2008 - 2009
University of Detroit Mercy

Faculty and Student Research Symposium & Poster Fair

Tuesday April 14, 2009
12:00pm - 2:00pm
University of Detroit Mercy
Faculty & Student
Research Symposium
& Poster Fair

Tuesday April 14, 2009
12:00 to 2:00 pm

Fountain Lounge, McNichols Campus
University of Detroit Mercy

Organized by the Faculty Development Team:

Barry Dauphin, Russell Davidson, Matt Mio, Allegra Pitera,
Liz Roberts-Kirchhoff, Pat Rouen, Karen Selby, Michelle Wheater, Sandy Yost
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in Alphabetical Order

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ENERGY DRINKS: ENERGIZE YOUR KNOWLEDGE

Abuamsha, Mira; Fletcher, Eryn; Shehu, Enida; Tanzo, Venice and Zalenski, Tonya

PURPOSE
The purpose is to inform dental health professionals about the oral implications of increased consumption of energy drinks.

HYPOTHESIS
Energy drinks are as detrimental to oral health, if not worse, than sugar containing sodas. Increased consumption by individuals between the ages of 12-30 years may substantially increase caries rates in consumers.

SUMMARY
Energy drinks are as detrimental to oral health, if not worse, than sugar containing sodas. Increased consumption by individuals between the ages of 12-30 years may substantially increase caries rates in consumers. Through clever advertising and use of slogans, the energy drink companies have managed to gain a high market share composed of pre-teen, teen, and young adults, who have adapted the drinking of energy drinks as part of their daily lifestyle. Not only does consumption have negative oral implications, but it also has systemic effects. Increased amount of caffeine intake is linked to seizures in adults, cardiac complications, and increased bone loss in the elderly. Energy drinks contain several additional ingredients which are marketed as healthy energy boosters. These claims are not evaluated by the food and drug administration and are not regulated like medicinal ingredients. This combination of ingredients is contributory to dental erosion more so than traditional soft drinks.

CONCLUSIONS
Energy drinks are detrimental because of sugar content, low pH, buffering capacity, and they are often consumed more often throughout the day than other beverages.
NEXT GENERATION TRAFFIC LIGHT SYSTEM

Albarazi, Khaledoun*; Sadeeh, Fadi*; Mohammed, Utayba; Al-holou, Nizar Ph.D.
Department of Electrical and Computer Engineering
University of Detroit Mercy

National statistics of NHTSA have reported that more than 22% of all crashes in 2007 in the U.S. resulted from intersection collisions. Moreover, the highest percentage of pedestrians killed or injured resulted from improper crossing of roadway or intersection. On the other hand, designing a dynamic traffic light to reduce traffic jam and fuel consumption has become a priority.

To improve safety and efficiency in intersections, we propose Next Generation Traffic Light System (NG-TLS). In NG-TLS, traffic light will act as an intelligent unit by interacting with coming vehicles and providing advisory information to drivers. NG-TLS has safety features such as congestion reduction, collision avoidance, and emergency vehicle. The system is based on vehicle-infrastructure integration (VII/Intelli-Drive). In this mode, the traffic light, serving as a road side unit (RSU) which can communicate with vehicles, which use on-board units (OBU), wirelessly.

Multiple intersection scenarios with an embedded algorithm are evaluated using Vehicle-Infrastructure Integration Laboratory (VIILAB) simulation environment. We are planning to integrate GPS information to the simulation environment as a Hardware-In-The-Loop to validate some scenarios by using virtual and real data. Some of the simulation results and performance measurements will be presented.
A COMPARATIVE ANALYSIS OF MOBILE ROBOT NAVIGATION STRATEGIES

Aljeroudy, Yazan*; Barry, Kevin*; Luo, Chaomin; Krishnan, Mohan; Paulik, Mark
Dept. of Electrical & Computer Engineering

Robots are increasingly being used or considered for a wide variety of civilian and military applications such as fire fighting, enforcing perimeter security, bomb disposal, exploration, etc. In this context, robot navigation in what may be wholly or partially unknown environments is a challenging problem. It typically requires satisfying a number of different behaviors such as obstacle avoidance, goal finding, trap avoidance, etc., all in real time. This is achieved using sensor information in a reactive multi-behavior-fusion strategy, which produces the right navigation decision by combining appropriate behaviors as needed for any situation the robot might find itself in.

VFH, VFH+, VPH and VPH+ are different navigation algorithms developed by various researchers in the field. In their different ways they extract high-level information from the raw sensor data using which navigation decisions are made. Different navigation algorithms have their individual advantages and disadvantages. Tradeoffs characterize factors such as how effectively they perform in various environmental situations, how fast these algorithms run, etc. In this work a comparative performance analysis is carried out of the effectiveness of these algorithms in various robot environments on the basis of three factors – data reduction, computation reduction, and a cost function.
HIV PATIENTS AND DENTAL IMPLANT SUCCESS

Almariego, May; Coleman, Talonda; Thibault, Kara

PURPOSE
The purpose of our table clinic is to explore the facts that debate the idea of dental implant placement in patient’s positive for the Human Immunodeficiency Virus also known as (HIV). Our research will show that dental implants are not contraindicated in HIV patients and their success rate is comparable to those placed in systemically healthy patients approved for placement.

SUMMARY
There are many considerations when placing an implant – particularly on a patient who is immuno-suppressant. This presentation will discuss HIV and it’s manifestations on the oral cavity and dental implants. This presentation will also discuss different stages of HIV and how it affects healing time on bone. We believe that HIV will affect the healing time on implants, but not the failure rate.

CONCLUSION
In conclusion, the placements of dental implants are not contraindicated in otherwise healthy HIV positive patients. Although there must be modifications made to the treatment method and oral hygiene care prompted to the patient, the dental implant maybe apart of successful and thorough aspect of dental care. This information allows the dental hygienist to provide not only proper hygienic care for implant placement but it also allows for accurate information to be displayed to interested patients looking improving esthetics and function.
Communication between mobile robot is a challenging task. In Multi-Robots system, each robot needs to communicate with each other in order to work collaboratively. The robot needs to exchange information with the others such as sensor values, tasks, location, etc. In this case, Multi-Robots integrates their tasks and perform their jobs efficiently.

Data exchange between different applications has never been as easy as it is within a Service-Oriented Architecture (SOA). Service-Oriented Architecture is an efficient method to exchange data with one another as they participate in tasks. (SOA) paradigm has quickly gained popularity as the most reasonable method to build robust and flexible infrastructures for connecting applications. Industrial automation system started using SOA for message exchange. Moreover, Industrial robots used SOA to assist system integration and promote reuse of production solutions. However, when it comes to real-time visibility, there is a huge gap between the physical world and the high-level systems. This research will evaluate the suitability of SOA for mobile robot communication.
DEVELOPMENT OF TEST BED TO EVALUATE THE PERFORMANCE OF DEDICATED SHORT RANGE COMMUNICATION (DSRC)

Alyusuf, Baraa; Mohammad, Utayba; Al-Holou, Nizar, Ph.D

Intelligent Transportation System (ITS) uses Inter-Vehicle Communications (IVC) to perform safety messaging between vehicles. Dedicated Short Range Communication (DSRC) standard was drafted as an enhanced protocol for Vehicular Ad hoc NETwork (VANET) communications. DSRC has promising potential to increase vehicle safety as well as to enhance driving experience.

The vision of ITS is to equip both roads and vehicles with DRSC transceivers called Road Side Units (RSU) and On-Board Unit (OBU) respectively. However, DSRC is still in draft version, so markets don’t have standard DRSC transceivers. Moreover, it will be very expensive, especially that we need a large number of nodes to reflect a real world scenario on inter-vehicle communication.

We have built a generic test bed that can be used to evaluate and analyze the performance of IEEE802.11 based protocols including DSRC. The test bed used low-cost WiFi nodes to emulate multiple vehicles contending for the medium. This test bed allowed us to evaluate jitter time and channel throughput for different protocols. The results will be presented in the poster.

ACKNOWLEDGEMENT:
This work was funded by the MIOH University Transportation Center (UTC), Michigan Department of Transportation (MDOT), and CAR/CVPC.
ORTHOGONAL SILANE PROTECTING GROUP METHODS FOR MODIFIED SONOGASHIRA COUPLINGS

Ambrosi, Gavin M.; Bugeja, Monica L.; Dumais, David J.; Martinez, Salette; Ward, Andrew L.; and Mio, Matthew J.*
Department of Chemistry and Biochemistry, University of Detroit Mercy

Iterative oligomerization syntheses of arylethynylenes involving the palladium-catalyzed Sonogashira reaction often require systematic silane protection/deprotection of terminal acetylenes. Our group has devised a modification of the Sonogashira reaction that allows for the one-pot generation of symmetrical bisarylethynylenes in the presence of bulkier silane-protected acetylenes. Central to the modification's synthetic protocol is the utilization of an amidine base such as 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU) and the presence of substoichiometric amounts of water, in addition to Pd catalyst, CuI and organic solvent. An orthogonal approach to the generation of these oligomers allows for rapid molecular prototyping, and in turn, increases the accessibility of valuable arylethynyl structures.
SELF-CARE AND HEALTH-SEEKING BEHAVIOR OF MIGRANT FARMWORKERS

Anthony, Maureen

There are an estimated three million migrant farmworkers in the United States. Agriculture is considered one of the most dangerous industries in the US with dawn to dusk work hours in often unfavorable weather conditions. Many crops require stoop labor and repetitive movements that can result in musculoskeletal injuries. Workers are also exposed to a variety of potentially dangerous chemicals. Working outdoors in sunlight can cause heat exhaustion, sun burn, skin cancers and diseases of the eye. Farmworkers are also susceptible to injuries from farm machinery, falling items, and falling from trees or ladders.

In addition to the inherent dangers of farm work, numerous factors place migrant farmworkers at even greater risk of injury and illness. Most migrant farmworkers in the US are of Hispanic descent and only 12% speak English. The median educational level is 6th grade, with 20% having less than three years of formal education. Low educational rates and poor English language skills can influence how MSFW understand potential risks associated with pesticides and other safety-related warnings.

A prospective survey using face-to-face structured interviews was used to explore the type and frequency of occupational injuries as well as health-care seeking practices of migrant workers. Musculoskeletal injuries were the most commonly reported injuries, followed by injuries of the skin and chemical exposure. Self care with over-the-counter remedies was the predominant method of dealing with injuries, and, with the exception of chemical exposure, was found to be for the most part, appropriate. The reported use of folk remedies was low.

Future research efforts should focus on ergonomic modifications and farmworker education to reduce or prevent musculoskeletal injuries. The number of reported chemical exposures and inappropriate treatment draw attention to the need for continued efforts for both primary prevention of exposure and optimal treatment once exposure occurs.
FORENSIC IDENTIFICATION: THEN & NOW

Baker, Holly; Banaszewski, Lisa; Byrne, Christina; Houser, Danielle

PURPOSE
To compare and contrast forensic identification technologies then and now.

SUMMARY
Forensic identification has been used since the time of Paul Revere when identification was done based on dentures and bridge work. There have been many advances in the recent years in the field of forensic odontology. The most used advancement is the digital radiograph system. Using digital x-rays has saved time, paper, and money for forensic odontologists. The digital x-ray machine is called the Nomad.

There are also several programs that are used for identification purposes such as Dexis and WinID. These programs make it easier for forensic odontologists to sort through ante mortem and postmortem records. Instead of looking though piles of paper the computer systems find the matches automatically.

These advancements have helped identify many victims in mass disasters such as Hurricane Katrina. Since the Nomad system is handheld and portable, images can be sent and viewed quickly, providing a possible quick identification.

CONCLUSION
In conclusion, there have been many changes to forensic identification. There are many strengths and weaknesses to both the new and old technologies. The decision on which technologies are better is up to the operator and their user preferences.
VARIABILITY IN THE LOCATION OF THE MANDIBULAR FORAMEN IN AFRICAN-AMERICAN AND CAUCASIAN POPULATIONS OF MALE AND FEMALE SKULLS

Banno, Reta; Bee, Mary Tracy
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The mandibular foramen is a hole on the medial surface of the mandible of humans, through which the inferior alveolar nerve passes. This nerve is targeted when anesthetizing the lower jaw, as required in many dental procedures. Our research investigated variability in the position of the mandibular foramen in male and female populations, as well as in Caucasian and African-American populations. One hundred skulls from the Hamaan-Todd collection at the Cleveland Museum of Natural History were digitally photographed and analyzed in a double blind study. Preliminary results do not identify a significant difference in the position of the foramen between males and females (p>0.05). However, a significant difference in the antero-posterior position of the foramen in Caucasian and African-American populations was identified (p<0.01). This has great clinical relevance as it may result in variable treatment and positioning of anesthesia needles in patients of different races.
SYNTHESIS OF ESTER PRODRUGS FOR FOLYL POLYGLUTAMATE SYNTHETASE INHIBITION

Bandaranayake, Prabash C.*#; Nortman, Jacqueline R.*#; Patel, Bhavisha*#; Mastay, Andrew R.*; and Bartley, David M.

Folylpolyglutamate synthetase (FPGS) catalyzes the synthesis of poly(γ-glutamyl) metabolites (“conjugates”) of folates and antifolates. The design and synthesis of inhibitors of FPGS is important for studying the significance of poly(γ-glutamyl) metabolite synthesis and degradation in cellular regulation and could be an important lead in increasing the efficiency of the antifolates in use as anti-tumor agents. Extremely potent phosphinic acid containing pseudopeptide inhibitors of FPGS have previously been synthesized but they are unable to penetrate the cellular membrane. Previous experiments have suggested that these inhibitors are unable to utilize the folate transport system because they contain negatively charged carboxylate moieties. These negative charges also prevent the compounds from passively diffusing through the cell membrane. Research in our laboratory focuses on synthesizing prodrug esters of these inhibitors. Progress toward a cell permeable FPGS inhibitor will be presented.

