

PERSONAL INFORMATION :

Melissa A. Babcook, M.D., Ph.D.

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Dublin, OH 43016
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EDUCATION HISTORY:

August 2015 – May 2019
July 2009 – January 2015

Doctor of Medicine; University of Toledo College of Medicine; Toledo, OH
Doctor of Philosophy in Nutrition; Case Western Reserve University School of Medicine; Cleveland, OH; Dissertation Title: Preclinical Development of Combination Simvastatin and Metformin Chemotherapy for Metastatic Castration-Resistant Prostate Cancer; Mentor: Sanjay Gupta, Ph.D.

August 1999 – May 2004

Bachelor of Science, Dual Degree in Biology and Chemistry; Bowling Green State University; Bowling Green, OH

EMPLOYMENT HISTORY:

June 2019 – June 2021

Clinical Instructor Housestaff, Resident Physician; Internal Medicine Department, Physician-Scientist Training Program, The Ohio State University Wexner Medical Center

September 2018 – June 2019
May 2016 – August 2016

Research Consultant; Whispergenics; Toledo, OH
NIH NCI Postdoctoral Summer Intern; Center for Cancer Research; Laboratory of Genitourinary Cancer Pathogenesis, Mentors: David VanderWeele, M.D., Ph.D., Kathleen Kelly-Siebenlist, Ph.D.; Bethesda, MD

December 2014 – October 2015

Research Faculty; The Urology Institute; University Hospitals Case Medical Center; Cleveland, OH

September 2014 – October 2015

NIH NIDDK Postdoctoral Fellow; Department of Urology; Case Western Reserve University School of Medicine; Cleveland, OH

December 2011 – August 2015

Student Member, Research Faculty Member; Tumor Board for Genitourinary Cancers; University Hospitals Case Medical Center; Cleveland, OH

February 2012 – July 2015

Head of Yeast Propagation and Management, Part-Time Brewer; Fat Head's Brewery and Tap House; Middleburg Heights, OH

January 2008 – May 2009

Adjunct Instructor, Introductory Chemistry and Biology; Arts and Sciences Department; Northwest State Community College; Archbold, OH

April 2007 – July 2009

Water Utilities Director (01/01/2008 to 07/05/2009); **Water Treatment Plant Superintendent** (04/25/2007 to 12/31/2007); Village of Ottawa; Ottawa, OH

August 2006 – March 2007

Medical Technologist, Mass Spectrometry Technician; Quest Diagnostics; Department of Toxicology and Forensics; Las Vegas, NV
Quality Control Analyst, FTIR, GC/MS, HPLC Technician; ProCaps Laboratories; Quality Control Division; Henderson, NV

September 2005 – August 2006

August 2004 – August 2005

Research Assistant (Craig Jensen, Ph.D. Laboratory) and **Teaching Assistant** (Honors General Chemistry Laboratory and Analytical Chemistry Laboratory); Department of Chemistry; University of Hawaii at Manoa; Honolulu, HI

May 2000 - August 2004

Water Treatment Plant Operator, Chemical and Microbiological Analyst; Village of Archbold Water Treatment Plant; Archbold, OH

ADDITIONAL CLINICAL EXPERIENCE/VISITING ROTATIONS:

January 2018

Tulane University
Internal Medicine & Psychiatry; Forensic Psychiatry

August 2018

Duke University
Internal Medicine & Psychiatry; Psych-Oncology

July 2018

University of Iowa Hospitals and Clinics
Inpatient Medicine-Psychiatry Unit

HONORS and AWARDS:

March 2018	Medical Student Travel Award – Ohio Psychiatric Physicians Association Annual Meeting
September 2016	Medical Student Travel Award – Association of Medicine and Psychiatry Annual Meeting
August 2015 – May 2018	Dorothy and Ashel Bryan Scholarship – UTCOM Merit-Based
August 2015 – May 2018	Dearce Koch Scholarship – UTCOM Merit-Based
August 2015 – May 2018	UT Health Science Bookstore Scholarship – UTCOM Merit-Based
April 2015	Postdoctoral Research Award – Research ShowCASE, CWRU
April 2015	Doctoral Excellence Award in Nutrition – School of Graduate Studies, CWRU
September 2014	Society for Basic Urological Research Fall Symposium Travel Award
May 2014	Podium Presentation Award – Biomedical Graduate Student Symposium, CWRU
May 2014	Graduate Student Research Honorable Mention Award – Research ShowCASE, CWRU
July 2013	Scientific Poster Presentation Award – Case Comprehensive Cancer Center Retreat, CWRU
May 2013	Poster Presentation Award – Biomedical Graduate Student Symposium, CWRU
May 2013	Graduate Student Research Award – Research ShowCASE, CWRU

