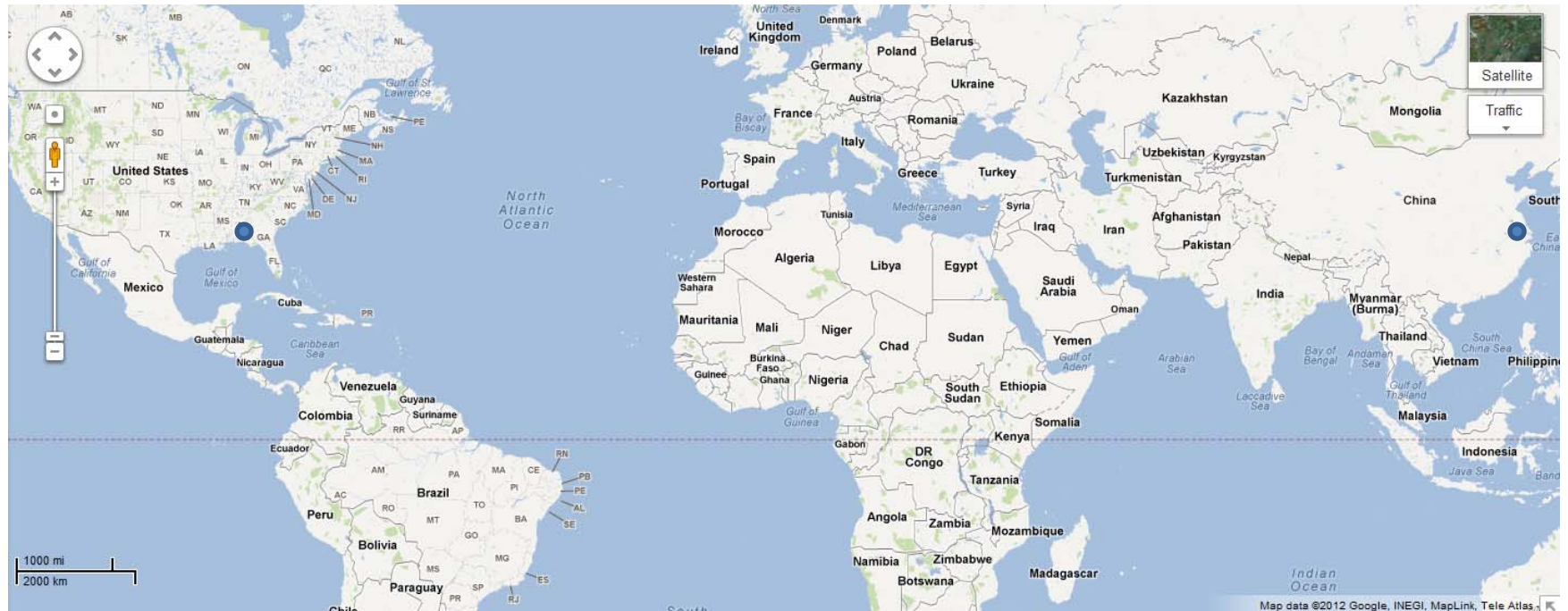


# Industrial Engineering at Auburn University

Jorge Valenzuela, PhD  
Department Chair



# Where is Auburn University?



Country: USA

State: Alabama

City: Auburn

# A close look

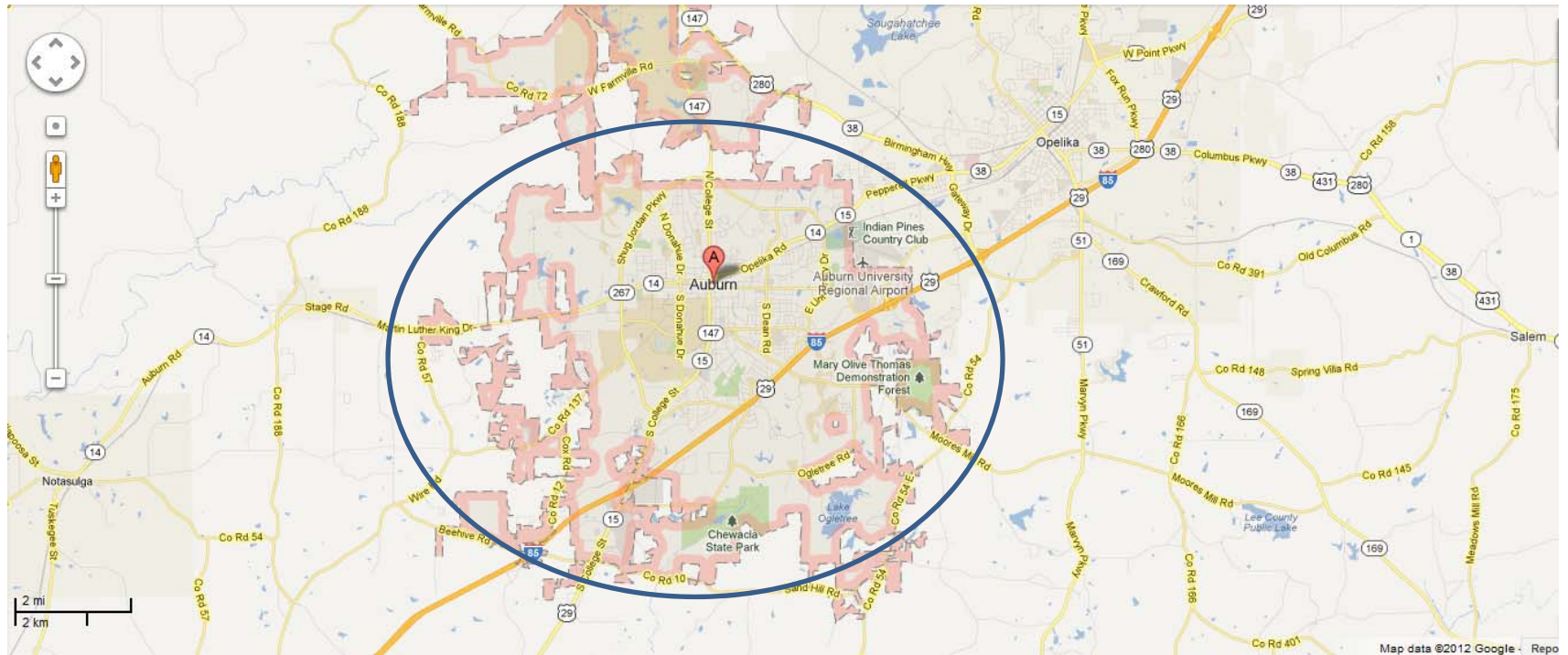


# A closer look

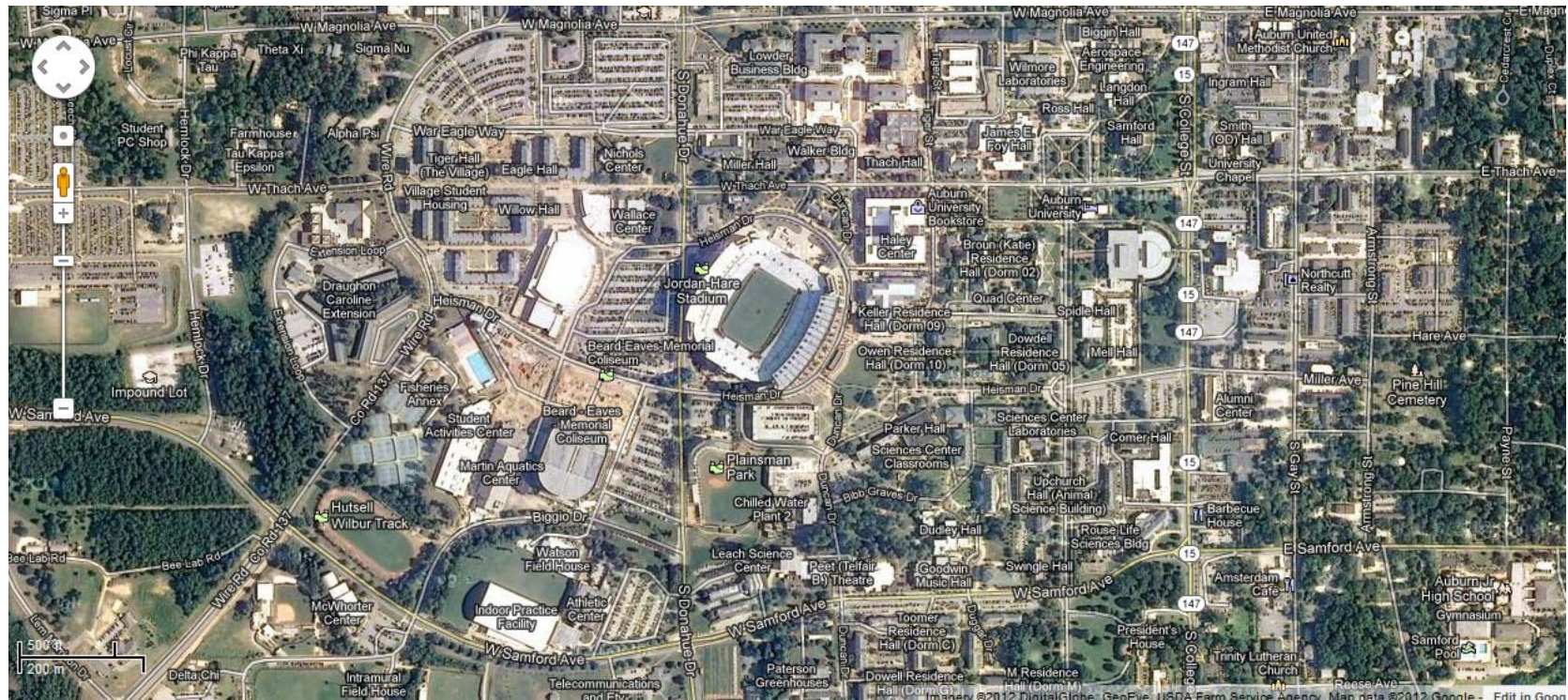




# A much closer look



# The city of Auburn



Population: 53,380  
College students: 25,000



# The city of Auburn



# The university



Stadium



Dorms

War Eagle!



