December 2013

Student Organizations

“Coming together is a beginning. Keeping together is progress. Working together is success.”

- Henry Ford
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Commitment, responsibility, willingness, honesty, and friendship—these are all common characteristics shared by many members of different organizations at Northern Illinois University. At NIU, it is extremely hard not to be involved with at least one activity. NIU is home to many different organizations and there is at least one organization out there for each and every student.

Want to have your voice and opinions heard? Join the Northern Illinois Student Association. Want to strengthen your faith? Choose from many of the different religious groups on campus like Lutheran Student Fellowship, CRAVE, or Campus Crusade for Christ. Maybe you enjoy sports. Aside from the many intramurals NIU has to offer, there are also unique athletic clubs like the Triathlon Club, Equestrian Team, and Human vs. Zombies. Music, service, Greek life, academic associations, and many more clubs and organizations are found here at NIU and want students like YOU to join. If for some reason you cannot find the right organization for you, then create one! NIU has something to offer for everyone. Joining an organization may seem slightly intimidating at first, but it such a rewarding experience in the end. Through activities and clubs, students make new friends, develop leadership skills, and most importantly have fun!

The theme for this issue is “Rep Your Organization,” in which students applaud and commend their organization or club. The key to “repping your organization” can be summed up in one word—pride. Take pride in your organization or club. This is easy to do; share with a family member the activities your organization participates in, tell a friend about why they should join, and spread the word about your organization around the NIU campus.

Personally, I cannot pick one single organization to “rep,” because I take immense pride in all of them. You might say I am a mutt—a mix of all sorts of organizations. It is this uniqueness and diversity of organizations that makes NIU one of a kind. Taking pride in organizations is extremely important, but we must not forget to take pride in the school that allows such organizations to exist—Northern Illinois University.
Math Club
By Greg Sassi

Math Club. Where do I start with trying to describe the entity that is Math Club? You would think that this would be an easy task. From the outside, it looks like a group of generally eight to ten people meeting up once a week to talk about math. Graduate students regularly attend the club. Pizza is eaten and mathematical ideas are discussed. Sometimes there’s a surprise lecture showing us how little we actually know about a concept. We try to solve problems that other people may not even think of as problems. Some of the ideas are over my head, but people are willing to bring things down to my level. Outside of the meetings, Math Club sells sample math finals near the end of the semester to help people get ready for their finals.

But that is not the only component of the club, oh no. The people that go to Math Club are highly interested in nearly everything associated with the study of mathematics. We all relate in a mutual way, which adds to the experience. I started going there partly for the pizza and partly for the math, but I stay for the friendships.

Math Club: Come for the pizza, stay for the math.
Evans Scholars: A Dream Come True
by Terry Lesyk

The Evans Scholarship is an award of a scholarship to cover tuition and housing. More importantly, it’s a statement of trust on the part of the Evans Scholars foundation and its supporters, and as such is a source of pride for those upon whom it is bestowed. The idea for a caddie scholarship came from Charles “Chick” Evans, Jr. a top amateur golfer of the 1910’s and 1920’s who himself was unable to afford college tuition dropping out of Northwestern University after a year. Chick was firm about never turning professional, his mother suggested he use the money earned from golf to help those who couldn’t afford college, “My mother wouldn’t think of accepting any money unless we could arrange it to be trusted to furnish educations for deserving qualified caddies.” Chick’s dream came true in 1930. The Western Golf Association, the lifeblood of the Evans Scholars program, awarded Harold Fink and Jim McGinnis the programs first scholarships to Northwestern University. Eighty years later, 825 Evans Scholars are currently enrolled at 20 universities. One of the fourteen scholarship houses is located at Northern Illinois University. Being an Evans Scholar here at Northern Illinois and being an Evans scholar in general is so much more than just getting a full tuition scholarship. It’s the chapter house concept – Evans Scholars living and learning together and sharing a bond of fellowship - which makes the program unique. It is knowing that I have been given an amazing opportunity to attend college and that there is a community of people on and off the golf course that are willing to help every step of the way both while I am in school and when I start my professional career that make this scholarship truly unique and life changing. At Northern there are 42 Evans Scholars, as a house we participate within the university joining clubs and organization, hosting philanthropic events, and serving our community. Having been given so much, it is important for us to give back. Last spring we hosted a Saint Baldrick’s event fundraising over $2000. Every year, we host two blood drives and on weekends and days off many scholars volunteer their time within the community. Together we represent an educational institution seeking to teach men and women to live and work with each other and to instill in them the ability to embrace individual differences and to respect individual freedoms.
The Lincoln Laureate Student Award
By Sarah Stuebing

