Computer Science and Information Systems Programs
Interim Report

—

University of Puerto Rico at Bayamón

July 31, 2020

Introduction

The Department of Computer Science at the University of Puerto Rico at Bayamon offers two computing programs, one in Computer Science and another one in Information Systems. In this document, we present the actions taken to address the shortcomings specified in the Summary of Accreditation for the 2018-2019 Accreditation Cycle. Since the weaknesses found for both programs were the same, the department's Assessment and Accreditation Coordinator (AAC) has prepared only one document for both programs.

Weaknesses

This section presents the way the Computer Science Department has addressed the shortcomings indicated in the Summary of Accreditation of the 2018-2019 Accreditation cycle for both academic programs.

Criterion 6: Faculty

The Summary of Accreditation Document states:

> *The competence of the faculty must be demonstrated by such factors as ongoing professional development. Most faculty members are not participating in professional development and are not engaged in any activities relevant to maintaining currency in their areas. Although there is some money available for conference travel, and there is a sabbatical system, members of the department faculty are not using these resources. Travel funds are not seen as available. There is a lack of understanding of the importance of professional continuing development and maintenance of currency for the faculty. This limits the ability of the faculty to update courses with modern concepts and approaches and to deliver up-to-date material.*

This document also states that the faculty must demonstrate:

- *Evidence of the completion of professional development activities by the faculty.*
- *Minutes of faculty meetings held to focus on the need for professional development.*
- *Demonstration of an understanding by the faculty of the importance of continuing professional development.*

Improvements on Criterion 6

A Faculty Professional Development Plan (FPDP) was developed in 2019. The FPDP classifies the professional development activities in three types:

1. Professional development activities of a technical nature
2. Professional development activities that impact teaching and learning
3. Additional Professional development activities.

Professional development activities of a technical nature include activities that are directly related to the technical aspects of the program. For example: Microsoft, Oracle or any other technical certifications, academic courses, seminars and workshops related to CS and IS. Professional development activities that impact teaching and learning should be those that improve the way in which courses are delivered. For example: workshops on the use of Blackboard, Moodle or any other similar tool; workshops in distance learning, assessment, and new teaching strategies. Additional Professional development activities are those that impact the student indirectly and enrich the department and its faculty. For example: Proposal writing workshops, research seminars, Math and Science workshops/seminars not related exactly to Computing, ways to organize hackathons or computer science programming contests, etc.

The FPDP was presented to the professors in early 2019. It has been put into action since then. Also, meetings have been held in which the following topics are discussed:
1. Importance of professional development and continuous improvement
2. Information about professional development opportunities.
3. Achievement status of the FPDP.

Attainment of Criterion 6

Completion of professional development activities by the faculty.

There is evidence that supports the fact that faculty has engaged in continuous professional development prior to the drafting of the FPDP. However, the AAC started tracking this formally in August 2019. Evidence of Professional Development (PD) activities has been compiled in detail in Appendix A. The following table highlights some of these activities:

Activity	Description	Type	Date	Faculty
Information Assurance and Security Graduate Certificate	Graduate Certificate Polytechnic University of Puerto Rico	1	2017 - 2019	Nelliud Torres
Completion of D.B.A. in Management of Information	Graduate Degree from *Universidad Ana G. Mendez*	1	May, 2020	Omar Diaz

Systems				
Coursework conducting to a degree in Electrical Engineering	Pursuing a Second Degree at Polytechnic University of Puerto Rico	1	Since 2017	Elio Lozano
IPv6 Protocol Course and Workshop	Summer Workshop Sponsored by the Internet Society	1	Aug, 2019	Miguel Velez Juan M Solá
Flask, Python and Arduino	Summer Seminar	1	June, 2020	René Rodriguez
98-364 MTA: Database Fundamentals	Microsoft Certification	1	Nov, 2019	Antonio Huertas
MTA: Introduction to Programming Using Python - Certified 2018	Microsoft Certification	1	Dec, 2018	Jose J. Diaz
SEED Hand-on Labs for Security Education: SEED Workshop	Summer Workshop at Syracuse Univ.	1	June 2018	Juan M Solá
UPR IPERT - Tidyverse Workshop (Big Data)	Summer Workshop Sponsored by the NIH and NIGS	1	Summer 2019	Omar Diaz Jose J. Diaz
Peer-Led Team Learning Workshop	Workshop	2	Summer 2018	Nelliud Torres
ICANN 61 - ICANN Public Meetings	Convention of the Internet Society	1	March 2018	Miguel Velez
98-388 MTA: Introduction to Programming using JAVA	MS Exam	1	Feb, 2019	Antonio Huertas
Math Department Lecture	Lecture	1	Spring 2019	Filiberto Arniella

Faculty meetings held to focus on the need for professional development.

