

Samantha K. Zepeda, Ph.D.

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Professional Appointments

- Adjunct Chemistry Faculty (2026- Present)
Texas A&M University- San Antonio, TX
- Instructor of Biochemistry (2025-Present)
University of California San Diego Extended Studies- San Diego, CA
- Postdoctoral Research Associate (2025)
Yale University- New Haven, CT
- Postdoctoral Research Assistant (2024-2025)
University of Washington- Seattle, WA
- Graduate Research Assistant (2019-2024)
University of Washington- Seattle, WA
- Research Assistant (2016-2019)
Texas State University- San Marcos, TX

Education

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|---------------|---------------------|--------------------------|
| • Fall 2024 | Ph.D., BIOCHEMISTRY | University of Washington |
| • Spring 2019 | M.S., BIOCHEMISTRY | Texas State University |
| • Spring 2017 | B.S., BIOCHEMISTRY | Texas State University |
| • Spring 2017 | B.S., BIOLOGY | Texas State University |
| • Fall 2013 | A.S., PRE-PHARMACY | South Texas College |

Teaching Experience

Spring 2026

- Texas A&M University- San Antonio- Department of Natural Sciences
Adjunct Faculty for CHEM 2323, CHEM 2123, CHEM 2023, CHEM , CHEM

Winter 2026

- University of California San Diego, Extended Studies Program
Instructor for BIOL-40357

Fall 2025

- University of California San Diego, Extended Studies Program
Instructor for BIOL-40357

Spring 2021

- University of Washington, Department of Biochemistry
Teaching Assistant for BIOC 426- Basic Techniques in Biochemistry

Autumn 2020

- University of Washington, Department of Biochemistry
Teaching Assistant for BIOC 450- Honors Biochemistry

Fall 2018

- Texas State University, Department of Chemistry and Biochemistry
Instructional Assistant for CHEM 4481- Advanced Biochemistry

Spring 2017, Spring 2018

- Texas State University, Department of Chemistry and Biochemistry
Instructional Assistant for CHEM 3275/3381- Biochemistry Techniques

