5th ANNUAL FLORIDA STATEWIDE SYMPOSIUM:

# ENGAGEMENT IN UNDERGRADUATE RESEARCH

## October 19-20, 2012 Orlando, Florida

www.researchsymposium.ucf.edu





### Keynote Speaker

THE OFFICE OF UNDERGRADUATE RESEARCH PRESENTS:

# An Overview of the Assessment Practices of Undergraduate Research

#### Speaker: Dr. Mary Crowe

Associate Provost, Florida Southern College President, Council on Undergraduate Research (CUR)

This seminar will discuss the peer-reviewed literature on assessing the undergraduate research experience with respect to:

- · Retention
- · Graduate school placement
- · Student learning outcomes

Friday, October 19 from 1:30 pm - 3:00 pm Key West Ballroom, Student Union







## Symposium Schedule

#### FRIDAY, OCTOBER 19

11:00 am - 1:00 pm Registration

Student Union, Key West Ballroom, 2nd Floor

1:00 pm - 1:30 pm Welcome and Orientation

Key West 218 CD

Dr. Elliot Vittes, Interim Dean and Vice Provost,

Undergraduate Studies Christy Clarke. McNair Scholar

Dr. Kimberly Schneider, Director, Office of

Undergraduate Research

1:30 pm - 3:00 pm Keynote Presentation: An Overview of the Assessment Practices of Undergraduate Research

Key West 218 CD

Dr. Mary Crowe, Associate Provost of Experiential Education, Florida Southern College; President, Council on Undergraduate Research (CUR) Introduction: Dr. M.J. Soileau, Vice President for Research

Keynote Sponsored by the UCF Office of Research and Commercialization

INTERACTIVE PRESENTATIONS

3:15 pm - 4:00 pm

Unique Research Projects: Integrating Study Abroad and Community Service Opportunities Into Undergraduate Research

Key West 218 A

LouAnne Hawkins, Katrina Meyers (University of North Florida), and Olesya Dudenkova

(University of Florida)

Inquiry Guided Learning at Embry-Riddle Aeronautical University

Key West 218 B

Rachel Silverman, Jennifer Carney-Wojton, Ronald Roberts, Dave Pedersen, and Jayathi Raghavan

(Embry-Riddle Aeronautical University)

4:15 pm - 5:00 pm Faculty Learning Communities: (Re)Visioning Undergraduate Curricula to Promote Research and Inquiry

Key West 218 A

Donna Chamely-Wiik and Jennifer Peluso

(Florida Atlantic University)

#### Advancing STEM by Adding Authentic Research and Service-Learning to Upper-Division Electives

Kev West 218 B

Linda Walters (University of Central Florida)

#### 5:15 pm - 7:00 pm Poster Session and Reception

Burnett Honors College Lounge

#### 7:00 pm Dinner on your own

See suggestions on page 18

#### SATURDAY, OCTOBER 20

8:30 am - 9:00 am Coffee and Conversation

Burnett Honors College Lounge

9:00 am - 10:00 am Special Workshop: Developing an Assessment

Plan

BHC 130

Mary Crowe (Florida Southern College)

#### INTERACTIVE PRESENTATIONS

10:10 am - 10:55 am A Different Approach to Conference Preparations:

**Helping Undergraduates Enhance Graduate Program Applications and Professional Networks** 

BHC 126

Natalie Hofmann, Christopher Leone, and Igra Javed

(University of North Florida)

Out of the Classroom and Into Our Research: **Using Directed Independent Studies and** Other Co-Curricular Activities to Promote

Undergraduate Research

BHC 128

Mirya Holman and Daniel Meeroff (Florida Atlantic University)

11:05 am - 11:50 am Avoiding Drama in the Lab: Using Roleplaying to

**Teach Research Ethics** 

BHC 126

Judith Ochrietor (University of North Florida)

### Establishing an Undergraduate Research Program in a Community College Setting

BHC 128

Denise Guerin, Bobby Hom, and Diana Matthews (Santa Fe College)

