



# ***How to introduce ACI certification and Concrete research to undergraduate students; the UANL experience***

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The Concrete Convention and Exposition  
Philadelphia, PA., Sunday, October 23, 2016**



# ACI Northeast Mexico Chapter



**SNEM – ACI  
Start activities in 1982**

## Main activities

- Promote concrete knowledge through technical conference and chapter library
- Encourage the constitution of student chapters around Mexico
- Provide ACI certifications in Mexico
- Together with FIC-UANL encourage the interest on concrete research among bachelor degree students (Since 2009)





# SNEM-ACI STUDENT CHAPTERS



## ACI-FIC-UANL Northeast Mexico



**Instituto Tecnológico de La Paz (ITLP),  
Earth Sciences Department**



**Universidad Autónoma de Coahuila  
(UAdeC)-Facultad de Ingeniería**



**Universidad Autónoma de Tamaulipas  
(FIANS-UAT)-Facultad de  
Ingeniería "Arturo Narro Siller"**



**Universidad Autónoma de San Luis Potosí**





# ACI CHAPTERS



## Student chapters

- Worldwide 111
- Mexico 19

● ACI Chapters

● Student Chapters

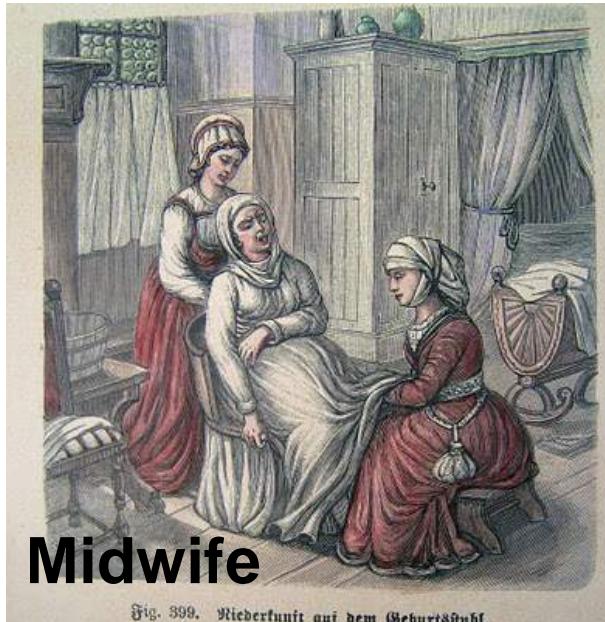




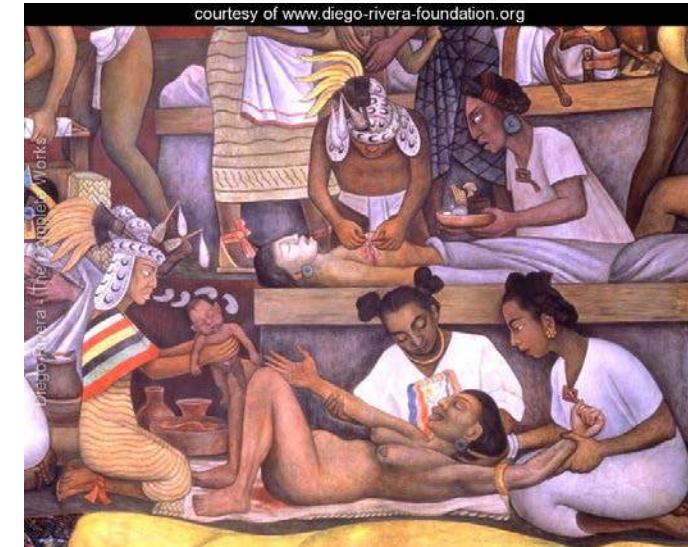
# NEONATOLOGY

## Neonatologist

The branch of health science dealing with disorders of the neonate; a subspecialty of pediatrics



**Midwife**





# NEONATAL DISEASES

- Anemia
- Breathing problems
- Benign skin disorders





# CONCLUSIONS

## Concrete Technologist

The branch of health science dealing with disorders of the neonate; a subspecialty for professions with the concrete construction industry





# CONCRETE, MISTAKES/DISEASES

- Planning
- Shrinkage
- Batching mistakes
- Curing
- Extreme weather
- Segregation





# STAFF in

## Construction

### Childbirth

- Instrumental nurse
- Gynecologist
- Anesthesiologist
- Neonatologist

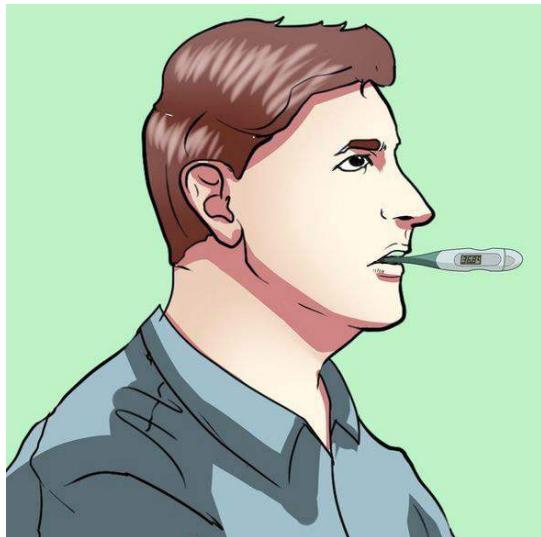




# FIELD-TECH ACI CERTIFICATION

## VITAL SIGNS

In Humans



In Concrete





# ACADEMIC LABORATORY AND COMPETITION

- Concrete design for a target slump, compressive strength and electrical resistivity
- Four laboratory sessions (four consecutive weeks) to practice standard test methods and improve fresh stage concrete uniformity and performance (12 hours)
- Fifth session “performance of fresh stage properties examination”
- Final note is calculated through an equation that considers the deviations in yield, slump, strength, resistivity and fresh stage testing performance





# SUMMER INTERNSHIPS at UANL



## PAICYT - UANL

- Universidad Autónoma de Sinaloa, Campus Culiacán
- Universidad Autónoma de Sinaloa, Campus Mochis
- Universidad Autónoma de Nuevo León
- Instituto Tecnológico Superior de los Ríos
- Universidad de Colima





# SUMMER INTERNSHIPS at UANL

- Six week theoretical short course on concrete technology (40 hours) with examination
- ACI Concrete Field Testing Technician Certification is mandatory ( $\approx \$ 150.00$  USD, 60 % discount for students)
- Research seminar program (8-10)
- Participation as research assistants in MsC or Phd projects
- Competition, same as in our CT course
- Letters of stage conclusion are provided to all the students
- Based on performance and average note, letters of encouragement-recommendation are also provided to best students





# CONCLUSION (TARGET ASPECTS)

**QUALITY ASSURANCE**

**SUSTAINABILITY**

**EXTENDED SERVICE LIFE**





# CONCLUSION

The new challenge faced by the cement industry to reduce the CO<sub>2</sub> emissions associated with the use of cement and concrete is not an insurmountable one.

This challenge will not necessitate large financial investments, because it is essentially a matter of education.





# Thank you for your attention

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