

# KRISHNA D. REDDY, PH.D.

Phone: (813) 396-0907

Email: krishnareddy@usf.edu

## EDUCATION

---

<b>PhD</b>	University of South Florida, Medical Sciences (Molecular Medicine) Dissertation: "Regulation of protein palmitoylation by intrinsically disordered regions"	12/2016
<b>BS</b>	University of Florida, Microbiology and Cell Science Minor, Religious Studies	05/2011

## RESEARCH EXPERIENCE

---

<b>Assistant Professor</b>	Dept. of Molecular Medicine, University of South Florida, Tampa, FL	01/2025-Present
<b>Instructor</b>		07/2023-12/2024
<b>Postdoctoral Research Associate</b>	Dept. of Physiology & Biophysics, Weill Cornell Medical College, New York, NY Howard Hughes Medical Institute Advisor - Olga Boudker, Ph.D.	11/2016-06/2023
<b>NSF EAPSI Fellow</b>	National Institute of Physiological Sciences, Okazaki, Japan Advisor - Masaki Fukata, M.D., Ph.D.	06/2015-09/2015
<b>Graduate Research Assistant</b>	University of South Florida, Tampa, FL Advisors - Robert Deschenes, Ph.D. and Vladimir Uversky, Ph.D.	08/2011-11/2016

## FUNDING

---

### Completed

National Institute of Health - F32 NS102325 (PI: Reddy); 4/1/2017 – 3/31/2020

Project Title: Evolution of Ion Specificity in Glutamate Transporters

National Science Foundation - EAPSI #1515390 and JSPS #SP15050 (PI: Reddy); 2015

Project Title: Regulation of neuronal communication by protein lipid modifications

### Pending

National Institute of Health – NIGMS R35 (PI: Krishna Reddy); 07/01/2026 – 06/31/2031

Project Title: Decoding ion coupling and design principles of secondary active transporters

## PUBLICATIONS

---

\* equal contribution; # co-corresponding

### Highlighted publications

- Reddy KD#**, Rasool B, Badichi Akher F, Kutlešić N, Pant S, Boudker O# (2025). Evolutionary analysis reveals the origin of sodium coupling in glutamate transporters. *Nat Struct Mol Biol* (2025).
  - preprinted in *bioRxiv*, 2023.12.03.569786
  - [News and Views: A structural window into the evolution of secondary transport mechanisms](#)
- Huang Y, **Reddy KD**, Bracken C, Qiu B, Zhan W, Eliezer D, Boudker O (2022). An environmentally ultrasensitive fluorine probe to resolve protein conformational ensembles by <sup>19</sup>F-NMR and cryo-EM. *J Am Chem Soc* 19;145(15):8583-8592.
  - preprinted in *bioRxiv*; 2022.03.29.486269
- Reddy KD#**, Ciftci D, Scopelliti AJ, Boudker O# (2022). The archaeal glutamate transporter homologue Glt<sub>Ph</sub> shows heterogeneous substrate binding. *J Gen Physiol* 154 (5): e202213131.
  - [2022 Cranefield Postdoc Award for outstanding JGP manuscript](#)
  - preprinted in *bioRxiv*; 2021.07.08.451670

4. **Reddy KD\***, Malipeddi J\*, Deforte S, Pejaver V, Radivojac P, Uversky VN, Deschenes RJ (2017). Physicochemical sequence characteristics that influence S-palmitoylation propensity. *J Biomol Struct Dyn*. 35 (11), 2337-2350. PMID: 27498722

#### Other peer-reviewed publications

5. Whelan JN\*, **Reddy KD\***, Uversky VN, Teng MN (2016). Functional correlations of respiratory syncytial virus proteins to intrinsic disorder. *Mol BioSystems* 12 (5), 1507-1526. PMID: 27062995
- 2016 Hot Article in Molecular BioSystems
6. Mitchell DA, Hamel LD, **Reddy KD**, Farh L, Rettew LM, Sanchez PR, Deschenes RJ (2014). Mutations in the X-Linked Intellectual Disability gene, zDHHC9, alter autopalmitylation activity by distinct mechanisms. *J Biol Chem* 289 (26), 18582-18592. PMID: 24811172
7. Breydo L, **Reddy KD**, Piai A, Felli IC, Pierattelli R, Uversky VN (2014). The crowd you're in with: effects of different types of crowding agents on protein aggregation. *Biochim Biophys Acta* 1844 (2), 346-357. PMID: 24252314
8. Na I, **Reddy KD**, Breydo L, Xue B, Uversky VN (2014). A putative role of the Sup35p C-terminal domain in the cytoskeleton organization during yeast mitosis. *Mol BioSystems* 10 (4), 925-940. PMID: 24549315

