are often required to adjust to the condition. These changes can effect physical health, emotional health, financial wellbeing, and family.

Purpose: The Purpose: of this review of the literature was to define Wilson's disease, its symptoms, prevalence, treatment options and the aspects of an individual's life that are affected. These individuals require a multitude of professional support systems and medical resources to address their needs.

Methods: Using a literature review, the effects of Wilson's disease and an individual's treatment options will be presented as well as how a person may experience adjusting to and accepting the disability; and the quality of life benefits of doing so.

Results: Issues brought on by Wilson's disease will create awareness for medical professionals and those affected by Wilson's disease as well as interventions and medications. These interventions and medications will provide emotional and physical support to improve quality of life for these individuals.

Conclusions: Individuals with Wilson's disease that receive quality healthcare that includes both emotional and physical interventions will become more independent and have a greater overall quality of life.

Poster #41

Name Cynthia, Diaz
Department Rehab & Movement Sciences
Faculty Mentor Gerard Fluet
Co-Authors Glenn Forsyth, Kristen Gasnick, Ileana Johnson, Monika Jurgowska, Meghan Lonergan, Gregory O'Connor
Title In adults with chronic stroke, does home-based robotic therapy improve upper extremity function?

Background: Patients with stroke require a well-developed rehabilitation plan in order to regain motor function. These rehabilitation programs are carried out in hospitals and clinics across the country, but chronic stroke patients located in rural areas have limited access to these plans. Home-based robotic interventions may be helpful to improve access to rehabilitation for this population.

Purpose: The goal of this review was to determine if home-based robotic therapy can lead to improvements in upper extremity function in patients with chronic stroke.

Methods: Thirty-three articles were reviewed by seven physical therapy students to determine applicability and five were selected for inclusion. Databases PEDro, PubMed, and CINAHL were searched using the key terms: stroke, home-based home-based therapy, and upper limb. Inclusion criteria consisted of chronic stroke, upper extremity function, and home-based interventions. Case studies and articles lacking the use of robotic-therapy or home-based interventions were excluded. In total, 143 subjects (88 M/55F) with an average age of 57.5 years were included. Chronicity of stroke ranged between 4-84 months with a baseline severity score ranging from 22-37 on Fugl-Meyer Assessment.

Results: There is promising yet limited evidence on the efficacy of home-based robotic therapy to improve upper extremity function in adults with chronic stroke. In each study, the home-based robotics intervention elicited statistically significant improvements in motor function across several outcome measures. Although the cohort studies indicated significant improvements in motor function, a randomized-controlled trial found no difference between home-based robotic therapy and home exercise program.

Conclusions: There is a small body of evidence supporting feasibility of home-based robotic therapy targeting upper extremity function in adults with chronic stroke. The findings of this literature review suggest that home-based robotic therapy may be a viable and feasible option for clinicians as a means of providing physical rehabilitation to persons with chronic stroke and upper extremity motor dysfunction.

Poster #42**Name**

Sandra Kirolos

Department

Primary Care

Faculty Support

Frank Giannelli, MS, PA-C

Title

Effects of Perioperative Administration of IV Ibuprofen or IV Parecoxib on Morphine Consumption

Background:

Inadequate postoperative management of acute pain, can progress to chronic and persistent pain often associated with long-term use of opioids. This may develop into an opioid dependency, an important aspect of the opioid epidemic that is associated with heroin use, overdose, and death. Opioids carry some benefits, but endure many more risks and adverse effects that can prolong the hospital stay. Ibuprofen is a classic NSAID that inhibits COX-1 and COX-2 enzymes, while parecoxib is a selective COX-2 inhibitor. A higher risk for adverse events is associated with ibuprofen but, there is a plateau effect observed at higher doses of parecoxib. However, NSAIDs treat the inflammatory aspect of pain that opioids cannot, as well as reduce opioid-related adverse effects and opioid consumption.

Purpose:

The purpose of this study was to examine effects of perioperative administration of IV ibuprofen or IV parecoxib on morphine consumption, pain relief, and prevalence of adverse effects.

Methods:

Searches were conducted in PubMed, MEDLINE, and CINAHL. Search terms included IV ibuprofen, ibuprofen, IV parecoxib, perioperative administration, postoperative, opioid consumption, and acute pain. Data extracted from the studies included information about opioid strength, treatment group, control group, method of medication delivery, and the primary and secondary end points. Data about number of treatment groups, the strength of the NSAIDs, and frequency of delivery, sample sizes, duration of the study, results and conclusion of the primary and secondary end points were extracted from the studies that met the inclusion criteria.

