Niroshika Monerawila Keppetipola

Assistant Professor
California State University at Fullerton, Fullerton, CA, 92831
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Education:

- *Cornell University, New York* **2003-2008**
  Tri Institutional (Memorial Sloan Kettering-Cornell-Rockefeller)
  Training Program in Chemical Biology
  Ph.D. in Chemistry and Chemical Biology
  July 2003 - December 2008

- *University of Colombo, Sri Lanka* **1997- 2001**
  Department of Chemistry
  Bachelor of Science, Chemistry -Graduated with 1st class honors

Research Experience:

- *California State University at Fullerton, Fullerton, CA*
  Assistant Professor - Department of Chemistry and Biochemistry **2013 - present**
  Conducting independent research on biochemical characterization of RNA binding proteins and the role of post-translational modifications on the activity of these proteins using both *in vivo* an in *vitro* techniques

- *University of California Los Angeles, Los Angeles, CA* **2009-2013**
  Postdoctoral Fellow
  Conducted biochemical and structural characterization of an alternative splicing regulatory protein under the supervision of Professor Douglas L. Black

- *Cornell University, New York, NY* **2003 -2008**
  Tri-Institutional Training Program in Chemical Biology (TPCB) Scholar
  Conducted studies on characterization of DNA, RNA, enzymes involved in replication, repair and host-defense mechanisms as well as enzymes involved in eukaryotic mRNA processing reactions; mRNA capping, under the supervision of Professor Stewart Shuman.

- *University of Colombo, Colombo, Sri lanka* **2000-2001**
  Undergraduate Research Student
  Developed a novel colorimetric assay to determine the Nitrate ion concentration in water samples under the supervision of Professor H. D. Gunawardhana.

Awards:

- NSF-ASBMB Travel Award **2014**
- The Vincent du Vigneaud award of excellence for poster presentation, Weill-Cornell Graduate School **2007**
- The Bhikaji Framji Khan gold medal for overall best performance in Chemistry, University of Colombo, Sri Lanka (2001). **2001**
- The Professor Ramakrishna Gold medal for best performance in Inorganic Chemistry, University of Colombo, Sri Lanka (2001). **2001**
- The Professor Pearlyn Pereira gold medal for best performance in Physical Chemistry, University of Colombo, Sri Lanka (2001). **2001**
- The Tamarasa Gold medal for best performance in Analytical Chemistry, University of Colombo, Sri Lanka (2001). **2001**
- The Mahapola Higher Education Scholarship for performance in the G. C. E. (Advanced Level) Examination, University of Colombo, Sri Lanka **1997-2001**
- The C. L. de Silva Memorial prize for best performance in Chemistry, University of Colombo, Sri Lanka **1999**

CSUF Undergraduate Research Student(*) Awards:

- Robert Ontiveros*, **1st Place**, CSU Research Competition, Bakersfield, CA **2016**
  Won 1st place in the category of Biological and Agricultural Sciences

- Robert Ontiveros*, **1st Place**, Biochemistry Session II **2016**
  Southern California Conference for Undergraduate Research, Long Beach, CA

Grants:

Funded

CSUF Research, Scholarship, and Creative Activity (RCSA) **2015**
Incentive Grant ($10,000)

- CSU program for Education and Research in Biotechnology (CSUPERB), **2014**
  Faculty-Student Collaborative Research- New Investigator Grant Program
  ($ 15,000)

- Ruth L. Kirschstein National Research Service Award (NRSA)
  (2010 -2011; $47606, 2011-2012; $ 50,474) **2009**

- NIH training grant from the Training Program in Neural Repair at UCLA **2009**
  ($36,996)

Peer- Reviewed Publications:

1. **Keppetipola** NM, Yeom KH, Hernandez AL, **Bui T***, Sharma S, Black DL (2016) "Multiple determinants of splicing repression activity in the polypyrimidine tract binding proteins, PTBP1 and PTBP2. RNA 22(8):1172-80 ***CSUF student coauthor**

2. **Keppetipola N**, Sharma S, Li Q, and Black DL. (2012) "Neuronal regulation of Pre-mRNA Splicing by Polypyrimidine Tract Binding Proteins, PTBP1 and PTBP2" Crit Rev Biochem Mol Biol. 47(4):360-78.

