

# CURRICULUM VITAE

## Rachita K. Sumbria, Ph.D.

### PROFESSIONAL INFORMATION

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Associate Professor  
Department of Biomedical and Pharmaceutical Sciences  
School of Pharmacy  
Chapman University, Irvine, California, USA 92618  
Email: [sumbria@chapman.edu](mailto:sumbria@chapman.edu)

Associate Project Scientist  
Department of Neurology  
University of California, Irvine, California, USA 92868  
Email: [rsumbria@uci.edu](mailto:rsumbria@uci.edu)

### EDUCATION BACKGROUND

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2006-2010	<b>Ph.D. in Pharmaceutical Sciences</b> Department of Pharmaceutical Sciences, School of Pharmacy Texas Tech University Health Sciences Center, Amarillo, Texas, USA
2001-2005	<b>Bachelor of Technology (B.Tech) major in Pharmaceuticals &amp; Fine Chemicals</b> , Institute of Chemical Technology, Mumbai, India

### PROFESSIONAL EXPERIENCE

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2021-Current	Associate Professor School of Pharmacy, Chapman University, Irvine, California, USA
2020-Current	Associate Project Scientist Department of Neurology, University of California, Irvine, California, USA
2019-2021	Associate Professor of Biopharmaceutical Sciences School of Pharmacy and Health Sciences, Keck Graduate Institute, Claremont, California, USA
2018-2020	Assistant Project Scientist-IV Department of Neurology, University of California, Irvine, California, USA
2014-2019	Assistant Professor of Biopharmaceutical Sciences School of Pharmacy, Keck Graduate Institute, Claremont, California, USA
2016-2018	Assistant Project Scientist-II Department of Neurology, University of California, Irvine, California, USA
2014-2016	Assistant Project Scientist-I Department of Neurology, University of California, Irvine, California, USA
Jan-June 2014	Postdoctoral Research Associate Department of Neurology, University of California, Irvine, California, USA
2011-2013	Postdoctoral Research Associate

Department of Medicine, University of California, Los Angeles, California, USA

2006-2010 Research/Teaching Assistant  
Department of Pharmaceutical Sciences, Texas Tech University HSC, Amarillo, Texas, USA

2005-2006 Research Associate  
Intellectual Property Division, Evalueserve (EVS), Gurgaon, India

May-August 2004 Research Intern  
Haffkine Biopharmaceuticals Pvt Ltd. Mumbai, India

#### **FUNDED GRANTS:**

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10/01/15-09/30/17 NIRG-15-361188, Alzheimer's Association  
Role: PI  
Title: A brain-penetrating biologic TNF-alpha inhibitor for Alzheimer's disease: The overall goal of the project was to investigate the protective effects of a brain-penetrating biologic TNF-alpha inhibitor in a mouse model of Alzheimer's disease.

01/01/17-12/31/17 Joseph H. Stahlberg Foundation  
Role: PI  
Title: Brain penetrating erythropoietin for Alzheimer's disease  
This funding provided support for a pilot study to investigate the effect of a brain-penetrating erythropoietin compared with vehicle treatment, in a male transgenic mouse model of Alzheimer's disease.

07/15/2017-04/30/20 R21AG055949, National Institute of Aging/National Institutes of Health  
Role: PI  
Title: Re-engineering Erythropoietin for Alzheimer's Disease: The overall goal of the project is to investigate the effect of a neuroprotective and neuroregenerative approach for Alzheimer's disease. The model neurotrophin studied is a brain-penetrating analog of EPO in a mouse model of Alzheimer's disease.

07/01/2018-04/30/22 R01NS020989, National Institute of Neurological Disorders and Stroke/National Institutes of Health  
Role: Co-I, PI: Mark Fisher/David Cribbs  
Title: Hemorheological Factors in Cerebral Ischemia: Overall aim of this project is to investigate the role of brain endothelial erythrophagocytosis in cerebral microbleed development.

01/01/19-12/31/21 Joseph H. Stahlberg Foundation  
Role: PI  
Title: Optimizing the Dosing of a Novel Brain Penetrating Erythropoietin Analog for Alzheimer's Disease

08/01/19-04/30/25 R01AG062840, National Institute of Aging/National Institutes of Health  
Role: PI  
Title: A Brain Penetrating Bi-functional Transferrin Receptor Antibody-TNF-alpha Decoy Receptor Fusion Protein for Alzheimer's Disease

01/01/20-12/31/21 Joseph H. Stahlberg Foundation  
Role: PI

Title: Brain uptake and hematology safety of a novel brain penetrating erythropoietin for Alzheimer's disease

- 9/30/20-6/30/25 R01AG072896, National Institute of Aging/National Institutes of Health  
Role: MPI (Derick Han and Rachita Sumbria)  
Title: Modulation of the liver-brain axis by alcohol and its impact on Alzheimer's disease pathology
- 10/31/22-11/31/26 5K01DK125448-04, NIDDK  
Role: Co-Mentor, PI: Cintia E. Citterio  
Title: The Role of Thyroglobulin in Thyroid Hormone Synthesis
- 11/01/22-10/31/24 R03AI168826, National Institute of Allergy and Infectious Diseases/National Institutes of Health  
Role: Co-Investigator, PI: Sherif Elshahawi  
Title: Mechanisms and In Vivo Activity of a Next-Generation Daptomycin Antibiotic
- 6/01/24 - 3/31/29 R01AG085724, National Institute of Aging/National Institutes of Health  
Role: PI  
Title: Efficacy, safety, and mechanisms of brain penetrable erythropoietin in Alzheimer's disease mouse models
- 7/1/24 – 6/30/25 Chapman University School of Pharmacy, Collaboration Award  
Role: MPI (Moom Roosan and Rachita Sumbria)  
Title: Gene signatures of liver-brain crosstalk in Alzheimer's disease

## TEACHING EXPERIENCE:

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### Keck Graduate Institute, School of Pharmacy and Health Sciences, Claremont, California, USA

- Fall 2014-2020 PHAR 330, CSS1 Scientific Inquiry- Intro to Drug Information and Statistics and Interprofessional Education (IPE) Problem Based Learning (PBL), 2 credit hours  
Responsibility: Instructor  
Topic: Statistics, 10 hours  
Most Recent Teaching Evaluations: [4.84/5 \(last evaluated in 2014\)](#)
- PHAR 410, SSS8 Pharmacokinetics, 3 credit hours  
Responsibility: Course coordinator and instructor  
Topic: Basic pharmacokinetics, 39 hours  
Most Recent Teaching Evaluations: [4.78/5 \(last evaluated in 2020\)](#)
- Fall 2014 ALS 493 Independent Research, 1.5 credit hours  
Responsibility: Mentor to Nina Butingan  
Topic: Cerebral Microbleeds – Mechanisms – Literature Review  
Most Recent Teaching Evaluations: NA
- Spring 2014-2020 PHAR 331, CSS3 Scientific Inquiry-Biostatistics and Interprofessional Education (IPE) Problem Based Learning (PBL), 2 credit hours  
Responsibility: Course coordinator and instructor  
Topic: Biostatistics, 21 hours  
Teaching Evaluations: [4.63/5 \(last evaluated in 2020\)](#)
- Fall 2016 ALS 493 Independent Research, 1.5 credit hours  
Responsibility: Mentor to Jesslyn Magee

