

Christopher S. Malarkey, Ph.D.

Assistant Professor, Department of Pharmaceutical Sciences, School of Pharmacy
Regis University
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CONTACT INFORMATION

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EDUCATION

- 2008-2014 Postdoctoral Fellowship in Pharmacology
University of Colorado School of Medicine
Department of Pharmacology
MS# 8303 RC-1 South Tower, L18-6402
12801 E. 17th Ave
Aurora, CO 80045
Mentor: Dr. Mair Churchill
Concentration of study: Investigation of the role of mitochondrial
transcription factor A (TFAM) in various disease states
- 2003-2008 Ph.D. in Biochemistry (with distinction)
Loyola University Chicago
Department of Chemistry
1068 W. Sheridan Rd.
Chicago, IL 60660
Mentor: Dr. Duarte Freitas
Dissertation title: *Biophysical Studies on the Pharmacological Action of
Lithium*
- 1998-2003 B.S. in Chemistry with Biochemistry Emphasis
Loyola University Chicago
Department of Chemistry
1068 W. Sheridan Rd.
Chicago, IL 60660

EMPLOYMENT HISTORY

- 2014 – Present Assistant Professor
Department of Pharmaceutical Sciences
Regis University School of Pharmacy
3333 Regis Boulevard, Denver, CO, 80221

Job responsibilities/accomplishments: Teach pharmacy students
biochemistry, physiology, medicinal chemistry, and pathophysiology of
various disease states, but mostly focusing on the cardiac, renal, and

endocrine systems. Maintain an active research lab focused on studying the role of high mobility group box proteins in various disease states. I also serve the school, college, and university on various committees. I have been awarded teacher of the year and pharmacy preceptor of the year since I was hired.

2008-2014

Postdoctoral Fellowship in Pharmacology
University of Colorado School of Medicine
Department of Pharmacology
MS# 8303 RC-1 South Tower, L18-6402
12801 E. 17th Ave
Aurora, CO 80045

Job responsibilities/accomplishments: Research the role of mitochondrial transcription factor A (TFAM) in various disease states using an array of biophysical methods. Write grants for outside funding. I published 5 papers during my postdoctoral fellowship and obtained a fellowship to support my research from the American Heart Association. I was named the Outstanding Postdoctoral Fellow Award winner in my last two years at the University of Colorado.

2003 – 2008

Graduate Research Assistant/Teaching Assistant
Loyola University Chicago
Department of Chemistry
1068 W. Sheridan Rd.
Chicago, IL 60660

Job Responsibilities/accomplishments:

Research: I investigated the mechanism of action of lithium in the treatment of bipolar disorder for my dissertation. I published 4 papers, and I was awarded the Dumbach Medal, which is awarded to the top graduating chemistry Ph.D. student each year.

Teaching: I taught lectures and laboratory sections for general chemistry, organic chemistry, physical chemistry, and biochemistry. I was awarded the top teaching assistant award in my first year of graduate school.

HONORS AND AWARDS

2017	Preceptor of the Year Award for Faculty Regis University, awarded from the School of Pharmacy Office of Experiential Education
2016	American Association of Colleges of Pharmacy Teacher of the Year Award
2013	Outstanding Postdoctoral Fellow Award. University of Colorado School of Medicine, Department of Pharmacology
2012	Outstanding Postdoctoral Fellow Award. University of Colorado School of Medicine, Department of Pharmacology

2008	Dumbach Medal. Awarded To the Top Graduating Ph.D. Student in the Department of Chemistry, Loyola University Chicago
2008	Award for Best Oral Presentation at Loyola University Chicago's Interdisciplinary Graduate Research Symposium
2007-2008	Arthur J. Schmitt Dissertation Fellowship. Loyola University Chicago
2004	Department of Chemistry Best Teaching Assistant Award. Loyola University Chicago
2003-2006	GAANN (Graduate Assistance in Areas of National Need) Fellowship, Loyola University Chicago
1998-2002	Loyola Scholarship, Loyola University Chicago