3. **Keppetipola N**, Jain R, Meineke B, Diver M, and Shuman S. (2009) "Structure-activity relationships in Kluyveromyces lactis gamma-toxin, a eukaryal tRNA anticodon nuclease." RNA 15, 1036-44.

4. **Keppetipola N**, and Shuman S. (2008) "A phosphate-binding histidine of binuclear metallophosphodiesterase enzymes is a determinant of 2',3' cyclic nucleotide phosphodiesterase activity" J. Biol. Chem. 283, 30942-9.

5. **Keppetipola N**, and Shuman S. (2007) "Characterization of the 2', 3' cyclic phosphodiesterase activities of Clostridium thermocellum polynucleotide kinase-phosphatase and bacteriophage lambda phosphatase" Nucleic Acids Res. 35, 7721-32.

6. **Keppetipola N**, Nandakumar J, and Shuman S. (2007) "Reprogramming the end healing pathway of a bacterial RNA repair enzyme." Nucleic Acids. Res.35, 3624-3630.

7. **Keppetipola N**, Jain R, and Shuman S. (2007) "Novel triphosphate phosphohydrolase activity of Clostridium thermocellum TTM, a member of the triphosphate tunnel metalloenzyme superfamily" J. Biol. Chem. 282, 11941-9.

8. **Keppetipola N**, and Shuman S. (2006) "Distinct enzymic functional groups are required for the phosphomonoesterase and phosphodiesterase activities of Clostridium thermocellum polynucleotide kinase-phosphatase." J. Biol. Chem. 281, 19251-19259.

9. **Keppetipola N**, and Shuman S. (2006) "Mechanism of the phosphatase component of Clostridium thermocellum polynucleotide kinase-phosphatase." RNA 12, 73-82.

10. **Keppetipola N**, and Shuman S. (2005) "Characterization of a thermophilic ATP-dependent DNA ligase from the euryarchaeon Pyrococcus horikoshii.." J. Bacteriol. 187, 6902-8.

11. **Keppetipola N**, and Gunawardhana H. D. (2001) "Development of a New Colorimetric Method to Determine Nitrate" published in the proceedings of the 58th SLAAS (Sri Lanka Association for the Advancement of Science) annual sessions.

National and Regional Conferences Attended and Presentations

RNA Society Meeting, Madison, WI **2015**

Oral Presentations:

US-Uzbekistan Conference, Fullerton, CA **2014**
"Understanding how two related RNA binding proteins can exert different splicing outcomes"

Experimental Biology, San Diego, CA **2014**
"Understanding how two related RNA biding proteins can exert different splicing outcomes" **invited presentation***

Poster Presentations

Experimental Biology, San Diego, CA **2016**
"Identification and Characterization of a Minimal Functional Splicing Regulatory Protein"

Southern California Conference for Undergraduate research **2016**
**Posters presented by student coauthors listed below*

CSUPERB 2016, Garden Grove, CA **2016**
**Posters presented by student coauthors listed below*

Experimental Biology, San Diego, CA **2014**
"Understanding how two related RNA binding proteins can exert different splicing outcomes"

RNA Society Meeting, Ann Arbor, MI **2012**
"Understanding how PTB and nPTB direct different splicing outcomes".

RNA Society Meeting, Seattle, WA. **2010**
"Understanding the structural and functional differences between PTB and Neuronal PTB".

Keystone meeting- Genome Instability and Repair, Breckenridge, CO. **2007**
"Reprogramming the end healing pathway of a bacterial RNA repair enzyme".