Topic: Confocal Microscopy Imaging in Alzheimer's Disease Mouse Model  
Most Recent Teaching Evaluations: NA

Spring 2016  
ALS434, Clinical Biostatistics, 3 credit hours  
Responsibility: Course coordinator and instructor  
Hours: 21  
Teaching Evaluations: 4.75/5 ([last evaluated in 2016](#))

Spring 2020  
ALS 493 Independent Research, 1.5 credit hours  
Responsibility: Mentor to Demi Castellanos and Shih-Jing Yao  
Topics: Pharmacokinetics of cTfRMAb-TNFR fusion protein and Impact of amyloid-beta on RBC-brain endothelial cell interaction, in vitro.  
Most Recent Teaching Evaluations: NA

### Chapman University, School of Pharmacy, Irvine, California, USA

Fall 2021  
PHS602 Drug Discovery and Development, 3 credit hours  
Responsibility: Instructor  
Hours: 4  
Teaching Evaluations: 4.9/5 ([last evaluated in Fall 2021](#))

Spring 2022/2024  
PHRM 622, Drug Delivery System 2, 2 credit hours  
Responsibility: Course coordinator and instructor  
Hours: 24  
Teaching Evaluations: 4.82/5 ([last evaluated in May 2024](#))

Fall 2023  
PHS 620: Biostatistics, 3 credit hours  
Responsibility: Course coordinator and instructor  
Hours: 36  
Teaching Evaluations: 4.54/5 ([last evaluated in December 2023](#))

### RESEARCH MENTORSHIP

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#### Postdoctoral Fellow/Research Associate/Research Assistant Advisor

- Jiahong Sun, Keck Graduate Institute/Chapman University, 2018-2021
- Weijun Ou, Keck Graduate Institute/Chapman University, 2020-2021
- Devaraj Chandnra, Chapman University, 2021-Current
- Nataraj Jagadeesan, Chapman University, 2021-Current
- Rudy Chang, Chapman University, 2021-2022
- Chuli Roules, Chapman University, 2022-Current
- Mrigank Rai, Chapman University, 2023-Current

#### PhD Thesis Advising Committees

- Jonalyn Herce, Keck Graduate Institute, 2019-Current (Role: Member)
- Joshua Yang, Keck Graduate Institute, 2018-2021 (Role: **Chair**)
- Karen Paco, Keck Graduate Institute, 2018-2021 (Role: Member)
- Payam Amiri, Keck Graduate Institute, 2017-2021 (Role: Member)
- Jane Yao, Chapman University, 2021-Current (Role: **Co-advisor**)
- Judy Weng, Chapman University, 2021-2023 (Role: Member)
- Rudy Chang, Chapman University, 2022-Current (Role: **Chair**)
- Adenike Oyegbesan, Chapman University, 2023-Current (Role: **Chair**)

- Diem Nguyen, Chapman University, 2023-Current (Role: Member)
- Ashely Duche, Chapman University, 2024-Current (Role: Member)
- Wonsuk Choi, Chapman University, 2024-Current (Role: Member)

### **Masters of Science Thesis Advising Committees**

- Abrar Al Maghribi, Keck Graduate Institute, Thesis Title: Re-engineered Erythropoietin for Alzheimer's Disease, 2017-2018 (Role: **Chair**)
- Kaylyn Kato, Keck Graduate Institute, Thesis Title: Increased Tunneling Nanotubes in Breast Cancer Cells Treated with 5-Fluorouracil, 2017-2018 (Role: Member)
- Prema Vyas, Keck Graduate Institute, Thesis Title: Intracellular Trafficking of Red Blood Cells in Brain Endothelial Cells, 2018-2019 (Role: **Chair**)
- Jonalyn Herce, Keck Graduate Institute, Thesis Title: Understanding the role of old and young erythrocyte-derived exosomes in aging, 2018-2019 (Role: Member)
- Demi Castellanos, Keck Graduate Institute, Thesis Title: Pharmacokinetics and Safety Profile of a High Affinity Transferrin Receptor Antibody in Mice, 2019-2020 (Role: **Chair**)
- Jada Mack, Keck Graduate Institute, Thesis Title: Decorating Red Blood Cell Exosomes for CRISPR-Cas9 Delivery Across the Blood-Brain Barrier, 2019-2020 (Role: Member)
- Shih-Yao, Keck Graduate Institute, Thesis Title: Effects of amyloid beta on brain endothelial erythrophagocytosis, 2020-2021 (Role: **Chair**)
- Maria Melville, Keck Graduate Institute, Thesis Title: Effect of biologic TNF inhibitors on microglial activation in a mouse model of tauopathy, 2020-2021 (Role: **Chair**)
- G. Kyle Otazu, Keck Graduate Institute, Thesis Title: Examining the Role of the RAGE Ligand S100B on Growth and Migration of Gliomas, 2020-2021 (Role: Member)
- Yuu Ohno, Keck Graduate Institute, Thesis Title: Effect of Biologic TNF- $\alpha$  Inhibitors in Aged APP/PS1 Mice, 2021-2022 (Role: **Chair**)
- Urvashi Panchal, Chapman University, Thesis Title: Role of hepatic lipoprotein receptor-related protein 1 on amyloid beta pathology in a mouse model of amyloidosis, 2023-2025 (Role: **Chair**)

### **Senior Thesis Advising Committees**

- Jillian Knox, Claremont McKenna, Thesis Title: The effect of a BBB-penetrating TNF $\alpha$  inhibitor on amyloid burden, neuroinflammation, and blood-brain barrier integrity in the APP/PS1 mouse model of Alzheimer's disease, Graduated in December 2016 (**Primary Advisor**)
- Juan Castillo, Claremont McKenna, Thesis Title: Adhesion and Engulfment of Altered Red Blood Cells to Brain Microvascular Endothelial Cells, Graduated in December 2017 (**Primary Advisor**)
- Victoria Vanderpole, Pomona College, Thesis Title: Blood-Brain Barrier Penetrating Analogue of Erythropoietin (EPO), cTfRMAb-EPO, Reduces A $\beta$  Pathology in APP/PS1 Mice, Graduated in May 2018 (**Primary Advisor**)
- Kathrine Whitman, Claremont McKenna, Thesis Title: Mouse Modeling Behavior in APP/PS1 Mice Treated with a BBB-penetrating Erythropoietin Fusion Protein, cTfRMAb-EPO, 2018-2019 (**Primary Advisor**)
- Charlene Zhu, Scripps College, Thesis Title: Efficacy of Brain-Penetrable Erythropoietin in Reducing Cortical and Hippocampal Amyloid- $\beta$  Load in a Transgenic Mouse Model of Alzheimer's Disease, 2018-2019 (**Primary Advisor**)
- Juste Simanaukaite, Pomona College, Thesis Title: Effect of TNF-alpha Inhibition on Hippocampal Cell Density and Neurofibrillary Tangles in the PS19 Transgenic Mouse Model for Alzheimer's Disease, 2020-2021 (**Primary Advisor**)

