Rachid Skouta, Ph.D. Laboratory of Medicinal Chemistry Research Assistant Professor, Dept. of Chemistry Border Biomedical Research Center (BBRC) Physical Sciences Building, Room 410 University of Texas at El Paso Office: 915-747-5318 Cell: 917-402-1123 E-mail: <u>rskouta@utep.edu</u> Member of the American Chemical Society (ACS) Member of the American Association for Cancer Research (AACR)

## Education

January 2014 -	Research Assistant Professor, Dept. of Chemistry-UTEP
January 2012-Dec 2013	<b>Core Facility Scientific Manager</b> The Columbia NYSTEM CPS Facility: Design and Synthesis of Chemical Probes. Columbia University, Interdisciplinary Northwest Corner (NWC) Director: <b>Brent Stockwell</b>
July 2010-January 2012	<b>Post Doctorate</b> Columbia University, Department of Chemistry and Biology Advisor: <b>Brent Stockwell</b> Topics: Medicinal chemistry: design and synthesis of bioactive compounds for cancer studies
June 2008-June 2010	Post Doctorate Canadian Post Doctoral Fellowship (FQRNT) Columbia University, Department of Chemistry Advisor: Ronald Breslow Topics: the study of natural catalysis: design and synthesis of artificial enzymes for catalytic reaction in aqueous media. Molecular electronics: design and synthesis of single-molecule electronic devices
Jan 2004-Mai 2008	Ph.D in Organic Chemistry Richard H. Tomlinson Fellowship in University Science Teaching (T-PULSE) Graduate Student Fellow McGill University, Department of Chemistry, Montreal, Canada. Advisor: Chao-Jun Li Dissertation Title: Gold-catalyzed carbon-carbon, carbon-oxygen and carbon-nitrogen bond formations. Efficient synthesis of isoflavanones, aza-isoflavanones, (+/-)-Pterocarpans and isoflavones
Jan 2001- June 2003	<b>M.Sc.</b> in organic chemistry Institut de Pharmacologie, Sherbrooke University, Canada. Advisor: <b>Yves Dory</b> Dissertation Title: Comparative study between two pathways for the synthesis of macrolactame, to form nanotubes

Curriculum Vitae	Rachid Skouta, Ph.D.
1998-2001	<b>Ph.D.</b> in physical sciences of engineering, laboratory of thermodynamic and energetic processes. University of Perpignan, France. Advisor: <b>Michel Daguenet</b> Dissertation Title: Numerical Study of the Transition toward Chaos of Two-Dimensional Natural Convection within in an Inclined Square Cavities
1997 -1998	<b>D.E.A</b> Graduate Diploma ( <b>M.Sc.</b> Equivalent) in Synthesis and modelling of Bio-Active molecules. Université d'Aix-Marseille III, France. Advisor: <b>Jean-Marc Pons</b> Dissertation Title: Synthesis of antibiotic molecules

# Teaching

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2010-2	2011	Adjunct Professor of Chemistry, Dept of Chemistry, Barnard College, New York.
2004-2	2008	Department of Chemistry, McGill University, Canada.
•	Winter 2008	Teaching organic chemistry (222 class).
•	Winter 2007	Teaching organic chemistry (222 class)
•	Fall 2006	Teacher Assistant (organic chemistry 212, laboratories).
•	Fall2005	Teacher Assistant (organic chemistry 212 and 222, laboratories).
•	Winter 2004	Teacher Assistant (organic chemistry 362 laboratories).
	To listen, onlir	ne, to some of my tutorials using the Personal Response System (PRS):
http://cool.mc		gill.ca/COOLLectureListing.aspx?CourseID=1137 then on the Recording Name
	column select	one of the following tutorials:
	(1) tutorial1IR	Spectroscop; (2) tutorial2SpectroscopyReview; (3) tutoria3 Spectroscopy Problem
	Solving; (4)	Tutorial4Alcohols; (5) Tutorial5EthersCarboxylicacid; (6) Tutorial6 Carboxylic
	acids; (7) Tuto	prial7AldehydesandKetones; (8) Tutorial8Aldolandaminereactions.
2001-2	2003	Department of Chemistry, University of Sherbrooke, Canada.
•	Fall 2001	Teacher Assistant (organic synthesis $U_1$ and $U_1$ ).
•	Summer 2001	Teacher Assistant (organic synthesis $U_3$ ).
•	Fall 2002	Teacher Assistant (organic synthesis $U_1$ and $U_1$ ).
•	Summer 2002	Teacher Assistant (organic synthesis $U_3$ ).
٠	Fall 2000	High School Teacher in Physical Sciences at high school level, France.

