

# The House of Tomorrow

## Supporting STEM Enrollment of ELs and Disadvantaged Youth in STEM courses through Pre-Introduction to Chemistry & Particle Physics

Villa Park High School

Chemistry Building

March 28<sup>th</sup> and April 11<sup>th</sup>, 2015

### Goals:

1. Providing support for **scientific literacy** through current research
2. Promoting **economic independence** *via* careers in technology & science
3. Promoting **peace & understanding** through overcoming language barriers

### Introduction of staff and their backgrounds and roles:

Workshop Organizer and Grant Writer Dr. Bartrom-Olsen

Workshop Facilitators Rotarians VPHS Principal Ed Howard & Greg Mills

Instructor (English) Dr. Bartrom-Olsen

Instructor (Spanish) Brenda Ochoa

Instructional Support Cody Hutchings

Teaching Assistant Rotarian Marianne Koepnick

Recruitment: VPHS ELs Teacher Ulises Garcia & CV Counselor Valerie Gotts

Greeter Rotarian Mike Brunhofer

Electronic Media Coordinator Rotarian Teri Brooks

Print Media Coordinator Andie Mills

Acknowledgements: Pablo Larios-graphics

### Workshop timeline:

Greeting: Dr. Bartrom and Ms. Ochoa

Breakfast and Round-robin student and parent introductions

Provision of materials (backpacks) to learners

Attention to the books: *"In Quest of the Quark"* and *"En Busca del Quark"*

Instruction of the seven topics explicated through chapters in the text:

Ch 1: Introduction to atomic theory and atomic model

Ch 2: History of the Periodic Table

Ch 3: Composite units of Matter and Energy (Fermions and Bosons)

Ch4: The Fermion family (matter)

Ch5: The Boson family (energy)

BREAK

Ch 6: Symmetry of Forces (how matter and energy are related)

Ch 7: Symmetry Breaking (matter/energy in stars)

Ch 8: Unification of Forces (how it all fits together)

Ch 9: Summary, review and glossary of terms

Epilogue- origins of the names of the particles

APPLICATIONS: to industry

FOLLOW-UP: question/answer session



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