### **Summer Undergraduate Research Mentor**

- David Moran (Cornell University), Summer Undergraduate Research Experience Program, 2015
- Jillian Knox (Claremont McKenna), Summer Undergraduate Research Experience Program, 2016
- Juan Castillo (Claremont McKenna), Claremont McKenna Interdisciplinary Science Scholarship - Summer Research Grant, 2016
- Victoria Vanderpole (Pomona College), Summer Undergraduate Research Experience Program, 2017

- Juan Castillo (Claremont McKenna), Claremont McKenna Interdisciplinary Science Scholarship - Summer Research Grant, 2017
- Kathrine Whitman (Claremont McKenna), Summer Undergraduate Research Experience Program, 2018
- Charlene Zhu (Scripps College), Summer Undergraduate Research Experience Program, 2018
- Samar Mann (Pitzer College), Summer 2018-2021
- Matthew Choi (Claremont McKenna), Summer 2020-2021
- Chuli Roules (Chapman University), Summer 2021-2022
- Riley Murphey (Chapman University), Summer 2021-Fall 2021
- Audrey Drew (Chapman University), Fall 2021
- Tamara Abdulla (Chapman University), Summer 2021-Spring 2022
- Roselyn Trinh (Chapman University), Spring 2022
- Hunter Wilson (Chapman University), Summer 2023
- Emi Iwasaki (Chapman University), Fall 2023-Current

### High School Research Mentor

- Amber Lee (South Hills High School), High School Student Internship Program, CA, USA, 2017
- Pavan Mody (Damien High School), High School Student Internship Program, CA, USA, 2018
- Sriyansh Yarlagadda, High School Student Internship Program, CA, USA, 2019
- Abheerava Koka, High School Student Internship Program, CA, USA, 2020, 2021
- Sreya Chilukuri, High School Student Internship Program, CA, USA, 2020
- Sanjana Kolluru, High School Student Internship Program, CA, USA, 2022-Current
- Hiya Rakholia, The Millennium School, India, 2022
- Sharada Bhagwat, The Millennium School, India, 2022
- Rutvi Mevawala, The Millennium School, India, 2022
- David Zhang, University High School, Irvine, CA, USA, Fall 2023-Current

### PharmD Research Capstone Mentor

- Katelyn Troung, PharmD Research Capstone, CUSP, CA, USA, 2024

## PUBLICATIONS, CONFERENCE PROCEEDINGS AND ORAL PRESENTATIONS

**PUBLICATIONS:** Total citations: 1556, H-index: 21, i10-index: 32

<http://www.ncbi.nlm.nih.gov/sites/myncbi/rachita.sumbria.1/bibliography/49437204/public/?sort=date&direction=descending>

43. Chandrashekar DV, Roules GC, Jagadeesan N, Panchal UR, Oyegbesan A, Imiruaye OE, Zhang H, Garcia J, Kaur K, Win S, Than TA, Kaplowitz N, Roosan M, Han D, **Sumbria RK**. Hepatic LRP-1 plays an important role in amyloidosis in Alzheimer's disease mice: Potential role in chronic heavy alcohol feeding. **Neurobiol Dis.** **2024** Jun 15; PubMed PMID: 38885850. <https://doi.org/10.1016/j.nbd.2024.106570>
42. Jagadeesan N, Roules C, Chandrashekar DV, Yang J, Kolluru S, **Sumbria RK**. Modulation of hippocampal protein expression by a brain penetrant biologic TNF- $\alpha$  inhibitor in the 3xTg Alzheimer's disease mice. **J Transl Med** **22**, 291 (2024). <https://doi.org/10.1186/s12967-024-05008-x>
41. Zhang H\$, **Sumbria RK\*\$**, Chang R\$, Sun J, Cribbs DH, Holmes TC, Fisher MJ\*, Xu X\*. Erythrocyte-brain endothelial interactions induce microglial responses and cerebral microhemorrhages in vivo. **J Neuroinflammation** **20**, 265 (2023). <https://doi.org/10.1186/s12974-023-02932-5>. \$ first authors \*corresponding authors
40. Imran Sajid M, Sultan Sheikh F, Anis F, Nasim N, **Sumbria RK**, Nauli SM, Kumar Tiwari R. siRNA drug delivery across the blood-brain barrier in Alzheimer's disease. *Adv Drug Deliv Rev.* 2023 Aug;199:114968. doi: 10.1016/j.addr.2023.114968. Epub **2023** Jun 21. PMID: 37353152.
39. Chandrashekar, D.V.; Steinberg, R.A.; Han, D.; **Sumbria, RK**. Alcohol as a Modifiable Risk Factor for Alzheimer's Disease — Evidence from Experimental Studies. **Int. J. Mol. Sci.** **2023**, *24*, 9492. <https://doi.org/10.3390/ijms24119492>