#### 12:00 pm - 12:45 pm

#### Tracking Research Experience for Undergraduates (REU) Program Participants: Techniques for Longitudinal Assessment

BHC 126

Jose Sanchez and Brandon Nzekwe (Florida State University)

# Incorporating Community-Based Experiences into the Undergraduate Research Experience: Beginner, Intermediate, and Advanced Activities

BHC 128

Ashley Allen and Jody Nicholson (University of North Florida)

#### 12:45 pm - 1:30 pm

#### **Lunch and Conversation**

### Florida Undergraduate Research Conference (FURC) Planning

BHC 130

#### 1:30 pm - 2:45 pm

#### Instructor and Student Join in Research at Embry-Riddle Aeronautical University, Robins AFB Campus

BHC 126

Jim Paul and Thomas Henkel (Embry-Riddle Aeronautical University)

# The Perils and Pitfalls of Plagiarism: Some Best Practices for Facilitating Authentic Scholarship in Undergraduates

BHC 128

LouAnne Hawkins and Christopher Leone (University of North Florida)

#### 2:55 pm - 3:40 pm

#### Introducing Undergraduates to Research through Structured Coursework

BHC 130

Kimberly Schneider and Neyda VanBennekom (University of Central Florida)

#### 3:40 pm - 4:00 pm

#### **Debriefing**

BHC 130

### Friday, October 19th, Abstracts

#### **KEYNOTE PRESENTATION**

1:30 pm - 3:00 pm

An Overview of the Assessment Practices of Undergraduate Research Dr. Mary Crowe, Associate Provost of Experiential Education, Florida Southern College; President, Council on Undergraduate Research (CUR) (Key West 218CD)

Because undergraduate research seems to hold potential in increasing student learning, retention, graduation rates and entrance into graduate programs, campuses across the country are providing more undergraduate research experiences (URE) for students. In this talk I will provide a summary of the current literature associated with assessing: undergraduate research programs and assessing student learning outcomes, I'll talk about current studies and identify the gaps in the assessment data.

Sponsored by the UCF Office of Research and Commercialization

#### INTERACTIVE PRESENTATIONS

3:15 pm - 4:00 pm

Unique Research Projects: Integrating Study Abroad and Community Service Opportunities into Undergraduate Research

LouAnne Hawkins, Katrina Mevers (University of North Florida), and Olesya Dudenkova (University of Florida) (Kev West 218A)

Many students and faculty are familiar with traditional approaches to undergraduate research. However, integrating other types of experiential learning strategies into research experiences can be exceptionally challenging but extremely rewarding for undergraduate scholars thereby cultivating additional skills and expertise. Using two select case studies from different disciplines, we examine how study abroad and community service opportunities can be incorporated into research experiences enriching the undergraduates' learning opportunities. We consider the benefits and advantages as well as the limitations of such projects. We discuss practical steps to support students engaged in these multifaceted research experiences.

#### Inquiry Guided Learning at Embry-Riddle Aeronautical University

Rachel Silverman, Jen Carney-Woiton, Ronald Roberts, Dave Pedersen, and Jayathi Raghavan (Embry-Riddle Aeronautical University) (Key West 218 B)

Our discussion panel will present methods for enhancing undergraduate research by implementing an Inquiry Guided Learning (IGL) approach, IGL is a multi-faceted method for promoting critical thinking and independence when students are researching complex problems and issues without a simple, single answer. Each panel participant has completed the IGL workshop at our university, and we are all in the process of implementing changes to our courses inspired by our understanding of IGL. We would each explain how we applied IGL practices to our specific disciplines (English, Communication, Mathematics, Military Studies).

#### 4:15 pm - 5:00 pm

#### Faculty Learning Communities: (Re)Visioning Undergraduate Curricula to Promote Research and Inquiry

Donna Chamely-Wiik and Jennifer Peluso (Florida Atlantic University) (Key West 218 A)

Distinction through Discovery, FAU's Quality Enhancement Plan, is an initiative designed to improve student learning through undergraduate research and inquiry experiences. These experiences emphasize both curricular and co-curricular opportunities. A grant program will be implemented in Fall 2013 to encourage curricular revisions towards these goals. To support development of pedagogically sound, research-focused curricular modifications we have established a Faculty Learning Community (FLC). Seven modules were developed to include institutional best practices and resources, pedagogies and active learning experiences, and strategies for gauging effective teaching and learning. The structure and plan for implementation of this FLC will be discussed.

