

FGCU Center/Institute Annual Report 2018-2019: **Institute for Technological Innovation (iTi)**

A. CENTER/INSTITUTE VISION, MISSION, GOALS, AND OBJECTIVES

1. **Vision:** In sync with Florida Gulf Coast University's vision for "achieving national prominence in undergraduate education," the Institute for Technological Innovation (iTi) will be known for *developing ideas and technological innovations, that can be used to collaborate and deliver undergraduate education and certification training programs*. In concert with industry partners, iTi bridges the gap between disciplines (i.e., business, technology, healthcare, engineering) and organizations (i.e., private enterprise, government, military).
2. **Mission:** iTi is a *virtual outreach organization* integrating business innovation with computing, engineering and technological knowledge. iTi mission is to foster innovations in business and technology education & practice, particularly, asynchronous, mobile and collaborative learning technologies. Succinctly, *we develop ideas, tools and programs to collaborate and learn*. iTi uses information and ideas as an agent of change and economic growth in the SWFL region and the Nation. iTi generates revenue for (1) sustaining the operation (overhead) and (2) supporting faculty/student research, development and commercialization. iTi provides ideas and learning innovations to support the LCOB mission to educate "students from Southwest Florida and beyond to address local and global business challenges ... (and) foster entrepreneurship and economic growth."
3. **Permanent Goals:**
 - a. Develop one-of-a-kind projects to enhance IT and healthcare education & practice.
 - b. Expand the body of knowledge in IT & healthcare.
4. **Objectives of the Reporting Year (2018-2019):**
 - a. Develop an IT Canvas course resource for integrating third-party vendor certification course-module, such as: Wireless Network Administrator (CWNA); Certified Information Systems Auditor (CISA); Certified Information Systems Risk Manager (CISRM);
 - b. Continue to seek partnership opportunities with Government, Industry and FGCU faculty for the delivery of IT certification training programs.
 - c. Develop mobile apps (interfaces) to support student learning.
5. **Objectives of the Next Reporting Year (2019-2020):**
 - a. Develop and submit a Cyber Security grant proposal (**Dr. Patricia Angle**), based on the funded project initiated by **Dr. Rob Totterdale** who retired this year.
 - b. Submit a research paper called "The Interplay of Information Technology and R&D and its Implications for Innovation" (**Dr. Patricia Angle**)
 - c. Develop a strategic plan for transforming iTi into an AI research enterprise (**Dr. Walter Rodriguez**). And, more importantly, facilitate a transition for a new director to lead iTi for the next decade.
 - d. Recruit new iTi faculty and researchers in the AI, ML, NLP and Cyber Security areas (**Dr. Walter Rodriguez**)

- e. Develop IT certification programs for the delivery in several developing countries (**Dr. Walter Rodriguez and Dr. Peter Meso**).
- f. Coordinate and Implement a track-session on AI and Machine Based Innovations in Africa at the 2020 African Conference on Information Systems and Technology to be held May-June 2020 (**Dr. Peter Meso**)
- g. Start planning, coordinating and publishing a special Issue on AI and Machine-Learning based Innovations in Africa in the African Journal of Information Systems (via fast-tracking best submissions to ACIST conference into journal) (**Dr. Peter Meso**).
- h. Conduct a seminar (or round-table forum) on IT Innovation at the 2020 ACIST conference 2020 (**Dr. Peter Meso**).
- i. Conduct research on implications of AI and Machine Learning Innovations on country-development in the emerging economies (**Dr. Peter Meso**).
- f. Develop a “Lean and Six Sigma” certification course-module (**Dr. Hulya Yazici**)

B. SELF-ASSESSMENT OF THIS REPORTING YEAR

1. Self-Assessment on Strengths, Weaknesses, Opportunities and Challenges

Strengths: iTi’s strength (continuous to be) the development of one-of-a-kind, high-demand, online business, healthcare and technology training modules and seminars. These online training modules are delivered (free of charge) via mobile learning software developed by faculty and students. Participants access the course-modules via Canvas integration. In addition, we have interdisciplinary collaboration within the following departments: IS/business (**Drs. Angle, Meso, Rodriguez**); Supply Chain Management/OM (Dr. Yazici). Two new faculty in the department (**Dr. Angle and Dr. Meso**). Dr. Angle will seek collaborators in the Cyber Security; and Dr. Meso will seek collaborations in the IT Developing Countries areas. In addition, there is a renewed interest in the healthcare area, although no specific goals are available at the time of this reporting.