Evidence of the faculty meetings have been compiled. We have held various faculty meetings during the academic year 2019-2020 in which the status of the FPDP has been discussed. Evidence of the presentations and the agenda of these meetings have been included in Appendix D.

Demonstration of an understanding by the faculty of the importance of continuing professional development.

A survey was conducted in May 2020 to gather information about the understanding of the importance of PD activities. This auto-evaluation has been analyzed in this document. The results collected by Google Forms are presented in Appendix B. The findings are:

- Around 70% of our professors participate in 3 or more PD activities per year.
- Workshops and Webinars were the activities they attended most of the time. Webinars have gained momentum during this year due to the lockdown.

- Around 70% of our professors have included what they learned in the PD activities as part of their courses.
- Most of the faculty know the process of requesting financial support to the Dean of Academic Affairs or the Chancellery
- Around 86% of the faculty members receive emails about opportunities for continuing professional development.

Our final assessment of this survey is :
- The financial situation of our government has not impacted the FPDP substantially. Moreover, professors are committed with the university and our department into delivering up-to-date coursework and approaches to our department constituents.
- Our faculty members are engaged in professional development activities way before drafting the FPDP.
- Faculty indicated that courses have been impacted as faculty members are including modern concepts and approaches learned from the PD activities.
- However, the course syllabi are not updated as often as they should. This needs to be addressed since some new activities that are incorporated are missing on the course syllabus.
- The professors are not updating their personal C.V.'s as they should.
- The FPDP is a necessary tool to make faculty professional development accountable.

These issues will be addressed with the following actions:
- The course syllabi need to be updated during the Fall semester.
- Professors need to update their C.V.'s.

Opportunities and Limitations

In march 2020, our government imposed an executive order to lockdown the island as a response to the global COVID-19 pandemic. During this period, the administration encouraged participation on Webinars about distance learning activities. Some of these webinars were coordinated from the Academic Dean's office and some from the UPR Central Administration. Therefore, our faculty took advantage of this event to strengthen their continuous improvement.

As the lockdown has been slowly relaxed, the faculty have held meetings during June 2020 to share their experiences on the way they coped with courses during the lockdown. Also, seminars had been held by our peers on technical topics. Evidence of these seminars have been included on Appendix A.

Because of the fiscal crisis that Puerto Rico has been addressing, the University of Puerto Rico at Bayamón and more specifically, the Office of the Dean of Academic Affairs has experienced budget cuts for funding faculty professional development activities during the 2019-2020 academic year. This can be evidenced in a letter received by the Dean of Academic Affairs on

March, 3 2020. However, the Assessment and Accreditation Coordinator (AAC) has been continuously sending information to the department's faculty related to professional development opportunities that do not incur in significant expenses. At the department level, we are committed to exploring additional avenues to address this issue, although based on the evidence provided, we believe this has not impacted our FPDP substantially.

Criterion 7: Facilities

The Summary of Accreditation of the 2018-2019 Accreditation states:

> *Classrooms, offices, laboratories, and associated equipment must be adequate to support attainment of the student outcomes and to provide an atmosphere conducive to learning. Offices still suffer the impact of hurricane Maria, some 14 months later. Some offices are not fit for use by faculty or for visiting by students. Two faculty members work under a plastic sheet because of continuing drips from the ceiling. Offices smell of mold and mildew. This severely limits faculty ability to work and to serve student needs.*

Improvements on Criterion 7

The aftermath of hurricane Irma and Maria impacted "Academicos 1", the building in which the faculty offices are located. This building did not suffer substantial structural damage, however, water began leaking into it. Because of our tropical climate and the frequent water leakage, books, papers, office materials, and some furniture were damaged. However, no computers, printers, or other electronic equipment were affected. The Assessment and Accreditation Coordinator along with the Department Chair developed a Reconditioning Plan for the Computer Science Department and Faculty Offices. The main points of our plan can be summarized as follows:

1. Inspection of the Academicos 1 building. This inspection was performed by the AAC and the Department Chair and included:
    a. department office
    b. professors' offices
    c. storage rooms and closets
    d. restrooms
2. A report containing images of these findings was sent to the Dean of Administrative Affairs and the Dean of Academic Affairs (evidence is on Appendix C).
3. Cleaning and organization of professors' offices. This entails discarding obsolete documents, materials and equipment no longer in use. Pictures and videos of this event are contained in Appendix E.

On January 7, 2020 an earthquake of 6.4 magnitude hit the southern part of the island. This event delayed the waterproofing and sanitizing work for building "Academicos 1", since we were waiting for FEMA funds for carrying out the repairs to the roof. Because of these delays, the department in conjunction with the Office of the Dean of Academic Affairs and the Chancellor's

Office identified vacant office spaces to move the professors with affected offices to other areas within the university. These are room 120 on Building 100 (with space for two professors) and room B-109 on the Science and Technology Complex (with space for four professors). The remaining three full-time faculty members currently hold administrative positions and use their assigned offices for meeting with students and for dealing with class-related work. We expect to return to our facilities during the 2020 Fall semester. Funds for the repairs of the Academicos 1 building have been allocated by the Office of the President of the University, as these funds have been approved and will be reimbursed by FEMA.

Appendix A

In this appendix we have compiled the PD activities by faculty members. Evidence of each activity can be found in the online evidence folder.

Jose J. Diaz

Activity	Description	Type	Dates / Hours
CompTIA Network+ Certification	IT certification exam	1	July 2003
Technology Literacy for Educators:62-193	MS Exam	1	July 28, 2017
98-349:MTA: Windows® Operating System Fundamentals	MS Exam	1	July 28, 2017
MTA: Introduction to Programming Using Python - Certified 2018	MS Exam	1	December 6, 2018
MTA: Introduction to Programming Using JAVA - Certified 2018	MS Exam	1	December 6, 2018
UPR IPERT - Tidyverse Workshop	Workshop	1	July 31 - August 4, 2019
UPR IPERT - *Talleres de Análisis Cuantitativos Aplicados al Area de Salud*	Workshop	1	February 15, 22, 29 2020
UPR Carolina SICI 4010 Application of Statistical Analysis by Computer	3 credit undergraduate course	1	Spring 2020
Flask, Python and Arduino	Workshop	1	June 16, 2020
Taller sobre ShareX y capturas de pantallas	Workshop	1	June 16, 2020
MIPS - Programming	Workshop	1	June 18, 2020
Robomind - Workshop	Workshop	1	June 23, 2020
C# Crash course	Workshop	1	June 25, 2020

Omar Diaz

Activity	Description	Type	Dates / Hours
98-364 MTA: Database Fundamentals	MS Exam	1	July 28, 2017
98-367 MTA: Security Fundamentals	MS Exam	1	August 11, 2017
98-349 MTA: Windows Operating System Fundamentals	MS Exam	1	December 6, 2018
98-366 MTA: Networking Fundamentals	MS Exam	1	December 6, 2018
MicroTik Router Configuration as a Wireless Access Point	Workshop	1	December 24. 2018
UPR IPERT - Tidyverse Workshop	Workshop	1	July 31 - August 4, 2019
La relación de mentoría: Principios básicos, destrezas y estrategias para el desarrollo de investigadores/as	Workshop	2	November 16, 2019
Completion of P.h.D. in Management of Information Systems from *Universidad Ana G. Mendez*	Graduate Degree	1	Completion in May, 2020
Flask, Python and Arduino	Workshop	1	June 16, 2020

Antonio F. Huertas

Activity	Description	Type	Dates / Hours
98-361 MTA: Software Development Fundamentals	MS Exam	1	February 27, 2019
98-388 MTA: Introduction to Programming using JAVA	MS Exam	1	February 27, 2019
C Tutorial Course	Course	1	June 28, 2019
98-364 MTA: Database Fundamentals	MS Exam	1	November 22, 2019

