



First Annual Multicultural Undergraduate Research
Art and Leadership Symposium

March 7, 2015
Lory Student Center

Colorado
State
University

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Acknowledgements

- MURALS Committee:
 - Dr. Raymond Black, Ethnic Studies
 - JoAnn Cornell, Asian/Pacific American Cultural Center
 - Dr. Oscar Felix, Diversity and Enrollment and Access
 - Dr. Michelle Foster, Food Science and Human Nutrition
 - Whitley Hadley, Student Affairs in Higher Education
 - Bridgette Johnson, Black/African American Cultural Center
 - S. Mo Moreira, Office for Undergraduate Research and Artistry
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 - Dr. Kyle Oldham, Housing and Dining Services, Residence Life
 - Jimena Sagas, Morgan Library
 - Dr. Malcolm Scott, School of Social Work

- Graduate Student Evaluators
 - Trevor Aguirre, Mechanical Engineering
 - Kimberly Allison, Education and Human Resources
 - Theresa Barosh, Ecology
 - Dominique David-Chavez, Human Dimensions of Natural Resources
 - Whitley Hadley, Student Affairs in Higher Education
 - Michael Nguyen, Chemistry
 - Beatriz Salazar, Student Affairs in Higher Education
 - Vanessa Selwyn, Cell and Molecular Biology
 - Tolu Taiwo, Student Affairs in Higher Education

- Marketing
 - Sarah Kingery, College of Natural Sciences, Dean's Office

- Photography
 - Elliot Foust

Welcome!

Welcome to our inaugural Multicultural Undergraduate Research Art and Leadership Symposium, we truly appreciate your presence. With MURALS, we are intentionally reaching out to students of color in various disciplines and exposing them to a variety of undergraduate research opportunities. Mentoring, presenting research, networking, and learning about multicultural leadership are four main aspects of the program.

A special acknowledgement to all the student participants, graduate student evaluators, and the Colleges and Divisions who supported these endeavors. This event would not have been possible if we did not work together to enhance student's educational experience at Colorado State University.

Bridgette Johnson, Director of Black/African American Cultural Center

And a Special Thanks to our sponsors:

- College of Agricultural Sciences
- College of Business
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- Colorado State University Bookstore
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- Morgan Library
- Office of the Vice President of Diversity
- Office of the Vice President for Research

Workshops

Round I, 9:00-10:15:

Session I, LSC 308-310: Student Meets Graduate School: Experiences and Reflections of 4 Graduate Students

Theresa Barosh (Moderator), Trevor Aguirre, Michael Nguyen, Dominique David-Chavez, and Whitley Hadley will share and discuss their journey to graduate school.

Session II, LSC 304-306: The Ethnic Studies Degree: Why Study Difference and Diversity?, Ray Black, PhD

The Ethnic Studies Degree: Why Study Difference and Diversity This panel will discuss the Ethnic Studies major and career paths including the history of Ethnic Studies and the department here at CSUS, what you study, what our students and graduates are doing with their lives. This interactive discussion about diversity, difference, tolerance and respect within the Ethnic Studies major.

Session III, LSC 328-330: Getting Started on Undergraduate Research, S. Mo Moreira

The Office for Undergraduate Research and Artistry is dedicated to facilitating meaningful undergraduate experiences that expose students to diverse opportunities to work with faculty or industry representatives within their discipline. These opportunities are intended to provide students with an extension of the learning experience beyond the classroom, to foster mutually beneficial relationships between students and faculty and between students and industry, and to impart experience-based credentials to undergraduates seeking to enhance their resume. Learn more about your programs and how we can help facilitate these benefits. For ALL majors and interests

Round II:

Session I, LSC 308-310: Preparing for Graduate School, Jill Putman

Learn strategies to prepare for graduate school.

Session II, LSC 304-306: Tying Your Skills to Careers, Jon Linn

Identify and understand your skills. Learn how to translate them into any career path using your current major.

Session III, LSC 328-330: Navigating Opportunities with Your Story, Kyle Oldham, PhD

Being your authentic self is important to leadership, life and learning. How might you show to navigate opportunities of leadership and your career? Discover keys that can aid in your success.