Results:

There were six studies included in this study, all conducted in various surgical settings. Three studies explored the effects of IV ibuprofen compared to placebo and, three studies compared IV parecoxib to placebo. All participants included received IV morphine, mostly by PCA. The use of NSAIDs as adjuvant therapy reduced morphine consumption in all studies by up to 40.5%. Longer administration of parecoxib was associated with lower morphine use. Preoperative administration of NSAIDs showed further reduction of opioid consumption. Intervention groups had better pain relief, with up to 37% improvement at rest and up to 30.8% with movement. Lower rates of adverse effects were demonstrated with NSAIDs as opposed to placebo. There were fewer incidences of an adverse event in parecoxib compared to ibuprofen.

Conclusions:

The Results: support pain treatment using combination therapy consisting of an NSAID and an opioid. Clinicians should discuss treatment goals and plans with their patients, as well as educate them about pain therapy. They are also encouraged to consider all factors before deciding the appropriate treatment plan for the patient. The addition of NSAIDs during the perioperative period can provide adequate pain management in the acute phases. Thus, preventing progression to chronic pain and long-term use of opioids, ultimately improving the opioid epidemic.

Poster #43

Name Maria Spinosi and Raveena Dhruve
Department Rehab & Movement Sciences
Faculty Support Dr. Evan T. Cohen
Co-Authors Conklin, A; Galema, M; Indrikovic, J; McGillen, M; Mercurio, D; Toomer, A; Winter, J
Title The effects of electrical stimulation on gross motor function in children with cerebral palsy: a systematic review

Background: Cerebral palsy (CP) is a common young-onset neuromuscular disorder that often Results: in problems with gross motor function. The goal of Physical Therapy for the child with CP is to ameliorate these problems and maximize ability and participation. Electrical stimulation (ES) is a frequently implemented modality that utilizes electrical currents to stimulate muscles to improve function. Although well-researched in adult populations, ES use in children with neuromuscular disorders, such as CP, is limited.

Purpose: The Purpose: of this systematic review was to explore the effectiveness of ES on gross motor function of children with CP, and make recommendations for its use.

Methods: A search of CINAHL, Scopus and MEDLINE databases was conducted in October 2016 using keywords cerebral palsy, electrical stimulation and children. The search was limited to randomized controlled trials within the past 15 years, in English, which investigated the use of ES in children with CP ages 0 to 21. Studies were excluded if the ES was applied to the upper limb, replaced an orthosis, or if the ES was compared to an alternate intervention. Studies were reviewed and rated using the Physiotherapy Evidence Database (PEDro) scale. The PEDro scale is an 11-item questionnaire that identifies threats to internal validity.

Results: Six articles met the inclusion criteria. Internal validity of the studies was generally strong (median PEDro score=10 (range 9-11 IQR 1)). Studies investigated 3 forms of ES: neuromuscular electric stimulation (NMES), functional electric stimulation (FES), and threshold electric stimulation (TES). Outcome measures used to evaluate the effect of ES varied across studies. Two articles investigated FES use on the trunk and lower limb, respectively, and reported improvements in sitting balance and gait mechanics. Of the three studies using NMES, two found significant improvements in gait kinematics while the third reported no changes in gait, range of motion, or tone. The studies that investigated TES reported no significant findings.

Conclusions:

NMES and FES consistently led to improvements in children with CP, suggesting that NMES and FES may be a useful therapeutic adjunct. Conversely, TES did not result in any improvements. Despite these positive results the research is scarce. Further investigation is warranted to determine optimal dosing parameters, and a more comprehensive exploration of the long-term effect of ES intervention for children with CP. The research supports ES use as a relatively cost-effective and feasible treatment modality for children with CP. However, parental training, patient tolerance, family compliance, and insurance limits may hinder its long-term use. In addition, clinical vigilance is required to ensure safety as children with CP often have co-morbidities that are precautions or contraindications to ES use. ES should be considered as a potential treatment modality for children with CP when the intention is to improve clinical impairments or gross motor function.

Poster #44

Name Adrian Lopez
Department Rehab & Movement Sciences
Faculty Support David Kietrys
Co-Authors DaTorre J., Gandhi C., Kaczka K., Kline M., Lopez A., Wills D., Kietrys D.
Title The Effectiveness of TENS, PENS, and Electromagnetic Stimulation for Reducing Lower Extremity Pain Due to Diabetic Peripheral Neuropathy: A Systematic Review and Meta-analysis

Background: Diabetic peripheral neuropathy (DPN) is a common complication of type II diabetes; up to 53% of patients with DPN experience pain in the lower extremities (LEs). Electrical stimulation is a commonly used for management of pain.

Purpose: To analyze evidence regarding the effectiveness of TENS, PENS and electromagnetic stimulation for reducing LE pain due to DPN.

Methods: We searched PubMed, CINAHL, and Medline using keywords TENS, PENS, electromagnetic stimulation, and other related terms. Results: were combined with Results: of a search of terms related to DPN. Relevant randomized controlled trials were assessed with the Cochrane Risk of Bias tool. Data from articles was used in a meta-analysis of TENS, PENS, and electromagnetic stimulation. A second meta-analysis was performed with data from 3 studies that used conventional TENS.