38. Yang, J.; Ou, W.; Jagadeesan, N.; Simanaukaite, J.; Sun, J.; Castellanos, D.; Cribbs, D.H.; **Sumbria, R.K.** The Effects of a Blood–Brain Barrier Penetrating Erythropoietin in a Mouse Model of Tauopathy. **Pharmaceutics** **2023**, *16*, 558. <https://doi.org/10.3390/ph16040558>
37. Fang, C., Lau, W.L., Sun, J., Chang R., Vallejo A., Lee D., Liu J., Liu H., Hung YH., Zhao Y., Paganini-Hill A., **Sumbria RK.**, Cribbs DH., Fisher M. Chronic kidney disease promotes cerebral microhemorrhage formation. **J Neuroinflammation** **20**, 51 (2023). <https://doi.org/10.1186/s12974-023-02703-2>
36. Ou W, Ohno Y, Yang J, Chandrashekar DV, Abdullah T, Sun J, Murphy R, Roules C, Jagadeesan N, Cribbs DH, **Sumbria RK.** Efficacy and Safety of a Brain-Penetrant Biologic TNF- $\alpha$  Inhibitor in Aged APP/PS1 Mice. **Pharmaceutics**. **2022**; 14(10):2200. <https://doi.org/10.3390/pharmaceutics14102200>.
35. Garcia J, Chang R, Steinberg RA, Arce A, Yang J, Van Der Eb P, Abdullah T, Chandrashekar DV, Eck SM, Meza P, Liu ZX, Cadenas E, Cribbs DH, Kaplowitz N, **Sumbria RK**, Han D. Modulation of hepatic amyloid precursor protein and lipoprotein receptor-related protein 1 by chronic alcohol intake: Potential link between liver steatosis and amyloid- $\beta$ . **Front Physiol.** **2022** Sep 15;13:930402. <https://doi.org/10.3389/fphys.2022.930402>. PMID: 36187787; PMCID: PMC9520570.
34. Feinberg PA, Becker SC, Chung L, Ferrari L, Stellwagen D, Anaclet C, Durán-Laforet V, Faust TE, **Sumbria RK**, Schafer DP. Elevated TNF- $\alpha$  leads to neural circuit instability in the absence of Interferon Regulatory Factor 8. **J Neurosci.** **2022** Jul 1;JN-RM-0601-22. doi: 10.1523/JNEUROSCI.0601-22.2022.
33. Sun J, Ou W, Hill PA, Han D, Fisher MJ, **Sumbria RK**. Comparative studies between the murine immortalized brain endothelial cell line (bEnd.3) and induced pluripotent stem cell-derived human brain endothelial cells for paracellular transport. **PLOS One.** **2022** May 25;17(5):e0268860. doi: 10.1371/journal.pone.0268860.
32. Ohno Y, Murphy R, Choi M, Ou W, **Sumbria RK**. Full- versus Sub-Regional Quantification of Amyloid-Beta Load on Mouse Brain Sections. **J. Vis. Exp.** (183), e63669, doi:10.3791/63669 (2022).
31. Ou W, Yang J, Simanaukaite JM, Choi M, Castellanos DM, Chang R, Sun J, Jagadeesan N, Parfitt KD, Cribbs DH, **Sumbria RK**. Biologic TNF- $\alpha$  inhibitors reduce microgliosis, neuronal loss, and tau phosphorylation in a transgenic mouse model of tauopathy. **J Neuroinflammation.** **2021**;18:312.
30. Yang J, **Sumbria RK**. The concentration of brain homogenates with the Amicon Ultra Centrifugal filters. **MethodsX.** **2021**;8:101584.
29. Sun J, Vyas P, Mann S, Paganini-Hill A, Nunes AC, Lau WL, Cribbs DH, Fisher MJ, **Sumbria RK**. Insights into the mechanisms of brain endothelial erythrophagocytosis. **Front. Cell Dev. Biol.** **2021**;9:672009.
28. Castellanos, D.M.; Sun, J.; Yang, J.; Ou, W.; Zambon, A.C.; Pardridge, W.M.; **Sumbria RK**. Acute and Chronic Dosing of a High-Affinity Rat/Mouse Chimeric Transferrin Receptor Antibody in Mice. **Pharmaceutics** **2020**, *12*, 852.
27. Yang J, Sun J, Castellanos DM, Zambon AC, Pardridge WM, **Sumbria RK**. Eliminating Fc N-linked glycosylation and its impact on dosing consideration for a transferrin receptor antibody-erythropoietin fusion protein in mice. **Mol Pharm.** **2020** Aug 3;17(8):2831-2839.
26. **Sumbria RK**. Targeting the transferrin receptor to develop erythropoietin for Alzheimer's disease. **Neural Regen Res.** **2020**;15(12):2251-2252.
25. Sun J, Yang J, Whitman K, Zhu C, Cribbs DH, Boado RJ, Pardridge WM, **Sumbria RK**. Hematologic safety of chronic brain-penetrating erythropoietin dosing in APP/PS1 mice. **Alzheimers Dement (N Y).** **2019**;5:627-636. PubMed PMID: 31660425; PubMed Central PMCID: PMC6807369.
24. Michael N, Grigoryan MM, Kilday K, **Sumbria RK**, Vasilevko V, van Ryn J, Cribbs DH, Paganini-Hill A, Fisher MJ. Effects of Dabigatran in Mouse Models of Aging and Cerebral Amyloid Angiopathy. **Front Neurol.** **2019**;10:966. PubMed PMID: 31611836; PubMed Central PMCID: PMC6776875.
23. Sun J, Boado RJ, Pardridge WM, **Sumbria RK**. Plasma Pharmacokinetics of High-Affinity Transferrin Receptor Antibody-Erythropoietin Fusion Protein is a Function of Effector Attenuation in Mice. **Mol Pharm.** **2019** Aug 5;16(8):3534-3543. PubMed PMID: 31199881; PubMed Central PMCID: PMC6684820.
22. Sun J, Martin JM, Vanderpoel V, **Sumbria RK**. The Promises and Challenges of Erythropoietin for Treatment of Alzheimer's Disease. **Neuromol Med.** **2019** Mar;21(1):12-24. PubMed PMID: 30656553; PubMed Central PMCID: PMC6407698.