LEADERSHIP:

August 2016 – May 2019	<i>Medical Student Affairs Committee; Association of Medicine and Psychiatry</i>
April 2016 – May 2017	<i>Hematology & Medical Oncology Chair; Internal Medicine Club; University of Toledo College of Medicine; Toledo, OH</i>
April 2016 – May 2017	<i>Treasurer; Psychiatry Club; University of Toledo College of Medicine; Toledo, OH</i>
April 2016 – May 2017	<i>Secretary; LGBTQ People in Healthcare; University of Toledo College of Medicine; Toledo, OH</i>
January 2016 – May 2017	<i>Co-Founder/Co-Coordinator; M1/M2 Skills Workshop Series; University of Toledo College of Medicine; Toledo, OH</i>
August 2015 – May 2016	<i>M1 Representative; Interprofessional Immersive Simulation Center; University of Toledo College of Medicine; Toledo, OH</i>
August 2015 – May 2016	<i>College of Medicine Representative; Institute for Healthcare Improvement, UT Health Science Campus Chapter; University of Toledo; Toledo, OH</i>
October 2014 – May 2015	<i>Postdoctoral Representative; Faculty Senate, Committee on Graduate Studies; Case Western Reserve University; Cleveland, OH</i>
September 2007 - July 2009	<i>Communications Secretary; Blanchard River Flood Mitigation Committee; Putnam County Citizen and Public Official Collaborative; Ottawa, OH</i>
August 2001 - May 2003	<i>Social Chairperson; Alpha Gamma Delta Sorority, Alpha Kappa Chapter; Bowling Green State University; Bowling Green, OH</i>

TEACHING and MENTORING:

May 2014 - August 2014	Mentee: Raj R. Nanavaty; The Ohio State University; Department of Biological Sciences; CWRU Undergraduate Summer Research Program
May 2013 - May 2014	Mentee: Christine Z. Oak (co-mentorship); Case Western Reserve University; Department of Biology and Medical Anthropology; CWRU Undergraduate Senior Capstone Research Program
May 2012 - August 2012	Mentee: Tavaris Tucker (co-mentorship); John F. Kennedy High School; CWRU High School Student Scientific Enrichment and Opportunity Program
January 2008 - May 2009	Adjunct Instructor, Introductory Chemistry and Biology; Arts and Sciences Department; Northwest State Community College; Archbold, OH

August 2004 - May 2005 Teaching Assistant, Honors General Chemistry and Analytical Chemistry Laboratories; Department of Chemistry; University of Hawaii at Manoa; Honolulu, HI

GRANT FUNDING:

March 2015 - August 2015 Clinical and Translational Science Collaborative of Cleveland Core Utilization Pilot Grant
“Correlation of AMP-Activated Protein Kinase Phosphorylation Status, Activity, and Protein Expression with Prostate Cancer Progression to Castration-Resistance and Metastasis in Human Archived Specimens”
Primary Investigator: Sanjay Gupta
Co-Investigators: Melissa A. Babcook, Gregory T. MacLennan, Pingfu Fu
(Second funded research grant written by M.A. Babcook)

October 2014 – October 2015 Case Urological Translational Research Training Program
NIH T32 Postdoctoral Fellowship
Ruth L. Kirschstein National Research Service Award
Primary Investigator: Melissa A. Babcook
(Second funded training grant written by M.A. Babcook)

July 2013 - December 2013 Clinical and Translational Science Collaborative of Cleveland Core Utilization Pilot Grant
“Effect of Synergistic Simvastatin and Metformin Chemotherapy in Mouse Model of Metastatic Castration-Resistant Prostate Cancer”
Primary Investigator: Sanjay Gupta
(First funded research grant written by M.A. Babcook)

August 2011 - July 2014 Metabolism Training Program
NIH T32 Pre-Doctoral Fellowship
Ruth L. Kirschstein National Research Service Award
(First funded training grant written by M.A. Babcook)

ACTIVE IRB PROTOCOLS:

Co-investigator. OSU-18263: Early Detection and Mechanisms of Ibrutinib-Associated Cardiotoxicity. Primary Investigator: Daniel Addison.

Co-investigator. OSU-13053: Precision Cancer Medicine for Advanced Cancer Through High-Throughput Sequencing. Primary Investigator: Sameek Roychowdhury.

