

**Emily E. Scott, Ph.D.**

F. F. Blicke Collegiate Professor of Pharmacy  
 Departments of Medicinal Chemistry, Pharmacology, and Biological Chemistry  
 Biophysics and Chemical Biology Programs  
 University of Michigan  
 428 Church St., Ann Arbor, MI 48109-1065  
 (734) 764-3530  
 scottee@umich.edu

**EDUCATION AND POSTDOCTORAL TRAINING**

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2013 Visiting Scholar, Sabbatical in protein NMR methods, Laboratory of Thomas Pochapsky, Department of Chemistry, Brandeis University  
 1999 – 2004 Postdoctoral Fellow, Department of Pharmacology and Toxicology, University of Texas Medical Branch, Galveston, TX; Mentor: James R. Halpert  
 1998 – 1999 Postdoctoral Fellow, Department of Biochemistry and Cell Biology, Rice University, Houston, TX; Mentors: John S. Olson, Quentin H. Gibson  
 1998 Ph.D., Department of Biochemistry and Cell Biology, Rice University, Houston, TX; Mentors: John S. Olson, Quentin H. Gibson  
 1992 B.S., Department of Marine Biology, Texas A&M University at Galveston, Galveston, TX; Mentor: Dr. Donald A. Harper

**ACADEMIC APPOINTMENTS**

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2021 – F. F. Blicke Professor of Pharmacy, University of Michigan  
 2019 – Affiliate Professor, Department of Biological Chemistry, University of Michigan  
 2016 – Professor, Department of Medicinal Chemistry, University of Michigan  
 2016 – Professor, Department of Pharmacology, University of Michigan Medical Center  
 2016 – Affiliate Professor, Biophysics Program, University of Michigan  
 2015 – 2016 Professor, Department of Medicinal Chemistry, University of Kansas  
 2010 – 2015 Associate Professor, Department of Medicinal Chemistry, University of Kansas  
 2008 – 2016 Courtesy Faculty, Department of Chemistry, University of Kansas  
 2007 – 2016 Affiliate Faculty, Department of Molecular Biosciences, University of Kansas  
 2004 – 2010 Assistant Professor, Department of Medicinal Chemistry, University of Kansas

**FELLOWSHIPS, HONORS, AND AWARDS**

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2022 Fellow, American Society of Pharmacology and Experimental Therapeutics  
 2019 Fellow, American Association for the Advancement of Science  
 2015 MERIT Award, National Institutes of Health/NIGMS  
 2012 North American New Investigator Award in honor of James R. Gillette, The International Society for the Study of Xenobiotics  
 2011 Early Career Achievement Award, Drug Metabolism Division, American Society for Pharmacology and Experimental Therapeutics  
 2009 James R. Gillette Drug Metabolism Best Paper of 2009 in *Drug Metabolism and Disposition*  
 2007 Travel Award to attend Experimental Biology and Microsomes and Drug Oxidations Meetings, University of Kansas Cancer Center  
 2006 1st place Award, 5<sup>th</sup> Southwest P450 Meeting, Poster Presentation

2003	Postdoctoral Scientist Award, Drug Metabolism Division, American Society for Pharmacology and Experimental Therapeutics Annual Meeting
2003	Young Scientist Travel Award, American Society for Pharmacology and Experimental Therapeutics Annual Meeting
2000 – 2003	Ruth L. Kirschstein National Research Service Award (NRSA) Postdoctoral Fellowship, National Institutes of Health
1996 – 1998	NIH Training Grant Fellow, Houston Area Molecular Biophysics Predoctoral Fellowship

## PROFESSIONAL SCIENTIFIC ACTIVITIES

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### Professional Associations

Comprehensive Cancer Center, University of Michigan	2016 – present
American Association for the Advancement of Science	2013 – present
American Chemical Society	2009 – present
Drug Discovery, Delivery & Experimental Therapeutics Research Program, University of Kansas Cancer Center	2006 – 2016
International Society for the Study of Xenobiotics	2006 – present
American Society for Pharmacology and Experimental Therapeutics	2002 – present
American Society for Biochemistry and Molecular Biology	2000 – present

### Grant Peer Review

National Institutes of Health, F31/F32	2021
National Institutes of Health, MIRA program	2020
National Institutes of Health, F31/F32	2019, 2020
National Institutes of Health, SCORE program	2018
National Science Foundation	2018
Breast Cancer NOW	2017
National Institutes of Health, COBRE program	2017
National Institutes of Health, Regular reviewer for MSFA	2012 – 2016
Marsden Fund, New Zealand	2015
Worldwide Cancer Research/American Institute for Cancer Research	2014
COBRE Center in Structural Biology, University of Oklahoma	2013
National Institutes of Health, Ad hoc reviewer for XNDA, MSFA	2011
National Science Foundation, Ad hoc reviewer	2011
COBRE Center for Biomolecular Structure and Dynamics, University of Montana	2011

### Editorial Boards

ASPET Board of Publications Trustees/Publications Committee	2016 – 2022
Chair	2020 - 2022
<i>Journal of Biological Chemistry</i>	2013 – 2023
<i>Drug Metabolism Reviews</i>	2012 – 2023
<i>Drug Metabolism and Disposition</i>	2012 – present
Faculty of 1000, Pharmacology and Drug Discovery, Toxicology	2011 – 2016
<i>Toxicology and Applied Pharmacology</i>	2012 – 2014
<i>Pharmacological Reviews</i>	2010 – 2014

### Consulting

King & Spaulding, LLP	2020 – 2022
Covington & Burling, LLP	2019-2020
Genentech, South San Francisco	2015 – 2018
Pfizer, Inc., St. Louis, MO	2008, 2009

## RESEARCH SUPPORT (Peer Reviewed Only)

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### Current

#### Primary Research

R37 (MERIT) GM076343 (E. E. Scott, PI) 01/01/06– 02/28/25

National Institutes of Health/National Institute of General Medical Sciences

#### *Structural Basis of Cytochrome P450 Activity*

The objective of this proposal is to extend our structural knowledge across current boundaries by determining the first structures of several human cytochrome P450 enzymes of clinical utility, examining clinically important new P450/ligand complexes, and probing the structural relationships between cytochrome P450 enzymes and other proteins involved in catalysis.

R01 GM135346 (E. E. Scott, PI) 7/1/20 – 03/31/24

National Institutes of Health/National Institutes of General Medical Sciences

#### *Studies of human cortisol- and aldosterone-producing cytochrome P450 11B1 enzymes*

The objective is to elucidate the structural principles that control the interactions of cytochrome P450 11B enzymes with their substrates, inhibitors, and catalytic partner proteins, in order that this information can be harnessed to more effectively prevent and treat human disease.

R01 GM128508 (Jed Lampe, PI; E. E. Scott, co-I) 08/01/18 – 05/31/23

National Institutes of Health/National Institutes of General Medical Sciences

#### *The role of CYP3A7 in the disposition and toxicity of HIV inhibitors in the developing infant*

The objective of this proposal is to determine the functional consequences and mechanistic basis of the differences in HIV drug metabolism and inhibition between CYP3A7 and CYP3A4.

R01 GM130997 (Scott and Pochapsky, MPI) 01/01/19 – 11/30/23

National Institutes of Health/National Institute of General Medical Sciences

#### *Structure and dynamics of clinically relevant cytochrome P450 enzymes*

The objective is to generate the NMR assignments needed to understand cytochrome P450 interactions with their ligands and catalytic partner proteins in solution, without crystallizing each.

R01 086597 (R. Auchus, PI; E. E. Scott, consultant) 7/1/18 – 4/30/23

National Institutes of Health/National Institutes of General Medical Sciences

#### *Activation of androgen biosynthesis and drug metabolism by cytochrome b<sub>5</sub>*

The objectives of this application are to define the biochemical and biophysical nature of the b<sub>5</sub>P450 17A1 interaction, determine the rate-limiting step(s) of the 17,20-lyase reaction, and to probe allosteric sites on the complex.

P41 RR001209

2B40, 3B60, 5B12 (E. E. Scott, Subproject PI)

5/31/08 – 2/29/24

National Institutes of Health/Stanford Synchrotron Radiation Laboratory

#### *Structures of Membrane Cytochrome P450 Enzymes*

Each renewal provides 2-years of access to a Department of Energy synchrotron facility for X-ray crystallography data collection.

Training Grants

T32 132046 (Montgomery and Scott, co-PI) 07/01/19 – 06/30/24  
 National Institutes of Health/National Institutes of General Medical Sciences  
*Michigan Chemistry-Biology Interface Training Program*  
 The mission is to implement innovative approaches to training and mentoring for students working across the chemistry-biology continuum towards graduation and professional success.

**Pending**

None.

**Completed**

1560096 (Cherie Dotson, Director; E. E. Scott, co-Director) 03/01/19-02/28/22  
 National Science Foundation/Division of Biological Infrastructure  
*Interdisciplinary REU in the Structure and Function of Proteins*  
 The objective of this program is to expose undergraduate students to the nature of interdisciplinary research within the framework of protein structure-function studies.