Invited Seminars

CSU San Bernardino, CA **2016**
Seminar title "Understanding how two Related RNA Binding Proteins Exert Different Splicing Outcomes"

University of Colombo, Sri Lanka **2016**
Seminar title "The Role of Post-Translational Modifications on the Splicing Activity of the Polypyrimidine Tract Binding Protein"

CSUF Student (*) Oral Presentations at Regional Conferences:

CSU Research Competition, Bakersfield, CA **2016**
"Identification and Characterization of a Minimal Functional Splicing Regulatory Protein" **Jordan Ontiveros*** and Niroshika Keppetipola
Won 1st place in the category of Biological and Agricultural Sciences

Southern California Conference for Undergraduate Research, Long Beach, CA **2016**
"Identification and Characterization of a Minimal Functional Splicing Regulatory Protein" **Jordan Ontiveros*** and Niroshika Keppetipola
Won 1st place in Biochemistry Session II

Student (*) Poster Presentations and National and Regional Conferences:

Southern California Conference for Undergraduate Research, Riverside, CA **2016**
"Identification and Characterization of PTMs in Related RNA Binding Proteins"
Janice Reynaga* and Niroshika Keppetipola

CSU-UCLA Grad Fair and Summer Symposium **2016**
"Identification and Characterization of a Minimal Functional Splicing Regulatory Protein" **Jordan Ontiveros*** and Niroshika Keppetipola

Southern California Conference for Undergraduate Research, Long Beach, CA **2016**
"Exploring the Kinetic and Inhibitory Properties of West Nile Virus NS2B-NS3 Protease" **Jennifer Chau*, Edwardo Gonzalez*, Bianca Espinoza*** Nicholas Salzameda and Niroshika Keppetipola

Southern California Conference for Undergraduate Research, Long Beach, CA **2016**
"Cloning an N-terminal Deletion Mutant of Polypyrimidine Tract Binding Protein 1" **Arhcana Shankar***, **Jordan Ontiveros*** and Niroshika Keppetipola

Experimental Biology, San Diego, CA **2016**
"Identification and Characterization of a Minimal Functional Splicing Regulatory Protein" **Jordan Ontiveros*, Justin Doan*,** and Niroshika Keppetipola

CSU Annual Biotechnology Symposium, Garden Grove, CA **2016**
"Identification and Characterization of a Minimal Functional Splicing Regulatory Protein" **Jordan Ontiveros* Justin Doan *** and Niroshika Keppetipola

CSU Annual Biotechnology Symposium, Garden Grove, CA **2016**
"Understanding the Role of Post-Translational Modifications in PTBP1 Splicing Activity"
Justin Doan *, Tessa Bui*, Eric Adams and Niroshika Keppetipola

Southern California Conference for Undergraduate Research **2014**
"Characterization of a Neuronal Splicing Regulatory Protein-
Polypyrimidine Tract Binding Protein 2 (PTBP2)" **Yarexy Bello***
Rasmey Thach*, Edwardo Gonzalez* and Niroshika Keppetipola

Southern California Conference for Undergraduate Research
"Role of Post-Translational Modifications in the Splicing Activity of **2014**
Polypyrimidine Tract Binding Protein 1" **Tessa Bui*,**
Alfonso Ramirez*, and Niroshika Keppetipola

Southern California Conference for Undergraduate Research **2014**
"Identifying a Minimal Functional Polypyrimidine Tract Binding Protein"
Jacqueline Padilla* and Niroshika Keppetipola

US-Uzbekistan Conference, Fullerton, CA **2014**
"Binding Affinity of Splicing Regulatory Proteins PTBP1 and PTBP2
to Sequences with Guanosine Residues" **Jose Covarrubias*** and Niroshika Keppetipola

Student (*) Oral Presentations at CSUF:

Department of Chemistry and Biochemistry Alumni Day **2016**
"An Analysis of the Impact of an Integrated Research Experience in an
Undergraduate Biochemistry Laboratory Course" **Jeffrey Pina*,** Barbara Gonzalez
And Niroshika Keppetipola

NSM-ICC Symposium **2016**
"Identification and Characterization of a Minimal Functional
Splicing Regulatory Protein" **Jordan Ontiveros*** and Niroshika Keppetipola

Student (*) Poster Presentations at CSUF:

NSM Summer Research Symposium, CSUF, Fullerton, CA **2016**
"Understanding the Role of Post-Translational Modifications on the Splicing Activity
of two related RNA Binding Proteins" **Janice Reynaga*** and Niroshika Keppetipola

NSM Summer Research Symposium, CSUF, Fullerton, CA **2016**
"Identification and Characterization of a Minimal Functional
Splicing Regulatory Protein" **Jordan Ontiveros*** and Niroshika Keppetipola

NSM Summer Research Symposium, CSUF, Fullerton, CA **2016**
"Identification and Characterization of Linker 2 Deletions of a Splicing Regulatory Protein,
PTBP1" **Archana Shankar*** and Niroshika Keppetipola

NSM Summer Research Symposium, CSUF, Fullerton, CA **2015**
"Polypyrimidine Tract Binding Protein Regulates the Alternative Splicing
of MDM2 pre-mRNA in Glioblastoma Cells" **Bridget Sands*** (HHMI summer

research student) and Niroshika Keppetipola

Department of Chemistry and Biochemistry Alumni Day **2015**
Role of Post-Translational Modifications in the Splicing Activity of Polypyrimidine Tract Binding Protein 1" **Alfonso Ramirez*,** **Tessa Bui*** and Niroshika Keppetipola

Student Creative Activities and Research Day Spring 2015 **2015**
"Understanding Analysis of Non-Covalent Protein-Ligand Interactions Using Isothermal Titration Calorimetry" **Stephanie Suon***, Eric Adams, and Niroshika Keppetipola

Student Creative Activities and Research Day Spring 2015
Role of Post-Translational Modifications in the Splicing Activity of **2015**
Polypyrimidine Tract Binding Protein 1" **Alfonso Ramirez*,** **Tessa Bui*** and Niroshika Keppetipola

NSM Summer Research Symposium, CSUF, Fullerton, CA
"Identification and Characterization of a Minimal Functional **2014**
Splicing Regulatory Protein" **Jacqueline Padilla*** and Niroshika Keppetipola

Chemistry and Biochemistry Research Poster session, CSUF, Fullerton, CA **Spring 2016**

"Identification and Characterization of an NES Activity within Polypyrimidine Tract Binding Protein 1" **Jazlyn Lum***, and Niroshika Keppetipola

"Exploring the Kinetic and Inhibitory Properties of West Nile Virus NS2B-NS3 Protease" **Jennifer Chau*,** Nicholas Salzameda and Niroshika Keppetipola

"Ubiquitination and its Role in PTBP1 Splicing Activity" **Kelly Anlevo*** and Niroshika Keppetipola

The Purification and Characterization of the West Nile Virus NS2B-NS3 Protease **Matt Harding*,** Eric Adams, Nicholas Salzameda and Niroshika Keppetipola

Chemistry and Biochemistry Research Poster session, CSUF, Fullerton, CA **Fall 2015**

"Role of Post-Translational Modifications in the RNA Binding Domain 2 of The Polypyrimidine Tract Binding Protein" **Justin Doan*, Tessa Bui*,** and Niroshika Keppetipola

"An Analysis of the Impact of an Integrated Research Experience in an Undergraduate Biochemistry Laboratory Course" **Jeffrey Pina*,** Barbara Gonzalez And Niroshika Keppetipola

Chemistry and Biochemistry Research Poster session, CSUF, Fullerton, CA **Spring 2015**

"Understanding Analysis of Non-covalent Protein-Ligand Interactions Using Isothermal Titration Calorimetry" **Stephanie Suon***, Eric Adams, and Niroshika Keppetipola

"Post-translational Modifications of Polypyrimidine Tract Binding Protein" **Sarita Vashishtha*** and Niroshika Keppetipola

Chemistry and Biochemistry Research Poster session, CSUF, Fullerton, CA **Spring 2014**

"Characterization of the Splicing Regulatory Properties of Polypyrimidine Tract Binding Protein 2" **James Peek*, Edwardo Gonzalez*, Tessa Bui***, **Rasmey Thach*** and Niroshika Keppetipola