#### Reviews

9. DeForte S\*, **Reddy KD\***, Uversky VN (2014). Digested disorder: Quarterly intrinsic disorder digest (October/November/December). *Intrinsically Disordered Proteins* 3(1).
10. **Reddy KD\***, DeForte S\*, Uversky VN (2014). Digested disorder: Quarterly intrinsic disorder digest (July/August/September). *Intrinsically Disordered Proteins* 2(1). e27833
11. DeForte S\*, **Reddy KD\***, Uversky VN (2013). Digested disorder: Quarterly intrinsic disorder digest (April/May/June). *Intrinsically Disordered Proteins* 1(1).

#### HONORS AND AWARDS

Cranefield Postdoc Award (for outstanding 2022 <i>J Gen Physiol</i> manuscript)	2023
Nominee, Next Generation in Biomedicine (Broad Institute)	2022
NIH NRSA Postdoctoral Fellow (F32)	2017-2020
USF Health Research Day - Travel Award for Outstanding Neuroscience Poster	2016
USF Dissertation Completion Fellowship	2016
NSF EAPSI Fellow	2015
Biophysical Society Education Committee Travel Award	2015
Florida Academic Scholar	2009-2011
National Merit Scholar	2009-2011

#### TEACHING EXPERIENCE

<b>University of South Florida</b> , Tampa, FL (as faculty)	
Co-director, Responsible Conduct of Research	2025-present
Co-director, Structural Biology	2026-present
Foundations in Biomedical Sciences – GMS6001 (6 lecture hours)	2025
Structural Biology – BCH6746 (4 lecture hours)	2025
Molecular Basis of Disease – BCH6627 (6 lecture hours)	2025
<b>Weill Cornell Medical College</b> , New York, NY	
Next Generation Methods for Neuroscience and Pharmacology (24 lecture hours)	2019-2024
<b>University of South Florida</b> , Tampa, FL (as a graduate student)	
Fundamentals of Structural Bioinformatics - BCH6886 (4 lecture hours)	2015-2016
Structural Biology - BCH6746 (2 lecture hours)	2015
Translational Biotechnology - GMS6847 (6 lecture hours)	2014-2016
Python Programming for Bioinformatics - GMS7930 (40 lecture hours)	2014-2015

**MENTORING EXPERIENCE**

---

\* indicates that the student is in a demographic underrepresented in science.

*As primary mentor*

Morgan Dooley, Bioinformatics and Computational Biology M.S. student	2025-present
Irfan Sharif, Biomedical Sciences B.S. student	2025-present

*Dissertation/Thesis Committees*

Irene Gutierrez*, Ph.D. student, Dept. of Molecular Biosciences	2025-present
Sean Quirk, Ph.D. student, Dept. of Chemistry	2025-present
Ya-Tzu Li*, Ph.D. student, Dept. of Molecular Medicine	2025-present

**Before USF**

Yvette Dimitrova*, undergraduate student	2023-present
Farideh Badichi*, postdoctoral researcher	2023-2024
Burha Rasool*, postbaccalaureate research assistant	2022-2024
Nemanja Kutlešić, undergraduate student (summer)	2022
Swati Pant*, Biochemistry Ph.D. student (rotation)	2021
Bryce Delgado*, Biochemistry Ph.D. student (rotation)	2019
Logan Hou, high school student (summer)	2018
Yessenia Lopez*, Physiology and Biophysics Ph.D. student	2018-present
Eva Fortea*, Physiology and Biophysics Ph.D. student	2017-2019
Chelsea Fetters*, Molecular Medicine M.S. student	2015-2016
Jeremy Baker, Biotechnology M.S. student	2014
Jashwanth Malipeddi, Bioinformatics M.S. student	2013-2015
Sasha Schuler*, undergraduate student	2012-2013

