

CURRICULUM VITAE
Yuhua Song, Ph.D.

Professor (with tenure) in Department of Biomedical Engineering
The University of Alabama at Birmingham
1825 University Boulevard, Shelby 803, Birmingham, AL 35294-2182
Phone: (205) 996-6939 (office); Fax: (205) 975-4919
Email: yhsong@uab.edu Web: <https://sites.uab.edu/yhsong/>

Research Statement

Our research goal is to identify therapeutic drug candidates for target proteins involved in Alzheimer's disease and other diseases using integrated computational and experimental approaches. For therapeutic drug identifications, with unbiased virtual screening/translational bioinformatics approach, biophysical and biological experimental validation, we aim to screen and identify the novel compounds – including endo- & exogenous small molecules and repositioned FDA-approved drugs – with desired binding activity for protein targets, ability to activate relevant cellular responses, and synergy with other binding ligands for important cellular activities in Alzheimer's disease and other diseases, with current focus in Alzheimer's disease. We are also interested in mechanism and treatment studies of diseases comorbidity, including the mutual interactions between vascular disease/atherosclerosis and Alzheimer's disease, between Cancer and Alzheimer's disease. We plan to further investigate the identified top drug candidates with *in vivo* studies, dish-based clinical trials using iPSC technology and electronic health record analyses for therapeutic outcome studies. We also investigate protein-protein interactions, small molecule-target protein interactions and its mediated cellular signaling events, and how these are changed by disease-associated genetic variants to gain insights for the mechanisms of action in Alzheimer's disease and other diseases. Methodology development for multiscale modelling of complex biological systems continues to be a focus of my research group. Our research program is currently funded by NIH, NSF, Alzheimer's Drug Discovery Foundation and UAB internal grants. In addition to \$2.1 million NIH R01 awarded to study TREM2-endogenous ligand interactions in Alzheimer's disease through 2021 – 2026; we are recently (06/15/2023) awarded \$2.89 million NIH R01 grant to study drugs repositioning for Alzheimer's disease through 2023 - 2028.

Education Statement

My goals for education are to inspire the students' interest, motivate students to actively think and be committed in the course and research, teach students to critically read literatures, and help the students to develop critical and independent thinking, problem solving and team working skills, and good working ethic that are important for the students' future academic and professional development.

In addition to engagement in class teaching of both undergraduate and graduate courses, I have mentored more than 50 trainees with 15 minority and more than 20 female trainees since I joined UAB in 2006, including postdoctoral associates, graduate, undergraduate and high school students, research scholars, and research assistants. The trainees in my research group have been productive and are recognized by students' awards. I have also served on more than 20 thesis committees. Due to my dedication to mentees' training, I was awarded Graduate Dean's Excellence in Mentorship Award.

Education and Training

2002 - 2005	Post-Doc in Computational Biology, Washington University in St. Louis, St. Louis, MO
2001 - 2002	Post-Doc in Computational Biomechanics, University of Pittsburgh, Pittsburgh, PA
1998 - 2001	Post-Doc in Computational Mechanics, Tsinghua University, Beijing, China
1996 - 1998	Ph.D. in Materials Science and Eng., Harbin Institute of Technology, Harbin, China
1993 - 1996	M.S. in Materials Science and Eng., Harbin University of Sci and Tech, Harbin, China
1985 - 1989	B.S. in Materials Science and Eng., Jilin University of Technology, Jilin, China
2013 - 2016	Master of Business Administration, University of Alabama at Birmingham (UAB)

Academic Appointments

2022 –	Professor with Tenure, Department of Biomedical Engineering, UAB
2012 - 2022	Associate Professor with Tenure, Department of Biomedical Engineering, UAB
2006 - 2012	Assistant Professor, Department of Biomedical Engineering, UAB
2005 - 2006	Research Instructor with Dr. Nathan A. Baker, Center for Computational Biology