Results: The initial search yielded 199 articles; 182 articles were excluded based on title, abstract, and/or elimination of duplicates, and 9 articles were excluded because they did not pertain to our question or had no control group. Cochrane scores ranged from 4 to 13 (out of 16) with a mean of score of 9.44. Heterogeneity was high ($I^2=97\%$ for PENS, TENS and electromagnetic stimulation, and $I^2=93\%$ for conventional TENS), due to differences in outcome tools and treatment parameters across studies. In both meta-analyses, the pooled effect (1.97, 95%CI 0.69-3.24 and 2.91, 95% CI 0.33-5.49, respectively) favored treatment. All 3 studies using conventional TENS reported statistically significant reduction in pain, but the clinical meaningfulness of the improvement is unclear.

Conclusions: Although meta-analyses of TENS, PENS, or electromagnetic therapy suggest that they may be useful for treating lower extremity pain in patients with DPN, the high heterogeneity, inconsistent findings across individual studies, and uncertainty of the clinical meaningfulness suggests that more study is needed before a recommendation can be made.

Poster #45

Name Jettie Young
Department Psychiatric Rehab & Counseling Professions
Faculty Support Dr. Ann Murphy and Dr. JS. Parrott
Title Using Incentivized Depot Injection Programs to Improve Adherence: Patient Impact and Concerns, Considering Clinician Concerns, and Effects on Adherence and Quality of Life

Background: Although many underlying reasons for non-adherence in clients prescribed anti-psychotic medication have been studied, all parties can benefit from research into accepted and proven Methods: to promote greater adherence if they concurrently impact and improve client wellness. Financial incentives in the form of gift cards or cash and check payments to individuals who attend appointments, accept medication injections, or prove medication adherence could potentially improve both adherence rates and client wellness. Both clients and clinicians have expressed concerns about ethical responsibility, influence, power, and client care in this model.

Purpose: To understand the effect of incentives on adherence and attitudes and further, whether there is evidence that incentives are a viable and acceptable method to improve adherence to anti-psychotic medication.

Methods: Five studies that examined adherence to anti-psychotic medications in individuals with a serious mental illness (i.e., diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, or other psychotic disorder), who received financial incentives for medication adherence were identified from electronic database searches. In addition, four studies were identified from the same electronic databases examining the attitudes of clinicians and clients after their experiences with financial incentives related to medication adherence. Two additional studies were identified that examined the long-term effects of the incentives, including adherence rate change after discontinuation of incentives.

Results: Financial incentives are a way to increase adherence to medications, especially long-acting depot medications. Attitudes of both clinicians and clients show concerns in areas of power and manipulation, but where controls and caution are used, many clients show improved adherence and improved quality of life as shown by increased SQOL scores. However, when financial incentives are discontinued, many clients return to previous levels of adherence.

Conclusions: The impact of the findings will be discussed.

Poster #46**Name**

Valerie Ferri

Department

Psychiatric Rehab & Counseling Professions

Faculty Support

Dr. Ann Murphy and Dr. JS. Parrott

Title

Burnout interventions for the behavioral health workforce: A Meta Analysis.

Background:

Although the issue of burnout has been a well-documented concern for workers within the behavioral health field, there has been a lack of research around interventions to improve the emotional needs of workers treating individuals receiving behavioral healthcare.

Purpose:

The objective of this meta-analysis was to identify specific interventions used with behavioral health workers to address their emotional wellness.

Methods:

Data was collected through online searches using Pub-Med, Cochran Review, and the general online Rutgers library search function using key words associated with behavioral health workers and, emotional wellness interventions to prevent issues such as burnout. Pearling techniques were also utilized with the initial search Results: to acquire more access to research that was specific to behavioral health workers. Eligibility criteria included studies that were specific to interventions used to prevent burnout among any participants, working in any profession at any level of the behavioral health field, including psychiatrists, psychologists, social workers, counselors, therapists, nurses, direct care workers, and peer staff.

The articles that were ultimately identified included educational interventions, which taught different aspects of wellness, self-care, and communication. The interventions included BREATHE (Burnout Reduction: Enhanced Awareness, Tools, Hand- outs, and Education) program, the MBRS (Mindfulness-based Stress Reduction) program, the OSCAR (Occupational Stress with Mental Health Clients in Acute Response) 2 day training and general workshops. Outcomes of burnout, job satisfaction, and stress were compiled and organized using the System Review Data Repository (SRDR), and will be analyzed using the SRDR supported OpenMetaAnalyst.

Results:

The quality of the studies analyzed were low, largely due to all but one offering no randomization nor control group for comparison. Specific details regarding the meta-analysis will be presented once the analysis is completed.