The Lincoln Laureate Student award is the highest honor awarded by the state of Illinois; and as an NIU student, you are eligible to receive it. Every year, the Lincoln Academy of Illinois awards the most outstanding graduating senior from each four-year, degree-granting institution in Illinois with a ceremony at the state capitol, a medal to be worn at graduation, and a scholarship.

My name is Sarah Stuebing, and I am NIU’s 2013 Lincoln Laureate. I have to start off by saying thank you, because I am tremendously honored and humbled by this award, and the experiences that I have had at NIU that have led me to this point.

If there is only one message that I hope to convey about NIU, it is that anything is possible here. I have had the privilege of conducting research in four different departments, three different countries, and with horses, rats, dogs, and monkeys through NIU. I have been able to be involved in student organizations, and even found one of my own. I have served as an ambassador for the university, and as a volunteer within the community. I have taught horseback riding and Sunday school throughout my time at Northern, and have mentored NIU students along the way.
My time at Northern has been an unforgettable one. At the start of my college career, I never could have imagined that I would study abroad in Scotland, or spend a summer working with monkeys and pumas in Argentina. I could not have imagined presenting at multiple research conferences, speaking in front of 4,000 people, or being published on a research article. And yet, I was able to do all of this and more at NIU, thanks to the help and support of faculty mentors, the Honors Program, the Office of Student Engagement and Experiential Learning, and the Study Abroad Office, just to name a few. NIU has invaluable resources available to all of us, and I hope you take the time to make use of them.

Now, how can you become the next Lincoln Laureate? Work hard, be involved, and find your passion. If you are able to find your passion and pursue it, all the rest will fall into place. Find faculty to support you and dreams, and never let anyone deter you from trying. And, as you approach the end of your junior year, ask a faculty member to nominate you for the Lincoln Laureate award.

I won’t say that this journey toward the Lincoln Laureate award is always easy, but it can be done. People have often asked me how I have managed to do the many things that I have, and I always answer by saying that I simply have crazy ideas, and I work hard to try them out. So, remember that anything is possible here at NIU, and I look forward to reading about your accomplishments as the new Lincoln Laureates.
The Dark Side of Mentoring
By Rory Johnson

I: Abstract

This project is about negative experiences in mentoring relationships. A mentoring relationship is a relationship between an experienced member of an organization (mentor) and an inexperienced member (protégé) in which the mentor helps prepare or advance the career of the mentee (Kram, 1986). A negative mentorship would be a relationship characterized by dysfunction between the mentor and protégé. Negative mentoring has typically been explored from the just mentor/protégé’s points of view, however not often from both. Dr. Finkelstein and I will be using an archival data set from a formal mentoring program to longitudinally study both the mentors’ and mentees perspectives regarding problems that emerged in the relationship. Further, we will look at whether different numbers and types of problems were related to early termination from the program. The data we will use comes from a year long, state-wide mentoring program in Colorado that was organized by professors from Northern Illinois University and Colorado State University. We will analyze the data to see if certain patterns of problems that emerged in some mentoring relationships can help us understand better who terminated the mentorships and who continued and to see if the mentors and mentees had different perspectives on relationship problems.

