

# FIU

# FLORIDA INTERNATIONAL UNIVERSITY

ANNUAL REPORT  
2010 - 11



# CONSTRUCTION MANAGEMENT



## **Annual Report 2010-2011**

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## 1. Introduction

This year the Department of Construction Management continued to make noteworthy accomplishments as in the previous years. The Bachelor of Science in Construction Management program is re-accredited by the American Council for Construction Education (ACCE) for a six year period ending in 2013 in 2008. The third year report was submitted in December 2010 and was accepted without reservation by ACCE in the Annual Meeting held in February 2011.

Enrollment is slightly lower than last year. The Fall 2010 total (undergraduate and graduate) headcount is 546 as compared with 594 in Fall 2009 indicating a decrease of nearly 8 percent. This year, the graduate Fall 2010 enrollment is 171, and the undergraduate enrollment is 375. The total number of students graduated this year hit the all-time high of 166.

Construction Management faculty members were active in publishing their research findings in reputed construction journals and conference proceedings. Collectively, the department faculty published three books, twenty two journal papers, four research reports and fifteen conference proceedings papers.

The department did extremely well again this year in external research funding, thanks to Dr. Yimin Zhu and Dr. Bayraktar. Dr. Zhu succeeded again this year in securing funding from National Science Foundation and now has three ongoing projects with NSF. Dr. Bayraktar received a grant from the Florida Department of Transportation.

The Department has been allocated funding for developing its planned construction process laboratory. The university space committee approved the plan. Work will begin in the fall term of this year. The laboratory will be an open-air yard-like facility and will have an overhead crane for demonstration purposes. The laboratory is intended to provide students hands-on demonstrations on real-life construction processes, construction materials, components and their assembly. Half-built walls, steel structural joints and samples of various construction components will be the features of this laboratory.

In addition, last year the department completed a 650 square feet space to build its MEP (mechanical, electrical, plumbing) studio on the first floor of the Engineering Center Building. This lab is equipped with HVAC, electrical and plumbing appliances/fixtures for demonstration to students, and computer hardware and software for instruction and training.

At present, undergraduate students taking the course on Construction Materials are required to meet three class sessions in the civil engineering materials laboratory for hands-on demonstration on testing of common construction materials, such as cement,

concrete, steel and timber. This arrangement provides much needed laboratory experience to our students.

The department currently has 10 fulltime faculty members (with one joining in Fall 2011) and employs between 10 to 15 adjunct faculty members every term. Dr. Youngcheol Kang, our newest fulltime faculty member will join the department this year. Dr. Kang, P.E. a recent PhD in civil engineering from University of Texas at Austin, will join the department in Fall 2011 as a tenure-track Assistant Professor.

## 2. Academics

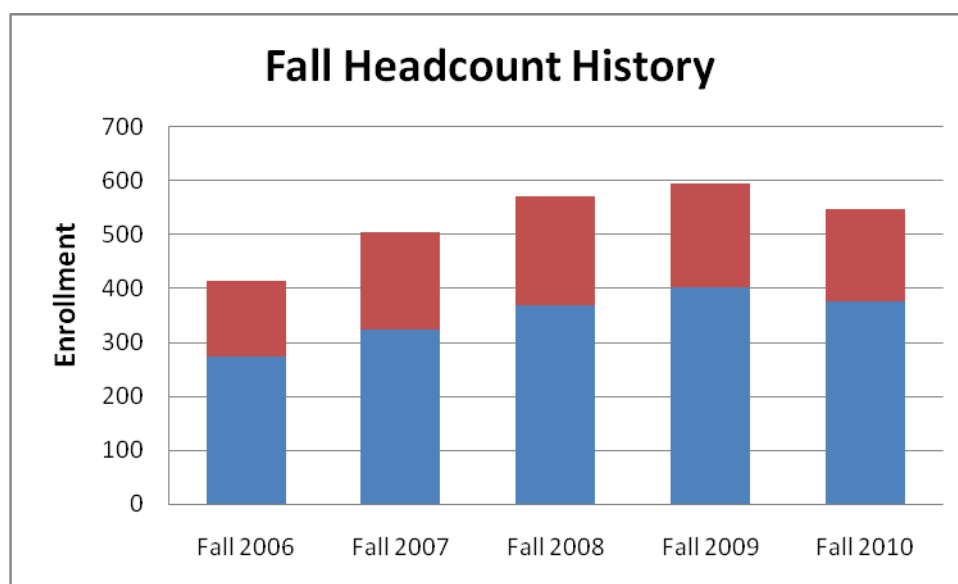
### 2.1. Enrollments and FTEs

Fall headcount (enrollment) history is shown in Table 1 and Figure 1. After a steady growth over the last six years, this year for the first time, the fall enrollment declined slightly, by nearly 8 percent, from 594 to 546. The undergraduate enrollment declined from 402 to 375 and graduate enrollment from 192 to 171.

The department currently has 9 fulltime faculty and employs anywhere between 10 to 14 adjunct faculty members every term.

**Table 1. Fall Headcount History**

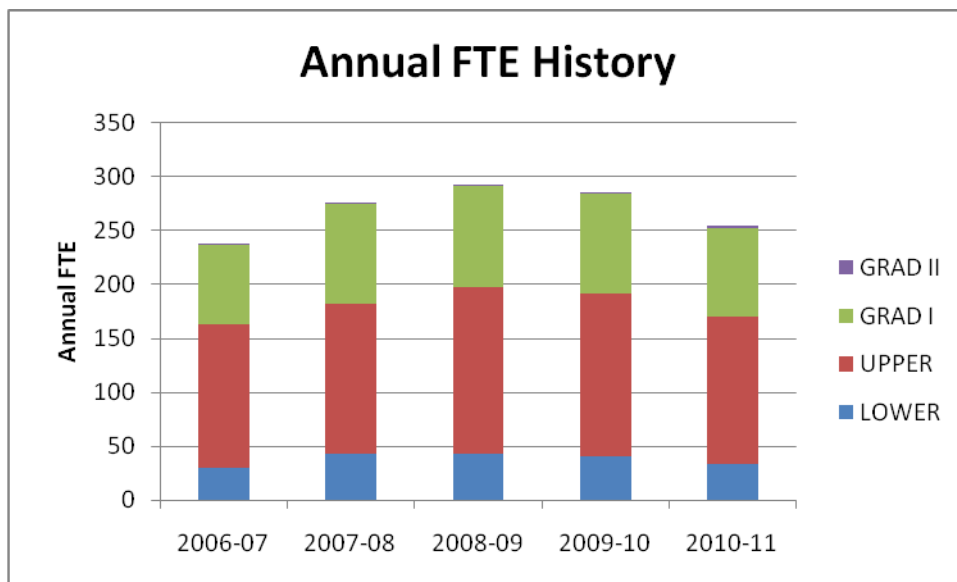
	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010
UNDERGRADUATE	273	323	369	402	375
GRADUATE	141	182	202	192	171
<b>TOTAL</b>	<b>414</b>	<b>505</b>	<b>571</b>	<b>594</b>	<b>546</b>