MTA: Networking Fundamentals - Certified 2020	MS Exam	1	June 5, 2020
Flask, Python and Arduino	Workshop	1	June 16, 2020
Taller sobre ShareX y capturas de pantallas	Workshop	1	June 16, 2020

Elio Lozano

Activity	Description	Type	Dates / Hours
Studying a Bachelor in Electrical and Computer Engineering	Second Degree	1	Since 2017 - 2020
C# Crash course	Workshop	1	June 25, 2020

Juan M. Solá

Activity	Description	Type	Dates / Hours
SEED Hand-on Labs for Security Education: SEED Workshop	Workshop	1	June 4 - 7, 2018
98-388 MTA: Introduction to Programming using JAVA	MS Exam	1	December 1, 2018
98-382 MTA: Introduction to Programming using Javascript	MS Exam	1	February 27, 2019
98-383 MTA: Introduction to Programming using HTML and CSS	MS Exam	1	February 27, 2019
1st IPv6 Protocol Course and Workshop	Workshop	1	August 20 - 21, 2019
AWS Community Day with Adrian Cockcroft	Seminar	1	March 2, 2020
Emociones en los procesos educativos asistidos por tecnologías de la Internet	Webinar	2	March 27, 2020
6to Webinar Sistémico: Cómo aplicar el	Webinar	2	May 1, 2020

Activity	Description	Type	Dates / Hours
acomodo razonable en los cursos a distancia y cursos presenciales en la modalidad asistida por tecnologías alternativas para la continuidad académica			
Flask, Python and Arduino	Workshop	1	June 16, 2020
MIPS - Programming	Workshop	1	June 18, 2020
C# Crash course	Workshop	1	June 25, 2020

Nelliud D. Torres

Activity	Description	Type	Dates / Hours
Microsoft Certified Educator	MS Exam	1	July 28, 2017
Information Assurance and Security Graduate Certificate	Academic Certificate	1	2017 - 2019
Uso y manejo de un curso en línea utilizando Moodle (Parte II)	Course	2	September 6, 2019
Peer-Led Team Learning Workshop	Workshop	2	Summer 2018
Flask, Python and Arduino	Workshop	1	June 16, 2020
Taller sobre ShareX y capturas de pantallas	Workshop	1	June 16, 2020
MIPS - Programming	Workshop	1	June 18, 2020
R - Workshop	Workshop	1	June 11, 2020
Robomind - Workshop	Workshop	1	June 23, 2020
C# Crash course	Workshop	1	June 25, 2020

Miguel Vélez Rubio

Activity	Description	Type	Dates / Hours
MSCHE 2019 Annual Conference Philadelphia, PA	Convention	2	December 9 - 11, 2019
1st IPv6 Protocol Course and Workshop	Workshop	1	August 20 - 21, 2019
MSCHE 2018 Annual Conference	Convention	2	November 28 - 30, 2018
Evidence Based Entrepreneurship and Startup Lab Workshop: Banco Popular	Workshop	1	June 2018
ICANN 61, San Juan, PR	Convention	1	March 10 - 15, 2018
NASIG 2018, San Juan, PR	Conference	1	March 7 - 9, 2018
MSCHE 2017 Annual Conference	Convention	2	December 6 - 8, 2017
Online Course Design Workshop	Workshop	2	April - May 2016

Rene Rodriguez

Activity	Description	Type	Dates / Hours
Flask, Python and Arduino	Workshop	1	June 16, 2020
Taller sobre ShareX y capturas de pantallas	Workshop	1	June 16, 2020

Filiberto Arniella

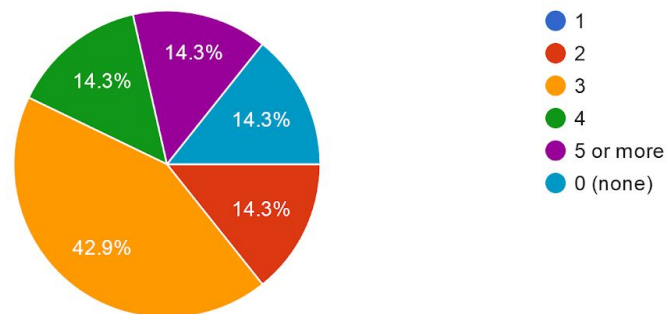| Activity	Description	Type	Dates / Hours
Math department Lecture	Lecture	1	Spring 2019

All the appendixes have been compiled in an online shared folder containing the evidence. The link is here!

