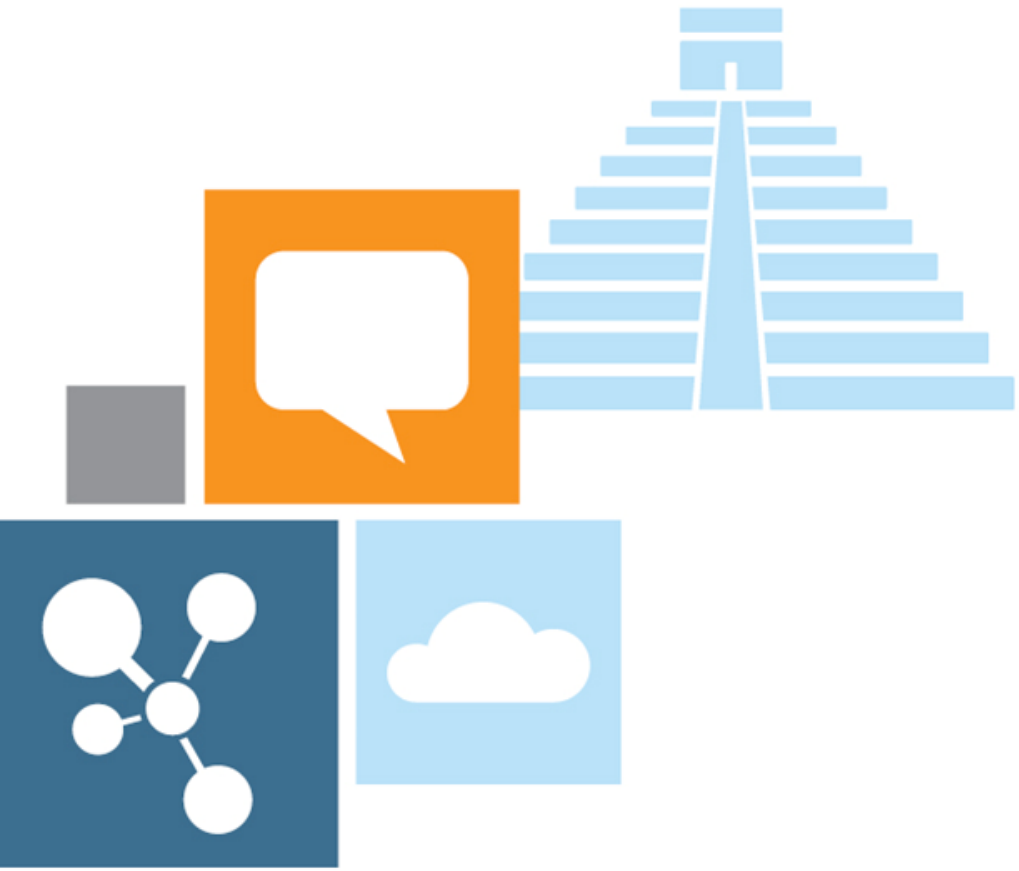
Microsoft



Microsoft® Research

Faculty Summit 2012

Riviera Maya, Mexico | May 23-25 | In partnership with CONACYT

Moving the needle and growing women in computing in Latin America

Juliana Salles, PhD
Senior Research Program Manager

May, 24, 2012

Rane Johnson

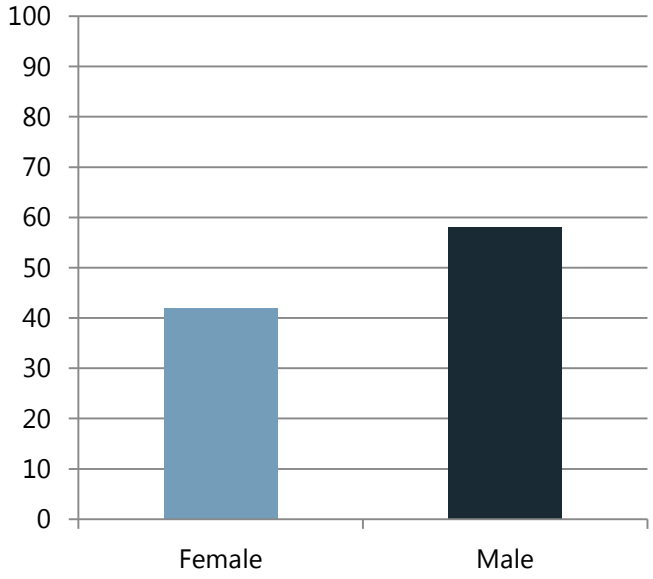
- MSR/MRC initiatives in women in computing
  - projects that use technology to transform how we learn about history and how we eradicate human trafficking.
  - lead for growing, attracting and retaining women in STEM.
- She leads the worldwide efforts
  - Partners include NCWIT, CRA-W, AIB, ACM-W

Juliana Salles

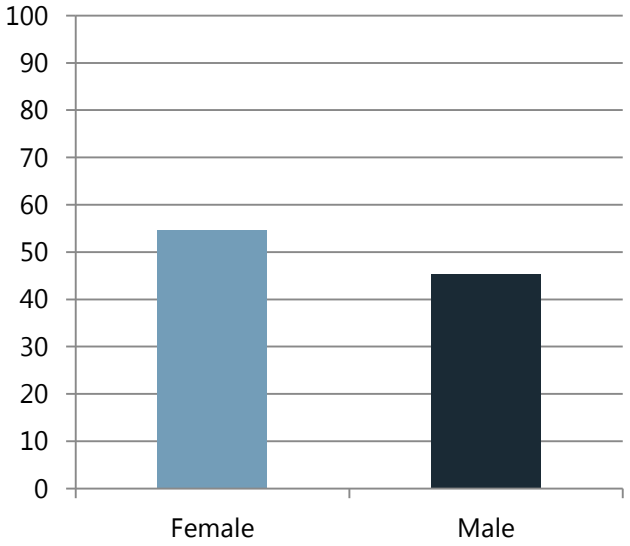
- Microsoft Research Connections
  - Research projects in CS, bioenergy, climate change, biodiversity
- Software development @ Microsoft
- Since 2008, MSR is working with thought leaders in Latin America
  - Build awareness & drive change on the topic of women in technology

The status – some US statistics

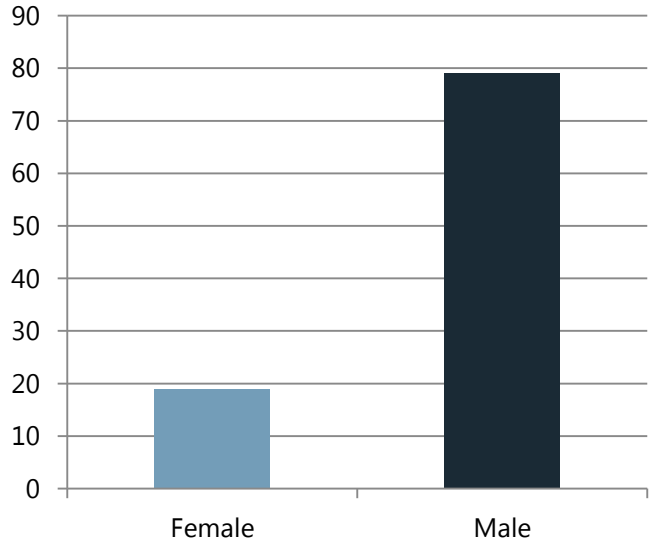
ncwit.com



58% of all professional occupations in the 2009 U.S. workforce are held by women



25% of professional computing occupations in the 2009 workforce are held by women



11% of corporate officer positions at Fortune 500 technology companies are held by women

Why is gender diversity in computing important?

- Gender balanced teams are more experimental and efficient
  - A study on U.S. technology patenting reveals that *patents created by mixed-gender teams are the most highly cited*
- Technology permeates all areas of knowledge
- By 2018, there will be nearly 1.4 million job openings in IT in the US

What is going on in Latin America?

- LATAM Summit WS and data gathering since 2008
  - Challenging process, but we've observed the same trends
- Collaboration with leading organizations
  - Discussing best practices and programs successful in other geographies
- Call to action
  - Pilot projects in Mexico, Colombia and Brazil

Project Pilots

Lorena Gomez, ITESM, Mexico

Attract and Keep students in Information Technology: Making IT fun

Eduardo Freire Nakamura, UFAM, Brazil

Women in Computing - Towards Gender Balance in the North Region of Brazil

Jose Tiberio Hernandez, University of Los Andes, Colombia

Women in Computing in Colombia
The UniAndes project

Women in Computing - Towards Gender Balance in the North Region of Brazil

Eduardo Freire Nakamura

Research and Technological Innovation Center (FUCAPI)

Federal University of Amazonas (UFAM)

Overall Numbers

Computer Engineering (since 2004)

- Entrance: 12% (58/465)
- Dropouts: 14% (24/177)

Computer Science (since 1999)

- Entrance: 16% (123/768)
- Dropouts: 16% (40/251)

Information Systems (since 2010)

- Entrance: 20% (38/187)
- Dropouts: 36% (4/11)

Why Growing Women in Computing?