**INVITED LECTURES**

---

1. Decoding mechanisms of membrane transporters using evolutionary analyses (Sep. 2025). *University of South Florida, Molecular Biosciences Colloquium*.
2. How evolution changed the structure and function of a membrane transporter (Jan. 2025). *University of California – Davis, Biophysics Graduate Group* (virtual).
3. Evolutionary analysis illuminates ion coupling mechanisms in glutamate transporters (Sep. 2024). *Society of General Physiologists 77th Meeting*, Woods Hole, MA.
4. How evolution changed the structure and function of a membrane transporter (Mar. 2024). *University of South Florida*, Tampa, FL.
5. Substrate binding heterogeneity in glutamate transporters (Feb. 2024). *Advances in Membrane Physiology 2024*, Biophysical Society 68<sup>th</sup> Annual Meeting, Philadelphia, PA.
6. Ancestral reconstruction of ion-coupling evolution in glutamate transporters (Feb. 2024). *Membrane Transport Subgroup Symposium*, Biophysical Society 68<sup>th</sup> Annual Meeting, Philadelphia, PA.
7. How evolution changed the structure and function of a membrane transporter (Jan. 2024). *Boston University*, Boston, MA.
8. How evolution changed the structure and function of a membrane transporter (Dec. 2023). *Southern Methodist University*, Dallas, TX.
9. The archaeal glutamate transporter homologue GltPh shows heterogeneous substrate binding (Dec. 2023). *Society of General Physiologists Cranefield Awards Symposium* (virtual).
10. Evolution of ion-coupling in glutamate transporters (Aug. 2023). *Molecular Biophysics Mini Symposium 2023*, New York, NY.
11. How evolution changed the structure and function of a membrane transporter (Nov. 2022). *Mississippi State University*, Starkville, MS.
12. Evolution of membrane transport mechanisms (Oct. 2022). *Serbian Society for Molecular Biology* (virtual).
13. The C-termini of palmitoyltransferases are conserved and required for enzyme function (September 2016). *Protein S-palmitoylation: from Mechanism to Application*, St. Hilda's College, Oxford, UK.

14. Organization of the synapse by zDHHC9, a protein acyl transferase (February 2016). *USF Health Research Day*, Tampa, FL.

#### ADDITIONAL TRAINING

---

<b>EMBO Laboratory Leadership for Scientists in the Americas</b> (virtual)	2025
<b>Effective Communication Workshop (Alan Alda Center)</b> Office of Diversity and Inclusion, Weill Cornell Medical College, New York, NY	2023
<b>Launching Undergraduate Teaching Careers</b> Rockefeller University, New York, NY	2018
<b>Workshop on Molecular Evolution</b> Marine Biological Laboratory, Woods Hole, MA	2017
<b>Ion Channels and Transporters</b> EMBO-FEBS Lecture Course, Erice, Italy	2017

#### SERVICE AND OUTREACH

---

##### Professional Activities:

Cryo-EM Planning Committee, University of South Florida	2025
Faculty Search Committee, Department of Molecular Medicine, University of South Florida	2025
Chair, Molecular Biophysics Training Program (T32) Trainee Retreat	2023
Interim Cryo-EM core facility co-operator, Weill Cornell Medical College	2022
Organizer, Monthly Membrane Protein Seminar Series at Weill Cornell	2021-2024
Co-Chair, Mechanisms of Membrane Transport Gordon Research Seminar	2019
<i>Peer-Reviewed Articles for:</i> PNAS, Science Advances, Protein Science, Nature Communications (4), eLife (2), Trends in Biochemical Sciences, PeerJ, Current Protein & Peptide Science, Biophysics Colab	

##### Volunteer and Outreach Activities:

Panelist and Presenter, USF Minorities in Medicine	2025
Workshop Facilitator (Building a CV/Biosketch/Resume), USF Medical Sciences PhD Retreat	2025
Head Judge, TerraNYC STEM Fair	2023-2024
Judge, Undergraduate Poster Award Competition (Biophysical Society Annual Meeting)	2023
Career Panelist, Molecular Biophysics Training Program, Weill Cornell	2022
Stand-Up Comedy at Science Riot, New York Hall of Science	2019
Stand-Up Comedy at The Symposium – Academic Stand-Up, Caveat NYC	2018,2019
Career Panelist, A. Philip Randolph High School (Harlem, NYC)	2018
Invited Speaker, Global Health Day, A. Philip Randolph High School (Harlem, NYC)	2017
Judge, New York State Science and Engineering Fair	2017-2019
Judge, New York City Science and Engineering Fair	2017-2019
Judge, State Science and Engineering Fair of Florida	2015-2016
Event Host, Pint of Science US	2015
Invited Speaker, Pint of Science US	2014
Recruitment Chair, Association of Medical Sciences Graduate Students	2012-2013
Invited Speaker, Great American Teach-In at Riverview High School	2012