# These authors have contributed equally to this research
PHOSPHORUS CONTAINING PROLINE DERIVATIVES FOR ASYMMETRIC ORGANOCATALYSIS

Mastay, Andrew R.* and Bartley, David M.

Proline and proline derivatives are widely used reagents for organocatalysis of asymmetric aldol, Diels-Alder, Mannich, and Michael reactions. Replacing the carboxylic acid of proline with a phosphonic or phosphinic acid functional group allows for the introduction of additional steric hindrance to the acid side chain of the catalyst while maintaining the acid-base catalytic properties of proline. Work toward the synthesis of phosphorus containing proline derivatives will be presented.
SYNTHESIS OF AN INHIBITOR IN THE THS PATHWAY IN TRYPANOSOMA AND LEISHMANIA PROTOZOA

Schupbach, Justin M.*#; Gould, Alex T.*#; Reiter, Samuel J.*#; Smally, Kevin A.*#; and Bartley, David M.

Several parasitic species including *Trypanosoma* and *Leishmania* utilize \(N^1,N^8\)-(bisglutathionyl)spermidine (trypanothione, TSH) as part of their defense mechanism against oxidative and chemical stress and to regulate polyamine levels. Their mammalian hosts on the other hand use glutathione for this purpose. Since these parasites utilize TSH instead of the glutathione, the TSH biosynthetic pathway is a logical target for inhibition in order to avoid harm to the host and is a potential target for drug design.

The enzyme responsible for TSH biosynthesis in these parasites is trypanothione synthetase. TSH synthetase is an ATP-dependent ligase which catalyzes the synthesis of TSH from glutathionylspermidine and glutathione. The design and progress toward the synthesis of a phosphinic acid containing inhibitor of TSH synthetase will be presented.

# These authors have contributed equally to this research
DRUG-INDUCED BRUXISM

Beidoun, Amanda; Daman, Diana; El-Mallah, Houda

The purpose of this presentation is to define drug-induced bruxism and discuss its possible treatments. Bruxism is characterized as the unnecessary grinding or clenching of teeth. Medications such as selective serotonin reuptake inhibitors (SSRI), antidepressants and antipsychotic drugs have been implicated in inducing this condition as a secondary side effect in patients taking these medications. Examples of these medications include fluoxetine, fluvoxamine, paroxetine, sertraline, haldoperidol, and venlafaxine. The common mechanism between these medications that contributes to bruxism is their ability to suppress the brain chemical dopamine. One of dopamine’s functions is to control muscular or motor activity. Possible treatments for drug-induced bruxism include an occlusal guard in which the patient can wear at night. These occlusal guards evenly distribute bite forces to protect the teeth from stresses that crack or wear them abnormally, protect tempromandibular joints from excessive bite stress that can produce pain and dysfunction, and reduce the heavy forces generated by the jaw-closing muscles. Alternative drugs such buspirone, propanolol, gabapentin, and botulinum toxin, not indicated for bruxism, may be employed to manage the symptoms of bruxism. Various published case studies attest to the relief or elimination of symptoms from bruxism after the initiation of buspirone into therapy concurrently with SSRIs, with no documented side effects. In some other published studies of label use of propanolol, a nonselective beta-adrenergic blocking agent, and gabapentin, an anticonvulsant agent, have also been shown to be effective in treating symptoms of bruxism. One study involving 18 patients (ages 3 to 40) that spanned a period of eight years, the botulinum toxin, a substance acting at peripheral cholinergic synapses to prevent the release of neurotransmitters to exert an anticholinergic effect and induce paralysis, was also shown to be effective in relieving bruxism in controlled doses. Drug-induced bruxism is relevant to the dental hygiene practice because TMJ and teeth clenching are very common nowadays. Bruxism secondary to treatment with antidepressants maybe unrecognized. An in depth evaluation may be needed to assess the patients bruxism.
PATIENT SAFETY BEGINS AT THE TIME OF ADMISSION: THE IMPACT OF DELIRIUM AND EARLY ASSESSMENT

Belton-Flemming, Diane, RN, BSN, Graduate Nursing Student

The purpose of this project is to examine the relationship of early assessment and incidence of delirium among hospitalized patient’s 65 years and older. This project was conducted using 376 patients, both male and female, on a 32 bed medical unit with cardiac focused care in mind. The CAM-ICU assessment tool was used as a guide to measure risk and predisposing factors for this particular group. Of those assessed the prevalence of health problems during this project were congestive heart failure/atrial fibrillation (20 %), pneumonia/ COPD (50 %) and urinary tract infections (30%). To increase awareness of delirium among nurses, methods of teaching included an educational poster for the unit, Power Point and video on how to use the adapted CAM-ICU tool. Nursing interventions included assessing for cognition/socialization, activity, toileting, oxygenation, sleep/rest, nutrition and pain. Alterations in any of these areas correlated with a higher incidence with delirium. Also, a review of medical charts, lab/test results and medications were performed. Nursing interventions to maintain patient safety were put into place for those at risk according to the CAM-ICU tool.

Family participation was also encouraged at the bedside to decrease incidences of confusion, stimulate increase activity and recovery among patients. Family members were also encouraged to provide information that patient sometimes could not remember or was not aware of. The results indicated that among the 376 patients assessed in this project 312 had predisposing factors; 64 had risk factors and 76 patients scored positive for CAM. In addition, the results suggest that early assessment is the catalyst for safe patient care therefore; more research and educational programs are needed to increase awareness of delirium.
EVIDENCE-BASED PRACTICE ON ADOLESCENTS SELF-MANAGEMENT OF DIABETES: ARE THEY ABLE TO DO SO EFFECTIVELY?

*Bridges, Dakima RN Graduate UDM FNP Student; Conley, Joyce PhD. RN UDM Faculty

Diabetes mellitus is becoming a growing endocrine disorder of children with peak incidence in early adolescence. Over 186000 people under the age of 20 was diagnosed with type 1or 2 diabetes in 2007. Satisfactory and consistent self-management of diabetes is important to prevent the many complications associated with the disease. Children diagnosed with diabetes require different standards of care from that of an adult. There are a significant amount of emotional needs that ought to be addressed while clinicians develop their plan of care. More importantly, parental support and supervision over the plan of care is crucial when helping the child to eventually achieve independence over their disease management when capable.

The purpose of reviewing literature about adolescents managing their diabetes is to help bring a better understanding of what these children struggle with, while helping clinicians to better meet their needs when providing treatment. The clinical question studied is: How do adolescents diagnosed with diabetes (type 1 or 2) cope with issues of self-management? An in depth search regarding literature on this subject was conducted. Databases used to gather information was CINAHL, PubMed Clinical Queries, and Cochrane Reviews searching articles older than 2004. In total, eleven articles were found but only seven were appropriate for review. There was a significant amount of data on adolescent-parent relationships and how the nature of these relationships influences disease management outcomes. One research article was found regarding data on cultural influences and if culture is an influencing factor concerning adolescents’ management of diabetes.

The research showed notably strained adolescent-parent relationships. The studies showed a considerable amount of adolescents vying for autonomy and parents uneasy about relinquishing that freedom in the studies presented. The studies reviewed showed a need for clinicians to create and implement behavioral, as well as medical interventions to enhance the adolescent’s ability to self-manage their diabetes better. More importantly, these behavioral interventions could also help teach parents how and when to give their adolescent autonomy; and not worry about the end result of doing so.
SAVE A TOOTH...SAVE A LIFE: DENTAL PULP STEM CELLS AND THEIR CURATIVE PROPERTIES

Brooker, Rebecca; Hall, Rebecca; Jewell, Ashley

PURPOSE
The purpose of our table clinic is, through a review of literature, to compare and contrast the benefits and drawbacks of using dental pulp stem cells for the treatment of illnesses. It has been hypothesized that dental pulp stem cells would be as effective in treating illnesses when compared to other stem cells currently in use such as bone marrow stem cells and embryonic stem cells.

SUMMARY
In today's media, stem cells are an everyday topic of discussion with regards to their usefulness, current research, and ethical boundaries. There are three defining characteristics that all stem cells share: self-renewal, multipotency, and the ability to regenerate after transplantation. Current stem cells being used clinically, such as bone marrow and embryonic stem cells, have proven to be successful, however they leave room for improvement. Stem cells derived from dental pulp have become the new advancement that is needed in this field. Research has shown, dental pulp stem cells are capable of differentiation into multiple cell types which differs from other stem cell origins. Based on previous research the interest in using dental pulp stem cells has escalated due to ease in management of cells and little controversy being raised about harvesting.

CONCLUSION
Stems cells found in dental pulp have extremely important curative properties in the fields of dentistry and medicine. Current research has jump started the use of dental pulp stem cells that can be effectively used in helping treat many common illnesses. Future research regarding their value and range is necessary in order to grasp the full potential of dental pulp stem cells.
WESTERN BLOT ANALYSIS FOR DETECTION OF THE A2 SUBUNIT OF THE (Na+, K+)-ATPASE IN MOUSE BRAIN

Onofry, Kevin T.; Janice, Michael J.; Caspers, Mary L.
Department of Chemistry and Biochemistry

The (Na⁺, K⁺)-ATPase catalyzes the active transport of Na⁺ and K⁺ across cell membranes and helps to reestablish ion balance after a neuron has fired. It is composed of α and β subunits; three isoforms of the α subunits exist in brain. Previous work in this laboratory has detected the presence of the α2 and α3 subunits of the (Na⁺, K⁺)-ATPase in mouse brain sections (24 micron) using [³H]ouabain binding to the subunits. In order to specifically identify the location of the α2 subunits, work began to optimize an indirect immunohistochemical (IHC) technique using goat polyclonal IgG antibody directed against the α2 subunit of the (Na⁺, K⁺)-ATPase, and rabbit anti-Goat IgG conjugated to horseradish peroxidase (HRP) directed against the primary antibody. Visualization was accomplished using a luminal substrate and CL-XPosure X-ray film. The inability to obtain reproducible results using IHC led to the use of western blots (10% gel) using the same primary and secondary antibodies. The results are much more promising showing staining of the α2 subunit (~113 kDa); however, there is a significant amount of background staining. We will continue to test different concentrations of primary and secondary antibodies along with different blocking and washing techniques in order to reduce the amount of non-specific staining. When optimal conditions have been ascertained, we will apply this procedure to brain tissue from wild type and heterozygous α2 knockout mice. We gratefully acknowledge the Department of Chemistry and Biochemistry, University of Detroit Mercy, for supporting this project.
IMPROVING ORAL HEALTH AT COVENANT HOUSE

Chizick, Chelsea*; Nogiec, Amber*
Dental Hygiene Program

An oral health education program was conducted to improve plaque removal technique, nutritional knowledge, and overall understanding of the importance of oral health among 18-22 year old homeless adults who resided at Covenant House Center in Detroit, MI. The mean pre-test plaque index (PI) scores exhibited by the adults were 29%, and the mean pre-test nutrition worksheet scores were 65%. A pre-test survey revealed the adults lacked knowledge in various components of oral health care including the correct toothbrushing and flossing technique, the etiology of periodontal disease, the use and benefits of fluoride, and the importance of eating healthy foods to contribute to the overall health of teeth. Healthy People 2010 states that “Many persons in the United States do not receive essential dental services. Through increased access to appropriate and timely care, individuals can enjoy improved oral health.” An oral health education program including educational handouts and interactive discussion was implemented. Adult subjects were distributed information regarding correct oral hygiene technique, etiology of periodontal disease, benefits of fluoride, and the importance of choosing healthy snacks. Important concepts of each topic were emphasized, and concerns were addressed. To evaluate the effectiveness of the education provided, pre and post-test PI scores were compared using the Mann-Whitney µ test. Post-test nutrition worksheets and surveys were also obtained and compared to baseline. A significant difference in oral hygiene was not found due to poor attendance and disinterest amongst the adults at the second educational session. Although as a group the results were not statistically significant, two out of the three adults showed great improvement in their oral hygiene, and the mean post-test nutrition worksheet scores were 100%, indicating a 35% improvement in understanding regarding choosing healthy foods to eat. Knowledge in other aspects of oral health also increased as the adults were able to participate in discussion and answer questions. The presenters concluded that the oral health education program for Covenant House Center was successful as it increased awareness about the importance of oral health and correct oral hygiene techniques. Development of similar programs throughout the state could prove to be an effective tool in increasing oral health, and preventing oral disease among the adult population. However, motivational aspects of adult learning need to be taken into consideration when planning such programs in the future, so participation and interest in such topics are increased.
NOT JUST AN INNOCENT KISS

Chizick, Chelsey; Nogiec, Amber; Cooksey, Erica; Dest, Jennifer

PURPOSE
The purpose of this table clinic is to compare the transmission of periodontal organisms between spouses with periodontal health and those spouses with periodontal disease.