Weaknesses: iTi’s weakness has been obtaining college approval for its revenue-generating initiatives. But, fortunately, FGCU is recruiting a new “entrepreneurial” dean, according to the announcement. Unfortunately, during the reporting year, we were unable to obtain approvals on proposed projects—even when there was a strong interest from the potential sponsors.

Opportunities: iTi continues to fosters the creation of new initiatives, namely, in Cyber Security and Technology-Support for Developing Countries with new faculty directors. By developing adaptable, innovative, mobile training programs, iTi has traditionally served FGCU’s students and the business community while generating revenues to support its initiatives. In seeking opportunities, we met numerous times with FGCU leadership to explore how we could collaborate in the delivery of these training programs. There was strong interest in the collaboration. But, like the previous years, the decision-makers were unable to approve our proposals. Therefore, again iTi decided to conduct no-cost service and research projects with interested students and faculty, as indicated in this report.

Challenges: iTi major challenge, during the reporting year, has been obtaining college approvals for its initiatives. But, as mentioned above, FGCU is seeking new leaders, faculty researchers in the LCOB. Although it’s very challenging to recruit and retain

talented and dedicated research assistants in the Computer Science, Computer Information Systems and Software Engineering fields, we have been able to recruit new talent, as reflected in the above objectives for next reporting year. Nevertheless, we continue to create no-cost online competitions and mobile-learning projects to attract more students into those fields (i.e., AI Essay Competition (**Dr. Rodriguez**) as well as Software, Robotics and Networking projects led by **Dr. Zalewski** et al.)

2. Additional Resources Needed

None, other than official college approvals for our not-for-credit initiatives. This still remained our major challenge. But we now have a new Interim Dean that has expressed interest in supporting new projects.

C. IMPLEMENTATION OF LAST YEAR'S RECOMMENDATIONS

1. **GRT:** "Clearly identify all materials that are developed "In House" as opposed to those that are provided by a 3rd party service. And justify the use of any 3rd party services. Most of the Institute objectives are focus on development, however there is limit evidence of any "In House" development."

iTi/Rodriguez: In response, we have consolidated the career certification initiative into a single Canvas resource, titled "IT." So, now we can clearly identify the materials that are developed and supported in-house, namely, the discussion forums, live chats, and online assistance that complement the video-training provided on the online portal developed by the third-party supplier. Justification for using a 3rd party vendor: Thanks to a friendly informal partnership, developed during the last two decades, this is the most economical, effective and efficient way to access thousands of video-training course-content for a very low-cost to no-cost per user.

2. **GRT:** "Scale back operations to ensure the quality of the programs. The institute list a large number of programs under development, we recommend developing few but higher programs, and demonstrating the need and benefit of said programs."

iTi/Rodriguez: As advised, last year, we scaled back operations, due to the budget constraints. Nevertheless, we were able to complete and write the final DoD MyCAA Report titled: "iTi MyCAA: Final Report: Strategic AI Plan for Using Automation to Improve Student-Support Operations and Student-Persistence." (submitted to the Acting Dean of the LCOB and available to GRT upon request).

3. **GRT:** "Most of the content on the website appears to be under construction. Please make sure all content on the website is appropriately develop prior to publication.

iTi/Rodriguez: In response, we developed the new website at: <https://www.fgcu.edu/cob/institutes-and-initiatives/> or <https://www.fgcu.edu/cob/iti/>

4. **GRT:** "Please show the evidence for how the goals are being addressed. And provide details on any items are completed as part of coursework or that are independent activities."

iTi/Rodriguez: Last-years' stated goals were fully addressed and available for review on the Canvas system as well as in the third-party video training portal.

5. **GRT:** “Please specifically note the impact or benefit of the programs for the student and/or community users.”

iTi/Rodriguez: The online career certification courses greatly benefit our BSCIS graduates. Reason: Each registered senior is given the opportunity to participate in the summer program. Impact: Career certification training is a valuable credential for all Information Systems graduates. Of course, the budget constrains is only allowing iTi to support a handful (5) of senior at this time.