SCHOLARLY ACTIVITIES: PUBLICATIONS

Refereed Journal Articles

1. **Malarkey, C.S.**, Gustafson, C.E., Saifee, J.F., Torres, R.M., Churchill, M.E., and Janoff, E.N. Mechanism of Mitochondrial Transcription Factor A Attenuation of CpG-Induced Antibody Production. *PLoS One*, 2016. 11(6): p. e0157157.
2. **Malarkey, C.S.**, Lionetti, C., Deceglie, S., Roberti, M., Churchill, M.E., Cantatore, P., and Loguercio Polosa, P. The sea urchin mitochondrial transcription factor A binds and bends DNA efficiently despite its unusually short C-terminal tail. *Mitochondrion*, 2016. 29: p. 1-6.
3. Sanchez-Giraldo, R., Acosta-Reyes, F.J., **Malarkey, C.S.**, Saperas, N., Churchill, M.E., and Campos, J.L. Two high-mobility group box domains act together to underwind and kink DNA. *Acta Crystallogr D Biol Crystallogr*, 2015. 71(Pt 7): p. 1423-32.
4. Das, C., Roy, S., Namjoshi, S., **Malarkey, C.S.**, Jones, D.N., Kutateladze, T.G., Churchill, M.E., and Tyler, J.K. Binding of the histone chaperone ASF1 to the CBP bromodomain promotes histone acetylation. *Proc Natl Acad Sci U S A*, 2014. 111(12): p. E1072-81.
5. Wysoczynski, C.L., Roemer, S.C., Dostal, V., Barkley, R.M., Churchill, M.E., and **Malarkey, C.S.** Reversed-phase ion-pair liquid chromatography method for purification of duplex DNA with single base pair resolution. *Nucleic Acids Res*, 2013. 41(20): p. e194.
6. **Malarkey, C.S.** and Churchill, M.E. The high mobility group box: the ultimate utility player of a cell. *Trends Biochem Sci*, 2012. 37(12): p. 553-62.
7. **Malarkey, C.S.**, Bestwick, M., Kuhlwilm, J.E., Shadel, G.S., and Churchill, M.E. Transcriptional activation by mitochondrial transcription factor A involves preferential distortion of promoter DNA. *Nucleic Acids Res*, 2012. 40(2): p. 614-24.

- Graham, D.J., **Malarkey, C.**, and Sevchuk, W. Experimental investigation of information processing under irreversible Brownian conditions: work/time analysis of paper chromatograms. *J Phys Chem B*, 2008. 112(34): p. 10594-602.
- Malarkey, C.S.**, Wang, G., Ballicora, M.A., and Mota de Freitas, D.E. Evidence for two distinct Mg²⁺ binding sites in G_{sa} and G_{ia1} proteins. *Biochem Biophys Res Commun*, 2008. 372: p. 866-869.
- Layden, B.T., Abukhdeir, A.M., **Malarkey, C.**, Oriti, L.A., Salah, W., Stigler, C., Gerald, C.F.G.C., and Mota de Freitas, D. Identification of Li⁺ binding sites and the effect of Li⁺ treatment on phospholipid composition in human neuroblastoma cells: A ⁷Li and ³¹P NMR study. *Biochim Biophys Acta*, 2005. 1714: p. 339-349.
- Graham, D.J., **Malarkey, C.**, and Schulmerich, M.V. Information content in organic molecules: quantification and statistical structure via Brownian processing. *J Chem Inf Comput Sci*, 2004. 44(5): p. 1601-11.