## Accomplishments

- Establishment of new laboratories for the undergraduate classes (Org362) at McGill University for the academic year of 2006-2007 with the collaboration of Prof. G. Just (Chemistry Department, at McGill University).
- Establishment of three new laboratories for the undergraduate classes (Org212 and for Org222) at McGill University in 2005 with the collaboration of M. Daoust (Chemistry Department, at McGill University). Those undergraduate laboratories are related to the new area in chemistry "Green Chemistry"
- Participation in Dr. Craig Nelson Science Teaching Seminar, August 28<sup>th</sup>-31<sup>st</sup>, 2006. McGill University, Montreal, Canada.
- Participation in the Tomlinson Graduate Teaching Development Workshop, January 2006. McGill University, Montreal, Canada.

- Participation in the organization and being a laboratory teacher assistant during the ACS Green Chemistry Summer School in Montreal July 6-14 2005. McGill University, Montreal, Canada.
- Participation in the organization of Canada-U.S. Joint Workshop on Innovative chemistry in Clean Media May 20-21 2004. McGill University, Montreal, Canada.

Funds	s, Awards and	Fellowships
After .	Joining UTEP	
•	2015	Border Biomedical Research Center (BBRC) Pilot Grant (Dr. Skouta, PI): \$ 25.000
•	2014	College of Science's Multidisciplinary Research Pilot Program (PI: Dr. Narayan, Dr. Skouta, Co-PI), \$ 25.000
•	2014	RedSky/The BioMedical Institute of the Americas (PI: Dr. Narayan, Dr. Skouta, Co- PI) \$ 25.000
•	2014	Border Biomedical Research Center (BBRC) Pilot Grant (PI: Dr. Fenelon, Dr. Skouta, Co-PI): \$ 25.000
•	2014	Border Biomedical Research Center (BBRC) Pilot Grant (PI: Dr. Francia, Dr. Skouta, Co-PI): \$ 25.000
•	2014	Best poster award for Basic Research at the 2014 Dynamica Expo Symposium, El Paso-TX (\$1,000)
Before	e Joinina UTE	Ρ
•	2010	NSF Award in Green Chemistry and Engineering Conference, Washignton D.C \$ 2.000
•	2008-10	Post Doctoral Canadian Fellwoship (FQRNT) \$70.000
•	2006-08	Richard H. Tomlinson Fellowship in University Science Teaching (T-PULSE) Graduate Student Fellow . \$20.000
•	2006-07	CSC-Montreal 2001 Graduate Award in recognition of excellence in research \$ 2.000
•	2006-07 laboratories	Sterry Hunt Awards for excellence in demonstrating in the undergraduate
•	2007	ACS award for the NSF Pan-American Advanced Studies Institute (PASI), Sustainability and Green Chemistry. \$ 5.000
•	2006	Best environmental chemistry oral presentation at the 9th Annual Chemistry and Biochemistry Graduate Research Conference. Concordia University, Montreal, Quebec, Canada, November 24 <sup>th</sup> and 25 <sup>th</sup> , 2006.
•	2006	Robert Zamboni Price in Chemistry for the dissemination of my research at CSC Conference: Halifax, Nova Scotia May 27-31, 2006. \$1.000
•	2004	Student/Young Investigator Funding Award-Green Chemistry Gordon Conference July 4-9, 2004 at Roger Williams University, Bristol, RI, USA. \$3.000
•	2003 2001-02	Second price of the scientific contest. University of Sherbrooke science awards \$4.000.

# **Invited Talks**

- Sept 2014 College of Health Sciences, University of Texas at El Paso
- May 2013 Biological Sciences Department, University of Texas at El Paso
- Nov 2012 Chemistry and Biochemistry Department, Seton Hall University-NJ
- July 2012 Chemistry Department, Columbia University

- June 2012 Chemistry Department, University of British Columbia Okanagan Canada
- July 2010 Chemistry Department, Columbia University
- Feb 2010 Chemistry Department, University of Toledo

## Publications

#### Patents

Stockwell, B.; Dixon, S.; **Skouta, R**. "Preparation of substituted diaminobenzoates and related compounds as ferrostatin-1 analogs for modulation of ferroptosis useful in treatment of excitotoxic disorders" From PCT Int. Appl. (2013), WO 2013152039 A1 20131010.