# The ISE Department

- Located in the Shelby Center, a \$108 million new center with modern classrooms, lecture halls and laboratories.



My office

# The ISE students



Undergraduate students: 357

Master's students: 102

PhD students: 58



# Socializing





# The Faculty

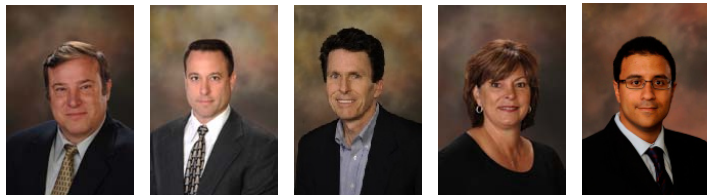
## Manufacturing Systems



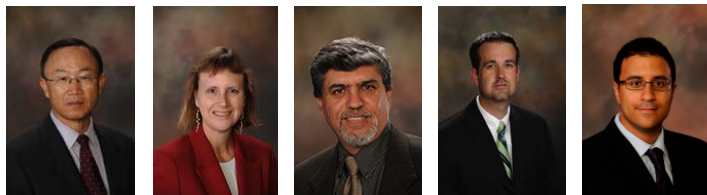
## Professor Emeritus



## Human Factors - Safety - Ergonomics

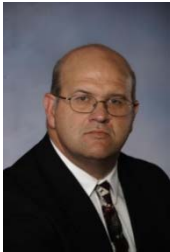


## Service Systems

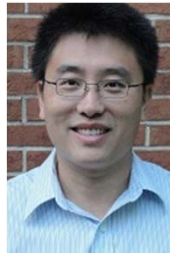


# Adjunct and Affiliate Professors

## Adjunct Professors



## Affiliate Professors



## Instructors



# Bachelor in Industrial and Systems Engineering

## FRESHMAN YEAR

English Comp I	ENGL 1100	3	English Comp II	ENGL 1120	3
Core Fine Arts		3	Core History <sup>1,2</sup>		3
Calculus I	MATH 1610	4 (P)	Calculus II	MATH 1620	4 (P)
Fund. of Chem I	CHEM 1030	3 (P)	Physics I	PHYS 1600	4 (P)
Chem I Lab	CHEM 1031	1 (P)	Intro to Comp Prog		
Engr Orientation	ENGR 1100	0 (P)	(Matlab)	COMP 1200	2 (P)
Intro to Engr	ENGR 1110	2 (P)			
	<b>TOTAL</b>	<b>16</b>		<b>TOTAL</b>	<b>16</b>