PRESENTATIONS

Refereed Poster Presentations

- Ricchetti, C., Berlau, D., Clapp, P., **Malarkey, C.S.** Overcoming peer evaluation pitfalls by utilizing faculty and student feedback. Team Based Learning Collaborative National Meeting. San Diego, CA, March 2018.
- Sanchez-Giraldo, R., **Malarkey, C.S.**, Churchill, M.E.A., Saperas, N., Subirana, J.A., Campos, J.L., Studies of the interaction of yeast and human HMGB with AT-rich DNA. The FEBS Journal Biological Series. Barcelona, Spain, July 2013.
- Malarkey, C.S.**, Churchill, M.E.A. Investigation of the interaction between mitochondrial transcription factor A and amyloid beta and implications for Alzheimer's disease. Mitochondrial Medicine Conference, Mitochondrion. Scottsdale, AZ, July 2011.

Non-Refereed (Invited) Platform Presentations

- Malarkey, C.S.**, Investigating the role of high mobility group (HMG) box proteins in disease. Regis University School of Pharmacy Interview Day, October 2017
- Malarkey, C.S.**, Investigation of the role of sox2 in mediating lipopolysaccharide induced immune response. Regis University Department of Chemistry Seminar Series, April 2017.
- Malarkey, C.S.**, Investigating the role of high mobility group (HMG) box proteins in disease. Regis University School of Pharmacy Interview Day, October 2016.
- Malarkey, C.S.**, Mitochondrial transcription factor A, a potential treatment for unwanted immune response. Regis University Pharmaceutical Sciences Seminar, October 2015.
- Malarkey, C.S.**, Mitochondrial transcription factor A, a potential DNA "mop" for the treatment of autoimmune disease. Regis University Biology Seminar Series, February 2015.

GRANT ACTIVITY

Pending Grants

Investigation of Sox2 attenuation of LPS induced immune response in gastric cancer.
National Institutes of Health R15
\$300,000

Investigation of Sox2 attenuation of LPS induced immune response in gastric cancer.
American Association of Colleges of Pharmacy
\$10,000

Completed Grants

Investigation of the role of mitochondrial transcription factor a in heart disease.
Principle Investigator: Christopher S. Malarkey
American Heart Association 13POST16330009
Effective Period: 07/01/2013-06/30/2014
\$50,048

CURRENT RESEARCH ACTIVITIES

2016- Present Investigation of the role of Sox2 in gastric cancer, role: primary investigator.

2014 – Present Investigation of the role of mitochondrial transcription factor A in various disease states, role: primary investigator.

EDITORIAL/REFeree POSITIONS

2012 Biochimica et Biophysica Acta Gene Regulatory Mechanisms
2012-2018 Nucleic Acids Research

PROFESSIONAL, SCIENTIFIC, HONORARY ASSOCIATIONS OR SOCIETIES

2014-Present American Association of Colleges of Pharmacy (AACP)
2014-Present American Chemical Society (ACS)
2012-Present American Heart Association (AHA)
2012-Present American Association for the Advancement of Sciences (AAAS)

SERVICE TO REGIS UNIVERSITY

Regis University Committee Memberships

2015-Present University Research and Scholarship Committee (URSC) (member)

2016 Center for Scholarship and Research Engagement (CSRE) director
search committee member

Rueckert-Hartman College for Health Professions Committee Memberships

2015- Present College Assessment Committee (member)

2016 School of Physical Therapy search committee (member)

School of Pharmacy Committee Memberships

2016 – Present Assessment committee (chair)

2016 – Present Peer Evaluation Task Force (member)

2014 – Present Assessment committee (member)

2014 – Present Student appeals committee (member)

School of Pharmacy Service Activities

2014 – Present Student Awards Ceremony and White Coat Ceremony (Participant)

2014 – Present Student Interview Days (Interviewer, Evaluator)

2016 Regis University Delegate to the House of Representatives at the American Association of Colleges of Pharmacy (AACP) national meeting

2016 – Present School of Pharmacy Silent Auction (Donor)

2016 – Present National Community Pharmacists Association (NCPA) Comedy Night Participant

Department of Pharmaceutical Sciences Service Activities

2014 – Present Pharmaceutical Sciences Faculty Lab (Facilitated capital equipment purchases)