#### Advancing STEM by Adding Authentic Research and Service-Learning to Upper-Division Electives

Linda Walters (University of Central Florida) (Key West 218 B)

To boost the number of undergraduates actively involved in research, and to enhance the science communication skills of these students, I have transformed my upper-division, elective Marine Biology course into research/service-learning course that showcases what is possible. In this 25-person class, all individuals participated in research projects over the course of the semester that would add to the current literature. My students were also connected with public school educators, and they developed presentations for K-8th grade classrooms based on their research. All presented their results at on-campus Research and Service-Learning Showcases.

#### **POSTERS** (5:15 pm - 7:00 pm)

(Burnett Honors College Lounge and Reading Room)

#### **Incorporating Outreach into Science Literacy Research**

Sandra Gilchrist (New College of Florida)

Students participate in an outreach seminar to learn the fundamentals of presentation, visualization, and assessment of science literacy. Each student makes multiple presentations during the term to hone skills and to shape a final project. contribute time to three outreach activities in the campus or local community, sharing information on outcomes through online scrapbooks. Interdisciplinary students learn about their strengths and interests in both formal and informal science education. Research projects on campus ecology form the core of the outreach activities, often resulting in senior thesis projects incorporating outreach.

#### Infusing Problem Based Learning (PBL) Across the Research Curriculum

Yu Wai P. Lin. Teresa Petrino, and Flona Redway (Barry University)

Pedagogy of discovery, inquiry, and analysis in undergraduate research is needed. By using a PBL approach across multiple courses, we hope to cultivate desirable attributes of a competent researcher. We use "Blackboard" as a platform to design activities which encourage studentcentered learning. Current biomedical articles in popular press are used as triggers to generate a series of learning activities - readings of primary source articles, interpretation and analysis of data, and application to multifaceted real world problems. Students are more appreciative of this learning style in graduate and medical school as evidenced by testimonials. [NIH-MARC and RISE Grants; Biology Department]

#### Senior Software Engineering Project Course as a Research Opportunity

Janusz Zalewski (Florida Gulf Coast University)

Senior Software Engineering Project courses in undergraduate computing programs (computer science, software engineering or information technology) are normally used to teach students software development principles in typical stages of the life cycle model. This is a very valid approach, which allows the undergrads to acquire knowledge useful for immediate employment. However, it does not prepare them well for pursuing graduate studies. This presentation focuses on a different approach, which utilizes principles of software engineering in teaching students to attack problems from the research perspective to build on existing knowledge of software development for enhancing analytical rather than developmental skills.

### Learning Environment and Academic Research Network (LEARN): A Model for Retention in the STEM Disciplines

Kimberly Schneider and Amy Bickel (University of Central Florida)

The Learning Environment and Academic Research Network (L.E.A.R.N.) is a living-learning, research-based community established in fall 2011 at the University of Central Florida. The program aims to increase retention in Science, Technology, Engineering, and Mathematics (STEM) disciplines by identifying at-risk first-year students and providing opportunities for them to live in a learning community, take courses together, and become a research apprentice in a laboratory setting. L.E.A.R.N. is sponsored by the Office of Undergraduate Research and the National Science Foundation, in collaboration with Housing and Residence Life.

### Assessing the Methods to Involve Undergraduates in Research: Multiple Models Considered

Amy Bickel, Drew Fedorka, and Kimberly Schneider (University of Central Florida)

In an effort to understand how to best support students interested in getting involved in research, we investigated the different "getting started" avenues that UCF offers students. These opportunities include, but are not limited to, one-on-one advising, an introduction to research course, and workshops. Using a survey, we made comparisons between the various opportunities to address the efficacy of each approach. The goal was to assess which opportunity renders the highest level of involvement in undergraduate research. After consideration of cost, students impacted, and eventual involvement in research, one-one-one advising seems to be the most effective way of engaging students in undergraduate research opportunities.