SUMMARY
During periodontal disease, there are elevated levels of *Actinobacillus actinomycetemcomitans* (now *Agregatibacter actinomycetemcomitans*) and *Porphyromonas gingivalis* on the tongue and in the saliva which suggests kissing is a route of transmission of these organisms between spouses. Horizontal transmission of *A.a* and *P.g* between spouse’s ranges between 14-60% for *A.a*, and 30-75% for *P.g*. The von Troil-Linden et al study concluded that in a group of ten couples consisting of a periodontitis patient and their spouse, four out of the ten couples were infected of *A.a*, and six out of the ten couples were infected with *P.g*, as compared to the group of ten periodontally healthy patients and their spouses, of which zero out of the ten couples were positive for the *A.a* organism, and only one out of the ten couples were infected with *P.g*. In addition, spouses of patients with periodontitis had significantly deeper periodontal pockets than the spouses of patients without periodontitis suggesting that not only was there possible transmission of *A.a* and *P.g* between the spouses, but that the transmission likely resulted in periodontitis in the recipient spouse. Asikainen et al. concluded that in a study of eleven married spouses consisting of a periodontitis patient and their spouse, seven out of the eleven couples were infected with *A.a* and four of these couples exhibited identical genotypes of *A.a*. Likewise, in a group of ten couples, seven out of the ten were infected with *P.g*, and two demonstrated identical genotypes as their partner, indicating likely transmission between the spouses.

CONCLUSION
There is some evidence to show that transmission of *A.a* and *P.g* does occur between spouses through kissing. Horizontal transmission of these organisms may be controlled by routine periodontal treatment involving the elimination of these pathogens and by a high standard of oral hygiene. Dental professionals must educate their patients on the risk of transmitting these organisms as a way to promote thorough oral care in the prevention of periodontal disease.
EVIDENCE-BASED PRACTICE THE USE OF STEROIDS IN PREVENTING POSTOPERATIVE NAUSEA AND VOMITING

Christian, Willecia* and LaCroix, Huda*, Conley, Joyce PhD. RN, Faculty University of Detroit Mercy, College of Health Professions

OBJECTIVE
The main objective of this literature review was to determine if postoperative nausea and vomiting (PONV) could be prevented in patients undergoing surgery with the use of steroids.

CLINICAL QUESTION
“In patients undergoing general anesthesia, what is the effect of steroid use during surgery (such as dexamethasone and methylprednisolone) on reducing postoperative nausea and vomiting compared with patients who did not receive steroids?”

METHOD
A comprehensive search of PubMed and the Cochrane Database was completed to find articles on the clinical question. The search resulted in a review of six articles.

ACCEPTED PRACTICE
Currently there are no practice guidelines for the use of steroids in the reduction of PONV according to AANA or ASA.

CRITICAL APPRAISAL
The majority of the studies appraised found that dexamethasone or methylprednisolone is effective in reducing PONV. Three of the studies used adjunct therapy (another treatment [antiemetics] used together with the primary treatment [steroids]) in combination or in comparison with steroids. The results still favored the use of steroids (dexamethasone and methylprednisolone) in reducing PONV when combined with other therapies. The results also identified that combination therapy was more effective in reducing PONV than with the use of dexamethasone alone.

CLINICAL PRACTICE IMPLICATIONS
The consensus of the studies state that dexamethasone is a safe and inexpensive drug to use. Methylprednisolone not only reduced PONV it also reduced postoperative fatigue and postoperative opioid consumption. Based on this, future studies to consider should focus on the effect of steroids in combination with antiemetics in reducing PONV.
TRENDS IN LEARNING STYLES OF "AT RISK" STUDENTS

Coleman, Margaret; and Kwapis-Jaeger, Judy

The lock-step nature of a dental hygiene curriculum does not allow much flexibility for the "at risk" student. Educators have struggled to develop programs to identify these individuals early and to retain them. The purpose of this study was to assess if differences existed in the learning styles between students deemed “at risk”, as defined by students placed on a modified curriculum in order to complete the program and those students enrolled in the program who graduated in the stipulated time. The Myers-Briggs Type Indicator (MBTI) was administered over a ten year period (1998-2008) to students (n=316) during the first semester of class. Ten students were placed on a modified curriculum for academic reasons and/or personal reasons during that time frame. The MBTI data was analyzed using frequency distribution and chi square analysis. Personality types were identified and strength of individual preferences were reported. Respondents who were placed on modified schedules were proportionally represented in the same common occurring personality types as the larger group. Further analysis revealed strong to moderate preference scores in at least two of the four functions which may affect adaptation to least preferred learning styles. Teaching modalities must be addressed to meet the needs of the "at risk" student. Strategies which facilitate learning may include the modified curriculum itself, monitoring, peer learning style mentoring, aggressive counseling and advising, and other techniques to make these students educationally successful.
IMPROVING HEALTH CARE ACCESS AND SERVICES TO THE UNDERSERVED IN DETROIT THROUGH PROGRAM AND RESEARCH GRANTS INVOLVING THE MCAULEY HEALTH CENTER

Conley, Joyce; Chan, Tracey; Glenn, Lori; Groh, Carla; McCune, Renee; Mellon, Suzanne

The presentation will describe improvements in health care services to the underserved based on recently awarded program and research grants to the University of Detroit Mercy and its academic nurse managed center, the McAuley Health Center. The grants involve faculty of the College of Health Profession and practitioners of the Center.

The McAuley Nurse Managed Health Center is located on the east side of Detroit, a very economically distressed and underserved area of Detroit, where residents have great difficulty accessing primary care. Primary health care services to children have been added to adult services as a result of a program grant from the Health Resources and Services Administration. Blue Cross Blue Shield of Michigan has funded two research grants involving the Center; one is a health lifestyle change program for obese African American women, the other educates Center staff on how to identify and work with individual clients who may have health literacy challenges. The Center’s nurse practitioners are providing healthy nutrition lifestyle education in Highland Park schools as a result of a program grant from the Michigan State Housing Development Authority. Uninsured women can receive breast and cervical cancer screening at the Center through a program funded by the state of Michigan. Additionally, a research grant from the Komen Foundation expanded hereditary breast cancer risk assessment to low-income Arab American, African American and Latina women.
ONE-POT, UNSYMMETRIC CADIOT-CHODKIEWICZ REACTION UTILIZING AN IN SITU ETHYNYLSILANE DEPROTECTION

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Department of Chemistry and Biochemistry, University of Detroit Mercy

The Cu (I)-dependant Cadiot-Chodkiewicz coupling reaction is an excellent transformation for the generation of arylbutadiynes from bromoalkyne precursors. Our group has devised a modification to this protocol that uses trimethylsilyl-protected acetylene starting materials to generate unsymmetric bisarylbutadiyne oligomer products in one-pot at room temperature. Central to the modification is the utilization of the amidine base 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU) in the presence of CuI, water and organic solvent to effect in situ alkynylsilane deprotection. The advent of innovative approaches to the generation of these oligomers should allow for rapid molecular prototyping, and in turn, increase the accessibility of valuable arylethynyl structures.
REACTIVITY OF NAFION AND 3M MEMBRANES TO ATTACK BY HYDROXYL RADICALS BASED ON SPIN TRAPPING WITH DMPO

Danilczuk, Marek*; Perkowski, J. Andrew*, Schlick, Shulamith

The fragmentation of Nafion membranes and model compounds upon attack by hydroxyl radicals has been investigated in our laboratory by ESR spectroscopy, using direct ESR detection, or by spin trapping, with 5,5-dimethylpyrroline-N-oxide (DMPO) and methyl-nitroso-propane (MNP) as the major spin traps used.1,2

We present a comparison of the stability of 3M membrane (EW 850) and Nafion (EW 1100), based on the relative intensity of the DMPO adducts of carbon-centered radicals, DMPO/CCR, which were detected when the membrane solutions were exposed to HO• radicals. The hydroxyl radicals were generated by UV-irradiation of hydrogen peroxide.3

It is important to notice that the hyperfine splittings from 14N and Hβ nuclei of the adducts are different for the two membranes: For Nafion aN=15.9 G, aHβ=23.5G, and for 3M aN=15.7 G, aHβ=18.7G, possibly indicating different fragmentation mechanisms. The relative intensity of CCR adduct from the 3M membrane is significantly lower than that expected from the polymer concentration in the mixture, indicating a higher stability to attack by hydroxyl radicals, for the experimental conditions used in our laboratory.

A better understanding of the membrane stability can be obtained by quantitative measurements of the reaction rates between the membranes and HO• radicals, as well as of trapping rates of membrane-derived radicals by DMPO. The rate constants of the reaction of hydroxyl radicals with the membranes in aqueous solutions were determined using the competition kinetics method,4,5 by monitoring the formation of the DMPO/OH adduct in the solution, in the absence and in the presence of different membrane concentrations.

The major conclusion is that the 3M membrane is significantly more stable compared to Nafion when exposed to HO• radical attack: The rate constants for the reaction of hydroxyl radicals with the membranes is one order of magnitude slower for 3M membrane compared to Nafion.
MEASURING CLINICAL JUDGMENT IN NOVICE PSYCHOLOGY STUDENTS | AN EXERCISE IN EDUCATIONAL RESEARCH WITH IMPLICATIONS FOR CLINICAL RESEARCH


Much of the field of clinical work in psychology involves gathering information and making clinical judgments about this information. Research into clinical judgment is important in order to improve the validity of assessment processes and to help clinicians make more accurate judgments (Garb, 1998). The field needs to develop models of how clinicians organize information and come to diagnostic conclusions on the basis of case material, as some research into clinical judgment (e.g., Dawes, 1994) has suggested that clinicians are not as reliable and accurate as would be expected.

This class project involved creating an instrument to review assessment material to enable comparisons of clinical judgment over time. The Assessment III class (PYC 673) created an instrument, gathered testing data from the Rorschach Inkblot Method (RIM) from 2 assessments and analyzed the clinical ratings made be a 1st yr. assessment class to the material. We studied the reliability of the instrument (inter-rater reliability of advanced students who were blind to the test data) and the comparison of beginner’s ratings with the ratings or more experienced students. Next we compare whether the 1st yr. students’ ratings change after having had more exposure to the instrument being studied (i.e., learning the Rorschach during the assessment course). It would be expected that as students learn about a psychological testing process such as the RIM in more detail, they should be able to make more subtle distinctions in applying findings to the data. We also analyzed whether two protocols with different kinds of diagnoses are differentiated by novice students, i.e., different Rorschach being given different kinds of ratings on the clinical judgment instrument.
EFFECT OF MALOCCLUSION ON THE SOCIAL PERCEPTIONS OF DENTAL STUDENTS

DeHaan, D Andrew; Bayirli, Burccu

The objective of this study was to determine how dental students (prior to matriculation) perceive various malocclusions. The investigators proposed that these students would rate malocclusions proportional to the severity of a particular characteristic that differentiates the malocclusion from ideal. Furthermore, this study investigated the perception of malocclusions in male versus female, and the perception of visible decay.

Although termed with the prefix “mal” meaning “bad”, malocclusions are simply classifications of occlusion and not necessarily unaesthetic. In fact, a previous University of Detroit Mercy (UDM) study used an African American population to study the appeal of various malocclusions. So, how would these images be rated by dental students? To find the answer, first year students were surveyed during their orientation week—they had no formal dental education at this point.

A questionnaire was created in a 2003 study at the UDM by Jennifer R. Ludwig, DDS. The title of this study was “Effect of malocclusion on social perceptions in the African-American population.” To expand on this research, a new focus group was chosen—dental students. There were 55 unique images created, each with various degrees of malocclusions (spacing, crowding, overbite, openbite, overjet, and negative overjet). One male and one female facial image were used and the dentition was simply changed to eliminate variability. The images were presented to the focus group in a random order, and they were asked to complete a questionnaire for each image.

The results of the study showed a significant correlation between the severity of a malocclusion and how appealing the students found each image. There were statistical differences between how spacing was perceived in a male versus a female. Additionally, it was discovered that a visible carious lesion makes a dentition less appealing unless the malocclusion was considered severe enough, in which case there was no statistical difference between an image exhibiting dental neglect and one showing virgin teeth.

This research can used be in a variety of ways. Informing dental practitioners and patients of the perceptions of various malocclusions is the initial goal, as this evidence can allow for more informed decisions to be made regarding treatment options. Additionally, comparison between the original 2003 study and the one at hand would give further insight into the perception of malocclusions amongst two distinct focus groups. In the future, it would be fascinating to re-survey this dental student focus group during or after their dental education. Comparisons could then be made on how a relative dental lay person would perceive a particular malocclusion versus an educated dental practitioner. Taken as a whole, this research gives a unique insight into relative appeal of various malocclusions.
URBAN ENGINE | AN ALTERNATIVE-DESIGN CONCEPT DEVELOPED IN DETROIT

Architecture students at The University of Detroit Mercy, under the direction of Professor Amy Green Deines.

Observation | Detroit’s Woodward Corridor represents a dynamic urban essay that speaks to the value that public activity contributes to the character of the city. In performing an analysis, we ask, what change in the urban landscape is necessary to maintain peak physical conditions in the city? Is it possible to rebrand a city, like Detroit, with its unique cultural signature?

Proposal | During the Fall semester the architecture studio produced public art and architectural intervention that acted as urban catalysts, to engage the public in refreshing ways that reinvigorates street life along the Woodward axis.

The URBAN ENGINE design proposals are critical solutions that seek to bridge communities, universities, and academies in such a way that collaboration is essential. It offers a perspective that is new and fresh regarding Urban and Architectural Design, professional and academically, and the role the museum plays as a catalyst of critical discourse and human interaction. The URBAN ENGINE exhibition supports the methodology of placing post-industrial cities back into the public eye, with a positive image! This particular way of approaching a project differs from other academic + professional practices in that its survival relies on collaboration from the micro to macro, from the individual citizen to the city.

The recent exhibition provided the collaborative opportunity that was between The Museum of Contemporary Art Detroit and University of Detroit Mercy, School of Architecture. This type of model is an excellent example of cross-institutional partnership. A wide range of individuals received the work produced within URBAN ENGINE studio enthusiastically with over 200 attendees at the opening evening event.
Guillain-barre syndrome (GBS) is an autoimmune disorder which normally presents with transient peripheral limb paralysis. Two main treatments recommended by the American Academy of Neurology, Plasmapheresis (PE), which is recommended as Level A and has proven effective, and Intravenous Immunoglobulin (IVIg), which has been rated Level B, probably useful or effective. (National Guideline Clearinghouse, 2009)

The intention of this literature review is to consider the effectiveness of IVIg on neurological symptoms in patients who have GBS. IVIg is not considered the main standard of care; nevertheless it is more cost effective and less invasive than PE, which has been proven effective.