#### Book chapter

**Skouta**, **R**. and Li, C.-J. Gold-Catalyzed Multi Component Reactions. **Chapter 6**, from the book: 'Gold Catalysis: An Homogeneous Approach (Catalytic Science Series)' edited by **F Dean Toste**& **Véronique Michelet** (July 2012).

Reviews published in refereed journals

**Skouta**, **R.** Selective Chemical Reactions in Supercritical Carbon Dioxide, Water and Ionic Liquids. *Green Chemistry Letters and Reviews*, **2009**, *2*, 121-156.

Skouta, R.; Li, C.-J. Gold-Catalyzed Reactions of C-H Bonds. Tetrahedron, 2008, 64, 4917-4938

(Review, Ph.D. work). "Top-50 most cited articles" as published in Tetrahedron 2006-2009.

Articles published in refereed journals

**26.** Linkermann, A.; **Skouta, R.;** Himmerkus, N. et. al. Synchronized renal tubular cell death involves ferroptosis. *PNAS*, **2014**, *111*, 16836-16841

**25.** Skouta, R.; Dixon, SJ.; Wang, J.; Dunn, DE.; Orman, M.; Shimada, K.; Rosenberg, PA.; Lo, DC.; Weinberg, JM.; Linkermann, A. Ferrostatins Inhibit Oxidative Lipid Damage and Cell Death in Diverse Disease Models *J. Am. Chem. Soc.* **2014**, *136*(12), 4551-4556.

**24.** Dixon, SJ.; Patel, DN.; Welsch, M.; **Skouta, R**.; Lee, ED.; Hayano, M.; Thomas, AG.; Gleason, CE.; Tatonetti, NP.; Slusher, BS.; Stockwell, BR. Pharmacological inhibition of cystine-glutamate *exchange* induces endoplasmic reticulum stress and ferroptosis, *Elife (Cambridge). 2014* May 20;3:e02523. doi: 10.7554/eLife.02523.

**23.** Yang, WS.; SriRamaratnam, R.; Welsch, ME.; Shimada, K.; **Skouta, R**.; Viswanathan, VS.; Cheah, JH.; Clemons, PA.; Shamji, AF.; Clish, CB. Regulation of Ferroptotic Cancer Cell Death by GPX4. *Cell*, **2014**, *156*(*1-2*), 317-331.

**22. Skouta. R.;**\* Vazquez, H.; \* Schneebeli. S.; Kamenetska, R.; Breslow. R.; Venkataraman. L. Hybertsen. M., Probing the Conductance Superposition Law in Single Molecule Circuits with Parallel Paths *Nature Nanotechnology*, **2012**, *7*(*10*):663-7. \*= contributed equally.

**21. Skouta**, **R.** Hayano, M., Shimada, K., Stockwell, B. R., Design and synthesis of Pictet-Spengler condensation products that exhibit oncogenic-RAS synthetic lethality and induce non-apoptotic cell death. *Bioorg. Med. Chem. Lett.* **2012**, *22*, 5707-5713.

**20.** Dixon, D., Lemberg, K., Lamprecht, M.R., **Skouta, R**., Zaitaev, E., Gleason, C., Patel, D., Bauer, A.J., Cantley, A., Yang, W.S., Morrison II, B., Stockwell, B.R. Optimized ferrostatin-1, an inhibitor of ferroptosis. *Cell*, **2012**, *149*, 1-13.

**19.** Yang, W. S.; Shimada, K.; Delva, D.; Patel, M.; Ode, E.; **Skouta, R**.; Stockwell, B. R. Identification of Simple Compounds with Microtubule-Binding Activity That Inhibit Cancer Cell Growth with High Potency . *ACS Med. Chem. Lett.* **2012**, *3*(1), 35-38.

**18.** Wolpaw, A. J.; Shimada, K.; **Skouta. R**.; Welsch, M. E.; Akavia, U. D.; Pe'er. D.; Shaika. F.; Bulinski, J. C.; Stockwell, B.R.; Modulatory profiling identifies mechanisms of small-molecule-induced cell death *PNAS*, **2011**, *108*, 16151-16152.

**17.** Herman, A. G.; Hayano. M.; Poyurovsky. M. V.; Shimada. K.; **Skouta. R**.; Prives. C.; Stockwell. B. R. Discovery of Mdm2-MdmX E3 Ligase Inhibitors Using a Cell-Based Ubiquitination Assay. *Cancer Discovery*, **2011**, *1*, 312-325.