Official Census (North Region)

51% of local population is female

Our numbers are very modest (12~20%)

Local Job Opportunities

Industrial Park with 600 enterprises (electronics, computing, motorcicles)

Half a million jobs

Three business incubators

Job Distribution

High profile: Male, locals and **from other regions**

Low profile: Female, locals

What Strategy?

We need a better understanding

Historical, cultural and economical aspects are important

Possibilities

Workshops, speaker series, mentoring, networking

Students have expressed their wish to meet successful professionals that have reached **a balance in their professional, social, and personal life**

First Step: Awareness

Objectives

Assess and tackle the gender issue in Computing

The whole pipeline is important: prospective students, undergraduate/graduate programs, professional careers

Landscape of the gender diversity

Provide a clear landscape of the gender diversity in Computing for Brazilian North Region

Understand the social, economic and cultural differences compared to the other Brazilian regions, Latin America, North America, and Europe

Changing the landscape

Defining small actions for the daily cultural change and congregating other colleagues

Assessing strategies for improving gender diversity in the Brazilian North Region

Our Strategy

Group meetings (bimonthly)

Meetings to assess the project status, define nesxt steps

Speaker Series (quarterly)

Leading researchers and practitioners engaged in the gender issue to share their experience
Initial targets: students, professors and the working group

Workshop

Local open event for the local community (academia and industry) for a broad discussion

Attend Specialized Forums

Expected Deliverables

Comprehensive Report

Current landscape of the gender issue in the Brazilian North Region (including social, cultural, economic aspects)

Work plan

A detailed work plan and public information to improve the gender diversity awareness

Identifying Brazilian, Latin America and worldwide partners to share experiences and align efforts

Financial Strategy

A coherent and realistic strategy to raise additional resources (human and financial) for future steps

Attract and Keep students in Information Technology: Making IT fun

Lorena Gómez
Computer Science Department
Tecnológico de Monterrey
May 2012

Lorena Gómez

Bio

Director of Master´s Program in Software Engineering and Information Technology at ITESM Monterrey Campus.

Teaches graduate and undergraduate courses in Databases and Software Engineering.

Collaborating with the University of West Indies on the development of an application framework for mobile payments in support of micro-economies in latin America and the Caribbean, sponsored by LACCIR

Microsoft Enterprise Consortium and Microsoft Dynamics Academic Alliance Board of directors member.

Lorena received a B.S in Computer Science, a M.S. in Computer Science from Tecnológico de Monterrey and a Ph.D. in Computer Science from Arizona State University.

Women in IT @ Tec de Monterrey

Some Data

10-15 % Female Students

Dropout in girls is not common at ITESM, MTY

Female students are in the top 10% best students

Industry Needs IT Professionals

Companies need more IT Professionals: Male and Female

Students get 2 or 3 job offers before graduation

Conclusion

Attract and Keep students in Information Technology (both genders)

Project Description

Workshops

Mini Robotics for Kids
Create your own Video Game
(Kinect/windows phone)
Magic behind the screen (Multitou
Playing with Data

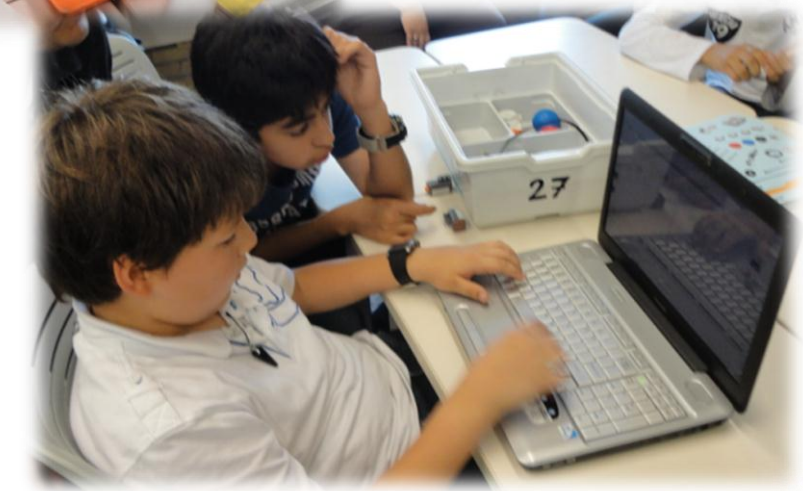
Web Site/Social Site

A day in the life of a
(Software Engineer, IT Consultant, students)
Interviews with successful people (Women)
News /Statistics/ List of best Jobs
Webinars from successful IT People (Specially Women)

Success Story

MiniRobotics for Kids

- 10-14 year old
- 12 four-hour sessions
- Design, Assembly, Code, Test -→ ZumoBot Competition
- Instructors are students majoring in CSE / Robotics/ EE doing Social Service
- Final Project : ZumoBot Competition