## SOPHOMORE YEAR

Core Literature <sup>1</sup>		3	Linear Algebra	MATH 2660	3
Physics II	PHYS 1610	4	ENGR Elective <sup>3,5</sup>		3
Calculus III	MATH 2630	4	Safety & Ergo	INSY 3020	3
Diff EQ	MATH 2650	3	Methods & Work		
Prob & Stat I	STAT 3600	3	Measurement	INSY 3021	3
			Prob. & Stat II	STAT 3610	3
			Applied Stat Lab	STAT 3611	1
	<b>TOTAL</b>	<b>17</b>		<b>TOTAL</b>	<b>16</b>



# Bachelor in Industrial and Systems Engineering

## JUNIOR YEAR

Core History or Social Science <sup>1,2</sup>	3
Spreadsheet- Based Apps	3
COMP 3010	3
Stochastic O.R. INSY 3400	3
Deterministic O.R. INSY 3410	3
Eng. Economy INSY 3600	3
<b>TOTAL</b>	<b>15</b>

Core Social Science <sup>1,2</sup>	3
TECH Elective <sup>4,5</sup>	3
Simulation INSY 3420	3
Oper. Planning INSY 3700	3
Mfg. Systems I INSY 3800	3
<b>TOTAL</b>	<b>15</b>