R01 GM123253 (W. Backes, PI; E. E. Scott, co-I) 4/1/17 – 2/28/21  
 National Institutes of Health/National Institutes of General Medical Sciences  
*Interactions among P450 System Proteins and their Distribution into Endoplasmic Reticulum Microdomains*  
 The objective of this proposal is to better understand how proteins of the P450 monooxygenase system are organized in the ER and the role of P450-P450 interactions on their function.

P30 GM110761-01 (R. P. Hanzlik, PI) 08/01/14 – 06/30/19  
 National Institutes of Health/National Institutes of General Medical Sciences  
*Protein Structure and Function*  
 The objective was to continue to grow a critical mass of investigators focused on protein structure and function among four Kansas campuses by supporting small projects and core laboratories. E. E. Scott served a) on the administrative Leadership Committee with specific responsibilities for the Writing Program, b) as Chair of the Protein Structure Lab Steering Committee, and c) as mentor for a junior faculty pilot project. Grant continued, but E. E. Scott changed institutions in August 2016.

E. E. Scott, PI 2019  
 University of Michigan Biosciences Initiative  
*Upgrade of essential NMR instrumentation in BioNMR Core Lab*  
 The objective of this proposal is to upgrade and renovate two high-field NMR instruments and provide other staff and user support for the BioNMR core laboratory.

R01 GM102505 (E. E. Scott and J. Aubé, co-PI) 7/1/12 – 3/31/17  
 National Institutes of Health/National Institutes of General Medical Sciences  
*Structure and Function of Cytochrome P450 17A1*  
 The objective was to understand the mechanisms controlling the multifunctional reactions of cytochrome P450 17A1 through convergent structural, synthetic, and functional approaches.

- R01 GM076343 (E. E. Scott, PI) 03/01/11 – 2/28/15  
 National Institutes of Health/National Institute of General Medical Sciences  
*Structural Basis of Cytochrome P450 Activity*  
 The objective of this proposal was to expand, test, and apply our understanding of the unique relationships between the structures of human cytochrome P450 2A and 2E enzymes and their ligand selectivity. Renewed as current R37 grant listed above.
- 66296 (E. E. Scott, PI) 2/15/10 – 6/30/13  
 Institute for Advancing Medical Innovation  
*Advancement of compounds targeting human lung cytochrome P450 2A13 for the prevention of nicotine-associated lung cancer*  
 These studies characterized the solubility, toxicity, metabolic stability, and preliminary pharmacokinetics of benzylmorpholine compounds selective for cytochrome P450 2A13 inhibition.
- 68944 (E. E. Scott, PI) 12/1/11 – 11/30/12  
 University of Kansas Cancer Center  
*Inhibitors of Cytochrome P450 17A1 to Treat Metastatic Prostate Cancer*  
 This proposal supported characterization of the structure and function of CYP17A1 with substrates and current inhibitors and the use of this information to design new drugs for metastatic castration resistant prostate cancer with improved efficacy and selectivity.
- P20 RR017708 (R. P. Hanzlik, COBRE PI) 4/1/10 – 3/31/12  
 50342, 50454 (E. E. Scott, subproject PI)  
 National Institutes of Health/National Center for Research Resources  
*Structure and Function of CYP17A1, Critical Enzyme in Human Androgen Biosynthesis*  
 The structure of a CYP17A1/inhibitor complex was determined to characterize how cytochrome P450 17A1 interacts with inhibitors then in clinical trials for prostate cancer and to provide a basis for improving these compounds.
- GM076343-04S1 (E. E. Scott, PI) 7/17/09 – 12/31/10  
 National Institutes of Health/National Institute of General Medical Sciences  
*Administrative Supplement to Structural Basis of Cytochrome P450 2A13 Activity*  
 Application of solution NMR techniques to P450-ligand interactions.
- R01 GM076343 (E. E. Scott, PI) 1/1/06 – 12/31/10  
 National Institutes of Health/National Institute of General Medical Sciences  
*Structural Basis of Cytochrome P450 2A13 Activity*  
 The objective of the proposed studies was to define unique relationships between the structure of human cytochrome P450 2A13 and its specific metabolic activities relative to its role in nicotinederived procarcinogen activation and potential inhibition in preventing lung cancer.
- 2506011 (E. E. Scott, PI) 7/1/09 – 6/30/10  
 General Research Fund, Kansas University Center for Research  
*Chemoprevention of tobacco-related lung cancer by selective inhibition of cytochrome P450 2A13*  
 The objective was to characterize a family of compounds that inhibit cytochrome P450 2A13, but not cytochrome P450 2A6, to identify one or two of the best compounds toward a long-term goal of developing a compound that can be used as a chemopreventative in human smokers.

R01 GM079447 (PI: J. Limburg; E. E. Scott, Co-I) 5/1/07 – 5/1/10  
 National Institutes of Health/National Institute of General Medical Sciences  
*Mechanism and Inhibition of Collagen Prolyl-4-hydroxylases*  
 The objective was to elucidate the mechanism of peptidyl proline hydroxylation by both human and anthrax prolyl-4-hydroxylase. The role of E. E. Scott was as crystallographer to determine protein structures, one of the three specific aims.

R01 GM076343-04S2 (E. E. Scott, PI) 1/1/09-12/31/09 (*declined*)  
 National Institutes of Health/National Institute of General Medical Sciences *Minority*  
*Supplement to Structural Basis of Cytochrome P450 2A13 Activity*  
 Fund Pharm.D. student to apply solution NMR techniques to P450-ligand interactions.

No grant number. (E. E. Scott, PI) Higuchi 6/09  
 Biosciences Center  
*Nanodrop 2000 UV-Vis Spectrophotometer*  
 Provided 80% of instrument purchase price.

49610 (E. E. Scott, PI) 1/1/08 – 2/22/09  
 Kansas Masonic Research Institute  
*Cytochrome P450 2A13 Inhibitors for Preventing Nicotine-Induced Lung Cancer*  
 The objective of the proposed studies was to identify compounds that selectively inhibit cytochrome P450 2A13, but not cytochrome P450 2A6.

2302006 (E. E. Scott, PI) 2/14/06 – 3/21/08  
 New Faculty General Research Fund, Kansas University Center for Research  
*Crystallization of Cytochrome P450 2E1 as Preliminary Data for NIH R01 Application*  
 The proposal funded part of a postdoctoral fellow to initiate crystallization trials of a new protein under study in the laboratory.

P20 RR017708 (R.P. Hanzlik, COBRE PI) 7/1/04 – 6/30/07  
 31218, 31219, and 31220 (E. E. Scott, Subproject PI)  
 National Institutes of Health/National Center for Research Resources  
*Structure-Function of Cytochrome P450 2A and 2E Enzymes.*  
 The goal was to elucidate the structural basis for the differing but overlapping substrate specificities of the human xenobiotic-metabolizing cytochrome P450 2A and 2E enzymes.

No grant number. (E. E. Scott, PI) 2/2/06  
 Higuchi Biosciences Center  
*AKTA Purifier Purification System*  
 Provided ~50% of instrument purchase price.

## PUBLICATIONS

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### Journal Articles (corresponding author underlined)

1. Burris-Hiday, S.D., Loomis, C.L., Richard, A.M., Scott, E.E. (2023) Generation of human steroidogenic cytochrome P450 enzymes for structural and functional characterization *Meth. Enzymol.* (*in press*)
2. Liu, J., Offei, S.D., Yoshimoto, F.K., Scott, E.E. (2023) Pyridine-containing substrate analogs are restricted from accessing the human cytochrome P450 8B1 active site by tryptophan 281 *J. Biol. Chem.* 299:103032.