### **Promoting Research: The Student Undergraduate Research Council** *Kimberly Schneider and Christy Clarke (University of Central Florida)*

The goal of the Student Undergraduate Research Council (SURC) at the University of Central Florida is to support and promote undergraduate research campus-wide. This group works closely with the Office of Undergraduate Research to increase the number of students engaged in research projects. The objectives of the student group are two fold: (1) to promote undergraduate research to students campus-wide, and (2) to support and advise the Office of Undergraduate Research. Each year 10 members are accepted into the SURC group to serve as ambassadors, mentors, and advocates for undergraduate research.

### Saturday, October 20th, Abstracts

#### Critical Information Literacy Skills for Undergraduate Researchers

Donna Wrublewski (University of Florida)

For undergraduates beginning research, one of the first tasks they engage in is background information gathering. For students new to college library resources, the resource choices and sheer amount of information can be overwhelming. This poster will describe a structured approach to introduce undergraduates to the basics of information literacy and library research, with the goal of identifying learned skills that should be incorporated into any assessment of student development in an undergraduate research program.

#### SPECIAL WORKSHOP

9:00 am - 10:00 am

#### Developing an Assessment Plan

Mary Crowe (Florida Southern College) (BHC 130)

> As with any academic and/or service unit on a university or college campus, undergraduate research program directors and faculty members are asked, "How do you know you are doing a good job and are meeting the needs of our campus community?" We ask ourselves, "How might we improve what we do?", and "How do we know that resources are being used effectively?" Accurately answering these questions requires a plan for regular and systematic evaluation of programmatic offerings, and during this workshop I'll lead participants through an exercise to help them develop an effective evaluation plan for one or more components of the undergraduate research program.

#### INTERACTIVE PRESENTATIONS

10:10 am - 10:55 am

A Different Approach to Conference Preparations: Helping **Undergraduates Enhance Graduate Program Applications and Professional Networks** 

Natalie Hofmann, Christopher Leone, and Igra Javed (University of North Florida) (BHC 126)

Attending professional conferences is an intimidating experience for many undergraduates. When preparing students for conferences, most of us concentrate on helping students learn to communicate their research findings. Students can, however, benefit greatly from specific preparation in methods that foster networking and exploration of potential graduate and professional programs. Undergraduates can be trained to use conference programs, conference meals, and free time to help establish relationships that inform them about various graduate programs and faculty. This preparation promotes confidence, enables students to function as seasoned conference veterans, and prepares them for the next phase of their academic career.

#### Out of the Classroom and Into Our Research: Using Directed **Independent Studies and other Co-Curricular Activities to Promote Undergraduate Research**

Mirya Holman and Daniel Meeroff (Florida Atlantic University) (BHC 128)

Involving students in faculty research projects through directed independent studies and other co-curricular activities offers opportunities for students to learn the research process through hands-on activities. Our presentation details the benefits and pitfalls of supervising undergraduate research through independent studies outside of the traditional classroom environment from multidisciplinary including perspective. experiences Engineering and Political Science faculty. We provide guidelines developed through practice, including helpful tips on identifying and recruiting students, student direction, and making sure the process works for the professor as well as the student.

#### 11:05 am - 11:50 am

### Avoiding Drama in the Lab: Using Roleplaying to Teach Research

Judith Ochrietor (University of North Florida) (BHC 126)

As undergraduate students gain research experience, they may find themselves in ethically-sensitive situations for which they have no training. In an effort to get students thinking and talking about research ethics, a workshop was held at an annual undergraduate Student actors portrayed situations while research symposium. faculty moderators challenged the audience to discuss the issues. Representatives from the Office of Research Integrity were present to clarify guidelines as necessary. Commonalities and differences were found between the natural and social sciences, as well as between individuals. This pedagogical approach successfully challenged students to realize the ethically-sensitive situations they may encounter.

