

**MEXICO**

HERE  
FOR  
GOOD

SOCIAL RESPONSIBILITY  
REPORT 2016



**LAUREATE**  
INTERNATIONAL  
UNIVERSITIES®



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INTERNATIONAL  
UNIVERSITIES®

SOCIAL  
RESPONSIBILITY  
REPORT **MEXICO 2016**

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**LAUREATE**  
INTERNATIONAL  
UNIVERSITIES®



*"I am confident that our students will go into the world prepared not only to find jobs, but also to create jobs, and most importantly, to continue to create change. This is made possible through the dedication and leadership of tens of thousands of faculty and staff members who also deserve the highest praise. Together, may we remain Here For Good".*

**Douglas Becker**  
Founder, Chairman and CEO,  
Laureate International Universities

# PRESENTATION

HERE  
FOR  
GOOD

Our mission, "Here for Good", implies playing an active role in all the communities we serve; it permeates across Laureate campuses and institutions, as well as across our offices, therefore making a statement about our commitment to aim actions according to the particular circumstances of each region.

In Mexico, Laureate encompasses two strongly consolidated institutions: Universidad del Valle de Mexico and Universidad Tecnologica de Mexico. With 43 campuses in 19 states across Mexico, Laureate Mexico is a key player in all the localities where it operates. Each institution, and its corresponding campus, supplies talents to the community in order to contribute to the well-being of those inside and beyond campus doors. In the midst of unity, diversity is one of the fundamental virtues of our network.

This 2016 Social Responsibility Report is a summary of relevant progress made in social responsibility management across areas such as Ethics and Corporate Government, Quality of Life and the Workplace, Community Outreach, Environment and Applied Research.

**UVM**

**UNITEC**

# 2 SOCIAL RESPONSIBILITY MANAGEMENT

Certified



Corporation®

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## LAUREATE, FIRST YEAR AS PUBLIC BENEFIT CORPORATION AND B CORP™

In 2015, Laureate took major steps to further express our commitment to integrating our social impact mission into the legal structure of the company, while also finding sustainable and transparent ways of measuring impact.

In October 2015, Laureate converted from a traditional corporation to a Public Benefit Corporation (PBC), a new class of corporations that are required by law to create general public benefit through a material, positive impact on society. Laureate joins over 2,800 other corporations nationwide and is the largest one to convert to PBC status.

*B Corp™ Certification Provides a Public Performance Benchmark*

In late 2015, Laureate and its network institutions went through a rigorous assessment by B Lab®, a non-profit organization that evaluates and certifies companies based on their overall social and environmental performance, public transparency, and legal accountability. With our certification as a B Corporation, Laureate joins the global movement of businesses that strive to be a force for good.



*“From the inception of the company, our main purpose has been to prepare our students for success in their careers and lives. We recognized the enormous importance that society places on education as a public good. This inspired us to create a culture that combines the ‘head’ of a business enterprise with the ‘heart’ of a non-profit organization. **Our public benefit is firmly rooted in our belief that when our students succeed, countries prosper and societies benefit.**”*

*Douglas Becker,  
Laureate Founder, Chairman and CEO*

# 2

## SOCIAL RESPONSIBILITY MANAGEMENT

### ESR LABEL



The ESR Label, granted by Centro Mexicano para la Filantropía (CEMEFI) and Alianza para la Responsabilidad Social, is the most important acknowledgment in this area given to Mexican companies. The label is awarded once institutions have self-diagnosed their performance in a series of areas, and after delivering corresponding documentary evidence.

Universidad del Valle de Mexico and Universidad Tecnológica de Mexico have been awarded the ESR Label for seventh and sixth time, respectively.

*“Receiving the Label as Socially Responsible Company makes us proud, since it indicates that we are acting according to our values and code of ethics. Furthermore, it means a greater commitment from each one of our associates to act with integrity in all work related interactions, since we are custodians of the trust of many students and parents who see us as their best ally to achieve a successful development in both the professional and personal arenas”.*

**Victor Campuzano Tarditi**  
Outreach and Government Relations



## THE GLOBAL COMPACT AND PRINCIPLES FOR RESPONSIBLE BUSINESS EDUCATION

Laureate Mexico has an ongoing commitment to promote human rights, environmental care and fight against corruption. Since 2009, we have supported the Principles of the Global Compact. As part of such commitment, our institutions implement actions to make progress towards Compact objectives.

Starting on such same year, UVM and UNITEC became signatories of the Principles for Responsible Management Education (PRME), a platform to promote universal values, so that our students may, as future leaders, act responsibly.

Thus, curricula are subject to ongoing review to guarantee the incorporation of up-to-date trends and highest social responsibility standards. A number of activities take place in parallel in order to promote a culture of respect for the environment and human rights.



# 2

## SOCIAL RESPONSIBILITY MANAGEMENT

### SCHOOL HARASSMENT PREVENTION AND HANDLING MANUAL

In 2016, Laureate Mexico published the “School Bullying Prevention and Handling Manual”, aimed at supporting directors and coordinators in the events of bullying, and for other types of school violence.

This Manual also provides the coordinator with tools to understand state and general legal frameworks which regulate processing of school violence matters, and to help him make the best possible decisions in each case.

In order to achieve this, a “Coordinator for the Attention of Bullying Situations”, has been appointed at each campus. He will be in charge of coordinating efforts for the correct use of the Manual on site. This Manual will be a supporting tool for the reinforcement of attitudes, as well as for the building of knowledge and skills of those in direct contact with students, in order to detect and cope with problematic situations before they become a bigger issue.

### PROTOCOL FOR THE PREVENTION AND ATTENTION OF BULLYING AND SEXUAL HARASSMENT

In order to foster and consolidate a learning and working environment for the university community as a whole, distinguished by the observance of principles of equality between men and women, respect for human rights, and no discrimination, actions should be taken against violence regardless of its manifestations.

In this regard, prevention, attention and elimination of bullying and sexual harassment practices among members of the university community, call for the reinforcement of internal mechanisms to deal with the negative effects of sexual violence observed in sexual harassment and bullying practices.

The “Protocol for the Prevention and Attention of Bullying and Sexual Harassment at UVM”, published in 2016, includes clear criteria and guidelines for the correct handling and observance of applicable regulations, with the following characteristics:

*“In this act, UVM and the INAI join efforts, with the belief that Mexico needs data protection researchers who can contribute to private life culture of protection”.*

*Bernardo Gonzalez Arechiga,  
Rector of the Universidad del Valle de Mexico.*

1. This tool clearly describes obligations to be met by authorities responsible for conducting follow-up on reports submitted.
2. The Protocol is an instrument which sets an effective standard for the investigation of bullying and sexual harassment cases, which might arise inside our campus community.
3. This tool sets the basis to make sure that the attention of bullying or sexual harassment reports, both at school and labor level, are taken care of with strict observance of a prejudice and gender stereotype free procedure.

It is our strong belief that this tool will contribute to the improvement of coexistence rules between administrative staff, professors and students who make up our campus community; thus, we are working through a number of initiatives towards the training of our staff for due implementation of the Protocol.



## UNIVERSIDAD DEL VALLE DE MEXICO AND INAI, IMPLEMENT “AULA IBEROAMERICANA” (IBERO-AMERICAN CLASSROOM) FOR PERSONAL DATA PROTECTION

Universidad del Valle de Mexico and Instituto Nacional de Transparencia, Acceso a la Información y Protección de Datos Personales (INAI, National Institute of Transparency, Access to Information and Protection of Personal Information), signed a collaboration agreement to implement the Ibero-American Classroom for Personal Data Protection, designed as a virtual course for UVM undergraduates.

