Programme
Ravi Kumar Perry, Master of Ceremonies
Graduate Student, Political Science

Conference and Graduate Student Poster Presentations
6:00 p.m. to 7:00 p.m.

Welcome/The Occasion .................................................. Dr. Sheila Bonde
Dean, The Graduate School

Acknowledgment of Distinguished Guests.......................... Monique Brown
Graduate Student, Public Health

Dinner Buffet
Music Provided By The Lomar Brown 5Tet

Introduction of the Speaker ............................................. Dr. Brenda Allen
Associate Provost and Director of Institutional Diversity

Keynote Speaker ......................................................... Dr. Isaac Colbert, ’71, ’74
Former Dean of Graduate Students, Massachusetts Institute of Technology

Musical Selection ........................................................ Lomar Brown 5Tet
Greater Hartford Collective of Arts

In Recognition of the Keynote Speaker ............................... Orly Clerge
Graduate Student, Sociology

Presentation of Proclamations ................................. Rep. Joseph S. Almeida (D-Dist. 12)
Deputy Majority Leader/Co-Chair of the Rhode Island Minority Leadership/Legislative Caucus
Hon. David Cicilline
Mayor, City of Providence

Presentation of Conference Awards .......................... Racquel Sherwood
Graduate Student, Molecular Biology, Cell Biology and Biochemistry
Noelle Hutchins
Graduate Student, Pathobiology

Acknowledgment of Nominees & Presentation .................. Andrea Owens-Jones
President, Nabrit BGSA & Graduate Student, Political Science
Sam McNeal
Vice President, Nabrit BGSA & Graduate Student, Pathobiology

Closing Remarks ........................................................ Dr. Valerie Wilson
Associate Dean, The Graduate School
Biography of Dr. Samuel M. Nabrit

Samuel Milton Nabrit was born on February 21, 1905, in Macon, Georgia. Nabrit was the son of James M. Nabrit, a Baptist minister and teacher, and Augusta G. West. He was one of eight children, all of whom received a college education. Nabrit received his bachelor’s degree in biology from Morehouse College in 1925. Soon after graduation, Nabrit was hired as an instructor in zoology at Morehouse and taught there until 1931, reaching the rank of professor of biology in 1928, the same year he married Constance Crocker. It was during this time that he attended Brown University, where he was awarded an M.S. in 1928 and a Ph.D. in biology in 1932, becoming the first Morehouse alumnus to earn a Ph.D. and the first African American to be awarded a Ph.D. at Brown.

Nabrit's doctoral research was conducted at the Marine Biological Laboratory in Woods Hole, Massachusetts, where he studied the ability of fish to regenerate their fins after injury. He continued his research after becoming chairman of the biology department at Atlanta University (now Clark-Atlanta University) in 1932. He became dean of the graduate school of arts and sciences at Atlanta University in 1947, where he stayed until 1955, when he became the second president of Texas Southern University (TSU).

Nabrit was committed to encouraging more Black students to pursue advanced research. While residing in Texas, Nabrit was involved in the Upward Bound program and attracted a great deal of outside funding in an effort to double the enrollment of Black students at TSU. As President at TSU, he also supported students in their successful protests against segregation in public buildings in Houston, declaring that no student would be expelled for civil rights activities. Upon the invitation of President Johnson, Nabrit left Texas Southern to join the Atomic Energy Commission in 1966, becoming the body’s first Black member.

In 1985, Brown University honored its first Black trustee and established the Nabrit Fellowship to assist graduate students from minority groups. In 1999, Nabrit was once again honored by Brown University with a portrait hanging in Sayles Hall, alongside portraits of the university's most distinguished faculty.

Nabrit died on December 30, 2003, at the age of 98.
Biography of Dr. Isaac M. Colbert

Dr. Colbert earned his bachelor's degree (1968) in experimental psychology from the John Hopkins University in Baltimore, MD, where he grew up. He earned both his M.A. (1971) and his Ph.D. (1974) in experimental psychology from Brown University. Colbert worked for three decades in educational administration at the Massachusetts Institute of Technology. Starting as a consultant in human resources in 1977, he has served in a number of different roles at MIT, eventually being named the Dean of Graduate Students in 1999. In that capacity, Colbert led efforts to enhance the housing and funding resources of graduate students.

As Dean of Graduate Students, Dr. Colbert had an unfailing commitment to graduate students and their experience at MIT. He attributes his enthusiasm for working on behalf of graduate students to his experience as a graduate student at Brown University. Colbert describes his time at Brown as “probably the greatest time in my life. I loved graduate school.” He said that the intense intellectual activity, surrounded by people who were intensely involved in their work, made the experience exciting and valuable. “Not everything went smoothly. I had a dissertation committee that pushed me to the wall and forced me to a higher level than I thought possible, and I loved it.”