3. Petrunak, E.M., Bart, A.G., Peng, H-W., Auchus, R.J., and Scott, E.E. (2023) Human cytochrome P450 17A1 structures with metabolites of prostate cancer drug abiraterone reveal substrate-binding plasticity and a second binding site. *J. Biol. Chem.* 299:102999.
4. Roberts, A.G., Stevens, J.C., Szklarz, G.D., Scott, E.E., Kumar, S., Shah, M.B., and Halpert, J.R. (2023) Four decades of CYP2B research: from protein adducts to protein structures and beyond. *Drug Metab. Dispos.* 51:111-122.
5. Liu, J., Carlson, H.A., and Scott, E.E. (2022) Cytochrome P450 8B1 structure and function: supporting drug design for non-alcoholic fatty liver disease and diabetes. *J. Biol. Chem.* 298:102344.
6. Loomis, C.L., Brixius-Anderko, S., and Scott, E.E. (2022) Redox partner adrenodoxin alters cytochrome P450 11B1 ligand binding and inhibition. *J. Inorg. Biochem.* 235:11934.
7. Bart, A.G., Morias, G., Vangala, V.R., Loadman, P.M., Pors, K. and Scott, E.E. (2022) Cytochrome P450 binding and bioactivation of tumor-targeted duocarmycin agents *Drug Metab. Dispos.* 50:49-57.
8. Brixius-Anderko, S. and Scott, E.E. (2021) Aldosterone synthase structure with Cushing's disease drug LCI699 highlights avenues for selective CYP11B drug design *Hypertension* 78:751-759.
9. Brixius-Anderko, S. and Scott, E.E. (2021) Structural and functional insights into aldosterone synthase interaction with its redox partner protein adrenodoxin *J. Biol. Chem.* 296:100794.
10. Vogt, C.D., Bart, A.G., Yadav, R., Scott, E.E., and Aubé, J. (2021) Effects of fluorine substitution on steroid metabolism by cytochromes P450 17A1 and 21A2 *ACS Chem. Bio.* 19:7664-7669.
11. Burris-Hiday, S.D. and Scott, E.E. (2021) Steroidogenic cytochrome P450 17A1 structure and function *Mol. Cell. Endocrinol.* 528:111261-111273.
12. Lu, J., Bart, A.G., Wu, Q. Criscione, K.R. McLeish, Scott, E.E., and Grunewald, G.L. (2020) Structure-based drug design of bisubstrate inhibitors of phenylethanolamine N-methyltransferase possessing low nanomolar affinity at both substrate binding domains *J. Med. Chem.* 63:13878-13898.
13. Wróbel T.M., Rogova O., Andersen K.L., Yadav R., Brixius-Anderko S., Scott E.E., Olsen L., Jørgensen F.S., and Björkling F. (2020) Discovery of novel non-steroidal cytochrome P450 17A1 inhibitors as potential prostate cancer agents *Int. J. Mol. Sci.* 21:4868-4879.
14. Russell, L.E., Schleiff, M.A., Gonzalez, E., Bart, A.G., Broccatelli, F., Durmus, S., Hartman, J.H., Humphreys, W.G., Lauschke, V.M., Martin, I., Nichols, C., Nwabufo, C., Prasad, B., Scott, E.E., Segall, M., Takahashi, R., Taub, M.E., and Sodhi, J.K. (2020) Advances in the study of drug metabolism *Drug Metab. Rev.* 295:5640-5653.
15. Bart, A.G., Harris, K. L., Gillam, E.M.J., and Scott, E.E. (2020) Structure of an ancestral mammalian family 1B1 cytochrome P450 with increased thermostability *J. Biol. Chem.* 295:5640-5653.
16. van Rooyen, D., Yadav, R., Scott, E.E., and Swart, A.C (2020) CYP17A1 exhibits 17 $\alpha$ -hydroxylase/17,20-lyase activity towards 11 $\beta$ -hydroxyprogesterone and 11-ketoprogesterone metabolites in the C11-oxy backdoor pathway. *J. Steroid Biochem. Mol. Biol.* 199:105614
17. Bart, A.G., Takahashi, R.H., Wang, X. and Scott, E.E. (2020) Human cytochrome P450 1A1 adapts active site to nonplanar substrate *Drug Metab. Dispos.* 48:86-92.
18. Brixius-Anderko, S. and Scott, E.E. (2019) Structure of human cortisol-producing cytochrome P450 11B1 bound to the breast cancer drug fadrozole provides insights for drug design *J. Biol. Chem.* 294:453-460.
19. Bart, A.G. and Scott, E.E. (2018) Structures of human cytochrome P450 1A1 with bergamottin and erlotinib reveal active-site modifications for binding of diverse ligands *J. Biol. Chem.* 293:19201-19210.
20. Yadav, R. and Scott, E.E. (2018) Endogenous insertion of non-native metalloporphyrins into human membrane cytochrome P450 enzymes *J. Biol. Chem.* 293:16623-16634.

21. Godamudunage, M.P., Grech, A.M., and Scott, E.E. (2018) Comparison of Antifungal Azole Interactions with Adult Cytochrome P450 3A4 vs. Neonatal Cytochrome P450 3A7 *Drug Metab. Dispos.* 46:1329-1337.
22. Fehl, C., Vogt, C., Yadav, R. Li, K., Scott, E.E. and Aubé, J. (2018) Structure-based design of inhibitors with improved selectivity for steroidogenic cytochrome P450 17A1 over cytochrome P450 21A2. *J. Med. Chem.* 61:4946-4960.
23. Bart, A.G. and Scott, E.E. (2017) Structural and functional effects of cytochrome  $b_5$  interactions with human cytochrome P450 enzymes. *J. Biol. Chem.* 292:20818-20833.
24. Petrunak, E.M., Rogers, S.A., Aubé, J., and Scott, E.E. (2017) Structural and functional evaluation of clinically relevant inhibitors of cytochrome P450 17A1 (CYP17A1). *Drug Metab. Dispos.* 45:635-645.
25. Scott, E.E. (2017) w versus w-1 hydroxylation: Cytochrome P450 4B1 sterics make the call. *J. Biol. Chem.* 292:5622-5623.
26. Li, A., Yadav, R., White, J.K., Herroon, M.K., Callahan, B.P., Podgorski, I., Turro, C., Scott, E.E., and Kodanko, J.J. (2017) Illuminating cytochrome P450 binding: Ru(II)-caged inhibitors of CYP17A1. *Chem. Commun. (Camb.)* 53:3673-3676.
27. Yadav, R., Petrunak, E.M., Estrada, D.F., and Scott, E.E. (2017) Structural insights into the function of steroidogenic cytochrome P450 17A1. *Mol. Cell. Endocrinol.* 441:68-75.
28. Bonomo, S., Hansen, C.H., Petrunak, E.M., Scott, E.E., Styrisshave, B., Jorgensen, F. S., and Olsen, L. (2016) Promising tools in prostate cancer research: Selective non steroidal cytochrome P450 17A1 inhibitors. *Nat. Sci. Reports* 6:29468-29479.
29. Scott, E.E., Wolf, R.C., Otyepka, M., Humphreys, S.C., Reed, J.R., Henderson, C.J., McLaughlin, L.A., Paloncýová, M., Navrátilová, V., Berka, K., Anzenbacher, P., Dahal, U.P. Barnaba, C., Brozik, J.A., Jones, J.P., Estrada, D.F., Laurence, J.S., Park, J.W., and Backes, W.L. (2016) The role of protein-protein and protein-membrane interactions on P450 function. *Drug Metab. Dispos.* 44: 576-590.
30. Estrada, D.F., Laurence, J.S., and Scott, E.E. (2016) Cytochrome P450 17A1 interactions with the FMN domain of its reductase as characterized by NMR. *J. Biol. Chem.* 291:33904003.
31. Petrunak, E.M., DeVore, N.M., Porubsky, P.R., and Scott, E.E. (2014) Structures of human steroidogenic cytochrome P450 17A1 with substrates. *J. Biol. Chem.* 289: 32952-32964.
32. Estrada, D.F., Skinner, A.L., Laurence, J.S., and Scott, E.E. (2014) Human cytochrome P450 17A1 conformational selection: Modulation by ligand and cytochrome  $b_5$ . *J. Biol. Chem.* 289:14310-14320.
33. Johnson, E.F., Connick, J.P., Reed, J.R., Backes, W.L., Desai, M.C., Xu, L., Estrada, D.F., Laurence, J.S. and Scott, E.E. (2014) Correlating Structure and Function of Drug Metabolizing Enzymes: Progress and Ongoing Challenges. *Drug Metab. Dispos.* 42:9-22.
34. Estrada, D.F., Laurence, J.S., and Scott, E.E. (2013) Substrate-modulated cytochrome P450 17A1 and cytochrome  $b_5$  interactions revealed by NMR. *J. Biol. Chem.* 288:17008-17018.
35. Blake, L.C., Roy, A., Neul, D., Schoenen, F.J., Aubé, J. and Scott, E.E. (2013) Benzylmorpholine analogs as selective inhibitors of lung cytochrome P450 2A13 for the chemoprevention of lung cancer in tobacco users. *Pharm. Res.* 30: 2290-2302.
36. Walsh, A.A., Szklarz, G.D. and Scott, E.E. (2013) Human cytochrome P450 1A1 structure and utility in understanding drug and xenobiotic metabolism. *J. Biol. Chem.* 288:1293212943.
37. DeVore, N.M. and Scott, E.E. (2012) Nicotine and 4-(methylnitrosamino)-1-(3-pyridyl)-1butanone (NNK) binding and access channel in human cytochrome P450 2A6 and 2A13 enzymes. *J. Biol. Chem.* 287:26576-26585.
38. Stephens, E.S., Walsh, A.A., and Scott, E.E. (2012) Evaluation of inhibition selectivity for human cytochrome P450 2A enzymes. *Drug Metab. Dispos.* 40:1797-1802.
39. DeVore, N.M. and Scott, E.E. (2012) Cytochrome P450 17A1 structures with prostate cancer drugs abiraterone and TOK-001. *Nature* 482:116-119.
40. DeVore, N.M., Meneely, K.M., Bart, A.G., Stephens, E.S., Battaile, K.P., and Scott, E.E. (2012) Structural comparison of cytochromes P450 2A6, 2A13, and 2E1 with pilocarpine. *FEBS J.* 279:1621-1631.