Dr. Ximena Puente de la Mora, Commissioner-President of INAI said that aside from demonstrating the strong commitment of UVM and INAI with the right to informational self-determination, the introduction and implementation of the Ibero-American Classroom for Personal Data Protection will foster specialization and knowledge of personal data related topics through the incorporation of this course in university curriculum. This course is part of a unique effort to encourage personal data protection in Latin America.

The course will allow future professionals to properly respond to challenges posed by privacy resulting from progress in technologies and communication. The Ibero-American Classroom for Personal Data Protection is an innovative project in the region.



## LAUNCHING OF AN APP BY SUPERCIVICOS TO PROMOTE CITIZEN ENGAGEMENT

In order to encourage engagement of citizens in public affairs, Laureate, Los Supercivicos and Factivo, a technology firm, have developed an App for mobile devices allowing citizens to record videos and report failures in utilities or anti-civic behaviors of other citizens.

This App can be used in iOS and Android devices, and downloaded for free from Apple Store and Google Play. With it, citizens can:

- Record on video failures in infrastructure, utilities or anti-civic behaviors of other citizens.
- Assign categories to reports and feed them with data on exact location (latitude and longitude), date and time.
- Contribute to the creation of a large database contributing to the analysis of information and generation of urban intelligence for better decision making.

Video reports with the greatest number of votes will be disseminated through the social media accounts of Los Supercivicos, currently followed by a community of more than one million people.

Besides being a useful tool to foster citizen engagement, the application also contributes to the gathering of data on incidence of failures so that they can be useful to government administrations for a better design of action plans aimed at solving such issues or designing public policies.

Analysis of information gathered by the application will be conducted by the Centro de Opinion Publica de la Universidad del Valle de Mexico (Center of Public Opinion of Universidad del Valle de Mexico) in order to design an index of citizen engagement , and will report results on a quarterly basis.

*“Our fellow Supercivico comrade, you truly have the power to change Mexico. Download this Application into your mobile, become a reporter and report anything which does not work in your community. With this App, many more of us are truly the “good guys!”*

**Comrade Hernandez**  
Supercivicos

# 3 QUALITY OF LIFE AND THE WORKPLACE

## CULTURE OF ACKNOWLEDGMENT

At Laureate we know that success depends on each one of us, and that thanking others is critical to strengthen teams and to let us know we are doing things right. Several events have been organized, in order to promote a culture of acknowledgment, and to give us a chance to express our gratitude to fellow co-workers.

On October, the launching of the site <http://miespaciolaureate.com/reconocimiento> took place as part of the process. To date, the site has three active sections:

- Thanks: allows employees to deliver virtual thank-you notes to whoever they want, and add the reason for being thankful.
- Acknowledging our operating principles: is intended to give employees a chance to reward outstanding behaviors of fellow co-workers with badges of honor, depending upon the acknowledged behavior. The supervisor of that person receives a copy of the badge of honor, for him to know that his team is making a difference.
- Success stories: this space is for employees to write success stories which they believe should be known by the rest of the organization. The best ten stories of each week will be published and the best five of the month selected for the hall of fame.



# 3 QUALITY OF LIFE AND THE WORKPLACE

## LAUREATE WELLNESS CLUB

This program promotes a healthy mental, physical and emotional lifestyle among employees. Campaigns are put in place to raise awareness about the need to take care of our health and improve our prevention, nutrition, training and fitness habits.

The project began in 2016, featuring many activities, namely:

- Launching of the wellness portal for our more than 20 thousand employees, faculty included.
- Delivery of Health Journals to 700 corporate employees.
- Physiotherapy and Nutrition Program in Samara and Tere, with more than 80 regular patients, and our students in charge of the sessions.
- Wellness Circuit: we increased the number of people with medical check-ups in the Metro Area. Corporate UNITEC associates were also incorporated.
- Health talks.
- Diagnosis (weight, size, glucose, cholesterol and triglycerides measurements).



## MARINA AND CUITLAHUAC CAMPUSES WERE AWARDED THE “GILBERTO RINCON GALLARDO” INCLUSIVE COMPANY DISTINCTION FOR 2016.

Marina and Cuitlahuac Campuses, in alignment with the social environment commitment of UNITEC, were awarded the “Gilberto Rincon Gallardo”® Inclusive Company Distinction, a strategy put in place by the Secretaría del Trabajo and Previsión Social (Secretariat of Labor and Social Welfare), aimed at acknowledging work centers which apply a Good Labor Practices Policy, for the incorporation of people in conditions of vulnerability as part of their labor force.

With this Distinction, UNITEC confirms its responsibility with the implementation of continuous improvement actions to strengthen good practices across the institution, and the promotion of labor

circumstances for people in conditions of vulnerability, as well as a contribution to cultural change favoring the incorporation of people in such circumstances into violence-free environments.

We wish to congratulate the team: Jorge Vazquez Solache, MSC, Rector of the Marina-Cuitlahuac Campus; Enrique Ordoñez del Villar, Director of Human Resources; Rodolfo Joel Aguilar Sanchez, General Services’ Manager; Rosario Hurtado Garduño and Hector Espino Lopez, Human Resources Managers of Marina and Cuitlahuac, respectively, who collaborated during the certification process.



## TOWN HALLS

Movimiento Laureate (Laureate Movement) is a project that seeks to promote collaborative work between UVM and UNITEC employees.

One of the ways to make this wish come true is through Town Halls, where Laureate, UVM and UNITEC authorities present strategic objectives and activities closer to the community. With face to face and streaming attendance across our campuses and corporate offices, employees may learn about the most relevant events taking place at Laureate, ask questions and share their opinion in a number of areas.

The first Town Hall took place in late 2015, and 3 Town Halls took place in 2016, with an average attendance of 8,050 attendees per session.

## 2016 UNITEC SUMMER CAMP

In order to offer entertainment and healthy experiences to the children of our Campus administrative staff, this year's Summer Camp took place from July 25 to August 5 at our Toluca, Cuitlahuac, Sur, Ecatepec and Atizapan facilities.

Children had the opportunity to spend time in a safe and healthy environment, with activities that gave them a chance to socialize, share and work as a team.

Human Resources, Cultural Promotion and PE, as well as Security were in charge of logistics, and other areas offered entertaining and learning activities to our young participants.



## DIAGNOSIS ON "THE VALUE OF DIFFERENCE"

In 2017, Laureate intends to launch a diversity and inclusion program with a positive impact in our organizational culture. The purpose is to enrich all of us with the talent of groups of people who have been traditionally excluded.

With this purpose in mind, an inclusive diagnosis was conducted in 2016. The aim was to identify existing challenges and opportunities for the success of the inclusion program.

A pilot was implemented with the diagnosis of the UVM San Rafael Campus, UNITEC Ecatepec Campus, Samara corporate offices and our call center. The following phases have been concluded to date, and we are ready now to launch the inclusion program in the coming year:

- Exploratory workshop to learn about work scope and methodology
- On line survey with more than 1,200 associates
- Interviews with personnel of different areas of the organization
- Visits to ensure accessibility of the areas

# 4 COMMUNITY OUTREACH

## UVM LAUNCHED THE PROFESSIONAL INSTITUTE, TO SATISFY THE DEMAND FOR HIGHER TECHNICAL PROFESSIONALS FOR THE PRODUCTIVE SECTORS

In order to respond to the growing demand of the productive sectors for higher technical professionals, with additional professional competences and a higher degree of technical knowledge, Universidad del Valle d Mexico opened the Instituto Profesional (Professional Institute).