Dr. Colbert retired as Dean of Graduate Students in June 2007. However, his accomplishments have had a lasting impact on the Graduate School at MIT. He is credited with creating a more “student centered” operation, establishing a strong network of colleagues committed to graduate students, improving graduate student housing on campus, working with alumni to help increase funding support for graduate students, and implementing more social opportunities to create a stronger sense of community. In 2006 he created the Graduate Student Life Grants program, later named the Ike Colbert Fund for Graduate Community, designed to create a well-resourced, self-nurturing community of graduate students. Upon Dr. Colbert’s retirement, MIT Chancellor Philip Clay said, “Ike has set a standard of caring that we hope to find in our next dean of graduate students.” Dr. Colbert is a true champion for graduate education and an inspiration for all of us to be involved in creating positive change in our communities.
5tet Bio Goes Here
ABSTRACTS

Yumi Aikawa, Master's of Public Health
Department of Community Health

The test-retest analysis of survey questions to investigate the patient-provider communication among legally unmarried women ages 40 to 75 in regards to their cancer-screening and sexual health

Background. The middle-aged and older women are at risk for various diseases associated with sexual health including cancers. Thus it is important for the health care providers to openly communicate with middle-aged and older patients about sexual health and intimate relationships. Methods. Using questions extracted from the Cancer Screening Project for Women (CSPW) surveys, the test-retest reliability of questions that addressed the levels of patient-provider communication was assessed using various statistical measures. The questions were assessed individually as well as in groups, and the analysis was repeated with stratification by age, intimate partner preference, and survey modes. Results. In general, inter-rater reliability ranged from “fair” to “substantial” agreement (κ = 0.25 to 0.84) and Pearson’s correlation coefficient fell mostly in the range of “medium” to “large” (r = 0.27 to 0.78). The stratification did not affect the reliability measures. Conclusion. The interpretations of the statistical measures demonstrate that the given CSPW questions are reliable and could be utilized to further investigate the quality of patient-provider communication among middle-aged and older women in regards to their sexual health. Since the reliability measures were not affected by stratifications, these questions can be used over a broad spectrum of women including those who are legally unmarried and sexual minorities.

Stacy-ann Allen, 1st Year Ph.D.
Department of Pathobiology

Characterizing the role of Gangliosides GD1b and GT1b in BKV Infection

BK virus (BKV) is a non-enveloped, double stranded DNA virus and belongs to the family Polyomaviridae. It is one of 4 polyomaviruses found in humans. BKV is prevalent and infects approximately 85% of the world’s population. BKV establishes a lifelong persistent infection within the kidney. This infection is asymptomatic in immunocompetent individuals. BKV is the causative agent of polyomavirus-induced nephropathy in immuno-suppressed kidney transplant recipients. BKV reactivation leads to high viral loads resulting in characteristic cytopathic effects such as lytic cell death that leads to organ dysfunction. There is an increased interest in trying to understand the role that polyomaviruses play as pathogens. Recently the role of gangliosides and their effects on polyomavirus tropism has been a key focus in the area of polyomavirus research. Gangliosides are sialioglycosphingolipids with a ceramide core that are found predominantly in the brain and on the surface of many cell types. They are thought to mediate the attachment and entry of microbes during infection. It has been demonstrated that specific gangliosides may be receptors used by BKV during the process of attachment and entry during viral infection. This project proposes to evaluate the role of gangliosides in BKV infection in permissive cells and to further characterize the interaction between the known ganglioside receptors, GD1b and GT1b, and the BK virus. The current results indicate that the known ganglioside receptors do not affect the binding of labeled BK virus. Furthermore infectivity data also show that gangliosides may play a role in modulating infection in permissive cells. Future studies are aimed at continuing to define the role of gangliosides in supporting viral entry.
Joseph Bahlman, 2nd Year Ph.D.
Department of Ecology and Evolutionary Biology

Gliding aerodynamics across different glide lengths in southern flying squirrels (Glaucomys sabrinus)

There are several mammals that are able to glide from tree to tree, using flaps of skin between their arms and legs. Gliding is the simplest form of flight, and although mammalian gliders have been studied extensively in ecological contexts, little is known about their aerodynamics. Traditionally, the aerodynamics of animal gliders has been predicted using theory developed for human-engineered aircraft. Known as steady-state gliding, this theory assumes that animals will glide at a constant glide angle and velocity that will generate enough aerodynamic force to just support their body weight. It has never been shown that gliders use steady-aerodynamics and never been tested in glides longer than 5 meters. In this study we tested the hypothesis that flying squirrels use steady-state aerodynamics at a variety of glide distances. Two high speed cameras (125 frames/seconds) were used to track the glides of wild northern flying squirrels (Glaucomys sabrinus). From these videos the three-dimensional trajectories, velocities, accelerations, and aerodynamic forces were calculated. We found that the aerodynamics of flying squirrels change as a function of glide length. The shortest glides (6-8 meters) do approximate steady-state glides, with relatively constant glide angles and velocities, and just enough aerodynamic force to balance body weight. For longer glides, however, glide angle and downward velocity continuously decreased, and for our longest glides (22 m), squirrels were moving upward at the end of the glide. The upward aerodynamic force increased with glide length to more than 1.5 x body weight. We conclude that northern flying squirrels are able to modulate their aerodynamics according to the distance they will glide. With progressively longer distances they are able to glide in a more dynamic manner that produces more upward aerodynamic force and shallower glides.