Classroom competition

Build

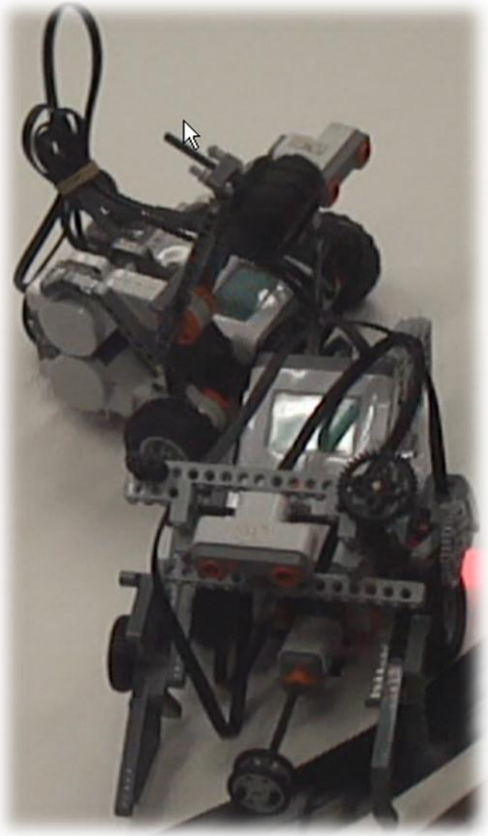
Name your Robot

Wallie

Terminator

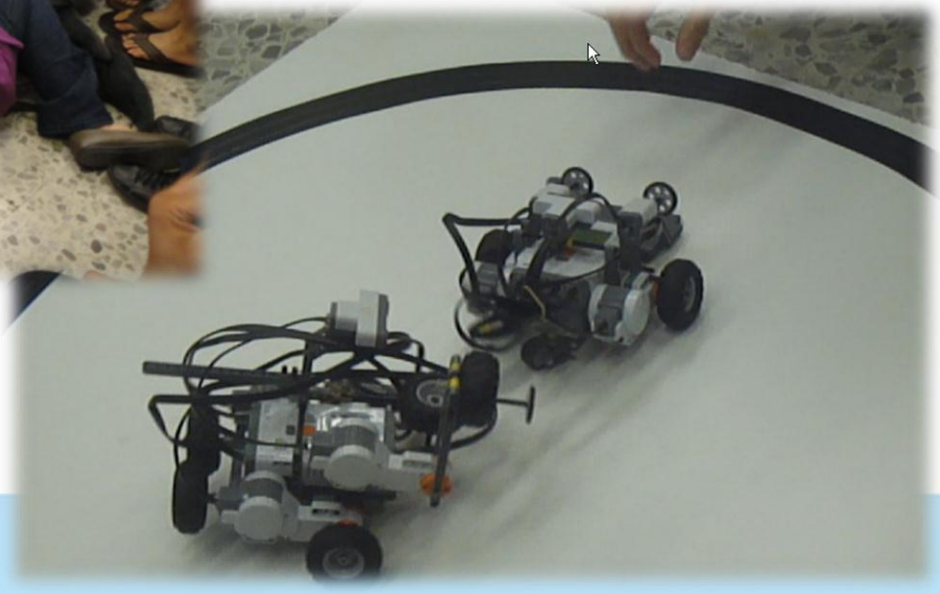
ScrewDriver

Code Review and Test



Fight

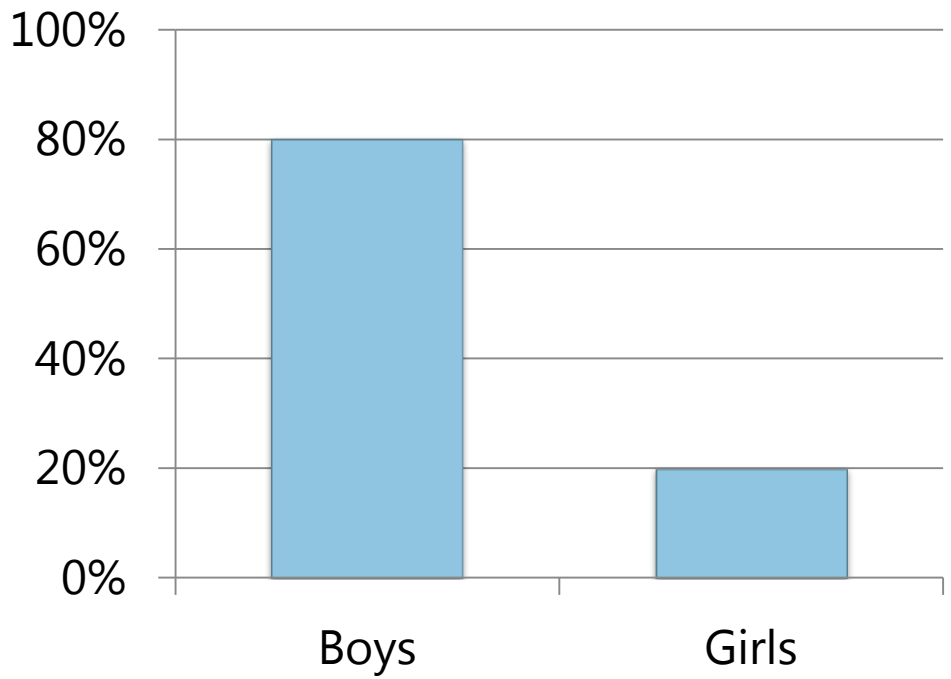
All family members participate



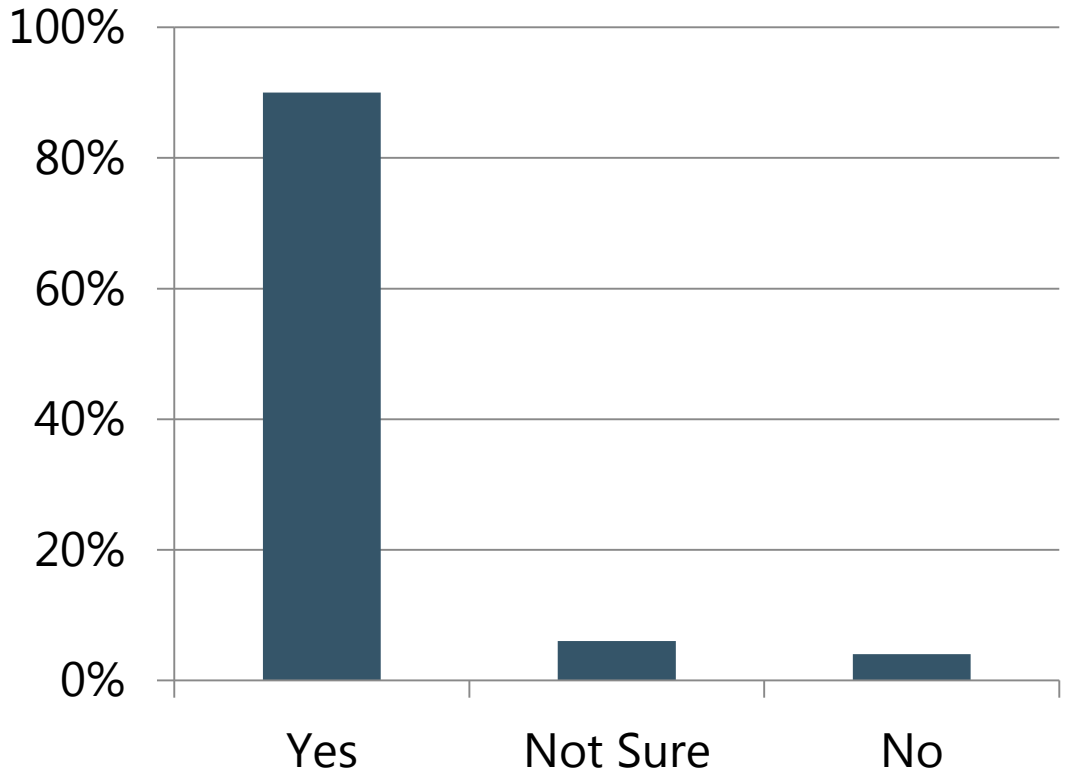
Final Round: Robotics 1

End of Workshop Survey

Distribution

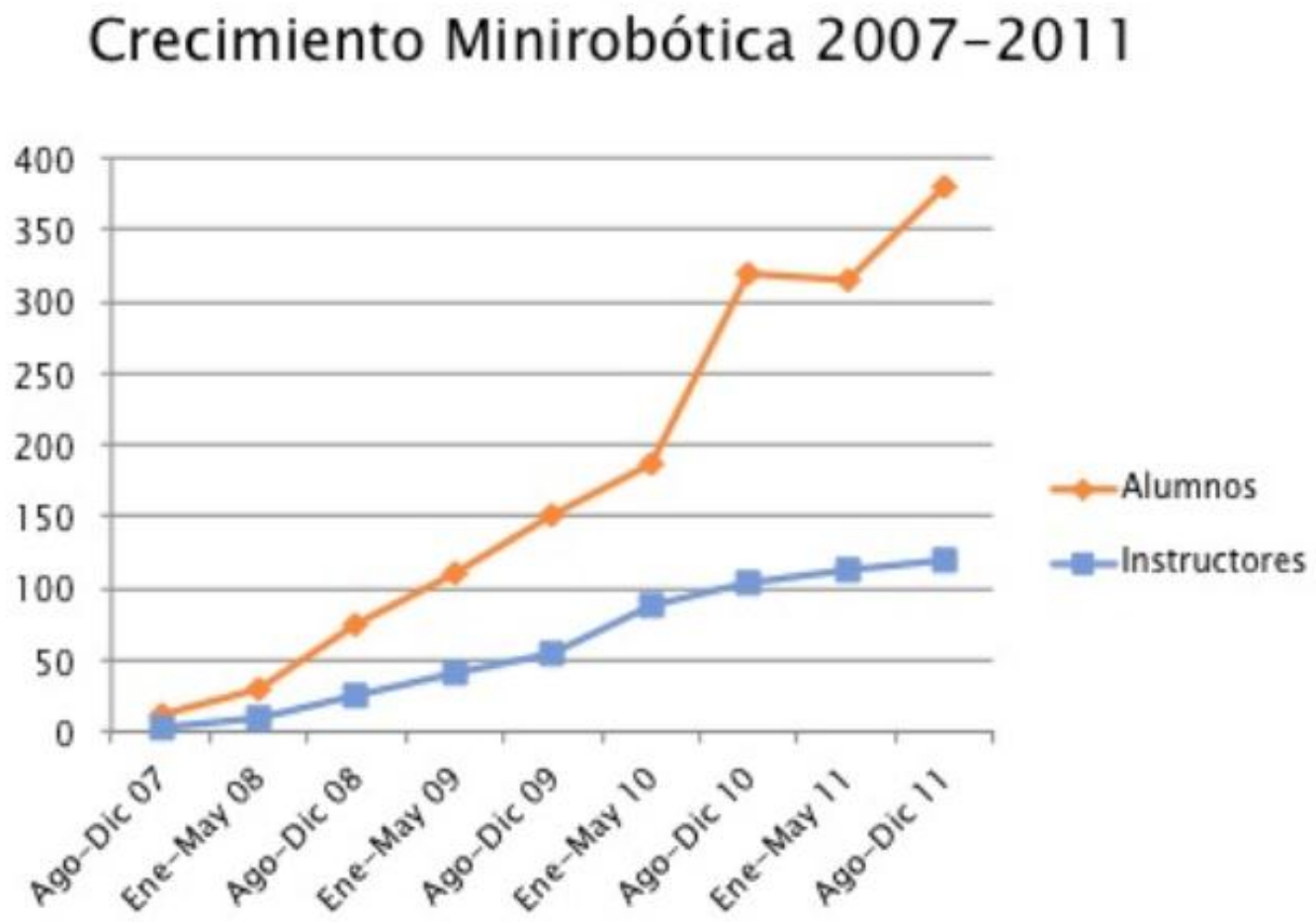


Will you pursue a career in IT?