**Figure 1. Fall Headcount History**

**Table 2. Annual Full Time Equivalent (FTE)**

	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
LOWER	30.5	43.7	42.8	41.3	34.1
UPPER	132.3	138.5	155	150.4	136.2
GRAD I	74.5	93.1	94.1	92.8	82.0
GRAD II	0.8	0.8	0.5	0.5	2.1
<b>TOTAL</b>	<b>238.0</b>	<b>275.7</b>	<b>292.0</b>	<b>285.0</b>	<b>254.4</b>



**Figure 2. Annual FTE History**

The annual full-time equivalent (AFTE) students, calculated as the fundable student credit hours divided by 40 or 32 credits for the undergraduate and graduate students, respectively, have again declined slightly at both undergraduate and graduate levels over the last year. Overall decrease in AFTE is 10% over the last year (2009-10). The increase in total AFTE, however, was close to 40% over the three year period from 2005-06 to 2008-09. Figure 2 shows the AFTE history of the department since 2006-07.

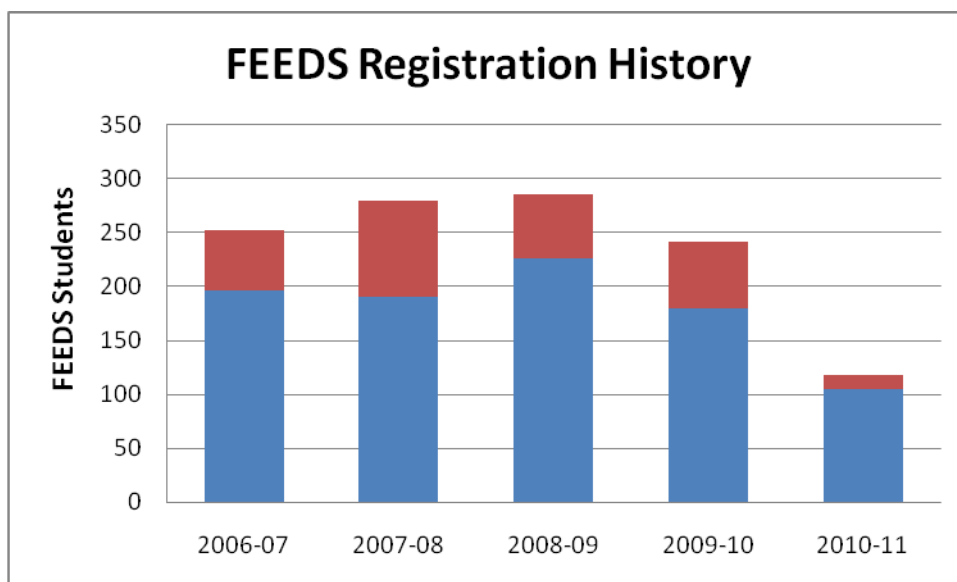
## 2.2. Florida Engineering Education Delivery System (FEEDS)

Table 3 and Figure 3 show the FEEDS enrollment (total registrations) over the last five years. In 2005, the department developed and implemented its FEEDS Policy in order to improve the quality of instruction and delivery of course materials. As a result

enrollment in FEEDS sections were capped. Thus the decrease in FEEDS enrollment was by design and deliberate. The desired quality control measures were effective and the quality of FEEDS instruction was not an issue during the re-accreditation visit. At the graduate level, reduction in FEEDS enrollment is compensated by online classes as discussed in the following section.

**Table 3. FEEDS Registration History**

	FEEDS Registrations				
	2006-07	2007-08	2008-09	2009-10	2010-11
UNDERGRADUATE	196	190	226	180	105
GRADUATE	56	90	60	62	13
<b>TOTAL</b>	<b>252</b>	<b>280</b>	<b>286</b>	<b>242</b>	<b>118</b>



**Figure 3. FEEDS Registration History**

### 2.3. Online Masters Program

The department began offering graduate courses online for its Masters students in 2004. Two sections for each online course are offered, one for the in-state students and the other for the out-of-state students. Fee structures are different. FTE credits of out-of-state students are not credited to the department. Sufficient courses are offered

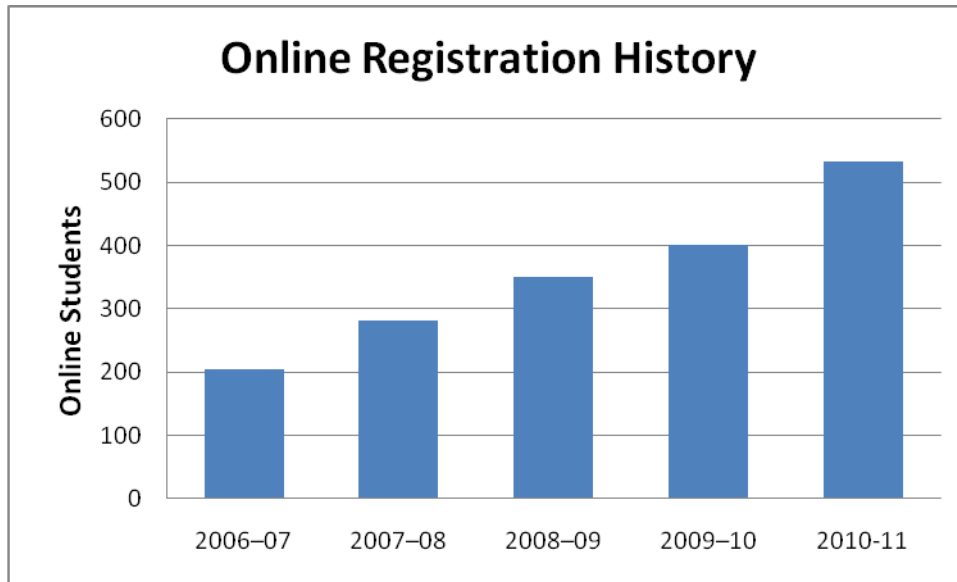
within a four-semester cycle enabling students to graduate by taking all courses online. The enrollment is on the rise as can be seen from Tables 4 and 5 and Figure 4. At present, approximately a total of 180 students enroll in online classes in a typical term. About 110 of them are in-state and 70 out-of-state. Currently, the college charges in-state students a plus fee of \$299 per course and out-of-state graduate students a flat fee of \$1,599. The department's total revenue in the 2010-2011 academic year was close to \$450,000.