Breann Brown, 2nd Year Ph.D.
Department of Molecular Pharmacology, Physiology and Biotechnology

Molecular Basis for Actin Reorganization by the Neuronal Protein SPAR

In the central nervous system, excitatory synaptic transmission primarily occurs at dendritic spines, small protrusions located on dendrites. Dysregulation of spine structure and motility has been implicated in a variety of pathologies including Down Syndrome, schizophrenia and drug addiction. Spine-associated RapGAP (SPAR) is a multidomain scaffolding protein that is enriched in mature dendritic spines and regulates spine dynamics and morphology through its interactions with the actin cytoskeleton and the small GTPase Rap2. Our aim is to use X-ray crystallography combined with biochemical studies to determine the molecular basis by which SPAR mediates changes in spine structure through its interactions with its multiple effector proteins. We have produced soluble and stable mg quantities of the SPAR PDZ domain. Using NMR spectroscopy, we determined that the SPAR PDZ domain interacts with a Kalirin C-terminal peptide, suggesting that it is a Class I PDZ domain. We have also produced soluble and well-folded amounts of the SPAR minimal interaction RapGAP domain. In conjunction, we have purified the GTPase Rap2 in order to characterize the interactions between the RapGAP domain and Rap2. These studies investigating SPAR structure and function will lay the groundwork for the development of novel therapies to treat diseases caused by abnormal spine structure and motility.
Monique Brown, Master's of Public Health
Department of Community Health

The Feasibility of Implementing Routine HIV Testing in Primary Care Settings

HIV/AIDS is a significant health problem in the United States and has significantly affected minority populations. The Centers of Disease Control and Prevention (CDC) estimates that 1 million people are living with HIV/AIDS. Approximately, 280,000 people are living with HIV/AIDS in the United States but are unaware. Routine HIV testing in primary care settings seems to be a possible public health intervention to diagnose more HIV infections. Primary care providers and health care administrators might be able to incorporate routine HIV testing in their respective medical practices. The main objective of this study is to identify facilitators and barriers to the implementation of this intervention in primary care settings as perceived by primary care providers, staff and administrators, especially in areas that predominantly serve minority populations. Risk assessment has a major role to play in the implementation of routine testing. Language differences and stigma have been perceived as major barriers to the implementation of routine HIV testing. Nevertheless, routine HIV testing would be an accepted public health intervention as indicated by the majority of health care providers and administrators included in this study.

Angel Byrd, 4th Year M.D./Ph.D.
Division of Endocrinology, Warren Alpert Medical School; Department of Pathobiology

Investigation of YB-1 as an IGF-1/insulin receptor bound transcription factor

Insulin-like growth factor (IGF) pathways are important for cellular growth. By use of the yeast two hybrid cloning method, novel proteins have been identified that are known to interact with the intracellular portion of the IGF-1 receptor, regulating or transmitting signals from IGFs. A mouse embryonic cDNA expression library was screened with an intracellular region fragment of the IGF-1 receptor. Members of the Y box protein family were among the most abundant clones observed. YB-1 is a known regulator of many cellular functions, including transcription, translation, DNA repair, drug resistance and stress responses to extracellular signals. One of the genes that it targets is the protein tyrosine phosphatase (PTP-1B), resulting in down regulation of the IGF-1 receptor. Our goals are to determine the molecular basis for YB-1 binding to the IGF-1/insulin receptor, the mechanism through which IGF-1/insulin activates YB-1 and the role of YB-1 in IGF-1/insulin mediated receptor negative regulation via PTP-1B. It is hypothesized that upon IGF-1/insulin binding to its receptor, this stimulates nuclear targeting of YB-1, leading to the transcription of PTP-1B, which dephosphorylates the IGF-1/insulin receptor resulting in down regulation. Consequently, this leads to drug resistance, insulin resistance and possibly Type 2 diabetes.
Jade Carter, 6th Year Ph.D.  
Department of Pathobiology

Ethanol Impaired Neuronal Migration Is Mediated By Decreased Expression Of Aspartyl-(Asparaginyl)-b-Hydroxylase

Fetal alcohol spectrum disorders (FASD) are associated with hypoplasia and impaired neuronal migration in the cerebellum. Previous studies linked cerebellar hypoplasia in FASD to inhibition of insulin/insulin-like growth factor (IGF) signaling. Since aspartyl (asparaginyl)-b-hydroxylase (AAH) is stimulated by insulin and IGF’s and mediates motility, we examined the potential role of reduced AAH expression in ethanol impaired neuronal migration. Effects of ethanol on IGF-I stimulated AAH expression and neuronal migration were examined in human PNET2 CNS-derived neuronal cells along with the role of increased glycogen synthase kinase-3 (GSK-3) activation in relation to AAH protein expression and motility in ethanol-exposed cells. Ethanol significantly reduced IGF-I stimulated AAH protein expression and directional motility without reducing AAH mRNA levels. Further studies demonstrated that: 1) AAH protein could be phosphorylated by GSK-3; 2) AAH protein expression was decreased by high levels of GSK-3b activity; 3) AAH protein was increased by inhibition of GSK-3b and caspase activities; and 4) ethanol-impaired AAH protein expression and motility could be partially rescued by chemical inhibition of GSK-3b and caspase activity. Therefore, ethanol-impaired neuronal migration is mediated by inhibition of IGF-I stimulated AAH expression by increased GSK-3 phosphorylation and proteolytic (caspase) degradation of AAH protein.