Publications

- Hendricks, G.G., Grigoryan, L., Navarro, M.J., Nicholas J., Catanzaro, N.J., Hubbard, M.L., Powers, J.M., Mattocks, M., Treichel, C., Walls, A.C., Lee, J., Ellis, D., Wang, J.W., Cheng, S., Miranda, M.C., Valdez, A., Chao, C.W., Chan, S., Men, C., Max R. Johnson, M.R., **Zepeda, S.K.**, Ols, S., Hui, H., Wu, S.-W., Lujan, V., Muramatsu, H., Lin, P.J.C., Sung, M.M.H., Tam, Y.K., Leaf, E.M., Pardi, N., Baric, R.S., Pulendran, B., Veessler, D., Schäfer, A., King, N.P. Computationally designed mRNA-launched protein nanoparticle immunogens as an integrated vaccine platform. (**Submitted**)
- Alfajaro, M.M., Keeler, E.L., Li, N., Catanzaro, N.J., Teng, I.-T., Zhao, Z., Grunst, M.W., Yount, B., Schäfer, A., Wang, D., Kim, A.S., Synowiec, A., Peña-Hernández, M.A., **Zepeda, S.**, Arinola, R., Kaur, R., Menasche, B.L., Wei, J., Russell, G.A., Huck, J., Song, J., Ring, A., Iwasaki, A., Jangra, R.K., Lee, S., Martinez, D.R., Mothes, W., Uchil, P.D., Doench, J.G., Spaulding, A.B., Baric, R.S., Serebryanny, L., Tsybovsky, Y., Zhou, T., Douek, D.C., Wilen, C.B. (2025) HKU5 bat merbecoviruses engage bat and mink ACE2 as entry receptors. Nat. Comm. (**Accepted**)
- Addetia, A., Schäfer, A., Sprouse, K., Valdez, A., Taylor, A., Navarro, M.J., Brown, J., Leaf, E., Miranda, M., Walls, L., Lee, J., Catanzaro, N.J., Treichel, C., Willoughby, I., Powers, J., Martinez, D.R., Vesari, B., Ravichandran, R., Seo, A.J., Stewart, C., Merz, B., Beirne, E., **Zepeda, S.**, Cook, A., Pessaint, L., Sharma, A., Edwards, D., Lee, K., Smith, K., Starr, T., Baric, R., King, N.P., Veessler, D. (2025). "Phylogeny-driven design of broadly protective sarbecovirus receptor-binding domain nanoparticle vaccines." [bioRxiv: 2025.2005.2011.652904](https://doi.org/10.1101/2025.2005.2011.652904). (**Preprint**)
- Rosen, L., Tororici, M.A., De Marco, A., Pinto, D., Foreman, W.B., Taylor, A.L., Bohan, D., Rietz, T., Errico, J.M., Hauser, K., Dang, H.V., Chartron, J.W., Giurandella, M., Cusumano, G., Saliba, C., Zatta, F., Sprouse, K., Park, Y.P., Addetia, A., **Zepeda, S.K.**, Brown, J., Dellota, E., Rajesh, A., Noack, J., Tao, Q., DaCosta, Y., Dias de Melo, G., Kergoat, L., Zhang, I., Liu, Z., Guarino, B., Schmid, M.A., Miller, J.L., Lempp, F.A., Czudnochowski, N., Camerini, E., Whelan, S.P.J., Bourhy, H., Purcell, L.A., Benigni, F., di Iulio, J., Pizzuto, M.S., Lanzavecchia, A., Telenti, A., Snell, G., Corti, D., Veessler, D., Starr, T.N. (2024) A potent pan-sarbecovirus neutralizing antibody resilient to epitope diversification. Cell. doi: 10.1016/j.cell.2024.09.026. Online ahead of print. PMID: 39383863
- Lee, J.*, **Zepeda, S.K.***, Park, Y., Taylor, A.L., Quispe, J., Leaf, E.M., Treichel, C., Corti, D., King, N.P., Starr, T.N., Veessler, D. (2023) Broad receptor tropism and immunogenicity of a clade 3 sarbecovirus. Cell Host and Microbe. 31(12):1961-1973.e11
- Muenks, A., **Zepeda, S.**, Zhou, G., Veessler, D., and Dimaio, F. (2023) Automatic and accurate ligand structure determination guided by cryo-electron microscopy maps. Nat. Commun. 14(1):1164
- Starr, T.N.*, **Zepeda, S.K.*** et al. (2022). ACE2 binding is an ancestral and evolvable trait of sarbecoviruses. Nature. 603, 913–918
- Meng, B., Abdullahi, A., Ferreira, I.A.T.M., Goonawardane, N., Saito, A., Kimura, I., Yamasoba, D., Gerber, P.P., Fathi, S., Rathore, S., **Zepeda, S.K.**, Papa, G., Kemp, S.A., Ikeda, T., Toyoda, M., Tan, T.S., Kuramochi, J., Mitsunaga, S., Ueno, T., Shirakawa, K., Takaori-Kondo, A., Brevini, T., Mallery, D.L., Charles, O.J. (2022). "Altered TMPRSS2 usage by SARS-CoV-2 Omicron impacts infectivity and fusogenicity." *Nature* **603**(7902): 706-714.
- McCallum, M., Czudnochowski, N., Rosen, L.E., **Zepeda, S.K.**, Bowen, J.E., Walls, A.C., Hauser, K., Joshi, A., Stewart, C., Dillen, J.R., Powell, A.E., Croll, T.I., Nix, J.,

