



# FACULTY ANNUAL REPORT

For the period of July 1, 2004 to June 30, 2005

**Name:** Guillermo F. Salazar  
**Department:** Civil & Environmental Engr  
**Title:** Associate Professor  
**Date:** 09/02/2005

## 1. Teaching, Advising, and Curricular Development.

*You have received a set of reports indicating academic activity for the Academic year. If you wish to include any additional information on any or all of the categories, you may add your comments below. For advising activity, please indicate if you are the principal or co-advisor.*

### (a) Courses & laboratories taught

- CE3020 Project Management, A04
- CE585 Information Technology in the Integration of Civil Engineering, Fall 04
- CE582 Engineering and Construction Information Systems, Spring 05
- CE 1030 Civil Engineering and Computer Fundamentals, 1-week module Engineering and Construction Management, C05
- PQP (six projects) for London Project Center with Professors FitzPatrick and Sanbonmatsu, C05
- Graduate Course in Integration of design and Construction at the University Autonoma de Yucatan, Summer 05.
- Independent Graduate Study, H. Mokbel "The use of the 3D Building Information Model for the Construction Planning of the Worcester Courthouse: Foundations", Fall 04
- Independent Graduate Study, H. Mokbel "The use of the 3D Building Information Model for the Construction Planning of the Worcester Courthouse: Steel Frame", Spring 05
- Independent Graduate Study, M. Aboulez "The use of the 3D Building Information Model for the Construction Planning of the Worcester Courthouse: Foundations", Fall 04
- Independent Graduate Study, W. Guo, "Construction Accounting" 1 credit-hr, Fall04
- Independent Graduate Study, K. Douglas "CE585 Information Technology in the Integration of Civil Engineering" Summer 04
- Independent Graduate Study, K. Douglas "Construction Accounting" 1 credit-hr, Summer 05

### (b) MQPs, IQPs, Sufficiencies, ISPs, and Mass. Academy students advised and/or co-advised

#### IQPs:

- Brault, P., Krol, J., Molineaux, C., "E-Buildings", with Prof. Fabio Carrera & Mr. John Miller, B04, C05, D05.
- Prestileo, M., Flynn, R., Furber, S., "E-Grounds, Part II", with Prof. Fabio Carrera & Mr. John Miller, B04, C05, D05.
- Lopez, A, Pickett, D., Prince, G., "Communication Tools for RADAR" with Prof. M. FitzPatrick, London Project Center, D05
- Burgess, A., Keay, D., Spanos, R., Topi, J., "London Borough of Merton – GIS" with Prof. M. FitzPatrick, London Project Center, D05
- Pappia, A., Casey, R., Day, B., Donoghue, D., "London Borough of Merton –CHP" with Prof. M. FitzPatrick, London Project Center, D05
- Densmore, M., Dwyer, B., Carveth, C., Donovan, S., "Virtual Tour for Dickens Museum" with Prof. J. Sanbonmatsu, London Project Center, D05
- Rackliff, N., Parker, K., MacDonald, J., Tondreau, J., "Library Information System for the National Art Library" with Prof. J. Sanbonmatsu, London Project Center, D05
- Lynch, C., Madsen, T., Woschanko, K., Gruter, E., "An Action Plan for the London Science Museum" with Prof. J. Sanbonmatsu, London Project Center, D05

#### MQP s:

- Cote, C., Seermon, D., "Worcester Courthouse Construction: Foundations" with Prof. L.