Sharon Chakkalackal, Master's of Public Health  
Department of Community Health

Evidence-Based Practice in Clinical Psychology:  
The Use of Cognitive-Behavioral Therapy in a Community Setting

Background: At one end of the Evidence-based medicine and practice (EBTs) debate spectrum, guild associations, insurance companies and federal/state organizations push for practitioners to implement EBTs. On the other end of the spectrum, therapists have critiqued EBTs arguing that they are too structured and manual-guided, which may limit their effectiveness in usual clinical practice contexts. We sought to understand to what extent is EBT practiced by providers treating depressed adolescents. Methods: A total of 164 therapists were mailed packets and 84 responded by completing the study questionnaire packet. Therapists were surveyed on the treatment of their adolescent patient during the three months following the adolescent's inpatient hospitalization. Results: 40% percent of therapists reported their "most" preferred choice of treatment approach as CBT. We compared those that received CBT to all other therapies. Therapist-reported treatment approaches for depressed adolescents 50% of therapist reported half of their adolescent clients received CBT. Conclusion: CBT, an effective EBT, is being used by mental health providers in the community. In our study, 40% of therapists' choice of treatment was some form of CBT. Half of the depressed adolescent received CBT from their therapist and therapists reported greater functioning after 3 months of treatment.
Orly Clerge, 1st Year Ph.D.
Department of Sociology

The Role of Ethnicity in Black Immigrant Educational Achievement and Social Mobility

The second-generation immigrant stock, whose parents are from Asia, Latin America and the Caribbean, have a unique place in the United States. Second-generation immigrants are one of the fastest growing populations in the United States. According to sociological and demographic literature, black immigrant groups are lagging behind their immigrant peers in educational attainment and occupational outcomes. My proposed project will test the hypothesis that there is a significant difference in the educational and occupational outcomes of second-generation black immigrant groups from the Caribbean and Africa in gateway cities. I am particularly interested in the role of country of origin and ethnicity in the second-generations ability to become educationally and socially mobile. This analysis will add explanatory value to the existing segmented assimilation theory that posits that there is an array of social and economic outcome for the second generation in America, allowing us to empirically examine the interaction between race, country of origin and ethnicity.

Leroy Cooper, 1st Year Ph.D.
Department of Molecular Pharmacology, Physiology, and Biotechnology

Understanding a Molecular Basis for Sudden Cardiac Death

The inwardly rectifier potassium ion channels (Kir) participate in the terminal phase of repolarization and play a critical role in maintaining the resting membrane potential in cardiomyocytes. A gain-of-function mutation in these channels would shorten the action potential duration (APD) and therefore the QT interval. The purpose of this study is to create a transgenic rabbit model for short QT syndrome 3 (SQT3) by overexpressing a gain-of-function mutation D172N of Kir2.1 in the heart under the control of the cardiac-specific β-myosin heavy chain (βMyHC) promoter. This mutation was described in a family with inherited SQT3 and has been studied in heterologous expression systems. This study, however, will be the first investigation in creating an animal model and thus characterizing this class of Kir2 mutations in vivo. Moreover, I will proceed with the characterization of the transgenic phenotype at the molecular, cellular, and organism level.
Sarah Dawson, 4th Year Ph.D.
Department of Anthropology; Joukowsky Institute for Archaeology

Legitimization in Late Antique Gaul (393-470):
A Visigothic Non-Case Study

In reviewing a subset of the available material culture in Gaul and the Black Sea region between 393-450 C.E., predominantly garnet jewelry, weaponry, and imperial coinage, I demonstrate how a small quantity of evidence can nonetheless help shape a picture of Visigothic legitimization. Although their material culture lacks distinction, the absence of the Visigoths' individuality can, in turn, emphasize the communal dynamics into which they inserted themselves, as well as their own particular religious, political, and cultural agendas.

Two separate pictures can be drawn from the evidence presented. The first is that Germanic tribes in the Late Antique period used jewelry to advertise their adherence to the new faith of Christianity. The second is of a politically charged weapons and numismatic program. The use of Roman pagan iconography, Latin script, and Republican ideals is striking.

Although their actions often contradicted this intention, the material culture shows the Visigoths wanted to be regarded by the entire Roman community, both elites and non-elites, as civilized, trustworthy allies. By erasing distinction in their material output, the Visigoths were able to maneuver between two spheres, the barbarian and the Roman.

Nicholas Everage, 3rd Year Ph.D.
Department of Epidemiology

Odds and Prevalence of Pre-diabetes in the United States by Race and Ethnicity:
Results from the 2004-2006 BRFSS

Aims: To estimate the prevalence of diagnosed pre-diabetes in the United States and to estimate odds of diagnosed pre-diabetes by race and ethnicity.
Methods: The Behavioral Risk Factor Surveillance System (BRFSS) contains representative probability sample of non-institutionalized, adults (18+). In the BRFSS from 2004-2006, out of 11,384 reporting diagnosed pre-diabetes based on responses from phone interviews, 11,200 were included in final analyses.
Results: The prevalence of diagnosed pre-diabetes in the United States from 2004-2006 was .96 (95% Confidence Interval .92-1.00). Non-Hispanic, American Indian or Alaskan Natives had the highest diagnosed pre-diabetes prevalence (1.61) followed by Non-Hispanic Blacks (1.05 (.93-1.18)) and Other Races (1.05 (.82-1.27)). The prevalence of diagnosed pre-diabetes increased with age and decreased with education and income. Odds of diagnosed pre-diabetes were highest for racial/ethnic populations with the highest prevalence. An inverse relationship occurred between education and income and odds of diagnosed pre-diabetes in crude and adjusted models. Compared with having one health care provider, persons with > one health care provider had 1.32 (1.17-1.49) greater odds of diagnosed pre-diabetes.
Conclusions: Prevalence and odds of diagnosed pre-diabetes differs by race and ethnicity. These results may serve as benchmarks for future comparisons to ameliorate health disparities related to pre-diabetes diagnosis.
Characterization of IL-10 effects on antigen-specific CD8 T lymphocytes during murine cytomegalovirus (MCMV) infection