- Virgin, H.W., Corti, D., Snell, G., and Veesler, D. (2022) "Structural basis of SARS-CoV-2 Omicron immune evasion and receptor engagement." *Science* **0**(0): eabn8652.
- Park, Y.-J., De Marco, A., Starr, T.N., Liu, Z., Pinto, D., Walls, A.C., Zatta, F., **Zepeda, S.K.**, Bowen, J., Sprouse, K., Joshi, A., Giurdanella, M., Guarino, B., Noack, J., Abdelnabi, R. Foo, C. -L., Rosen, L. Lempp, F., Benigni, F., Snell, G., Neyts, J., Whelan, S.P., Virgin, H.W., Bloom, J.D., Corti, D., Pozzuto, M.S., Veesler, D. (2022) "Antibody-mediated broad sarbecovirus neutralization through ACE2 molecular mimicry." *Science* **0**(0): eabm8143.
 - Cameroni, E., Bowen, J.E., Rosen, L.E., Saliba, C., **Zepeda, S.K.**, Culap, K., Pinto, D., VanBlargan, L.A., De Marco, A., di Iulio, J., Zatta, F., Kaiser, H., Noack, J., Farhat, N., Czudnochowski, N., Havenar-Daughton, C., Sprouse, K.R., Dillen, J.R., Powell, A.E., Chen, A., Maher, C., Yin, L., Sun, D., Soriaga, L., Bassi, J., Silacci-Fregni, C., Gustafsson, C., Franko, N.M., Logue, J., Iqbal, N.T., Mazzitelli, I., Geffner, J., Grifantini, R., Chu, H., Gori, A., Riva, A., Giannini, O., Ceschi, A., Ferrari, P., Cippà, P.E., Franzetti-Pellanda, A., Garzoni, C., Halfmann, P.J., Kawaoka, Y., Hebner, C., Purcell, L.A., Piccoli, L., Pizzuto, M.S., Walls, A.C., Diamond M.S., Telenti, A., Virgin, H.W., Lanzavecchia, A., Snell, G., Veesler, D., Corti D. (2021). "Broadly neutralizing antibodies overcome SARS-CoV-2 Omicron antigenic shift." *Nature*. <https://doi.org/10.1038/s41586-021-04386-2>
 - Walls AC, Miranda MC, Schäfer A, Pham MN, Greaney A, Arunachalam PS, Navarro MJ, Tortorici MA, Rogers K, O'Connor MA, Shirreff L, Ferrell DE, Bowen J, Brunette N, Kepl E, **Zepeda SK**, Starr T, Hsieh CL, Fiala B, Wrenn S, Pettie D, Sydeman C, Sprouse KR, Johnson M, Blackstone A, Ravichandran R, Ogohara C, Carter L, Tilles SW, Rappuoli R, Leist SR, Martinez DR, Clark M, Tisch R, O'Hagan DT, Van Der Most R, Van Voorhis WC, Corti D, McLellan JS, Kleanthous H, Sheahan TP, Smith KD, Fuller DH, Villinger F, Bloom J, Pulendran B, Baric RS, King NP, Veesler D. Elicitation of broadly protective sarbecovirus immunity by receptor-binding domain nanoparticle vaccines. *Cell*. 2021 Oct 14;184(21):5432-5447.e16. doi: 10.1016/j.cell.2021.09.015. Epub 2021 Sep 15. PMID: 34619077; PMCID: PMC8440233.
 - Tortorici MA, Czudnochowski N, Starr TN, Marzi R, Walls AC, Zatta F, Bowen JE, Jaconi S, Di Iulio J, Wang Z, De Marco A, **Zepeda SK**, Pinto D, Liu Z, Beltramello M, Bartha I, Housley MP, Lempp FA, Rosen LE, Dellota E Jr, Kaiser H, Montiel-Ruiz M, Zhou J, Addetia A, Guarino B, Culap K, Sprugasci N, Saliba C, Vetti E, Giacchetto-Sasselli I, Fregni CS, Abdelnabi R, Foo SC, Havenar-Daughton C, Schmid MA, Benigni F, Cameroni E, Neyts J, Telenti A, Virgin HW, Whelan SPJ, Snell G, Bloom JD, Corti D, Veesler D, Pizzuto MS. (2021) "Broad sarbecovirus neutralization by a human monoclonal antibody". *Nature*. 597(7874):103-108. doi: 10.1038/s41586-021-03817-4. Epub 2021 Jul 19. PMID: 34280951.
 - McCallum M, De Marco A, Lempp F, Tortorici MA, Pinto D, Walls A, Betramello M, Chen A, Liu Z, Zatta F, **Zepeda S**, Di Iulio J, Bowen J, Montiel-Ruiz M, Zhou J, Rosen L, Bianchi S, Guarino B, Fregni CS, Abdelnabi R, Foo SC, Rothlauf PW, Bloyet L, Benigni F, Cameroni E, Neyts J, Riva A, Snell G, Telenti A, Whelan SP, Virgin HW, Corti D, Pizzuto MS, and Veesler D. N-terminal domain antigenic mapping reveals a site of vulnerability for SARS-CoV-2. (2021) *Cell*. 184(9):2332-2347.e16. doi: 10.1016/j.cell.2021.03.028
 - Villarreal MA, Biediger NM, Bonner NA, Miller JN, **Zepeda SK**, Richard BJ, Garcia DM, and Lewis KA. Determining Zebrafish Epitope Reactivity to Commercially Available Antibodies. *Zebrafish*. 2017;14(4):387-389. doi:10.1089/zeb.2016.1401.