Conclusions:

The impact of burnout interventions will be based on the completed meta-analysis, which will be presented along with suggestions for potential future research studies.

Poster #47

Name Taurean Williams
Department Psychiatric Rehab & Counseling Professions
Faculty Support Amy Spagnolo
Title Trauma Informed Care for Women of Color with Co-Current Disorders

Overview The inclusion of a trauma history screening can increase practitioner's awareness of potential past and present experiences that affect the individual's engagement in treatment based on prior traumatic life experiences. Addressing the individual's previous trauma history may not be viewed as critical component of healthcare for some providers. In the United States, it has been shown that childhood and adult trauma have been linked to most cause of adult illness, death and disability. (Black et al., 2011) Women living with HIV report having been physically or sexually abused as children twice as often as HIV negative women. ("The Well Project",2014) Providers in both mental health and primary care services should be working to incorporate screening for trauma and the use of Trauma Informed (TIC) approaches.

Purpose: (TIC) is the organizational structural and treatment framework emphasizing the physical, psychological and emotional safety for both consumers of healthcare and providers by empowering survivors in rebuilding a sense of control. ("Trauma Informed Care project",2014) It is critical that the community responds to an individual's trauma that sets the foundation for the impact of future traumatic events, experiences and effects. Health care itself can be a source of trauma or re-traumatization for historically discriminated and trauma impacted individuals. The goal of this project was to highlight the difficulties that women of color who are HIV/AIDS positive face when navigating through the health care system. In this project identifying and examining barriers can assist in creating initiatives that can reassure women that their experience within the health care system will not re-traumatize but empower them.

Conclusions: Research supports the importance and efficacy of implementing TIC in both mental and primary care services. Interventions should encompass TIC tools to help women of color with HIV/AIDS navigate and remain engaged treatment. For many women, the stigma surrounding medical issues and lack of social support discourage them from seeking care. Access to resources, such as TIC approaches, can eliminate barriers and lead to higher levels of social functioning and better health outcome. There is a need for continued research to provide insight into long term outcomes, interventions without medication implementation and implementation of approaches within communities with minimal funding.

Poster #48

Name Shima Ghavimi
Department Department Gastroenterology and Hepatology
Faculty Support Dr. Sushil Ahlawat
Title Sarcomatoid Carcinoma of the Pancreas

Background: Sarcomatoid carcinoma of the pancreas (SCP) is a rare and highly malignant variant of pancreas carcinoma that usually has a very poor prognosis mechanism. Several molecular pathways had been documented in this rare entity. Loss of E-cadherin was identified in 87% of the cases. The resulting disruption of cell adhesion might be an early event that could contribute to its aggressive behavior; KRAS and P53 mutation also have been detected that could result in its rapid proliferation. Furthermore, the increased TGF β 1 might regulate the transition from epithelial to mesenchymal morphology.

Purpose: The aim of this report is to point out a rare disease which only very few cases have been reported in the literature. Increased awareness and recognition of this rare entity and understanding its molecular mechanisms allow for the correct diagnosis and prompt initiation of specific therapies.

Methods: We used current data from published literature, Imaging and pathological reports from Rutgers University Hospital departments.

Results: In this case, the neoplasm unexpectedly consisted of three different histopathological types, including not only adenocarcinoma and squamous carcinoma but also sarcoma. Adenosquamous carcinoma of the pancreas is associated with high rates of recurrence and metastasis and carries a poor prognosis, much worse than even that of pancreatic adenocarcinoma, which has a reported median overall survival of no more than 5 month. Surgery is still the first-line treatment for adenocarcinoma of the pancreas, and the median survival can reach 14.4 month for R0 resection and 8 month for R1 resection. Chemoradiotherapy is unable to achieve a similar or better curative effect as per documented in our research. In our case, sarcomatoid change arose from adenosquamous carcinoma of the pancreas, which is regarded as a key step during cancer invasion and metastasis, and has been associated with resistance to chemotherapy and radiotherapy. Metastases were found in our patient and the patient underwent surgery, the patient is alive as of this writing. In our opinion, we need to have a follow up scan of this patient to look for further metastasis after resection of the surgery, although adenosquamous carcinoma of the pancreas with sarcomatoid change may indicate a poor prognosis, radical surgery without following aggressive treatment strategies may be more appropriate for the rare case. We highly also do want for the patient's biopsy to be analyzed for biological markers.

Conclusions: SCP is a rarely appreciated subset of pancreatic malignancy that does not necessarily portend to a uniformly dismal prognosis. Although some have rapid recurrence and an early demise, long-term survival may be possible. Future studies are needed to better define the cohort with potential for long-term survival so that aggressive therapies may be tailored appropriately in this patient subset.

[illegible]