6. **GRT:** We feel that previous comment from the GRT have been sufficiently addressed. Please continue to work on and address comments from previous years.

iTi/Rodriguez: Please note that iTi is proposing three interrelated initiatives and adding two new faculty researchers in the Cyber Security and IT for Developing Countries. (Please see new goals above). This plan will allow iTi to move quickly into AI, Cyber Security, IT for Developing Countries areas. In addition, we will be collaborating with Dr. Raj Srivastava and Dr. Hulya Yazici in the Supply Chain Management area—particularly, as SCM and Operations Management interfaces with IT and Information Systems.

*In his latest book, Harari (2018) talks about how educators should emphasize the 4C's: **critical thinking, communication, collaboration, and creativity.** "Most important of all will be the ability to deal with change, learn new things, and preserve your mental balance in unfamiliar situations. In order to keep up with the world of 2050, you will need not to merely invent new ideas and products but above all reinvent yourself again and again." Harari, Y.N. (2018). 21 Lessons for the 21st Century. New York: Penguin Random House.*

ATTACHMENTS *(excluded from the 6-page limit)*

ATTACHMENT I – Accomplishments in This Reporting Year

A. Externally Funded Grants/Contracts *(i.e. Non-FGCU sponsored research)*

- Self-Supported and used remaining carryover funds from the MyCAA multi-year project to support activities; Provided free IT/business/security video-training sessions to five graduates in the LCOB. And 62 students were involved in various creative IT business projects and competitions in the LCOB (namely, the AI Essay Competition.) The winners of these competition became co-authors in a peer-review published paper (see below.)
- Submitted Final Report for MyCAA project (Summer 2019). Sponsor: Department of Defense. Copy available upon request.

B. Peer-Reviewed Journal Publications, Book and Book Chapter, Official Reports

The reported publications below are directly related to one of the two permanent goals; namely, (1) Develop one-of-a-kind projects to enhance IT and healthcare education & practice; and (2) “Expand the body of knowledge in IT & healthcare.”

- **Rodriguez, W. et al.** (2019). “Improving Persistence via Student-Support Applications.” *Ubiquitous Learning: An International Journal*. Volume 12, Issue 3, 2019, <https://ubi-learn.com>
- **Rodriguez, W.** (2019) “iTt MyCAA: Final Report: Strategic AI Plan for Using Automation to Improve Student-Support Operations and Student-Persistence.” (submitted to the Acting Dean of the LCOB and available to GRT upon request).

Yazici, H.

- *A Study of Critical Thinking and Cross-disciplinary Teamwork in Engineering Education*, double blind and peer reviewed Book Chapter in “Women in Industrial and Systems Engineering: Key Advances and Perspectives on Emerging Topics”, Co-authored. Chapter 8, Springer Publishing. Submitted: April 2018, Accepted: 08/2018, proofs:02/2019, **In Press**.
<https://www.springer.com/gp/book/9783030118655>
 - Role of organizational project maturity on project and business success: last five year’s outlook, double blind and peer reviewed Book Chapter in “*Developing Organizational Maturity for Effective Project Management*, IGI Global (International Publisher of Information Science and Technology Research), in the Series, **Advances in Logistics, Operations, and Management Science**, Chapter 3, pp. 43-54, **Published** March 2018.
 - An exploratory analysis of the role of project management and corporate sustainability capabilities for organizational success. Several revisions. **In review** with the International Journal of Managing Projects.
 - Critical Thinking and Learning Styles, Interprofessional Education and Outcomes Assessment in Health Science, Business and Bioengineering, co-authored, **in review** with Higher Education, Springer.
 - Contributing author for the “Infusing Sustainability across the Curriculum”, peer reviewed Book Chapter in Making the Sustainable University, FGCU Book Project. **Accepted**.

C. Conference Papers/Presentations and Other Publications

The reported publications below are directly related to one of the two permanent goals; namely, “(1) Develop one-of-a-kind projects to enhance IT and healthcare education & practice,” and (2) “Expand the body of knowledge in IT & healthcare.”