Presentations

- **Samantha K. Zepeda** et. al. Structure, Antigenicity and Receptor Usage of a Cambodian Bat Sarbecovirus Spike. **Lecture (2024) American Virology Society, Columbus, OH.**
- **Samantha K. Zepeda** et. al. Structure, Antigenicity and Receptor Usage of bat born sarbecoviruses. **Lecture (2024) Rising Stars Symposium, Salt Lake City, UT.**
- **Samantha K. Zepeda** et. al. Role of Receptor Binding Domain Conformation on Spillover Potential of Cambodian Sarbecovirus. **Lecture (2023) American Crystallography Association, Baltimore, MD.**
- **Samantha K. Zepeda** et al. Spillover potential of Cambodian bat sarbecovirus. **Poster (2022) HHMI Science Meeting, Chevy Chase, MD.**
- **Samantha K. Zepeda**, Tyler Starr, et al. Molecular Basis of Rhinolophus ACE2 Receptor Association with Cambodian bat sarbecovirus RshTT200 Spike Glycoprotein. **Poster (2022) Emerging Infectious Disease in Bats Conference, Fort Collins, CO**
- **Samantha K. Zepeda**, and Karen A. Lewis. Mechanisms of Nuclear Export of RNA Binding Protein LARP6. **Poster (2019) Experimental Biology Research Conference, Orlando, FL**
- **Samantha K. Zepeda**, and Karen A. Lewis. Mechanisms of Nuclear Export of Human LARP6 (2019) Texas State University 3 Minute Thesis, San Marcos, TX
- **Samantha K. Zepeda**, and Karen A. Lewis. Nuclear Export of Human LARP6. **Poster (2018) College of Science Research Conference, University of Texas at San Antonio, San Antonio TX**
- **Samantha K. Zepeda**, and Karen A. Lewis. Nuclear Export of Human LARP6. **Lecture (2018) Chemistry and Biochemistry Research Colloquium, Texas State University, San Marcos TX**

Awards

- National Institute of Allergy and Infectious Disease, Ruth Kirstein Predoctoral Award (F31AI174573-01) (January 2023- December 2024)
- National Institute of General Medical Sciences, Molecular Biophysics Training Grant (T32GM008268-32) (July 2020-July 2022)
- ASBMB Travel Award, \$1000, American Society of Biochemistry and Molecular Biology (April 2019)
- Thesis Research Support Fellowship, \$1,970, Texas State University Graduate College (2019)
- University of Texas at San Antonio Department of Chemistry Poster Award (October 2018)