41. Reed, T., Lushington, G.H., Xia, Y., Hirakawa, H., Mure, M., Scott, E.E., and Limburg, J. (2010) Crystal structure of histamine dehydrogenase from *Nocardioides simplex* *J. Biol. Chem.* 285:25782-25791.
42. Porubsky, P.R., Battaile, K.P., and Scott, E.E. (2010) Human cytochrome P450 2E1 structures with fatty acid analogs reveal unexpected binding mode *J. Biol. Chem.* 285:22282-22290.
43. Swanson, H.I., Njar, V.C.O., Yu, Z., Castro, D.J., Gonzalez, F.J., Williams, D.E., Huang, Y., Kong, A-N.T., Doloff, J.C., Ma, J., Waxman, D.J., and Scott, E.E. (2010) Targeting drug metabolizing enzymes for effective chemoprevention and chemotherapy. *Drug Metab. Dispos.* 38:539-544.
44. Culpepper, M.A., Scott, E.E., and Limburg, J. (2009) Crystal structure of prolyl 4-hydroxylase from *Bacillus anthracis*. *Biochemistry* 49:124-133.
45. DeVore, N.M., Smith, B.D., Wang, J.L., Lushington, G.H., and Scott, E.E. (2009) Key residues controlling binding of diverse ligands to human cytochrome P450 2A Enzymes. *Drug Metab. Dispos.* 37:1319-1327.
46. Porubsky, P.R., Meneely, K.M., and Scott, E.E. (2008) Structures of human cytochrome P450 2E1: Insights into the binding of inhibitors and both small molecular weight and fatty acid substrates. *J. Biol. Chem.* 283:33698-33707.
47. DeVore, N.M., Smith, B.D., Urban, M.J., and Scott, E.E. (2008) Key residues controlling phenacetin metabolism by human cytochrome P450 2A enzymes. *Drug Metab. Dispos.* 36:2582-2590.
48. Reed, T.M., Hirakawa, H., Mure, M., Scott, E.E., and Limburg, J. (2008) Expression, purification, crystallization and preliminary X-ray studies of histamine dehydrogenase from *Nocardioides simplex*. *Acta Crystallogr. F* 64:788-791.
49. Miller, M.A., Scott, E.E., and Limburg, J.L. (2008) Expression, purification, crystallization, and preliminary X-ray studies of prolyl-4-hydroxylase from *Bacillus anthracis*. *Acta Crystallogr. F* 64:785-787.
50. Porubsky, P.R., Scott, E.E., and Williams, T.D. (2008) *p*-Dimethylaminocinnamaldehyde derivatization for colorimetric detection and HPLC-UV/Vis-MS/MS identification of indoles. *Arch. Biochem. Biophys.* 475:14-17.
51. Schlicht, K.E., Michno, N., Smith, B.D., Scott, E.E., and Murphy, S.E. (2007) Functional characterization of CYP2A13 polymorphisms. *Xenobiotica.* 37:1439-1449.
52. Smith, B.D., Sanders, J.L., Porubsky, P.R., Lushington, G.H., Stout, C.D., and Scott, E.E. (2007) Structure of the human lung cytochrome P450 2A13. *J. Biol. Chem.* 282:17306-17313.
53. Scott E.E. and Halpert J.R. (2005) Structures of cytochrome P450 3A4. *Trends in Biochem. Sci.* 30:5-7.
54. Li W., Liu H., Scott E.E., Grater F., Halpert J.R., Luo X., Shen J., and Jiang H. (2005) Possible pathway(s) of testosterone egress from the active site of cytochrome P450 2B1: A steered molecular dynamics simulation. *Drug Metab Dispos.* 33:910-919.
55. Honma W., Li W., Liu H., Scott E.E., and Halpert J.R. (2005) Functional role of residues in the helix B' region of cytochrome P450 2B1. *Arch. Biochem. Biophys.* 435:157-165.
56. Scott E.E., White M.A., He Y.A., Johnson E.F., Stout C.D., and Halpert J.R. (2004) Structure of mammalian cytochrome P450 2B4 complexed with 4-(4-chlorophenyl)imidazole at 1.9 Å resolution: Insight into the range of P450 conformations and coordination of redox partner binding. *J. Biol. Chem.* 279:27294-27301.
57. Scott E.E., Liu H., He Y.Q., Li W., and Halpert J.R. (2004) Mutagenesis and molecular dynamics suggest structural and functional roles for residues in the N-terminal portion of the cytochrome P450 2B1 I helix. *Arch Biochem Biophys.* 423:266-276.
58. Scott E.E., He Y.A., Wester M.R., White M.A., Chin C.C., Halpert J.R., Johnson E.F., and Stout C.D. (2003) An open conformation of mammalian cytochrome P450 2B4 at 1.6 Å resolution, *Proc. Nat. Acad. Sci. U.S.A.* 100:13196-13201.
59. Kumar S., Scott E.E., Liu H., and Halpert J.R. (2003) A rational approach to re-engineer cytochrome P450 2B1 regioselectivity based on the crystal structure of P450 2C5. *J. Biol. Chem.* 278:17178-17184.

60. Scott E.E., He Y.Q., and Halpert J.R. (2002) Substrate routes to the buried active site may vary among cytochromes P450: Mutagenesis of the F-G region in P450 2B1. *Chem. Res. Tox.* 11:1407-1413.
61. Scott E.E., Spatzenegger M., and Halpert J.R. (2001) A truncation of 2B subfamily cytochromes P450 yields increased expression levels, increased solubility, and decreased aggregation while retaining function. *Arch. Biochem. Biophys.* 395:57-68.
62. Domanski T.L., He Y.Q., Scott E.E., Wang Q., and Halpert J.R. (2001) The role of cytochrome 2B1 substrate recognition site residues 115, 294, 297, 298, and 362 in the oxidation of steroids and 7-alkoxycoumarins. *Arch. Biochem. Biophys.* 394:21-28.
63. Liong E.C., Dou Y., Scott E.E., Olson J.S., and Phillips Jr. G.N. (2001) Water-proofing the heme pocket: role of proximal amino acid side chains in preventing hemin loss from myoglobin. *J. Biol. Chem.* 276:9093-9100.
64. Scott E.E., Gibson Q.H., and Olson J.S. (2001) Mapping pathways for ligand entry into and exit from myoglobin. *J. Biol. Chem.* 276:5177-5188.
65. Scott E.E., Paster E.V., and Olson J.S. (2000) The stabilities of mammalian apomyoglobins vary over a 600-fold range and can be enhanced by comparative mutagenesis. *J. Biol. Chem.* 35:27129-27136.
66. Krzywda S., Murshudov G.N., Brzozowski A.M., Jaskolski M., Scott E.E., Klizas S.A., Gibson Q.H., Olson J.S., and Wilkinson A.J. (1998) Stabilizing bound O<sub>2</sub> in myoglobin by valine 68 (E11) to asparagine substitution. *Biochemistry* 37:15896-15907.
67. Scott E.E. and Gibson Q.H. (1997) Ligand migration in sperm whale myoglobin. *Biochemistry* 36:11909-11917.

### U.S. Patents

- US8598165 Morpholines as Selective Inhibitors of Cytochrome P450 2A13 (2007)  
 US9611270 Novel prodrugs of C17-heteroaryl steroidal CYP17 inhibitors/antiandrogens: Synthesis, in vitro biological activities, pharmacokinetics and antitumor activity (2015)

### Book Chapters

1. Scott, E.E. and Godamudunage, M. (2018) Structures of human cytochrome P450 enzymes: Variations on a theme *in* O<sub>2</sub>-Dependent Heme Enzymes. Ikeda Saito, M. and Raven, E., eds. Published by Royal Society of Chemistry.

## PRESENTATIONS

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### Invited Presentations at Meetings

1. 24<sup>th</sup> International Symposium on Microsomes and Drug Oxidations/13<sup>th</sup> International Meeting of the International Society for the Study of Xenobiotics, Seattle, WA (2022).
2. International Conference on Cytochrome P450, Washington, D.C. (2022)
3. North American ISSX/JSSX Meeting, Waikoloa, Hawaii (2020); *Cancelled due to COVID19*
4. Microsomes and Drug Oxidations, Prague, Czech Republic (2020); *Cancelled due to COVID19*
5. Experimental Biology, ASPET Session "Emerging Approaches to Drug Metabolism", San Diego, CA (2020); *Cancelled due to COVID19*
6. 12<sup>th</sup> International Society for the Study of Xenobiotics International Meeting, Portland, OR (2019)
7. American Association of Pharmaceutical Scientists Rocky Mountain Discussion Group Annual Meeting, Hillsboro, OR (2019)
8. 21<sup>st</sup> International Conference on Cytochrome P450, Brisbane, Australia (2019)
9. 22<sup>nd</sup> Microsomes and Drug Oxidations/33<sup>rd</sup> Japanese Society for the Study of Xenobiotics Meeting, Kanazawa, Japan (2018)
10. 2<sup>nd</sup> Gateway NMR Conference, Columbus, OH (2017)