**Table 4. Online (MS) Enrollment and Course Offering**

Semester/Year	Online Enrollment	Online Course Offering
Summer 2007	62	2
Fall 2007	104	3
Spring 2008	115	4
<b>2007 - 2008</b>	<b>281</b>	<b>9</b>
Summer 2008	86	2
Fall 2008	110	3
Spring 2009	154	4
<b>2008 - 2009</b>	<b>350</b>	<b>9</b>
Summer 2009	125	3
Fall 2009	143	3
Spring 2010	133	4
<b>2009 - 2010</b>	<b>401</b>	<b>9</b>
Summer 2010	158	4
Fall 2010	203	5
Spring 2011	172	3
<b>2010 - 2011</b>	<b>533</b>	<b>12</b>

**Table 5. Online (MS) Course Registrations History**

	Online Enrollment (Total)				
	2006-07	2007-08	2008-09	2009-10	2010-11
<b>Graduate</b>	205	281	350	401	533



**Figure 4. Online Registration History**

#### 2.4. Pines Center

The department offers classes in the Pines Center campus, which is located in the Broward County for convenience of the students primarily residing in the Broward and the Palm Beaches counties. We offer a number of classes there every semester during the academic year, and fewer during the summer. Courses which are offered at the Pines Center during a given semester are not offered at the Engineering Center during that same semester and vice versa. During 2010-11 academic year 15 undergraduate and 6 graduate course-sections were offered with a total of 359 undergraduate and 188 graduate student-registrations in the Pines Center. The data in Table 6 show that there has been a drop in undergraduate enrollment while the graduate enrollment increased.

**Table 6. Pines Center Course offering/registrations**

	Academic Year		
	2008-09	2009-10	2010-11
Undergraduate	17/446	16/448	15/359
Graduate	11/246	7/133	6/188
<b>TOTAL</b>	28/692	23/581	21/547

#### 2.5. Degrees Awarded

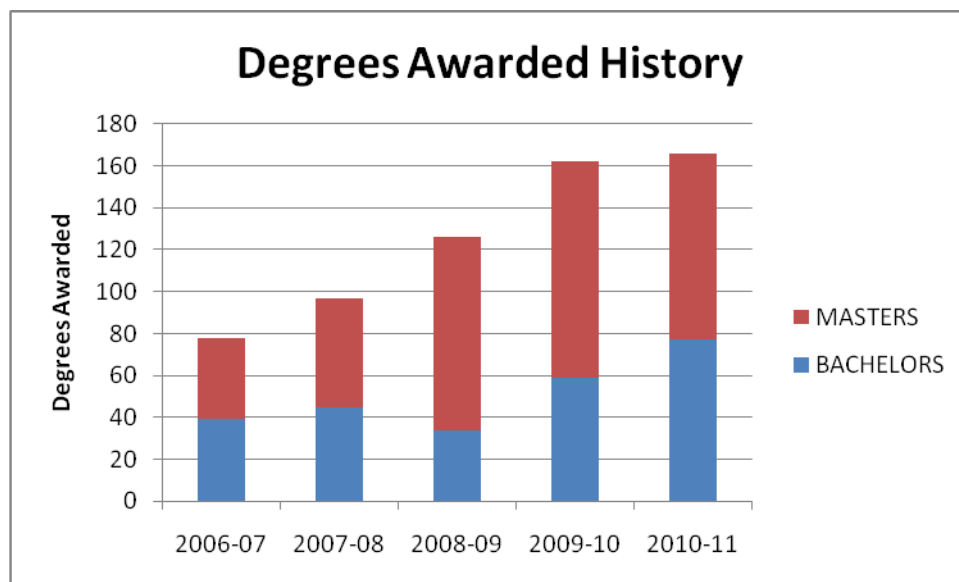
The department awarded degrees to a record number of 166 students last year. The historical numbers over the last five years for bachelors and masters are shown in Table 7 and Figure 5.



Our graduates are employed by all major construction companies in south Florida and nationwide. Arellano, Link Construction, Moss and Associates, Coastal Construction, Turner Construction, Odebrecht Construction, Balfour Beatty, and Skanska are some of the major employers.

**Table 7. Degrees by Students**

DEGREE LEVEL	Academic Year				
	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
BACHELORS	39	45	34	59	77
MASTERS	39	52	92	103	89
<b>TOTAL</b>	<b>78</b>	<b>97</b>	<b>126</b>	<b>162</b>	<b>166</b>



**Figure 5. Degrees Awarded History**

## 2.6. ACCE Accreditation

The CM undergraduate program (BSCM) has been re-accredited in fall 2007. The program has been awarded accredited status for another six years by the American Council for Construction Education (ACCE). The department's strengths were duly recognized. In response to ACCE site visit report, the department constructed a 650 sq. ft. MEP laboratory. It was completed last year. As mentioned earlier the department is working with the College Dean's Office and the FIU administration for establishing a construction process laboratory this year. The Third Year Interim Report prepared by

the department due to ACCE this year was approved without reservation by its Board of Trustees.

## **2.7. Student Chapter Activities**

Four student chapters are active in the Department. These are: ABC (Associated Builders and Contractors), AGC (Associated General Contractors), National Association of Women in Construction (NAWIC), and Sigma Lambda Chi Honor Society. ABC Student Chapter is the most active and works closely with the south Florida ABC. This student chapter participates in the National Construction Management Competition annually. Every year ABC East Florida Chapter organizes a golf tournament to raise funds for supporting the student team. Dr. Jose Faria served as the advisor and Dr. Morad as the mentor of the team. It should be mentioned that in 2006 the ABC Student Chapter team won the National Grand Championship.

## **2.8. Overseas and Professional Programs**

The department and the college's Division of External Program took initiatives to launch two overseas programs to offer the Masters in Construction Management (MSCM) programs in the Dominican Republic and in Panama. The program in the Dominican Republic will be offered in collaboration with Universidad Iberoamericana (UNIBE) in Santa Domingo, Dominican Republic, and the program in Panama will be offered in collaboration with the Quality Leadership University (QLU) in Panama City, Panama. Both programs will begin in 2012.

In addition, a professional MSCM program is currently under review. This program is planned for the executives in the industry and courses will be offered during the weekends.

## **2.9. Other Events**

### **2.9.1. Outreach**

- ABC Golf Tournament, March 25, 2011 At the Miami-Melreese Golf Course for raising funds to support the FIU ABC student team for participating in the National Construction Management Championship competition held in San Antonio, Texas.
- The department organized its regularly held Career Expo on February 8, 2011. Eleven major construction companies including ANF, Arellano, Facchina, GSD, Hensel Phelps, Link, Moss, MCM, Odebrecht, Skanska, and Turner participated.