The literature search for evidence based sources was conducted using the PubMed and Cochrane library search engines. The initial search criteria utilized was Guillain-Barre Syndrome. The results were further narrowed using the following criteria: Immunoglobulin, IVIg, English language only, human subjects only, and no articles before 1-1-2004. Only 30 articles were available in full text. Articles that pertained to the use or effectiveness of immunoglobulin in the treatment of GBS were included. One article was included from beyond the past 5 year deadline because it addressed the possible relapse in GBS after being treated with IVIg. An article addressing the relapse issue that reflects on the effectiveness of IVIg as a treatment method was not able to be found within the past 5 years.

It was determined that IVIg was as effective as PE, and that it presented with less adverse reactions as proven by the Hughes (2007) study, and the Faranca Jr. (2005). Less relapses were noted with IVIg than PE, per the study conducted by Romano (1998). Clinical practice implications include method of treatment, speed of diagnosis, ease and cost of treatment.
DEVELOPING INTELLIDRIVE -101 COURSE

Dutta, Utpal; Savolainen, Peter
Civil & Environmental Engineering

IntelliDrive is an initiative aimed at improving transportation system safety and operational efficiency through technologies that allow vehicles to communicate with the roadway infrastructure and with one another. A number of test bed activities are currently taking place throughout the country, including several in Michigan, to examine the feasibility of IntelliDrive in term of application, communication and approaches to integration.

Within this context, major investments and the cooperation of numerous public and private agencies are required. However, as IntelliDrive activities have emerged only recently and much of the activity is of a proprietary nature, documentation is scant and there are no authoritative resource texts. In order to encourage investment and participation in IntelliDrive activities by the transportation community, as well as public buy-in, a clear understanding of IntelliDrive is required. An introductory IntelliDrive course can play a significant role in this context. The proposed course will educate potential stakeholders, including public agencies, private corporations, and the traveling public, and thus facilitate their participation in the future of IntelliDrive.
EFFECTIVENESS OF CARDIAC ROBOTIC SURGERY: A LITERATURE REVIEW

Dzeroogian, Amy RN BSN;* Joyce Conley, PhD.RN (Faculty) College of Health Professions

Coronary artery disease is the single largest cause of mortality and cause of disability in both men and women in the United States. Persons unable to improve coronary artery disease risk factors will suffer major coronary artery events such as heart attack and stroke and eventually have to undergo coronary artery bypass grafting surgery (CABG) for revascularization of major occluded vessels.

Traditional CABG surgery is a major operation with many complications and involves a very long recovery. In the 1990s, minimally invasive cardiac robotic surgery techniques have been made available in a limited number of hospitals as another option for those patients who qualify. Research has shown that recovery time for the patient undergoing minimally invasive CABG surgery is shorter and postoperative pain is less severe than compared with traditional open heart surgery.

This power point presentation explores current literature on minimally invasive cardiac robotic surgery and the advantages and disadvantages to the open heart patient.
APPLIED BEHAVIOR ANALYSIS AS THE BEST EVIDENCE-BASED PRACTICE TREATMENT FOR AUTISTIC CHILDREN

Finos, Jennifer*; Hoxie, Erin*; Kuelbs, Kathryn*; Conley, Joyce, PhD. RN, faculty

Autism is a condition affecting nearly 1.5 million Americans, and the numbers are increasing each year. Because this is such a widespread disease, determining the best treatment from the numerous available treatments is imperative. This literature review will determine if Applied Behavior Analysis (intensive behavior therapy, discrete trial training, early intensive behavioral intervention, incidental teaching, verbal behavior intervention or pivotal response training) improves cognitive and language skills in children with autism. Applied Behavior Analysis is a relatively new treatment, which creates positive changes in the autistic child through principles of behavior. Currently, another therapy, Sensory Integration Therapy, is used as the “gold standard” for treatment. Sensory Integration Therapy works to create a positive change by stimulating the child’s senses. PubMed, PubCentral and ScienceDirect were all searched for research done on Applied Behavior Analysis. While searching, multiple names were given to Applied Behavior Analysis, because of the recent development of the therapy. The searches resulted in sixty-one articles that did not fully focus on Applied Behavior Analysis. After filtering through the articles, there were sixteen articles that focused on Applied Behavior Analysis. Eight articles were chosen based on the focus of cognitive and language development and were reviewed for the effectiveness of Applied Behavior Analysis as a treatment for cognitive and verbal skills in autism. Overall, the literature review reveals that Applied Behavior Analysis is statistically significant in improving cognitive and language skills of autistic children. However, autism treatment needs to be individualized for each patient because of the varying degree of symptoms and varying individual response to the treatment. The literature review statistically supports the use of Applied Behavior Analysis for treatment of children with autism, although more research is necessary to change the clinical practice guidelines.
DILEMMA IN MANAGEMENT OF BISPHOSPHONATE-RELATED OSTEONECROSIS OF THE JAW

Geist, Shin-Mey Rose; Gordon, Sara; Geist, James

Bisphosphonates have been related to osteonecrosis of the jaw (ONJ) since 2003. These drugs inhibit bone resorption and are used to prevent bone metastases and in the treatment of bone cancer and osteoporosis. Most ONJ cases have followed IV infusion of pamidronate (Aredia®) or zoledronic acid (Zometa®), but some cases involved patients who received alendronate (Fosamax®) orally. Although a causal relationship has not been established, many patients have discontinued the medication and have been advised against invasive dental treatment. This poses problems for patients who require surgical dental care. Furthermore, bisphosphonates are effective, and discontinuance of their use without strong evidence may adversely affect the patient.

We report a case of a patient who had used Zometa to prevent breast cancer metastasis and developed jaw bone necrosis. Her oncologist discontinued her bisphosphonate therapy after the onset of oral discomfort. Her jaw bone necrosis was well controlled; however, she was concerned about the risk of bone metastasis since she no longer taking bisphosphonates. She lived in fear everyday until she died in July 2006 due to metastasis.

The importance of accurate diagnosis and satisfactory management of the jaw bone necrosis is addressed in this case report, as well as concerns regarding discontinuing the use of bisphosphonates. The dilemma of whether bisphosphonates should be discontinued, temporarily withheld, or continued after the development of ONJ remains unsolved. In May 2006 Novartis stated that for patients at high risk of hypercalcemia of malignancy (HCM) or skeletal-related events (SRE), consideration should be given to maintaining bisphosphonate therapy.
ONE NURSE MIDWIFE'S CAUTIONARY TALE: THE IMPORTANCE OF RECOGNIZING OUR VULNERABILITES TO FORTIFY OUR PRACTICE AND THE ROLE OF THE DOCTORATE OF NURSING PRACTICE DEGREE

Lori A. Glenn MS RN CNM  
McAuley School of Nursing

The Doctorate of Nursing Practice degree is a program of study for the advanced practice nurse (APN) in the area of clinical practice. Practical application of such knowledge is designed to meet the unique, complex needs of our health care system, along with the advancement of the ANP profession. Focused areas of study include nursing practice, patient outcomes, leadership skills, epidemiology, statistics, ethics, systems, and organizations.

I had joined the faculty of the University of Detroit Mercy to teach nursing students. Part of my role was to join the DNP program development task force at the McAuley School of Nursing. My experiences in private practice gave a new perspective into the usefulness of the degree. My experience illustrates why the DNP is important and what it can do for APNs. I was a certified nurse-midwife for 8 years in a hospital based, full scope, group practice. Issues of quality, patient centered care never came into question. We seemed to be without vulnerabilities. In addition to outstanding patient care outcomes and highly favorable patient surveys, we also enjoyed status as equal members of the medical staff, with admitting and voting privileges. We functioned as a stand alone group of nurse-midwives, and had a mutually respectful relationship with our physician consultants. Events unfolded that lead to our practice being closed by the hospital and we found ourselves at a loss to demonstrate our worth.

By utilizing the tools learned in a Doctorate of Nursing program, advance practice nurses will afford the opportunity to demonstrate their safe, high quality, effective, comprehensive, patient-centered care. DNP prepared APNs will be able to manage and monitor their practices in a manner that ensures a continued presence in patient's lives while thriving professionally in an ever-changing health care environment.
TRANSDUCTION OF GENES FROM A LIPOPOLYSACCHARIDE SECONDARY MUTANT

Graves, James; Wingate, Jacob*

Lipopolysaccharide (LPS) mutations in gram-negative bacteria are associated with increased sensitivity to antimicrobial agents and decreased expression of proteins. Moreover, secondary mutants can frequently be distinguished from poor growing LPS mutants by a change in colony appearance and increase in size. Transduction, a method by which genes can be transferred from one strain to another by a bacterial virus (phage), was used to study LPS mutants of Escherichia coli. Donor strains harbored a copy of the tetracycline resistance transposon Tn10 linked to the region of the chromosome that contained the genes for LPS synthesis (rfa) to serve as a selectable marker. Because phage reproduced poorly on LPS mutants when examined by the cross streak method, a lysogen of thermoinducible generalized transducing phage P1.cml,clr100 was used from which to isolate LPS mutants. The phage genome contained a gene for chloramphenicol resistance as a marker. Strains that contained phage P1.cml,clr100 or produced altered LPS grew poorly at 42°C. Attempts to produce a heat induced lysate of the phage in broth culture from a selected LPS mutant were unsuccessful. An antibiotic disc test of the LPS mutant revealed an increased sensitivity to chloramphenicol which suggested that the P1.cml,clr100 may have been cured. A selected secondary LPS mutant was discovered to be sensitive to infection by the transducing phage P1.kc but demonstrated increased sensitivity to erythromycin in comparison to a strain with wild type LPS. When tested, a P1kc lysate prepared on the secondary LPS mutant by agar overlay propagation produced about 2.8 X 10^2 tetracycline resistant transductants/ml of the cell-phage mixture. Transductants tested exhibited wild type sensitivity to LPS specific phage U3. Transduction of genes from the region of the chromosome associated with LPS synthesis could help determine if secondary mutations are linked and increase understanding of cell membranes and permeability.
CULTURAL VARIATION IN EYE-MOVEMENT STRATEGY DURING VISUAL SEARCH

Lee, Yen Ju*; Hearns, Princess, L.*; Greene, Harold, H.

“Basic” cognitive and perceptual processes such as causal reasoning, and attention are generally reported as similar for all humans. However, recent research suggests that East Asians tend to be more holistic than North Americans (see Nisbett et.al, PR 2001). As well, East Asians are more likely to utilize background information during scene viewing tasks (Masuda et al., PSPB 2008). The underlying mechanism may be differences in the allocation of attention when viewers from different cultures process visual information.

Oculomotor indices provide a window on where attention is allocated. Attempts to demonstrate cultural differences in attention allocation have provided conflicting results. Whereas Chua et al. (PNAS 2005) reported differences in oculomotor control between Chinese and North American scene viewers, subsequent studies have found no difference (Rayner et al., VisRes 2009). A potential limitation may be that scene viewing is “open ended” and is influenced by many cognitive preferences. In contrast, during visual search, the goal is clear: “find the target”.

In our visual search study, eye-gaze-contingent scotomas (i.e. blindspots) were presented in the horizontal and vertical parafoveal field of Taiwanese and North American students at UDM. The measure of interest was the probability of directing saccades in the visual field when a scotoma was present. We have found (i) no main effect of the scotomas, and (ii) that most saccades were directed horizontally. Interestingly, whereas the interaction between scotoma and saccade direction was not significant for the Taiwanese sample (p = .83), it was for the North American sample (p = .01). The interaction indicates an asymmetry in processing within the parafoveal visual field for the North American sample.

The results (i) call into question assumptions about the universality of basic perceptual processes, and (ii) lend support to the claim (e.g. Chua et al., PNAS 2005) that cultural differences can influence oculomotor control.
DEPRESSION AND RURAL WOMEN: CHALLENGES, BARRIERS, AND OPPORTUNITIES

Groh, Carla J.

PURPOSE
This presentation will share the results of a study that examined the prevalence rate of depression in women living in rural Michigan, and perceived barriers to accessing mental health services.

REVIEW OF LITERATURE
Rural women have significantly higher rates of depression than their urban counterparts, and experience unique challenges and barriers such as geographic isolation; lack of transportation; higher rates of joblessness and poverty; lack of educational and/or vocational opportunities; and, inadequate numbers of health professionals. Moreover, the stigma associated with depression might have different implications for those living in small rural communities where it is harder to maintain privacy.

METHODOLOGY
This was a cross-sectional descriptive study. A convenience sample of 152 adult women was recruited from rural settings in Michigan. Variables measured included depression (CES-D), physical health problems, health insurance and disability status, treatment for depression, desirable treatment options for depression, barriers to treatment, and demographic data.

RESULTS
The mean age was 44 (SD 15.4). The majority were white (98.7), married (65%), and employed less than 30 hours/week (53%). The aggregate mean score on the CES-D for all subjects (N=137) was 13 (SD 10.3). For those who reported being currently depressed (n=42), the mean score was 25.5 (SD 7.9) compared to 7.5 (SD 5.1) for those not currently depressed (n=95). The difference was statistically significant (F=14, df=135, p=.000). Cronbach’s alpha for the CES-D was .90. The most common physical health problems reported were: arthritis (30.5%), hypertension (29%), headaches (28.5%), and back problems (23%).