21. Chang R, Al Maghribi A, Vanderpoel V, Vasilevko V, Cribbs DH, Boado R, Pardridge WM, **Sumbria RK**. Brain Penetrating Bifunctional Erythropoietin-Transferrin Receptor Antibody Fusion Protein for Alzheimer's Disease. **Mol Pharm.** **2018** Nov 5;15(11):4963-4973. PubMed PMID: 30252487; PubMed Central PMCID: PMC6457666.
20. Chang R, Castillo J, Zambon AC, Krasieva TB, Fisher MJ, **Sumbria RK**. Brain Endothelial Erythrophagocytosis and Hemoglobin Transmigration Across Brain Endothelium: Implications for Pathogenesis of Cerebral Microbleeds. **Front Cell Neurosci.** **2018**;12:279. PubMed PMID: 30237761; PubMed Central PMCID: PMC6135875.
19. **Sumbria RK**, Grigoryan MM, Vasilevko V, Paganini-Hill A, Kilday K, Kim R, Cribbs DH, Fisher MJ. Aging exacerbates development of cerebral microbleeds in a mouse model. **J Neuroinflammation.** **2018** Mar 6;15(1):69. PubMed PMID: 29510725; PubMed Central PMCID: PMC5840821.
18. Chang R, Knox J, Chang J, Derbedrossian A, Vasilevko V, Cribbs D, Boado RJ, Pardridge WM, **Sumbria RK**. Blood-Brain Barrier Penetrating Biologic TNF- $\alpha$  Inhibitor for Alzheimer's Disease. **Mol Pharm.** **2017** Jul 3;14(7):2340-2349. PubMed PMID: 28514851.
17. **Sumbria RK**, Vasilevko V, Grigoryan MM, Paganini-Hill A, Kim R, Cribbs DH, Fisher MJ. Effects of phosphodiesterase 3A modulation on murine cerebral microhemorrhages. **J Neuroinflammation.** **2017** Jun 5;14(1):114. PubMed PMID: 28583195; PubMed Central PMCID: PMC5460510.
16. Chang R, Yee KL, **Sumbria RK**. Tumor necrosis factor  $\alpha$  Inhibition for Alzheimer's Disease. **J Cent Nerv Syst Dis.** **2017** May 15;9:1179573517709278. PubMed PMID: 28579870; PubMed Central PMCID: PMC5436834.
15. **Sumbria RK**, Grigoryan MM, Vasilevko V, Krasieva TB, Scadeng M, Dvornikova AK, Paganini-Hill A, Kim R, Cribbs DH, Fisher MJ. A murine model of inflammation-induced cerebral microbleeds. **J Neuroinflammation.** **2016** Aug 30;13(1):218. PubMed PMID: 27577728; PubMed Central PMCID: PMC5006574.
14. Yang F, **Sumbria RK**, Xue D, Yu C, He D, Liu S, Paganini-Hill A, Fisher M. Effects of PDE4 pathway inhibition in rat experimental stroke. **J Pharm Pharm Sci.** **2014**;17(3):362-70. PubMed PMID: 25224348; NIHMSID: NIHMS670840; PubMed Central PMCID: PMC4364446.
13. Liu S, Grigoryan MM, Vasilevko V, **Sumbria RK**, Paganini-Hill A, Cribbs DH, Fisher MJ. Comparative analysis of H&E and Prussian blue staining in a mouse model of cerebral microbleeds. **J Histochem Cytochem.** **2014** Nov;62(11):767-73. PubMed PMID: 25063000.
12. Boado RJ, Hui EK, Lu JZ, **Sumbria RK**, Pardridge WM. Blood-brain barrier molecular trojan horse enables imaging of brain uptake of radioiodinated recombinant protein in the rhesus monkey. **Bioconjug Chem.** **2013** Oct 16;24(10):1741-9. PubMed PMID: 24059813.
11. **Sumbria RK**, Hui EK, Lu JZ, Boado RJ, Pardridge WM. Disaggregation of amyloid plaque in brain of Alzheimer's disease transgenic mice with daily subcutaneous administration of a tetravalent bispecific antibody that targets the transferrin receptor and the Abeta amyloid peptide. **Mol Pharm.** **2013** Sep 3;10(9):3507-13. PubMed PMID: 23924247.
10. Boado RJ, Lu JZ, Hui EK, **Sumbria RK**, Pardridge WM. Pharmacokinetics and brain uptake in the rhesus monkey of a fusion protein of arylsulfatase a and a monoclonal antibody against the human insulin receptor. **Biotechnol Bioeng.** **2013** May;110(5):1456-65. PubMed PMID: 23192358; NIHMSID: NIHMS549332; PubMed Central PMCID: PMC3919501.
9. **Sumbria RK**, Boado RJ, Pardridge WM. Combination stroke therapy in the mouse with blood-brain barrier penetrating IgG-GDNF and IgG-TNF decoy receptor fusion proteins. **Brain Res.** **2013** Apr 24;1507:91-6. PubMed PMID: 23428543.
8. **Sumbria RK**, Zhou QH, Hui EK, Lu JZ, Boado RJ, Pardridge WM. Pharmacokinetics and brain uptake of an IgG-TNF decoy receptor fusion protein following intravenous, intraperitoneal, and subcutaneous administration in mice. **Mol Pharm.** **2013** Apr 1;10(4):1425-31. PubMed PMID: 23410508; NIHMSID: NIHMS451181; PubMed Central PMCID: PMC3615110.
7. **Sumbria RK**, Boado RJ, Pardridge WM. Brain protection from stroke with intravenous TNF $\alpha$  decoy receptor-Trojan horse fusion protein. **J Cereb Blood Flow Metab.** **2012** Oct;32(10):1933-8. PubMed PMID: 22714051; PubMed Central PMCID: PMC3463885.
6. **Sumbria RK**, Boado RJ, Pardridge WM. Imaging amyloid plaque in Alzheimer's disease brain with a biotinylated A $\beta$  peptide radiopharmaceutical conjugated to an IgG-avidin fusion protein. **Bioconjug Chem.** **2012** Jun 20;23(6):1318-21. PubMed PMID: 22624578.



5. Mdzinarishvili A, **Sumbria R**, Lang D, Klein J. Ginkgo extract EGb761 confers neuroprotection by reduction of glutamate release in ischemic brain. **J Pharm Pharm Sci.** **2012**;15(1):94-102. PubMed PMID: 22365091.
4. Lang D, Kiewert C, Mdzinarishvili A, Schwarzkopf TM, **Sumbria R**, Hartmann J, Klein J. Neuroprotective effects of bilobalide are accompanied by a reduction of ischemia-induced glutamate release in vivo. **Brain Res.** **2011** Nov 24;1425:155-63. PubMed PMID: 22032877; NIHMSID: NIHMS335210; PubMed Central PMCID: PMC3217178.
3. Zhou QH, **Sumbria R**, Hui EK, Lu JZ, Boado RJ, Pardridge WM. Neuroprotection with a brain-penetrating biologic tumor necrosis factor inhibitor. **J Pharmacol Exp Ther.** **2011** Nov;339(2):618-23. PubMed PMID: 21831964; PubMed Central PMCID: PMC3199996.
2. Bungay PM, **Sumbria RK**, Bickel U. Unifying the mathematical modeling of in vivo and in vitro microdialysis. **J Pharm Biomed Anal.** **2011** Apr 28;55(1):54-63. PubMed PMID: 21310575; NIHMSID: NIHMS266646; PubMed Central PMCID: PMC3076931.
1. **Sumbria RK**, Klein J, Bickel U. Acute depression of energy metabolism after microdialysis probe implantation is distinct from ischemia-induced changes in mouse brain. **Neurochem Res.** **2011** Jan;36(1):109-16. PubMed PMID: 20878232.

#### BOOK CHAPTERS:

1. **Sumbria RK**, Fisher MJ. Endothelium. In: Caplan LR, Biller J, Leary MC, Lo EH, Thomas AJ, Yenari M, and Zhang JH, eds., *Primer on Cerebrovascular Diseases, Second Edition*, San Diego: Academic Press, **2017**: Pages 47–51.
2. Chang R, **Sumbria RK**. Quantitative Evaluation of Cerebral Microhemorrhages in the Mouse Brain. *Methods Mol Biol.* **2023**;2616:181-190. doi: 10.1007/978-1-0716-2926-0\_14. PMID: 36715935.