2002 - 2005 Dept. of Biochemistry and Molecular Biophysics, Washington University in St. Louis
Research Associate with Dr. Nathan A. Baker, Center for Computational Biology
2001 - 2002 Dept. of Biochemistry and Molecular Biophysics, Washington University in St. Louis
Postdoctoral Fellow with Dr. Savio L-Y. Woo, Musculoskeletal Research Center
Dept. of Orthopedic Surgery, University of Pittsburgh
1998 - 2001 Postdoctoral Fellow with Dr. Yongnian Yan, Center for Bio-Manufacturing Engineering
Dept. of Mechanical Engineering, Tsinghua University, China

Other University Affiliations/Positions at UAB

2022 - present Scientist, Center for Clinical and Translational Science (CCTS), UAB
2021 - present Scientist, Center for Neurodegeneration and Experimental Therapeutics, UAB
2011 - present Faculty of Structural Biology Program, UAB
2011 - present Member, Center for Nanoscale Materials and Biointegration, UAB
2010 - present Faculty of Graduate Biomedical Science, UAB
2009 - present Associate Scientist, UAB Comprehensive Cancer Center, UAB
2007 - present Secondary Faculty, Department of Biochemistry and Molecular Genetics, UAB
2007 - present Faculty of Medical Scientist Training Program, UAB
2006 - present Associate Scientist, Center for Computational and Structural Dynamics, Center for
Structural Biology, UAB
2006 - present Associate Scientist, Center for Metabolic Bone Disease, UAB
2006 - present Associate Scientist, BioMatrix Engineering and Regenerative Medicine Center, UAB
2011 - 2012 Associate Director, Center for Computational and Structural Dynamics, UAB

Awards and Honors

2023 – 2028 NIH R01 Award from National Institute on Aging
2021 – 2026 NIH R01 Award from National Institute on Aging
2021 NSF-supported XSEDE XRAC award, BIO200050 (computational resources)
2020 - 2021 COVID-19 HPC Consortium Award spearheaded by White House of Sci and Tech
Policy, U.S. Dept of Energy, NSF and IBM (TG-BIO200084, computational resources)
2020 – 2021 NSF-supported XSEDE award, MCB200181 (computational resources)
2017 Graduate Dean's Excellence in Mentorship Award for 2017
2013 NSF-supported XSEDE award, MCB130041 (computational resources)
2012 - 2018 NSF award from Biomedical Engineering Program in Division of Chemical,
Bioengineering, Environmental, and Transport Systems at NSF
2012 – 2013 NSF-supported Extreme Science and Eng Discovery Environment (XSEDE) award
MCB130026 (computational resources)
2009 - 2015 NIH K25 Mentored Quantitative Research Career Development Award, NIH/NCI
2008 - 2009 Startup/Educational Allocation award for computational resources
NSF's Partnerships for Advanced Computational Infrastructure
2008 - 2009 The Development Allocation Committee Award for computational resources
NSF's Partnerships for Advanced Computational Infrastructure
2007 - 2008 UAB ADVANCE Faculty Research Awards through the sponsorship of NSF
2006 - 2007 Medium Resource Allocations Committee Award for computational resources
NSF's Partnerships for Advanced Computational Infrastructure
2005 - 2006 Development Allocations Committee Award for computational resources NSF's Partnerships
for Advanced Computational Infrastructure
2002 Scholarship for the Grace Hopper celebration of women in computing
2000 Postdoctoral Fellowship, China National Science Foundation

Professional Affiliations

Biophysical Society American Association for Cancer Research American Chemical Society
American Society for Biochemistry and Molecular Biology American Heart Association
Protein Society National Center for Faculty Development & Diversity

Further Career Development

2022 – present Leadership Development for Engineering Program Directors
2021 Faculty Search Committee Training
2019 – present National Center for Faculty Development & Diversity, online career development and

Mentoring resources: monthly webinars, multi-week courses etc.