16. Skouta. R.;\* Cheng. Z-L.;\* Vazquez, H.; Widawsky, J. R.; Schneebeli. S.; Chen. W.; Hybertsen. M.

S.; Breslow. R.; Venkataraman. L. In situ formation of highly conducting covalent Au–C contacts for single-molecule junctions *Nature Nanotechnology*, **2011**, *6*, 353–357. \*= contributed equally.

**15.** Schneebeli, S. T.; Kamenetska, M.; Cheng, Z.; **Skouta, R**.; Friesner, R. A.; Venkataraman, L.; Breslow, R. Single-molecule conductance through multiple  $\pi$ - $\pi$ -stacked benzene rings determined with direct electrode-to-benzene ring connections. *J. Am. Chem. Soc.*, **2011**, *133*, 2136-2139.

**14.** Schneebeli, S. T.; Kamenetska, M.; Foss. F.; Vazquez, H.; **Skouta, R**.; Hybertsen. M. S.; Venkataraman. L.; Breslow. R. The Electrical Properties of Biphenylenes. *Org. Lett.* **2010**, *12*,

4114-4117.

**13.** Solhy, A.; Tahir, R.; Sebti, S.; **Skouta, R**.; Bousmina, M.; Zahouily, M.; Larzek, M.; Efficient synthesis of chalcone derivatives catalyzed by re-usable hydroxyapatite. *Applied Catalysis, A: General*, **2010**, 374(1-2), 189-193.

**12. Skouta**, **R.**; Wei, S.; Breslow, R. High Rates and Substrate Selectivities in Water by Polyviny imidazoles as Transaminase Enzyme Mimics with Hydrophobically Bound Pyridoxamine Derivatives as Coenzyme Mimics *J. Am. Chem. Soc.* **2009**, *131*, 15604-15606.

**11.** Wei, S.; Wang, J.; Venhuizen, S.; **Skouta, R**.; Breslow, R. Dendrimers in Solution Can Have Their Remote Catalytic Groups Folded Back into the Core: Enantioselective Transaminations by Dendritic Enzyme Mimics-II. *Bioorg. Med. Chem. Lett.*, **2009**, *19*, 5543-5546.

**10.** Skouta, R.;\* Yu, M.;\* Zhou, L.; Jiang, H.-F.; Yao, X.; Li, C.-J. Water-Triggered, Counter Anion-Controlled and Silver-Phosphines Complex Catalyzed Stereoselective Cascade Alkynylation / Cyclization of Terminal Alkynes with Salicylaldehydes. *J. Org. Chem.* **2009**, *74*, 3378-3383. *This* 

Selected by the Editorial Board of **SYNFACTS** for its important insights. \* = contributed equally. **9. Skouta, R**.; Li, C.-J. Gold-Catalyzed Efficient Regioselective Addition of Arenes to Allenes. *Canadian Journal of Chemistry* **2008**, *86*, 616-620.

**8.** Zhou, L.; Chen, L.; **Skouta, R**.; Jiang, H.-F.; Li, C.-J. Li, Palladium-Catalyzed 1,4-Addition of Terminal Alkynes to Unsaturated Carbonyl Compounds Promoted by Electron-Rich Ligands. *Organic and Biomolecular Chemistry* **2008**, *6*, 2969-2977.

**7. Skouta, R**.; Li, C.-J. Gold(I)-Catalyzed Annulation of Salicylaldehyde and Aryl-acetylenes as an Expedient Route to Isoflavanones. *Angew. Chem. Int. Ed.*, **2007**, *46*, 1117-1119.

**6.** Skouta, R.; Li, C.-J. Au(I)-Catalyzed Annulation of 2-Tosylaminobenzaldehyde and Alkynes, *Synlett.* **2007**, 1759-1762.

**5. Skouta, R**.; Li, C.-J. Rapid Syntheses of (±)-Pterocarpans and Isoflavones *via* the Gold-Catalyzed Annulation of Aldehydes and Alkynes, *Tetrahedron. Lett.*, **2007**, *48*, 8343-8346.

**4.** Baillargeon, P.; Bernard, S.; Gauthier, D.; **Skouta, R.;** Y. L. Dory, Efficient Synthesis and Astonishing Supramolecular Architectures of Several Symmetric Macrolactams. *Chem. Eur. J.*, **2007**, *13*, 9223-9235.

**3. Skouta, R**.; Varma, R. S.; Li, C.-J Efficient Trost's-Addition Catalyzed by Reusable Polymer-Supported Triphenylphosphine in Aqueous Media. *Green Chem.*, 2005, *8*, 571-575.