MiniRobotics Workshops 2007-2011

	Alumnos	Instructores
Ago-Dic 07	12	3
Ene-May 08	30	10
Ago-Dic 08	75	25
Ene-May 09	110	40
Ago-Dic 09	150	55
Ene-May 10	187	89
Ago-Dic 10	320	103
Ene-May 11	315	112
Ago-Dic 11	380	120



Next Step

Workshops in Computing for kids

Kinect
Windows Phone / Touch screen monitors
Others…

Social Networks/ Site

Hope to get some videos from role models (specially Women)

Ideas/Experiences/Comments from Audience

We would like to hear from you!

Lgomez@itesm.mx

Universidad de los Andes

Women in Computing in Colombia
The UniAndes project

José Tiberio HERNANDEZ
Rubby CASALLAS

Associate professors
University of los Andes – Bogotá - Colombia

May 23 – 25 2012

Universidad de los Andes

Women in Computing in Colombia
The UniAndes project

- Generalities
- Colombian situation
- UniAndes survey
- The Contest

Women in Computing

Universidad de los Andes

What is Women in Computing?

Women in Computing (WIC) is a project of the Department of Systems & Computing Engineering in University of los Andes Colombia, it is partially funded by Microsoft Research.

The main **objective** of WIC is to discover and understand the reasons why the participation of women in the fields of computing has been declining and is so low, and proposing actions to change this trend.

Women in Computing

Universidad de los Andes

Why?

The lack of participation by women leads to a reduced view of the needs of society, so the proposed solutions are insufficient. If women had a greater participation in working groups, organizations would have more varied and dynamic groups that produce more adequate solutions.

The role of women is very important in the computing area because of reasons of diversity and competitiveness.

Women in Computing

Universidad de los Andes

What do we do?

We analyze quantitative and qualitative information that allows us to understand the phenomenon.

We create mechanisms for participation and inclusion of women in our program in Systems & Computing Engineering.

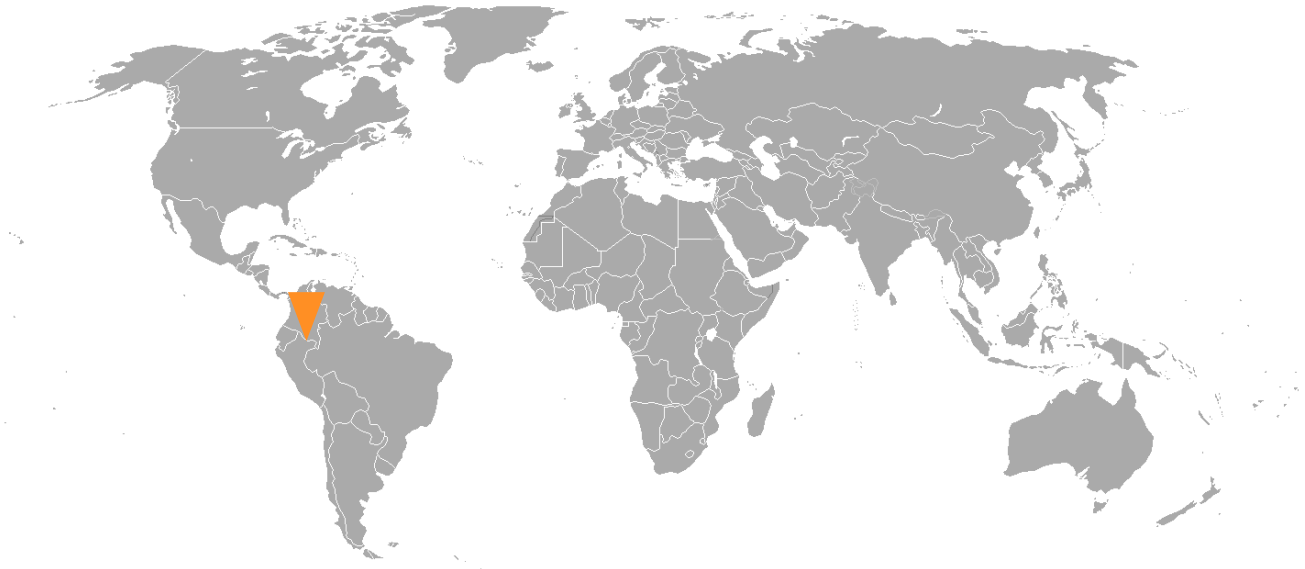
We establish inter-institutional links that allow us to accomplish these actions.

Women in Computing

Universidad de los Andes

Colombia

Population: 46 million



Bogotá

Population: 6.8 million

Educational, administrative, financial and political center of Colombia

Women in Computing

Universidad de los Andes

School of Engineering

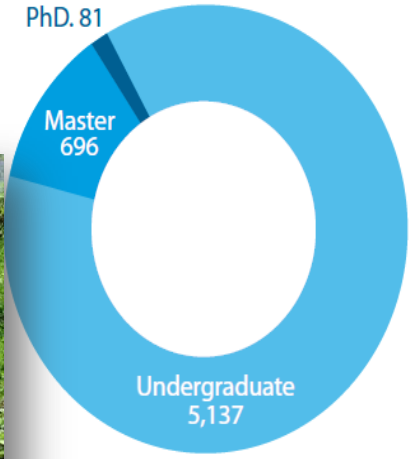
University of Los Andes

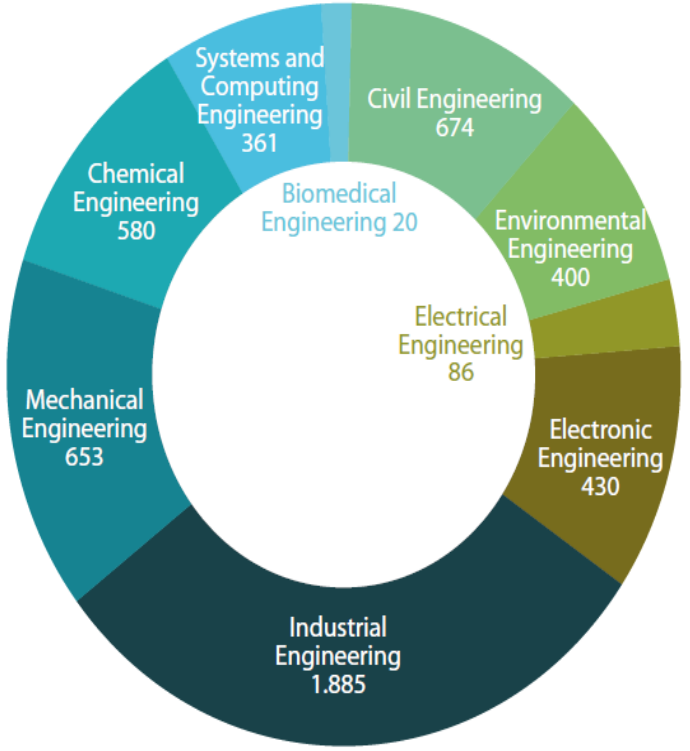
Enrollment 2011:

12,502 undergraduate

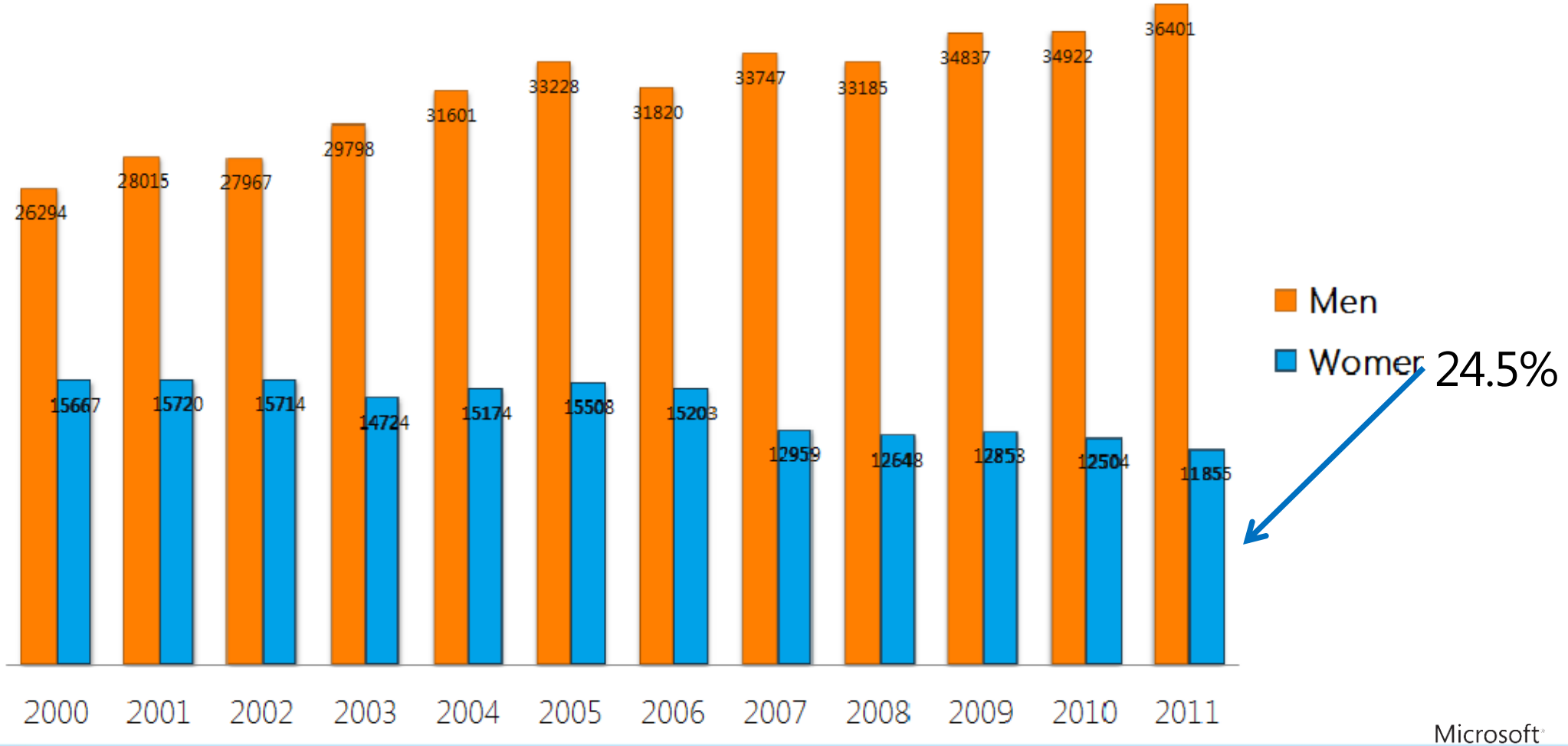
2,179 MSc

274 PhD



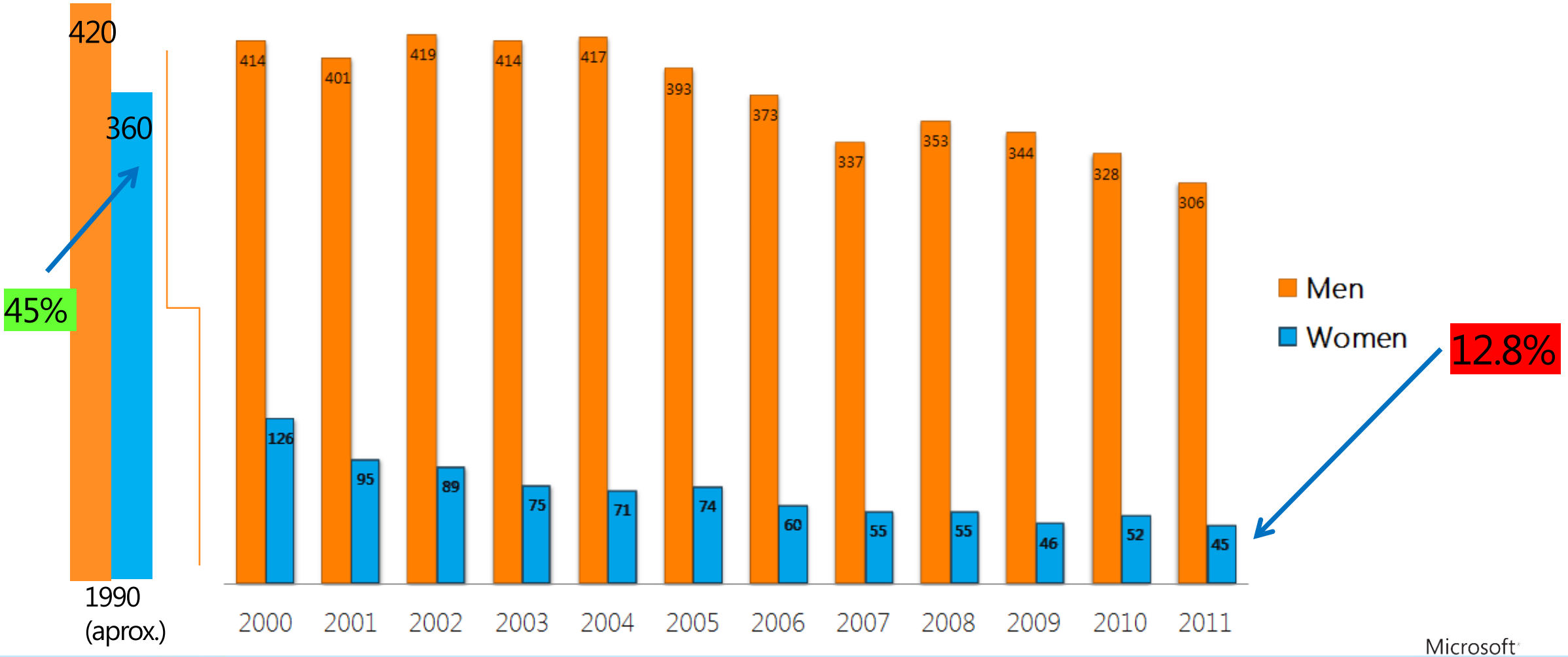


Participation by gender in Colombian universities in Computing



Participation by gender in UniAndes in Computing (absolute numbers)

Universidad de los Andes



Universidad de los Andes

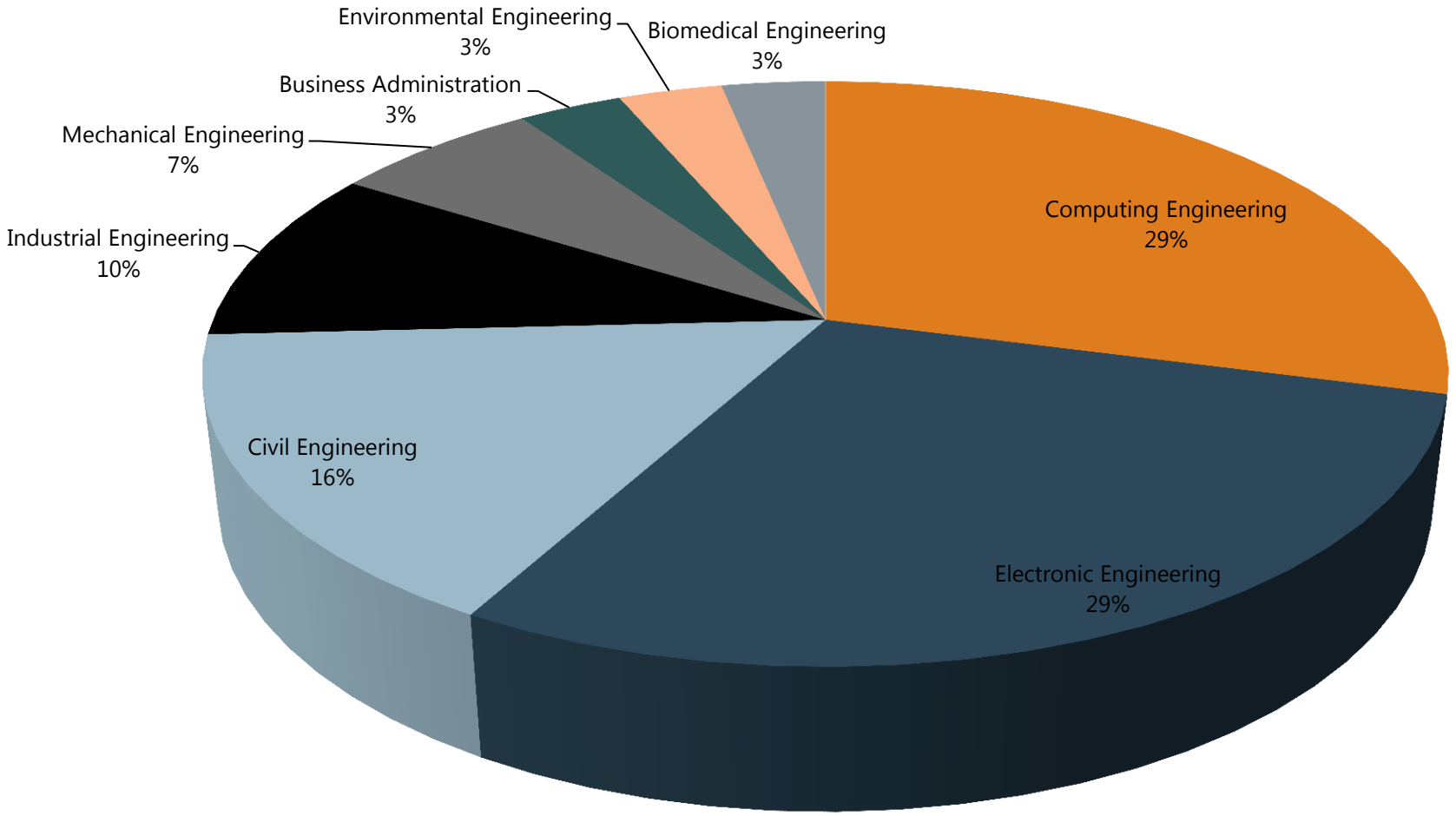
SURVEYS

What are the perceptions of high school students regarding Systems & Computing Engineering?