SERVICE TO THE COMMUNITY

2014-Present Volunteer at The Gathering Place, a women’s shelter

2014-Present Volunteer as a high school chemistry tutor

2014-Present Volunteer as Skinner Middle School science fair judge

TEACHING RESPONSIBILITIES

Department of Pharmaceutical Sciences, Regis University School of Pharmacy

Fall 2017

Integrated Pharmacotherapy 2, Acute Kidney Injury, PHRM 702, instructor

Integrated Pharmacotherapy 6, Peripheral Arterial Disease, PHRM 706, instructor

Integrated Pharmacotherapy 6, Ischemic Heart Disease, PHRM 706, instructor

Integrated Pharmacotherapy 6, Acute Coronary Syndromes, PHRM 706, instructor

Integrated Pharmacotherapy 6, Arrhythmias, PHRM 706, instructor

Integrated Pharmacotherapy 6, Disorders of Potassium, Magnesium, Calcium, and Phosphorus, instructor

Integrated Pharmacotherapy 10, PHRM 710, course director

Integrated Pharmacotherapy 1, Biochemical Concepts, PHRM 701, instructor

Integrated Pharmacotherapy 5, Chronic Kidney Disease, PHRM 705, instructor
Integrated Pharmacotherapy 9, Thyroid Disorders, PHRM 709, instructor
Integrated Pharmacotherapy 9, Urinary Incontinence, PHRM 709, instructor
Advanced Pharmacy Practice Experience Rotation III, PHRM 762 (1 student)
Professional Development 1, PHRM 725, instructor

Summer 2017

Advanced Pharmacy Practice Experience Rotation I, PHRM 760 (2 students)
Introduction to Pharmacy Practice Experience, PHRM 754, (6 students)

Spring 2017

Integrated Pharmacotherapy 12, Inflammatory Bowel Disease PHRM 712, instructor
Integrated Pharmacotherapy 12, Diabetes Mellitus Part 2, PHRM 712, instructor
Integrated Pharmacotherapy 7, Gout, PHRM 707, instructor
Integrated Pharmacotherapy 7, Osteoarthritis, PHRM 707, instructor

Professional Development 2, PHRM 726, instructor

Integrated Pharmacotherapy 3, Diabetes Mellitus Part 1, PHRM 703, instructor

Integrated Pharmacotherapy 3, Dyslipidemia, PHRM 703, instructor

Critical Evaluation of Alternative Medicine, PHRM 796, instructor

Advanced Pharmacy Practice Experience Rotation VII, PHRM 766 (1 student)

Fall 2016

Integrated Pharmacotherapy 2, Acute Kidney Injury, PHRM 702, instructor
Integrated Pharmacotherapy 2, Obesity, PHRM 702, instructor
Integrated Pharmacotherapy 2, Disorders of Sodium and Water, PHRM 702, instructor
Integrated Pharmacotherapy 6, Peripheral Arterial Disease, PHRM 706, instructor
Integrated Pharmacotherapy 6, Ischemic Heart Disease, PHRM 706, instructor
Integrated Pharmacotherapy 6, Acute Coronary Syndromes, PHRM 706, instructor
Integrated Pharmacotherapy 6, Arrhythmias, PHRM 706, instructor
Integrated Pharmacotherapy 6, Disorders of Potassium, Magnesium, Calcium, and Phosphorus, instructor

Integrated Pharmacotherapy 10, PHRM 710, course director

Integrated Pharmacotherapy 1, Biochemical Concepts, PHRM 701, instructor
Integrated Pharmacotherapy 5, Chronic Kidney Disease, PHRM 705, instructor
Integrated Pharmacotherapy 9, Thyroid Disorders, PHRM 709, instructor
Integrated Pharmacotherapy 9, Urinary Incontinence, PHRM 709, instructor

Professional Development 1, PHRM 725, instructor

Summer 2016

Advanced Pharmacy Practice Experience Rotation I, PHRM 760 (2 students)

Introduction to Pharmacy Practice Experience, PHRM 754, (3 students)

