

**One Professor from Top 200 Universities in the World**

**Immunomodulatory Agents**

Submitted by:

**Muhammad Faseeh Haider**

**1st semester**

**M. Phil Pharmacology**

Submitted to:

**Mr. Taseer Ahmad**

**Advanced Immunopharmacology**

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**College of Pharmacy**

**University of Sargodha**

**Mitch A. Phelps, PhD**

**Professor**

Pharmaceutics and Pharmacology

College of Pharmacy, The Ohio State University

**Director**

Pharmacoanalytical Shared Resource, OSU Comprehensive Cancer Center

# Biography

Dr. Phelps is a Professor in the College of Pharmacy (Division of Pharmaceutics and Pharmaceutical Chemistry) and in the College of Medicine (Department of Pharmacology) at The Ohio State University, Columbus, Ohio, United States.

Mitch Phelps’ research group is involved in both pre-clinical and clinical development of numerous small molecule anti-cancer and immuno-modulatory agents under development here at OSU. Their work aims to understand the mechanisms involved in the absorption, distribution, metabolism, and excretion (i.e. pharmacokinetics, PK) of these agents, and how both the PK and pharmacodynamic (PD) effects of these agents are altered by genetic differences (polymorphisms) among individuals (i.e. pharmacogenetics, PG).

# Research expertise

* Preclinical Disease
* Early Phase Clinical Trials
* Development of Small Molecule and Oligonucleotide Anticancer and Immune Agents

# Educational Background

PhD Biophysics The Ohio State University, United States, 2005

BA Physics Ohio Wesleyan University, United States, 1992

# Research Activities

**The Phelps-Coss Lab**

The Phelps-Coss Lab is a cancer focused multi-disciplinary research laboratory. Its goals are to perform impactful research in the areas of cancer biology, drug development and cancer pharmacology while equipping trainees to be competitive for diverse research careers in the pharmaceutical sciences.

The Phelps Lab studies the pharmacokinetic and pharmacodynamic (PK/PD) relationships of wide ranging anti-cancer therapies. They use quantitative bioanalyses, drug transport studies and non-linear mixed effects modelling to better understand interpatient variability in drug disposition and how it relates to drug response.

Active research programs are;

1. Mechanisms of Resistance to Immunomodulatory Therapies
2. Immunoliposomes for Delivery of Novel Small Molecule and Oligonucleotide Therapies
3. Exosomes as Carriers for Therapeutic Oligonucleotides in Cancer
4. Anabolic Resistance in Cancer Cachexia
5. Therapeutic mAb Disposition in Cancer Cachexia
6. Novel Combination Anti-Cachexia Therapies
7. PopPK/PD Modelling of Cytopenias Associated with Melphalan Therapy in Multiple Myeloma
8. Androgen Receptor (AR) in Hepatocellular Carcinoma (HCC)
9. Novel Selective Estrogen Receptor Modulators (SERMS) for the Treatment of Pre-Cancerous Liver Disease

**Recent Publications**

* Liva SG, Coss CC, Wang J, Blum W, Klisovic R, Bhatnagar B, Walsh K, Geyer S, Zhao Q, Garzon R, Marcucci G, Phelps MA, Walker AR. Phase I study of AR-42 and decitabine in acute myeloid leukemia. Leuk Lymphoma. 2020 Jun;61(6):1484-1492. doi: 10.1080/10428194.2020.1719095. Epub 2020 Feb 8. PubMed PMID: 32037935; NIHMSID:NIHMS1602187.
* Badawi M, Coss CC, Phelps MA. Letter to the Editor: Exposure-response or clearance-response relationship in immune checkpoint therapy?-A comment on 'correlation between nivolumab exposure and treatment outcomes in non-small-cell lung cancer' by Basak et al. Eur J Cancer. 2019 Jun;114:25-26. doi: 10.1016/j.ejca.2019.02.017. Epub 2019 Apr 19. PubMed PMID: 31009820.
* Lu C, Yang D, Klement JD, Oh IK, Savage NM, Waller JL, Colby AH, Grinstaff MW, Oberlies NH, Pearce CJ, Xie Z, Kulp SK, Coss CC, Phelps MA, Albers T, Lebedyeva IO, Liu K. SUV39H1 Represses the Expression of Cytotoxic T-Lymphocyte Effector Genes to Promote Colon Tumor Immune Evasion. Cancer Immunol Res. 2019 Mar;7(3):414-427. doi: 10.1158/2326-6066.CIR-18-0126. Epub 2019 Jan 4. PubMed PMID: 30610059; PubMed Central PMCID: PMC6397681.
* Wang J, Zhu X, Kolli S, Wang H, Pearce CJ, Oberlies NH, Phelps MA. Plasma pharmacokinetics and bioavailability of verticillin A following different routes of administration in mice using liquid chromatography tandem mass spectrometry. J Pharm Biomed Anal. 2017 May 30;139:187-192. doi: 10.1016/j.jpba.2017.02.051. Epub 2017 Mar 1. PubMed PMID: 28284083; PubMed Central PMCID: PMC5399420.