2016 – present UAB Center for Teaching and Learning

2012 GRD 717 Course: Principles of Scientific Integrity

2010 Excellence in Teaching Seminar Series by the UAB Office for Faculty Development and Faculty Affairs

2009 – present Biohazard management, biosafety training from UAB Occupational Health and Safety department, Certificates for Working with Mice in Research and Using Animals for Teaching Testing and Research at UAB

2009 Teaching Portfolio Workshop

2008 - present Professional Develop Seminar Series by UAB Center for Clinical and Translational Sci

2006 Master Teacher Program

Teaching Contribution (* New courses development)

- * BME 333 Biomechanics of Solids (Instructor), Spring 2008 – current, UAB
- * BME 680/780 Biomolecular Modeling (Instructor), Fall 2015 – current, UAB
- BME 150 Computer Meth in EGR, Fall, 2013, UAB
- * BME 480/580 Biomolecular Modeling (Instructor), Fall 2007, 2009, UAB
- BME 330 Biomechanics (Instructor), Spring 2007, UAB
- Lecture in “Math Methods for Biophysics and Biochemistry (Bio-5329)” at Washington Univ. in St. Louis
- Lab course develop for “Modeling Biomolecular Systems II (BME-540)” at Washington University in St. Louis
- Advised graduate students, undergraduate and high school students at UAB, Washington University in St. Louis, University of Pittsburgh, and Tsinghua University

Educational Contribution

Current and past postdoc, graduate, and undergraduate students/trainees: 54 with 15 minority and 22 female trainees. More than 10 students were awarded fellowships. Served on more than 20 students’ thesis or dissertation committees.

* Minority student; ** female student

Current Students/Trainees

Graduate students and research assistants

Rory A Greer (PhD) (Awardee of NIHT32 Training Grant; UAB Blazer Fellowship);

Hunter B Dean (PhD, MD) (jointly training with Dr. Erik Roberson.

Awardee of NIHT32 Training Grant in Neurodegeneration at UAB, 2019, 2020

Awardee of Alzheimer's of Central Alabama fellowship, 2021, 2022

Awardee of GSG Trainee Professional Development and Travel Award for *Society for Neuroscience meeting 2022*

Ryan A. Tuckey (PhD, MD) (jointly training with Dr. Erik Roberson)

Amanda M Plain*, ** (PhD, part time);

Caedmon Isaacson (ABM student): Awardee of 2023 Cancer Research Immersion Summer Program (CRISP) at UAB funded by NCI

Undergraduate students

Shalarrria Cooper*, **; Van Winkle, Sarah Gabrielle, Julia Fromm**, Andy Lee Mayfield

Annabel Lynne Johnson**: Awardee of 2023 Presidential Summer Innovation Fellowship

Baraa Aljawawdeh**, Alyssa Mckenna Pentas**, Prithak Shrestha

Past Students/Trainees

Graduate students

Helen E Brinyark ** (PhD rotation, 2021 - 2022); Urvi Rawal ** (M.S., rotation student, Fall 2022)

Adam E Bashir (MD) (2018-2019); Caleb M Graham (Master rotation, Fall 2019);

Romone Fancy * (PhD, graduated in Dec 2017); Hongyi Yang ** (PhD, graduated in Dec 2015);

Tiara Napier *, ** (MS, graduated in 2013); Qi Yan (MS, graduated in 2009);

Di Pan (MS, graduated in 2009); Mohit A Limdi (PhD rotation, 2016 - 2017);

Aufan, Muhammad Rifqi (PhD rotation, 2017); Khanh T Nguyen** (PhD rotation, Fall 2018);

Molly Sears Buckley** (MS rotation, Fall 2018)

Postdoctoral researcher, Research scholar and Research assistant

Thi Kieu Duyen Tran ** (2021 - 2022); Yuwei Song ** (2019 – 2021); Justin L. Howell (2013 – 2016);
Lingyun Wang (2011 – 2014); Qinghua Zeng (2014); Thomas Schmid (2012); Daixi Li (2009 – 2010);
Huikuan Chao (2009 – 2010); Bibo Shi (2008 – 2009); Yuemin Liu (2006 – 2007)

Undergraduate students

Han Jing (2022); Hrithik Praveen (2019 – 2022); Kyla Alexsa Gabriel*, ** (2019 – 2022); Jason Zhang (2020 –
2021), Zainab Ameir Ahmad ** (2018 – 2020); Patel, Kishan M (2018); Hong, Seooui ** (2018); Vaishali
Nijampatnam ** (2016-2017); Ruta Sanjay Bhat ** (2016-2017); Samuel Holder (2016); Nichelle Alyson
Preston ** (2016); Dynisty Everette * (2015); Julian Dill * (2015); Brady Dulak (2014); Musa Williams *
(2012); Kevin J Anderson * (2009 – 2011); Valentine Nwachukwu* (2011); Jonathan Suever (2007 –
2008); Russell Green (2007 – 2008); Joseph C Pak (2008)