PUBLICATIONS:

Babcook M.A., Nidhi N., Bonsu J.M., Yildiz V.O., Wei L., Ruz P., Paskett E., Addison D. Representation of Females in Clinical Trials Supporting FDA Approval of Contemporary Cancer Therapies. [*submitted to JAMA Oncology for review June 2020*]

Babcook M.A., Skeel Williams K. Psychosocial Aspects of Surgical Treatment Decisions in Women with Ductal Carcinoma In Situ. *Psycho-Oncology*. 2019; 28(7): 1367-1372.

Babcook M.A., Akgul M., Margevicius S., MacLennan G.T., Fu P., Abouassaly R., Gupta S. Ser-486/491 Ser-486/491 Phosphorylation and Inhibition of AMPK α Activity is Positively Associated with Gleason Score, Metastasis, and Castration-Resistance in Prostate Cancer: A Retrospective Clinical Study. *Prostate*. 2018; 78(10): 714-723. PMID: 29577356

Babcook M.A., Joshi A., Montellano J.A., Shankar E., Gupta S. Statin use in prostate cancer: an update. *Nutr Metab Insights*. 2016; 9: 43-50. PMID: 27441003

He Q., **Babcook M.A.**, Shukla S., Shankar E., Wang Z., Liu G., Erokwu B.O., Flask C.A., Lu L., Daneshgari F., MacLennan G.T., Gupta S. Obesity-initiated metabolic syndrome promotes urinary voiding dysfunction in a mouse model. *Prostate*. 2016; 76(11): 964-76. PMID: 27040645

Babcook M.A., Sramkoski R.M., Fujioka H., Daneshgari F., Almasan A., Shukla S., Gupta S. Combination Simvastatin and Metformin Induces G1-Phase Cell Cycle Arrest and Ripk1- and Ripk3-Dependent Necrosis in Osseous Metastatic Castration-Resistant Prostate Cancer Cells. *Cell Death Dis*. 2014; 5: e1536. PMID: 25412314

Babcook M.A., Shukla S., Fu P., Vazquez E.J., Puchowicz M.A., Molter J.P., Oak C.Z., MacLennan G.T., Flask C.A., Lindner D.J., Parker Y., Daneshgari F., Gupta S. Synergistic Simvastatin and Metformin Combination Chemotherapy for Osseous Metastatic Castration-Resistant Prostate Cancer. *Mol. Cancer Ther*. 2014; 13(10): 2288-2302. PMID: 25122066

Thakur V.S., Deb G., **Babcook M.A.**, Gupta S. Plant phytochemicals as epigenetic modulators: role in cancer chemoprevention. *AAPS J*. 2014; 16(1): 151-163. PMID: 24307610

Shukla S., Bhaskaran N., **Babcook M.A.**, Fu P., MacLennan G.T., Gupta S. Apigenin inhibits prostate cancer progression in TRAMP mice via targeting PI3K/Akt/FoxO pathway. *Carcinogenesis*. 2014; 35(2): 452-460. PMID: 24067903

Gupta K., Thakur V.S., Bhaskaran N., Nawab A., **Babcook M.A.**, Jackson M.W., Gupta S. Green tea polyphenols induce p53-dependent and p53-independent apoptosis in prostate cancer cells through two distinct mechanisms. *PLoS One*. 2012; 7(12):e52572. PMID: 23285096

Babcook M.A., Gupta S. Apigenin: A promising anticancer agent for the modulation of the insulin-like growth factor (IGF) axis in prostate cancer. *Biomed Res*. 2012; 23: SI 55-68.

PODIUM PRESENTATIONS:

May 2016

American Urological Association Annual Meeting 2016, San Diego, CA.
 “Title: Phosphorylation of AMPK α at Ser-486/491 is associated with metastasis and castration-resistance prostate cancer: A clinical study”
Babcook M.A., Akgul M., Margevicius S., MacLennan G.T., Fu P., Abouassaly R., Gupta S.

May 2014

Biomedical Graduate Student Symposium. “Simvastatin and Metformin: A Deadly Combination for Metastatic Castration-Resistant Prostate Cancer”
Babcook M.A., Shukla S., Sramkoski R.M., Fu P., Vazquez E.J., Puchowicz M.A., Molter J.P., Oak C.Z., MacLennan G.T., Flask C.A., Lindner D.J., Parker Y., Daneshgari F., Gupta S.