#### **Establishing an Undergraduate Research Program in a Community College Setting**

Denise Guerin, Bobby Hom, and Diana Matthews (Santa Fe College) (BHC 128)

Undergraduate Research programs are not only possible in a twovear college setting but are necessary for students to begin thinking in an analytical way about their area of study and to understand the importance of research in any field. Two-year colleges can introduce research methodology and appropriate presentation methods by using smaller scale research topics and projects. We will discuss how we started our Research in Undergraduate Education Program at Santa Fe College, formerly Santa Fe Community College, and show how it has grown over its seven year history. We'll leave lots of time for questions!

#### 12:00 pm - 12:45 pm

#### Tracking Research Experience for Undergraduates (REU) Program **Participants: Techniques for Longitudinal Assessment**

Jose Sanchez and Brandon Nzekwe (Florida State University) (BHC 126)

presentation highlights strategies for tracking gathering data on former Research Experiences for Undergraduates (REU) participants of a national scientific research laboratory. Over the past four years the National High Magnetic Field Laboratory's Center for Integrating Research & Learning (CIRL) has created a database containing the career trajectories and academic accomplishments of former REU program participants dating back to 1999. Through a continued relationship with former REUs, CIRL has established an online venue and present REU participants to network with one another.

#### Incorporating Community-Based Experiences into the Undergraduate Research Experience: Beginner, Intermediate, and Advanced Activities Ashley Allen and Jody Nicholson (University of North Florida) (BHC 128)

Community-based learning empowers students to actively engage with a community and creates unique research opportunities through that engagement. By combining applied research with real world involvement, students create integrated connections between these worlds, become more effective citizens in their communities, and learn valuable research skills including experience dealing with ethical dilemmas. In this session, we will discuss the value of communitybased research and present programs and activities that incorporate the community to varying degrees. We will also discuss some of the challenges associated with working with community partners and some effective strategies for overcoming those challenges.

#### 1:30 pm - 2:45 pm

#### Instructor and Student Join in Research at Embry-Riddle Aeronautical University, Robins AFB Campus

Jim Paul and Thomas Henkel (Embry-Riddle Aeronautical University) (BHC 126)

This paper describes the voluntary student involvement in research at the ERAU Robins AFB, GA, campus in support of ERAU's mission: "Our mission is to teach the science, practice and business of aviation and aerospace, preparing students for productive careers and leadership roles in service around the world." Two examples will be discussed. In the first example, the student is a junior author and contributes to the research. In the second example, the student is the senior author and the instructor acts as a mentor providing additional analysis.

#### The Perils and Pitfalls of Plagiarism: Some Best Practices for Facilitating Authentic Scholarship in Undergraduates

LouAnne Hawkins and Christopher Leone (University of North Florida) (BHC 128)

Benjamin Franklin asserts, "There is much difference between imitating a man and counterfeiting him." How do we help students appreciate this subtle difference? For that matter, what is the difference? When undergraduates embark upon literature reviews. theses, and other scholarly writing, students may fail to appreciate and respect these differences- with serious consequences. This interactive workshop will help participants better understand the many facets of plagiarism, the pervasive incidence of plagiarism, and the multiple causes for the occurrence of plagiarism. Participants will be armed with teaching strategies to help students avoid even accidental plagiarism.

#### 2:55 pm - 3:40 pm

#### Introducing Undergraduates to Research Through Structured Coursework

Kimberly Schneider and Nevda VanBennekom (University of Central Florida) (BHC 130)

What skills do all undergraduates need to be effective researchers? How can programs help students be more comfortable with research? How can we reduce the work load of faculty by better preparing students? This workshop will review several models that introduce students to research through formal coursework prior to starting a research experience. This includes a semester-long course, a short peer mentor led course, and a week-long faculty led course. These models are currently being used at UCF through NSF funding in collaboration with University of Alabama and Washington State University.