During murine cytomegalovirus (MCMV) infection, multiple antiviral and immunoregulatory cytokines are produced by cellular components of innate and adaptive immunity. The studies presented were conducted to characterize the effects of interleukin (IL)-10 on CD8 T cell antiviral responses to acute MCMV infection. When compared to C57BL/6 control mice, our results demonstrate a significant increase in the proportions and absolute total numbers of antigen-specific CD8 T cells in the spleens and livers of IL-10-deficient mice following MCMV infection. Furthermore, this accumulation was accompanied by an increase in the secretion of IFN-g from activated CD8 T cells. Additionally, we demonstrate that CD8 T cells contribute to the overall levels of IL-10 in spleen and liver. Collectively, these studies establish an integral function for IL-10 in modulating key CD8 T cell inflammatory and cytokine responses.

Sphingosylphosphorylcholine promotes cell survival and proliferation parallel to sigma-2 receptor ligand CB-64D in Neuroblastoma SK-N-SH Cells

Sigma receptors are a unique pharmacologically defined class of drug-binding proteins comprised of the Sigma-1 and Sigma-2 subtypes. To date, they have been found in the CNS, various peripheral organs and are highly expressed in tumors. They are associated with cellular processes ranging from modulation of calcium and neurotransmitter release, to growth, apoptosis, and regulation of movement and posture.

Although no endogenous ligand has been identified for either subtype, ongoing studies are shedding light on the signaling cascade of both subtypes. Recent data has implicated sphingolipids as the second messengers generated as a result of sigma-2 stimulation of a Sphingolipid Ceramide N-deacylase-like enzyme. The sphingolipid second messenger sphingosylphosphorylcholine (SPC) and ceramide have been implicated in cell proliferation and survival as a result of acute stimulation and apoptosis via chronic stimulation of the Sigma-2 Receptor respectively.

In this study, we have focused on the effects of the sphingolipid second messenger sphingosylphosphorylcholine in parallel with the Sigma-2 selective ligand CB-64D under serum starvation conditions on the neuronal cell line SK-N-SH.

The field of pharmacology and Sigma Receptors in this conference represents a highly underrepresented discipline by minorities. I hope that my research inspires others like myself to pursue careers in research and the sciences.
Effects of large and small envelope protein expression level and ratio on the secretion of hepatitis B viral and subviral particles.

Over 350 million people worldwide have persistent HBV (hepatitis B virus) infection. That can lead to cirrhosis and hepatocellular carcinoma which increases their risk to develop liver cancer by 100 fold. HBV produces three envelope proteins: large (L), middle (M), and small (S) which are collectively called hepatitis B surface antigen (HBsAg). All three envelope proteins are present on the surface of virions, the 42-nm infectious particles containing an outside lipid envelope and an inner nucleocapsid enclosing viral DNA and polymerase. A unique feature of hepatitis B virus (HBV) is the secretion of excess viral envelope proteins alone as subviral particles (HBsAg), the biological significance of this feature remains unknown. The aim of this study was to investigate the effects of expression level and the ratio between large (L) and small (S) envelope proteins on viral/subviral particle secretion, with a goal of drastically reducing the secretion of subviral particles while maintaining virion secretion. We found that an optimal L/S ratio was required for efficient virion secretion. Wildtype levels of virion secretion could be reached when HBsAg secretion was reduced to 30% of the wild type virus. Our findings confirm the importance of the L/S ratio on virion secretion, and suggest the feasibility to markedly reduce subviral particle secretion while retaining virion secretion. We plan to down regulate the expression of L and S proteins in a single replication/secretion construct and monitor the impact on virion secretion.

Does Mayoral Control really equate to School Board Diversity?
The Effect of Mayoral Appointments on School Board Diversity

Over the past two decades, education reform policy in urban districts has evaluated everything from curricular reform to governance structures in their relation to abysmal student achievement. One such governance structure that has risen to prominence is known as mayoral control. In a mayoral controlled district the office of the mayor and the school district merge, and the mayors takes on new responsibilities such as appointing the school board. Proponents of mayoral control claim that by having the mayor appoint school board members rather than the community elect the members, the governing board becomes more heterogeneous and has a wider array of expertise. By comparing the occupational backgrounds of the school board members in the largest 25 districts in the country (some elected, some under mayoral control), this study seeks to evaluate the validity of the proponents claim.
Elizabeth Hoover, 6th Year Ph.D.
Department of Anthropology

Redeeming Poisoned Spaces: Responses to Environmental Contamination and Health Research in the Mohawk Community of Akwesasne

The Akwesasne Mohawk reservation, which straddles the NY/Canadian border, is adjacent to the General Motors Superfund site on the St Lawrence River. Scientists who conducted numerous health studies on the residents concluded that residents of Akwesasne should avoid eating local fish and gardening near the site to avoid further chemical body burdens. This sudden shift in diet and activity has led to other health problems like diabetes, and culture loss. My dissertation project is investigating the effect of environmental contamination and health research on the identity and culture of this Mohawk community, and attempts by some community members to reclaim traditional activities and repair the human/environment rift. My research focuses on four areas: 1) the community’s response to both the research process and the manner in which health studies results were reported back to them; 2) how Akwesasronon perceptions of their bodies changed due to the discovery of contamination, and how this can expand the current anthropology of the body 3) how an altered relationship with the environment has affected community identity and 4) on current subsistence revival efforts being implemented at Akwesasne, and their efforts to repair this altered human/environment relationship.