II: Project Description:

Background and Context:

A mentoring relationship is a relationship between an experienced member of an organization (mentor) and a new or less experienced member (mentee/protégé) of the organization. The mentor provides either professional and/ or personalized guidance to the protégé and helps them gain experience in their particular field or organization (Kram, 1986). Negative mentoring relationships could happen due to negative relations between them, not being compatible, deliberate sabotage of each other, or other problems (Eby et al, 2000; Eby and McManus, 2004; Eby et al, 2004; Eby et al, 2008). A negative mentoring relationship is characterized by negative mentoring experiences. Eby et. al. in their development of a taxonomy for negative mentoring experiences, operationalized mentoring experiences from the protégés’ perspective as separated episodes that happen between the protégé and their mentor, and the mentors “characteristic manner of interacting with protégé or mentors’ characteristics that limit their ability to effectively provide guidance to protégés” (Eby.et. al, .2000, p3). Negative relationships have been operationalized into other sub-categories. The first category is dysfunctional relationships, which are characterized by malice on at least one parties part. The second category is ineffective relationships, where the intentions are positive however due to interpersonal problems the relationship doesn’t work. A third is a marginally effective relationships that are vacillating between effective and ineffective (Eby and McManus,2004; Ragins et al., 2000 ). Half of the participants in Eby’s study responded to have been involved in at least one negative mentoring relationship (Eby et. al. 2000). Scandura (1998) theorized that negative mentoring relationships could harm not only the protégé, but the mentor as well and even affect the organization in which it occurred.
Significance and Impact:

Negative mentoring relationships are still a relatively under-explored area of mentoring. The protégé’s perspective (Eby et al, 2000, Eby et al 2004, Eby and McManus, 2004) and the mentor’s perspective (Eby et al, 2008) have both been explored; however, there has not been extensive research from both the mentor’s and protégé perspective. Our research will be able to isolate individual mentoring episodes (meetings) from both the mentor’s and protégé’s point of view and observe the differences in how they react to the incident. Because our study is a longitudinal study, we have the ability to study the progression of the mentorship, specifically where problems occur as well as how they affect the termination of some of the mentorships. Scandura (1998) relates that in some cases, negative mentoring relationships can consist of psychological abuse or even physical abuse in harassment cases. Better understanding of the relationships could help the prevention of the negative mentorships and thus prevent some of the negative consequences of the mentorships.

Research Questions:

The present study will specifically analyze problems in the mentoring relationships. We will also examine (a) differences in responses by mentor and mentee in each pair where there were data from parties, (b) differences over time throughout the program, and (c) differences between those who made it through the entire program as compared with those who dropped the program early.

Methods:

Data to be used in this study was originally collected in 2007-2008 as part of the evaluation of a formal mentoring program created by researchers at Northern Illinois University and Colorado State University in order to study formal mentoring processes over the course of a one-year program. The data collected from participants in the largest of three cycles of this program will be examined here. Participants included 100 mentors (59% female, ages 30-66, 85% Caucasian) and 100 mentees (72% female, ages 24-61, 73% Caucasian). Participants were requested via email to respond to a survey link once per month following their monthly mentoring meeting with their partner. This short survey asked how long they met, how much time they spent working toward goals, if the mentor did anything that stood out as specifically helpful, and if any problems arose.

The present study will specifically analyze the answers to the “Are there any problems occurring with the relationship?” I will be reviewing all responses to the focal question several times and look for themes emerging from the data. I will then create
codes for the themes in the data so that each response can be coded by only one code. Dr. Finkelstein will then use my coding scheme to re-code the data (without knowledge of my coding results). Dr. Finkelstein and I will then meet to resolve any disagreements in coding and adjust any codes as necessary. I will then compare the number of problems in each category for mentors and mentees overall and tabulate how often they agree within the pair. After that, I will compare the frequency of problems in the early stages of the relationship to the frequency of them in later stages. Lastly, I will examine whether there are more and/or different problems listed for those who stayed in the program compared with those who left.

Outcomes

One outcome will be a poster presentation at Undergraduate Research and Artistry Day which will be an overview of my research project. The poster will include graphs, conclusions, and the details of the project. If the research yields valuable findings, the findings of the project, with Dr. Finkelstein’s help, could possibly be sent to a regional or national conference, and submitted to an academic journal.