Perceived barriers to obtaining services were lack of insurance (45%), living in a small town (37%), unsure how to access services (33%), embarrassed to seek care (32%), and not comfortable seeking services (31%) in addition to other barriers.

IMPLICATIONS
The implications of these findings include education, practice, research and advocacy. Advanced practice nurses are in key positions to provide leadership and vision in transforming how rural women view depression and treatment. With almost a third of the women reporting current depression in this study, it is critical for primary care nurse practitioners in rural communities to be vigilant in assessing for depression.
FACULTY ROLE MODEL CLINICAL EXPERIENCE PROGRAM:

A MECHANISM FOR SHAPING THE ORAL HEALTH PRACTITIONER FOR TOMORROW

Halaris, Jane RDH, BS; Neveu, Kathleen, RDA, RDH, MS

The University of Detroit Mercy Dental Hygiene Faculty Role Model (FRM) Clinical Experience Program was developed to reduce the inherent anxiety that all students feel during their first patient treatment experience. The primary goal of this program is to enable the student to gain confidence and allow for mentored experiential learning of clinic protocols and procedures in a more nurturing environment. The objectives of the program are to: 1) acquaint the dental hygiene student with patient care protocols; 2) reduce student anxiety during the patient care appointment; and 3) reinforce and/or increase faculty knowledge of clinic protocols and resources.

Provision of dental hygiene care is stressful, as patient care protocols and procedures are complex. Working in teams of two dental hygiene students, care was provided to one patient under the guidance of one dental hygiene faculty member at the University of Detroit Mercy (UDM) School of Dentistry. Students were mentored through all phases of the patient care process providing a one-on-one teaching-learning opportunity paced to meet each individual student’s skill and confidence level. The program included student and faculty preparation workshops. A 10 clock hour activity was conducted that involved one clinic session (three hours) of review of clinical protocols and patient chart contents, two three-hour patient care appointments and a one hour post experience review session. The FRM took place in the third semester (winter term) of the dental hygiene curriculum. Regularly scheduled clinic faculty and faculty volunteers served as role model faculty.

Students completed a survey after the FRM. Ninety-two percent of students (n = 26) agreed or strongly agreed that they gained a better understanding of the dental hygiene appointment. One hundred percent agreed or strongly agreed that they felt more confident as a result of the program. The survey also illustrated areas for program improvement.
PARALLEL AND DISTRIBUTED COMPUTING FOR ROBOTIC APPLICATIONS

Hammad, Maen*; Luo, Chaomin*; Krishnan, Mohan; Paulik, Mark

With the rapid development of robotic systems and their related applications, the required computational power for these systems has become increasingly difficult to achieve. Robots are expected to interface with a wide range of sensors such as cameras, LADAR, GPS...etc., process the acquired data, drive autonomously using a complex navigation and goal selections algorithms, and finally perform their planned task.

This research investigates different parallel computing architectures to achieve the required computational power in a robotic system at a minimal cost. The new Intel multi-core processor architecture along with parallel computing software is used to distribute the work on the different processor cores and achieve a high computational speed-up factor. In addition, a multi-computer cluster architecture is used to fulfill all the needed tasks and at a minimal cluster communication overhead. This research demonstrates the computational enhancements for image processing test benches adapted for a parallel computing architecture.
BEHAVIORAL DEVELOPMENT OF JUVENILE MICE

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The pace of behavioral development varies between and within species, correlating with growth and various life history characteristics, as well as reflecting the availability of food in the immediate environment. In order to measure differences in development rate among litters of mice, a standardized assessment was implemented. Behavioral development was measured using tests of sensory and motor functions, such as abilities to grasp and climb. Here we investigate the relationship of behavioral development to litter size and individual body weight.

The study used 59 juvenile mice (Mus musculus) from 3 commonly-used strains, C57BL/6, BALB/c, and CD-1. Mouse pups from 10 litters were tested when 10 days old. Pups of this age have fur, but their eyes and ears are still closed. Behavioral tests included righting reflex, grasp reflex, ability to grasp a 2.5 mm rod with fore and hind limbs, grasping a 9.5 mm stick, and ability to grip a horizontal mesh screen and climb a vertical screen. The tests scores were averaged for analysis.

The behavioral development score correlated significantly with both litter size (r=-.576, p<.001) and pup body weight (r=.321, p<.05). In turn, pup weight correlated inversely with litter size (r=-.770, p<.001). A regression analysis was run using litter size and pup weight to predict behavioral development score, which was statistically significant ($R^2=.301$, $p<.001$). The independent effect of pup weight was not significant, however, once litter size was in the equation. Thus, there is a negative relationship between behavioral development and litter size. The larger the litter, the slower the pace of development, but the impact of litter size is not solely due to nutrition level, as measured by weight of individual pups.
AN EVALUATION OF PATIENT SCREENING OUTCOMES

Hoelscher, Diane University of Detroit Mercy; Werth, Kimberly; Neely, Anthony

Track: Educational Research

Screening exams of new patients that include estimates of specific treatment needs can be used when assigning patients to help balance student comprehensive care experiences. However, inaccurate estimates lead to inefficiency. The objectives of this study were to 1) assess outcomes of the screening process by comparing treatment needs estimated at screening with actual treatments planned, and 2) pilot a method for gathering data to improve the screening process. After IRB approval, a randomized list of 200 records of patients having a 0150 exam between 1/03 and 1/07 was generated. Eighty-six records met inclusion criteria of screening exam immediately prior to treatment plan. Treatment needs estimated at screening and actual treatment on the signed treatment plan were compared. Descriptive statistics for patient demographic data were completed. The data suggest clinically apparent treatment needs had a higher level of agreement. The collection and analysis of additional data to identify variables that modify treatment choices are needed.

RESULTS
The sample was 44.2 percent male and 55.8 percent female. A total of 65.1 percent had private dental insurance, 23.3 percent Medicaid, and 10.5 percent self-pay. Twenty-four potential procedures were analyzed. Treatments where >50 percent of subjects had data were defined as sufficient for data analysis. Amalgam restoration, composite restoration, scaling/root planing, prophylaxis, crown, and post/core met the criterion for analysis. Percent agreement between initial clinical screening and final treatment plan were 70.8 percent, 52.5 percent, 52.5 percent, 44.3 percent, 36 percent, and 25.7 percent, respectively.

CONCLUSIONS
More data are needed to make inferences regarding screening agreement or relationship between demographic or other variables and estimations of treatment needs at screening. Many variables, such as screener calibration, limited diagnostic ability during screening, patient desires, capacities of student dentists to provide care, and others may impact the ability to predict patient treatment needs. Further study, including task analysis of steps between screening and treatment plan, faculty calibration, and longitudinal assessment of patients from screening through treatment completion, is needed.

SIGNIFICANCE
The comparison of agreement between screening and treatment plan is a logical first step in evaluating outcomes of a patient screening system and could be used by schools to make informed decisions regarding improvements.
IMAGE ANALYSIS USING FEATURE EXTRACTION TECHNIQUE

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Interpretation of a scene to extract high level content is one of the most fundamental capabilities of a human being. We routinely take this for granted, a fact that becomes evident when we attempt to teach a machine to accomplish the same task. When the machine in which this ability is incorporated is a mobile robot, it has the potential to be used in a wide variety of civilian and military applications such as fire fighting, enforcing perimeter security, bomb disposal, exploration, etc.

An important step in the process is to transform digital images, acquired via a camera, from pixel-based intensity values to a feature-based representation. These features can then be used by the robot to establish its location, track its position, and recognize an object. When the object is a lane line, its recognition is directly useful for road navigation.

The Scale Invariant Feature Transform (SIFT) is one promising technique that enables the extraction of key distinct features from the image. The advantage of this technique is that the extracted features are invariant to a variety of common practical image artifacts created by different viewing positions. For instance, an object might have a known shape but be smaller, it might appear to be rotated because the angle of approach is slightly different or perhaps the camera has been rotated, etc. The SIFT algorithm is even partially capable of dealing with a change in ambient illumination. In this work, we implement the SIFT algorithm and test it on a wide variety images to validate its performance in practical scenarios common to autonomous robot navigation.
DEVELOPMENTS IN THE SYNTHESSES OF A SERIES OF BIS-BIDENTATE LIGANDS UTILIZING 4,4’-METHYLENEDIANILINE

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A series of ligands, all incorporating 4,4’-methylene dianiline and utilizing two further donor atoms provided by a group of functional aldehydes, have been synthesized. Each ligand is a bis-bidentate moiety containing either four nitrogen or two nitrogen and two oxygen donor atoms. The stability of these ligands as free molecules as opposed to hydrochloride salts will be presented, as will their aqueous and organic solubility. Routine characterization has been by $^1$H and $^{13}$C nuclear magnetic resonance spectroscopy. This, as well as indications of their metal binding abilities, will be discussed.
GREEN DENTISTRY: WHAT DOES GREEN MEAN?

Huber, Eryn; Pop, Crystal; Mattheweson, Maggie

PURPOSE
To compare a traditional dental office with an eco friendly (green) dental office, focusing on excessive waste and disinfectants.

SUMMARY
What does green mean? Greening has been described as behaviors or activities that improve environmental outcomes. Healthcare problems with the environment are: toxic chemicals (disinfectants), pharmacological substances, and excessive waste. Disposable supplies in health care settings have been used to decrease the spread of blood borne disease, and therefore there has been an increase in waste. Green dental practices may reduce this waste and its negative effects on the environment without altering patient care. Toxic chemicals (disinfectants) need to be more environmentally friendly. Currently there is only one eco friendly disinfectant that can be used in the dental office. In an eco-friendly dental office employees can reduce excessive waste by recycling materials, reusing material and using green products. Examples of eco friendly dentistry may include: using toothbrushes recycled from yogurt cups, using cloth bibs, placing recycling receptacles in your office for paper and plastic, and using digital radiographs instead of film. However, along with the benefits come significant challenges. One major challenge in reducing waste is cost verses benefit, for example, metal tips or disposable plastic tips where metal tips are more expensive and require more time to maintain. Other challenges include, finding a disinfectant that is considered an intermediate level and not harmful to the environment, health care worker behavior change, and improved environmental education, as well as time it takes to implement the changes.

CONCLUSION
A green dental office is healthier/better for the environment and also provides the same quality patient care as a non-green dental office. In order to implement a green office and have a successful environmental program one must have employees willing to be trained, make behavior changes and start with small changes will grow towards their goal of a green dental office.
MORPHOLOGY AND ANOMALIES OF THE PALMARIS LONGUS MUSCLE

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Abstract. Historically, studies of the palmaris longus muscle have identified an absence in 10% of the population. More recent studies have observed a higher incidence of absence, especially in regards to different ethnic groups. We have expanded beyond typical studies by further investigating morphological features and variations of this muscle. In this study we observed 66 cadavers, 34 males and 32 females. We measured the length and width of the muscle belly and tendon. Actual presence of the muscle on the left side of the body was not significant (p=0.258); however, muscles on the right side of the body showed a significant difference (p<0.001) between males and females. A few anomalies were observed during this study including reversal of the muscle belly and tendon as well as differences in the insertion. These results illustrate that the many variations of the palmaris longus muscle should be considered before performing surgery.
ROLE OF SOCIAL ENTREPRENEURSHIP MODELS IN SOLVING DETROIT'S DROPOUT RATES

Kesavan, Ram; Mascarenhas, S.J, Oswald; Bernacchi, Michael;
College of Business Administration

Social Entrepreneurship approach to solve societal problems involves innovative and gutsy models of community development. This has required borrowing freely from the business world, concepts such as performance incentives, performance recognition, strategic planning, goal setting, budgeting, prioritizing, SWOT analysis, organizational development, employee empowerment, resource deployment, leadership training, contingency planning, business planning, benchmarking, milestone setting among others. Experimenting, Exploring and Educating are primary means to achieve meaningful social ends.

More than half the Detroit’s kids fail to finish high school. While there are many alternative explanations for this phenomenon, the results are devastating – increased crime, skyrocketing welfare payments, crowded prisons, higher insurance rates, declining property values, delapidated neighborhoods, ever increasing tax rates and decline of the “traditional family”.