This new educational initiative will train Higher Technical Professionals (TSU, Tecnicos Superiores Universitarios) and will initially be in two University campuses: Toluca and Villahermosa.

The initial phase of the UVM Professional Institute initiative includes three programs:

- TSU Drilling and Production Services aimed at the oil industry - Villahermosa Campus.
- TSU Industrial Maintenance/Automotive Industry - Toluca Campus.
- TSU Manufacturing Processes/Automotive Industry - Toluca Campus.

Curricula of these programs have been prepared in collaboration with leading companies of the different sectors, thus ensuring a practical aim as well as quick employability of graduates.

Laureate Mexico joined forces to shape the project with Manpower and ProMexico to carry out surveys about talent needs and the role of higher technical professionals as detonating factor for economic growth.

This project is closely linked to the industry, and is one answer to our strong belief that higher technical education can contribute to the improvement not only of productivity levels, but to the social mobility of thousands of young professionals across Mexico.





*Universidad del Valle de Mexico (UVM) and Fiat Chrysler Automobiles Mexico (FCA Mexico), signed a collaboration agreement to support the education of Higher Technical Professionals (TSU, Tecnicos Superiores Universitarios) specialized in the automotive sector.*

*"Our country demands 1.4 million higher technical professionals, approximately. Such demand is hard to meet if we think that out of the higher education enrollment, only 4 or 5% enroll in higher technical professional programs".*

**Francisco Ayza Merino**  
Director of Instituto Profesional (IP) UVM

*"IP UVM complements our educational work, in a brand new area. The most relevant part, and our core commitment, is to have the largest number possible of people with access - according to their interests and passion - to better education"*

**Luis Duran Lujan**  
CEO of UVM

# 4

## COMMUNITY OUTREACH

### RICHARD BRANSON CHOOSES THE FIRST PITCH TO RICH WINNER MEXICO 2016

*"It is wonderful to be in Mexico, and amazing to see the number of entrepreneurs you have. I have always believed that Mexico can be the best country one day, because of the wide spectrum of entrepreneurship you have. And I will be right!, I hope this becomes a reality"*

*Sir. Richard Branson.*

Priceless insights by Mr. Richard Branson, 200 thousand pesos in cash granted by Virgin Mobile, incubation of the project at Universidad del Valle de Mexico and a trip to the United Kingdom sponsored by Culture Group, are the prizes received by Mexican young creators of the Aliada project, who won the great finale of Pitch to Rich Mexico 2016, held at UVM Cumbres Campus, in Nuevo Leon.

Pitch to Rich Mexico resulted from the alliance between Virgin Mobile and Laureate Mexico to encourage Mexican young university entrepreneurs, through a business competition of developments with applications in mobile devices and with social benefit. Three finalists were selected from over 100





projects presented by students and alumni of 45 universities across Mexico. Finalists had the opportunity to present their ideas to Richard Branson, founder of Virgin Group; Dieter Holtz, CEO de Laureate Mexico; and Farid Aouragh, CEO of Virgin Mexico.

During the grand finale, Mr. Branson, who is worldwide acknowledged for his support to entrepreneurial endeavors, underlined the wide spectrum of entrepreneurship in Mexico.

Aliada, the winning project, is a platform created by the team represented by Rodolfo Corcuera Meier, graduate student from Instituto Tecnológico Autónomo de México. Aliada helps people to hire the best domestic helpers, immediately, and, at the same time, is a tool for people who wish to perform cleaning activities, in the area and schedule that suit them better. After almost two years of operation, this application has given domestic helpers access to a better life, because they currently spend an average 50% less time in transportation and have three times more service requests. This translates into an increase on their monthly income and more time at home with their family.

The other two finalist projects were GWI, from students and graduates of Universidad del Valle de México, el Tecnológico de Monterrey and Universidad Iberoamericana, who created an application that works as a security alert through a wristband; and Lubvia, created by Enrique Ugarte, graduate from the Benemérita Universidad Autónoma de Puebla, who created a device conceived to conduct follow-up of babies inside their mother's womb and newborns.

“Being able to support entrepreneurs in Mexico through inspiring Richard Branson is a privilege and a great opportunity for Laureate Mexico. Through our institutions, Universidad del Valle de México and Universidad Tecnológica de México, have written a story of more than 10 years of support to young entrepreneurship through the UVM and UNITEC awards, to social and technological development”, said Dieter Holtz, after thanking Richard Branson for the opportunity of this alliance with Virgin.

Pitch to Rich Mexico 2016 had the support of allies in the promotion of the invitation to the competition, and the selection of finalists. We wish to thank, among others: INADEM, Santander Universidades and Universia México, Proempleo DF, New Ventures, Enactus Worldwide and Enactus México, Endeavor México, Fundación Educación Superior Empresa, Fondadora, Junior Achievement México, Centro de Ciencias Aplicadas y Desarrollo Tecnológico of the UNAM, 909 LABS; Global Student Entrepreneur Awards and Alta Ventures México.

## SABER HACER (LEARNING HOW)

Through Universidad del Valle de Mexico and Universidad Tecnologica de Mexico, Laureate contributes to the development of society through its wide offering of higher education opportunities for thousands of people who make their dream of a more productive professional life come true.

However, many Mexicans do not have access to higher education yet. In many cases, they barely have primary studies and have not only been left out from formal education but, due to a number of circumstances, have not been able to develop skills and knowledge which might allow them acquire tools necessary to get a job or undertake a business endeavor. This forces them to experience marginalization and limits social mobility significantly.

With this in mind, at Laureate we decided to launch our Saber Hacer program; therefore, with our facilities and the experience of faculty, we teach trades that allow vulnerable groups to develop skills necessary to open a business with minimum capital requirements, or improve their employment opportunities.

With programs carefully designed by experts, we teach courses free of charge to foster trade learning and contribute to strengthening of self-confidence among participants.

Over one thousand people have been trained in:

- Bakery and coffee bar
- Cool kitchen
- Electric installation
- Plumbing
- Automation
- Computer design and 3D printing
- Solid surface
- Sales
- Seaming and pattern design
- Text processing tools
- Power Point tools
- Job skills
- Computer repair

*"Five months after concluding the cold cooking course, I opened a small business. I sell salads, ciabatta bread sandwiches, yogurt and jelly. Those were the things I learned during the course. Training in costs and finance helped me define how to start my business"*

*Leticia Ortiz Gutierrez.*



**OUR STUDENTS CONTRIBUTE TO  
COMMUNITIES THROUGH COMMUNITY  
SERVICE**

## LAUREATE'S GLOBAL DAYS OF SERVICE



Each October, students, faculty and administrative staff of our institutions and Laureate corporate offices worldwide come together to express their commitment with local communities and celebrate the impact of the organization during Laureate's Global Days of Service.

On October 2016, the Laureate network came together for the largest volunteerism event ever. During the month, more than 22,500 volunteers contributed with 220,000 hours of work. Across 16 countries, Laureate institutions and offices participated in more than 220 different activities.

Campuses and offices of Laureate Mexico participated in a variety of activities, such as painting a community center (UVM Querteraro Campus), beach cleaning (UVM Merida Campus) and tree preservation (UNITEC Cuitlahuac Campus).