III: Literature Cited


IV: Proposed Timeline

**November 15**
- turn in proposal

**November 29**
- I give Dr. Finkelstein first draft of IRB form to edit
- I continue reading literature

**December 6**
- Dr. Finkelstein submits final IRB form to IRB representative in psychology

**December 13**
- Dr. Finkelstein data set in usable format for me.
- I continue reading literature

**Over Break**
- I complete literature review
- I and Dr. Finkelstein finalize set of research questions and hypotheses
- I begin to review data and record any questions for Dr. Finkelstein

**January 17**
- Dr. Finkelstein and I meet and review all questions about data

**January 31**
- I complete my first set of data codes and the first round of the coding process

**February 14**
- Dr. Finkelstein completes data check we schedule meeting to discuss agreement and re-coding.

**February 28**
- I write up section on coding.
- I look at whether more problems reported for drop outs than Non-dropouts
- I look at whether themes are different for drop outs and non-dropouts

**March 14**
- I look at differences in themes between mentors and mentees overall and in pairs. I look at differences in themes over time.

**March 28**
- I continue writing up results and working on poster
Research Rookies Proposal

By Lydia Moore

Abstract:

Recent studies targeting the microenvironment of carcinomas have discovered that toll-like receptors can induce cytokines from immune cells and inhibit tumor growth. Toll-like receptors (TLR) are pattern recognition receptors (PPR) that play a key role in the innate immune system. There are ten functional TLRs in humans. TLRs are of significance because new studies propose that these receptors play a pivotal role in adaptive cross talk and chronic inflammatory conditions. They are expressed in various malignancies and aid in tumor progression. In the Elsawa lab, the main focus is on tumor associated inflammation and the tumor microenvironment. The lab focuses on understanding how inflammation promotes the proliferation of cancer cells. For my project, I will be focusing on Hepatocellular Carcinoma (HCC), a disease characterized by the transition of cells from an epithelial phenotype (cells lining the tissue) to mesenchymal phenotype (more aggressive stem cells that can differentiate into a variety of stem cells). My project is looking at the differences, if any, that are present in expression of inflammatory receptors (TLR 1-10) on two groups of HCC cells, epithelial and mesenchymal. Information provided from this experiment will expand the understanding of HCC biology and mechanisms that promote inflammation in this disease.

Project Description:

The Elsawa lab investigates the expression of inflammatory cytokines in the microenvironment of cancer cells. The lab focuses on understanding how inflammation promotes the proliferation and survival of cancer cells. The overall objective of my project is to test the expression of TLRs on the two groups of HCC cells.

Background and Context

Hepatocellular Carcinoma (HCC) has an average of 750,000 new cases a year and is the third most common cause of cancer death (Zheng, et al 2012). It is the most frequent type of liver cancer observed. Since there is a high rate of metastasis recurrence after liver resection, it is important to expand our understanding of HCC biology in order to develop new therapeutic strategies to combat this disease (Zheng, et al 2012). Typically, HCC occurs in patients with a history of chronic liver diseases, which promotes an inflammatory microenvironment. It is this microenvironment that plays a critical role in the processes of tumor invasion, epithelial-mesenchymal transition (EMT), and metastasis (the growth of secondary tumors in areas far from the original tumor) (Boi, et al 2013). The HCC microenvironment consists of stromal cells, growth factors and inflammatory cytokines, and extracellular matrix proteins (Capece, et al 2012). In many cancers, the chronic inflammatory state appears to be necessary for the
initiation and progression of cancer. HCC is an example of an inflammation-related cancer. Inflammation in liver cells occurs when recruitment of immune cells to the liver persists. When the liver is damaged, cells are recruited to repair the damage and regenerate the liver. This process involves deregulated growth and death of liver cells (Capece, et al 2012).

Recently, epithelial-to-mesenchymal transition (EMT) has been found in the progression of various cancers including Hepatocellular Carcinoma. EMT consists of the transformation from epithelial cells (cells lining the tissue) to mesenchymal cells (more aggressive stem cells that can differentiate into a variety of stem cells). This process plays an important role in tumor-metastasis (Jing, et al 1998).

In addition, toll-like-receptors are proteins that activate the immune cell response. Scientists are currently studying the ten functional TLRs in humans because they have a significant role in adaptive cross talk and inflammation in the tumor microenvironment. Interestingly, although TLRs are have been known to be expressed on innate immune cells such as monocytes, macrophages and dendritic cells, their expression has been detected on several malignancies and they have been shown to play a role in tumor progression (Boi, et al 2013). Uncontrolled TLR signaling can allow the malignant cells to proliferate and evade immune responses, while other responses can induce anti-tumoral immune responses to suppress tumor progression.