**2.** Leclair, S.; Gauthier, D.; **Skouta, R.;** Dory, Y. L.; Zhao, Y. Micrometer-Sized Hexagonal Tubes Self – Assembled by a Cyclic Peptide in a Liquid Crystal. *Angew. Chem. Int. Ed.*, **2004**, *43*, 349-353.

**1. Skouta, R.; Skouta, A.;** Daguenet, M. Numerical Study of the Transition toward Chaos of Two Dimensional Natural Convection within in an Inclined Square Cavities *Adv. Studies Theor. Phys.*, **2008**, *2(1)*, 37-50, (full article, 1<sup>st</sup> PhD. work). Link the paper:

http://www.m-hikari.com/astp/astp2008/astp1-4-2008/skoutaASTP1-4-2008.pdf

## Non-refereed contributions: Invited Poster and Talks

**Skouta, R.** \*; Tena, A.; Montes, L.; O. Valenzuela C.A.; Fenelon K. Evaluation of nueroprotective compounds bearing anti-oxidant properties against seziure in accute brain slices. Minority Health and Health Disparities Grantees' Conference December 1-3, 2014. **Oral presentation**.

**Skouta, R.** \*; Tena, A.; Montes, L.; O. Valenzuela C.A.; Fenelon K. Evaluation of nueroprotective compounds bearing anti-oxidant properties against seziure in accute brain slices. Minority Health and Health Disparities Grantees' Conference December 1-3, 2014. *Poster*.

Andrea Perez, Thadeu Costa, Eva Iniguez, Rosa A. Maldonado, **Rachid Skouta**. The Search of Efficient Drugs Against *Trypanosoma cruzi*. August 2014. COURI-UTEP *Poster*.

Gisela Gandara, Andrea Perez, Eva Iniguez, Rosa A. Maldonado, Rachid Skouta

Ferrostatin-1 analogs for better efficacy against *Leishmania major*. August 2014. COURI-UTEP **Poster**. David A. Ramirez, Jose Marin, Parijat Kabiraj, Mahesh Narayan, **Rachid Skouta**. Potential Use of Ferrostatin-1 Analogs as Inhibitors of Cell Death Induced by Rotenone in SH-SY5Y cells. August 2014. COURI-UTEP **Poster**.

Diandra Licon, Sophia Hantzopolus, Rachid Skouta, Carl Dirk,

Understanding the inhibition of radical species in diseases: mechanistic investigation of high potential antioxidants as radical inhibitors via computational chemistry. August 2014. COURI-UTEP **Poster**. Sophia Hantzopolus, **Rachid Skouta**, Carl Dirk, Computer Based Evaluation of Compounds with antioxidant/UV properties for Biological Applications. August 2014. COURI-UTEP **Poster**.

**Skouta, R. \*;** Tena, A.; Montes, L.; O. Valenzuela C.A.; Fenelon K. Design and biological evaluation of novel compounds against seziure in accute brain slices. Dynamica Expo 2014 symposium Nov, 2014 **Skouta, R. \*; Stockwell, B.** (2012); Small molecules that inhibit cell death. Columbia StemCell Day Conference\_NYSTEM meeting, May 7<sup>th</sup> **Poster**.

Skouta, R. \*; Breslow, R. (2010); Design and Synthesis of Novel Artificial Enzymes for Catalytic reactions in Aqueous Media. 15th Annual Green Chemistry & Engineering Conference, Jun 21-23. Skouta, R.\*; Wei, S.; Breslow, R. (2010); High Rates and Substrate Selectivities in Water by Polyvinylimidazoles as Transaminase Enzyme Mimics with Hydrophobically Bound Pyridoxamine Derivatives as Coenzyme Mimics. 241th ACS National Meeting & Exposition, Boston, Massachusetts, United States, August 22-26, 2010 *Poster* (PDF. work).

Skouta, R.\*; Schneebeli, S.; Kamenetska, M.; Venkataraman, L.; Breslow, R. (2009); The Chemistry of Molecular Conductance: Synthesis of New Nanowires. Nanoscale Science and Engineering Center annual Retreat (New York- USA) 17-18 April. *Poster* (PDF. work).

**Skouta, R.\***; Li, C.-J. (2008) Gold(I)-Catalyzed an Efficient Synthesis of Isoflavanones, aza-Isoflavanones, Isoflavones and Pterocarpans. 235th ACS National Meeting, New Orleans, LA, United States, April 6-10, *Oral presentation* (Ph.D. work).