### ¡COBIJALOS! (COVER THEM!)

In compliance with its social commitment and thanks to the support of university community, UNITEC donated 21,728 blankets to the National DIF, to be given away by the institution to disfavored communities in Hidalgo.

For the past 7 years, UNITEC has invited its students to join the ¡Cobijalos! Campaign. To date, the program has given more than 100,000 blankets to people in need.

Community service is a unique opportunity for our students to put knowledge and skills learned to work for social benefit. In 2016, students of UVM and UNITEC contributed with more than 10.5 million hours of community service.

*“Being part of this university community implies a social mission, and such mission will be there for life. That is why we should show solidarity with those in need”*

**Manuel Campuzano**  
Rector, UNITEC

Community service is a unique opportunity for our students to put knowledge and skills learned to work for social benefit. In 2016, students of UVM and UNITEC contributed with more than 10.5 million hours of community service.

|          | UVM       | UNITEC    | Total      |
|----------|-----------|-----------|------------|
| Students | 14,650    | 7,423     | 22,073     |
| Hours    | 7,032,000 | 3'563,040 | 10'595,040 |



**UVM AWARD FOR SOCIAL DEVELOPMENT AND UNITEC AWARD FOR INNOVATION FOR SOCIAL DEVELOPMENT**

For over a decade, Laureate International Universities and the International Youth Foundation have worked together to create a network to support young social founders of entrepreneurial projects, and have made an open invitation to the general public. Each year, Laureate Global Fellows, through the YouthActionNetMR program, selects 20 entrepreneurs with exceptional high impact initiatives to help them increase their scope.

The same spirit and extensive knowledge of the Mexican youth led to the introduction of the UVM Social Development Prize and the UNITEC Prize to Technological Innovation in 2006 and 2013, respectively. Both programs are part of the YouthActionNet®, and winners receive specialized training, economic support and access to opportunities derived from membership to these young entrepreneurs worldwide network - the largest in the world.

In the context of the 10th anniversary of the UVM Prize, an agreement was executed between the Secretariat of Social Development and Laureate International Universities, in order to facilitate full exercise of social rights and fight shortages encountered by people who live in poverty, exclusion and vulnerability, who live in high priority rural and urban areas, so that they may overcome inequality and raise their quality of life.

## BUSINESS INCUBATOR NETWORK

Laureate educates students prepared to transform the world in different areas, and entrepreneurship is one of them. Our business incubators are available for students and alumni, as well as for external business people looking for specialized advisory form experts.

### UNITEC

UNITEC's Business Incubator Network is the program supporting business creation of companies with a business project with an innovative component.

Since 2012, UNITEC Incubators have worked with more than 2500 entrepreneurs and have contributed to the creation of more than 174 companies with an innovative proposal - still in operation - providing effective solutions to a number of problems nationwide.

This network is made up by the Toluca, Atizapan, Ecatepec Sur and Cuitlahuac campuses, and focuses, mainly, on intermediate and traditional technologies.

280 projects in preliminary incubation phase, 62 in incubation phase and 27 in post-incubation phase were managed in 2016.

An agreement was signed with the Instituto Nacional de la Economía Social (INAES), for the preliminary incubation of 13 projects from vulnerable groups, with the incorporation of Federal Funds for business creation.

Three utility models have been registered; intellectual property has been issued by Instituto Mexicano de la Propiedad Industrial (IMPI) to two companies (Anudarte y EcoEsfera; and , nine patents are in process of preparation, authorization and formalities (Ecoladrillos, Tope, ICH, H2 Electry, ServiLectric, Naikum, Aua Soluciones and Eco-Gy).

### UVM

We have 8 business incubadores recognized by INADEM and 3 business centers. During 2016, 617 entrepreneurs were advised and 329 companies were created and have now operations. 34% of those, received governmental funding.



# 4

## COMMUNITY OUTREACH

### DIPLOMA ON “DEVELOPMENT OF PROFESSIONAL COMPETENCIES FOR PEOPLE WITH ACQUIRED MOTOR DISABILITIES”



Universidad del Valle de Mexico (UVM), HSBC, Fundacion Humanista de Ayuda a Discapacitados, I.A.P. (FHADI) and Vida Independiente Mexico (VIM), came together in 2015 to develop the Diploma on “Development of Professional Competencies for People with Acquired Motor Disabilities”. The program has been carefully designed by education and disability experts; it promotes the consolidation and acquisition of professional competencies by participants - all of them with motor disabilities. Participants who so wish can also take an evaluation to obtain the Competencies Certificate issued by CONOCDER. “Learning to Undertake Entrepreneurial Undertaking in the Workplace”

To date, 46 students have graduated from the academic program, and improved their professional and labor related growth possibilities.

### UNITEC JOINS THE “MEDICO EN TU CASA” (A PHYSICIAN AT HOME)

In order to contribute to the wellbeing of society, and raise awareness among students of Health Sciences programs, UNITEC joined the Medico en tu Casa program fostered by Mexico City’s Secretariat of Health.

In the program, students visit households of people in vulnerable condition who, due to a number of reasons, lack access to health institutions.

Today, UNITEC contributes to the program with students of Health Sciences careers, such as: Dentistry, Physiotherapy, Nutrition and Nursing.

*“Thanks to Medico en tu Casa, students have a wonderful opportunity to experience service rendering to those in the greatest need; the program rises empathy and awareness among them, and gives students an opportunity to join a “multidisciplinary”*

*Javier Garcia,  
Director of the School of Dentistry, UNITEC.*

**UNIVERSIDAD DEL VALLE DE MEXICO  
DELIVERS MORE THAN 10 THOUSAND  
SIGNATURES TO CONGRESS IN SUPPORT OF  
THE "LEY 3DE3" ("3 OF 3 ACT") INITIATIVE**

The 3 of 3 Act Citizen Initiative seeks the creation of the Ley General de Responsabilidades Administrativas (General Law of Administrative Responsibilities), to make 3 declarations compulsory for government public officials: assets, interests and tax.

In order to encourage citizen engagement and foster a civic culture among university community, Universidad del Valle de Mexico decided to join the promotion of this initiative. Through a communication campaign, along with activities such as conferences and brigades, the university informed the community about the objectives, scope and implications of backing up this project. The result was the gathering of more than 10 thousand signatures in 36 campuses nationwide.

*"We want our students to know that their generation is capable of transforming things that do not work and contribute to a new country. This initiative is a wonderful opportunity to prove it"*

**Bernardo Gonzalez Arechiga,**  
Rector UVM



Luis Duran, CE of Universidad del Valle de Mexico, handed more than 10 thousand signatures to Dr. Enrique Cardenas, Director of Centro de Estudios Espinosa Yglesias (Espinosa Yglesias Research Center), one of the promoting institutions of the 3de3 Act.



*"It was a great opportunity to show that the UVM community has the strength to drive positive transformations for Mexico. In this act, UVM meets the commitment to raise awareness in the community and contribute with actions to build a better nation."*

**Luis Duran Lujan**  
CEO of Universidad del Valle de Mexico



# 4

## COMMUNITY OUTREACH



### UVM DAY DEVOTED TO SOCIAL RESPONSIBILITY

In order to encourage a social responsibility and community service spirit in the community, Universidad del Valle de Mexico devoted the traditional UVM Day to Social Responsibility, intended for more than 80 thousand students, faculty members, and staff in a celebration across the 36 campuses across Mexico.