**Statement of Significance**

As cancer continues to affect more and more people around the world, new techniques for combating cancer must be developed. The tumor microenvironment is a recent area of interest for cancer treatment. For my project, I will be assessing the differential expression of TLR1-10 in Group 1 (epithelial) and Group 2 (mesenchymal) cell lines of HCC. I will screen for TLR1-10 to determine an expression pattern and similarities or differences between the two groups of cells. My research will help to expand the understanding of the biological mechanisms that contribute to HCC pathogenesis, which is important in order to develop new therapeutic strategies to fight this disease.

**Statement of Project Objectives**

My goal is to investigate the expression of TLR1-10 on the two groups of HCC cells, epithelial and mesenchymal. I will screen for TLR1-10 expression to determine an expression pattern and similarities or differences between the two groups.

**Methods**

My experiments will be done using HCC lines from Group 1 and 2 HCC cells. Group 1 HHC cell lines are epithelial derived cells from human patients. Group 1 cell lines include: Hep G2, Hep 3B, Huh 1, Mia-Paca-2, Huh 7, P/5, and Tong. Group 2 cell lines are mesenchymal derived cells from human patients and include: SK Hep, Focus, 2234-SNU 449, 2236-SNU 475, 2237-SNU 387, 2238-SNU 423, and Mahlavu. THLE3B cells are the normal counterpart for HCC cells derived from a healthy donor. My project will be accomplished through cell culture, RNA isolation, cDNA synthesis, and PCR and gel analysis.
Cell Culture: Cells will be grown in appropriate media (DMEM + 10% FBS + Penicillin/Streptomycin (P/S) antibiotics), counted and collected (10x10^6 cells) for RNA isolation. Cells will be preserved in 1 mL of TRIsure and stored at -20 degrees Celsius.

RNA Isolation: Thaw tubes with TRIsure reagent. Add 200 μl chloroform to each tube. Mix by vortexing 10 seconds; incubate on ice for 15 min. Spin at maximum speed for 15 minutes at 4 degrees Celsius. Take top layer into new labeled tubes (~400-600 μl). Add 500 μl isopropanol to each tube; mix by inverting 3-5 times; incubate on ice for 15 min. Spin at maximum speed; 15 min.; 4 degrees Celsius. Discard supernatant and wash with 1 mL 75% EtOH; spin at max. speed; 5 min.; 4 degrees Celsius. Let dry; invert tubes and reconstitute with 20 μl of nuclease free (n.f.) water.

cDNA synthesis: Add 1-5 μl RNA to 0.2 mL tubes. Add up to 12 μl total volume (RNA and water) n.f. water. Add 1 μl dNTPs. Add 1 μl oligo d(T). Heat reactions up to 65°C for 5 minutes. Prepare master mix (MM), taking into account total number of reactions to be done + 1 extra to account for pipetting errors. Add 6 μl of MM to each tube. Briefly spin samples. Place on thermal cycler using: Elsawa/cDNA_dt program. Once cDNA is complete, add 20 μl n.f. water to dilute the cDNA. Use 2 μl cDNA per PCR reaction.

PCR and gel analysis: Prepare 1% agarose gels (in TAE buffer). Heat in the microwave to dissolve the agarose, mixing every 1-2 minutes. Once agarose is completely dissolved, remove from microwave, add 5 μl environsafe stain per 100 mL agarose gel volume. Let cool to ~65-70°C. Pour gel into gel trays on bench facing refrigerator/freezers and add combs to create wells. Allow time for gels to polymerize. Remove combs, place gels in gel boxes and load samples. Load a molecular weight maker as a size standard. Load approximately 10 ul PCR sample/well. Run electrophoresis.

Outcomes

This experiment will elucidate which TLRs are expressed on HCC cells compared to wild type liver cells (THLE5B cells). I will learn if there is a difference in expression of TLRs between the two groups. If there is a difference, I will then focus on the specific TLR(s) that are different. If there is no difference, then I will focus on one TLR at a time to look at its specific function. Also, by the completion of this project, I will learn new lab concepts and techniques, and create a poster to display my scientific research for the Undergraduate Research and Artistry Day in April.

Literature Cited:

