Modeling and Simulation
Graduate Program
New Student Orientation

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Associate Professor, Computer Science
Director

Sabrina Gordon, M.A.
Coordinator

Spring 2016
Today’s Agenda

• Welcome & Opening Remarks
  – Dr. Randall Shumaker, Director, UCF Institute for Simulation & Training (IST)
  – Dr. John Weishampel, Associate Dean, UCF College of Graduate Studies
  – Rebecca Leis, Modeling & Simulation Student Knights (MaSK) Representative

• Cohort Introductions

• Overview of the M&S Graduate Program
  – Administration of the Program
  – Overview of the M.S. Program
  – Overview of the Ph.D. Program
  – Key University and Program Policies
  – Program Expectations
  – Words of Advice

• Closing Remarks and Q&A

• Breakout Sessions (Two Groups)
  – Tour of Research Labs and Resources of IST
  – Focused Advising
    • Enrollment and Scheduling
    • Transfer Requests
    • Outstanding Application Materials
Welcome & Opening Remarks
Modeling and Simulation Knights (MaSK)

Presented by Rebecca Leis - MaSK President
Our Vision

The vision of the Modeling and Simulation Knights (MaSK) is to inspire students of all levels to create innovative technology breakthroughs, educate the community about Modeling and Simulation, and cultivate interdisciplinary research by fostering collaboration and providing mentorship, advising, outreach, lab space, and equipment.
Background

- UCF chapter of the Society for Modeling and Simulation International (SCS) - scs.org
- Originally had 3 dues paying members now at 15
2015-2016 Organization Officers

- President - Rebecca Leis
- Vice President -
- Secretary - Karla Badillo-Urquiol​a
- Treasurer - Ryan Wohleber
- Webmaster - Clayton Tillman
- Scholarship Committee Chair - Karla Badillo-Urquiol​a
2015-2016 Action Plan

- Fundraisers
- Scholarship Fund
- Workshops
- Mentoring
- Outreach
- Lab Space
- Marketing
- Social Media and Website
- Professional Development Services
2015-2016 Events

- **Meetings**
  - Beginning of the Semester Social-Jan 19th
  - Tour of OCPS Orlando Campus Tech Center-Jan 29th
  - Doug Maxwell speaking about MOSES- Feb 2nd

- **Special Events**
  - MODSIM World M&S Challenge Competition-Jan 15th
  - We Love Old Tech Drive-Feb 1st-29th
  - MaSK Game Jam-March 25th-27th
Membership Benefits

- Access to Member only services such as professional headshot services, CV and resume help, and job placement help!
- Headshot and CV featured on website (coming soon!)
- Networking opportunities
- Volunteering (Free access to special events)
- Voting!
Contact Information

- **Website**
  - www.ucfmask.org

- **Gmail**
  - Mask.knights@gmail.com

- **Facebook**
  - https://www.facebook.com/groups/1MaSK/

- **Twitter**
  - https://twitter.com/ucf_mask
Good Luck!!

We are very happy you made it out today and we look forward to seeing you throughout the semester and at our MaSK events!
Cohort Introductions

Please state your:
• Name
• Past academic degrees
• Research area of interest
Overview of the M&S Graduate Program
The Pursuit of Graduate Education

- Everyone has their own reasons for attending graduate school and earning an advanced degree.

- Whatever your reason...graduate education is quite different from undergraduate education.
  - Graduate school demands more of your **focus, commitment** and a sense of **self-motivation**.

- For many of you, most likely, this will be your **first** major research experience.

- **We are VERY** glad that you are here!
M&S in the News
Role of UCF & the Central Florida Region

• On 9/22/2011, former President Bill Clinton in an interview on MSNBC’s “Morning Joe” discusses UCF and how the University and Orlando are contributing to the development of “jobs of the future” in the computer simulation industry.

• On 9/20/2012, former President Clinton discussed the need for public, private and nonprofit groups to work together to create hubs that spur economic growth and noted that NASA, Disney, Universal, video game companies, simulation companies and UCF worked together to stimulate the economy.

• On 10/29/2012, former President Clinton states that Central Florida is at the center of the modeling, simulation, and training industry in the US.
Overview of the Program

• UCF M&S Program is a **true interdisciplinary program** that builds on 20+ years of simulation education at UCF
  – Over 30 faculty and IST researchers at UCF who are considered M&S faculty

• Partnerships with IST, military simulation agencies and companies, other universities, and professional organizations
  – Virtually all FA-57 Army Officers (simulation specialists) are choosing UCF for obtaining M&S M.S. degrees

• Students in the M&S graduate program have focused their study and research efforts in one or more of the following research areas:
  – Human Systems in M&S
  – Computer Visualization in M&S
  – Quantitative Methods for Simulation, Modeling and Analysis
  – Interactive Simulation and Intelligent Systems
  – Simulation Infrastructure
  – Simulation Management
  – Simulation in Healthcare

• Program is becoming more rigorous in terms of modeling, mathematics and engineering
Modeling & Simulation is highly multidisciplinary and active across many research areas at UCF.

M&S graduate students work on projects with faculty in nearly every UCF academic college and research center, and with strong corporate and government partners in the community.

**Classroom management simulation for teacher training**
(ENGR, College of Education & Human Performance, IST)

**Mobile applications for healthcare training and commercialization**
(CON, College of Med., College of Health & Public Affairs, College of Business Admin., IST)

**Game-based training, game performance evaluation, tools for after action review**
[College of Sciences (COS), IST, U.S. Army]

**DRAMA-RAMA**
[NIH project with College of Nursing (CON), IST]

**STOKES High Performance Computing**
(ENGR, COS, IST)

**Motion capture technology**
(ENGR, IST)

**Let’s Go To The Fair**
(NSF STEM project in conjunction with Queens Museum of Art)
(College of Arts & Humanities, IST)

**Teach Live**
Classroom management simulation for teacher training
(ENGR, College of Education & Human Performance, IST)
Modeling and Simulation Graduate Program

Programs Offered
1. Modeling & Simulation Ph.D.
2. Modeling & Simulation M.S.
3. Modeling and Simulation of Technical Systems Graduate Certificate (G.C.)
4. Modeling and Simulation of Behavioral Cybersecurity Graduate Certificate (G.C.) NEW!

Graduates
- M.S.: 314
- Ph.D.: 81
- G.C.: 15
- Grand Total: 382

Active Students
- M.S.: 41%
- Ph.D.: 47%
- Cyber G.C.: 7%
- Tech Sys G.C.: 5%
- 148 Active Students as of 9.1.2015

Since 2001 through Fall 2015
1st cohort of G.C enrolled Fall 2012
Administration of the M&S Program
Program Administration

M&S Program Governance

1Executive Advisory Board
- Eric Anschuetz – Head, Software Systems Branch, Naval Air Warfare Center Training Systems Division
- Waymon Armstrong – President, Engineering & Computer Simulations
- Thomas L. Baptiste – President/Exec. Dir., National Center for Simulation
- Dr. Edward Degnan – Chief, M&S Found. Div., Air Force Agency for M&S
- Dr. Christopher D. Geiger – Sr. Manager, Universal Orlando Resort
- Cindy Harrison – Chief Software Architect, U.S. Army PEO STRI
- Dr. Roger Smith – Chief Technology Officer, Nicholson Center at FL Hosp.
- Dr. Robert Sottilare – Associate Director of Science & Technology, ARL
- Dr. Randall Shumaker – Director, Institute for Simulation & Training
- Janet Weisenford – Fellow, Inner City Fund International (ICFI)
- Dr. Ken Westerlund – Technical Director, Camber Corp.

2Graduate Program Advisory Committee
Discipline areas represented:
- Industrial Engineering
- Psychology
- Computer Science
- Electrical Engineering
- Math
- Philosophy
- Digital Media
- Medicine
- Institute for Simulation & Training
Overview of the M&S M.S. Degree Program
M.S. Degree Program

Course Requirements

• **M.S. Thesis** Option
  – 24 credit hrs coursework
  – 6 credits of thesis hrs

• **M.S. Non-Thesis** Option
  – 30 credit hrs of coursework

✔ Both options must have 24 hrs of formal coursework
✔ (can include up to 6 Indep Study hrs)
✔ Both options must have 50% (i.e., 15+ hrs) of coursework at 6000-level
✔ Only graduate-level work with a grade of “C-” or higher may be used to satisfy degree requirements

If you are considering pursuing a Ph.D., you should complete a thesis.
M.S. Program General Timeline (Thesis)

**Year 1**
- Complete core courses
- Select Thesis advisor
- Submit Graduate Plan of Study
- Network with students and faculty
- Perform independent research and formulate research question(s)/hypothesis(es)
- Form Thesis Advisory Committee, with assistance from Advisor

**Thesis Defense (Oral Examination)**
- If needed, continue coursework
- Complete thesis research
- Participate in professional conferences
- Prepare thesis document, with guidance from advisor
- Announce oral defense of thesis to UCF community, with approval of advisor
- Pass oral defense of thesis

If you are considering pursuing a Ph.D. at some time in the near or not-so-near future, it would be in your best interest to complete a M.S. Thesis.
Overview of the M&S Ph.D. Degree Program
Ph.D. Degree Program

Course Requirements w/Incoming Master’s Credit (30 hrs)

• 42+ credit hrs
  – 12 hrs of core courses
  – 3 hrs advanced research methods course
  – 12+ hrs of unrestricted electives
  – 15+ hrs dissertation

✓ Without incoming master’s credit, need 30hrs additional electives

✓ Only graduate-level work with a grade of “C-” or higher may be used to satisfy degree requirements
Ph.D. Program General Timeline

**Qualifying Examination**
- Complete core courses
- Pass Qualifying Exam
- Select dissertation advisor
- Submit Graduate Plan of Study
- Complete mandatory Academic Integrity/RCR training
- Network with students and faculty
- Begin to explore research problem

**Candidacy Examination**
- Continue coursework
- Form Dissertation Advisory Committee, with assistance from Advisor
- Perform independent research and formulate research question(s)/hypothesis(es)
- Have manuscript accepted for publication
- Prepare research proposal document, with guidance from advisor
- Pass oral defense of research proposal

**Dissertation Defense (Oral Examination)**
- Complete dissertation hours requirement
- If needed, continue coursework
- Complete dissertation research
- Participate in professional conferences
- Prepare and submit manuscripts for publication
- Prepare dissertation document, with guidance from advisor
- Announce oral defense of dissertation to UCF community, with approval of advisor
- Pass oral defense of dissertation

- **Annual Review**
  - Fall
  - Spr
  - Sum
  - Fall
  - Spr
  - Sum
  - Fall
  - Spr
  - Sum
  - Fall
  - Spr
  - Sum

*Year 1* *Year 2* *Year 3 and Onward*
The All-Important Graduate Plan of Study
The Graduate Plan of Study

Forms available online:
http://www.ist.ucf.edu/grad/Forms.html

- File by the end of your 2nd term
  - Keep the GPS current by updating it when revisions are made
The Graduate Plan of Study

You can always check your progress @ myUCF Student Center:
Ph.D. Degree Program

Academic Integrity / Responsible Conduct of Research Training

• Mandatory Academic Integrity/RCR Training of all doctoral students (as of Fall 2011) (http://www.students.graduate.ucf.edu/academic_integrity_training/)

• All training must be completed prior to a student’s advancement to candidacy

• Should be completed by the end of a student’s second term of enrollment (i.e., by end of Summer 2016)
“NOT ANYMORE” Module
For ALL new students admitted FA14 or later

• This is a behavioral conduct module to ensure that UCF remains a safe and productive environment for all members of the community.

• Mandatory module should be completed online.

• Enrollment will be dropped/placed on hold if not completed by the end of this semester.
Supplementing Your Graduate Education

- Graduate certificates – must apply & be accepted
  - eLearning Professional Development
  - Instructional Design for Simulations
  - Training Simulation
  - Design for Usability
  - Industrial Ergonomics and Safety
  - Systems Engineering
  - Emergency Management and Homeland Security
  - Modeling and Simulation of Technical Systems
  - M&S of Behavioral Cybersecurity
  - Project Engineering
  - Quality Assurance
  - and, others

- M.S. degree “Along the Way” – request through Sabrina
UCF academics are delivered by 11 colleges

The university structure is important for you to understand because it will help you find the appropriate electives and faculty to support your focus areas.

- Arts & Humanities
- Business Administration
- Education & Human Performance
- Engineering & Computer Science
- Graduate of Studies
- Health and Public Affairs
- Hospitality Management
- Medicine
- Nursing
- Optics and Photonics
- Sciences
M&S Website & Resources

www.ist.ucf.edu/grad

- Our website is a great place to find:
  - Examples of course syllabi,
  - Seminars (past recordings and future announcements)
  - Forms and procedures,
  - Brochures for all of our programs,
  - Contact information,
  - And MORE!
University Facilities, Resources and Support Services

Graduate Student Center
graduate.ucf.edu

Technology Commons
407-823-4357
servicedesk@ucf.edu

Veterans Academic Resource Center
407-823-2707
varc@ucf.edu

STOKES High Performance Computing
help-stokes@ist.ucf.edu
University Facilities, Resources and Support Services

• Where can I go if I have a complaint or concern?
  – This will depend on the unit that is being addressed in your complaint or concern.
  – You can ALWAYS start with our M&S Graduate Program Office.
    • We can ensure confidentiality, and
    • If the issue needs to be routed to another unit, we can help you find the right people to help.
Key Graduate Program Policies
Understand the University Policies

- The UCF Graduate Catalog is online (www.graduatecatalog.ucf.edu)
- Must be acquainted with **ALL** university policies
- Will now highlight more relevant policies for graduate education
  - Time Limitations
    - 7-Year Rule
  - Enrollment policies
    - Full-Time vs. Part-Time Enrollment
    - Continuous Enrollment
  - Dual Degree Shared Credit Policy
    - Triple Dipping
  - Unsatisfactory grades and academic standing
Time Limitations

- Your graduate degree when granted should be current and up to date in the discipline.

- **7-Year Rule:** No courses used in a GPS can be older than 7 years at the time of graduation.
  - This is based on when each course is taken – not on admit term.
  - For example, the course(s) that you take this Spring 2016 semester will be valid until the end of Spring 2023.

- Courses used for graduate certificates must be less than 3 years old.
Courses that are part of an EARNED Masters degree are EXEMPT to this policy, including those earned “along the way” in a doctoral program.
Enrollment Policies

Full-Time vs. Part-Time Enrollment

• Fall and Spring terms
  – Full-Time Enrollment ≥ 9 credit hrs
  – Part-Time Enrollment < 9 credit hrs

• Summer terms
  – Full-Time Enrollment ≥ 6 credit hrs
  – Part-Time Enrollment < 6 credit hrs

• Special cases:
  – M.S. thesis-option students enrolled only in Thesis hrs (XXX6971), Full-Time Enrollment ≥ 3 hrs per term, including summer terms
  – Ph.D. candidates enrolled in Dissertation hrs (XXX7980), Full-Time Enrollment ≥ 3 hrs per term, including summer terms
  – If you are receiving financial aid, please be sure to inquire about your funding agency’s definition of full-time and part-time enrollment

• IMPORTANT: Once you begin Thesis hrs or Dissertation hrs, you MUST continue to take them each semester until you graduate
Enrollment Policies

**Practices**

- **Deadlines**

<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
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Regular Registration

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<th>10</th>
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<th>14</th>
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<th>16</th>
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<tr>
<td></td>
<td>Classes Begin</td>
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<td>Drop/Swap Deadline</td>
<td>Add Deadline</td>
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End of Regular RG

Late Registration

- **UCF 1500**
  - This is an administrative course in which anyone can enroll to process first registration during regular registration. Can use add/drop periods to adjust enrollment later.

- **Multiple Term Enrollment**
  - Enrollment opens up in March each year for the next 3 semesters (Summer, Fall, Spring).
  - Students can plan coursework by enrolling in future semesters
Enrollment Policies

Continuous Enrollment

• Cannot miss 3 consecutive academic terms (Fall/Spring/Summer) to remain ACTIVE student
  – Will automatically become INACTIVE, if you do
  – In the case of an extenuating circumstance, a Special Leave of Absence may be requested by a student to temporarily waive the continuous attendance requirement

• MUST RE-APPLY to program, if you become INACTIVE
  – Readmission is not guaranteed
  – Readmission decisions are based on such factors as space in the program, reasons for the break in graduate education, progress in the degree program, among others
  – MUST follow catalog year of readmission
Enrollment Policies

- Per university policy, students must be enrolled in order to:
  - take exams,
  - conduct research, or
  - use any university resources (i.e., library access, faculty and staff member’s time, etc.).
Dual Degree Shared Credit Policy

• No “Triple Dipping”
  – No credit hours may be counted for more than two degree programs
    • i.e., PhD students who come in with 30hrs from earned MS cannot use those transfer 30hrs towards new M&S MS along the way.
  – Excludes Graduate Certificates
    • i.e., same course can be used towards PhD, MS along the way, and GC simultaneously.
Unsatisfactory Grades

• “C” grades (C, C+, C-), as well as D, D+, D-, F, and U grades, are all considered unsatisfactory grades.

• May apply a maximum total of 6 credit hours or 2 courses with “C” grades, whichever is greater, to satisfy degree program requirements.

• Exceeding 6 hrs of unsatisfactory grades may be grounds for dismissal.

• Be aware of +/- grades
  – For example, “B-” is calculated as 2.75 grade points.
Academic Standing

Key Graduate Program Policies

- **Regular**
  - Students must maintain a Graduate Status GPA of 3.0 or better in order to maintain regular graduate student status, receive financial assistance, and qualify for graduation.

- **Probation**
  - If GPA $\geq 3.0$ (but still higher than 2.0), student will be automatically placed on academic probation.

- **Dismissal**
  - If GPA $< 2.0$, student will be automatically dismissed from all active programs at UCF.
  - Any student who has earned more than two unsatisfactory grades, including C+ or less, U or WF is subject to dismissal from the program.
# New Student Advising

## MS & PhD Core Courses

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Semester to Enroll</th>
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<tbody>
<tr>
<td><strong>IDS 6147 Perspectives on Modeling and Simulation</strong></td>
<td>Fall 2016</td>
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<tr>
<td><strong>DIG 5876 Quantitative Aspects of M&amp;S</strong></td>
<td>Fall 2016</td>
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<tr>
<td>• Or higher-level quantitative course such as</td>
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<td>• <strong>ESI 5219 Engineering Statistics</strong></td>
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<td>• <strong>STA 5206 Statistical Analysis</strong></td>
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<tr>
<td><strong>IDS 6148 Human Systems Integration for M&amp;S</strong></td>
<td>Spring 2016 (#19690)</td>
</tr>
<tr>
<td><strong>IDS 6916 Simulation Research Methods and Practicum</strong></td>
<td>PhD &amp; MS thesis option: Spring 2016 (#19691)</td>
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</table>
Stay in Contact with Us

• Must use UCF’s student e-mail system (www.knightsmail.ucf.edu)

• University and program information and notices will ONLY be sent here

• You can view your Knights e-mail from other e-mail accounts
Upcoming Events

• **M&S Seminar Series**
  - Jan 27 @ 1:30am “Introduction to Smoothed Particle Hydrodynamics (SPH) - A Particle Method for Modelling and Simulation of Fluid Dynamics”
  - More information: [http://www.ist.ucf.edu/grad/events.html](http://www.ist.ucf.edu/grad/events.html)

• **Sandwiches & Solutions**
  - January 12, February 9, March 1, April 12
  - 12:00pm – 1:00pm
  - Partnership II Building, 3rd floor collaboration area

• **MaSK Meetings**
  - Jan 16: Otronicon Outing
  - Jan 19: Beginning of Semester Social
  - Jan 29: Tour of Orlando Campus of OCPS Tech Centers

• **Otronicon @ Orlando Science Center**
  - January 15th – 18th
  - (O)rlando Elec(tron)ic (I)nteractive Entertainment (Con)vention
## Stay in Contact with Us

<table>
<thead>
<tr>
<th>Degree Program</th>
<th>Program Director</th>
<th>Support Personnel</th>
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<tbody>
<tr>
<td>Modeling &amp; Simulation Ph.D.</td>
<td>Joseph J. LaViola, Jr., Ph.D. Associate Professor, Computer Science M&amp;S Director</td>
<td>Sabrina Gordon, M.A. Coordinator</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:jjl@eecs.ucf.edu">jjl@eecs.ucf.edu</a></td>
<td>(407) 882-1407</td>
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<tr>
<td></td>
<td></td>
<td><a href="mailto:Sabrina.Gordon@ucf.edu">Sabrina.Gordon@ucf.edu</a></td>
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<td><a href="mailto:modsim@ucf.edu">modsim@ucf.edu</a></td>
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<tr>
<td>Modeling &amp; Simulation M.S.</td>
<td></td>
<td>Partnership II Bldg – 131J</td>
</tr>
<tr>
<td>Modeling &amp; Simulation of Technical Systems G.C.</td>
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<td>Partnership II Bldg – 131D</td>
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<tr>
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Stay in Contact with Us

• Join our networks and stay informed!

• Find us on facebook and LinkedIn

• Search for “UCF Modeling & Simulation Graduate Program”
Words of Advice
Sorry ... There Are No Shortcuts to Your Degree!

http://go.to/funpic
You Must...

... work hard...

... be determined...

...and, stay focused.
But, the Key to Life Is Balance!
Thank You for Your Attention!

We are VERY glad that you are here!

Questions? Comments?