Presentations

Presentation Session I		
	LSC 308-310	
Time	Participant	Category
1:00 pm	David Hinson	Creative Writing
1:10 pm	Kenny Inthiraj	Science
1:20 pm	Diane Thajeb	Performing Arts
1:30 pm	Colleen McCollum	Science
1:40 pm	Morgan Bierbaum	Humanities
1:50 pm	Break	
2:00 pm	Rachel Taylor	Social Science
2:10 pm	Joei Robertson	Science
2:20 pm	Grace Stamps	Performing Arts
Presentation Session II		
	LSC 308 - 310	
Time	Participant	Category
4:00 pm	Chiara Flores	Science
4:10 pm	Shayla Monteiro	Creative Writing
4:20pm	Connor Whitaker	Science
4:30 pm	Break	
4:40 pm	Christina Hadera & Adrian Jones	Humanities
4:50 pm	Sesugh Solomon	Performing Arts
5:00 pm	Yohana Tuqualo & Onaopepo Kolahinde	Science
5:10 pm	Diane Thajeb	Performing Arts

Abstracts

Creative Writing

The Mayor's House: Description, David Hinson

“The Mayor’s House” is a story about family dysfunction due to a lack of communication on a variety of fronts. The reader first encounters the Westbrook family grieving over sixteen-year-old Madison Westbrook, whose death a month before the story’s main action causes the three remaining members of her family to retreat to separate corners of the universe: brother James to his bedroom, mother Amber to her bedroom, and father Paul to a house he’s been pretending to sell but uses instead as a buffer against the world. Their refusal to speak to one another in meaningful ways in combination with their inclination to speak only to people outside the family does nothing to bridge the divide. It isn’t until one October afternoon that certain events destroy the Westbrook routine of silence and offer at least the possibility of the kind of communication necessary to ease the pain of a grieving family.

This story does not have a single direct inspiration. It is a combination of several ideas that came over a period of several months, ideas that included a teenager self-diagnosing himself with depression, the history of a town, and a motif using the color gold. The sections about real estate were inspired by sections of Richard Ford’s novel *Independence Day*.

Awaken, Shayla Monteiro

Curl Jung once said, “he who looks outside dreams; he who looks inside awakens.” Identifying myself primarily as a Black, African American woman I have endured the emotional, psychological, and socioeconomic adversities of my culture, not only on my college campus but within my personal life as well. Silently suffocating within the fabric of our nations socially constructed inequalities of racism, sexism, classism, segregation, discrimination, and marginalization, my family ordained was shattered. At the age of nine my mom was incarcerated and I never knew my dad. Burdened to sacrifice my carefree childhood given the unforeseen circumstance, I was forced to raise and transition myself thorough all my ups, downs, twists and turns in my bio-psycho-social development transitioning into womanhood.

Born in the urban heart of Denver Colorado, raised by my extended families social class of secondary low wages, few or no benefits, and little opportunity for advancement flourished a displaced biracial Black, African American, Cherokee, and Portuguese naive girl. With a head full of curls and the weight of the world on my shoulders, accompanied by muffled nights that held me tight as my ambivalent search for a way out of a seemingly silent permanence of life’s darkest hours enslaved me. Time passed, life measured away by clocks, my solitude of mind neglected. I stumbled into countless situations I was not always emotionally or intellectually mature for. Without the guidance of biological parents I took on the identity of an adopted child, who spiraled down a dangerous cycle of self- destruction and defeat. Lost in whirlwind of ambiguity, hopeless, hopelessly searching for a light within my distorted self –perception and absent self-confidence yields the motivation of my creative writing process. Capturing a mural of my internal struggles expedition in its spiritual awakening to self-discovery is my theme of

focus. As a symbolic representation of my life experiences the identity of my hair serves as my platform in my conquest to awakening my inner beauty. Through the identity of my hair as my shadow of darkness, it was not until this past December when I committed to the big chop signified within the Black, African American culture as an inner rebirth of a woman's soul through a natural process of self-exploration.