"Determining Binding Affinity of Splicing Regulatory Protein PTBP1 to Sequences with Guanosine Rich triplets" **Jose Covarrubias*, Arya Moshrefi*,** Areum Han, and Niroshika Keppetipola

"Post-translational Modifications of an Alternative Splicing Regulatory Protein" **Alfonso Ramirez*** and Niroshika Keppetipola

Teaching Experience:

Californai State University at Fullerton, Fulleton, CA
Assistant Professor - **Fall 2013 – Present**

- Teaching Biological Chemistry (CHEM421- Fall 2013, Spring 2014, Summer 2016)
- General Biochemistry Laboratory (CHEM422 – Fall 2013, Spring 2014, Fall 2014, Spring 2015, Spring 2016). *Integrated Research into the curriculum and conducted research based experiments during the 2nd half of the course in Fall 2013, Fall 2014, Spring 2015 and Spring 2016). An assessment was conducted in Spring 2015 with Professor Barbara Gonzalez (Dept. of Chemistry and Biochemistry) and undergraduate Jeffery Pina (Dept. of Chemistry and Biochemistry), to measure the outcome of the practice on student skills including the ability to develop hypotheses, analyze data and critical thinking skills. Preliminary data suggest that students engaged in research-based learning perform better in developing hypotheses and demonstrate higher critical thinking skills compared to peers not exposed to the practice.*
- General Biochemistry Part 1 (CHEM423A- Fall 2014, Fall 2015, Spring 2016, Fall 2016)
- Nucleic Acid Biochemistry (CHEM542 – Fall 2014)

University of California Los Angeles, Los Angeles, CA

- **Instructor, Spring 2013** **Spring 2013**
  Taught Introduction to Molecular Biology (LS3) to undergraduate students

  Guest Lecturer **Spring 2012**
  Taught Cell Biology of Nucleus (MIMG 132) to undergraduate students

- **Teaching Assistant** **Fall 2011**
  Bioscience Postdoc Educational Leadership Program. Teaching assistant for graduate level courses M252A and M252B- Molecular Mechanisms of Human Diseases. Conducted power point presentations to review lecture material, discussed problem sets and conducted office hours.

- **Postdoctoral Student Mentor** **2010 - 2013**
  Mentored undergraduate Adrian L. Hernandez in the CARE scholars program (2011-2013). **He received the best senior thesis award**
  Mentored undergraduate summer student Jason Schmitt (2010) in the Howard Hughes Medical Institute exrop program

University of Colombo, Colombo, Sri Lanka **2002**

- **Assistant Lecturer,**
  Undergraduate analytical, organic, elementary chemistry labs and masters level analytical chemistry lab. Supervised and conducted analytical, organic and elementary chemistry labs – designed and assisted students with laboratory practicals and discussed principles underlying the experiments. Supervised and managed the duties of teaching assistants. Briefly summarized / discussed topics covered in the lecture in more detail. Office hours were conducted weekly. Problem sets were worked out and solved with the students during tutorial hours.
  Masters level analytical chemistry lab- assisted students with laboratory practicals.

Workshops

Experimental Biology Conference, San Diego, CA **2016**
"Advancing Teaching and Learning in the Biochemistry/Molecular Biology Classroom"

CSUF-Funding My Research Workshop- **selected participant*** **2015**

SanFrancisco State University, San Francisco, CA **2014**
"Designing Scientific Teaching tools for BMB education"
Sponsored by ASBMB

Arlington, VA
ASBMB Grant Writing Workshop for New and Early Career Faculty- **selected participant*** **2013**

Service:

Service to the Profession

Experimental Biology Meeting, San Diego, CA
Invited Judge
Undergraduate Poster Presentation Competition **2014**

Service to the University

Member of the Health Professions Research Institute **2014- present**

Service to the College

Research lab tours for STEM^2 Transfer Preview Day **2014**
Research lab tours for the SUCCESS progr **2014, 2015**
Participate in NSM Summer Research Symposia **2014- to date**
Participate in NSM Awards Banquets **2014- to date**