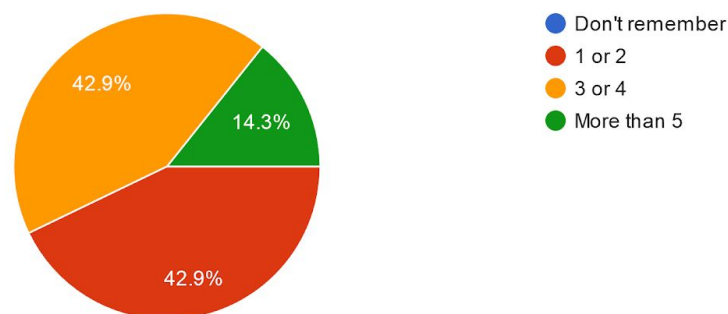# Appendix B

Results collected from the FPDP Assessment Form

How many professional development activities have you participated during this academic year?
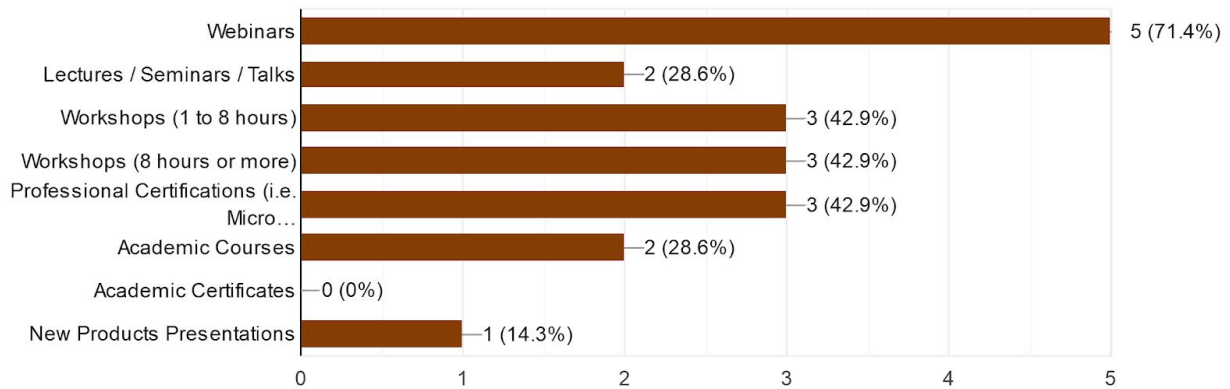7 responses

- 1
- 2
- 3
- 4
- 5 or more
- 0 (none)

How many professional activities have you participated during the previous academic year (2018-2020)?
7 responses

- Don't remember
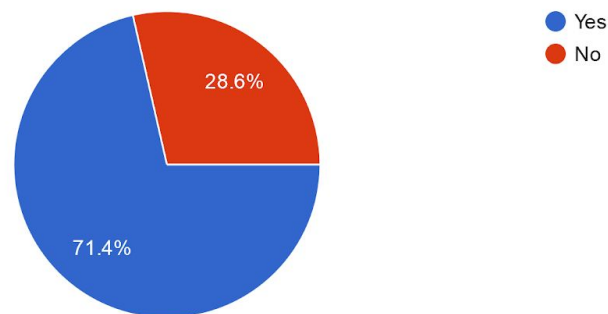- 1 or 2
- 3 or 4
- More than 5

What type of activities have you participated during the current academic year?
7 responses

Activity	Responses
Webinars	5 (71.4%)
Lectures / Seminars / Talks	2 (28.6%)
Workshops (1 to 8 hours)	3 (42.9%)
Workshops (8 hours or more)	3 (42.9%)
Professional Certifications (i.e. Micro…	3 (42.9%)
Academic Courses	2 (28.6%)
Academic Certificates	0 (0%)
New Products Presentations	1 (14.3%)

Have you included what you learned in the activities as part of your courses (current and previous years)?
7 responses

- Yes
- No

28.6%

71.4%

If you answered yes in the previous question, how have you included what you learn on the course?