Striving for the best while journeying through life obstacles, I have been at many crossroads and although I have freedom I am not free. Unlocking the dim pieces of myself lost along the way, fuels my creative writing style of choice to demonstrate this internal struggle in my awakening to escape my past life. Through the expression of poetry specifically in the form of a life poem, which fosters the theme of man can endure any hardship as long as he can find meaning in the experience is the starting point of inner rebirth revolution. Still, passionately lost in finding myself I have achieved a state of awakening called Namaste; Namaste refers to notion that my soul honors your soul. I honor the place in you where the entire universe resides. I honor the light, love, truth, beauty and peace within you, because it is also within me. In sharing these things we are united, we are the same, we are one. Walking in the peace of truths, it is like Curl Jung once said, "he who looks outside dreams; he who looks inside awakens."

Humanities

"The Sacred Underground", Morgan Bierbaum

This paper draws upon scholarly research and personal understandings of Mesoamerican artworks dealing with subterranean spaces and ritual. It examines the religious beliefs of some of the most prominent cultures of their respective time periods in order to understand the conceptual sources for many of their artistic forms. It investigates the importance of space as an element of design as well as the forms and materials that became canon for artworks related to the underground. It also raises the question of how Mesoamerican art can be understood from a Western art historical perspective and the issues of taking these artworks out of their original contexts in order to study them.

I drew upon the scholarly research of some of the most prominent Precolumbianists of the past several decades to establish the foundation for this paper, and supported some of my own hypotheses with this research and personal knowledge of Precolumbian art.

Taking a Stroll through Time: The History of Stepping and Strolling in the African-American Community, Christina Hadera and Adrian Jones

The purpose of our project is to compare and contrast stepping as a dance within the historical African-American fraternities and sororities, also known as the Divine 9 vs. community teams, such as a Christian church step team. Through this project, we have explored the history of this form of dance and its relation to African ancestry. In addition, we will also explore the benefits of being on a step team or participating in this dance and the influence that it has on many young people who are in need of a positive daily activity in their lives. We gathered

data from the different perspectives, both Greek and non-Greek. The data allowed us to sum up our results and show how step is important to individuals, small groups, and communities.

Performing Arts

“Eye for an Eye”, Kayla Banks

“Eye for an Eye” is a structured improvisational dance piece that illuminates a sense of understanding in times of conflict; that relates to human loss met with violence. Structured improvisation is about taking simple movement phrases and repeating them in a spontaneous way. I started my process by recording my footsteps. The pacing sound drove me to a point when I could not walk any further and would hit the wall. The footsteps and thuds against the wall represent gunshots and bombs exploding. In the same recording I kept and used the sound of my crying and exasperated breathe as shock effect to represent pain. I spent time alone in the dark quiet dance studio listening to recitations of the Sura in Arabic and recalled my time in choir singing “Oh Come, Oh Come Emmanuel” and “Keep Your Lamps”, which I used as inspiration for my dance movement phrases. The filming locations were picked out and the movement and shots were correlated with my ideas and my videographer’s ideas to take the audience to a place of war and desolation. Trash is shown in the video shots to relay a wasteland. The dance starts with spinning and the sounds of rumbling wheels on a cobble stone alley represent gunshots and bombs. The uphill shot was to connect the climbing a mountain in search of security or higher ground or reaching a higher level with the Sura recitation dubbed over the walking to avoid putting the Sura recitation to any dance movement because it is forbidden in Islam to dance to the Suras. Each shot alludes to religion, culture or emotion. The dance was filmed in two locations, in Aurora, Colorado, a prairie, dry grassland landscape and the Aurora Reservoir. Each area is symbolic of Israel; that of a desert area and an area with water symbolic of a life source like the Jordan River in contrast to the Dead Sea. I dance alone outside representing the tie of people to land, a spiritual connection of the flesh to the earth. I dance alone to isolate the situation. Isolation provides the sense of digging and searching for answers within a situation. Jesus went up on the Mount of Olives to pray and to find clarity. Dancing this piece alone really represents that feeling of searching for clarity. My body is the conflict fighting to be seen and reconciled representing division. The source of emotion for the piece comes from my own struggles as a being knowing the feeling of being trapped in a situation full of fear. My being helps to drive the movement from understanding a chaotic repetitive situation where one strives for the opportunities to find escape, peace and love. The music is a representation of both sides of the conflict (Israeli and Palestinian for instance and inspiration), pain and discord. Another part of the creative process was interviewing people on the Israel-Palestine conflict. I talked to everyday people about the situation as well as listened to many peace speakers, both Israeli and Palestinian, and I have kept up with reading recent news. I could not get away from reading about ISIS in Syria, Libya and Iraq, which to me shows a world crying for peace and justice. The movement stems from the stories from the interviews relating their pain and opposition and struggle was a part of my job as an artist to relay. What can be interesting for an audience viewer to know is that all of the filming was done in the natural sounds of the area and the music was dubbed over in the video editing process. This was done on purpose to create a discord between the movement and music and then to find those happy moments when the music fit the movement. The filming style can be characterized as surreal in this sense that the piecing