Noelle Hutchins, 1st Year Ph.D.
Department of Pathobiology

The Modulation of Type I Interferons in Human Polyomavirus Infections

JCV is a polyomavirus that naturally infects 30-80% of the adult population. JCV infection remains latent in immunocompetent individuals, yet, becomes reactivated in AIDS and immunocompromised patients. Upon reactivation, the virus travels to the central nervous system, infects oligodendrocytes and causes progressive multifocal leukoencephalopathy (PML). The inability to inhibit JCV infection remains a major therapeutic limitation. Recent advances in the field are aimed at providing alternative strategies to block JCV replication. The focus of this study is to examine how JCV infection responds to host immune defenses, particularly type I interferons (IFN-α/β). Type I IFNs are cytokines mainly produced by all cells in response to viral infection, and activate downstream signal transduction pathways, resulting in the transcription of antiviral genes. Our central hypothesis is that JCV inhibits Type I IFN release, and shuts down Type I IFN signaling, in order to maintain persistent viral replication in the host. Preliminary studies have shown that JCV inhibits the production and release of IFN-β, and IFN-β treatment impairs the production of JC viral antigens in human glial cells. These results suggests a novel mechanism of viral evasion of host immune responses, and provides insight into the administration of type I IFNs to treat JCV infections.
Heather Lee, 1st Year Ph.D.
Department of American Civilization

Chinese-American Restaurants:
Reading Assimilation as Intervention that Remakes Normativity

My research will analyze and historicize the immigrant origins of American culture in order to understand why popular memory recognizes the ethnic heritage of some practices while disavowing those roots in other cases. This research will help us understand the national political and cultural moment that gave rise to Chinese-American restaurants. Instead of judging their authenticity, I am searching for the historical and social reasons why Chinese food became popular during the early twentieth-century. This knowledge helps explain present-day Americans’ obsession with the authenticity of Chinese food and helps elucidate the early history of ethnic restaurants. My research provides an understanding of the ingenuity of racially oppressed minorities in the US that gives weight to their viewpoint. Though politically disenfranchised, their efforts to survive economically changed the way Americans consumed food and their attitude toward people of color. We receive a view of immigrants that challenges the long-held stereotype that racial minorities were self-isolated and refused to join the mainstream. This historical analysis of Chinese-American restaurants focuses on the ways in which oppressed groups assimilated and claimed America for themselves.

Courtni Newsome, 4th Year Ph.D.
Department of Pathobiology

The effect of β-glucan pretreatment on TNF production in vivo

The soluble β-glucan preparation PGG-glucan has been shown to prime antimicrobial functions, including increasing the oxidative burst response, microbicidal activity, and the chemotaxis of leukocytes, without eliciting the production of proinflammatory cytokines. In vitro experiments using primary macrophages and macrophage-like cell lines have demonstrated that pretreatment with PGG-glucan can reduce the production of TNF message and protein upon LPS stimulation. The purpose of this study was to examine the effect of PGG-glucan pretreatment on LPS-induced TNF protein production in vivo. The hypothesis is that PGG-glucan pretreatment will result in a reduction of LPS-induced TNF-protein levels. To test this hypothesis, CD-1 mice were pretreated with a single dose of PGG-glucan 40 hours prior to stimulation with LPS. Following LPS stimulation, serum TNF protein levels were measured by ELISA. Our data suggest that PGG-glucan pretreatment of mice can attenuate the LPS-induced TNF production in serum. These results indicate that PGG-glucan can stimulate cellular immune function while inducing suppression of proinflammatory cytokines in vitro and in vivo. These data and future studies may identify a pharmacological intervention that allows cells of the innate immune system to be primed while not overproducing inflammatory cytokines.
The Effects of CXCL9 and CXCL10 on CD8+ T cells Effector Functions during Murine Cytomegalovirus Infection

The protective function of CD8+ T cells against MCMV infection has been well documented and consists of the production of IFN-γ and TNF-α during late acute infection. The expression of monokine induced by interferon gamma (Mig/CXCL9) and interferon gamma inducible protein (IP-10/CXCL10) are important in recruitment of MCMV-specific CD8+ T cells into the liver. This migration is dependent upon the expression of CXCR3, which is the known receptor for these IFN-γ inducible chemokines. Although the mechanism of CD8+ T cell recruitment to the liver during MCMV infection has already been assessed, it is not known what the effector functions of these cells are at the site of infection. Antibody-mediated neutralization of CXCL9 and studies using mice deficient in CXCL10 will demonstrate if these ligands regulate T lymphocyte effector functions during MCMV infection. Understanding these events that are important for defense against viral infection will help to define a critical cascade for protection during infection.

A Model of Force Generation in a Self Assembling Toroidal Cluster of Cells

The differential adhesion hypothesis says that once no external forces are present, cells will spontaneously self assemble into spheroids to minimize surface energy and maximize adhesion. Recently it has been shown that single cell suspensions can self assemble into more complex geometries. My work aims at gaining a deeper insight into self assembly by a thermodynamic approach. The goal is to create a mathematical model that addresses the time evolution and stability of various cell suspensions seeded into agarose gels with different recess morphologies. It would predict, within a certain level of accuracy, the outcome of self assembled structures under prescribed conditions. Self assembly is an important process in the formation of functional tissue. Therefore, studies such as this advance the ability to mimic the formation of micro tissue and create new possibilities in fields such as tissue engineering and cancer biology.
Andrea Owens-Jones, 2nd Year Ph.D.
Department of Political Science

Historic Preservation and the Economic Redevelopment of the Auburn Avenue Historic District.