Service to the Department

New Faculty (Biochemistry) Search Committee **2016**
Participate in part-time faculty hiring **2016**
New student orientation **Summer 2015**
Participate in evaluating part-time faculty **2015-2016**
Member of Department Social Committee **2013-2014**
Member of Department Graduate Committee **2015 -present**
Member of Department Alumni Committee **2014 - present**
Academic advising **2013- present**
Participate in new faculty searches **2014-present**
Participate in department meetings and seminars **2013- present**

Professional Memberships

American Society for Biochemistry and Molecular Biology **Member 2013-2016**

RNA Society **Member 2010-2016**

CSUF Research Students

Fall 2013	**Status**
Juan Lopez	volunteer

Julie Armada	volunteer
Arya Moshreffi	volunteer

Spring 2014

Arya Moshreffi	BIO499L
Yarexy Bello	BIO499L
Tessa Bui	CHEM295
Edwardo Gonzalez	CHEM295
Patricia Razafimbriani	volunteer
Jaquelie Padilla	volunteer
James Peek	CHEM495 -ex. Ed
Jose Covarrubias	CHEM495 - ex. Ed
Rasmey Thach	volunteer

Fall 2014

Yarexy Bello	BIO499L
Tessa Bui	CHEM495
Edwardo Gonzalez	volunteer
Stephanie Suon	CHEM495
Sarita Vashishtha Sharma	CHEM499
Jacqueline Padilla	CHEM495

Spring 2015

Jacqueline Padilla	CHEM495
Thu Bui	CHEM495
Stephanie Suon	CHEm495
Jazlyn Lum	CHEM395
Kelly Anlevo	CHEM495
Matt Harding	CHEM495
Jennifer Chau	CHEM495
Edwardo Gonzalez	volunteer
Rasmey Thach	volunteer
Alfonso Ramirez	CHEM599
Giovanna Cano	CHEM295
Monique Garcia	volunteer
Alexander Hobby	CHEM295
Andrew Grigg	RCP
Michael Ngo	RCP
Eric Adams,	Research Assistant
Sarita Vashishtha Sharma	CHEM499
Yarexy Bello	Volunteer
Billy Peng	Volunteer

Fall 2015

Jeffrey Pina	CHEM495
Justin Doan	CHEM495
Thu Bui	CHEM495
Stephanie Suon	CHEM495
Jazlyn Lum	CHEM495
Kelly Anlevo	CHEM495
Matt Harding	CHEM495
Jennifer Chau	CHEM495
Edwardo Gonzalez	CHEM495
Rasmey Thach	volunteer
Alfonso Ramirez	CHEM599
Andrew Grigg	RCP
Michael Ngo	RCP
Eric Adams,	Research Assistant
Yarexy Bello	Volunteer
Jordan Ontiveros	CHEM395, MARC
Archana Shankar	volunteer

Spring 2016

Edwardo Gonzalez	CHEM495
Justin Doan	CHEM495
Jeffrey Pina	CHEM495
Jennifer Chau	CHEM495
Jazlyn Lum	CHEM495
Kelly Anlevo	CHEM499
Matt Harding	CHEM495
Jordan Ontiveros	CHEM495, MARC
Archana Shankar	BIO499L
Catherine Escobedoe	volunteer
Enoch Kim	CHEM295
Alfonso Ramirez	CHEM599

Fall 2016

Jeffrey Pina	CHEM599
Alfonso Ramirez	CHEM599
Joe Amos	CHEM495
Archana Shankar	BIO499L, BSCR Scholar
Enoch Kim	volunteer
Collin Marshall	CHEM495 HHMI Associate
Robert Ontiveros	CHEM495, MARC
Janice Reynaga	CHEM 395, MARC
Stephen Gonzalez	CHEM495, RCP
Edwardo Gonzalez	CHEM495

RCP- Research Carriers Preparatory Program
BSCR- Bridges to Stem Cells Research Scholars
MARC - Maximizing Access to Research Careers
HHMI - Howard Hughes Medical Institute
CHEM495-Undergraduate Research Course (Capstone Research Experience)