## 2.9.2. Industry Advisory Council Events

- Donor Thank you Event – Held on October 12, 2010 at Presidential Gold Suite, FIU Football Stadium to thank all CM emergency industry fund donor of 2010-11 year.
- CM Industry Advisory Council Meeting and Holiday Luncheon – Held on December 10, 2010 at GC Ballroom.
- FIU construction projects workshop - Held on April 29, 2011 for the south Florida construction industry, sponsored by south Florida ABC. John Cal, Associate Vice President, Facilities Management, Bob Griffith, Director of Planning and Real Estate Development, and Sylvia Berenguer, Director, Minor Projects, were the speakers.
- On April 26, 2011 the 2<sup>nd</sup> Annual FIU-Construction Management Alumni Chapter Dinner Forum was held at the GC Ballroom. More than 100 alumni attended. A panel discussion followed the dinner to discuss next five years economic outlook in the south Florida construction industry.
- The Executive Council (Chuck Nielson, Dan Whiteman, Dagobarto Diaz, Emilio Alvarez, Chad Moss, Irtishad Ahmad and Susan Jay) met several times throughout the year to assess the industry economy and strategize the fund-raising activities for the department.

### 3. Research and Scholarly Activities

#### 3.1. Research Areas

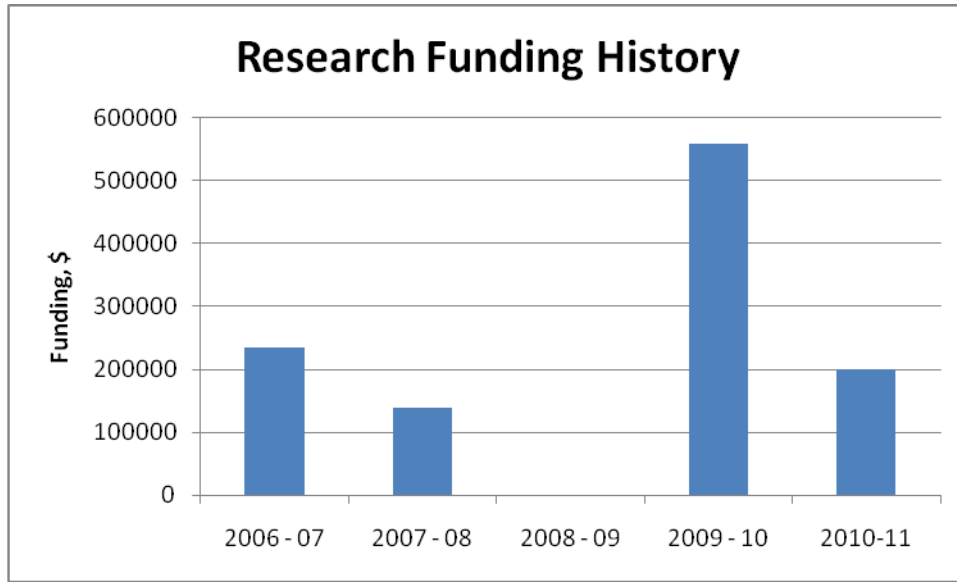
<u>Major Research Area</u>	<u>Faculty Member</u>
Risk Management and Decision Making	Irtishad Ahmad Emre Bayraktar Jose A. Faria Ayman Morad
Sustainability and Green Construction	Gene Farmer Yimin Zhu Emre Bayraktar Jose Faria
Information and Communication Technology	Irtishad Ahmad Yimin Zhu Ayman Morad
Infrastructure Systems and Management	Irtishad Ahmad Yimin Zhu Jose Mitrani
Safety and Health	Gene Farmer Jose A. Faria
Construction Education	Yimin Zhu Ron Baier Irtishad Ahmad

#### 3.2. Research Funding

As shown in Table 8 and Figure 6, the department did very well again this year in external research funding, thanks to Dr. Yimin Zhu and Dr. Bayraktar. Currently, Dr. Zhu is working on three National Science Foundation grants. Dr. Bayraktar received a research grant from Florida Department of Transportation. As in the previous years, this year also a number of research proposals were submitted to various funding agencies. There are a few research proposals in the pipeline.

**Table 8. Research Funding History**

Year	2006 - 07	2007 - 08	2008 - 09	2009 - 10	2010-11
<b>Total \$</b>	\$234,138	\$138,456	\$0	\$557,855	\$200,000



**Figure 6. Research Funding History**

### 3.2.1. Active Research Projects

1. Mehmet Bayraktar, P.I. and Yimin Zhu, Co-P.I., "Commercial Motor Vehicle Parking Trends at Rest Areas and Weigh Stations", Florida Dept. of Transportation (FDOT), \$100,230, March 22, 2011 - July 22, 2012, Awarded.
2. Irtishad Ahmad, P.I and Mehmet Bayraktar, Co-P.I. "A Study of Non-Union Wage Rates of Construction Trades in South Florida", ABC, AGC, CASF, ECA, FTBA, \$15,000, September 1, 2010 - May 01, 2011, Awarded.
3. Gene Farmer, P.I., and Ronald Baier, Co-P.I., "Florida Department of Transportation District 6 Facility Condition Assessment ", FDOT, \$157150.00, May 2011 - June 30, 2011, Awarded.
4. Yimin Zhu, P.I., Farmer-Academic-Industry Partnership for the Development of Sustainable, Energy Efficient, Multifunctional Bioproducts for the Built Environment, NSF subcontract from UNT, \$50,000, September 1, 2011 - August 31, 2013, Awarded.

5. Yimin Zhu, PI, "Collaborative Research: Foster Complex Systems Thinking in Construction Engineering Education Using a Case-Based Multidimensional Virtual Environment (CMVE)", \$0.00, Awarded.
6. Yimin Zhu, PI, "Stochastic Time, Cost and Environmental Impact, Optimization of Construction Processes", \$0.00, Awarded.
7. Yimin Zhu PI, "Analysis of Energy, Environment and Life Cycle Cost Reduction Potential of Ground Source Heat Pumps (GSHP) in Hot and Humid Climate ", \$0.00, Awarded.
8. Stochastic Time, Cost and Environmental Impact Optimization for Construction Processes PI: Dr. Yimin Zhu, National Science Foundation: \$307,855, 07/01/10 – 06/30/13.
9. Venture Capital Opportunities in Green Building Technologies, PI: Dr. Emre M. Bayraktar, FIU Ewing Marion Kauffman Foundation: \$14,937, 01/01/2010 – 01/01/2011

### **3.2.3. Submitted Research Proposals**

1. Gene Farmer, Co-PI (Dr. Tao, Dr. Zhu, et al), "A New Building America, Team: Consortium for Energy Efficient, Affordable and Resilient Homes", Department of Energy, \$508,287, 1/1/2010 - 12/31/2014.