Spring 2016

Integrated Pharmacotherapy 12, Inflammatory Bowel Disease PHRM 712, instructor

Integrated Pharmacotherapy 12, Diabetes Mellitus Part 2, PHRM 712, instructor

Integrated Pharmacotherapy 7, Gout, PHRM 707, instructor

Integrated Pharmacotherapy 7, Osteoarthritis, PHRM 707, instructor

Professional Development 2, PHRM, instructor

Integrated Pharmacotherapy 3, Diabetes Mellitus Part 1, PHRM 703, instructor

Integrated Pharmacotherapy 3, Dyslipidemia, PHRM 703, instructor

Fall 2015

Integrated Pharmacotherapy 2, Acute Kidney Injury, PHRM 702, instructor

Integrated Pharmacotherapy 2, Obesity, PHRM 702, instructor

Integrated Pharmacotherapy 2, Disorders of Sodium and Water, PHRM 702, instructor

Integrated Pharmacotherapy 6, Peripheral Arterial Disease, PHRM 706, instructor

Integrated Pharmacotherapy 6, Ischemic Heart Disease, PHRM 706, instructor

Integrated Pharmacotherapy 6, Acute Coronary Syndromes, PHRM 706, instructor

Integrated Pharmacotherapy 6, Arrhythmias, PHRM 706, instructor

Integrated Pharmacotherapy 6, Disorders of Potassium, Magnesium, Calcium, and Phosphorus, instructor

Integrated Pharmacotherapy 10, PHRM 710, course director

Integrated Pharmacotherapy 1, Biochemical Concepts, PHRM 701, instructor

Integrated Pharmacotherapy 5, Chronic Kidney Disease, PHRM 705, instructor

Integrated Pharmacotherapy 9, Thyroid Disorders, PHRM 709, instructor

Integrated Pharmacotherapy 9, Urinary Incontinence, PHRM 709, instructor

Advanced Pharmacy Practice Experience Rotation IV, PHRM 763 (1 student)

Professional Development 1, PHRM 725, instructor

Spring 2015

Integrated Pharmacotherapy 12, Inflammatory Bowel Disease PHRM 712, instructor

Integrated Pharmacotherapy 12, Diabetes Mellitus Part 2, PHRM 712, instructor

Integrated Pharmacotherapy 7, Gout, PHRM 707, instructor

Integrated Pharmacotherapy 7, Osteoarthritis, PHRM 707, instructor

Professional Development 2, PHRM, instructor

Integrated Pharmacotherapy 3, Diabetes Mellitus Part 1, PHRM 703, instructor

Integrated Pharmacotherapy 3, Dyslipidemia, PHRM 703, instructor

Fall 2014

Integrated Pharmacotherapy 2, Acute Kidney Injury, PHRM 702, instructor

Integrated Pharmacotherapy 2, Obesity, PHRM 702, instructor

Integrated Pharmacotherapy 2, Disorders of Sodium and Water, PHRM 702, instructor

Integrated Pharmacotherapy 6, Peripheral Arterial Disease, PHRM 706, instructor

Integrated Pharmacotherapy 6, Ischemic Heart Disease, PHRM 706, instructor

Integrated Pharmacotherapy 6, Acute Coronary Syndromes, PHRM 706, instructor

Integrated Pharmacotherapy 6, Arrhythmias, PHRM 706, instructor

Integrated Pharmacotherapy 6, Disorders of Potassium, Magnesium, Calcium, and Phosphorus, instructor

Integrated Pharmacotherapy 10, PHRM 710, course director

Integrated Pharmacotherapy 1, Biochemical Concepts, PHRM 701, instructor

Integrated Pharmacotherapy 5, Chronic Kidney Disease, PHRM 705, instructor

Integrated Pharmacotherapy 9, Thyroid Disorders, PHRM 709, instructor

Integrated Pharmacotherapy 9, Urinary Incontinence, PHRM 709, instructor

Professional Development 1, PHRM 725, instructor