We will examine some novel approaches from a social entrepreneurship perspective to address this important issue of high school dropout rates.
A COMPARISON OF MBTI LEARNING STYLES BETWEEN GRADUATES AND WITHDRAWALS FROM A DENTAL HYGIENE PROGRAM

Kwapis-Jaeger, Judy and Coleman, Margaret

Dental hygiene programs have struggled to identify applicants who will prove to be successful graduates. Various criteria have been utilized in the selection process. Withdrawals by admitted applicants cost both the student and the institution. Does the learning style of the applicant increase their ability to successfully complete the program? The purpose of this study was to assess if differences existed in learning styles between graduates of a program and those individuals who were admitted to that program but withdrew prior to completing the program. The term "withdrawal" will be defined as anyone who left the program or took a leave of absence for a period of one year. The Myers-Briggs Type Indicator (MBTI) was administered over a ten year period (1998-2008) to students (n=316) during the first semester of class. The MBTI data was analyzed using frequency distribution and chi square analysis. Personality types were identified and strength of individual preferences reported for the graduates (n=290) and for those who had withdrawn (n=26). Data indicated that those who withdrew reported very strong to strong preference scores in at least two of the four functions which may inhibit the use of less preferred preferences to adapt to other ways of learning. Of the reported MBTI personality preferences of all respondents, the least populated preferences tended to show the highest proportional withdrawals. Intervention strategies, such as peer learning style mentoring, aggressive counseling and advising especially to those different to the common profile, may need to be implemented to keep these students retained and viable.
MONITORING THE EFFECTS OF IRRADIATION OF ETHYLENEDIAMINETETRAACETIC ACID OVER TITANIUM OXIDE THIN FILMS USING ATTENUATED TOTAL REFLECTANCE INFRARED SPECTROSCOPY

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Attenuated total reflectance infrared spectroscopy (ATR-FTIR) has been used to study the effects of variation in the pH and metal ion complexation on the adsorption behavior of ethylenediaminetetraacetic acid onto titanium dioxide thin films. These in situ studies were carried out with the use of a flow-through apparatus which allowed for monitoring of adsorbed species on the surface of thin films during the course of the experiments. In addition, irradiation studies were performed in order to investigate the photo-initiated degradation of EDTA in the presence of titanium dioxide particles. A quartz window within the ATR apparatus was used to transmit ultraviolet radiation from a 300 W xenon arc lamp onto the thin film. Several techniques were used for identification of the product of irradiation including the use of the Nash reagent for detection of formaldehyde.
LADAR AND IMAGE AUTOMATIC CALIBRATION FOR IMPROVED SLAM PERFORMANCE

Lee, Cheng-Lung*; Luo, Chaomin*; Krishnan, Mohan; Paulik, Mark
Dept. of Electrical & Computer Engineering

Robots and autonomous vehicles are increasingly being considered for use in a wide variety of civilian and military applications such as fire fighting, enforcing perimeter security, bomb disposal, exploration, etc. Autonomous vehicles rely heavily on vision and Laser Detection and Ranging (LADAR) systems to provide mapping data for localization. The collected data are typically processed by a Simultaneous Localization and Mapping (SLAM) algorithm to iteratively build a map. In order to have reliable mapping data suitable for safe navigation, it is very important to register the camera image and LADAR data. Unfortunately, the fusion and calibration of the imaging data from these two systems often proves to be a computational bottleneck.

We have developed an efficient procedure to automatically register LADAR data with calibrated image data. The procedure includes: A) removal of tangential distortion from the camera image, B) using a calibration object to obtain a rotation matrix to register the camera image and LADAR data, and C) extracting image features for localization of objects of interest. The described algorithm provides a significant improvement in mapping accuracy and is expected to be used in the 2009 Intelligent Ground Vehicle Competition (IGVC).
Coronary artery bypass surgery (CABG) is a surgical procedure performed to relieve angina and reduce the risk of death from coronary artery disease. During surgery, the heart is usually stopped requiring a machine which mimics the function of the lungs and heart. Although, thousands of patients have undergone CABG surgery to improve their longevity, the success of CABG surgery is marred by a number of serious complications, in particular brain damage. Neurological dysfunction after coronary artery bypass online pump, results in neuropsychological dysfunction in 20% to 80% of patients. These adverse effects have been attributed to the process of cardiopulmonary bypass, because it increases micro emboli. In the belief that off pump coronary artery bypass (OPCAB), results in less adverse events, surgeons are using techniques of CABG surgery that avoid cardiopulmonary bypass.

This raised the clinical question: In heart surgery patients ages forty plus, is OPCAB, more effective than conventional CABG, in decreasing neurocognitive impairment, or preserving neurocognitive function postoperatively? A systematic appraisal of literature was conducted to acquire studies comparing neurocognitive function of patients receiving OPCAB versus CABG. The following databases: Ovid, Pubmed, Cochrane and CINAHL were searched to obtain studies regarding this information. Seven studies were retained for review. Four randomized controlled trials, one controlled trail, one blinded study, and one meta-analysis. Two studies resulted with significant difference in neurocognitive function immediately post-op, with OPCAB patients having better cognitive outcomes. However, at twelve months both groups showed similar cognitive ability. All seven studies concluded no significant difference in cognitive outcome for OPCAB versus CABG.

Although, traditional CABG surgery results in some cognitive decline initially, outcome for each patients are similar one year post-operatively. Advance practice nurses (APN) should consider which procedure is safe for patient specific condition and more cost effective when discussing options for this procedure. In addition, APNs can educate patients that both procedures yield similar results, when inquired by patients.
TOBACCO DEPENDENCE TREATMENT IN A DENTAL SCHOOL: 4 YEAR ANALYSIS

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PURPOSE
University of Detroit Mercy School of Dentistry implemented tobacco dependence treatment services in 2002, and the students have been surveyed annually about the impact the program has had on their patient care and personal tobacco use habits. This is an analysis of that data from 2003 to 2006.

METHODS
All students in 2nd year dental hygiene (DH) and 3rd and 4th year dentistry (DDS) classes are required to complete an annual on-line survey about their experience and attitudes regarding tobacco dependence treatment.

RESULTS
110 DH students and 591 DDS students completed the survey (100% response rate). Both groups asked more than half their patients whether they used tobacco, but this behavior was more likely in DDS than DH students. This behavior appears to have become more prevalent with the dental students over the course of the program. Both groups advised most tobacco users to quit. Most patients were not interested in quitting tobacco use. Both DH and DDS students reported they only record this information in the patient’s record sometimes. When asked whether they feel better prepared to help a patient quit smoking (on a scale of strongly agree to strongly disagree), DH students indicated, on average, that they agree, while DDS students’ response fell between neutral and agree.

CONCLUSIONS
Although DDS students are more likely than DH students to ask their patients about tobacco use, neither group is completely compliant in this regard and neither group consistently documents this behavior in the patient record. DH students express more confidence in their ability to help a patient quit smoking.
COMPARATIVE ANALYSIS OF SINGLE AND MULTI-ROBOT GOAL SELECTION FOR AUTONOMOUS EXPLORATION AND MAPPING

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Robots are increasingly being used for exploration purposes. This includes exploring Mars and the Moon, as well as the bottoms of the oceans. The exploration process requires two components, sequential goal selection and mapping. Mapping algorithms record coordinate references and shape data for observed information, and goal selection algorithms guide the robot to unknown areas.

Exploration can be done by a single robot or by a team of robots. Working together the robots can cover more ground in less time if properly coordinated. A common exploration algorithm known as “Frontier” has many variants, which include market-based goal distribution, revenue-based goal selection, and value-iterative cost-based goal selection. This work presents a comparison of these methods when used in isolation or in combination for optimal exploration in an unstructured outdoor environment.
BILATERAL VESTIBULOPLASTY UTILIZING PALATAL SOFT TISSUE GRAFTS IN A HIV-POSITIVE PATIENT

Kolhatkar, Shilpa DDS MDS; Mason, Suzanne* BS; Winkler, James R. DDS PhD; Bhola, Monish DDS

Individuals diagnosed with the Human Immunodeficiency Virus (HIV) are at risk for developing various health problems, including those that are life threatening. Since the advent of Highly Active Antiretroviral Therapy (HAART), there has been a significant increase in the life expectancy of HIV-positive individuals. Over the past 25 years the dental treatment of HIV-positive patients has undergone a change from the management of HIV-associated oral lesions to routine comprehensive dental care including the full spectrum of dental surgical therapies. There are limited reports on the outcomes of intraoral surgical therapy, particularly soft tissue grafts in the HIV-positive individual. To our knowledge, this is the first report of the treatment of an HIV-positive patient with a shallow mandibular vestibule in which palatal soft tissue grafts were used for vestibuloplasty. The aim of this report is to describe bilateral vestibuloplasty performed on a HIV-positive male using palatal soft tissue grafts and the healing response observed. During an 8-month follow up no adverse post-operative sequelae were seen. This article is part one of a five-part-series reporting on periodontal surgical procedures performed in HIV-positive patients.
A LANGUAGE FOR TRANSFORMATIVE URBANISM

Moore, Dorian - School of Architecture

“You know, there’s an old saying in the business world, if it works, it’s obsolete. And it’s only when a thing has become obsolete that everybody is sufficiently familiar with it to make it work.....”

-Marshall McLuhan

This Paper asks the question: Are cities obsolete?

As our world becomes more globalized, our approaches to revitalization and competitiveness must become more unique, creative, and insightful.

My current research has brought me to understand in some detail three cities each at different stages of development; one, Detroit, which is shrinking, one, Cleveland, which is stabilizing, and a third, Pittsburg which has transformed. All three cities have used similar techniques to [re]develop. All three are a part of an emerging area called the Lake Belt. All are examples of what I have termed the “City of Opportunity”.

This Paper will present the formulation of a Language for Transformative Urbanism through the investigation of these three cities. Cities must look at their inherent characteristics not as positive or negative, but as what is. It is only by reconstructing our view of what constitutes “city” that we can create a common platform for the advancement of urbanism.
PILOT PROJECT: PREDICTORS OF SUCCESS IN A PHYSICIAN ASSISTANT PROGRAM

Moser, M.S., PA-C, LLP, Sharon; Higgins, M.S., PA-C, Rose

PURPOSE
The selection of appropriate candidates for a physician assistant program is based on parameters that have traditionally been used but have not been proven to be either reliable or valid. This study attempted to begin that process.

METHOD
Retrospective data was obtained via a chart review of all Physician Assistant students who completed the program at the University of Detroit Mercy between 2003 and 2006, N= 109. Independent variables, termed “predictors” consisted of gender, age, highest degree earned prior to entering the program, undergraduate GPA, grades on each of six prerequisite courses (nutrition, developmental psychology, medical ethics, microbiology, statistics and advanced physiology), GRE (or MCAT equivalency) and its component parts, months of medical or helping experience and interview scores. The end point used (“dependent variable”), was the score obtained on the national certifying exam for physician assistants, called the PANCE.

RESULTS
Using a multiple regression analysis R-square test for explanatory power, age showed an R-square value of 0.0125 and gender 0.0121 providing very little explanatory power. Regression analysis showed very little explanatory power for graduate degree vs. no previous graduate degree. The independent variables with the highest predictive values for PANCE scores included undergraduate GPAs, prerequisite score on advanced physiology (highest) and microbiology, GRE (verbal) combined with GRE(math); including the analytical score decreased predictive power. Two tailed t-tests confirmed their significance at the .01 level. Number of months of experience had virtually zero explanatory power. Interview score provided little predictive power for the endpoint PANCE score.

CONCLUSION
The most predictive indicators include traditional GPA,GRE, and 2 prerequisite course grades (physiology and microbiology). The interview score has no predictive power for students who were admitted. If the population of students not admitted were included, the above variables would be hypothetically more extreme. Interviews are traditionally included as a chance to test the student for “fit” and introduction. A study examining the seven components of the interview and predictive value of portions of the interview among both admitted and non-admitted students would be an area for further research.
BEST PRACTICES IN NURSE PRACTITIONER COUNSELING AND DOCUMENTATION FOR HYPERTENSION PATIENTS AT MCAULEY HEALTH CENTER

Moses, Doris RN, Conley, Joyce PhD, RN, Faculty
College of Health Profession

INTRODUCTION AND PROBLEM STATEMENT:
Given guidelines from the Seventh Report of the Joint National Committee (JNC7) on the Prevention, Detection, Evaluation and Treatment of High Blood Pressure, more people than ever are being diagnosed with hypertension. Greater than 58 million Americans, 29% of the adult population, have hypertension. An added 45 million, or 22%, have pre-hypertension. Most patients are uninformed of the condition because it largely is asymptomatic (Shark K., 2006). A retrospective chart review at the McAuley Nurse Managed Health Center revealed the need to improve nurse practitioner documentation of counseling clients on lifestyle modifications needed to reduce hypertension.

CLINICAL QUESTION
What evidence-based interventions can Nurse Practitioners (NPs) use to improve counseling and documentation of counseling on lifestyle modifications for adults diagnosed with primary hypertension?

SEARCH FOR EVIDENCE
A literature search was conducted in the Cochrane Database of Systematic Reviews, CINHAL and MEDLINE using the following key words: nurse managed centers, hypertension, counseling, lifestyle modifications documentation and electronic medical records. McAuley Health Center (MHC) NPs were interviewed about barriers to counseling clients on lifestyle modifications and barriers to documenting the counseling in the electronic medical record. Based on literature and interviews, tools were developed for NPS to use in counseling hypertensive clients and in documenting the counseling.

PRESENTATION AND APPRAISAL OF EVIDENCE / CLINICAL PRACTICE IMPLICATIONS
Literature search results, interview data and analysis, and hypertension counseling tools were presented to MHC NPs who rated the tools as effective strategies to improve client counseling (as recommended by JNC 7 Guidelines).and counseling documentation.
PLAVIX AND DENTAL IMPLICATIONS

Muller, James; Geist, Shin-Mey Rose

The purpose of this table clinic is to raise the awareness that premature discontinuation of Plavix has caused catastrophic events of MI and/or death.

Plavix is an antiplatelet agent that inhibits platelet aggregation, thus preventing thrombus formation. Individuals who have high risk for myocardial infarction (MI) or cerebral vascular accident (stroke) are prescribed this medication to prevent cardiovascular events. Plavix is also prescribed to patients received coronary artery stents to prevent MI, and the current guideline recommends its use for 12 months following drug-eluting stent (DES) placement. Many dental patients take Plavix for the above mentioned reasons. Dentists’ intuitive concern is increased risk of bleeding during and after the dental procedures. Their dilemma in treating these patients has been:

- Continue antiplatelet therapy for surgical dental procedures?
- Alter antiplatelet regimen for surgical dental procedures?
- Stop Plavix for dental surgical procedure?
- Discontinue all antiplatelet medications (not only Plavix) for dental surgical procedures?