To answer this question we have made 92 surveys to students from different high-schools, 61 of these surveys were answered by women and the remaining 31 were answered by men

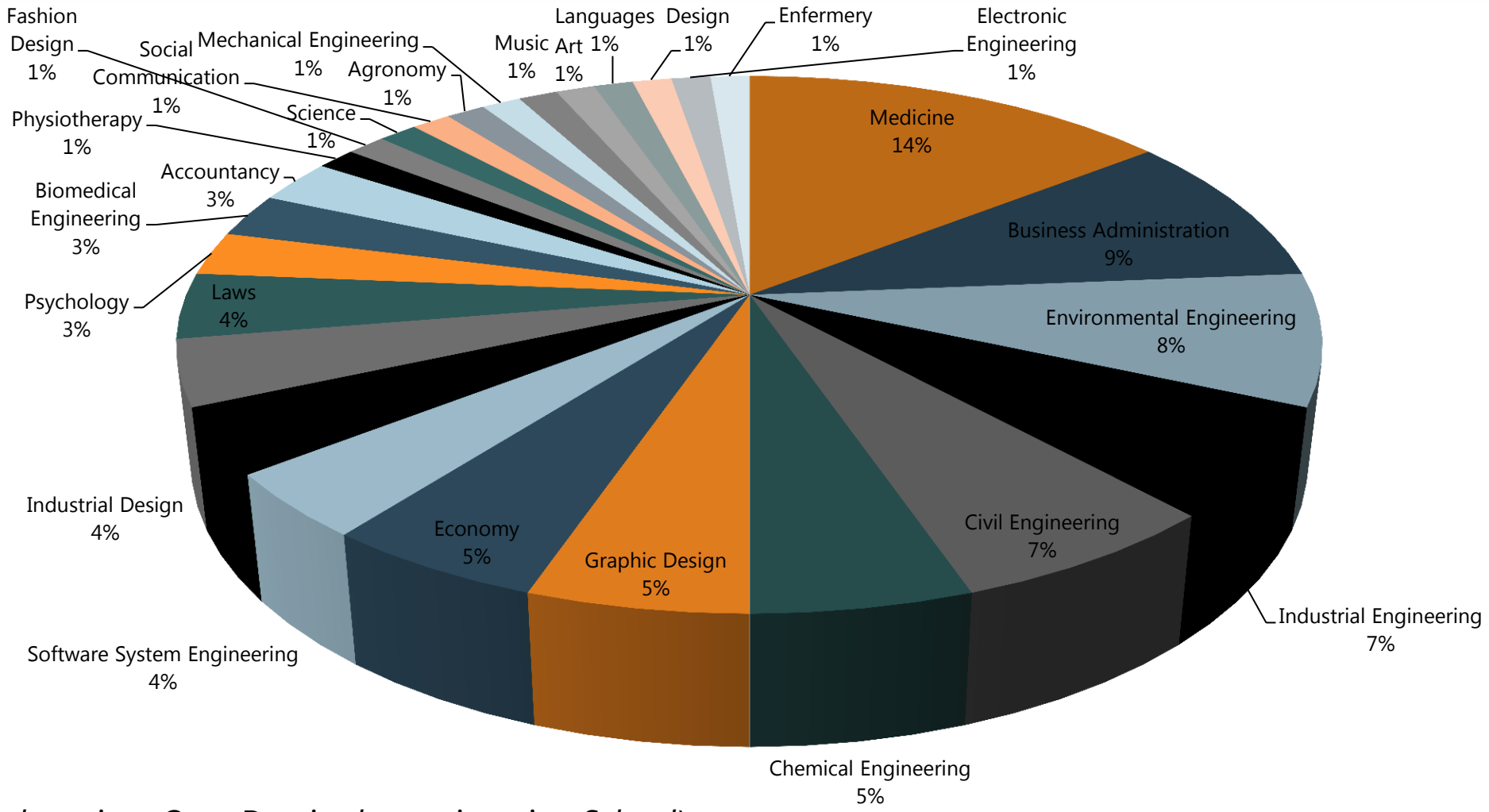
(High school students in an OpenDay at the Engineering School)

Career preference for men



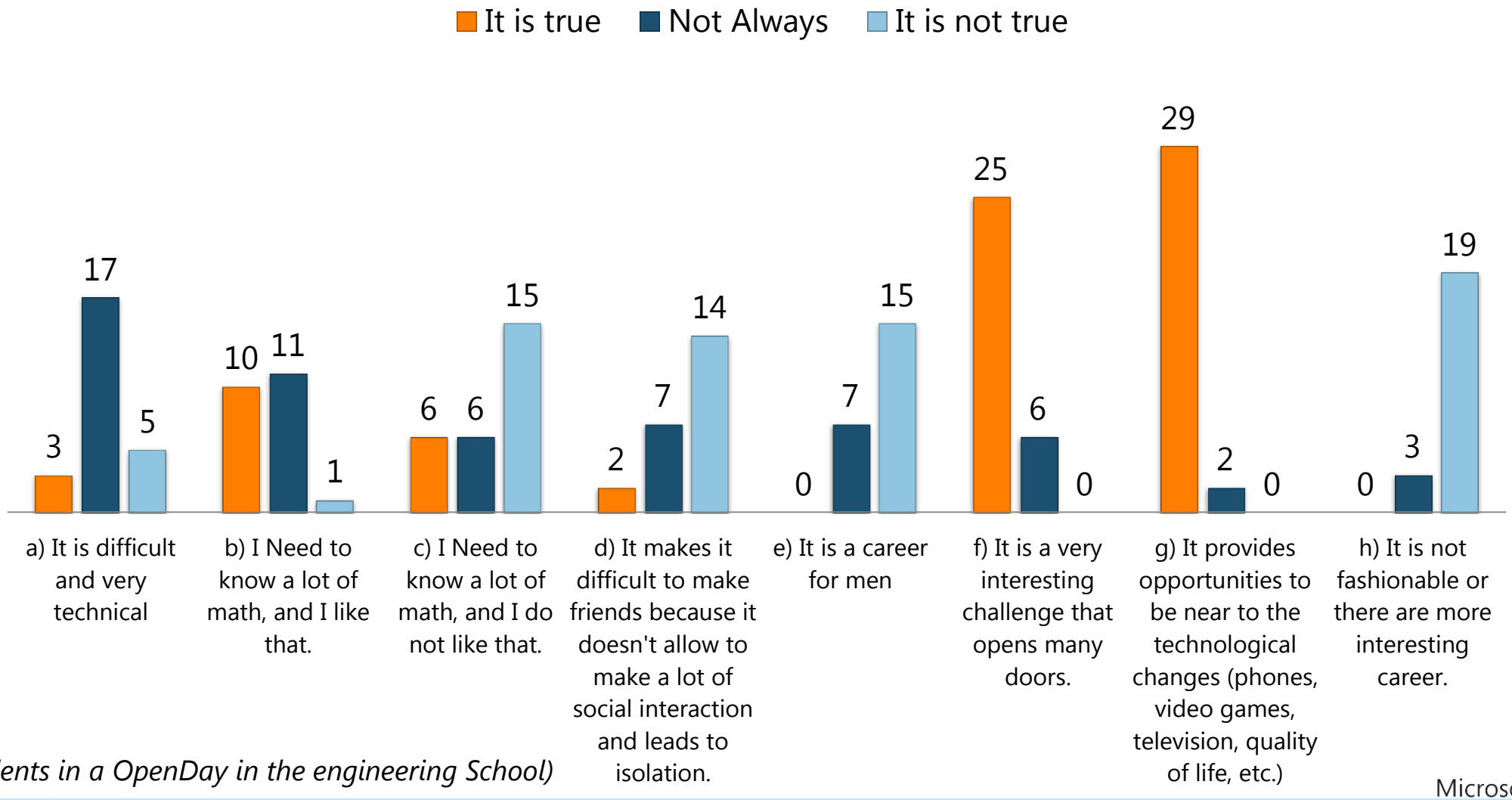
(High school students in a OpenDay in the engineering School)