#### CONFERENCE PROCEEDINGS AND POSTERS:

36. Chandrashekar DV, Roules C, Steinberg R, Panchal U, Jagadeesan N, Oyegbesan A, .....**Sumbria RK**. Chronic heavy alcohol intake and liver-specific LRP-1 reduction increase amyloidosis in Alzheimer's disease mice. *Alzheimer's Association International Conference*, Philadelphia, July 28-August 1, **2024**.
35. Chang R, Chandrashekar DV, Roules C, Iwasaki E, Jagadeesan N, **Sumbria RK**. Brain delivery of erythropoietin results in a significant reduction of brain A $\beta$  and spatial memory deficits in the APP knock-in mouse model. *Alzheimer's Association International Conference*, Philadelphia, July 28-August 1, **2024**.
34. Jagadeesan N, Roules C, Chandrashekar DV, Oyegbesan A, Iwasaki E, Kolluru S, **Sumbria RK**. Dose escalation of a blood-brain barrier traversing TNF- $\alpha$  inhibitor in a tauopathy (P301S) mouse model. *Alzheimer's Association International Conference*, Philadelphia, July 28-August 1, **2024**. (\*selected for lightening presentation)
33. Jagadeesan N, Roules C, Chandrashekar DV, Yang J, Kolluru S, **Sumbria RK**. Modulation of hippocampal protein expression by a brain penetrant biologic TNF- $\alpha$  inhibitor in the 3xTg Alzheimer's disease mice. *Alzheimer's Association International Conference*, **2023**. Online.
32. Chandrashekar D, Jagadeesan N, Abdullah T, Chang R, Yang Y, Murphey R, Audrey D, Trinh R, Tapia O, Choi M, Han D, **Sumbria RK**. Effect of chronic alcohol dosing on Alzheimer's disease pathology in a mouse model of amyloidosis. Program No. 529.04. 2022 Neuroscience Meeting Planner. San Diego, CA: *Society for Neuroscience*, **2022**. Online.
31. Fang C, Lau WL, Sun J, Vallejo A, Liu J, Liu H, Paganini-Hill A, **Sumbria RK**, Cribbs D, Fisher M. Chronic Kidney Disease Induces Cerebral Microhemorrhages In Aged Mice. *Stroke.* **2022**; 53:A87.
30. Yang J, Ou W, Simanaukaite JM, Choi M, Sun J, Melville M, Castellanos DM, Koka A, Chilukuri S, Cribbs DH, **Sumbria RK**. The effects of a high-affinity transferrin receptor antibody-Erythropoietin fusion protein in a mouse model of tauopathy. *Society for Neuroscience*, **2021**.Online.
29. Ou W, Ohno Y, Choi M, Sun J, Yang J, Abdullah T, Riley M, Chuli R, Choi M, Cribbs DH, **Sumbria RK**. Delayed treatment with a brain-penetrating biologic TNF- $\alpha$  inhibitor in the APP/PS1 mouse model of human amyloidosis. *Society for Neuroscience*, **2021**.Online.
28. Ou W, Yang J, Castellanos DM, Sun J, Koka A, Chilukuri S, Simanaukaite JM, Choi M, Cribbs DH, **Sumbria RK**. Pharmacologic Effects of Biologic TNF- $\alpha$  inhibitors in a Transgenic Mouse Model of Tauopathy. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, **2020**, Volume 16, Issue S12, e12278. (\*selected for lightening presentation)

27. Sun J, Vyas P, Mann S, Yarlagadda S, Fisher M, **Sumbria RK**. Mechanisms of Brain Endothelial Erythrophagocytosis: Insights Into the Pathogenesis of Cerebral Microbleeds. *Stroke*. **2020**; 51:ATP478.
26. Yang J, Sun J, Pardridge W, **Sumbria RK**. Impact of Eliminating Fc N-linked Glycosylation on the Plasma Pharmacokinetics of a Transferrin Receptor Antibody-Erythropoietin Fusion Protein Following Extravascular Administration in Mice. *Recombinant Protein Therapeutics - PepTalk*, San Diego, January 20-21, **2020**.
25. Sun J, Yang J, Zhu C, Whitman K, Martin JM, Mody P, Cribbs D, Boado R, Pardridge W, **Sumbria RK**. Hematologic Safety of a Brain Penetrating Erythropoietin-Transferrin Receptor Antibody Fusion Protein in a Mouse Model of Alzheimer's Disease. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, **2019**, Volume 15, Issue 7S, P2-165.
24. Sun J, Boado R, Pardridge W, **Sumbria RK**. Plasma pharmacokinetics of high-affinity transferrin receptor antibody fusion protein is a function of effector attenuation in mice. 13<sup>th</sup> Annual Drug Discovery for Neurodegeneration Conference, Long Beach, March 17-19, **2019**.
23. Michael M, Grigoryan M, Kilday K, **Sumbria RK**, Vasilevko V, Ryn J, Cribbs D, Paganini-Hill A, Fisher M. Effects of Dabigatran in Mouse Models of Aging and Cerebral Amyloid Angiopathy. *Stroke*. **2019**;50:ATP443.
22. Chang R, Maghribi-Al A, Vanderpole V, Vasilevko V, Cribbs D, Boado RJ, Pardridge WM, **Sumbria RK**. Therapeutic Effects of a Brain Penetrating Bispecific Erythropoietin-Transferrin Receptor Antibody Fusion Protein in the APP/PS1 Mouse Model of Alzheimer's Disease. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, **2018**, Volume 14, Issue 7, P3-057.
21. Chang R, Castillo J, Fisher MJ and **Sumbria RK**. Brain endothelial erythrophagocytosis and hemoglobin transmigration across the brain endothelium, in vitro. *KGI Research Retreat*, Claremont, CA, January **2018**.
20. Chang R, Maghribi-Al A, Vanderpole V, Vasilevko V, Cribbs D, Boado RJ, Pardridge WM, **Sumbria RK**. Brain-Penetrating Erythropoietin Attenuates Synaptic Loss, Amyloid Load, and Spatial Memory Deficits in the APP/PS1 Mouse Model of Alzheimer's Disease. *KGI Research Retreat*, Claremont, CA, January **2018**.
19. Nguyen K, **Sumbria RK**, Kolluru S. Incorporation of Critical Thinking in a PharmD Elective Course: Advanced Topics in Drug Interactions. *KGI Research Retreat*, Claremont, CA, January **2018**.
18. **Sumbria RK**, Vasilevko V, Grigoryan MM, Paganini-Hill A, Kim R, Cribbs DH, Fisher MJ. Effects of phosphodiesterase 3A modulation on murine cerebral microhemorrhages. *Res Pract Thromb Haemost*. **2017**; 1: 1–1451. PB 1658.
17. Chang R, Castillo J, Yee KL, Patel R, Benson R, Woods J, Fisher MJ and **Sumbria RK**. Adhesion and Engulfment of Altered Red Blood Cells to Brain Endothelial Cells; *Neuroscience Research Symposium*, Pomona, CA, September 30<sup>th</sup> **2017**.
16. **Sumbria RK**, Grigoryan MM, Vasilevko V, Ngo Q-T, Nguyen K, Paganini-Hill A, Kim R, Cribbs DH, Fisher MJ. Age- and Sex-Specific Development of Cerebral Microbleeds in a Mouse Model; *Stroke*. **2017**; 48:AWMP75.
15. Chang R, Knox J, Chang J, Woods J, Cribbs D, Pardridge W and **Sumbria RK**. Protective Effects of a brain-penetrating biologic TNF- $\alpha$  inhibitor in a mouse model of Alzheimer's disease. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, **2017**, Volume 13, Issue 7, P1242
14. Chang R, Knox J, Chang J, Woods J, Cribbs D, Pardridge W and **Sumbria RK**. A brain penetrating biologic TNF-alpha inhibitor for Alzheimer's disease. *SCCUR*, Riverside, CA, November 16<sup>th</sup> **2016**.
13. Chang R, Knox J, Chang J, Woods J, Cribbs D, Pardridge W and **Sumbria RK**. Protective effects of a brain-penetrating biologic TNF-alpha inhibitor in a mouse model of Alzheimer's Disease; *Neuroscience Symposium*, Claremont, CA, September 24<sup>th</sup> **2016**.
12. Chang R, Castillo J, Yee KL, Patel R, Benson R, Woods J, Fisher MJ and **Sumbria RK**. Interactions of murine red blood cells and brain microvascular endothelial cells; *Neuroscience Symposium*, Claremont, CA, September 24<sup>th</sup> **2016**.
11. Chang, R, Yee KL, Patel R, Benson R, Fisher MJ, **Sumbria RK**. Interactions of murine red blood cells and brain microvascular endothelial cells; *American Journal of Pharmaceutical Education* **2016**; 80 (5) Article S2.
10. **Sumbria R**, Mehr MG, Dvornikova A, Vasilevko V et al., A Systemic Inflammation Induced Mouse Model of Cerebral Microbleeds. *Arterioscler. Thromb. Vasc. Biol*. **2015**;35:A215.
9. **Sumbria R**, Boado R, Pardridge W. Neuroprotection In Stroke With A TNF- $\alpha$  Decoy Receptor – Trojan Horse Fusion Protein. *American Association of Pharmaceutical Scientists Annual Meeting*; **2012** October 14-18; Chicago, IL: Online file AAPS2012-W4031.
8. Rahman MA, Xu Y, **Sumbria R**, Weidanz JA, Bickel U. Binding and transcytosis of MHC Class 1 specific antibodies by brain-derived endothelial cells. *Pharmaceutical Sciences World Congress*; **2010** November 14-18; New Orleans, LA: Online file PSWC2010-004167.