11. 20<sup>th</sup> International Conference on Cytochromes P450, Dusseldorf, Germany (2017)
12. Great Lakes Drug Metabolism Discussion Group, Kalamazoo, MI (2017)
13. 21<sup>st</sup> International Symposium on Microsomes and Drug Oxidations, Davis, CA (2016)
14. Frontiers in Biomedical Research, Center for Protease Research, North Dakota State University, Fargo, ND (2016)
15. 17<sup>th</sup> Adrenal Cortex Conference, Boston, MA (2016)
16. Metals in Biology, RIKEN Symposium, Wako, Japan (2015)
17. 19<sup>th</sup> International Conference on Cytochromes P450, Tokyo, Japan (2015)
18. Delaware Valley Drug Metabolism Discussion Group, Langhorne, PA (2015)
19. Experimental Biology, ASPET Session "Role of protein-protein and protein-membrane interactions on P450 function", Boston, MA (2015)
20. Gordon Research Conference on Drug Metabolism, Holderness, New Hampshire (2014)
21. 20<sup>th</sup> International Symposium on Microsomes and Drug Oxidations, Stuttgart, Germany (2014)
22. 10<sup>th</sup> International Society for the Study of Xenobiotics Meeting, Toronto, Canada (2013)
23. 16<sup>th</sup> International Conference on Drug-Drug Interactions, Seattle, WA (2013)
24. 18<sup>th</sup> International Conference on Cytochromes P450: Biochemistry, Biophysics, and Biotechnology, Seattle, WA (2013)
25. Central Region IDeA Conference, Kansas City, MO (2013)
26. 1<sup>st</sup> Annual Symposium on Structural Biology, Oklahoma Center of Biomedical Research Excellence in Structural Biology, The University of Oklahoma, Norman, OK (2013)
27. Experimental Biology, ASPET Session "Correlating Structure and Function of Drug Metabolizing Enzymes: An Ongoing Challenge", Boston, MA (2013)
28. 245<sup>th</sup> American Chemical Society National Meeting, Young Investigators Symposium, New Orleans, LA (2013)
29. 18<sup>th</sup> North American International Society for the Study of Xenobiotics Annual Meeting, Dallas, TX (2012)
30. 18<sup>th</sup> North American International Society for the Study of Xenobiotics Annual Meeting, Dallas, TX (2012) Award lecture
31. Gordon Research Conference on Drug Metabolism, Holderness, New Hampshire (2012)
32. 19<sup>th</sup> Microsomes and Drug Oxidations and 12<sup>th</sup> European International Society for the Study of Xenobiotics Joint Meeting, Noordwijk aan Zee, the Netherlands (2012)
33. 17<sup>th</sup> International Conference on Cytochrome P450, Manchester, UK (2011)
34. ASPET Drug Metabolism Division Early Career Achievement Award Lecture, Experimental Biology, Washington D.C. (2011)
35. 18<sup>th</sup> International Symposium on Microsomes and Drug Oxidations, Beijing, China (2010)
36. Midwest Enzyme Chemistry Conference, Chicago, IL (2009)
37. 16<sup>th</sup> International Conference on Cytochrome P450, Okinawa, Japan (2009)
38. Great Lakes Regional ACS Meeting, Chicago, IL (2009)
39. 7<sup>th</sup> Southwest P450 Meeting, Navasota, TX (2009)
40. Great Lakes Drug Metabolism Discussion Group Meeting, Lincolnshire, IL (2009)
41. 9<sup>th</sup> Winter Conference on Medicinal & Bioorganic Chemistry, Steamboat Springs, CO (2009)
42. 5<sup>th</sup> Southwest P450 Meeting, Navasota, TX (2007)
43. 16<sup>th</sup> International Symposium on Microsomes and Drug Oxidations, Budapest, Hungary (2006)
44. Microsomes and Drug Oxidations, Mainz, Germany (2004)
45. 4<sup>th</sup> Southwest P450 Meeting, Navasota, TX (2004)
46. Gordon Research Conference on Drug Metabolism, Holderness, New Hampshire (2003)
47. 13<sup>th</sup> International Congress of Cytochromes P450, Prague, Czech Republic (2003)
48. 3<sup>rd</sup> Southwest Cytochrome P450 Conference, Navasota, TX (2003)
49. American Society for Pharmacology and Experimental Therapeutics, Drug Metabolism Division, at Experimental Biology Annual Meeting (2003)
50. 1<sup>st</sup> Southwest P450 Meeting, Navasota, TX (2001)
51. American Society of Biochemistry and Molecular Biology Annual Meeting, Boston, MA (2000)

**Invited Presentations at Companies and Academic Institutions**

1. P450 Researcher Groups from Universities of Buffalo, North Carolina (Chapel Hill), Pittsburgh, Colorado, Case Western, and Albany College (2022)
2. University of Michigan, Division of Metabolism, Endocrinology, and Diabetes (2021)
3. New Mexico University, Biochemistry Department, Omdahl Memorial Lecture (2021)
4. Biomedical/Pharmaceutical Research Panel, Great Lakes Pharmacy Conference (2021)
5. University of Illinois Urbana-Champaign, Department of Biochemistry (2021)
6. University of Michigan Rogel Cancer Center, Developmental Therapeutics (2021)
7. Kansas City University, Basic Sciences Department (2020)
8. University of Florida at Gainesville, College of Pharmacy (2020)
9. National Taiwan University, College of Pharmacy (2019)
10. Emory University, Department of Pharmacology (2019)
11. University of Michigan, American Chemical Society Medicinal Chemistry Student Chapter Meeting (2018)
12. Chemical Biology Interface Symposium, University of Michigan (2018)
13. Biophysics Symposium, University of Michigan (2018)
14. Division of Hematology/Oncology Research Conference (2018)
15. REU Program, University of Michigan (2017)
16. LifeArc (2017)
17. University of Michigan, Structural Biology Seminar Series (2017)
18. Wayne State University, Department of Chemistry (2017)
19. University of Michigan, American Chemical Society Medicinal Chemistry Student Chapter Meeting (2016)
20. University of Michigan, Department of Biological Chemistry (2016)
21. American Chemical Society Medicinal Chemistry Symposium, Ann Arbor, MI (2016)
22. University of Minnesota, Department of Medicinal Chemistry (2016)
23. University of Illinois, Department of Medicinal Chemistry and Pharmacognosy (2015)
24. Genentech, South San Francisco, CA (2015)
25. Kansas City Area Life Sciences Institute Regional Translational Medicine Meeting, Lawrence, KS (2015)
26. University of Michigan, Department of Medicinal Chemistry (2015)
27. Louisiana State University Health Science Center, Department of Pharmacology and Experimental Therapeutics (2014)
28. Rice University, Department of Biochemistry and Cell Biology, Houston, TX (2013)
29. Boehringer-Ingelheim, Ridgefield, CT (2013)
30. University of Texas Health Science Center at San Antonio, Department of Biochemistry and Cancer Center (2013)
31. University of Alabama at Birmingham, Department of Pharmacology and Toxicology (2013)
32. University of Missouri-Kansas City, School of Biological Sciences (2013)
33. West Virginia University, Randolph Cancer Center (2012)
34. Brandeis University, Department of Chemistry (2012)
35. University of Pennsylvania, Department of Pharmacology (2012)
36. University of Kansas Medical Center, Department of Pharmacology, Toxicology, and Therapeutics (2012)
37. University of Mississippi, Department of Medicinal Chemistry (2012)
38. Institute for Reproductive Health & Regenerative Medicine, University of Kansas Medical School, Department of Pathology (2012)
39. Johns Hopkins University, Department of Pharmacology and Molecular Sciences (2012)
40. John L. Omdahl Memorial Lecture, Cellular and Molecular Basis of Disease Seminar Series, The University of New Mexico Health Science Center (2012)
41. Higuichi Bioscience Center Science Talks (2012)
42. University of Alabama, Department of Chemistry (2011)
43. Benedictine College, Department of Chemistry and Biochemistry (2011)
44. The Wadsworth Center, NY State Department of Health (2011)

45. University of Utah, Department of Pharmacology and Toxicology (2010)
46. Washburn University, Department of Chemistry (2010)
47. University of Missouri, Kansas City, Department of Pharmacology and Toxicology (2010)
48. Kansas State University, Department of Biochemistry (2010)
49. Gilead, Foster City, CA (2010)
50. University of Colorado Health Sciences Center, Department of Biochemistry & Molecular Genetics (2009)
51. University of Missouri-Kansas City, Division of Cell Biology and Biophysics (2009)
52. University of Tohoku, Sendai, Japan (2009)
53. Pfizer, Inc., St. Louis, MO (2009)
54. Pfizer, Inc., St. Louis, MO (2009)
55. Pfizer, Inc., St. Louis, MO (2009)
56. Theravance, Inc., South San Francisco, CA (2007)
57. University of Iowa, Department of Medicinal Chemistry, Iowa City, IA (2007)
58. Cancer Center Research Symposium, University of Kansas Medical Center, Kansas City, KS (2007)
59. University of Minnesota Cancer Center, Carcinogenesis and Chemoprevention Program, Minneapolis, MN (2007)
60. Rice University, Department of Biochemistry and Cell Biology, Houston, TX (2006)
61. University of Kansas Medical Center, Department of Pharmacology, Toxicology, and Therapeutics, Kansas City, KS (2006)
62. William Jewell College, Department of Biology, Liberty, MO (2006)
63. University of Kansas, Department of Molecular Biosciences, Lawrence, KS (2006)
64. University of Kansas, Department of Pharmaceutical Chemistry, Lawrence, KS (2006)
65. Iowa State University, Department of Biochemistry, Biophysics, and Molecular Biology, Ames, IA (2006)
66. Oklahoma University, Department of Chemistry and Biochemistry, Normal, OK (2006)
67. Vanderbilt University, Division of Clinical Pharmacology, Nashville, TN (2005)
68. University of Michigan, Department of Pharmacology, Ann Arbor, MI (2005)
69. University of Kansas Medical Center, Department of Biochemistry and Molecular Biology, Kansas City, MO (2005)
70. Wichita State University, Department of Chemistry, Wichita, KS (2004)
71. From Cloning to Crystallization Workshop, Kansas University, Lawrence, KS (2003)
72. NIEHS Toxicology Center Seminar Series, Galveston, TX (2001)