7 responses

Some of the webinars that I took was related to the way students react to online courses and how we need to adapt what we do in regular courses to online courses. Also, I have used some of the knowledge learn on the MS Certifications to the Web Programming course.

More exercises using R language in the SICI 3017 course.

temas de big data en Base de datos

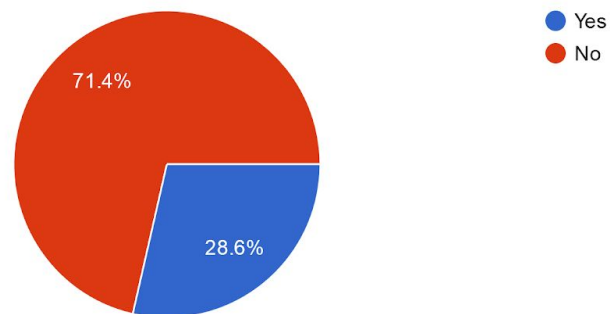Concepts that may be adopted by students for their own development.

No, I haven't.

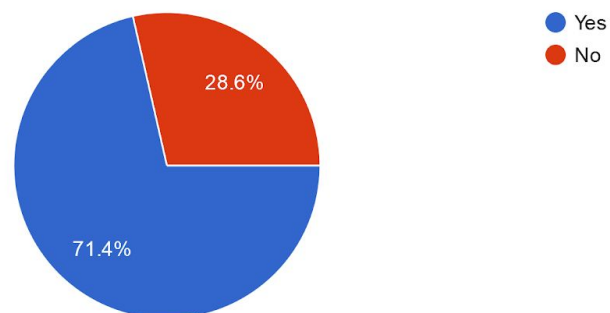New techniques, tools and trends

Cyber security

Have you update the Syllabus of courses that have been impacted?
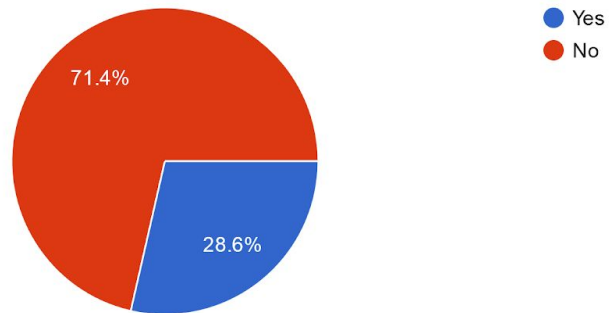7 responses

- Yes
- No

71.4%

28.6%

Do you know how to request help from the Dean of Academic Affairs or The Chancellery of how to request financial support for faculty improvement? (REQUEST ONLY)
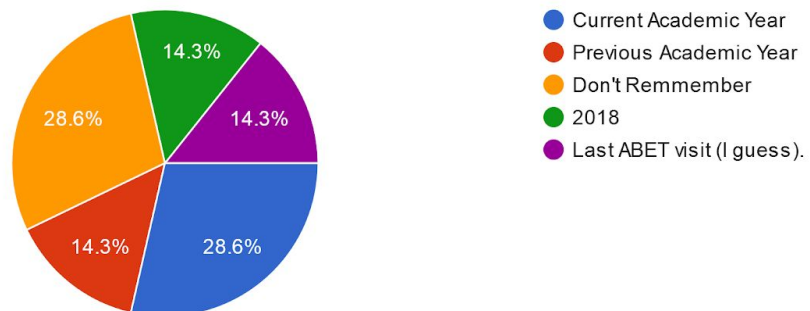7 responses

- Yes
- No

28.6%

71.4%

Have you included your latest professional development activities in your C.V or Resume?
7 responses

Yes
No

71.4%

28.6%

Which was the last time you update your CV?
7 responses

Current Academic Year
Previous Academic Year
Don't Remmember
2018
Last ABET visit (I guess).

14.3%

14.3%

28.6%

14.3%

28.6%

Have you receive emails about opportunities for professional development?

7 responses

Any other comments, ideas, complains about the process of professional development

4 responses

None

Hay que darle importancia al mejoramiento profesional

Made budget for train one faculty that serve as a trainer of other faculty (cross training)

no

Appendix C

This appendix contains letters that have been issued during the process of re conditioning faculty offices. These letters are in an online folder. Most of them are in Spanish. Translation can be sent upon request.