7. Xu Y, Rahman MA, **Sumbria R**, Weidanz JA, Bickel U. Pharmacokinetics of a HLA-A2 monoclonal antibody in transgenic mice. *Pharmaceutical Sciences World Congress*; **2010** November 14-18; New Orleans, LA: Online file PSWC2010-004359.
6. **Sumbria R**, Bungay P, Bickel U. Intracerebral microdialysis to study passive blood-brain barrier permeability and neurochemical changes following cerebral ischemia/reperfusion. *Pharmaceutical Sciences World Congress*; **2010** November 14-18; New Orleans, LA: Online file PSWC2010-004281.
5. **Sumbria R**, Bungay P, Bickel U. Passive Blood-Brain Barrier Permeability and Neurochemical Changes Following Cerebral Ischemia/Reperfusion. *Barrier of the CNS Gordon Research Conference*; **2010** June 20-25; New London, NH.
4. **Sumbria R**, Bickel U. Microdialysis as a tool to study the dynamics of blood-brain barrier opening. *American Association of Pharmaceutical Scientists Annual Meeting*; **2009** November 8-12; Los Angeles, CA: Online file AAPS2009-003571.
3. **Sumbria R**, Bickel U. Assessment of blood-brain barrier damage by microdialysis probe implantation. 287.6/QQ60. Neuroscience Abstracts. (Washington D.C, MD): *Society for Neuroscience*, **2008**.Online.
2. Fowler JC, **Sumbria R**, Martinez GM. Effects of phorbol ester on adenosinergic synaptic inhibition and recovery from energy deprivation in rat hippocampal slice. 680.1/F47. Neuroscience Abstracts. (San Diego, CA): *Society for Neuroscience*, **2007**.Online.
1. Bickel U, **Sumbria R**, Hao J. Delivery of NF- $\kappa$ B decoys for therapy of stroke. 835.7/P10. Neuroscience Abstracts. (Washington D.C, MD): *Society for Neuroscience*, **2008**.Online.

#### ORAL PRESENTATIONS:

- High-affinity transferrin receptor antibody for brain drug delivery in Alzheimer's disease mouse models, *Blood-Brain Barrier Transport in Aging and Alzheimer's Disease, NIH Workshop*, April 2024.
- Biomedical Research – why, how, and who? *The Millennium School*, Surat, GJ, India, November 2022.
- Anti-transferrin receptor antibodies for brain drug delivery – where are we now? *Keck Science Departmental Seminar Series*, Claremont McKenna, Pitzer and Scripps Colleges, Claremont, CA, April 2021.
- Overcoming the blood-brain barrier for brain drug delivery. *Summer Undergraduate Research Experience Speaker Series*, Keck Graduate Institute, Claremont, CA, July 2020.
- A Brain-Penetrating Erythropoietin-Transferrin Receptor Antibody Fusion Protein for Alzheimer's Disease. *PepTalk – Recombinant Protein Therapeutics*. San Diego, CA, January 2020.
- How to PhD – Some Pearls and Tidbits. *Keck Graduate Institute Research and Social*, Keck Graduate Institute, Claremont, CA, November 2019.
- High-affinity transferrin receptor antibodies to piggyback biologics into the brain for Alzheimer's disease. *Neuroscience Speaker Series*. Keck Sciences Center, Claremont Colleges, Claremont CA, March 2019.
- Targeting the Blood-Brain Barrier Transferrin Receptor for Delivery of Biologics for Alzheimer's Disease. *Neuroscience Webinar*, 2018.
- Protective Effects of a brain-penetrating biologic TNF- $\alpha$  inhibitor in a mouse model of Alzheimer's disease. *Alzheimer's Association International Conference*. London, UK, July 2017.
- A Systemic Inflammation-Induced Mouse Model of Cerebral Microbleeds. *Casa Colina Hospital*, Pomona, CA, December 2015.
- Characterization of a systemic inflammation induced mouse model of cerebral microbleeds. *KGI Research Retreat*, Claremont, CA, January 2015.
- Quantitative estimation of blood-brain barrier opening following ischemia reperfusion using intracerebral microdialysis. *Barrier of the CNS, Gordon Research Seminar*, New London, June 2010.