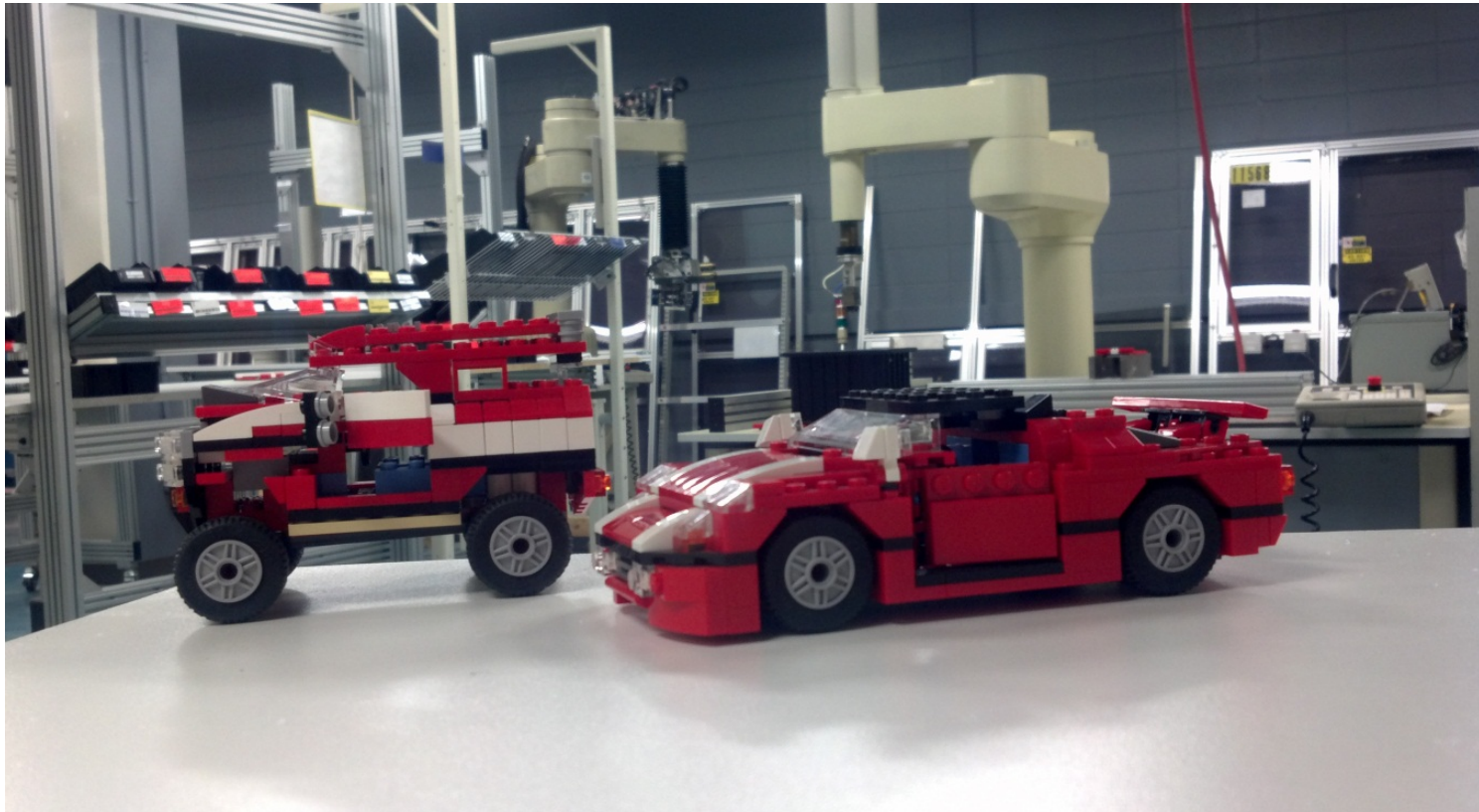
## SENIOR YEAR

Core Humanities (PHIL 1020, 1030, or 1040)	3
Fund. Elec. Engr ELEC 3810	3
Quality Control INSY 4330	3
Prof. Prac. INSY 4500	1
Mfg. Systems II INSY 4700	3
INSY Elective	3

Core Social Science <sup>1,2</sup>	3
Core Literature or Humanities <sup>1,2</sup>	3
Senior Design INSY 4800	3
INSY Elective	3
TECH Elective <sup>4,5</sup>	3
Graduation UNIV 4AAoEN1	0