During the 2016 UVM Social Impact Day, 600 academic social responsibility projects nationwide were presented. Such programs have been designed and submitted by students and faculty, additional to 300 social impact projects prepared by multidisciplinary teams across UVM campuses.

The celebration had the purpose of generating a positive attitude towards voluntary and active contributions to social well-being among students. Moreover, the aim was also to help participants understand how their acts have consequences for the environment and society through project planning and execution.

Exhibits of successful social responsibility projects were displayed in the different campuses, and experts were invited to share their experience with the community.



## LINCES CON CAUSA (BOBCATS WITH PURPOSE)

Linces con Causa is an institutional social responsibility contest created for the 2016 UVM Day. Its purpose is to promote Social Responsibility as an institutional value among students through the development of projects with social impact dealing with a specific problem. In this first edition, Linces con Causa received 192 projects from 36 campuses.

Cadena Social was awarded the first place of Linces con Causa. The purpose of this proposal is to incorporate young participants with intellectual disability into a university-wide social project. These young participants are already members of the Contigo en la UVM program at the Queretaro Campus. The initiative includes a waste sorting campaign. Such waste will later be transformed into green building materials, with the collaboration of engineering and architecture students. Materials were used to build a training center at El Zorrillo community, to benefit more than 300 low income people.

Students from Psychology, Architecture, Engineering, Graphic Design and Communication Sciences have joined the project. They were represented in this act by Ariadna I. Flores Banuelos, student of the Bachelor's in Psychology program; Karla Perez Alcocer, from Communication Sciences; Cecilia Estefania Precoma, from Architecture; Karla Alvarez Ortiz

and Jorge Alejandro Galindo Garcia from the Contigo en la UVM program.

The second place was for Medical School students from the Reynosa Campus with the Cadena de Vida proposal, aimed at training the population in cardiopulmonary resuscitation procedures. The Cadena de Vida team is made up by Sandra Hernandez Torres, Estefania Nava Matamoros and Jose Luis Alvarez Castillo from Medical School; Alejandro Arias Solis from Communication and Emily Campos Zavala from Graphic Design.

Third place was awarded to the Roma Campus with the proposal Insurance Agent for Dogs, with the purpose of rising awareness about responsible pet care, its impact on health and the environment. The proposal includes strategic alliances with shelters and animal welfare associations and incorporates insurance for dogs as part of the adoption process, in order to raise awareness amongst owners and reduce dog abandonment. This insurance policy includes medical attention, as well as civil and legal responsibility. This team was represented by Ernesto Alcantara Jaimes, David Sanchez Hernandez and Marbella Arreola Cruz, students of the Business program.

# 4

## COMMUNITY OUTREACH

### STUDENTS PARTICIPATED IN THE APAPACHO DE SALUD (HEALTH PAMPERING) DAY PROGRAM FOR DIF

Students of Dentistry, Nursing, Physiotherapy and Nutrition programs of UNITEC Marina Campus took part in Apapacho de Salud Day Program, to provide attention to 120 DIF children nationwide, and children certainly thank them with heartwarming smiles!

Nutrition students took anthropometric measurements in order to analyze body composition of children and evaluate their nutritional status; Dentistry students provided guidance for dental care. "We are a multidisciplinary team, and for me this has been a new experience. It is always good to know that we can support institutions that need it".

*"Readiness to help is a way of life, and their smile is the sweetest thing. We can share what we've got, and they do the same. This made us very happy!"*

**Pablo Enrique Hernandez**  
Physiotherapy student

*"I am proud of being UNITEC, and this type of events helps me reinforce it, and gives me an opportunity to stand beside those in need. This experience encourages me to be always ready to help"*

**Alberto Arroyo**  
Nursing student, UNITEC



## UVM CONTRIBUTES TO STRENGTHENING MEXICAN TALENT FROM PUBLIC SCHOOLS

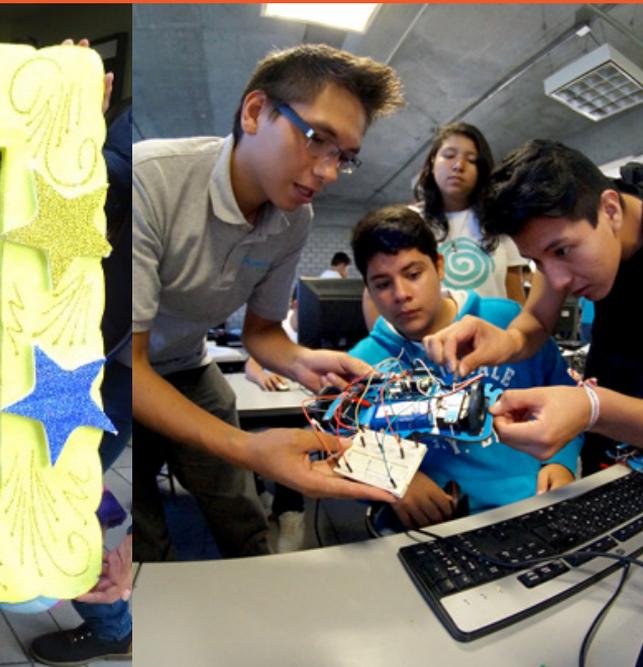
Universidad del Valle de Mexico and Centro de Investigacion y Docencia Economicas (CIDE, Center for Research and Teaching of Economics) have wrapped up the second edition of the 2016 Talentum-Media Superior (Talentum-Higher Secondary Education) program with personal tutoring offered to more than 700 students from federal high schools.

Talentum-Media Superior is a program designed and implemented by CIDE's Programa Interdisciplinario sobre Politica y Practicas Educativas (PIPE, Interdisciplinary Program on Educational Policy and Practices), created to identify high-potential students and foster their development.

This program is for students who have completed their first year of high school in federal low income schools. Talentum-

MS was implemented in 4 UVM campuses: Estado de Mexico, Queretaro, Nuevo Leon and Yucatan. And will expand to other campuses at national level for the next editions.

For six months, students taking part in the program received tutorship, conferences, as well as engineering-related talks and workshops. UVM engineering students and graduates, as well as participating universities offered personalized tutorship, programming and robotics lessons; likewise, workshops were offered in the mechatronics and basic sciences labs and practical sessions at the manufacturing production cell. Moreover, UVM professors and researchers gave lectures to help participants improve their oral and body expression skills.



*"In Mexico, the level of competence in basic math skills is quite low, and we have talents that might go unnoticed if not detected on time. That is why we believe it is so important to spot this young students, help them boost their potential, and aid them to achieve top level performance" - Maria del Carmen Veleros Valverde, UVM Curriculum Development Director.*

During this second edition, Talentum-MS brought together 721 students, 60% more than the previous edition; 586 students were newcomers and 211 were follow-up students from the 2015 Talentum-MS.

# 4

## COMMUNITY OUTREACH

### JORNADA SALUD, DIABETES Y VIDA PLENA 2016 (2016 HEALTH, DIABETES AND FULL LIFE DAY)

For the third consecutive year, UNITEC organized the 2016 Health, Diabetes and Full Life Day, with 103 patients.

Each patient received integral attention offered by students and faculty. Dentistry students offered dental check-ups and cleaning; Physiotherapy students focused on diabetic foot and exercises; Nutrition students took body mass measurements and made dietary recommendations; and Nursing students carried out glucose checks and explained the implications of diabetes, and talked about prevention.