### **3.3. Construction in the Twenty First Century (CITC VI) International Conference**

The department has organized the sixth conference on Construction in the Twenty First Century in Kuala Lumpur, Malaysia, in July 2011, in collaboration with East Carolina University and UiTM of Malaysia.

The department also organized the ASCE Conference on Computing in June under the leadership of Dr. Yimin Zhu. The conference was held in Miami and drew a significant number of participants.

### **3.4. Research Productivity**

In this section, a listing of the research output and faculty scholarly work is compiled.

#### **3.4.1. Journal Editorship**

Ahmad, I. Editorial Board Member, *Journal of Management in Engineering*, American Society of Civil Engineers.

Ahmad, I. Editorial Board Member, *Leadership and Management in Engineering*, American Society of Civil Engineers.

Bayraktar, M.E. Associate Editor, *Journal of Management in Engineering*, American Society of Civil Engineers.

### **3.4.2. Books and Book Chapters**

1. Lincoln Forbes and Syed Ahmed, *Modern Construction – Lean Project Delivery, and Integrated Practices*, Taylor and Francis, published in October 2010.
2. Gene Farmer. "Sustainable Building A LEED Approach to Construction Management", Delmar Cengage, Summer 2010.
3. Gene Farmer. "Sustainable Construction for Construction Managers", Delmar Cengage.

### **3.4.3. Refereed Journal Papers 2010-11**

1. Bayraktar, M., Owens, C., and Zhu, Y. "State-of-Practice of LEED in the United States: A Contractor's Perspective", *International Journal of Construction Management*, 05/24/2011.
2. Chunduri, S., Zhu, Y. and Bayraktar, M. "Improving Green Building Education by Addressing the Learning style and Prior Knowledge of Students", *Journal of Professional Issues in Engineering Education and practice*, 5/24/2011.
3. Jiang, A. and Zhu, Y.. "Life Cycle Cost Analysis of Residential Grid-connected Solar Photovoltaic Systems in Florida", *International Journal of Construction Education and Research*, 5/24/2011.
4. Shen, Z., Jensen, W., Berryman, C., and Zhu, Y.. "A Comparative Study of Activity-Based Construction Labor Productivity in the US and China", *Journal of Management in Engineering*, accepted for publication, 5/24/2011.
5. Mehmet Bayraktar Bayraktar, M. E., Arif, F., Hastak, M., and Gad, N. . "The Judiciary's Use of the Critical Path Method to Resolve Construction Claims", *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, ASCE, 2011.
6. Mehmet Bayraktar Papajohn, D., Cui, Q., and Bayraktar, M. E. . "Public-Private Partnerships in U.S. Transportation: A Critical Review and the Path Forward", *Journal of Management in Engineering*, ASCE, 2011.
7. Chundri, S., Zhu, Y., and Bayraktar, M. E.. "Improving Concept Learning in Green Building Education by Addressing Students' Learning Styles and Prior Knowledge", *Journal of Professional Issues in Engineering Education and Practice*, ASCE, 2011.
8. Bayraktar, M. E., Owens, C., and Zhu, Y. . "State-of-Practice of LEED in the United States: A Contractor's Perspective", *The International Journal of Construction Management*, 2011.

9. Bayraktar, M. E., Hastak, M., Gokhale, S., and Safi, B.. "A Decision Tool for Selecting the Optimal Techniques for Cost and Schedule Reduction in Capital Projects", *Journal of Construction Engineering and Management*, ASCE, 2011.
10. Papajohn, D., Cui, Q., and Bayraktar, Mehmet Emre. . "Public-Private Partnerships in U.S. Transportation: A Critical Review and the Path Forward.", *Journal of Management in Engineering*, 2010.
11. Zhu Y., Bayraktar, Mehmet Emre, and Chen S. . "Application of Metadata Modeling to Dispute Review Report Management", *Journal of Civil Engineering and Management*, 2010.
12. Perkinson, C., Bayraktar, Mehmet Emre, and Ahmad, I.. "The Use of Computing Technology in Highway Construction as a Total Jobsite Management Tool", *Automation in Construction*, Elsevier Science Publishers, 2010.
13. Bayraktar, Mehmet Emre and Hastak, M. . "A Scoring Approach to Construction Bond Underwriting", *Journal of Construction Engineering and Management*, ASCE, 2010.
14. Mehmet Emre and Owens, C.. "A LEED Implementation Guide for Construction Practitioners", *Journal of Architectural Engineering*, 2010.
15. Ossman III, G., Bayraktar, Mehmet Emre, and Cui, Q. . "Construction Arbitration Consistency and Reliability: Empirical Study", *Journal of Management in Engineering*, ASCE, 2010.
16. Cui, Q., Johnson, P., Sharma, D., and Bayraktar, Mehmet Emre. . "Determinants of Industry Acceptance for Highway Warranty Contracts: Alabama Case Study", *Journal of Infrastructure Systems*, ASCE, 2010.
17. Zhu, Y., Bayraktar, E., and Chen, S. C. "Application of Metadata Modeling to Dispute Review Report Management", *International Journal of Civil Engineering and Management*.
18. Jiang, A. and Zhu, Y.. "A Multi-Stage Approach to Time-Cost Trade-Off Analysis Using Mathematical Programming", *Journal of Construction Management*.
19. Li, X. D., Zhu, Y., and Zhang, Z. H. "An LCA-based Environmental Impact Assessment Model for Construction Processes", *Building and Environment*.
20. Zhu, Y., Zhang, R., and Ahmad, I. "Applying Concept Similarity to the Evaluation of Common Understanding in Multidisciplinary Learning", *Journal of Computing in Civil Engineering*.
21. Rizwan U. Farooqui, Syed M. Ahmed and Sarosh H. Lodi . "State of Adoption and Implementation of Knowledge Management Strategies In The U.S. Construction Industry.", *International Journal of Architectural Engineering and design Management (AEDM)*, Earthscan Publication. , 2009.
22. Rizwan U. Farooqui, Syed M. Ahmed and Sarosh H. Lodi . "Assessment of Pakistani Construction Industry - Current Performance and the Way Forward. ", *Journal for the Advancement of Performance Information and Value*, Vol. 1, Issue 2, 35-50, Performance Based Studies Research Group & CIB Task Group 61., 2009.