together of clips is meant to be choppy, random and unclear at times but all done with purpose. The film editor and I pieced together the dance phrase clips that went from forward movement to going back to movement that happened before. It has a back and forth feel to it. The attire I choose to wear is about exposure which can relate to having little to hold on to or loss. The overall process of the piece is about being vulnerable and utterly frightened. Vulnerable through the type of clothing that I choose to wear, the open location, the film editing and the topic. I have given myself to this moment, this dance in a time when I do not understand everything that is happening around me, but I am moved by it. I hope viewers can understand that.

“Free Yet Shackled”, Sesugh Solomon

The purpose of this piece was to breathe expansion upon the prompt “Free Yet Shackled.” The spoken word is a dual interpretation derived from separate poets, combined into one solid piece. The orchestration of tempo content and caliber spans the space of metaphysics to socio-economic constraints within the microcosmic scope of, everyday life. The factions of isolation are eccentricized in this motif the result is where Spoken Word meets Art Nouveau.

“Free Yet Shackled” was written within the course of 24 hours, 8 pages, and 1612 words later expanding the symmetry of physical lined paper amidst acknowledging the competition for the BAAC Office at Colorado State University, I immediately began penning my presentation I became energized towards exhibition, sparked by intuition, the pencil guided my wisdom as I delved deep inside the tunnels of my memories emotions contoured to the fabric of my language patterns.

This Spoken Word piece is a symbolic allusion to metamorphosis of a poet. I am not the sole curator of this lexicon, in advent of the competition I knew to be the sole proprietor to interpret the illusory stature of freedom that would so far remove the very foundation upon which the word was built. Therefore a second preparer by the name of Shayla Marie was called forth to present along with me. This poem represents the release of control of my own creative output a desire that is often wrought with discourse, tide and evasion.

This poem represents, that the allegorical and metaphorical delineations of reality are juxtaposed and created by the windows of the viewer that perceive them. Meaning freedom is not nor has there ever been a recovered reason at one hundred percent logic that defines the objective of slavery, shackles for the free shackles for the freeland, freedom for the slaves when they eat from their own hand.

Fantaisie-Improptu in C-Sharp Minor, Diane Thajeb

The theme is Romanticism. This piece is part of a repertoire of Romantic period music I have been working on that includes pieces by Liszt and Schubert as well. Chopin is known as the heart of the Romantic period. His works exemplify the lyricism of the age and he is credited for developing the modern piano style. Because of these traits, I chose this piece to represent the theme. As I worked on this piece I tried to capture the essence of the Romantic period. Chopin once told his students that “Everything must be made to sing”. I used his advice and worked on making each musical phrase similar to speech. For example, when someone is speaking they will pause from time to time to take a breath. I try to reflect that in my performance by giving a little

“breath” between musical phrases. Chopin was a great composer and I hope I captured his spirit in my performance.

Thief of Dreams , Diane Thajeb

This piece follows the story of a girl and a thief. A lullaby begins the piece. Eventually the thief enters and begins to steal parts of the girl’s dream. Enraged, the girl fights back. How will the story end?

Various instruments symbolizes the two characters. The girl is represented by the bells. Strings and a choir is the thief. I used Cubase, a music software, to compose the song. I went with this option because I wanted multiple instruments in Thief of Dreams and I can’t play anything else other than piano. Since my piece has no lyrics, I thought it would be better to have several instruments to represent the characters. That way, the listener can guess what is going on.