High school students

Amy Zhang ** (2016 – 2017, now at Harvard U); Courtney Mobbs ** (2016);
James Browning (2014 – 2015, now at UAB); Brea Reese*, ** (2013); Jarvis Williams * (2011);
Christopher Evans * (now at UAB, 2010, 2011); Nichele Cantrell *, ** (2009); Theodore Tolvin * (2008)

Student Thesis or Dissertation Committee

Zeng, Huaxiu, PhD student (2023 – current); Jana Badrani, MD/PhD student (2022 – current) LaBreesha
Batey, Ph.D student (2022 - current); Ari Benjamin Ginsparg, Ph.D. student (2020 - current);
Khanh T Nguyen, Ph.D. student (2021 - 2022); Ji Hee Kim, Ph.D. student (2017 - 2021);
Cordero D. Core, Ph.D. student (2011 - 2013); Ian T Cook, Ph.D. (2009 - 2012);
Hongyi, Yan, Ph.D. (2008 - 2014); David H. Johnson, Ph.D. (2008 - 2014);
Amanda M Plain, Ph.D. candidate (2008 - 2016); Lurong Pan, Ph.D. (2009 - 2013);
Xin Chen, Ph.D. (2006 - 2008); Muhammad Y. Qadri, M.D, Ph.D. (2007 - 2009)
Susan Floyd, B.S. (2021 - 2022); Cockrell, Benjamin Evan, B.S. (2021 - 2022);
Chidinma Anakwenze, B.S. (2010 – 2011); Vinuta P Mayakonda, B.S. (2011 - 2012);
Kyle E Murdock, B.S. (2013); Vinuta P Mayakonda, B.S. (2011 – 2012);
Chidinma Anakwenze, B.S. (2010 - 2011);

Awards for Students

Hunter B. Dean, MD/PhD student

- Awardee of NIH T32 Training Grant in Neurodegeneration at UAB, 2019, 2020
- Awardee of Alzheimer's of Central Alabama fellowship, 2021, 2022, 2023
- Awardee of GSG Trainee Professional Development and Travel Award for *Society for Neuroscience meeting 2022*

Rory A Greer, PhD student

- Awardee of UAB Blazer fellowship, 2020 – 2021
- Awardee of NIH T32 Training Grant at UAB, 2021-2023
- Awardee of GSG Trainee Professional Development and Travel Award for *Alzheimer's Association International Conference (AAIC) Advancements: APOE conference, 2023*

Helen E Brinyark, PhD student

- Awardee of UAB Blazer Fellowship, 2021 – 2022

Caedmon Isaacson (ABM student):

- Awardee of 2023 Cancer Research Immersion Summer Program (CRISP) at UAB funded by NCI

Annabel Lynne Johnson, BME Undergraduate Student

- Presidential Summer Innovation Fellowship, 2023

Jason Zhang, BME Undergraduate Student

- Honors College Presidential Summer Fellowship, 2020
- First Place, UAB Summer Research Expo, 2020
- UAB Undergraduate Student Government Association (USGA) travel grant, 2020
- Full scholarship from MIT biological engineering graduate program, 2021
- Tau Beta Pi Fellowship for graduate school study, 2021

Romone Fancy, M.S., PhD

- Graduate fellowship from The Comprehensive Minority Faculty and Student Development Program at UAB (2014–2017)

- NSF Bridge to the Doctorate fellowship from The Office for Equity and Diversity at UAB (2011–2013)
- AACR Minority Scholar in Cancer Research Award 2012
- First-Place for poster presentation in Biomedical Engineering Research Symposium at UAB, 2012

Tiara Napier, M.S.

- NSF Bridge to the Doctorate fellowship from The Office for Equity and Diversity at UAB (2011-2013)
- First-Place in the Engineering Category for poster presentation at conference for NSF Bridge to the Doctorate Fellows in Auburn, 2012

Kevin J Anderson, B.S.