## SERVICE

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### International

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|-------------|---|
| 2022        | Session co-chair, Advances in <i>in silico</i> ADME and Structure-based Modeling Prediction, 24th International Symposium on Microsomes and Drug Oxidations (MDO) and 13th International Meeting of the International Society for the Study of Xenobiotics (ISSX) joint meeting, Seattle, WA ( <i>invited</i> ) |
| 2020        | Session co-chair, P450 Structure, function, and mechanism: A celebration of JSSX-ISSX contributions to drug metabolism research ( <i>invited</i> ), <i>cancelled due to COVID19</i>   |
| 2020        | Session co-chair, Structure and function of cytochrome P450s, 23rd International Symposium on Microsomes and Drug Oxidations: From Structures to Regulations and Modeling ( <i>invited</i> ), <i>cancelled due to COVID19</i>   |
| 2018        | Session co-chair, Structure based approaches to enhance drug efficacy and safety, 22 <sup>nd</sup> International Symposium on Microsomes and Drug Oxidations ( <i>invited</i> )   |
| 2017 – 2023 | Bernard B. Brodie Award in Drug Metabolism Selection Committee ( <i>invited</i> )   |

- 2015 – present International Advisory Committee, International Conferences on Cytochrome P450 (*invited*)
- 2014 – present Microsomes and Drug Oxidations International Scientific Advisory Board (*invited*)
- 2014 – 2020 Awards Committee, International Society for the Study of Xenobiotics (*invited*)
- 2014 Herbert Tabor Award Young Investigator Award Committee, 20th International Symposium on Microsomes and Drug Oxidations, Stuttgart, Germany (*invited*)
- 2014 Session co-chair, Novel Insights into Structure and Function of Drug Metabolizing Enzymes, 20<sup>th</sup> International Symposium on Microsomes and Drug Oxidations, Stuttgart, Germany (*invited*)
- 2014 Selection Committee for the Asia Pacific Scientific Achievement Award and the Asia Pacific New Investigator Award, International Society for the Study of Xenobiotics (*invited*)
- 2013 Plenary Session Chair, Drug-Metabolizing Enzymes as Potential Therapeutic Targets, 10<sup>th</sup> International Society for the Study of Xenobiotics Meeting, Toronto, Canada (*invited*)
- 2013 Session Co-chair, Structural Biology of Cytochromes P450, 18<sup>th</sup> International Conference on Cytochrome P450, Seattle, WA (*invited*)
- 2011 Session Co-chair, P450 Structure and Function, 17th International Conference on Cytochrome P450, Manchester, UK (*invited*)
- 2010 Session chair, P450 Structure and Function I: Structure and Conformation, 18<sup>th</sup> International Symposium on Microsomes and Drug Oxidations, Beijing, China (*invited*)
- 2005 Poster Judge, 14<sup>th</sup> International Congress of Cytochromes P450, Dallas, TX (*invited*)

### National

- 2022 – 2025 Member, Finance Committee, American Society of Pharmacology and Experimental Therapeutics (*invited*)
- 2022 Discussion leader, “Mechanisms of drug metabolism” session, 50<sup>th</sup> Anniversary Gordon Research Conference in Drug Metabolism, Holderness, NH (*invited*)
- 2020 – 2022 Chair, American Society of Pharmacology and Experimental Therapeutics Board of Publication Trustees/Publication Committee (*invited*)
- 2020 – 2022 Member (ex officio), Council of the American Society of Pharmacology and Experimental Therapeutics
- 2020 – 2022 Council Liaison to the Division of Drug Metabolism and Disposition, American Society of Pharmacology and Experimental Therapeutics
- 2016 – 2020 Electorate Nomination Committee, American Association for the Advancement of Science (*elected*)
- 2019 Discussion Leader, Journals Workshop: An Interactive Guide to Publishing, Reviewing, and Ethics Issues
- 2015 – 2017 Program Committee, American Society of Pharmacology and Experimental Therapeutics (*elected*)
- 2014 – 2017 Chair (Elect, Current, Past), Drug Metabolism Division, American Society of Pharmacology and Experimental Therapeutics (*elected*)
- 2013, 2017 Selection Committee, Early Career Achievement Award, Drug Metabolism Division, American Society of Pharmacology and Experimental Therapeutics (*invited*)
- 2007 – 2009, 2011 – 2017 Best Poster Judge, Drug Metabolism Division, American Society of Pharmacology and Experimental Therapeutics Annual Meeting

- 2013 Selection Committee, Award for Outstanding Achievement in Chemistry in Cancer Research, American Association for Cancer Research (*invited*)
- 2013 Session organizer and chair, Correlating Structure and Function of Drug Metabolizing Enzymes: An Ongoing Challenge, American Society of Pharmacology and Experimental Therapeutics Annual Meeting, Boston, MA (*selected*)
- 2009 – 2012 Secretary/Treasurer (Elect, Current, Past), Drug Metabolism Division, American Society for Pharmacology and Experimental Therapeutics (*elected*)
- 2009 Session co-chair, Targeting Drug Metabolizing Enzymes for Effective Chemopreventative Approaches, American Society of Pharmacology and Experimental Toxicology, New Orleans, LA (*invited*)
- 2006 – 2008, 2010 – 2013 Selection Committee, James R. Gillette Best Paper in *Drug Metabolism and Disposition* Award, Drug Metabolism Division, American Society of Pharmacology and Experimental Therapeutics
- 2006 – 2009 Councilor, Drug Metabolism Division, American Society for Pharmacology and Experimental Therapeutics (*invited*)

### Regional

- 2006 Session chair, Substrate Protein Interactions, 5<sup>th</sup> Southwest P450 Meeting, Navasota, TX (*invited*)
- 2001 – 2002 Organizing Committee Member, 2<sup>nd</sup> Annual Southwest P450 Meeting (*invited*)

### University of Michigan

#### *University-wide*

- 2021 Member, Search Committee, Director of Research Cores
- 2021 Camille Dryfus Teacher Scholar Reviews
- 2020 – 2022 Chemical Biology Program Executive Committee
- 2019 Panelist, AAAS Panel, Women in Science and Engineering
- 2018 – 2020 Laboratory and Research Safety Committee
- 2018 – present Advisory Board, CryoEM Facility
- 2017 – present Faculty Director, BioNMR Core
- 2017 – 2019 Rackham Predoctoral Fellowship Committee
- 2017, 2018 Rackham International Student Fellowship Committee
- 2017 – 2018 NMR Renovations and Governing Committee
- 2016 – present Chemical Biology Program
- 2016 – present Cancer Center

#### *College of Pharmacy*

- 2019 – present Graduate Education Committee
- 2019 – 2020 Website Redesign Committee
- 2017 – 2021 Co-director, Protein Structure and Function Research Experience for Undergraduates (NSF)
- 2017 – 2020 Executive Committee
- 2016 – present Bachelor's of Science in Pharmaceutical Science Curriculum Committee
- 2016 – present Research Resources and Shared Equipment Committee
- 2016 – present Pharm.D. interviews

#### *Department of Medicinal Chemistry*

- 2022 Chair, Faculty Search Committee
- 2019 Peer Teaching Evaluation
- 2018 Rackham dissertation award committee

#### *Department of Biological Chemistry*

- 2018 – 2019 Faculty Search Committee

*Biophysics Program*

2019 – 2020 Admissions Committee

*Program in Biomedical Sciences (PIBS)*

2017 – present Graduate student recruiting

*Community*

2019 MiRCore lab, Skyline High School

**University of Kansas***University-wide*

2015 – 2016 Higuichi Biosciences Center Internal Advisory Board  
 2015 – 2016 Chemical Biology Training Grant Steering Committee  
 2014 – 2015 Funding Innovations Committee, Graduate Studies  
 2014 – 2016 Leadership Committee, NIH Center of Biomedical Research Excellence (COBRE) Program in Protein Structure and Function  
 2013 – 2015 Faculty Advisor, KU Postdoctoral Association  
 2012 Panelist, Preparing Future Faculty Series, Office of Graduate Studies  
 2011 – 2012 Chair, Scholarly Misconduct Investigation Committee  
 2011 – 2012 Doctoral Education Work Group  
 2011 Postdoctoral Task Force  
 2010 Internal Review Committee, KU X-ray Crystallography Lab and Director  
 2009 KU Biosafety and Recombinant DNA Committee  
 2009 Search Committee, Director of the KU Protein Structure Lab  
 2007 – 2016 Chair, Steering Committee, KU Protein Structure Lab  
 2007 Faculty Evaluator, Assessment of General Education  
 2007 Faculty Mentor, Honors Research Development Program  
 2007 Search Committee for Director, Biochemical Research Services Laboratory  
 2006, 2007 Interviewee, Women in Science Learning Community