*"These systemic conditions call for specialized attention. We are taught specific treatments. I believe I am well prepared for it"*

**Jose de Jesus Godinez**  
Student of Dentistry UNITEC.

### UNITEC, ATIZAPAN CAMPUS GATHERED MORE THAN 4,600 TOYS FOR DONATIONS

As happens every year from January to April, Engineering students of the Science and Technique with Humanism course gathered as many toys as possible for donations to foundations, hospitals, schools and associations supporting low income or disabled children.

This time, toys were donated to five public and private entities and associations, on late April and early May, as follows:

DIF Nacional: 500 toys

Escuela Hogar del Perpetuo Socorro: 2,100 toys

Fundacion Zotoluco: 120 toys

Casa Hogar San Juan Ixhuatepec: 90 toys

Ministerio Vive: 1,800 toys

In some cases, entity and association representatives went to the campus to receive the toys, while in other cases students participated in events organized by these associations.

## WOMEN OF SAN LUIS POTOSI DESERT LAUNCHED THE DE CIERTO VERDE PROGRAMS AT SUPERAMA STORES



The Enactus UVM team, made up by students from different Bachelor's programs, work with low income communities on design of sustainable projects. Such was the case of De Cierito Verde project from the Potosino desert highlands, and area with scarce economic and advancement opportunities.

With the support of Enactus UVM, two communities - Ejido Hidalgo and El Leoncito - made up by 22 women (most of them elderly women) promoted the implementation of 2 greenhouses for the sale and protection of cactus and succulent plants, most of them endemic of the region.

Last year, income of these communities was of three thousand pesos per greenhouse - this is approximately 41 cents per person per day. Many family members had to migrate in the search for better opportunities.

Now, under this scheme, Enactus UVM Lomas Verdes and San Luis Potosi women have created the De Cierito Verde project, with the purpose of preserving cactus species, increasing income and greenhouse related sales opportunities, as well as stopping family migration.

UVM Lomas Verdes Incubator and the Enactus team developed a business model, worked on training programs for producers, as well as on the design and registration of the brand and logo.

After one year of hard work, an alliance with Fundacion Walmart de Mexico, through the Pequeño Productor Cuentas con Nosotros, the program was finally consolidated.

With the support of social media and the "adopta un cactus" ("adopt a cactus") campaign, De Cierito Verde is now coming forward as a social and environmental impact project, which through selling cactus, seeks the growth of communities of hard working women who strive to grow their greenhouse projects and support their families.



## UVM STUDENTS SUPPORT TRIQUI CRAFTSMEN

Graduates and faculty of Universidad del Valle de Mexico support a Triqui community who live in Mexico City, and have help them improve their production of wristlets, bags and headbands.

The Triqui is an ethnic group from the state of Oaxaca. Most of them are craftsmen and use the waist loom to produce wristlets and necklaces made of threads of synthetic materials, cotton or wool which they sell in Mexico City streets.

Elaboration of a wool bag using a wrist loom can take up to two weeks; in spite of this, Triqui craftsmen often sell their pieces at any price. Factors such as a decrease in art craft demand, competition of foreign products, and bargaining, affect the opportunity of these communities to a decent income.



The ENACTUS UVM team for the Lomas Verdes Campus, spotted an opportunity to aid Triqui craftsmen, with the creation of sewing workshops to teach them skills such as sewing helms and zippers, to add value to their products. Moreover, they have worked with the Triqui to incorporate new designs (with greater demand) and promote their products inside Universidad del Valle de Mexico campuses.

*"The relevance to incorporate these projects for UVM is to boost social development, use the power of education as an endless resource to bring about change in people"*

**Erika Talia Arias Soto**  
Member of ENACTUS UVM



## STUDENTS OF UNITEC TRAVELED ABROAD FOR INTERNSHIPS

UNITEC and AIESEC (Association Internationale des Etudiants en Sciences Economiques et Commerciales), open the door to students who chose to experience internship programs abroad, to put into practice knowledge and skills learned in the context of international teams.

Programs are available in more than 125 countries with experiences ranging from 6 to 12 weeks. Twenty two students have participated in community projects in Czech Republic, Egypt, Colombia, Argentina, Brazil, Peru and Chile.

*"Sharing my culture and traditions to other students was my takeaway from this trip. Besides cherishing what I have here, in my country, my family, my friends, my culture and my costumes, and making friends in other countries".*

**Zairel Molina Villatoro**  
Student of Public Accounting and Finance,  
UNITEC Ecatepec Campus

# 5 ENVIRONMENT

*“It is wonderful to have a project of these dimensions in the midst of the severe environmental crisis we live in; a project which cherishes sustainability. Sharing solutions through an action plan involving investment in education, and funding to educate people is out of the ordinary”*

**Rodrigo Lepez Vela**  
National Director of Design, Art  
and Architecture of UVM

## UNIVERSIDAD DEL VALLE DE MEXICO JOINS THE ERASMUS+ WORLD PROGRAM FOR SUSTAINABLE SERVICE AND INCOME DISTRIBUTION DEVELOPMENT

Universidad del Valle de Mexico is already a member of the Erasmus+ program led by the European Union, with the aim of developing sustainability research development, among other objectives.

The Erasmus+ program includes LeNSes, Learning Network on Sustainable Energy System, aimed at proposing, developing, designing and creating feasible alternatives for better sustainable development worldwide.

A total of 36 universities in 10 countries are part of this program under the leadership of the Politecnico di Milano. Besides UVM, other two Mexican higher education institutions participate in the program.

Terms of involvement for UVM imply receipt of EU funding over the next years to encourage research, faculty training projects, incorporation of sustainability courses in curricula and creation of sustainability labs.

Institutions involved in the project should focus on the SPSS (Sustainable Product-Service System) and on the Development of Distributed Income. One of the benefits of LeNSes is that UVM faculty will have access to better practices available at other institutions. Likewise, UVM faculty will be able to conduct research to be published in Mexico and abroad. The best professors will have the opportunity to present papers at universities of Europe, India, China, and other country members of the program.

Moreover, UVM will receive professors and students from other institutions.



**2016 CHILDREN'S DRAWING CONTEST "UNITEC AND ME, PAINTING THE PLANET"**

Universidad Tecnologica de Mexico has a strong commitment with the well-being and inclusion of employees and their families. Along those lines, for second consecutive year, UNITEC has organized the Children's Drawing Contest to encourage creativity and see how the children of UNITEC employees see our planet.

181 children participated, and enjoyed a get-together with their parents with environment care related activities.

An exhibit of participating drawings was displayed throughout the year in all campuses.

# 6

## APPLIED ACADEMIC RESEARCH

### CENTRO DE OPINION PUBLICA (PUBLIC OPINION CENTER)

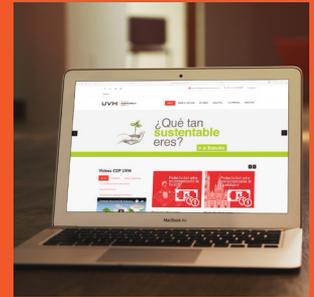
With a strong ongoing effort, the Public Opinion Center has pushed forward applied research projects seeking, on the one hand, to provide students with research skills development, and, on the other, to offer useful, relevant and timely information to society in areas relevant for the development of our nation.

This year, environmental pollution, mobility in large cities, sustainable energies, fitness habits and citizen engagement are some of the many topics we focused on, with the use of quantitative and qualitative methodologies. More than 6000 students and 850 professors have taken part in projects of the Public Opinion Center. Resulting reports have been delivered to leaders of opinion, the media and authorities, to contribute to generation of knowledge in Mexico.