- Yazici, H. Julie (Author & Presenter), **2019 IISE Annual Meeting**, “Project based learning approach for teaching data analytics” Engineering Education Track, IISE, Orlando, FL, May 18-21, 2019.
- Yazici, H. Julie (Author & Presenter), **2019 IISE Annual Meeting**, “Economic Resiliency Metrics for Disaster Recovery”, Humanitarian Sustainability Track, IISE, Orlando, FL, May 18-21, 2019.
- Yazici, H. Julie (Author & Presenter), Thinger, E. (Presenter), **2018 IISE Annual Meeting**, "Community Recovery and Economic Resiliency at the Aftermath of Hurricanes," IISE, Orlando, FL. (May 20, 2018).
- Yazici, H. Julie (Author & Presenter), **2018 IISE Annual Meeting**, "Embedding scholarly elements in the teaching of data analytics," IISE, Orlando, FL. (May 19, 2018).
- Yazici, H. Julie (Author & Presenter), Westley, C. (Author), Chang, A. (Author), **INFORMS 2018 Annual Meeting**, "Analysis of Economic Resiliency for Disaster Recovery," INFORMS, Phoenix, AZ. (November 6, 2018).
- Yazici, H. Julie (Author & Presenter), Eichbauer, M. (Author & Presenter), Chastain, J. (Author & Presenter), **11th Annual Florida Statewide Symposium on Best Practices in Undergraduate Research**, "Strategies to Use Work-Study Research Program to Enhance Professional Development of Transferable Skills," FAU, Boca Raton, FL. (October 19, 2018).

Additional Invited Presentation:

- Yazici, H. Julie (Author & Presenter), **Honors College Annual Faculty Research Symposium**, "Analysis of Social and Economic Resiliency for Disaster Recovery," Honors College, Cohen Center. (February 25, 2019).

D. Student Publications (e.g. theses, dissertations, conference papers/posters)

NA

E. Professional Services (e.g. conference hosted, book/journal editor, proposal/paper review, consultant)

Yazici, H.

1. **FGCU Research/Scholarship Venture Capital Grant**, 02/2019, PI, \$5020, (February 27, 2019 - June 30, 2019).in collaboration with Dr. Westley, Mr. Shannon, UG student Kristen Trainer. “Analysis of economic and community resilience factors for hurricane recovery in the state of Florida”. **Status:** Initial phase completed, April – June 2019, Second phase: Summer 2019, Current phase: Journal manuscript prep

Research with UG students and Mentoring:

2. **"WISER,"** Sponsored by Undergraduate Scholarship office, Florida Gulf Coast University. Literature search/review, data collection, conduct interview (January 7, 2019 – May, 2019).
3. **WISER,** Sponsored by Undergraduate Scholarship office, Florida Gulf Coast University. New application for 2019-20.
4. **FGCU Venture Capital Grant Project,** Survey design, conduct interviews, data analysis, Summer 2019.
5. **Eagle Work Study,"** Sponsored by FAFSA, Florida Gulf Coast University. Preliminary data, literature review (January 1, 2018 - May 1, 2018)
6. **Research Day 2018, 2019.** Mentored UG business students.
7. **FURC, 2019.** Mentored an Honors student.

Research with MBA student:

8. **Summer Research Grant,"** Sponsored by LCOB, Florida Gulf Coast University, Data analysis with Excel (May 1, 2018 - August 30, 2018).

Research related Service:

9. **Research / Service: FGCU Research/Scholarship Venture Capital Grant** Review Ad-Hoc Committee member, 01/2019-03/2019
10. **Research / Service Grants and Research Team** member (Spring 2018-current). Involved with Research Day judging, Review of Institute Reports and applications.
11. **QEP Leadership team Consultant (Fall 2019).** Review of grant proposals, FYRC 2020 preparation.

ATTACHMENT II – Budget Reports ([see the attached Budget Forms for Items 2 and 3 below](#))

1. Budget Narrative

Simply put, the budget used the remaining carryover funds from the MyCAA project. With these funds, we were able to complete the Final MyCAA Project Report this Summer 2019 (report available upon request).

2. Reporting Year Budget (see attached)

3. Next Reporting Year Budget (see attached)

ATTACHMENT III – Supplementary Information (*if none, please specify by "NA"*)

NA