#### **3.4.4 Reports 2010-11**

1. Zhu, Y., Bayraktar, Mehmet Emre, Chen, S. . "Development of Improved Information Management Processes for FDOT Dispute Review Board System", FDOT, 1, 2010.
2. Tao, Y. and Zhu, Yimin. "An Initial Energy and Environmental Impact Study of an InnoVida Patio House", College of Engineering and Computing - FIU.
3. Yimin Zhu, Mehmet Bayraktar and Shu-Ching Chen. "The Development of Improved Information Management Processes for FDOT Dispute Review Board System", Department of Construction Management - FIU.
4. Bayraktar, M. E. and Arif, F. "Venture Capital Opportunities in Green Building Technologies: A Strategic Analysis for Emerging Entrepreneurial Companies from South Florida and Latin America", Ewing Marion Kauffman Foundation / Eugenio Pino and Family Global Entrepreneurship Center, Florida International University, Jan. 2011.

#### **3.4.5 Conference Proceedings Papers 2010-11**

1. Bayraktar, Mehmet Emre, Arif, F., and Cinkilic, C.. "Assessment of Disputes in Florida Transportation Projects and Lessons Learned", Second International Conference on Construction in Developing Countries, Cairo, Egypt, Aug. 3-5, 2010.
2. Zhu, Y. and Tao, Y.. "Future House USA: an experience of international collaboration on a green building demonstration project", the International Conference of Construction and Real Estate Management, Beijing, China, November 5-6, 2009.
3. Gulbin, O. and Zhu, Y., . "Cycle Assessment of a Net Zero Energy House", the International Conference of Construction and Real Estate Management, Beijing, China, November 5-6, 2009.
4. Rizwan U. Farooqui and Syed M. Ahmed . "Proposal for a Construction Industry Safety Management Model based on Total Quality Management Principles", Proceedings of the 4th International Conference for Postgraduate Researchers of the Built and Natural Environment (PRoBE 2009), Nov 19-20, 2009, Glasgow, Scotland. , Glasgow, Scotland, Nov 19-20, 2009.
5. Rizwan U. Farooqui, Muhammad Saqib, Sarosh H. Lodi and Syed M. Ahmed . "Factors Affecting Success of Construction Projects in Pakistan", Proceedings of the 2nd Construction Industry Research Achievement International Conference (CIRAIC) 2009, Kuala Lumpur, Malaysia, Nov 3-5, 2009, Kuala Lumpur.
6. Rizwan U. Farooqui, Sarosh H. Lodi and Syed M. Ahmed . "A Stakeholder Perspective on the Desirable Skills of Project Managers in the Pakistani Construction Industry", Construction in Muslim World, Facing New and Challenging Environments, Kuala Lumpur, Malaysia, Oct 21-22, 2009.

7. Rizwan U. Farooqui, Syed M. Ahmed and Dilshad Umer . "Joint Ventures: Key Issues, Benefits and Critical Success Factors", Proceedings of the Fifth International Conference on Multi-National Joint Ventures for Construction Works, Kuala Lumpur, Malaysia, Oct 21-22, 2009.
8. Syed Ahmed Rizwan U. Farooqui and Syed M. Ahmed . "Current State of Adoption of Knowledge Management Practices in U.S. Construction Firms", Proceedings of the 3rd Latin American Conference on Construction Management and Economics (ELAGEC III), , Bogota, Colombia, Sep 9-11, 2009.
9. Rizwan U. Farooqui and Syed M. Ahmed . "Knowledge and Information Management in Construction Contracting Firms –The U.S. Perspective", Proceedings of 5th International Conference on Information and Knowledge Management in Building Construction (CIB-W102): Deconstructing Babel: Sharing Global Construction Knowledge, Rio de Janeiro, RJ, Brazil, , June 17-19, 2009.
10. Wallied Orabi and Khaled El-Rayes. "Maximizing Rehabilitation Benefits of Aging Transportation Networks", 2011 CSCE Annual General Meeting & Conference: 3rd International / 9th Construction Specialty Conference, Ottawa, Ontario, Canada, June 14-17, 2011.
11. Wallied Orabi. "A Web-Based Resource Management System for Damaged Transportation Networks", 2011 ASCE International Workshop on Computing in Civil Engineering, Miami, FL, June 19-22, 2011.
12. Ozcan, G. and Zhu, Y. "Optimization of Time, Cost, and Environmental Impact for Sustainable Infrastructure Construction", Proceedings of the 2011 ASCE International Workshop on Computing in Civil Engineering, Miami, FL, June 19 - 22.
13. Shen, Z. and Zhu, Y. "Complex Engineering System Learning through Study of Engineering Cases using 3D Animations", The ASEE 2011 Annual Conference and Exposition, Vancouver, British Columbia, Canada, June 26 - 29, 2011.
14. Arif, F., Bayraktar, M. E., and Grant, S.M.. "Comparison of Residential Roofing Alternatives Using Life Cycle Cost Assessment", Modern Methods and Advances in Structural Engineering and Construction ISEC-6, Zurich, Switzerland, June 21-26, 2011.
15. Bayraktar, M. E., Arif, F., and Cinkilic. "Assessment of Disputes in Florida Transportation Projects and Lessons Learned", Second International Conference on Construction in Developing Countries, Cairo, Egypt, Aug. 3-5, 2010.

#### **3.4.6. Journal Publications 2009-10**

1. Salman Azhar, Irtishad Ahmad and Maung K. Sein, " Action Research: A Proactive Research Method for Construction Engineering and Management," Special Issue on Research in ASCE *Journal of Construction Engineering and Management*, January, 2010.

2. Papajohn, D., Cui, Q., and Bayraktar, Mehmet Emre., Public-Private Partnerships in U.S. Transportation: A Critical Review and the Path Forward. *Journal of Management in Engineering*, 2010
3. Zhu Y., Bayraktar, Mehmet Emre, and Chen S. Application of Metadata Modeling to Dispute Review Report Management, *Journal of Civil Engineering and Management*, 2010
4. Perkinson, C., Bayraktar, Mehmet Emre, and Ahmad, I. The Use of Computing Technology in Highway Construction as a Total Jobsite Management Tool *Automation in Construction*, Elsevier Science Publishers, 2010
5. Bayraktar, Mehmet Emre and Hastak, M. . "A Scoring Approach to Construction Bond Underwriting", *Journal of Construction Engineering and Management*, ASCE, 2010.
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## 4. Fundraising

### 4.1. Scholarships

The department offers the following scholarships to the students.