Career preference for women



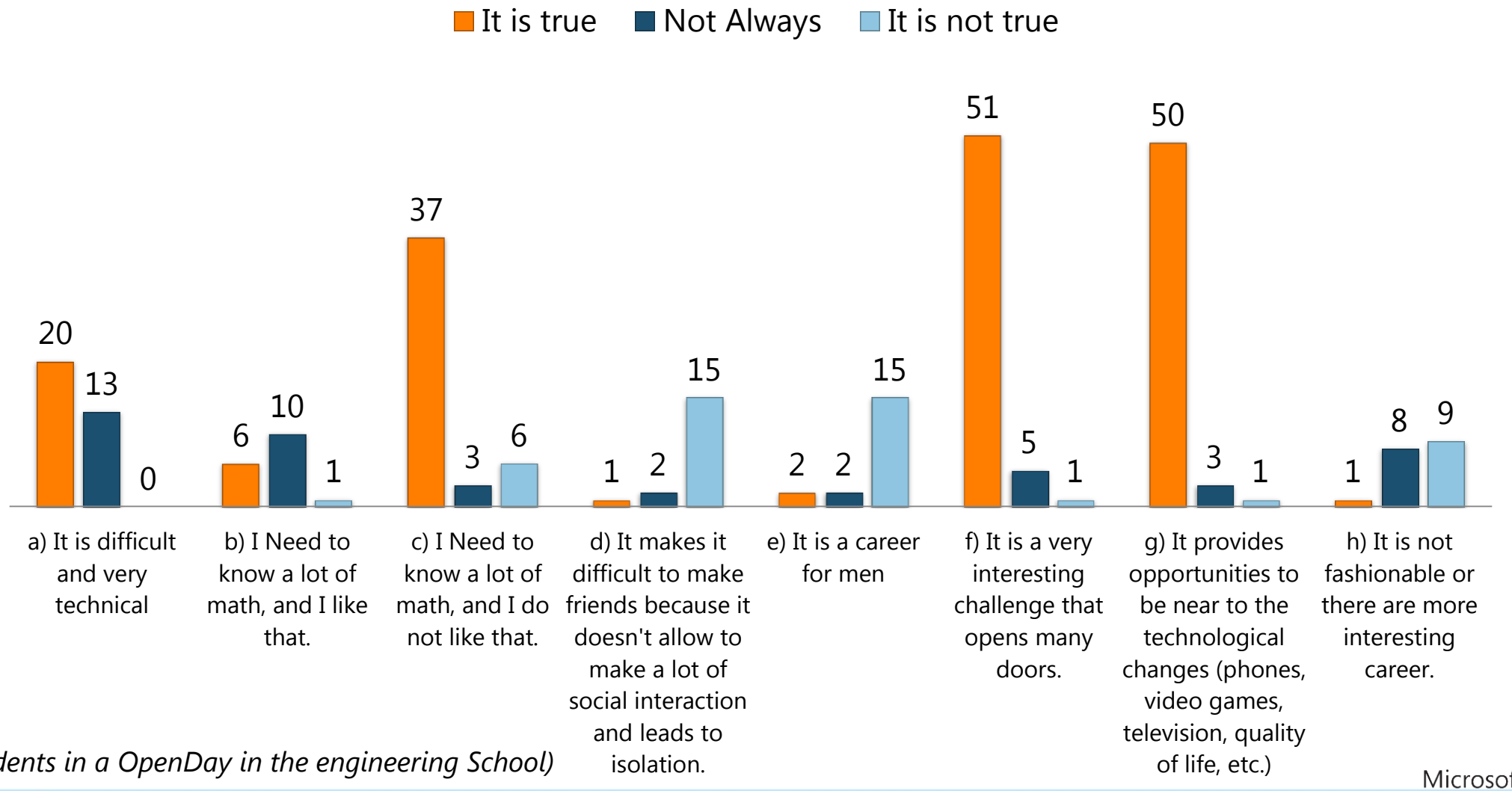
(High school students in a OpenDay in the engineering School)

I think that studying Systems and Computing Engineering… (Men)



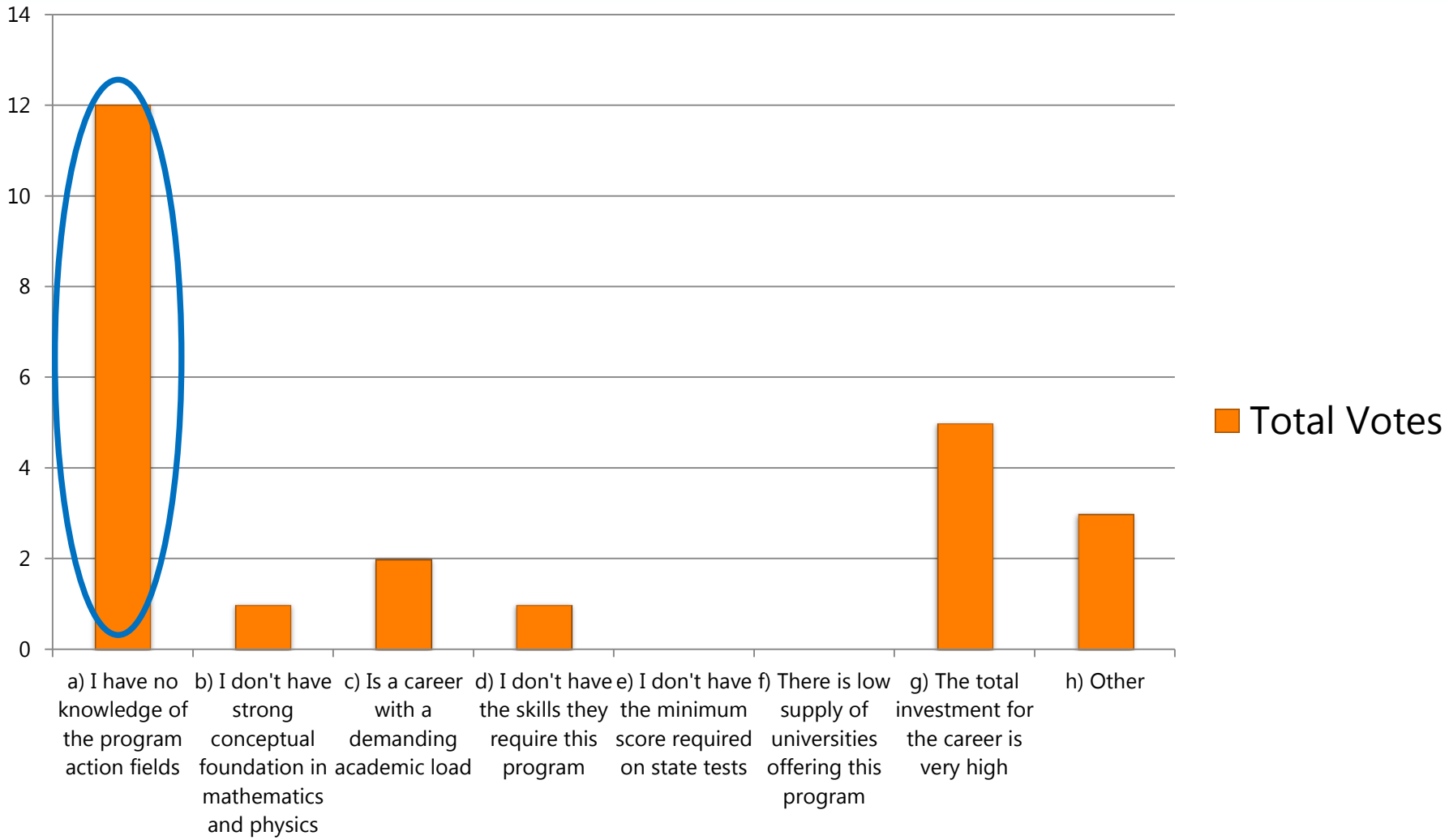
(High school students in a OpenDay in the engineering School)

I think that studying Systems and Computing Engineering… (Women)