Faculty and students have access to databases of projects for articles, essays, and deep analysis of information, and to enrich both teaching and learning experiences.

Operations on the Public Opinion Center began this year at UNITEC, in order to expand the benefits of this program to its students and faculty.

- Citizen engagement, do we know what the Constituent Assembly is?
- Study on sports habits, why do you exercise?



- Self-medication, an everyday practice? Environmental pollution study
- Being an entrepreneur, is it a life project or a forced decision?
- Study on elementary education teachers: the view of the parents and of teachers
- Study on Mexican workers and their perception about labor conditions
- Being a police officer in Mexico, a matter of admiration or distrust?
- Energy sustainability: Should we take action today or tomorrow?
- Pets and wellness
- Does your city move you or paralyze you?

#### COP UNITEC

- Diabetes and oral health care
- Healthy life and diabetes
- Nursing



CENTRO DE  
**OPINIÓN PÚBLICA**  
LAUREATE MÉXICO

# 6

## APPLIED ACADEMIC RESEARCH

### UNITEC ORGANIZES THE INTERNATIONAL HEALTH SCIENCES SYMPOSIUM

In recent years, UNITEC has developed a solid leading role in health sciences, with Bachelor's programs in Dentistry, Physiotherapy, Nutrition and Nursing. The First International Health Sciences Symposium was organized as part of UNITEC's 50th anniversary celebrations.

*"This International Health Sciences Symposium contributes to the recognition of UNITEC as one of the universities with state-of-the-art technology for the education of professionals".*

**Dr. Alexis Bolio**  
Health Sciences Director, UNITEC

Topics of the Symposium make up a wonderful contribution to prevention and improvement of public health. Worth mentioning are lectures on electric oral cavity burns, lifestyle, health education, physical health during and after exercising and depression.

### GREEN STOVES CREATED BY PROFESSORS AT UVM CONTRIBUTE TO PREVENT RESPIRATORY DISEASES IN WOMEN FROM CHIAPAS

Several years ago, Doctor Nein Farrera, leader of Research at Universidad del Valle de Mexico Tuxtla Campus, together with professors Joel Moreira Acosta, Pascual Lopez de Paz and Lorena Ramirez Rodas created and developed the first "Lekil Vaj" (meaning "good tortilla" in Tsotsil) stove, for marginalized rural communities, such as Tierra Blanca and Rosario de la Montaña in the Municipality of Independencia in Chiapas. At the time, they could not imagine the benefit and impact that this stove would have over the years.

The core objective of the project was to implement the green "Lekil Vaj" stove in households across marginalized rural households, in order to contribute to the mitigation of greenhouse effect gases and reduce deforestation in the region.

Today, it is possible to assess the impact of the initiative and state that according to health records available, women who have the green stove get less sick than before.

In one year, more than 200 green stoves have been given away through several research and social projects funded by several entities. "Lekil Vaj" stoves are an alternative for communities where, due to the number of people, conventional infrastructure is not yet available.

### SERVILECTRIC: 'WINDS OF INNOVATION' FOR WIND POWER

Cintha Rodriguez, Sustainability Engineering student, and Roberto Herrera, Telecommunications and Electronic Engineering student, both from UNITEC, detected a great business opportunity and brought their experience together to create an affordable wind generator for domestic use for Mexican households, and have proven that green energies can also be profitable!

Their project was awarded the James McGuire prize to students graded by Laureate International Universities.



The ServiLectric proposal is also a break for the Mexican environment; its purpose is to encourage the use of green energies and contribute cutback dependency on fossil fuels, since 80% of electric power still comes from such fuels. This means that electric power generation contributes with almost 20% of pollutants emitted annually - that is 100 million tons of CO2 we breathe every day.

ServiLectric is aware that its product should contribute to the well-being of society; thus, part of its proposal aims at taking electric power to those who still do not have it.

*"We have a purpose: to take electric power who still lack access to it, such as rural or low income communities. We would like to change the life of those who still lack electric power and have lived like that their whole life"*

**Cynthia Rodriguez**  
Student UNITEC.

## UNITEC STUDENT ACHIEVES REMINERALIZATION OF TEETH TO REVERT CAVITIES

Refugio Antonio Lopez Robles, is about to finish his specialization degree in Pediatric Dentistry at UNITEC, and thanks to his work was awarded first place during of the Dental Abstracts magazine in Spain. "Remineralization of primary dental enamel using fluorinated agents"

*"It is wonderful to realize that I have the necessary knowledge and that I am surrounded by professors who believed in me and who have shared their experience with me. I know this will be relevant for in my resume, but satisfaction is my true reward"*

**Refugio Antonio Lopez Robles**  
Estudiante de la Especialidad en Odontología Pediátrica

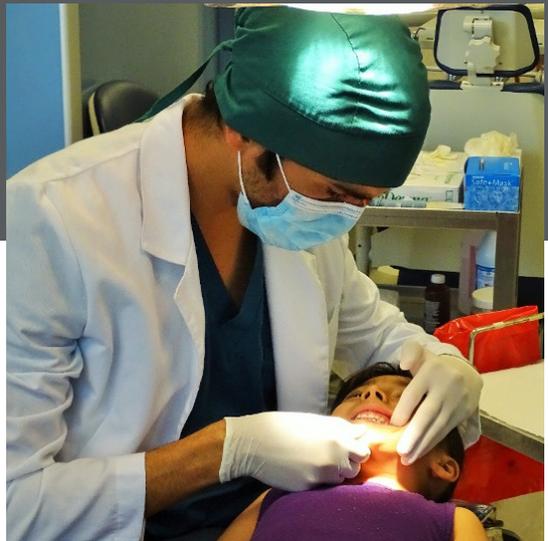


## STUDENTS OF UVM VILLAHERMOSA CAMPUS DESIGN THE AQUAMETRICS AUTONOMOUS EQUIPMENT TO MONITOR WATER IN NATURAL RIVERS

Students of Universidad del Valle de Mexico Villahermosa Campus, led by Maria Teresa de Jesus Perez Figueroa, designed an autonomous equipment to monitor affluents of the Grijalva and Usumacinta rivers, main drinking water supply sources for human consumption in Villahermosa, Tabasco.

The Aquametrics drone was presented during the First International and Third National Health and Environment Congress: Innovation for Sustainable Development, held at the Tuxtla Campus of Universidad del Valle de Mexico.

Antonio was mentored by Dr. Roberto Valencia, and supported from Guadalajara by Dr. Roberto Espinoza, and other UNITEC faculty members. He has proven that it is not necessary to wait for tooth drilling to ensure the presence of caries, because tooth decay begins as a white spot, and if detected on time and remineralized the lesion can be stopped from becoming caries. His job is based on testing different products on children enamel, remineralize emerging caries, and reverting the tooth decaying process.



The equipment is radio control operated and can be monitored from a distance of up to three kilometers. The goal is to optimize times for water purification processes. The system generates information to know if at the time water has the optimum quality to be processed and distributed to homes.

Additionally, the drone helps monitoring water quality in aquariums, irrigation systems, wetlands and greenhouses, among others. Aquametrics is better than similar equipment due to real time worldwide Internet transmission of test results.

Maria Teresa de Jesus, Lino Romero and Heron Beche Clemente - all from UVM Villahermosa Campus - were in charge of project development, and Ideas Disruptivas, was the project funding company.