NAME OF SCHOLARSHIP	DESCRIPTION
CONSUL TECH (endowed)	1 for \$1,000
BALFOUR BEATTY (endowed)	1 for \$1,000
CONDOTTE AMERICA (endowed)	1 for \$1,500
CASF (endowed)	1 for \$2,500
ASPE (endowed)	1 for \$2,000
KELLY FOUNDATION (CM & CIVIL) (endowed)	2 for \$2,000 ea.
Donald E. Hudson (one time)	2 for \$2,500 ea.
Turner Construction (one time)	1 for \$2,500

### 4.2. Industry Support Campaign

More than \$400,000 was raised during the two year period (2008-09 and 2009-10) from the south Florida construction industry. Despite a severe downturn in the economy this was possible because of the urgency of the situation as the department was going to be reorganized due to the budget crisis. The department leadership and faculty with the help of the College Dean and the Director of Development launched a rigorous fundraising campaign and succeeded in raising the fund needed. But more importantly, in the process the department bonded very strongly with the local construction industry and a strong industry advisory council was formed. The department organized several programs to keep the industry engaged and supportive. As a result, a number of successful construction companies are now interested in naming the program with significant endowment.

Despite our best efforts, however, due to continued downturn in the local and national economy, this year, we could not sustain the same level of annual fundraising from the industry as in the last two years.

Following is the list of the participating companies along with the amount contributed last year.

Arellano Construction Co	\$10,000
Baker Concrete	\$2,500
Baring Industries	\$2,500
Coastal Construction	\$10,000
Condotta America	\$2,500
Construction Financial Management Association	\$2,500
Cuesta Construction	\$2,500
David J. Valdini & Assoc	\$5,000
Emilio F. Alvarez & Co.	\$10,000
GFA International Inc	\$2,500
KVC Constructors, Inc.	\$2,500
Link Construction Group	\$2,500
MCM Corporation	\$5,000
Moss Construction	\$10,000
Nielson & Company	\$10,000
Odebrecht Construction, Inc.	\$2,500
PBS&J	\$1,000
Peckar & Abramson	\$5,000
Right Way Plumbing Co.	\$5,000
Skanska Construction	\$10,000
SPI Structural Prestressed Industries, Inc.	\$2,500
Steel Fabricators, Inc.	\$2,500
Suffolk Construction Co.	\$10,000
Superior Electric	\$5,000
Turner Construction Co.	\$10,000
Williams Paving Co. inc	\$5,000

This campaign is ongoing on an annual basis. Please see Appendix A for IAC membership criteria.

## **5. Future Plans and Priorities**

### **5.1. Priorities**

#### **5.1.1. Fund raising**

The department and the College office of Development prepared a plan to raise funds for capital improvement for the department. The targeted source is the south Florida construction industry, comprised of national and local construction companies. They are the employers of our graduate and thus have shown keen interest in the welfare of the department and its programs. The department will continue and strengthen its efforts to attract endowed funds for scholarships, faculty development and more

importantly for naming the proposed school of construction. The department will involve the industry in department's activities by offering continuing education and training programs. This will open other forms of involvement that can lead to fund raising, student support and curriculum improvement.

The CM Industry Advisory Council developed membership categories and criteria in order to facilitate its fundraising efforts. The efforts will continue on an ongoing basis but the focus will be on endowment funds and on naming opportunities for a proposed School of Construction.

With the help of the Office of University Advancement, the department has already undertaken an aggressive campaign to realize this goal. The department and the council will continue its efforts to generate endowment fund in order to establish the FIU School of Construction, and to raise fund for laboratory facilities for the department.

In addition, the department is planning to hold a *construction trade fair* in order to generate funds for the department. The department will also organize sponsored seminars and workshops for industry professionals, it is expected that this kind of events will generate additional funds.

The CM Industry Advisory Council developed the following membership categories (shown in **Appendix A**) in order to facilitate its fundraising efforts.

The Industry Executive Council had been established with the leaders of the IAC as its members. The department will publish newsletters on a regular basis (once a year newsletter with quarterly electronic bulletins or e-letters) in order to keep the industry partners and alumni informed and engaged.

The IAC will be involved in providing advice on curriculum, fund raising, and outreach activities. The council is also an excellent source of guest speakers and adjunct professors.

### **5.1.2. Maintain Accredited Status**

The department will continue to retain its accredited status of the bachelors program with the highest order of approval. Preparations in terms of outcomes assessment, satisfying curriculum requirements, providing oversight of instruction, achieving program goals, involving the industry in curriculum development and improvement are underway.

### **5.1.3. Strengthening online program**

The department will expand the program beyond geographic and time barrier, to make programs accessible to overseas, out-of-state and professional/working students.

### **5.1.4. Research Funding**

The department will strive towards establishing the CM department as a research intensive program. Hiring of new faculty in strategic areas to increase external research funding will continue to be a priority. Efforts will be made to hire faculty with proven strengths in research and to identify emerging research areas and funding agencies. One new faculty member is joining the department this fall. With five research-active faculty members in the department we expect to reach research award exceeding \$500,000 this year.

### **5.1.5. Marketing of programs (website, visits, brochures, newsletters, postcards, mail campaign)**

The department will continue its efforts in attracting students from other states and countries as well as from governmental and corporate entities. With the help of the new marketing personnel hired by the College, the department will publish redesigned brochures, program descriptions and other print materials. The website dedicated to the online program will be redesigned to make it attractive and user-friendly. Newsletters will be published on a regular basis beginning this fall. Advertisements will be placed in trade magazines and industry association publications to market the programs. An industry liaison coordinator position was created last year - the department is searching for a suitable person to fill this position. The position will help the department tremendously in its effort to market its programs effectively and to build strong ties with the industry.

### **5.1.6. Alumni Association**

The department Alumni Association will be encouraged to undertake activities such as annual gathering, sports, and other extracurricular activities. Alumni will be invited to participate in outcomes assessment survey, contribute to newsletter articles, and fund-raising.

### **5.1.7. Student chapter/honor society activities**

The department will continue to encourage student chapter and the honor society activities and their participation in student competitions.

### **5.1.8. Construction process laboratory**

The Department has been allocated funding for developing its planned construction process laboratory. The university space committee approved the plan. Work will begin in the fall of this year. The laboratory will be an open-air yard-like facility and will have an overhead crane for demonstration purposes. The laboratory is intended to provide students hands-on demonstrations on real-life construction processes, construction materials, components and their assembly. Half-built walls, steel structural joints and samples of various construction components will be the features of this laboratory.

### **5.2. Resource Needs**

- Construction Process laboratory for the undergraduate students.
- Staff support for developing and maintaining relationships with the industry, alumni, and the hiring companies.
- Additional faculty lines.