*School of Pharmacy*

2015 – 2016 Executive Committee  
 2015 – 2016 Academic and Professional Conduct Committee  
 2010 – 2011 Search Committee for Associate Dean  
 2007 – 2016 Selection Committee, Ron Borchardt Family Pharmaceutical Sciences Scholarships  
 2006 – 2010 Design and Installation Oversight of new Medicinal Biochemistry Laboratories for Pharm.D. students on Lawrence and Wichita Campuses  
 2006 – 2013 School of Pharmacy Curriculum Planning Committee

*Department of Medicinal Chemistry*

2012 Selection Committee, Lester and Betty Mitscher Prize for Excellence  
 2010 – 2016 Committee for the Edward E. Smissman Memorial Lecture Series  
 2010 Chair, Search Committee for Medicinal Biochemistry Laboratory coordinators for Lawrence and Wichita campuses  
 2010 – 2011 Search Committee for Assistant/Associate Professor  
 2009 Department Liaison, Research Computing and IT Planning  
 2008 – 2013, 2015 – 2016 Graduate Admissions Committee, Department of Medicinal Chemistry  
 2008 Chair, Search Committee for Lecturer in MDCM 601 and 603, Department of Medicinal Chemistry  
 2006 – 2007 Search Committee for Associate/Full Professor  
 2006 – 2007 Coordinator, Department of Medicinal Chemistry Seminar Series



2005 – 2007	Coordinator, Departmental Research Experience for Undergraduates Program
2005 – 2013	Faculty Coordinator, Medicinal Chemistry Meeting in Miniature (MIKI) Meeting
2004 – 2013, 2014 - 2016	Ambassador, Committee for Teaching Excellence
2004 – 2006, 2012	Irsay Dahle Award Committee

#### *Other University of Kansas Departments*

2014 – 2015	Search Committee for Ronald T. Borchardt Global Health Education Distinguished Professor, Department of Pharmaceutical Sciences
2012 – 2013	Faculty Search Committee, Department of Pharmacology and Toxicology
2007 – 2008	Faculty Search Committee, Department of Chemistry
2005	Faculty Search Committee, Department of Pharmacology and Toxicology

#### **University of Texas Medical Branch**

2004	Search Committee for Research Assistant Professor, Department of Pharmacology and Toxicology
2004	Panelist, Negotiation Skills Roundtable, Committee for Career Development, Graduate School of Biomedical Sciences
2001 – 2002	President, Organization of Postdoctoral Scientists at UTMB

## **TEACHING**

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### **Teaching Development**

2015	Best Practices Institute Award, Center for Teaching Excellence
2012	Peer Teaching Triad, Center for Teaching Excellence
2012	Piloted online book and quizzes, online lectures, and partially flipped classroom for Medicinal Biochemistry
2011	Adapted Medicinal Biochemistry for synchronous distance students
2004 – 2016	Ambassador, Center for Teaching Excellence

### **Courses Taught** (\* indicates course coordinator)

#### **University of Michigan**

	<u>Course</u>	<u>Credits</u>	<u># Students</u>
<i>Undergraduate Courses</i>			
2018 – present	MC310: Principles of Drug Action*	3	35-45
<i>Professional Courses</i>			
2017 – present	MC500: Principles of Drug Action I*	3	80-90
2017 – 2019	MC700: Principles of Drug Action IV	3	80-90
<i>Graduate Courses</i>			
2019 – present	Pharmacol 601: Quant. Prin. Pharmacology	3	~30
2019	Biophys 602: Prin. Macromolec. Crystallogr.	3	15-20
2017 – present	Pharmacol 604: Collab. Proj. Pharm. Sciences	1	10-12
2017 – present	MC740: Original Research Grant Proposal	1	1-3
2016	MC532: Bioorganic Prin. Medicinal Chemistry	3	10
<i>Multi-level Courses</i>			
2018, 2019	Responsible Conduct of Research (undergrad/postdocs)		~60

**University of Kansas***Undergraduate Courses*

2005 – 2012, 2014 2015	Medicinal Biochemistry (*since 2007)	4 – 5	105 – 170
2005 – 2010	Medicinal Biochemistry Laboratory*	3	155
2006	Medicinal Biochemistry II	1	105 – 150
		3	105

*Graduate Courses*

2015	Principles and Practice of Chemical Biology	3	~20
2010 – 2012, 2014	Organic Chemistry of Biological Pathways	2	8-15
2010 – 2016 (even years)	Issues in Scientific Integrity	1	~40
2006 – 2012	Biomedical Chemistry*	3	1 – 6
2009	Advanced Lab Techniques	2	6
2008 – 2012 (even years)	Modern Biochemical and Biophysical Methods	4	10-25
2007	Seminar in Medicinal Chemistry	1	7
2007	Introduction to Chemical Biology	guest lectures	10

**University of Texas Medical Branch**

2004	Prin. Drug Action, Pharmacokin. & Biotran.	guest lecture	~35
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**University of Texas A&M at Galveston**

1997	Marine Invertebrate Zoology Laboratory*	1	~35
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**MENTORING**

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**Undergraduate Students and Volunteers**

2022	Ryan Kauffman
2022	Schuyler Byrn
2022	Lily Kim (Pharm.D.)
2020	Sage Scott
2018	Laura Sanchez (REU)
2017 – 2018	Annie Grech
2017	Trey Shupp
2015 – 2016	Nicholas Martinez
2015 – 2016	Cara Davis
2015 – 2016	Eder Davila-Contreras
2015	Danushka Weerasekara
2015	Tyler Stone
2012 – 2013	Anne Reed-Weston (high school)
2011 – 2012	Michelle Jackson (Post-bac)
2011	Wan To Poon (Pharm.D.)
2010 – 2013	Lindsay Astleford
2010	Melbien Tinio
2009 – 2014	Aaron Bart
2009	Saleh Darkhalil
2007 – 2010	Eric Carillo (Pharm.D)
2007	Molly Christian
2006 – 2007	Naseem Nikeem

2006 Jordan Christian  
 2005 – 2006 Christopher Wood  
 2005 Jenilee Morrison

#### Graduate Students (Department/Program)

2022 – present Alexandria Chabez, Ph.D. (Biological Chemistry)  
 2020 – present Elyse Frydendell, Ph.D. (Pharmacology)  
 2019 – present Cara Loomis, Ph.D. (Biological Chemistry)  
 2019 – present Jinghan Liu, Ph.D. (Medicinal Chemistry)  
 2018 – 2020 Stephen Black, M.S. (Medicinal Chemistry)  
 2018 – present Alaina Richard, Ph.D. (Chemical Biology)  
 2017 – present Sarah Burris, Ph.D. (Medicinal Chemistry)  
 2016 – 2019 Aaron Bart, Ph.D. (Biophysics Program), currently Postdoctoral Fellow, Merck and Co.  
 2014 – 2016 Aaron Bart, Ph.D. (Molecular Biosciences), currently Postdoctoral Fellow, Merck and Co.  
 2015 Elyse Petrunak, Ph.D. (Medicinal Chemistry), currently Research Scientist, Broad Institute of MIT and Harvard  
 2014 Charlie Fehl, Ph.D. (co-mentored with Jeff Aubé, Medicinal Chemistry), currently assistant professor, Wayne State University  
 2012 Eva Stephens, M.S. (Medicinal Chemistry), currently Senior Regulatory Affairs Associate, Fred Hutchinson Cancer Research Center  
 2012 Linda Blake, Ph.D., Pharm.D. (Medicinal Chemistry), currently Internal Medicine Pharmacist, Oregon Health and Science University  
 2011 Natasha (Michno) DeVore, Ph.D. (Molecular Biosciences), currently Associate Professor, Department of Natural and Applied Sciences, Evangel University  
 2009 Patrick Porubsky, M.S. (Medicinal Chemistry), currently Forensic Scientist, Kansas Bureau of Investigation  
 2009 Megen (Miller) Culpepper, Ph.D. (Chemistry, co-mentored with Dr. Julian Limburg), currently Assistant Professor, Appalachian State University  
 2008 Timothy Reed, Ph.D. (Chemistry, co-mentored with Dr. Julian Limburg), currently Microbiologist, Astrix Technology Group  
 2008 Natasha Michno, M.S. (Medicinal Chemistry), currently Associate Professor, Department of Natural and Applied Sciences, Evangel University  
 2008 Melanie Blevins, M.S. (Medicinal Chemistry), currently Scientist, Li-COR Biosciences  
 2005 Jason Sanders (Medicinal Chemistry), Instructional Technologist, Northwest Independent School District