# Our Labs

## Manufacturing Laboratory

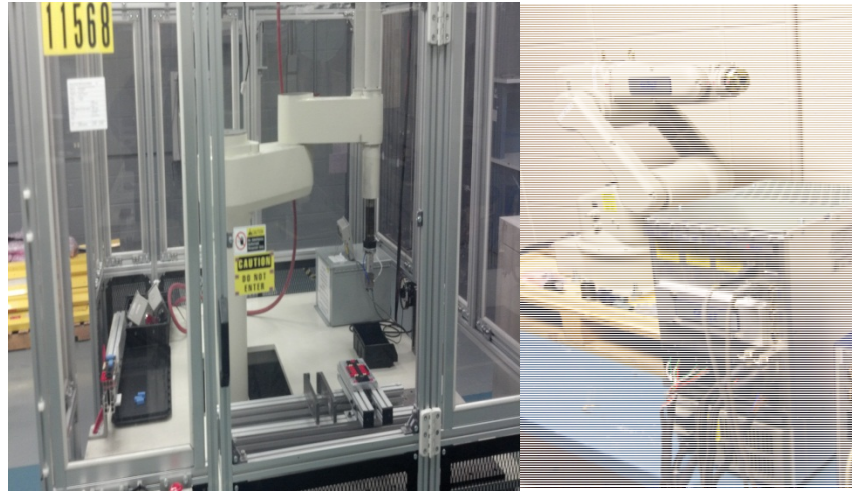


# Our Labs

## Vision Inspection



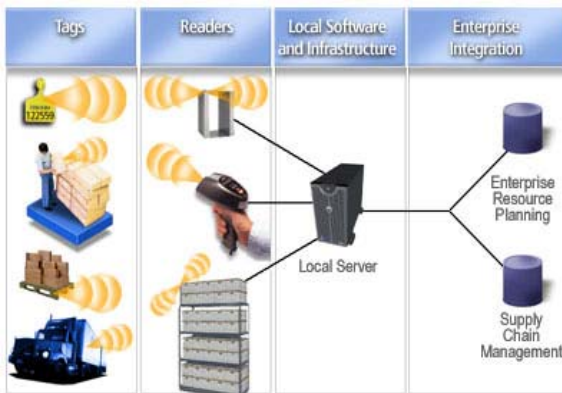
## Robotics



## PLC Conveyor



## RFID



## Auto Storage and Retrieval System (ASRS)



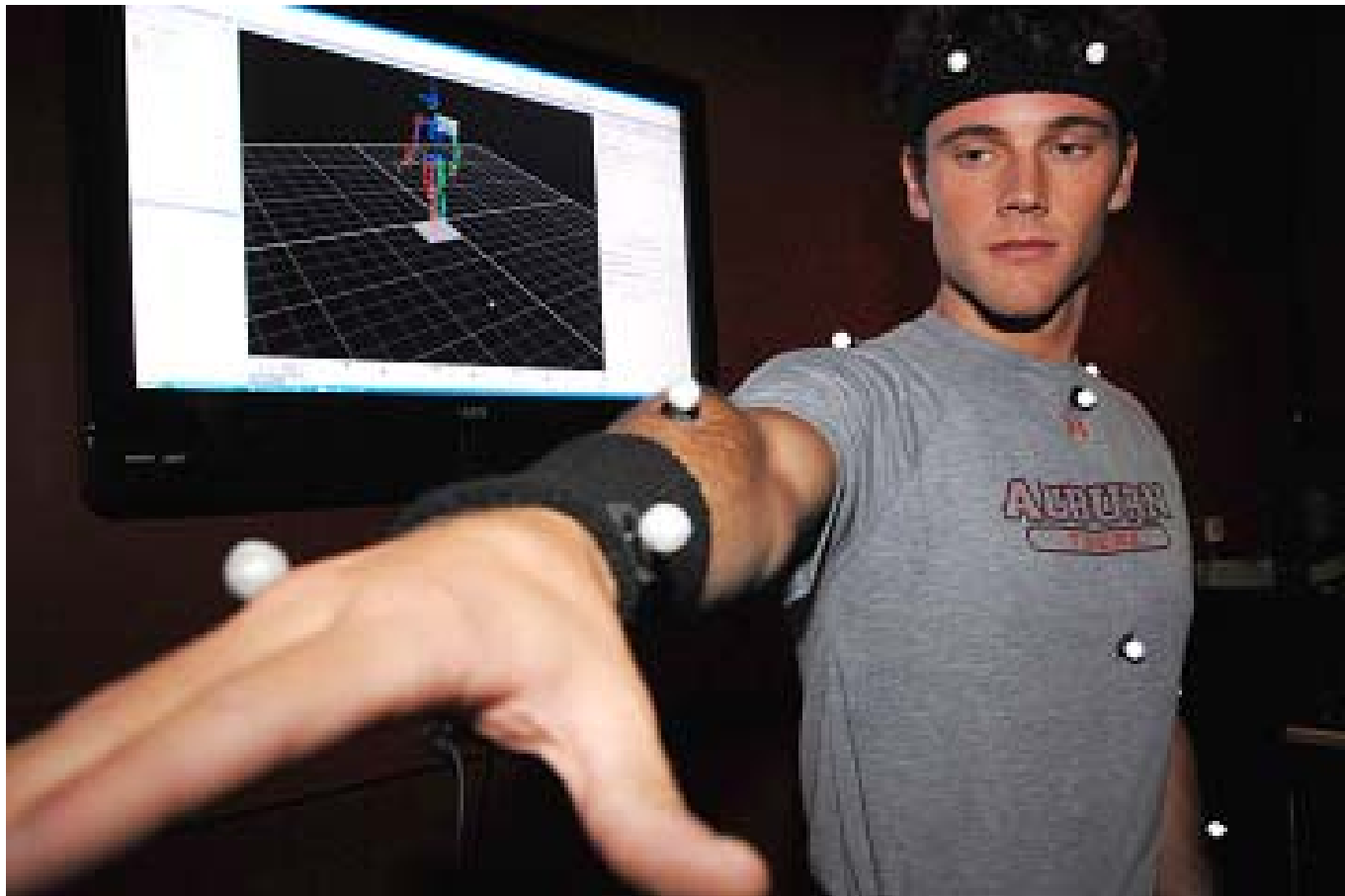
## Facility Details

- 5,000 Sq Ft
- 1M- Equip. Donations
- ASRS Material System
- Conference Room
- Two Offices
- Quality Lab
- Electronic Testing Lab