### **5.3. New Programs**

- New programs – There seems to be a market for a construction executive program at the Master’s level which will attract busy executives already employed in the construction industry and are in need of academic training and/or a degree for professional and personal development. The department is planning with the college Dean’s office to offer such a degree on weekends. In addition, international programs at the Master’s level in the Dominican Republic and Panama have been developed, these programs will begin in 2012. The department already has a successful online Master’s program. Another area for expansion could be a joint MS degree program in Construction Engineering together with the Department of Civil Engineering.
- Continuing education/workshops – The department can offer continuing education short courses and workshops for the industry professionals, contractors and their employees. There is a vast market for such programs since most professional licensing authorities require continuing education credits for renewal of certificates. These programs can potentially generate additional revenue to be used partly to hire support staff to expand these types of activities.

### **5.4. New Directions**

#### **Organizational Growth and Development**

- Recruitment of two additional faculty members within two years.
- Recruitment of an additional staff position to support industry and alumni engagement activities and to secure donors support.



**Curriculum Implementation**

- If approved, implement the new programs, including Master of Science in Construction Engineering in collaboration with Civil and Environmental Engineering and enact improvements as necessary.

**Enrollment Management**

- Re-evaluate the admission policy for the undergraduate and graduate programs to address the quality of students being admitted to the program and the high demand on the discipline.

**Research**

- Hire faculty with proven strengths in research and identify emerging research areas and funding agencies to capture external funding.

**Fundraising**

- Complete an endowment campaign and begin to envision future fundraising goals.

**Marketing and Market Research**

- Enhance marketing of the online graduate program.
- Continue to grow and market the career expos as a means to attract prospective students, donor support and to enhance placement opportunities for our graduating students

## Appendix A - Industry Advisory Council Membership

### **Department of Construction Management Industry Advisory Council**

#### **INTRODUCTION**

The purpose of the Construction Management Industry Advisory Council (CM IAC) is to support and promote the Construction Management programs at Florida International University.

#### **MISSION**

The Department of Construction Management at Florida International University is committed to excellence in teaching, research, and service in and for the construction industry. The objectives of the CM IAC are to:

1. Advance and support the highest quality faculty, educational facilities, and undergraduate and graduate programs for the students enrolled in Construction Management.
2. Serve as a liaison between the construction industry and the Department impacting the curriculum and research directions.
3. Develop and implement innovative programs which will benefit the Department and the construction industry.
4. Offer advice, counsel, and financial support to the Department.

#### **MEMBERSHIP PRINCIPLES AND GIVING LEVELS**

The CMIAC meets twice annually in the fall and the spring. Active participation is encouraged. Special meetings may be announced occasionally. Sub-committee meetings will be held, as necessary, throughout the year.

Effective June 2009, the CM IAC has extended annual membership to the construction management industry in the following contribution categories:

#### **FOUNDATION SOCIETY (\$2,500 to \$4,999) corresponds to FIU's Dean's Circle**

Privileges include:

- Invitations to CMIAC-exclusive events. Events for 2009-2011 included:
  - Donor recognition event at FIU Panther Stadium (2010-11 Isiah Thomas, 2009-10 Mario Cristobal)
  - Annual Holiday networking luncheons
  - FIU Construction Workshop 101/Campus Ten-Year Plan

- Marlins Stadium Construction Site Tour
- Select invitations to University-wide events
- Subscription to FIU publication for donors and friends
- Donor Honor Roll listing in Department office, *FIU Magazine* and FIU Annual Giving website
- Florida International University Panther Shield Decal

**ARCH SOCIETY (\$5,000 to \$9,999) corresponds to FIU's Provost's Circle**

Privileges include:

- Invitations to CMIAC-exclusive events. See above for past examples.
- Priority to events and recruiting activities sponsored by the Department
- Special invitation from the University President to private receptions honoring persons of national and international prominence who visit FIU
- Special invitation to the Alumni Tailgate Party
- Annual Student Thank-a-Thon
- Select invitations to University-wide events
- Donor Honor Roll listing in Department office, *FIU Magazine* and FIU Annual Giving website
- Subscription to FIU publication for donors and friends
- Florida International University Panther Shield Decal

**PILLAR SOCIETY (\$10,000 to \$24,999) corresponds to FIU's President's Circle**

Privileges include:

- Invitations to CMIAC-exclusive events. See above for past examples.
- Preferential consideration for co-op and internship positions through the Department at no fee
- Priority to events and recruiting activities sponsored by the Department
- Private Holiday reception with the University's top donors hosted by the President of the Foundation Board of Directors
- Special invitation from the University President to private receptions honoring persons of national and international prominence who visit FIU

- Special invitation from the President to attend the Presidential Lecture Series throughout the year as an invited guest
- Special Invitation to the Alumni Tailgate Party
- Select Invitations to University-wide events
- Annual Student Thank-a-Thon
- Donor Honor Roll listing in Department office, *FIU Magazine* and FIU Annual Giving website
- Subscription to FIU publication for donors and friends

**TOWER SOCIETY (\$25,000 to \$49,999) corresponds to FIU's Tower Society**

Privileges include:

- Invitations to CMIAC-exclusive events. See above for past examples.
- Individual plaque in Department office with company logo
- Preferential consideration for co-op and internship positions through the Department at no fee
- Priority to events and recruiting activities sponsored by the Department
- Private Holiday reception with the University's top donors hosted by the President of the Foundation Board of Directors
- Special invitation from the University President to private receptions honoring persons of national and international prominence who visit FIU
- Special invitation from the President to attend the Presidential Lecture Series throughout the year as an invited guest
- Special Invitation to the Alumni Tailgate Party
- Select Invitations to University-wide events
- Annual Student Thank-a-Thon
- Donor Honor Roll listing in Department office, *FIU Magazine* and FIU Annual Giving website
- Subscription to FIU publication for donors and friends

**SKYSCRAPER SOCIETY (\$50,000 to \$99,999) corresponds to FIU's Society of Founders**

Privileges include:

- Invitations to CMIAC-exclusive events. See above for past examples.
- Individual plaque in Department office with company logo
- Preferential consideration for co-op and internship positions through the Department at no fee
- Priority to events and recruiting activities sponsored by the Department
- Individual Recognition event

- Commemorative event recognition piece
- Private Holiday reception with the University's top donors hosted by the President of the Foundation Board of Directors
- Special invitation from the University President to private receptions honoring persons of national and international prominence who visit FIU
- Special invitation from the President to attend the Presidential Lecture Series throughout the year as an invited guest
- Special Invitation to the Alumni Tailgate Party
- Select Invitations to University-wide events
- Yearly Valentine postcard
- Yearly Birthday greetings
- Annual Student Thank-a-Thon
- Donor Honor Roll listing in Department office, *FIU Magazine* and FIU Annual Giving website
- Subscription to FIU publication for donors and friends

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