

## Vito Adrián Cantú Alessio Robles

### Contact information

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### Education

**2015 -now : PhD in computational sciences**, San Diego State university. PhD Robert Edwards as advisor.

**2010-2012 : Master Degree in Biochemistry**, Biotechnology Institute, National Autonomous University of México, (GPA=3.56) Thesis: “Analysis of a NPr mutant library” as advisor PhD. Xavier Soberon,

**2006-2010 : Bachelor Degree in Genomic Sciences**, Center for genomic science, National Autonomous University of Mexico, (GPA=3.62)

### Work experience

**July 2014- December 2014 : Genomic Advisor**, CIAD (Center for Nutrition Research and Development) worked on

Determination of infectious agent on shrimp early mortality syndrome (EMS) from Mexican shrimp farms.  
*Vibrio parahaemolyticus* genome assembly.  
Assembly of shrimp transcriptome.  
De novo assembly of bacterial and viral genes from human oral cavity metagenomic data.  
Assertion of human DNA depletion method using NGS technologies.

**April 2013-June 2014 : Genomic Advisor**, INMEGEN (national institute for genomic medicine) worked on:

Annotation of *Taenia solium* genes,  
Analysis of complete human genomes for Mexican native peoples sequenced using complete genomics technology.  
Analysis of illumina human metagenomic data.

### Scientific Papers

h-index = 6

Gomez-Jimenez, Silvia, Lorena Noriega-Orozco, Rogerio R. Sotelo-Mundo, **Vito A. Cantu-Robles**, Ana G. Cobian-Guemes, Rosario G. Cota-Verdugo, Luis A. Gamez-Alejo, et al. “**High-Quality Draft Genomes of Two *Vibrio Parahaemolyticus* Strains Aid in Understanding Acute Hepatopancreatic Necrosis Disease of Cultured Shrimps in Mexico.**” *Genome Announcements* 2, no. 4 (August 28, 2014): e00800–00814. doi:10.1128/genomeA.00800-14.

Gomez, Sandra, Laura Adalid-Peralta, Hector Palafox-Fonseca, **Vito Adrian Cantu-Robles**, Xavier Soberón, Edda Sciutto, Gladis Frago, et al. “**Genome Analysis of Excretory/Secretory Proteins in *Taenia Solium* Reveals Their Abundance of Antigenic Regions (AAR).**” *Scientific Reports* 5 (May 19, 2015). doi:10.1038/srep09683.

Santos, Yossef Lopez-de los, Henry Chan, **Vito A. Cantu**, Rachael Rettner, Filiberto Sanchez, Zhongge Zhang, Milton H. Saier, and Xavier Soberon. “**Genetic Engineering of the Phosphocarrier Protein NPR of the Escherichia Coli Phosphotransferase System Selectively Improves Sugar Uptake Activity.**” *Journal of Biological Chemistry* 287, no. 35 (August 24, 2012): 29931–39. doi:10.1074/jbc.M112.345660.

Knowles, B., C. B. Silveira, B. A. Bailey, K. Barott, **V. A. Cantu**, A. G. Cobián-Güemes, F. H. Coutinho, et al. “**Lytic to Temperate Switching of Viral Communities.**” *Nature* 531, no. 7595 (March 24, 2016): 466–70. doi:10.1038/nature17193.

Cobián Güemes, Ana Georgina, Merry Youle, **Vito Adrian Cantú**, Ben Felts, James Nulton, and Forest Rohwer. “**Viruses as Winners in the Game of Life.**” *Annual Review of Virology* 3, no. 1 (September 29, 2016): 197–214. doi:10.1146/annurev-virology-100114-054952.

Cornejo-Granados, Fernanda, Zyanya L. Zatarain-Barrón, **Vito A. Cantu-Robles**, Alfredo Mendoza-Vargas, Camilo Molina-Romero, Filiberto Sánchez, Luis Del Pozo-Yauner, Rogelio Hernández-Pando, and Adrián Ochoa-Leyva. “**Secretome Prediction of Two M. Tuberculosis Clinical Isolates Reveals Their High Antigenic Density and Potential Drug Targets.**” *Frontiers in Microbiology* 8 (February 7, 2017). doi:10.3389/fmicb.2017.00128.

Valera, Manuel, Zhengyang Guo, Priscilla Kelly, Sean Matz, **Vito Adrian Cantu**, Allon G. Percus, Jeffrey D. Hyman, Gowri Srinivasan, and Hari S. Viswanathan. “**Machine Learning for Graph-Based Representations of Three-Dimensional Discrete Fracture Networks.**” *Computational Geosciences* 22, no. 3 (June 1, 2018): 695–710.

Edwards, Robert, Alejandro Vega, Holly Norman, Maria Cynthia Ohaeri, Kyle Levi, Elizabeth Dinsdale, Ondrej Cinek, et al. “**Global Phylogeography and Ancient Evolution of the Widespread Human Gut Virus CrAssphage.**” *BioRxiv*, January 26, 2019, 527796.

Johri, Shaili, Jitesh Solanki, **Vito Adrian Cantu**, Sam R. Fellows, Robert A. Edwards, Isabel Moreno, Asit Vyas, and Elizabeth A. Dinsdale. “**‘Genome Skimming’ with the MinION Hand-Held Sequencer Identifies CITES-Listed Shark Species in India’s Exports Market.**” *Scientific Reports* 9, no. 1 (March 14, 2019): 4476.

Güemes, Ana Georgina Cobián, Yan Wei Lim, Robert A. Quinn, Douglas J. Conrad, Sean Benler, Heather Maughan, Rob Edwards, et al. “**Cystic Fibrosis Rapid Response: Translating Multi-Omics Data into Clinically Relevant Information.**” *MBio* 10, no. 2 (April 30, 2019): e00431-19. <https://doi.org/10.1128/mBio.00431-19>.

## Research Internships

**2014(September) – 2015 :** Determination of selective pressure of phage proteins in marine viral metagenomes, at Dr Robert Edwards laboratory at San Diego State University (10 hours per week)

**2009 (August) - 2010 (August) :** HPLC determination of carbon source utilization order of different strains of *Escherichia coli*, at PhD Xavier Soberón laboratory at Biotechnology Institute, UNAM, Cuernavaca, México (full time)

**2007 (August) - 2008 (March) :** Study of loop transfer in TIM-barrel type proteins and its effect on Chloramphenicol resistance at PhD Xavier Soberón laboratory, Biotechnology Institute, UNAM, Cuernavaca, México (10 hours per week)

## Teaching experience

“Introduction to LINUX operating system” March 2014, graduate level short course, “instituto nacional de medicina genómica” (national institute for genomic medicine)

“Introduction to the PERL programming language” March 2014, graduate level short course, “instituto nacional de medicina genómica” (national institute for genomic medicine)

## Languages

My native language is Spanish.

I fluently read, speak and write English.

I fluently read, speak and write French.

## Others

I have experience with molecular biology, cloning, bacteria cultivation and HPLC techniques

I have strong expertise in Bioinformatics, particularly metagenomics and protein docking,

I have strong expertise in: Bash /Shell, Perl, C and parallel C (openMP, MPI)

I have some experience with: C++, Python, Php, MySQL and R/Bioconductor.

Have worked with “TECAN sapphire” and “bio-rad colony picker” Robotics units and I can write software for them.