Social Sciences

Intersectional Analysis of Body Positivity and Perception, Rachel Taylor

This paper is an analysis on the way body positivity is being discussed in different forums with individuals who hold different identities. The research that is shared and dissected within this paper is important and needed because, there was not much when I collected it for this specific piece. Ultimately if someone reads this paper they will find multiple outlets where research and knowledge surrounding specific marginalized intersecting identities will be found. Early on in this paper an overview of body positivity and its ties to the concept of thin privilege was shared. This is important because it showed the ways in which thin privilege impacts body positivity and the way fat/plus-size individuals are able to move around society. The rest of the paper shares information surrounding the intersections of identities and how different groups experience and perceive their bodies. It was important to save the body positivity and social activism section for the end of this piece, because it can be understood as a call for action, a way for individuals to do self-defining and identity formation on their own terms. It is important to showcase the work that is currently being done in order to dismantle a system that is not supportive of fat queer women of color. The work is nowhere done, however this project shows that by sharing stories, visibility and voice is being given to those who historically within American society have not had a space to do so. One way to add more visibility is to bring together multiple forms of research and directly share it in one piece of academic writing so it is then available for multiple individuals to see and expand their knowledge on.

Visual Arts

“Grey”, Grace Stamps

An ongoing project, "Grey" (2014-current) is my attempt to deconstruct my own identity as a black and white female in the States.

The word "grey" is a playful name for my racial identity (black + white = grey) yet also represents where I fall between my primary cultures—in a "grey zone."

I take popular visual media that deals with black or white issues/culture and formally dismantle the images to literally deconstruct my identity. Often I create many iterations of the same image to further abstract the initial picture. The vibrant colors in my paintings reflect the energetic behaviors/beliefs/actions of a racial group (white/black/multicultural), while the washed out grey figure is me, attempting to integrate. At times my "assimilation" may appear forced—with pigment being poured on my face—or voluntary; violent or passive; recognizable or foreign.

The following works were all inspired by one photograph from the Ferguson riots in late 2014. The paintings are displayed in chronological order. Each work from this series was created with oil paint on canvas.

Science

Inhibition of SMYD3 for Clinical Management of Triple-Negative Breast Cancer

Chiara Alyssa Flores

Breast cancer is a leading cause of death in the world. The triple-negative breast cancer (TNBC) subtype is associated with poorer prognosis than hormone receptor positive subtypes and impacts a disproportionately high number of African Americans. Though more aggressive and invasive than other breast cancers, cytotoxic chemotherapy is often the only effective treatment option for TNBC's. As a result, TNBC represents a serious racial health disparity.

EcoCAR 3 – Converting a 2016 Chevy Camaro into a hybrid electric vehicle

Kenny Inthiraj

Due to increasing demand for petroleum as well as ecological detriment from vehicle emissions, the transition into efficient-dominant forms of energy has become the center of conservation. Hybrid vehicles, which harness electricity, have been in the fold for a while, but targeted toward a small fraction of drivers. The EcoCAR project aims to maintain the performance and integrity of a classic muscle car while reengineering the vehicle to be efficient and eco-friendly. The question is no longer if we can do it, but how with effective design meant to harbor much more innovations in the future. My specific research involves the heart and core of the Camaro, the powertrain. Essentially the powertrain takes energy and turns it into acceleration. The research involved has to do with a lot of testing, analysis, design, and a

constant circulation of the aforementioned tasks. Field testing, vehicle dynamics, and drive-cycle simulations were the first part of the project, while the latter half involved designing, packaging, fabricating, and integrating components. The results: a flexfuel engine coupled with a high powered electric motor using minimal packaging was the choice, with enough horsepower and torque to drive a Camaro from 0-60 mph in less than 6 seconds and huge reductions in greenhouse gases and petroleum consumption. The project is a four year long endeavor and my work only involves the first year of design. But from my area we can develop advanced energy systems which aim to increase efficiency.

A Comparative Analysis of the Health Benefits of Active and Sedentary Movement in Environments of Normoxic or Hypoxic Exposure