### **Acknowledgements**

Florida Statewide Symposium: Engagement in Undergraduate Research

#### SYMPOSIUM PLANNING COMMITTEE:

Dr. Kimberly Schneider Director, Office of Undergraduate Research

Ms. Nancy Lynch Senior Administrative Assistant, Undergraduate Research

> Ms. Amy Bickel Office Coordinator, Undergraduate Research

> > Mr. Richard Harrison Associate Librarian, UCF Libraries

Dr. Martin Dupuis Associate Dean, Burnett Honors College

Mr. Michael Aldarondo-Jeffries Director, McNair and RAMP Scholars Program

#### Florida Statewide Symposium: Engagement in Undergraduate Research

#### MANY THANKS TO:

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Mr. Drew Guarino

Ms. Lidia Kawashima

Mr. Brian Strickland

Burnett Honors College

Continuing Education, Martin Malpica and Dorothy Loman

Office of Undergraduate Studies

Student Undergraduate Research Council

Student Union

Symposium Participants and Guests

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for sponsoring the keynote speaker

### **Participants**

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Saint Leo Universisty

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The University of Tampa Florida A & M University New College of Florida

Santa Fe College

University of Central Florida University of North Florida

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University of North Florida Florida Atlantic University

Santa Fe College Jacksonville University Florida Gulf Coast University

Stetson University Valencia College

Embry-Riddle Aeronautical University

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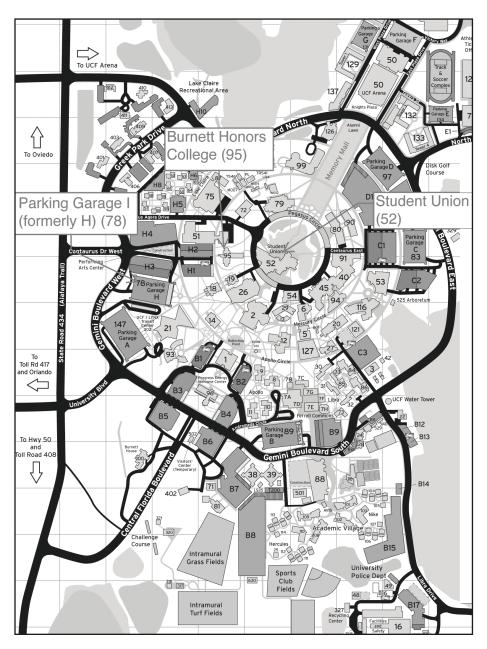
Donna Wrublewski University of Florida

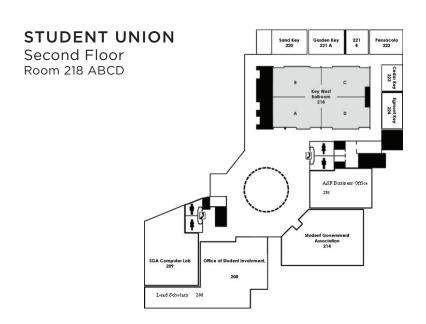
Janusz Zalewski Florida Gulf Coast University

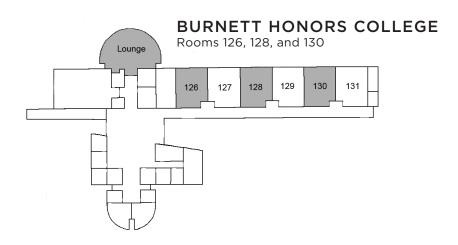
## **Maps & Locations**

#### UNIVERSITY OF CENTRAL FLORIDA MAP

Student Union (52), Burnett Honors College (95), and Parking Garage I (formerly H) (78)







# Maps & Locations

#### Vicinity Map and Dinner Suggestions



#### UCF Student Union (#1 on map)

Wackadoo's (Sports Bar and Grill)

#### UCF Restaurants (#2 on map)

Gemini Blvd. + N. Orion Blvd.

Balagan (Eastern Mediterranean Cuisine)

Domino's Pizza (Italian)

HighFive Froyo (Frozen Yogurt)

Jimmy John's (Sandwiches)

Kyoto Sushi and Grill (Japanese)

Subway (Sandwiches)

Tailgaters (Sports Bar and Grill)

#### University Blvd Restaurants (#3 on map)

Applebee's (American)

Falafel Cafe (Middle Eastern)

Buffalo Wild Wings (Wings and Sports Bar)

Habanero's (Mexican)

Logan's Roadhouse (Steakhouse)

Ruby Tuesday (American)

Steak n' Shake (American)