**Skouta, R.\***; Li, C.-J. (2007) Gold(I)-Catalyzed Carbon-Carbon and Carbon-Heteroatom Bond Forming.JCO 'Journées de Chimie Organique', Ecole Polytechnique de Palaiseau (France) 17-19 September. *Poster* (Ph.D. work).

**Skouta, R.\***; Li, C.-J. (2007) Gold(I)-Catalyzed Annulation of Salicylaldehyde and Aryl-acetylenes as an Expedient Route to Isoflavanone with 100% Atom-Economy. NSF Pan-American Advanced Studies Institute (PASI), Sustainability and Green Chemistry. Universidad Iberoamericana. Mexico city, Mexico May 29-June 10. *Poster* (Ph.D. work).

**Skouta, R.\***; Li, C.-J. (2007) Green Chemistry: Reactions in Water. NSF Pan-American Advanced Studies Institute (PASI), Sustainability and Green Chemistry. Universidad Iberoamericana. Mexico city, Mexico May 29-June 10. *Oral presentation* (Ph.D. work).

**Skouta, R.\***; Li, C.-J. (2006) Green Chemistry; How Chemistry and Engineering Contribute to the Environment?. 9th Annual Chemistry and Biochemistry Graduate Research Conference. Concordia University, Montreal, Quebec, Canada, November 24<sup>th</sup> and 25.<sup>th</sup> *Oral presentation* (Ph.D. work). **Skouta, R.\***; Li, C.-J. (2006) Highly Atom-Economical Carbon-Carbon Bond Formation in Aqueous Media. International Symposium on Green Chemistry for Pharmaceuticals and Fine Chemicals October 20-22. McGill University, Montreal, *Canada. Poster* (Ph.D. work).

**Skouta, R.\***; Li, C.-J. (2006) Efficient Trost's gama-Addition Catalyzed By Reusable Polymer-Supported Triphenylphosphine in Aqueous Media. 89<sup>th</sup> CSC Conference: Halifax, Nova Scotia, *Canada,* May 27-31. *Oral presentation* (Ph.D. work).

Skouta, R.\*; Li, C.-J. (2005) Reactions in Aqueous Media with High Atom Economy.9<sup>th</sup> Annual

Green Chemistry and Engineering Conference, Washington, DC. June 20-24. *Poster* (Ph.D. work). Skouta, R.\*; Li, C.-J. (2005) Recent Developed Reactions in Aqueous Media. ACS Green Chemistry Summer School in Montreal July 6-14 2005. McGill University, Montreal, Canada. *Poster*, (Ph.D. work). Skouta, R.\*; Li, C.-J. (2004) Exploring the Reactivity in Water. Green Chemistry Gordon Conference July 4 at Roger Williams University, Bristol, RI, USA. *Poster* (work done in our laboratory). Skouta, R.\*; Dory, Y. L. (2003) Approche Efficace d'Assemblage Supramoléculaire vers la Synthèse de Nouveaux Nanotubes. 71<sup>e</sup> Congrès de L'Acfas, Université du Québec à Rimouski, Canada 19-23 May. *Oral presentation* (M.Sc. work).

#### Supervised students Current lab members at UTEP: Gisela, Gandara University of Texas at El Paso, Undergraduate student, Bridge program Valenzuela Carlos University of Texas at El Paso, Undergraduate student, Rise Program Priscila Olague University of Texas at El Paso, Undergraduate student University of Texas at El Paso, Undergraduate student Borrego Kassandra David Morris University of Texas at El Paso, Undergraduate student Grant, Mark A University of Texas at El Paso, Undergraduate student Enrique Rangel University of Texas at El Paso, Undergraduate student Past lab members at UTEP:

Diandra Lincon	University of Texas at El Paso, Undergraduate student- COURI program
David Ramirez	University of Texas at El Paso, Undergraduate student-COURI program
Hantzopulos, Sophia	University of Texas at El Paso, Undergraduate student
Andrea Perez	University of Texas at El Paso, Undergraduate student
Other institutions:	

Severin Schneebeli	Columbia University, Graduate student
Marina Orman	Columbia University, Research assistant
Madalina Ene	Columbia University, Research assistant
Alice Chang	Columbia University, Undergraduate student
Orlando Deleon	Columbia University, Undergraduate student
Tara Yacovitch	McGill University, Undergraduate student
Alexandre Telnoff	University of Sherbrooke, Undergraduate student