Recognized in Sci and Tech Honors Program in its Spring Celebration of Excellence at UAB, 2011

Di Pan, B.S.

Ireland Tuition Scholarship, 2008-2009

Jonathan Suever, B.S.

The Mr. & Mrs. Kwok-Chong Woo Grant” from Orthopaedic Research Laboratory Alumni Council (2007–2008)

Department, School and University Service at UAB:

Department level service

- Director for Graduate Program Committee, Department of Biomedical Engineering (BME) (2021 – 2022) (recruitment of the largest group of incoming students in at least past six years)
- Associate Director for Graduate Program Committee, BME Department (2020 Fall - 2021 Spring)
- Graduate Program Committee, BME Department (2006 – 2013, 2016- present)
- Academic Research Excellence Committee, BME Department (2016 - 2020)
- Visibility & Recognition Committee, BME Department (2016 - 2020)
- BME Chair Search Committee (2015)
- Department Strategic Planning Committee, BME Department (2007 - 2009)

School level service

- Neuro-engineering Graduate Program Committee, School of Engineering (2020 – current)
- Neuro-engineering Faculty Search Committee (2020 – present)
- School’s representative on the UAB commission on the Status of Women (2020 - current)
- Academic Affairs Committee, School of Engineering (2018 - present)
- Quality Assessment Committee, School of Engineering, UAB (2014 - 2016)
- Faculty Advisor for Society of Women Engineers, School of Engineering (2011 - 2016)
- Faculty member for Society of Women Engineers, School of Engineering (2016 - present)
- Equity and Diversity Committee, School of Engineering (2007 - 2009)

University level service

- UAB President’s Commission on the Status of Women (CSW) (2020 – present)
- American Association of University Women (AAUW) at UAB (2019 – 2020)
- Faculty representative on UAB HPC Users Advisory Group (2016 - present)
- Graduate Students Thesis Committees at UAB (2006 – present)
- Faculty Advisor for Master and PhD students (2006 – present)
- Faculty Mentor, UAB Science and Technology Honor Program (2006 - present)
- Faculty Mentor, UAB Honors College (2006 - present)
- Faculty Mentor, UAB CORD summer research internship for high school students (2008 - present)
- Faculty Interviewer of the candidates for other graduate programs (2007 - present)
 - Medical Scientist Training Program
 - Graduate Biomedical Sciences
- Faculty Mentor, NSF REU program, Department of Physics (Summer 2011, 2012, 2014, 2015)
- Faculty Mentor, UAB’s Beckman Scholars Program application for undergraduate research (2014)
- Faculty Judge for UAB BME Research Symposium (Spring 2012)
- Faculty Judge for graduate research day (Spring 2011)
- Associate Director of the Center for Computational and Structural Dynamics, UAB (2011 - 2012)
- Organizer of Molecular and Modeling Simulations study group monthly meetings (2011 - 2014)
- Advisory Board for mentoring women in computing and technology (2010 - 2012)
- Computer and Networking Advisory Committee, School of Engineering (2007 - 2009)
- Participation in UAB ADVANCE program (2006 - 2010)

Outreach Activities and Mentoring Female and Minority Students

- Actively involved with the activities in Community OutReach Development program at UAB, mentoring minority high school students (2008 - present)
- School's representative on the UAB commission on the Status of Women (2020 – current)
- Faculty advisor for minority Undergraduate, Master and PhD students (2007 – present)
- Faculty advisor for female High School, Undergraduate, Master and PhD students (2007 – present)
- Faculty member for Society of Women Engineers, School of Engineering (2016 - present)
- Faculty Advisor for Society of Women Engineers, School of Engineering (2011 - 2016)
- American Association of University Women at UAB (2019)
- Faculty mentor for High school student in Hoover High School (2016-2017)
- Faculty mentor for High school student in Jefferson County International Baccalaureate School (2014-2015)
- Faculty mentor for High school students in Mountain Brook High School and Birmingham's Ramsay High School (2009)
- Advisory Board of mentoring for women in computing and technology, UAB (2010 - 2012)
- Committee for Professional Opportunities for Women, Biophysical Society (2012 - 2015)
- Early Careers Committee, Biophysical Society (2015 – 2017)
- Outreach with Girls, Inc. and Southern Company to highlight the fun in engineering through the Eureka!Nights program at Crestwood Center (2011)
- Outreach with Birmingham SWE Section and Southern Company to organize a Professional development series at UAB (2011, 2012)