The Auburn Avenue neighborhood in Atlanta, GA has strong socio-political significance to the city of Atlanta with it being home to some of the city's oldest churches and civic groups as well as the birthplace of Dr. Martin Luther King, Jr. Its designation as a local landmark district in 1989 allows the city of Atlanta to protect and preserve important historical structures throughout the area. What I seek to examine in this paper is how the designation of urban Black neighborhoods as historic districts affect Blacks' ability to both preserve and revitalize their communities. I use the Auburn Avenue Historic District as a case study to explore how Blacks can use historic preservation as a tool to revitalize their inner-city neighborhoods. This paper reveals the challenge and significance of preserving structures that are historically important to Blacks and the implications this has for urban revitalization.

Christopher Peete, Master’s of Public Health
Department of Community Health

Using Aggregate Data Analysis to Further Improve the Diabetes Outpatient Education Program of Rhode Island

Participants in the Rhode Island Outpatient Education program have been diagnosed with any form of diabetes and, thus, also encouraged to visit a certified diabetes outpatient educator (DOE) at least once a year. In addition to providing self-management information, educators are also asked to record aggregate data and submit it to the Rhode Island Department of Health. This information is recorded, analyzed, and reported to the DOE Board, which uses it to gain a demographic understanding of which clients are being encountered, how often, and to what specialist were they are referred. Aggregate data was collected from certified DOEs for the months of April, May, and June in 2007. The number of individuals that fit into the various demographic and diabetic categories were calculated and converted into percentages. This information was compared to that of the previous two years. Results displayed a larger number of female encounters than male and a significantly larger number of non-Hispanic white encounters than any other ethnicity. The comparison of results for years 2005-2007 showed that there is a recurring trend in what demographic groups were encountered by educators. The conclusion was drawn that there existed a need to reach more of the minority populations.
Roland Pongou, 3rd Year Ph.D.
Department of Economics

Cultural Distance, Physical Distance and HIV/AIDS in Ghana

We find that a higher representation of an ethnic group in a community decreases the likelihood of HIV infection among its members. This effect is decomposed into the role of risk insurance, social surveillance, and quality of matching determined by ethnic preferences in a long-term relationship, each of these factors being expected to prevent violation of social norms such as sexual fidelity. This exercise is replicated using a newly constructed index of geocultural distance, which is a population-weighted physical distance between an individual and other members of her ethnic group in the country.

Victoria Ruiz, 1st Year Ph.D.
Department of Pathobiology

Elucidating the role of regulatory T lymphocytes in H. pylori-induced gastric cancer.

*Helicobacter pylori* (*H. pylori*) has been identified as a major causative agent in gastric carcinomas. *H. pylori* infection is common worldwide, acquired during childhood and unless treated, infection can persist for years causing a cascade of gastric epithelial damage leading to gastric carcinoma. *H. pylori* pathogenesis may be directly correlated with the host immune response. *H. pylori* infected individuals have elevated levels of a special subset of *H pylori* specific CD4+CD25high regulatory T-helper lymphocytes (Treg). They function in regulating autoimmune responses and maintaining immune homeostasis. Recent in vivo and in vitro studies have shown regulatory T lymphocytes favor *Helicobacter pylori* persistence by actively suppressing CD4+ memory T-cell responses. Studying the role of these lymphocytes may be critical for understanding the mechanism of *H. pylori* persistence and the development of *H. pylori*-associated diseases including gastric cancer. The objective of the project is to elucidate the role of regulatory T lymphocytes in *H. pylori* infection in a novel in vivo gastric cancer model. We hypothesize that regulatory T cell populations will be elevated in our *H. pylori*-infected p27−/− gastric cancer mouse model. This increase in regulatory T lymphocytes will support *H. pylori* persistence.
Racquel Sherwood, 3rd Year Ph.D.
Department of Molecular Biology, Cell Biology and Biochemistry

The Microtubule Motor Protein Kar3 is Required for Normal Mitotic Division and Morphogenesis in Candida albicans

The kinesin-related protein Kar3p is a conserved molecular motor that plays diverse roles in microtubule-directed nuclear movement. Previously, it was shown that Candida albicans Kar3p is critical for nuclear congression and fusion during mating. Here, we demonstrate that C. albicans Kar3p also plays a critical role in mitotically dividing cells, as kar3 cells grow slowly and exhibit reduced viability compared to wildtype cells. Slow growth of kar3 cells was due, at least in part, to delayed cell cycle progression; cells accumulated in anaphase as large budded cells still undergoing nuclear division. Loss of Kar3p also led to altered cell and colony morphology, including diminished filamentation on Spider medium and an increased tendency to form pseudohyphae in liquid culture. Consistent with a role in mitotic division, Kar3p was shown to localize to the spindle pole bodies throughout the cell cycle. Finally, kar3 cells exhibited aberrant and unstable mitotic spindles, a finding that accounts for the delay in cell cycle progression and the decreased viability of these cells. We propose that the altered morphology of kar3 cells is a direct consequence of their delayed progression during anaphase, and discuss the requirement for Kar3p-mediated nuclear migration during both mating and mitotic programs.