This table clinic provides the best available evidence on the risks and benefits of altering a patient’s Plavix regimen. We also provide a strategy in assessing risk of bleeding and managing dental patients who are taking antiplatelet agents including Plavix.
KNOWLEDGE OF INFANT AND TODDLER ORAL HEALTH OF PEDIATRICIANS AND PEDIATRIC NURSES IN MICHIGAN

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Dental caries is the most common chronic disease affecting children today. Infant and toddler oral health promotion in physicians’ offices can improve children’s oral health. The purpose of this study was to evaluate infant and toddler oral health knowledge of pediatric nurses and pediatricians in Michigan. Methods: A questionnaire was sent to pediatric nurses and pediatricians. The survey included 21 items on knowledge and practices of infant oral health. Results: 31 nurses and 14 pediatricians responded to the survey. The results showed that the majority of respondents rarely counsel parents on oral health, only 1% use CAT (tool to assist caries risk), the majority do not have brochures regarding oral health in their offices, and in the last 5 years, less that 10% of respondents have attended continuing education courses on infant oral health. Infant oral health education programs are needed and can improve pediatric nurses and pediatricians’ knowledge and practices in Michigan.
SEDATION IN THE ICU: BEST PRACTICES TO GUIDE CARE FOR THE MECHANICAL VENTILATED PATIENT

Page, Kimberly*; Conley, Joyce Phd.RN (faculty)

Mechanical ventilation is a medical treatment that provides an adjunct secure airway for providing supplemental oxygen for the intubated patient. While this therapy is necessary to sustain life, in some cases it is an uncomfortable situation that causes anxiety and fear in patients. The ability or inability to adequately sedate these patients could possibly have a negative affect on length of ventilator days. The following question is posed, “In the mechanical ventilated patient, what effect does an anesthetic such as propofol have on length of ventilator days compared with benzodiazepines such as versed or ativan?”

The following PubMed literature research strategy was employed: (1) quantitative evidence composed of randomized studies of mechanical ventilated adult patients 18 years or older and (2) research articles consisting of mechanical ventilated adult patients and sedation protocols. Data was primarily collected from journal research articles. The articles consist of open label randomized trails of intensive care patients. The clients consist of medical and post-surgical patients that were on the mechanical ventilator for more than 24 hours. Various sedatives such as propofol, versed and ativan are compared as they relate to length of ventilator days while in the ICU. Propofol has resulted in shorter ventilator days when compared to other sedative medications.

A patient’s ICU experience should not consist of fear, sleeplessness, or delirium related to the, lack of adequate sedation. For this can result in nurse harm or patient self harm leading to lengthier ventilator days. Hospitals are now implementing sedation protocols, screening tools, and other strategies to help ICUs utilize adequate and minimal sedatives as necessary for each patient to tolerate his ICU stay and have a speedy recovery.
RADIATION RESISTANCE IN ADULT DROSOPHILA MELANOGASTER

Parashar Vijay, Rogina Blanka, Lurie Alan G.

ABSTRACT

*Drosophila melanogaster* (fruit fly) has been a model organism used for many genetics and developmental biology studies for over 100 years. Various studies have been conducted to understand the effects of ionizing radiation (IR) on *Drosophila*. Most IR studies have been done using early stages of development such as larvae and pupae. We examined the effects of IR on adult fruit flies at different ages. Male and female adult fruit fly were irradiated using different doses of IR and dose-response curves for lethality were prepared. 50% lethality 2 days post irradiation (LD50/2) in one-day-old adult fruit flies is observed to be \( \sim 1250 \text{Gy (Gray)} \). Male flies are more radiation sensitive than female flies. We found that wild type fruit flies are 300 times more radiation-resistant compared to human, similarly to published data. In addition, we showed that there is an age dependent decline in the radiation resistance in both male and female adult flies.

We observed a synergistic effect on the lethality of flies exposed to lower dose of IR (200Gy) early in life and the treatment with paraquat, a known free radical producer, later in life (at age 10 or 20 days).

Our data suggest that adult *Drosophila melanogaster* can serve as an excellent model to study the factors responsible for high radiation resistance of fruit flies.
"THE UNIVERSITY DISTRICT: DETROIT STORIES" & "SPRAWL"

Pitera, Allegra

My research interests combine teaching pedagogy and projects with my own work, primarily experimental video. As an educator as well as Director of Digital Media Studies at the University of Detroit Mercy, my pedagogical and personal interests lie in how to use media to incorporate inter-disciplinary studies; to use sound, images as well as visual and narrative compositions to communicate multi-dimensional ideas, passions and concepts. In relation to this inter-disciplinary approach, a large focus of the projects is examining and exploring the issues surrounding urban Detroit. I encourage my students to think of the D.J.’s concept of 'mixing' as also an approach of digital media: of weaving together space, design, technology, story-telling and critical discourse. One of the concepts I try to reinforce is that 'space' includes and affects the psychological as well as the physical. In addition, I teach digital media students that 'design' is the intentional approach to choreograph the experiential and that digital technology is a tool for exploring these ideas. Accepting this, I challenge the students to consider: how does the user/viewer experience and process the interaction between digital media and the ‘narrative’ of the everyday? How can digital media reach out to the community and affect change?

Two of the texts I am currently considering for content contributions are: Richard Florida’s “The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life” and Jane Holtz Kay’s “Asphalt Nation”. I am interested in: how/why sprawl and our perhaps overdependence on the vehicle was intentionally constructed and how this life style has affected our urban cores; how our currently auto-centric culture might be shifting to embrace urban ideologies; how inter-disciplinary/“creative” professionals are changing our society; and if/how our local urban/suburban environments can attract people to move there, including skilled professionals.
THE UNIVERSITY OF DETROIT MERCY/HENRY FORD HEALTH SYSTEM SCHOOL BASED PROGRAM: INCREASING ORAL HEALTH SERVICES FOR CHILDREN

Shepherd, Kathi; Aksu, Mert; Miriyala, Vinod; Stewart, Gail

In Spring 2008 a partnership between the University of Detroit Mercy (UDM) School of Dentistry, Henry Ford Health System and the State of Michigan Department of Community Health designed a program for children identified as having high disease rates and lack access to dental care enrolled in seven city of Detroit public elementary schools. The objectives were to: 1) increase oral health prevention services; 2) ensure restoration of active disease for children; and 3) reduce disparities through the provision of a dental sealant program. The program is facilitated on site by a Community Oral Health Coordinator employed by Henry Ford Health System. Three licensed PA 161 dental hygienists were hired with University of Detroit Mercy faculty status to provide preventive oral health care in the seven designated elementary schools. After being calibrated by the Department of Pediatric Dentistry faculty, the team of dental hygienists perform a screening, prophylaxis, sealants and fluoride varnish on each child upon obtaining parental consent. Pre and post oral health education tests are administered to assess acquisition of knowledge utilizing chair side laptop computers. Children are referred to the UDM School of Dentistry for restorative and other necessary care utilizing a SEALS classification system. Assurance of appointment attendance is tracked by way of a web based axiUm crystal reporting mechanism. To date over a thousand children have been treated by the team of dental hygienists. Ten percent of the children have had appointments at the School of Dentistry. Phase one student involvement has occurred through a formal observation requirement. Although continued program evaluation is currently being conducted, initial results after eleven months reveal an increase in the amount of oral health services provided for the designated population. The program thus far has provided an avenue for the dental hygiene faculty to work with families and agencies to raise awareness of the importance of oral health. Due to the low number of restorative appointments made at the School of Dentistry, the possibility of both dental and dental hygiene students rendering care with faculty supervision on site in the schools is being investigated.
REACTIONS TO WORK STRESS: ARE WINDOWS A DISTRACTION OR A RELIEF?

Slowik, Linda Haynes and *Delekta, Julia Helene

Windows are a prominent feature of work spaces, yet have received surprisingly little systematic examination regarding their psychological effects on employees. The current study explores the relationship between number of windows and job-related affective reactions (job satisfaction, burnout, depression, and helplessness). These factors are examined in the context of role ambiguity, which refers to uncertainty regarding priorities, reporting relationships, standards, etc. Role ambiguity is a work stressor related to many negative affective reactions. Two competing predictions are made regarding the effects of windows in the context of role ambiguity. The alleviation hypothesis suggests windows have a palliative effect on stress reactions, perhaps by providing a relaxing view. In contrast, the cognitive overload hypothesis suggests windows are a distraction that aggravates the effects of stressful work, perhaps by reducing the amount of attention devoted to the stressful task. These hypotheses were examined in a sample of 94 full time white-collar employees who provided self reports on their depression, helplessness, burnout, and job satisfaction, as well as role ambiguity. Researchers assessed the office space, including a count of the number of windows viewable from the participants’ primary work space. Notably, the potential confound of hierarchical status was controlled for since it tends to be related to number of windows and ambiguity. The results showed a main effect of ambiguity on affective reactions, such that high ambiguity was associated with significantly lower job satisfaction, and higher levels of depression and burnout. A main effect of windows was also found, in this case relating to reactions as a set, but not to any one specific reaction. Follow-up analyses showed employees working under high ambiguity with more windows stood out as experiencing the most negative affective reactions. Support for the cognitive overload model and the role of attention is discussed.
INCLUSION COMPLEXES OF SPIN ADDUCTS BY \( \beta \) CYCLODEXTRIN

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Department of Chemistry and Biochemistry

Spin trapping electron spin resonance (ESR) techniques have been used in our laboratory to study oxygen and carbon-centered free radicals generated during fragmentation of polymeric membranes used in fuel cells.\(^1\)-\(^4\) We have explored the potential of cyclodextrins (CDs) to encapsulate the spin adducts of 5,5-dimethyl-1-pyroline (DMPO), N-\( \text{tert} \)-Butyl-\( \alpha \)-phenylnitroine (PBN) and 2-methyl-2-nitrosopropane (MNP) and to increase their stability through the formation of inclusion complexes. Here we describe the effect of \( \beta \)CD on DMPO/OH and PBN/OH adducts, and on MNP adducts derived from attack of hydroxyl radicals on acetic acid (AA) and difluoroacetic acid (DFAA) in aqueous solutions at 300 K.\(^5\) The complexation with \( \beta \)CD led to significant stabilization of the DMPO and PBN adducts but only slight changes of the hyperfine splittings and line widths were detected, possibly due to location of the nitroxide radical fragment outside the hydrophobic inner cavity of the cyclodextrin molecule. For MNP as a spin trap, however, the interaction with \( \beta \)CD is stronger; the di-\( \text{tert} \)-butyl nitroxide radical (DTBN) and the MNP adducts were detected outside the CD as well as inclusion complexes, and were studied as a function of temperature and CD concentration.

5. Spulber, M.; Schlick, S., manuscript in preparation.
Reactions can often be catalyzed by the presence of metal or metal ions. This work is a preliminary study on the role of copper atoms in Sonagashira\textsuperscript{1} reactions, a type of multistep reaction coupling reaction which results in the linking of a terminal alkyne to an organic halide. The complete mechanism for this reaction is unknown, but researchers speculate\textsuperscript{2,3} that it proceeds through deprotonation of the alkyne, a process which is facilitated by complexation of the alkyne to a copper (I) cation.

This work implements \textit{ab initio} molecular orbital and density functional calculations to study the impact of complexation with Cu\textsuperscript{+} on the acidity of the simplest alkyne, C\textsubscript{2}H\textsubscript{2}. Our early gas-phase results show that Cu\textsuperscript{+}-C\textsubscript{2}H\textsubscript{2} forms a stable complex through coordination of p electrons in C\textsubscript{2}H\textsubscript{2} to the metal ion. The energy required for removal of a proton from C\textsubscript{2}H\textsubscript{2} is substantially reduced by this complexation, resulting in an increase in the estimated acidity equilibrium constant.

Future work in this area will treat the effect of solvent and explore the possibility of use of other metals than Cu as catalysts in Sonagashira coupling reactions.

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3. M Mio, private communication
PERCEPTIONS OF SEXUALITY BY AFRICAN AMERICANS ON HEMODIALYSIS

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Background: Sexuality encompasses all that is male or female and all that is human. End-stage renal disease and the regimen associated with hemodialysis treatment have been particularly noted to affect one’s sexuality. Additionally, the expression of sexuality in the context of one’s self-identity and meaningful relationships has been suggested to influence effective adaptive behavior. Previous research related to dialysis and sexuality has focused on erectile dysfunction and treatment in males outside the United States. Little is known about the psychosocial effect of hemodialysis on sexuality – particularly in African Americans who make up a disproportionate percentage of chronic hemodialysis patients.

Purpose: A middle-range model, the Sexuality Adaptation Model (SAM), derived from Roy’s Adaptation Model is being used as a guiding framework in this qualitative descriptive study to provide an in-depth exploration of African Americans’ perceptions of sexuality since being on dialysis. Specific aims are to identify African Americans’ perceptions of the hemodialysis regimen on physical sexuality characteristics, personal identity, family-social roles, and intimate relationships as a man or woman.

Methods: Data is being collected by semi-structured interviews to identify focal, contextual, and residual stimuli (i.e. demographic variables, medical history, and perceptions regarding effects of hemodialysis on sexuality) along with coping responses and adaptive behaviors. The content of individual transcripts is being analyzed to isolate and code categories of emerging themes. The proposed sample for this study is 20 African American participants between the ages of 21 to 60 years. This sampling strategy allows an exploration of common and unique expressions related to sexuality across a broad range of demographically varied cases.

Results: Preliminary themes will be presented.

Conclusions: This study may aid nurses to develop strategies to support both the American Nephrology Nursing Association’s (ANNA) and American Nurses Association’s (ANA) standard of care to promote satisfaction with sexuality.
DELIVERY MODELS AND REIMBURSEMENT: CAN EVIDENCE OVERRIDE HISTORY?

Thomas, Patricia

PROBLEM
The cry for healthcare reform resounds in all sectors of the United States economy. Although most policy makers agree on universal coverage, there is not agreement on how to finance the system. Case management has been identified as a mechanism to manage length of stay (LOS) and authorization for payment. In spite of this, organizations struggle with inconsistent and varied criteria to evaluate effectiveness of case management delivery models.