#### University Palms Shopping Center (#4 on map)

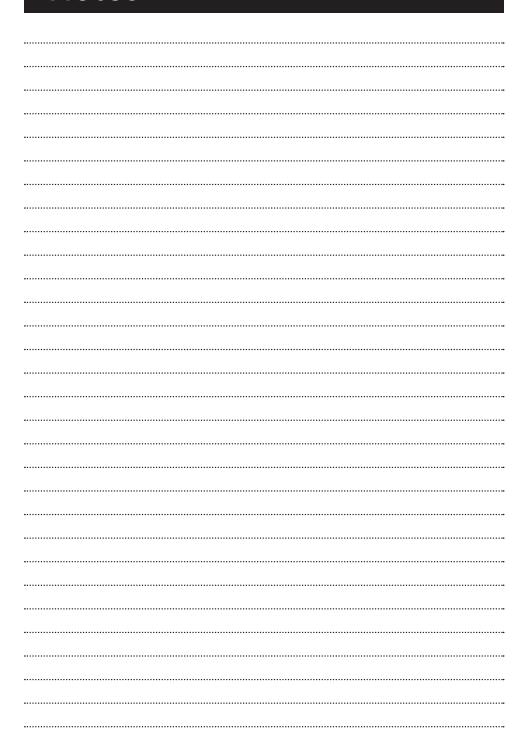
Alafaya Tr. + McCulloch Rd.

Dragon Court (Chinese)

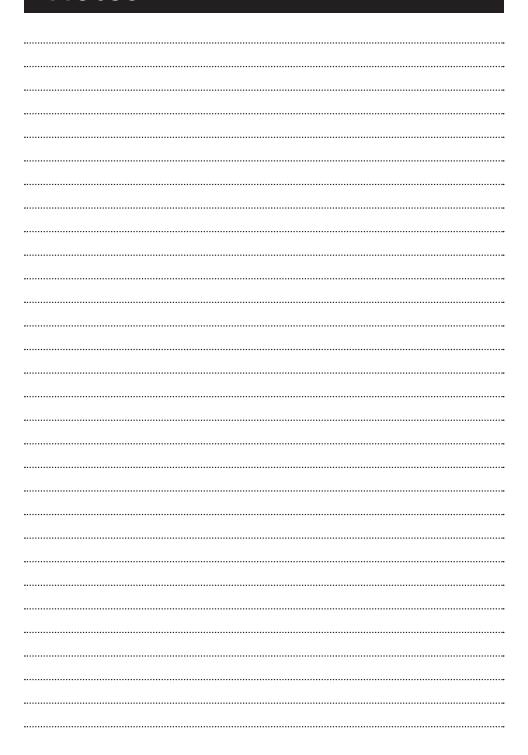
Giovanni's (Italian)

The Moat Sports Grille (American)

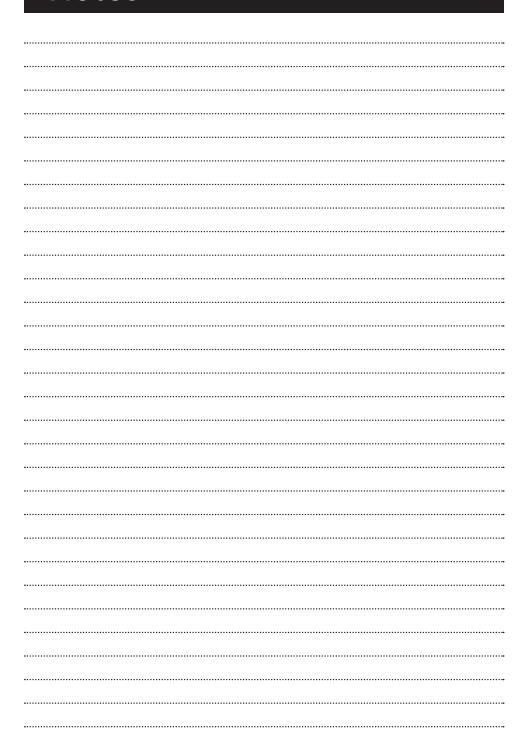
# Notes



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#### OFFICE OF UNDERGRADUATE RESEARCH

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