#### Postdoctoral Fellows

2021 – present Kurt Harris  
 2019 – 2020 Aaron Bart, currently Scientist, Structural Biology, Triana Biomedicines  
 2018 – 2023 Nicole Motl, Research Lab Specialist Lead, Center for Structural Biology, University of Michigan  
 2017 – 2021 Simone Brixius-Anderko, currently Assistant Professor, University of Pittsburgh  
 2015 – 2019 Malika Godamudunage, currently Scientist, Abbvie  
 2015 – 2018 Rahul Yadav, currently Postdoctoral Fellow, University of Mississippi  
 2011 – 2016 D. Fernando Estrada (NRSA Postdoctoral Fellow, K99/R00 recipient), currently Assistant Professor, University at Buffalo  
 2014 – 2015 Elyse Petrunak, currently Research Scientist, Broad Institute of MIT and Harvard

2012 – 2015	Youbin Tu, currently Sr. Data Analyst and Data Engineer (Healthcare and Clinical), City College of New York
2012 – 2013	Vickie Jasion, currently Medical Science Liaison, Rheumatology Field Director, AbbVie
2011 – 2012	Natasha DeVore, currently Assistant Professor of Chemistry, Missouri State University
2009 – 2011	Andria Skinner, currently Program Manager, R&D Planning, Regeneron Pharmaceuticals
2009	Megen Culpepper, currently Associate Professor, Appalachian State University
2008 – 2010	Kathy Meneely, currently Lab Manager, University of Texas at San Antonio
2007 – 2016	Agnes Walsh, currently Technical Associate II, Department of Biological Engineering, MIT
2006	Jelena Zaitseva, currently Principle Scientist, BASF
<b>Research Staff</b>	
2020 – 2021	Hyun Gi Yun, Ph.D., currently Pharm.D. student
2016	Archana Mishra, Ph.D., currently Assistant Professor, College of Science, Technology, Engineering & mathematics, University of Arkansas, Fort Smith
2007 – 2008	Anuradha Meta Roy, Ph.D., currently Director, Infectious Disease Assay Development Core, University of Kansas
2005 – 2007	Brian Smith, currently Director of Bioanalytical Services, ICON plc
<b>Visiting Scientists</b>	
2022	Richard Auchus, M.D., Ph.D., (sabbatical) Department of Internal Medicine, Division of Metabolism, Endocrinology, and Diabetes, University of Michigan
2021	Tom Pochapsky, Ph.D., Professor of Chemistry and Biochemistry (sabbatical), Department of Chemistry, Brandeis University
2019 – 2020	Stephina Dcunha, visiting Ph.D. student, University of Queensland, Australia
2019	Nathan Wong, visiting Ph.D. student, Brandeis University
2018 – 2019	Caleb Vogt, visiting Ph.D. student, University of North Carolina, Chapel Hill
2018	Kurt Harris, visiting Ph.D. student, University of Queensland, Australia
2017 – 2018	Kasun Imaduwege, Ph.D., University of Michigan
2015 – 2016	Dhanushka Weerasekara, M.S., Department of Biochemistry and Molecular Biology, University of Colombo, Sri Lanka
2015	Silvia Bonomo, visiting Ph.D. student, Department of Pharmaceutical Sciences, University of Copenhagen, Denmark
2014	Malika Godamudunge, visiting Ph.D. student, Department of Chemistry and Biochemistry, New Mexico State University
2014	Allison Colthart, visiting Ph.D. student, Department of Chemistry, Brandeis University
2013	Jeanine Chan, Ph.D., Assistant Professor (sabbatical), Department of Chemistry, Pacific University Oregon
<b>Faculty</b>	
2020	Aditi Das, Associate Professor, University of Illinois Urbana-Champaign
2019 – present	Jennifer Guimbellot, Assistant Professor, University of Alabama at Birmingham
2015 – 2016	Jed Lampe, Assistant Professor, University of Kansas
<b>Mentorship Training</b>	
2022	Workshop: No Club: Putting a Stop to Women's Dead-End Work, American Society for Biochemistry and Molecular Biology

2022	Power Hour, Gordon Research Conference, Holderness, NH
2021	LGBTQ terminology workshop, Dept. Pharmacology, University of Michigan
2021	Wellness: Supporting the Health and Wellbeing of Biomedical Researchers, Office of Intramural Training & Education, National Institutes of Health
2020	Train the Trainers 2020, a 3-day NIH workshop covering mental health and wellness, trauma in trainees, suicide prevention, executive functioning and attention, career advising, and well-being
2020	Consulting, Counseling and Psychological Services Center, University of Michigan
2020	Mastering Civility class, University of Michigan
2020	Mentoring Others Results in Excellence (MORE) workshop with trainee, University of Michigan
2019	Faculty Recruitment Workshop, Strategies and Tactics for Recruiting to Improve Diversity and Excellence (STRIDE)
2019	Mentoring Others Results in Excellence (MORE) workshop with trainee, University of Michigan
2018	Mentoring Practices working retreat, Office of Graduate and Postdoctoral Studies, University of Michigan
2018	Leading in the Lab workshop, European Molecular Biology Organization
2016	Building and Managing a Research Team, Center for Biomedical Research Excellence, University of Kansas
2016	Mentoring Graduate Student Writing, University of Kansas
2008	Advising and Mentoring Graduate Students, University of Kansas
2006	Panel on Models of Mentoring Graduate Students, University of Kansas

### **Mentorship Service** (outside of the Scott lab)

#### *Communication Skills*

2021	Poster Preparation seminar, Research Experience for Undergraduates, College of Pharmacy, University of Michigan (virtual)
2020	Designing an Engaging Poster, PSTP Training Grant students, University of Michigan
2018	Participate with trainee, K Award Writing Workshop, Michigan Institute for Clinical & Health Research
2018	Poster Preparation seminar, American Chemical Society MEDI local chapter, University of Michigan
2017 – 2022	Pharmacological Sciences Training Program seminar with topics such as communication skills, career paths and skills, University of Michigan
2016	Leader, Grant Writing workshop for faculty, Center for Biological Research Excellence, University of Kansas

#### *Professional Skills*

2021	Organizer and facilitator, Journals Workshop: An Interactive Guide to Publishing, Reviewing, and Ethics Issues, Experimental Biology (virtual)
2021	Facilitated viewing of Cold Spring Harbor's "Life, Hope & Science: Three Journeys in Research" (virtual)
2020	Rigor and Reproducibility, Responsible Conduct of Research course, University of Michigan (virtual)
2020	Hosted "Picture a Scientist" watch party and facilitated discussion for women in science group (virtual)
2019 – present	Co-PI and mentor, NIH-funded Michigan Chemistry-Biology Interface Training Program, University of Michigan (in person and virtual)
2019 – 2022	Co-PI and mentor, NSF-funded Research Experience for Undergraduates, University of Michigan (in person and virtual)

2019	Rigor and Reproducibility, Responsible Conduct of Research course, University of Michigan (virtual)
2018 – 2020	Host, monthly Women in Science coffee (in person and virtual)
2005 – 2016	Mentor, 5-6 School of Pharmacy Advisees per year, University of Kansas
2005 – 2006	Women in Science and Engineering, University of Kansas
<i>Careers</i>	
2022	P450 researchers from Universities of Colorado, North Carolina (Chapel Hill), Buffalo, Pittsburgh, and Albany College (virtual)
2022	New Investigators Career Session, ISSX/MDO Meeting, Seattle, WA
2022	Meet the Experts session, Drug Metabolism and Disposition Division of ASPET, Experimental Biology Meeting, Philadelphia, PA
2021	Facilitated “Do’s and don’ts for the job search and interview” for training grant students, University of Michigan (virtual)
2021	Facilitated “How to conduct an informational interview” for training grant students, University of Michigan (virtual)
2021	Research Overview and Career Journey seminar, NSF Research Experience for Undergraduates program, University of Michigan (virtual)
2021	Interviewee, Women in Science and Engineering class, University of Michigan (virtual)
2020	Facilitated Career Coffee Hour, CBI training grant, University of Michigan
2020	Organizer and host, science and career seminar series for Scott, Estrada, and Lampe lab trainees to network with P450 scientists (virtual)
2020	Career Panel, Women in Science and Engineering, University of Michigan (virtual)
2018	Interviewee, Careers course, University of Michigan
2018	Research career talk, REU program, University of Michigan
2017	Career talk, REU program annual symposium, University of Michigan
2016	Career consulting, Research Assistant Professor
2015	Career Day, Southwest Middle School, Lawrence, KS
2015	Guest lecture on Pharmacy School and Faculty Roles, University 101 for Pharmacy students, University of Kansas
2015	Career presentation to 200 high school students, Business of STEM event, University of Kansas
2014	Career Day, Southwest Middle School, Lawrence, KS
2012	Campus interview talk, Preparing Future Faculty Series, University of Kansas
2012	Interviewee, Science writer intern, University of Kansas
2007	Interviewee, Women in Science Learning Community, University of Kansas