Professional Service

Grant reviews

NSF CBET EBMS program, October 2021

UAB Center for Clinical and Translational Science (CCTS), November 2018

NSF CBET EBMS program, September 2018

NIH Membrane Biology and Protein Processing Study Section, October 2017

NSF CBET/CDS&E program, June 2017

Kentucky Science & Engineering Foundation, April 2016

Portuguese Foundation for Science and Technology, Panel Member for the Bioengineering, Biotechnology and Biochemistry Panel, Lisbon, Portugal, October 2012

Associate Editor and Editorial Boards

Associate Editor: Frontiers in Drug Discovery - Dermatologic Drugs

Editorial Boards: MCB: Molecular & Cellular Biomechanics (2007 - present)

Journal of Bioprocessing & Biotechniques (2011 - present)

Journal of Thermodynamics & Catalysis (2011 - present)

Health and Medical Informatics Open Access (2018 – present)

International Journal of Biochemistry & Physiology (2018 – present)

Membranes, Topic Editor in Section "Membranes in Life Science" (2021 – present)

Manuscript Reviews

Computational and Structural Biotechnology Journal

Computational Biology and Chemistry

Journal of Chemical Information and Modeling

Biomechanics and Modeling in Mechanobiology

Biophysical Journal

Medicinal Research Reviews

PLoS ONE

Journal of Biological Chemistry

Computational Science & Discovery

ACS Nano

Journal of Biomechanics

Materials & Design

IEEE Transactions on Biomedical Engineering

Journal of Zhejiang University-SCIENCE B

Journal of Mechanics in Medicine and Biology

Polymer Engineering and Science

International Journal of Computational Bioscience

Journal of Neurophysiology (panel review)

Journal of Orthopedic Research (panel review)

The Journal of Arthroscopic and Related Surgery (panel review)

Clinical Biomechanics (panel review)

Conference Organization

Organizing committee for the 2013 Frontiers in Structure Biology of Membrane Proteins symposium

Research Support

Active Research Support

NIH R01 AG081228 (Role: PI)	06/15/2023-02/29/2028
Drugs repositioning to target TREM2 in Alzheimer's disease	\$2,891,110 (TC)
NIH R01 AG068395 (Role: PI)	09/15/2021 – 05/31/2026
TREM2-endogenous ligand interactions in Alzheimer disease	\$2,136,242 (TC)
NSF/MCB MCB2024964 (Jun Zhang, PI; role: collaborator)	08/01/2020 – 07/31/2024
	\$900,000 (TC)
Regulatory functions of intrinsically disordered electronegative clusters (ENC) in RNA-binding proteins	
Alzheimer's Drug Discovery Foundation (Erik Roberson, PI; role: co-Investigator)	04/01/2019 - 04/01/2024
Toward Therapeutic Approaches to TREM2 in Alzheimer's Disease	660,000 (TC)
UAB Hugh Kaul Precision Medicine Institute pilot grant (Role: PI)	05/01/2020 – 09/30/2024
	\$20,000 (TC)
Repurposing already-available drugs to target human host proteins and SARS-CoV-2 proteins for COVID-19 prevention and treatment	

Pending Research Support

NIH R01 AG084029-01 (Thomas Brett, PI; role: co-Investigator/site PI)	
Structural Targeting of TREM2 in Alzheimer's Disease	7/1/2023 -06/30/2028
	\$2,850,080 (TC) \$315,926 (TC for subaward)