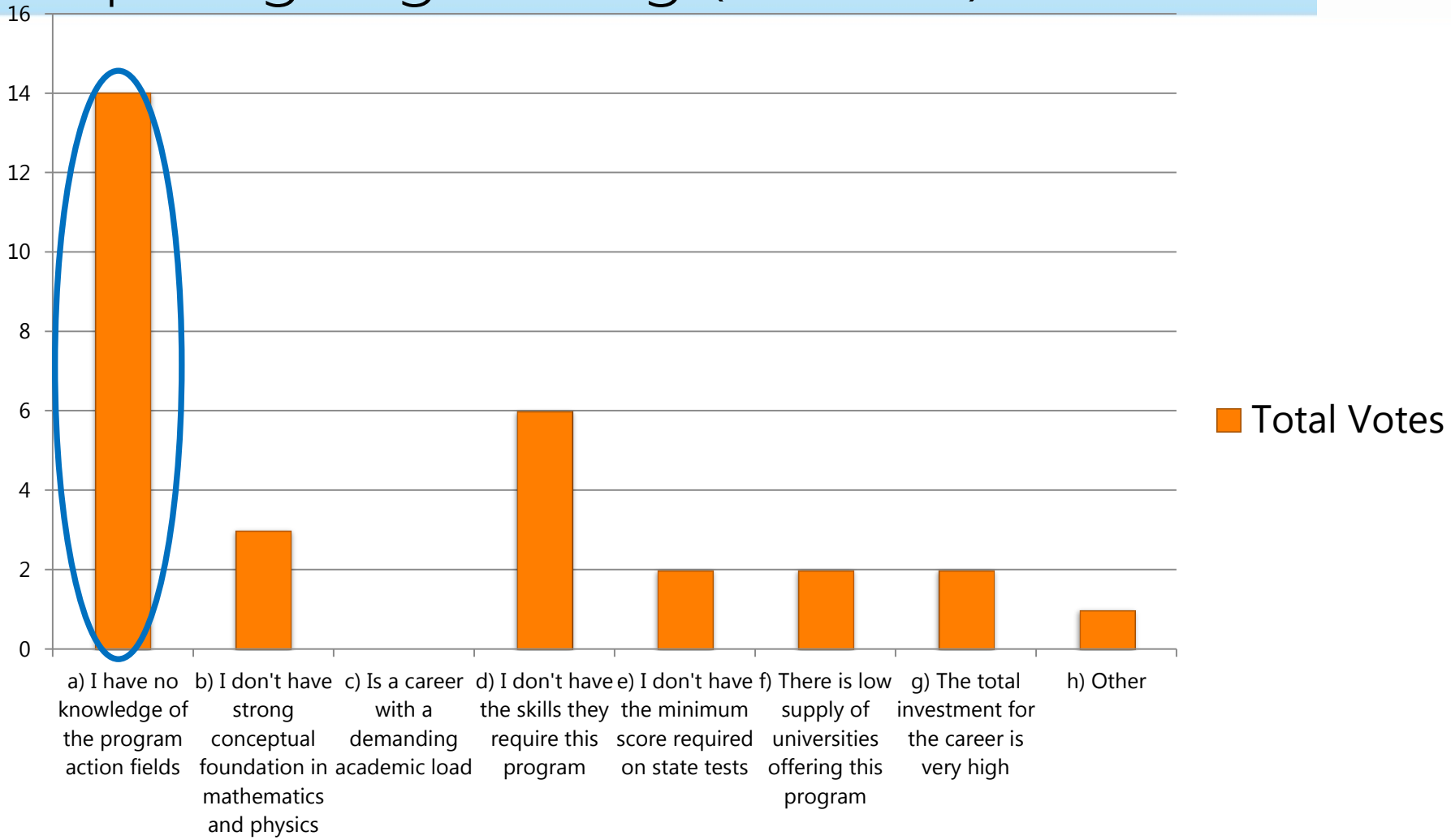
(High school students in a OpenDay in the engineering School)

Reasons to NOT study Systems and Computing Engineering (Men)



(High school students in a OpenDay in the engineering School)

Reasons to NOT study Systems and Computing Engineering (Women)



(High school students in a OpenDay in the engineering School)

Actions to advance

Universidad de los Andes

How & What to communicate to young students? (9th to 11th degree)

- MSR/UniAndes project
  - A website focused on WIC
  -
    - http://sistemas.uniandes.edu.co/mujeresencomputacion/
  - A set of local & permanent surveys (from 9th to 12th)
  - A contest to seek new ways to communicate

Women in Computing

Best Proposal Contest 2012

This competition aims to encourage the creation of proposals to high school students between 9° and 11°, and to motivate the participation of women in computing, in particular, the program of Systems and Computing Engineering, of University of los Andes.

Change the preconception related to the Systems and Computing Engineering career.

To publicize the application fields and professional profiles of the career.

Women in Computing

Universidad de los Andes

Best Proposal Contest 2012

Dates:

Deadline for proposals: September 4, 2012

Publication of pre-selected proposals: September 14, 2012

Selection of winners: September 21, 2012

Prizes:

First place: COP$3'000.000

Second place: COP$2'000.000

Third place: COP$1'000.000

Universidad de los Andes

Women in Computing in Colombia
The UniAndes project

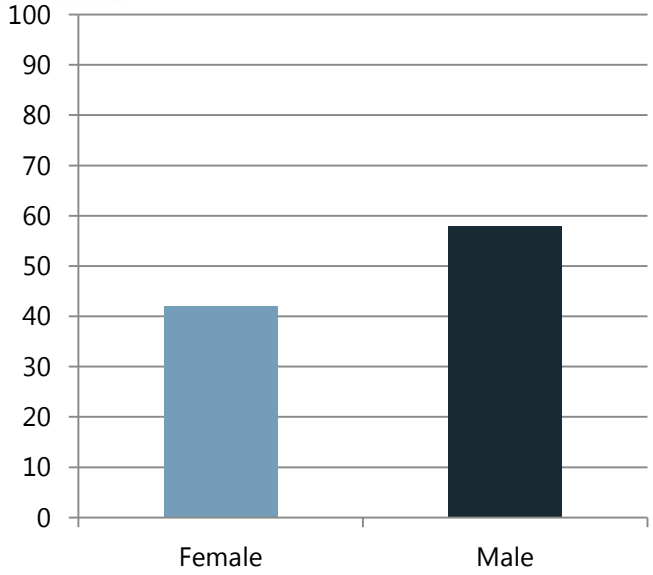
- A big challenge
- Become an institutional concern

- Suggestions ?

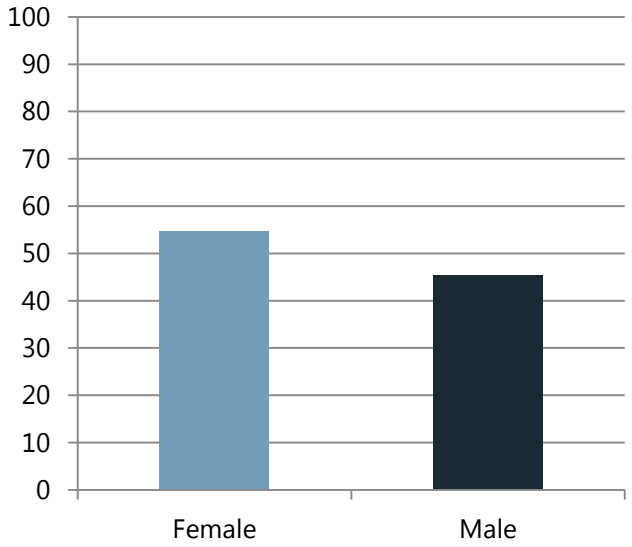
Microsoft®

© 2012 Microsoft Corporation. All rights reserved. Microsoft, Windows, and other product names are or may be registered trademarks and/or trademarks in the U.S. and/or other countries.
The information herein is for informational purposes only and represents the current view of Microsoft Corporation as of the date of this presentation. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information provided after the date of this presentation. MICROSOFT MAKES NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO THE INFORMATION IN THIS PRESENTATION.

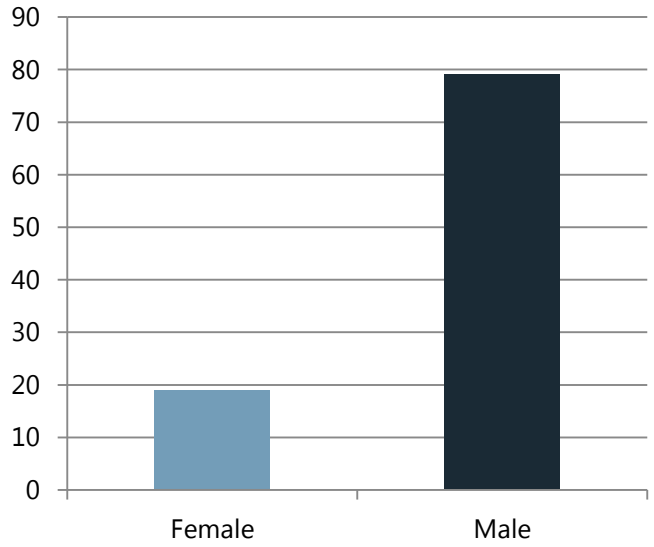
Some stats in Brazil



42% of all professional occupations in Brazil workforce are held by women



54.6 % of bachelor degree recipients in Brazil are women



19% of bachelor degree recipients in IT are women