#### Web Reports:

- Subacute Cerebellar Degeneration, Rare Disease Database, National Organization for Rare Disorders, 2021. URL: <https://rarediseases.org/rare-diseases/cerebellar-degeneration-subacute/>
- Podcast Features: “Breaking the Blood Brain Barrier: The Quest to Cure Neurodegeneration”. URL: <https://jefferies.com/Podcasts/episode/1699/1/32>

- Podcast Features: “Hopeless Optimism”. URL: <https://jefferies.com/Podcasts/episode/1699/1/30>

## OTHER SIGNIFICANT ACTIVITIES

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### Ad-hoc Reviewer:

Front. Drug Deliv., Acta Neuropathologica Communications, Journal of Stroke and Cerebrovascular Diseases, Biochimica et Biophysica Acta, Neurochemical Research, Behavioural Brain Research, Theranostics, Journal of Central Nervous System Disease, Brain Sciences, Journal of Pharmacy and Pharmaceutical Sciences, International Journal of Brain and Cognitive Sciences, Journal of Visualized Experiments (JoVE), Brain Injury, CNS & Neurological Disorders – Drug targets, Neuroscience & Medicine, Canadian journal of neurological sciences, PlosOne, NeuroReport, Metabolic Brain Disease, American Journal of Medicine and Medical Sciences, Research in Neuroscience

### Editorial Activities:

Review Editor, Editorial Board, CNS Drug Delivery, Frontiers in Drug Delivery

Topic Editor, Editorial Board, Pharmaceuticals, 2021-Current

Topic Editor, Front. Cell Dev. Biol. Special Issue: Brain Endothelial Cells: Future Candidates for Translational Medicine to Intercept Brain Inflammation

### Grant Review Panel:

2024, Ad-hoc Reviewer, PSI Foundation

2023, Ad-hoc Reviewer, CDMRP PRCRP CTT-BraC Panel, DoD

2021-Current, Standing Member, DMPB (formerly DDNS) Study Section, NIH (SRO: Razvan Cornea)

2021, Ad-hoc Reviewer, CSR 2021/10 ZRG1 MDCN-M (91) S The blood-brain barrier, neurovascular systems and CNS therapeutics Study Section, NIH (SRO: Linda Macarthur)

2021, Ad-hoc Reviewer, NIH Drug Discovery for the Nervous System (DDNS) Study Section (SRO: Mary Custer)

2020-2021 AHA BRAIN 1 FELLOWSHIP Peer Review Committee

2020 Wellcome Trust/DBT India Alliance

2019-2020 AHA BRAIN 1 FELLOWSHIP Peer Review Committee

2017 Grant reviewer for the Neurological Foundation of New Zealand

### Conference/Workshop Service:

Animals in Research, Chapman School of Pharmacy, July 2024, Irvine, USA

Camtasia Studio Teaching Workshop, Chapman School of Pharmacy, July 2024, Irvine, USA

Panelist, Session 3: Current BBB penetrating drug transport strategies and drug studies for Alzheimer’s Disease, Blood-Brain Barrier Transport in Aging and Alzheimer’s Disease, NIH Workshop, April 2024, USA

Biostatistics Review Session, Keck Graduate Institute, April 2022, Claremont, USA

Moderator, Session 1: Fundamentals of Brain and Kidney Physiology, Brain and Kidney Symposium, May 2020, Irvine, USA

Chair, Preclinical: Basic Therapeutics - Novel Approaches To Treating Disease Session, Alzheimer’s Association International Conference July 2017, London, UK

### Honors, Office held, and Awards:

Treasurer, Graduate Student Association at Amarillo (GSAA), 2007-2008

Student representative for Curriculum Evaluation Committee, TTUHSC, 2008-2009

Recipient of Mary Lou Clements-Mann Endowed Scholarship, 2009

Recipient of Graduate Student Association at Amarillo (GSAA) Travel Scholarship, 2009

Recipient of American Association of Pharmaceutical Scientists (AAPS) Travel Scholarship, 2009

1<sup>st</sup> position, Poster Competition in the category of Senior Scientists, Student Research Week Lubbock, Texas, March 2010

The Barriers of the CNS Gordon-Kenan Research Seminar Travelship, May 2010

Recipient of Graduate Student Association at Amarillo (GSAA) Travel Scholarship, May 2010

3<sup>rd</sup> position, Poster Competition, Ninth Annual Research Day, Amarillo, June 2010

1<sup>st</sup> position, Poster Competition, UCLA Department of Medicine Research Day, 2012  
 Associate faculty member, Associate Faculty member, F1000Prime, 2014-  
 Excellence in Research Award, Keck Graduate Institute, 2020  
 Women of Distinction Award, Chapman University, 2024  
 Paper of the Year Award, Chapman University, Department of Biomedical and Pharmaceutical Sciences, 2024

**Professional Memberships:**

2009 - Current Member, American Heart Association  
 2009 - Current Member, American Association of Pharmaceutical Scientists  
 2009 - Current Member, Society for Neuroscience  
 2010 - Current Member, International Brain Barriers Society  
 2014 - Current Member, American Association of College of Pharmacy  
 2014 - Current Associate Faculty Member, Faculty 1000 Prime  
 2016 - Current Member, International Society to Advance Alzheimer's Research and Treatment (ISTAART)

**INSTITUTIONAL COMMITTEE ASSIGNMENTS AND SERVICE**

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**Chapman University, School of Pharmacy, Irvine, California, USA**

2024- Chair, Science Committee, CUSP  
 2024- Ad-hoc Member, Director of Brain Institute Search Committee, Chapman University  
 2024- Member, Faculty Review Committee, CUSP  
 2024-2024 Ad-hoc Member, Paper of the Year Committee, CUSP  
 2023-2024 Member, CUSP Deans Search Committee, Chapman University  
 2021-Current Member, IACUC, Chapman University  
 2021-Current Student Success Advisor, CUSP  
 2021-2022 Assessment Committee, CUSP

**Keck Graduate Institute, School of Pharmacy and Health Sciences, Claremont, California, USA**

2019-2021 Member, Program Assessment Committee  
 2018-2021 Member, Research Infrastructure Committee  
 2014-2021 Interviewer, Pharm.D. Candidates  
 2018-2019 Member, Search Committee, Dean, School of Pharmacy and Health Sciences  
 2018-2019 Chair, KGI-Western Task Force  
 2018-2019 Member, Search Committee, Founding Dean, School of Medicine  
 2018-2019 Member, Faculty & Staff Development and Awards Committee  
 2017-2019 Ad-hoc Member, Student Conduct Committee  
 2017-2018 Steering Committee, Student Support and Environment, ACPE Self-Study  
 2016-2017 Chair, Scholarship, Awards, Honors, and Ceremonies Committee  
 2016-2017 Member, Pharmaceutics Search Committee  
 2016-2017 Member, Department of Biopharm. Sci, Search Committee  
 2016-2016 Ad-hoc Chair, Student Conduct Committee  
 2016-2017 Member, Student Conduct Committee  
 2014-2015 Member, Admissions Committee  
 2014-2015 Member, Scholarship, Awards, Honors, and Ceremonies Committee  
 2015-2016 Member, Search Committee, Interprofessional Education Director  
 2014-2017 Facilitator, Problem Based Learning  
 2014-2019 Faculty Mentor for Pharm.D. Students

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