Onaopepo Kolahinde and Yohana Tuqualo

Purpose is to determine the physiological factors necessary in order to heighten performance at altitude. Training at high altitude, altitudes higher than the body is familiar with, is famous for aiding athletes in improving their physical performance. Such a training regiment creates two main stressors on the body who work at the same time; the first being the applied workload on the body, and the other being the hypoxia-inducing environment itself. When a person exercises, the working skeletal and cardiac muscles need oxygen to supply the increased energy demand, so oxygen is extracted from nearby blood vessels, decreasing the amount of circulating oxygen. Pairing this phenomenon with decreased available oxygen in the environment decreases the amount of circulating oxygen even more. The goal of this form of training is to provoke adaptations to the skeletal and cardiac muscles of the body to the point where performance at such an environment declines in difficulty overtime. Looking at the current forms of training employed by people today, it is clear that in relation to high altitude training, training with the substitution of high altitude is a definite way of improve cardiac and skeletal muscle function, and performance overall. What isn't clear is if high altitude with the substitution of physical performance would provide the same trend. If the body were to receive decreased amounts of circulating oxygen without the added stressor of an exercising workload, would it still adapt in the same way, allowing for increased performance.

There will be nine visits where the subjects will be subjected to training in either hypoxic or normal oxygen conditions. The selection of the environmental conditions will be randomized. Each visit will then be followed by a visit of sedentary exposure to either a hypoxic or normal environment; here the subjects will simply sit and breath. For either normal or hypoxic training, the subjects will perform 35 minutes of stationary cycling at 65% workload max. For either normal or hypoxic sedentary exposure, subjects will sit and breathe either titrated hypoxic air or room air through a mouthpiece for a period of 35 minutes. In both sedentary and training visits of hypoxic air SaO₂ monitors will be employed to make sure SaO₂ is kept at 78% for the entire 35 minutes. We currently are performing this test on 2 subjects. Both are active young adults; one male, one female.

The study is still being conducted with the first set of data concluding at the end of February, and the second set of data should be finished in April. Based on that timeline, we can give a prediction of what should happen in this experiment and compare that to the preliminary set of data. The first set of data is based on two individuals and gives a spotlight perspective of the hypothesis. This set of information will be presented at MURALS on March 7th. Currently,

we do not have a full set of a data to provide an analysis. All of this will be provided at MURALS.

Although we have no definitive results, we can predict certain conclusions based on what we know about hypoxia and its effects on high-altitude training. We can expect that the subjects will exert more of a workload max in the high-altitude chamber compared to the control level altitude. The variance in workload max will have an expected increase in SaO₂ levels and consumption of oxygen. Where we find the real determinant of high-altitude effects on training is if we can find these same results when the subjects are sedentary. The idea is that the mitochondrial or skeletal dynamics that are effecting oxygen consumption while active will show these same effects while sedentary. Inducing these subjects to the same low-oxygen environments, we should expect the same dynamics to take effect and produce similar results in SAO₂ levels and heart rate. Based on numerical data, we will be able to create a comparative analysis of these two environments and their effects on sedentary and active movement. Based on research done in other studies, we can also start to look at other variables such as hemoglobin concentration and hematocrit value. Looking at Czuba's study, we can see how our results compare to their findings of improved aerobic capacity and endurance performance. The Czuba study compares directly to our research with the two given environments. It also concludes more data on how the variances in altitude training can cause impacts on lactate production

Analysis of The Effects of Knocking out HDAC11 on The Hypothalamic Response to Stress in Mice and Differences in Blood Vasculature Density

Colleen McCollum

Histone deacetylases (HDAC) are enzymes which help with regulation of gene transcription. Depending on HDAC activity, DNA becomes more or less accessible for transcription to RNA and ultimately protein expression. In this study, mice with the HDAC 11 gene knocked out (eliminated from the genome) were compared to control mice. The experiments focused on cFOS, which indicates stress, and PECAM, which is present in blood vessels. Brain sections were labeled for cFOS and PECAM and images were taken of the hypothalamus, specifically the paraventricular nucleus (PVN) and the ventromedial hypothalamus (VMH). The mice were either restrained to induce stress, injected with phenylephrine (PE), or both. Phenylephrine is suspected to have effects on stress response. There were differences by genotype in cFOS labeling of the VMH in mice that received both stress and PE. However, the differences did not extend to the other groups. The effect of the knockout on blood vessel density in the PVN was also investigated, but no significant differences have been found.