Albano, A04, B04, C05

- Blizzard, I, Morin, C., Yong, J., "Worcester Courthouse Construction: Steel Frame" with Prof. L. Albano, B04, C05, D05
- McGovern, K., Tervola, T., "Project Management: Worcester Vocational High School Part III" with Prof. L. Albano A04, B04, C05, D05
- Martino, A., Nicewicz, R., Szafarowicz, E., "Renovation of Worcester Memorial Auditorium" with Prof. L. Albano, A04, B04, C05
- Currier, B., Soumalidis, A., "Preliminary Design/Cost for Dormitory Buildings" A04, B04, C05, D05

**(c) Theses, dissertations and directed research advised and/or co-advised**

M.Sc. Thesis:

- Farah, T., "Interoperability of the 3D Parametric Building Model Database Structure for Design, Cost Estimating and Scheduling" Fall 04, Summer 05
- Guo, W., "Schedule-Based Risk Analysis Methodologies", Fall 04

Ph.D. Thesis:

- Almeida, J., "The Impact of Innovative Technologies on the Construction Industry", Fall 04, Spring 05 (in progress)
- Mokbel, H., "A Model for Digital Integration of Design-Build -Operate", Fall 04, Spring 05 (in progress)
- Aboulezz, M., (SS), "Dynamic Models and the Impact of Large Scale Construction Projects", Co-advising with Prof. K. Saeed, Fall 04, Spring 05 (in progress)

**(d) Academic advising (undergraduate and graduate)**

- Graduate Students: 8 students
- Seniors: 2 Students
- Juniors: 6 Student
- Sophomores: 4 Students
- Freshmen: 6 Students
- Insight Advising A04 and B04: 23 Students

**(e) Revisions to courses and laboratories**

Developed a set of digital audio-videos to support the learning of construction project management application software under the sponsorship of the WPI Teaching Technology Fellowship program. These videos have been used in CE1030, CE3020, CE585, C E582 and MA2071

**(f) Development of courses and laboratories**

\*\*None\*\*

**(g) Teaching recognition and awards**

- WPI Teaching Technology Fellowship Program (03-04, 04-05)

**(h) Outcomes assessment and/or accreditation preparation**

\*\*None\*\*

**(i) Other Activities**

\*\*None\*\*

**2. Scholarship, Program Development, and Professional Activities.**

*Add any information you desire on any or all of the categories. For publications and presentations, please indicate publication, author(s), title, date, pp. etc. For proposals and grants/contracts received, please indicate Funding Agency, title duration, award amount requested/received. You have a limit of 12,000 characters for each category.*

**(a) Refereed journal articles published or in press**

\*\*None\*\*

**(b) Books or book chapters published or in press**

\*\*None\*\*

**(c) Conference papers published or in press**

- Mokbel, H., and Salazar, G.F. "Assessing the Parametric Building Model Capabilities in

Minimizing Change Orders", Proceedings of the Office of Naval Research Second International Conference: Comparing Design in Nature with Science and Engineering, Rhodes, Greece, June 28-20, 2004

- Salazar, G., & Almeida, J., "Use of the Parametric Building Model in Civil and Environmental Engineering Education at WPI", Proceedings of the ASCE Annual Conference, Salt Lake City, Utah, June 20 – 23, 2004.

**(d) Presentations (specify conference, professional, etc.)**

- Salazar, G., & Almeida, J., Mokbel, H., "Use of the Parametric Building Model in Civil and Environmental Engineering Education at WPI", Poster Presentation, Annual Conference, Salt Lake City, Utah, June 2004.

**(e) Creative works (Specify published, performed, etc.)**

\*\*None\*\*

**(f) Performances (specify type)**

\*\*None\*\*

**(g) Reviews (specify of what)**

Member of the Editorial Board of "Ingenieria" Revista Academica de la Facultad de Ingenieria de la Universidad Autonoma de Yucatan ("Engineering" Academic Journal of the Engineering School of the Univeristy of Yucatan)

**(h) Patents**

\*\*None\*\*

**(i) Proposals submitted**

- "Assessing the Potential Long-Term Benefits of the use of Building Information Modeling in the Design of Institutional Buildings" for \$ 10,000, submitted to the Boston Society of Architects, February 2005