Appendix D

The following pages show a handout view of some of the presentations exposed during faculty meetings.   More evidence can be found on the <u>online folder</u>.

Faculty Professional Development Plan

Dr. Juan M. Sola Sloan
Sept 4, 2019

Why we need a plan?

- Some of us are very active, some are less active but we do it.
- We are not documenting our activities correctly
  - Noticed by the visiting team
- Our CVs are not updated regularly as they should.
  - During the visit
- We lost track of this...
- Every man for himself
- Are we really incorporating what we have learn into the class?
  - If we are doing it: Formally / Informally?
- Professional Development is required by our institution.

Faculty Professional Development Plan (FPDP)

- Goals
  - Collect Activities of the Faculty EVERY SEMESTER
  - Accountability
  - Improve our Curriculum
- Classify them
  - 1 -Technical
  - 2- Teaching/Academic
  - 3- Other

1- Technical Professional Development Activities

Examples:

- Microsoft / Oracle Certifications
- Academic Courses
- Seminars in New Technologies
  - Node.js / Angular.js / IPv6
- Workshops related to CS/IS

2-Academic/Teaching Professional Development

Examples:

- Moodle/Blackboard Workshops
- Distance Learning Seminars
- Accreditation and Assessment Seminars
- Workshop on Learning Experiences
- Alternative Learning

3-Additional Professional Development

Examples:

- Workshops on Writing Proposals for NASA/NSF
- Research Seminars
- Math and Science Workshops not related to Computing
- Health Seminars that could impact courses
- Seminars on organizing Hackatons or Programming Contest

How will keep track of these activities?

- Every time you attend PLEASE report to the Assessment and Accreditation Coordinator (AAC)
- AAC have to keep track of every professor PD activities
- Accountability is needed
- At the beginning and at the end of every semester

WE NEED TO HELP EACH OTHER!

- Disseminate every PD opportunity you know to your colleagues:
  - Email
  - Whatsapp
  - Handouts
  - Word of Mouth
- Invite your people

Faculty Professional Development Plan 2020 Status

Dr. Juan M. Sola Sloan
February, 2020

2020 status

- Some of us are very active, some are less active but we are doing it!
- Most of the activities have been documented.
  - And most of them are of technical nature.
- Most professors are engaged.
- Open Question:
  - Are we really incorporating what we have learn into the class?
    - If we are doing it: Formally / Informally

Some activities

- TidyVerse Workshop
  - R workshop (2 professors)
  - Summer 2019
- IPV6 Week
  - (2 professors)
  - Fall 2019
- MTA Database Certification
  - MS Exam
  - 1 professor
- Full Stacks Nights
  - Various activities
  - 1 professor

- Academic Courses (2nd BS Degree)**
  - 1 professor
- CAHSI PLTL Workshop**
  - 1 professor
- Math Department Lectures ***
  - 1 professor

1- Technical Professional Development Activities

Examples:

- Microsoft / Oracle Certifications
- Academic Courses
- Seminars in New Technologies
  - Node.js / Angular.js / IPv6
- Workshops related to CS/IS

2-Academic/Teaching Professional Development

Examples:

- Moodle/Blackboard Workshops
- Distance Learning Seminars
- Accreditation and Assessment Seminars
- Workshop on Learning Experiences
- Alternative Learning

3-Additional Professional Development

Examples:

- Workshops on Writing Proposals for NASA/NSF
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- Invite your people

Appendix E

This appendix contains images of faculty organizing and discarding old documents, equipment and furniture. This task was performed by faculty since only faculty knows the paperwork that can be discarded and which equipment they want to decommission.   Equipment that was discarded or decommissioned: old papers, faulty chairs, chairs with water damage, file cabinets, damaged clapboard, and one damage desk.

Bin outside office of Profesor Nelliud Torres and Jose J. Diaz

Discarding papers, cardboard and vacuuming offices

Discarding damage chairs from various offices

Discarding damage clapboard and cleaning offices

Mold and Mildew found on wall behind boxes

Important note: After this finding we proposed to the Dean of Academic Affairs to move our offices to other buildings.

Water damaged envelopes and papers that were discarded

Vacuuming debri found