LITERATURE REVIEW
The full immersion model of care management was built from concepts in the case management literature related to role functions of discharge planning, utilization review, and care coordination or facilitation (Huber, 2006, Marquis, & Huston, 2003, Powell, 2000). These functions require collaborative relationships between health care providers and the identified payer for payment of services rendered.

METHODS
This retrospective, causal comparative study examined the traditional case management delivery model and a newly developed (modified) case management model to identify if a relationship existed between LOS and payment denials grounded in case management role functions.

PRACTICE CHANGE
This study involved modification of the case management role functions and staffing patterns. Current case management role functions were examined and a new model of care delivery was established to address perceived gaps in service. The changes included expected communication patterns, documentation processes, and coordination of the plan of care. The modified case management delivery model was implemented on adult medical, surgical, and cardiology units across general, intermediate, and intensive levels of care.

EVALUATION
LOS data were analyzed for each nursing unit that implemented the modified case management model and compared to the same population of patients in the previous year. Payor data was analyzed for LOS and payment denials.

RESULTS
A statistically significant reduction in LOS occurred when the caseload staffing patterns and role expectations for the modified model of case management were implemented. LOS did not have a statistically significant impact on denials, appeals, or payment status. LOS for appealed, denied, or partially denied cases was actually higher than those paid in full. The payer source did not have a statistically significant influence on LOS and managed care plans did not have a statistically lower LOS compared to traditional contracted plans.
USE OF FEMORAL NERVE BLOCK FOR ACUTE PAIN RELIEF IN PATIENTS AFTER TOTAL KNEE REPLACEMENT

Trajkovic, Sanja RN-ONC*

The past decade has seen increasing use of peripheral nerve block for the patients after total knee arthroplasty (TKA). The use of femoral nerve blocks, either continuous or single-shot, emerged as an alternative approach to postoperative pain management. The outcomes generated by the use of femoral nerve block include satisfactory analgesia without side effects associated with opiates and ketamine (i.e., respiratory depression, hemodynamic effects, and decreased use of antiemetics or oversedation); shorter length of stay; faster recovery as well as functional rehabilitation. The purpose of this review of literature is to address the following question: How effectively can use of femoral block in the patients with TKA control the postoperative pain? The critical appraisal of 6 research articles with the strongest level of evidence showed that the use of femoral block neither significantly relieves postoperative pain nor improves other postoperative outcomes after knee replacement so their administration should be discouraged.
THE MIDDLE PASSAGE: THE EXPERIENCE OF WOMEN AND CHILDREN

Turner-Pewitt, Shawn R.

The Atlantic Slave trade produced an episode in history never before experienced by any race of people: The Middle Passage. It was the most far reaching episode of the Slave trade. The Africans that journeyed from the coast of the continent to the shores of the unknown Americas were forever changed by their experiences during the Middle Passage. It was an extremely long and intense journey. During this journey Africans began their transformation to being an American, albeit an enslaved one. The African women and children captured for slavery aboard the slave ships had a unique experience during the Middle Passage. The women were usually kept separate from the men. They were allowed (along with the children) near the top deck with the crewmembers. Women slaves were valuable only in the fact that they could potentially produce more slaves. They were actually considered worth half of what males were worth.

Despite the harsh conditions, isolation and uncertain outcome their journey during the Middle Passage, African women were able to build community and forge alliances amongst themselves. Even during the period of being held at the slave castles, the African women used the opportunity to make connections in familiarities of languages, customs and localities. “As they (women) struggled to locate themselves in relation to the violation of their capture, their sense of community would be gendered in various ways.” Their sense of community, culture and survival allowed African women to gain strength and endure the horrors of the Middle Passage and subsequently slavery. Women would treat each other as kin during this time of the slavery process. It was a source of comfort to have a sense of the familiar. The enslaved African women did not allow her circumstance to affect her ability to try to make sense of her ordeal and care for herself and others as best she could. There were some women who would recount their stories of survival. Women who endured the shame and humiliation of being enslaved but still were able to tell their stories.
RELIABILITY OF BEHAVIORAL OBSERVATION: EFFECTS OF PRACTICE

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The observation and measurement of behavior is potentially valuable, but conclusions may be subjective and variables are difficult to quantify. Techniques for increasing the reliability of observational coding include using clear definitions of behaviors, extensive training, and coding behavior from videotapes. As part of a larger study of mouse (*Mus musculus*) exploratory behavior, reliable measures of behaviors in an “open field” setting were created. Observers were trained and given practice in coding behaviors from videotapes using Noldus Observer XT software.

Two observers coded 5 videotapes twice each; the second trial had the addition of one new mouse behavior. The mice were observed in an open field test that assesses exploratory behavior in a novel environment. Two reliability measures were calculated on the observations, percent agreement in behavior type and correlation of behavior duration; both inter-rater and test retest reliability data were compared. In addition, two behaviors were selected for detailed analysis, rearing and rearing against the wall.

Inter-rater reliability improved with practice. Correlation between the observers was shown to start out at a good level, greater than .80, and reached .90 on the fourth trial. However, the percent agreement never reaches the .80 level. By the fifth trial, agreement reaches .71, but this level is not consistently maintained. On test-retest reliability, Observer A showed a higher correlation between the first and second videotape than Observer B. Test-retest correlation was higher than percent agreement. Similarly, correlation is higher than percent agreement when comparing measurement of rearing to rearing on the wall. Agreement for rearing on the wall was higher than for other rearing, 5/12 vs. 3/12.

Results indicated good agreement after several practice sessions and better results were obtained with behaviors that were more concretely defined. With sufficient training, observation of behavior can generate good measurement for research studies.
BEDSIDE EDUCATION AND POST DISCHARGE
TELEMANAGEMENT: THE EFFECTIVENESS
OF A MULTIFACETED APPROACH TO
DECREASE HEART FAILURE READMISSION
RATES

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Purpose of the project: Evaluate effectiveness of a multifaceted approach, incorporating
focused in-hospital education with post-discharge telemanagement for the patient
admitted with heart failure (HF). Methods: Random sampling of heart failure patients
(N=30) admitted to a cardiac step down unit followed through to discharge. Post
discharge telemanagement phone call follow-up.

Phase I (December 2007-May 2008) Piloted a heart failure education folder distributed
to HF patients. Utilized a survey tool for the readability, effectiveness of information
provided, and process utilized evaluated by patients and nursing staff. Initiation of
education by nursing staff at time of admission, focused on what the patient and
caregiver needed to know to prevent future admissions for heart failure, and improve
activity tolerance. Phase II (June 2008-July 2008) Combination approach of in-patient
education and post-discharge telemanagement for HF patients conducted.
Telemanagement phone call by a team member which reinforced patient education
related to fluid and dietary management, evaluated and reinforced medication
adherence, symptom management, and physician follow-up.

Results: Phase I indicated Press Ganey score improvements in the nursing and patient
evaluation of the folder. Phase II data indicated that a sicker population of HF patients
was monitored which led to increased lengths of stay. When telemanagement and
education were utilized together, the Press Ganey scores continued to improve. The
data indicated a 3% readmission rate (1/30 patients/30 days) signifying cost
effectiveness totaling $253.00 compared with costs of re-admission. Implications: A
control group could be considered and follow up over 6 months and a year for future
studies.
IS EGFR TYROSINE KINASE INHIBITOR BETTER THAN TRADITIONAL CHEMOTHERAPY TO TREAT NON-SMALL CELL LUNG CANCER?

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Statement of the Problem: Lung cancer is the leading cause of cancer deaths in the world. In 2005, lung cancer killed about 1.3 million people worldwide. Of all types of lung cancer, non-small cell lung cancer is the most common, accounting for about 80% of all lung cancers. Despite treatments, such as chemotherapy, surgery, and radiation therapy, median survival for Americans with non-small cell lung cancer is only 8–10 months. New drugs that inhibit epidermal growth factor receptor tyrosine kinase signaling pathway (EGFR TKIs) were developed later. The purpose of this literature review was to analyze and compare the effectiveness between EGFR-TI and a traditional chemotherapy, platinum-based compounds, in non-small cell lung cancer.

Clinical Question: In non-small cell lung cancer patients, what is the effect of tyrosine kinase inhibitor on one-year survival rate compared with traditional chemotherapy?

Search for Evidence/Accepted Practice: MEDLINE search was carried out to obtain papers by using primary subject headings including survival, non-small cell lung cancer, tyrosine kinase inhibitor, first line chemotherapy. Six papers were found based on a limited search. Keywords such as clinical trial, Meta-Analysis, Practice Guidelines, and Randomized Controlled Trial were used to limit search.

Presentation and Critical Appraisal of the Evidence: The data derived from randomized controlled clinical trials showed that EGFR tyrosine kinase inhibitor could significantly prolong survival in non-small cell lung cancer patients who failed to respond to first-line treatment. One year survival was prolonged by 41%.

Retrospective studies were employed in two papers. Due to the small sample size, more evidences are needed. Clinical Practice Implications: EGFR tyrosine kinase inhibitor is an effective drug to prolong survival in patients with advanced non small cell lung cancer as a second line treatment.
“Nurses eat their young” is a term familiar to most nurses. It is a commonly discussed topic as well as written about in the nursing literature. Despite anecdotal evidence of incivility toward student nurses, there is little empirical evidence of this phenomenon. Incivility towards student nurses in the clinical setting can diminish student self-confidence, interfere with the learning process, and affect the student’s desire to remain in nursing (Randle, 2003). Equally disturbing is that incivility between nurses and nursing students in health care settings can negatively influence patient outcomes through reduced transfer of information, loss of concentration, and reduced communication.

The purpose of this qualitative study is to explore student nurses experiences of incivility in clinical nursing education. Focus group methodology was used. Participants were recruited using purposive sampling of second degree option and traditional junior and senior undergraduate nursing students in the McAuley School of Nursing who have experienced incivility in their clinical practicum experiences. Data is currently being analyzed for themes.

It is imperative that the uncivil treatment of student nurses by staff nurses in the clinical setting be understood. Incivility toward students can affect student retention at the time when a significant nurse shortage exists and is projected to worsen.
LONGITUDINAL OUTCOMES OF COMMUNITY-BASED SUBSTANCE ABUSE PREVENTION EFFORTS (TROY COMMUNITY COALITION)

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In 1991, a group of dedicated community leaders, known as the Troy Community Coalition (TCC), applied for a federal grant from the Center for Substance Abuse Prevention, a branch of the U.S. Department of Health and Human Services and was awarded a five-year grant to promote substance abuse prevention and develop a comprehensive prevention plan for Troy. The grant provided for a Coalition office, staff, community education, and a comprehensive needs assessment and evaluation of its efforts. Above all, it gave the community the resources to build a strong Coalition, which includes all sectors of the community working together to meet the challenge of substance abuse. Subsequently, the TCC received funding for two consecutive five-year grants from the Office of National Drug Control Policy (ONDCP) and the Substance Abuse and Mental Health Services Administration (SAMHSA) (1997 to 2010).

As a requirement of federal funding, the TCC is required to collect data annually on social indicators to track the outcomes associated with their prevention efforts. The initial needs assessment strategies included several components including the first implementation in 1991 of the “Troy Student Survey” developed and administered by the Troy School District. This tool assessed student attitudes, perceptions, and behaviors regarding ATOD. The survey was administered to all students in attendance in grades 8 through 12 and included elements from the Michigan Alcohol and Other Drug School Survey and the National Senior High School Survey. A review of the successful longitudinal results over the past 17 years on the reduction of teen alcohol and tobacco use will be provided.

In addition, outcome data collected from several other sources including: Social Indicators Reports, Police Department Data, Youth Dialog Day Transcripts and Surveys, Key Leader Surveys, Adult Surveys, Coalition Dynamics Surveys, Community Readiness Surveys, and Coalition Capacity Assessments will also be provided.
A QUALITATIVE META-ANALYSIS OF GREENLEAF SERVANT LEADERSHIP RESEARCH

Zimmerman-Oster, Kathleen; Labara, Kimberly*; and Roberts, Merry*

It has been forty years since Robert K. Greenleaf published his first essay, “The Servant as Leader”, where he distinguished his theory: “It begins with the natural feeling that one wants to serve, to serve first. Then conscious choice brings one to aspire to lead. The difference manifests itself in the care taken by the servant - first to make sure that other people’s highest priority needs are being served” (p. 4). Since this essay, stories, interviews, case studies, and testimonials have been written on servant leadership. The Hine Bibliography (2008) and the McClellan Bibliography (2008) are resources that provide detailed listings of articles discussing servant leadership.

However, many of the articles included in these reviews have not been evidence-based. As the formative step in developing a Greenleaf Scholars Program, the researchers embarked on a qualitative meta-analysis of current empirical research on servant leadership. The goals of the program and the research are as follows:

- To inspire a new generation of critical scholarship based on the concepts of servant-leadership as articulated in the writings of Robert K. Greenleaf,
- To document, focus, and strengthen rigorous empirical studies that offer evidence of the impact of leadership theories and practices on the health and effectiveness of organizations, institutions and communities, by creating a typology matrix of evidence-based research, and
- To build a nurturing community of academic researchers, practitioners, and students who study and teach servant-leadership.

The literature review found many articles that provide evidence-based research on servant leadership that were not documented in the Hines and McClellan efforts; including several measurement assessments (i.e. Servant Leadership Questionnaire, Servant Leadership Behavioral Scale, etc.) created to measure servant leadership. The resulting typology matrix will serve as a resource for the Greenleaf Scholars Program and assist in furthering the ideas of Greenleaf’s seminal work on Servant Leadership.