**(j) Grants/contracts received**

- "Current use of Information Technology in Civil Engineering Education" for \$ 1,200. submitted to the ASCE Executive Committee of the Technical Council on Computers and Information Technology on behalf of the Education Committee, November 2004
- "CEE at WPI Curriculum Reform Plan" for \$ 100,000, submitted to the National Science Foundation by F. Hart (PI), P. Mathisen (Co-PI), R. Mallick (Co-PI), J. Plummer (Co-PI), G. Salazar (Co-PI), L. Albano & J. Miller (Senior Personnel) 2005.
- International University Network on Integrated Design and Construction with Dr. Julio Baeza-Pereyra from UADY. Travel grant awarded to UADY-WPI.
- Revit Technology Corporation renewed extension up to July 2005 for the use of 40 site licenses for use in CE1030, CE3030, CE3020, CE582, CE585, MQPs and Theses.
- Building Systems Design, Inc. renewed extension up to the Spring of 2005 of 10 licenses for the use of PerSpective software
- Timberline Software Inc. renewed 8 Site Licenses for the use Precision extended Cost Estimating software
- Timberline Software Inc. awarded 8 Site Licenses for the use Timberline Office software
- PRIMAVERA Systems Inc renewed 62 Site Licenses for the use of newly released PRIMAVERA 3e/c Project Planner and Expedition software
- A-Systems awarded educational discount for their JobView software for students taking CE582 in the spring 05.

**(k) Research recognition and awards**

\*\*None\*\*

**(l) Professional development**

- Attended the ASCE Annual Conference in Civil Engineering, Baltimore, Md, October 2005
- Attended DBIA Annual Conference, Chicago, IL, Attended DBIA New England
- Chapter seminar "Design-Build, What is Going on", Cambridge, MA, September 13, 2004.
- Attended DBIA New England Chapter seminar "Successes, Strategies and Stories from the Trenches, Design-Build projects that Work", Portland ME, December 7, 2004

**(m) Consulting**

**\*\*None\*\***

**(n) Outreach to K-12 programs**

**\*\*None\*\***

**(o) Other scholarly activities**

- Participated in monthly discussions as a panel member of Autodesk/Revit Design-Build Advisory Board , and AutoDesk Construction Management Academic Advisory Board

**3. Service**

*Please note that there is a new category this year for contributions to diversity and pluralism.*

**(a) Service to departments and programs**

- Member of exploratory faculty for MQP site at Turks & Caicos Island, Summer 05
- Master Builder Program (MBP) Coordinator
- WPI-DBIA Student Chapter , Faculty Advisor, with Prof. L. Albano
- WPI-AGC Student Chapter, Faculty Advisor

**(b) Service to the Institute**

Faculty Review Committee member

**(c) Service to your profession including to societies (committees, positions held, grant review panels etc.)**

- Member of the American Society of Civil Engineers:
- Construction Research Council
- Technical Council on Computing Information Technology
- Education Committee (chair)
- Intelligent Systems
- Member of the:
- Construction Industry Institute (Academic Member)
- American Association of Cost Engineers
- Construction Building International, Contracts Committee
- Society of Value Engineering
- Design Build Institute of America
- Education and Research Committee
- Civil Engineering Infrastructure Committee
- New England Chapter, President (2004)
- Education Committee

**(d) Service to the community**

**\*\*None\*\***

**(e) Contributions to campus diversity and pluralism**

**\*\*None\*\***

**(f) Recognition and awards**

- Chair of the Education Committee of the ASCE Technical Council on Computing Practices, 2005
- President of the New England Chapter of the Design Build Institute of America, 2004

**(g) Other service, including campus non-academic and civic**

- Usher, Sunday Services at the Holden Chapel

**4. Any other contributions to improving WPI's stature and reputation.**

**\*\*None\*\***

**5. Any other categories or accomplishments you would like to describe.**

**\*\*None\*\***

**6. Suggestions for improvement of the programs, the university and this reporting process.**

Your teaching load models should recognize the fact that advising projects, in the majority of the cases, is a very faculty intensive process. The allocation of faculty to projects is not equally distributed because it is student driven.