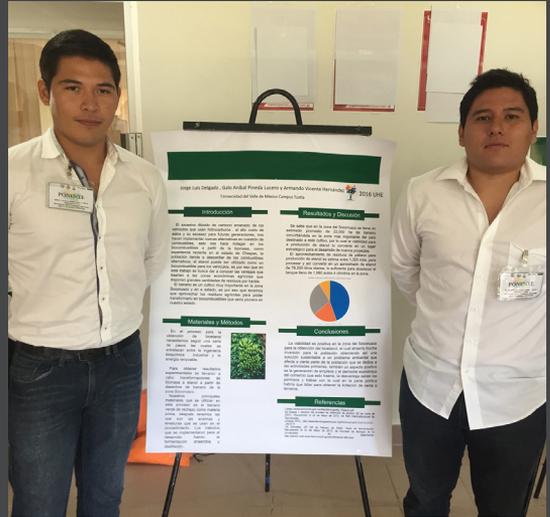
## ETHANOL PRODUCTION FROM BANANA WASTE IN SOCONUSCO, CHIAPAS

Jorge Luis Delgado and Galo Anibal Pineda, students of the sixth semester of the Energy and Sustainable Development Engineering program at UVM Tuxtla Campus, obtained bio-ethanol from the anaerobic fermentation and distillation process of green banana from the Soconusco, Chiapas, area - national leading banana production region. Bananas that do not comply with international export standards are wasted, and give rise to environmental problems resulting from fermentation, which, in turn, contribute to diseases in soil and plants.

These students have managed to process banana waste and transform it into ethanol. This fuel may even be used for cars adapted to run on it.

*"The advantage with this raw material is that it is not a seasonal produce; it is cyclic, the Soconusco region produces banana constantly. Bananas are always available, this means that raw material is available for consumption and production at all times"*

*-Jorge Luis Delgado and Galo Anibal Pineda, students at UNITEC.*



## GRADUATE FROM UVM HISPANO CAMPUS DEVELOPS ORTHOSIS TO AID CEREBRAL PALSY (CP) PATIENTS

## PROFESSOR AND STUDENT FROM UVM CUMBRES CAMPUS DEVELOP AN ULTRASOUND PROXIMITY SENSOR FOR THE BLIND

Their willingness to help others was the driving force of Professor Arturo Reta and student Jonathan Ibarra Osorio, to create and develop an ultrasound proximity sensor for the blind. This wristband-type device is vibration based and alerts about obstacles within a short distance, thus preventing tripping and falls.

*"The idea of creating the ultrasound proximity sensor", says professor Reta, from UVM Cumbres Campus, in Monterrey, Nuevo Leon, "was to help a fellow UVM professor, who is blind".*

The wristband includes a micro controller, a small ultrasonic sensor and batteries, and has been designed to be affordable.

Santiago Mendez, graduate student of Mechatronics of UVM Hispano Campus, developed an orthosis project to aid treatment of muscle hypertrophy in patients.

Orthoses are commonly used for physical rehabilitation of patients suffering from traumatism; however, Santiago worked in a piece which serves as an external device to help correct the movement of arms, legs and back of people with muscle hypertrophy resulting from intellectual disabilities.

Orthoses are external supporting devices applied to the body with the purpose of modifying functional and structural aspects of the body. Santiago said that he designed this orthosis during his professional practice sessions at APAC (Asociación Pro Personas con Parálisis Cerebral). He manufactured the piece with existing materials not yet used as standard in this type of applications. Still in experimental stage, his project is considered as innovative.

Thanks to materials used by Santiago, the cost of the piece is 10% lower than traditional orthoses.

The piece is also ergonomic and orthopedically efficient if compared to splints manufactured with PVC pipes and/or polypropylene.

# 6

## APPLIED ACADEMIC RESEARCH

### STUDENTS FROM THE VERACRUZ CAMPUS BUILT A SOLAR THERMAL COLLECTOR



Engineering and Sustainable Development students, Monica Miguel Rivera and Arantxa Lizbeth Sosa, created a project called "Solar Thermal Collector" to replace LP gas stoves and electric grills, with a maximum temperature of 150° C - enough for cooking. The main purpose of the collector is to provide low income families of Puerto de Veracruz a more affordable less contaminant choice for cooking.

The Solar Thermal Collector, as its name suggests, runs on solar energy. With an average approximate useful life of 15 years, the collector is very low on maintenance requirements, easy to use and has a positive impact on the daily life of the user, because it runs on renewable energy and results on savings while replacing LP gas.

A mobile phone easy-to-use application has been designed for the use of the collector; furthermore, it has a manual system which can be adjusted without the application or the electronic system.

### PROJECT OF A STUDENT FROM UVM HISPANO CAMPUS AIMED AT AN ENGINE RUNNING 100% ON HYDROGEN

For the past six years, Ricardo Flores Rodriguez, student of the 9th quarter of Mechatronics Engineering of UVM Hispano Campus, has worked on the design and refinement of a hydrogen water-based engine. The main purpose is to achieve a gas, diesel or LP gas motor vehicle to run on 100% hydrogen, with the resulting reduction of contaminant emissions.

He said that as part of the project they are trying to store hydrogen and make sure it can be used on internal combustion engines, in order to drop contamination levels so

that the whole vehicle park may migrate to hydrogen, or so that the hydrogen system may be adapted to diesel engines.

Ricardo Flores believed a project of this magnitude was necessary, because besides taking care of the environment it contributes to cost reductions: operation expenses for new transportation units is of around 40%, and fuel expenses account for 55% in old fuel based vehicles.

The solar collector contributes to a significant reduction of CO2 emissions to the atmosphere resulting from daily combustion of hydrocarbons.

*“Projects developed by UVM Veracruz Campus have their very particular label, because students are encouraged to unleash unlimited creativity. We support and guide our students so that they can develop their skills and capacities; we want them to feel self-assured to embrace their professional life. We must underline that this type of projects are evidence of the academic quality of UVM, because it is 100% classroom experimental work, a product developed by our students”*

### **Eduardo Mora Giles**

*Director of Engineering and Information Technologies of UVM Veracruz Campus.*



## **STUDENTS OF UVM VERACRUZ CAMPUS DESIGNED AN ELECTRIC ADAPTER FOR WHEELCHAIRS**

The primary objective of Mariaclara Esquivel Zamudio, Cristina Garcia and Alejandra Rivera Jimenez, students of UVM Veracruz Campus, was to facilitate mobility for people in wheelchairs using a manual electric adapter.

This 100% portable engine plugs into the wheelchair, and supplies the necessary drive preventing the person in the chair to turn the wheels manually or with the aid of someone else. A finger actuated control located next to the arm-rest of the chair, allows the user to determine the direction.

The system may be adapted to a manual wheelchair, therefore dropping total cost to about an eighth of the cost of an electric wheelchair.

This adapter, developed by the three eight semester students of the Mechatronics Engineering program of UVM Veracruz Campus, generates the power necessary for motion. Drive is generated through a previously configured adapter, and the user may determine the direction using the control next to the arm-rest. This gives back autonomy to the user, which is particularly relevant for people who have lost hand mobility.

Another advantage of the manual chair with an electric adapter versus a fully electric wheelchair is that the first can be folded and put away in a vehicle trunk or stored.

In this type of project Mariaclara, Cristina and Alejandra have put their creativity and what they have learned in class at the service of society.

HERE  
FOR  
GOOD

# Thanks!

*To all our students and partners who, with their talent,  
innovation and commitment make Laureate Here for Good*

*January 2017*