Karol Silva, Master's of Public Health
Department of Community Health

How Urban Students’ Laws of Life Relate to Social Skills and Academic Competence

The purpose of the present study is to determine if there are any ethnic differences in the expressed importance and value of family, sacrifice, perseverance, sympathy, and respect, between African American and Hispanic fifth grade students in ten public schools in urban community of Plainfield, NJ. A secondary purpose of this study is to investigate how the family network, sacrifice, perseverance, sympathy, and respect, are related to successful social behaviors and academic competence in the classroom. The Social Skills Rating Scale was utilized to measure student social skills (cooperation, assertion, and self-control subscales). Overall, there were no ethnic differences in the expression of family, sacrifice, perseverance, sympathy, and respect, between African American and Hispanic students. Hispanic females were more likely than their male counterparts to express importance and value of the family network; likewise, African American females were found to score significantly higher than African American males in measures of sacrifice. Hispanic students were more likely than African American students to score significantly higher on measures of overall social skills and self-control subscale. When controlled by gender, Hispanic females continued to score significantly higher than African American females on the self-control subscale; furthermore, Hispanic females were also found to score significantly higher than African American females on the assertion subscale.
Margaret Stevens, 5th Year Ph.D.
Department of American Civilization

Red International and the Black Caribbean: 1919-1939

Scholars have widely documented how Western metro poles such as Paris, London and New York City were international hubs where African radicals from across the Diaspora engaged—or disengaged for that matter—with Communist praxis. Yet scant study has interrogated the emergence of this seeming “Black” and “Red” miasma within subaltern epicenters inside the Caribbean, particularly in Haiti, Cuba, Puerto Rico, and certain islands in the British West Indies. Moreover, they bore a reciprocal relationship to political developments in New York City. Shifting the center of gravity toward this Caribbean-American space points toward a more fluid, decentralized form that this amalgam of political forces might have taken. At a minimum my research might complicate our current understandings of both “center” and “periphery” in the fields of American Studies, Africana Studies and U.S. History, in relationship to Black radical and Communist history. My project is a visual representation of the alternative mechanisms for envisioning the transnational, cross-cultural boundaries that Black radicals in the Caribbean and New York City traversed between the years of 1919-1939. This poster will “center” the “periphery” by placing the Caribbean, literally, at the center of the presentation, while including New York City at the “margins.”

Chenjie Xu, 3rd Year Ph.D.
Department of Chemistry

The Size Influence of Gold Nanoparticles to Computed Tomography Imaging Ability and Their Optical

Metal particles in the nanometer size regime have received great attention because of their morphology-dependent properties. In the last few decades, controlled synthesis of different size and shape metal nanoparticles with high purity and monodispersity has been achieved for the applications in nanoscience and technology. Gold nanoparticles have been tested as a computed tomography (CT) contrast agent for X-rays. With its high absorption coefficient (at 100KeV: gold: 5.16cm²g⁻¹; iodine: 1.94cm²g⁻¹; soft tissue: 0.169 cm²g⁻¹; and bone: 0.186 cm²g⁻¹), gold provides about 2.7 times greater contrast per unit weight than the traditional iodine based agent. Moreover, it’s also a good candidate for optical imaging. However, no one has investigated the relationship between the size of particles and their imaging ability. Thus, we prepared gold nanoparticles with different sizes ranging from 4nm to 80nm. The results showed that the higher mean density of gold compared to the background results in a contrast differential ΔHU (HU = Hounsfield units). We also found out the bigger the particle, the higher contrast we got under the same mole concentration. Uptake and Toxicity of gold particles was also examined to study the relation between toxicity and size. Finally, the reflection ability of different gold particles was compared. We believer our study about the size influence will benefit nano-medicine field and help optimize the design of gold based contrast agent.
Special Thank You To . . .

Carthene Bazemore-Walker  
Mary Bates  
Mary Black  
Michele Blanchette  
Wayne Bowen  
Monique Brown  
Rebecca Burwell  
James Campbell  
Vania Cao  
Geeta Chougule  
Diane Chouinard  
Orly Clerge  
Lauren Coates  
Kami Crary  
Barbara Dailey  
Sarah Dawson  
Cherrie Deangelis  
Chad Gaits  
Katrina Gamble  
Alicia Germani  
Jodie Gill

Women in Science and Engineering:

The New Scientist Program (NSP)  
RI-INBRE: Centralized Research Core Facility

Carrie Honeman  
Evelyn Hu-Dehart  
Noelle Hutchins  
Deborah Lister  
Sam McNeal  
Tania Nevers  
Asha Nurse  
Andrea Owens-Jones  
Helen Pallas-Viola  
Nancy J. Picard  
Christopher Peete  
Marisa Quinn  
Elena Riverstone  
Margot A. Saurette  
Racquel Kim Sherwood  
Kisa Takesue  
David Targan  
Scott Turner  
Jim Vincent  
Valerie Wilson

"The smallest act of kindness is worth more than the grandest intention." –Oscar Wilde
A Very Special Thank You To Our Sponsors

The Graduate School
Graduate Student Council
Office of the President
Office of Institutional Diversity
The Leadership Alliance
Department of Africana Studies
The Third World Center
Center for the Study of Race and Ethnicity in America

A Very Hearty Thank You To Conference Committee Members

Ravi Kumar Perry, Chair
Monique Brown
Orly Clerge
Noelle Hutchins
Sam McNeal
Andrea Owens-Jones
Racquel Sherwood