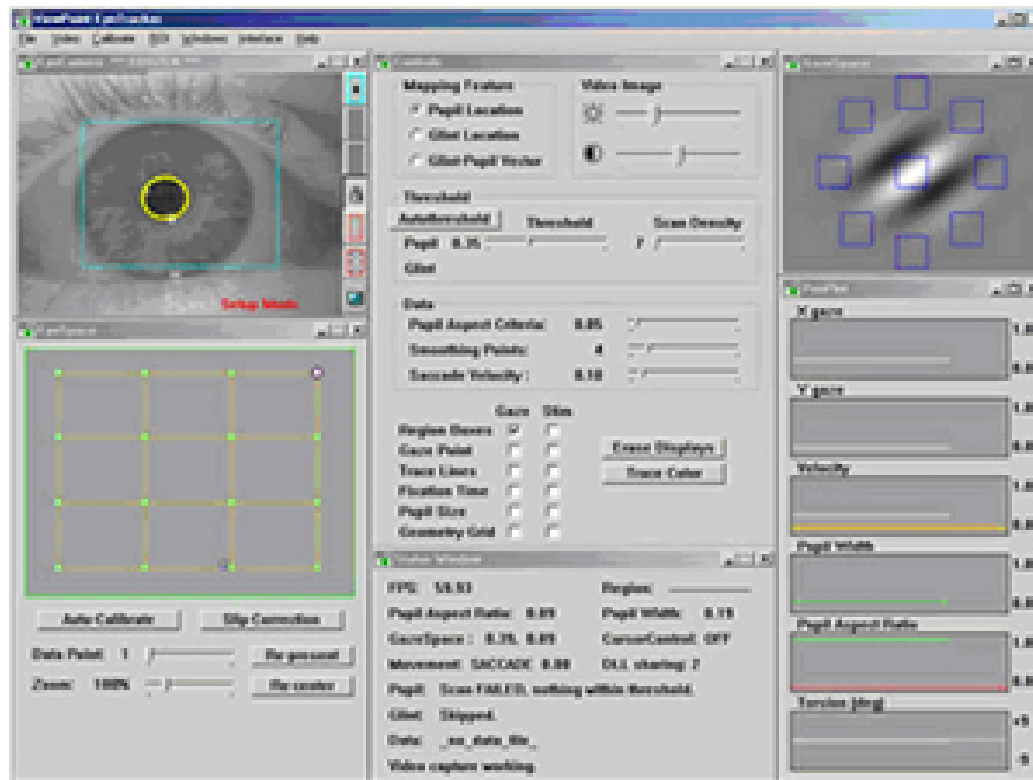
# Our Labs

## Motion Capture



# Our Labs

## Eye Tracking System



# Graduate Degrees

- **MISE** ( $\geq 31$  credit hours)
  - 3 core courses, at least 4 INSY elective courses, 3 elective courses, 1 hour of seminar
- **MISE/MBA**
  - Same as MISE plus MBA courses
- **MS** ( $\geq 31$  credit hours)
  - 3 core courses, at least 4 INSY elective courses, thesis, oral exam
- **PhD** ( $\geq 60$  credit hours)
  - 3 core courses, at least 4 INSY elective courses, at least 10 hours of research, electives, 1 hour of seminar, general exam, dissertation, oral exam



# Core Courses

- All students take
  - INSY 7300 – Advanced Engineering Statistics I
  - INSY 6600 – Manufacturing/Production Economics
  - INSY 7420 – Linear Programming/Networks
- We assume that the student has the equivalent of an undergraduate IE degree:
  - Calculus-based probability and statistics (STAT 3600/3610)
  - Operations research (INSY 3400/3410)
  - Engineering Economy (INSY 3600)
  - Other IE background (production/manufacturing systems, ergonomics, quality control, etc.)

# English Proficiency

- For international students:
  - INTL 1800 – Oral proficiency
  - INTL 1820 – Classroom communications (required for TAs)
  - INTL 1830 – Writing proficiency
- More advanced courses:
  - ENGL 3040 – Technical writing
  - ENGL 3080 – Business Writing

# Teach/Research Assistantships

- A TA/RA carries a tuition waiver
- TA appointments are assigned by the Department Chair (\$650 per month)
- RA assignments by individual faculty members (anything for \$0 to \$1500)
- If you are on a TA/RA appointment, you cannot have another job without departmental approval
- TAs and RAs are competitive



# ISE Information

- INSY Web site – <http://www.eng.auburn.edu/insy>



- Course schedules
- Graduate core courses
- General information on the department, faculty, etc.
- FAQ

# The Graduate School

- Dean – Dr. George Flowers
- The Graduate School makes MOST of the rules and is ultimately responsible for admissions, enforcing graduation requirements, etc.
- Web site – <http://www.grad.auburn.edu>
  - Calendar of important dates
  - Forms
  - AU Bulletin  
([http://www.auburn.edu/student\\_info/bulletin/](http://www.auburn.edu/student_info/bulletin/))
  - Student Policies  
([http://auburn.edu/student\\_info/student\\_policies/](http://auburn.edu/student_info/student_policies/))

# Questions?