May 2014

American Urological Association Annual Meeting 2014, Orlando, FL.
 “Simvastatin and Metformin: A Deadly Combination for Metastatic Castration-Resistant Prostate Cancer” **Babcook M.A.**, Shukla S., Sramkoski R.M., Fu P., Vazquez E.J., Puchowicz M.A., Molter J.P., Oak C.Z., MacLennan G.T., Flask C.A., Lindner D.J., Parker Y., Daneshgari F., Gupta S.

POSTER PRESENTATIONS:

May 2020

AACR Annual Meeting 2020. “Representation of Females in Clinical Trials Supporting FDA Approval of Contemporary Cancer Therapies” **Babcook M.A.**, Nidhi N., Bonsu J.M., Yildiz V.O., Wei L., Ruz P., Paskett E., Addison D. [Conference cancelled]

November 2014

Society for Basic Urological Research 2014 Fall Symposium. “Preclinical development of combination simvastatin and metformin chemotherapy for

- metastatic castration-resistant prostate cancer” **Babcook M.A.**, Shukla S., Sramkoski R.M., Fu P., Vazquez E.J., Puchowicz M.A., Daneshgari F., Almasan A., Molter J.P., Oak C.Z., MacLennan G.T., Flask C.A., Lindner D.J., Parker Y., Gupta S.
- July 2014 Case Comprehensive Cancer Center Retreat. “Combination simvastatin and metformin induces G1-phase cell cycle arrest and Ripk1- and Ripk3-dependent necrosis in osseous metastatic castration-resistant prostate cancer cells” **Babcook M.A.**, Sramkoski R.M., Fujioka H., Daneshgari F., Almasan A., Shukla S., Nanavaty R.R., Gupta S.
- April 2014 Research ShowCASE. “Combination simvastatin and metformin induces necrotic cell death in osseous metastatic castration-resistant prostate cancer” **Babcook M.A.**, Sramkoski R.M., Daneshgari F., Almasan A., Gupta S.
- April 2014 AACR Annual Meeting 2014. “Combination simvastatin and metformin induces necrotic cell death in osseous metastatic castration-resistant prostate cancer” **Babcook M.A.**, Sramkoski R.M., Daneshgari F., Almasan A., Gupta S.
- July 2013 Case Comprehensive Cancer Center Retreat. “Synergistic simvastatin and metformin combination chemotherapy for metastatic castration-resistant prostate cancer” **Babcook M.A.**, Shukla S., Fu P., Sramkoski R.M., Vazquez E.J., Puchowicz M.A., Lindner D.J., Parker Y., Gupta S.
- May 2013 Biomedical Graduate Student Symposium. “Synergistic simvastatin and metformin combination chemotherapy for metastatic castration-resistant prostate cancer” **Babcook M.A.**, Sramkoski R.M., Vazquez E.J., Puchowicz M.A., Shukla S., Gupta S.
- April 2013 Research ShowCASE. “Synergistic action of simvastatin and metformin on metastatic castration-resistant prostate cancer” **Babcook M.A.**, Sramkoski R.M., Vazquez E.J., Puchowicz M.A., Shukla S., Gupta S.
- April 2013 AACR Annual Meeting 2013. “Synergistic simvastatin and metformin combination chemotherapy for metastatic castration-resistant prostate cancer” **Babcook M.A.**, Sramkoski R.M., Puchowicz M.A., Shukla S., Gupta S.
- August 2012 Cleveland High School Student Scientific Enrichment and Opportunity Program. “Berries of *Solanum nigrum* prevent growth of human bladder cancer cells by inhibiting proliferation and inducing apoptosis” Tucker T., Bhaskaran N., **Babcook M.A.**, Gupta S.
- July 2011 Case Comprehensive Cancer Center Retreat. “Molecular modeling predicts high-affinity binding of green tea catechin gallates to HMG-CoAR reductase catalytic active site” **Babcook M.A.**, Datt M., Gupta S.
- April 2011 AACR Annual Meeting 2011. “p53-dependent and p53-independent responses by green tea polyphenols in human prostate cancer” Gupta K., **Babcook M.A.**, Thakur V.S., Nawab A., Jackson M.W., Gupta S.

PROFESSIONAL MEMBERSHIPS and ASSOCIATIONS:

- August 2015 – Present Member; American College of Physicians
 August 2015 – Present Member; American Medical Association

August 2015 – Present	Member; Institute for Healthcare Improvement
April 2013 – December 2018	In-Training Member; Society for Basic Urological Research
November 2010 – Present	Associate Member; American Association for Cancer Research
November 2010 – Present	Member; Women in Cancer Research
November 2010 – Present	Member; Chemistry in Cancer Research