Initial Development of a Multi-Plex Immunocytochemistry Protocol for Differentiation of Epithelium, Mesenchymal tissue and Leukocytes in Canine Cytology Samples

Joel Robertson

In the ongoing battle to diagnose cancer, cytology has become a valuable test; causing less pain than a tissue biopsy and a fast response time. Yet, accuracy and misinterpretations due to the resemblance among cell/tumors result in decreased specificity. The use of immunocytochemistry (ICC) procedures is extremely powerful. Having the ability to determine

the presence of an antigen via its binding to a specific antibody, have made these methods important in many discoveries. We propose that validated multi-plex Immunocytochemical procedures, in conjunction with standard cytology, are valuable tools for conclusively and rapidly differentiating ambiguous cell types. Thus, we have designed an ICC protocol capable of effectively detecting cytokeratin (epithelium), vimentin (mesenchymal tissue), and CD18 (leukocytes) markers in mixed populations of canine cells. We began first by purchasing antibodies with demonstrated immunoreactivity for canine tissue: mouse anti-human pan-cytokeratin; rabbit anti-human vimentin; and rat anti-human CD18. Corresponding secondary antibodies specific for the species utilized for the primary antibodies, yet conjugated to different fluorophores, were also obtained. Madin-Darby Canine Kidney Epithelial Cells (MDCK/NBL-2 line), cultured primary soft tissue sarcoma cells (STSA-1) and malignant histiocytosis cell line (DH82 line) were propagated for initial verification using individual antibodies. Next, to find the appropriate combination that allowed for visualization of the individual fluorophores with minimal cross-reactivity, test of varying concentrations of pooled antibodies were conducted. Finally, the selected protocol was applied to mixed populations of cells collected during impression smears of organs. As this process correctly identified cell types of different origins in mixed sample populations, we have confirmed the specificity of the procedure. Having optimized this multi-plex technique, we are continuing our research, working with prospective and banked cytology samples with defined histologic correlations. Once corroborated, we believe this will be an efficient method to broaden and enhance our real-time diagnostic capabilities.

Comparing the Effect of Docosahexaenoic Acid (DHA) Supplementation of Western and Low-Fat Diets on Cardiomyocyte Cross-Sectional Area (CSA)

Connor Whitaker, Amanda Evans, DNR Veeramachaneni, Melinda Frye

Over two-thirds of American adults are classified as overweight or obese, with Hispanic and Black portions of the population having the highest obesity and overweight rates (1). Obesity due to poor diet is associated with left-ventricular hypertrophy, a thickening of heart muscle due to an increase in cardiomyocyte volume, which increases risk of cardiomyopathy. Omega-3 fatty acids have been documented to have cardioprotective properties that may attenuate cardiac hypertrophy in responses to various pathogenic stimuli (2). In particular, DHA, a major long-chain omega-3 fatty acid, has been shown to ameliorate structural and functional maladies in the heart resulting from pressure overload (3), including a decrease in cardiomyocyte cross-sectional area (CSA) (4), however, it is unknown whether DHA intake alters cardiomyocyte structure when combined with a high-fat Western diet compared to a intake of a low-fat diet. To answer this question and examine the effect of treatment duration, we assessed cardiomyocyte CSA in rats in response to Western and low-fat diet intake, both with and without supplemental DHA.

Notes

Schedule

When	What	Where
7:30-8:00	Check In/ Sign up For Workshops	Grand Ballroom, LSC
8:00-9:00	Breakfast	Grand Ballroom, LSC
9:00-10:15	Workshops: Round 1	
	Session I: Student Meets Graduate School: Experience and Reflections of four Grad Students	308-310 LSC
	Session II: The Ethnic Studies Degree: Why Study Difference and Diversity?	304-306 LSC
	Session III: Getting Started on Undergraduate Research	328-330 LSC
10:15-10:30	Break	
10:30-11:45	Workshops: Round 2	
	Session I: Preparing for Graduate School	308-310 LSC
	Session II: Tying Your Skills to Careers	304-306 LSC
	Session III: Navigating Opportunities With Your Story	328-330 LSC
11:45-1:00	Lunch	
1:00-2:45	Presentations I	308-310 LSC
3:00-3:45	Exhibits	Ballroom C, LSC
4:00-5:45	Presentations II	308-310 LSC
6:00-7:00	Awards Dinner	Ballroom D, LSC
	Bridgette Johnson	
	Dr. Ray Black	
	Key Note Speaker: Dr. Antonette Aragon	
	Award Distribution: Dr. Oscar Felix	
7:00	Closing: Dr. Malcom Scott	