Completed Research Support

COVID-19 HPC Consortium spearheaded by White House of Science and Technology Policy, U.S. Department of Energy, NSF and IBM (TG-BIO200084) (Role: PI)	12/03/2020 – 12/03/2021
	1,500,000 HPC service units (SUs)
Computational Investigation of Vitamin D3 and its Hydroxyderivatives as Promising Drugs against COVID-19	
NIH R01 HL138990 (Qin, PI; role: co-Investigator)	07/1/2017 - 03/31/2021 \$375,000 (ADC)
E2F2 and Vascular Function	
TG-BIO200050 (Role: PI)	01/01/2021 – 06/30/2021 100,000.0 SUs
NSF-supported XSEDE Resource Allocations Committee (XRAC)	
Integrative computational investigation of already-available drugs to target key human host and SARS-CoV-2 proteins for COVID19 treatment	
TG-MCB200181 (Role: PI)	06/17/2020 – 06/16/2021 50,000.0 SUs
NSF-supported Extreme Science and Engineering Discovery Environment (XSEDE)	
Effects of Self-Oligomerization on Conformation and Ligand Binding in the Alzheimer's Disease Associated Protein TREM2	
NSF CBET-1159859 (Role: PI)	10/1/2012 - 09/30/2018 \$299,997 (TC)
Thrombospondin-1/calreticulin binding in regulating cell intermediate adhesion and collagen expression	
Bioengineering-Surgery Collaborative pilot grant (Role: MPI; Song and Parker)	\$2500
	4/01/2017 – 03/31/2018
Synergistic Effect of Tamoxifen and TRA-8 on ER-Positive Breast Cancer Treatment	
AHA 14GRNT2048002 (Bevenssee, PI; role: co-Investigator)	07/01/2014 – 06/30/2017 \$247,500 (TC)
AHA (Southeast Affiliate) Molecular Physiology of Na/Bicarbonate Cotransporters	
NIH 5K25 CA140791 (Role: PI)	08/14/2009 – 06/30/2015 \$768,940 (TC)
NIH/NCI Protein Interactions Underlying Fas-Mediated DISC in Cholangiocarcinoma	
NIH R01GM038953 (Falany, PI; role: co-Investigator)	9/30/2010 - 8/31/2014 250,000 (ADC)
NIH/NIGMS Human Cytosolic Sulfotransferases	
TG-MCB130026 and MCB130041 (Role: PI)	11/09/2012 – 11/08/2013 775,000 SUs
NSF supported Extreme Science and Engineering Discovery Environment (XSEDE)	
The Interaction of PEG-grafted PLL Copolymers with Biomembrane	
Pilot award from UAB Center for Biophysical Sciences and Engineering (Song, PI)	\$2,500
	10/01/2011 - 09/30/2012
Characterize and quantify the studied protein-protein and protein-ligand interactions	
NSF TG-MCB090009 (Song, PI)	10/01/2008 - 09/30/2009
NSF's Partnerships for Advanced Computational Infrastructure	
The role of thrombospondin 1-calreticulin interactions in calreticulin-induced intermediate adhesion	

-
- NSF TG-MCB080078** (Song, PI) 04/21/2008 - 03/31/2009
NSF's Partnerships for Advanced Computational Infrastructure
In silico study of glycosylation effects on integrin structure and function
- UAB ADVANCE Faculty Research Awards through the sponsorship of NSF** (Song, PI) \$22,500
07/01/2007 - 12/30/2008
Protein interactions underlying Fas-mediated apoptosis in osteoclasts
- NSF TG-MCB060053** (Baker, PI; Song, Co-PI) 07/01/2006 - 06/30/2007
Awarded as computational resources
NSF's Partnerships for Advanced Computational Infrastructure
Small molecule perturbation of biological membrane electrostatics, mechanics, and dynamics

PUBLICATIONS

*With my students and co-advised students' names underlined; * Corresponding author*

<http://www.ncbi.nlm.nih.gov/sites/myncbi/yuhua.song.1/bibliography/40758995/public/?sort=date&direction=descending>

Peer-reviewed Journal Articles (in reverse chronological order)

1. Hunter B Dean, Rory A Greer, Gunnar N Eastep, Daniel S Elston, Thomas J Brett, Erik D Roberson*, **Yuhua Song***. Multimerization of TREM2 is impaired by Alzheimer's disease-associated variants. *Journal of Biological Chemistry*, under revision, 2023.
2. Andrzej T. Slominski, Tae-Kang Kim, Radomir M. Slominski, Yuwei Song, Shariq Qayyum, Wojciech Placha, Zorica Janjetovic, Konrad Kleszczynski, Venkatram Atigadda, **Yuhua Song**, Chander Raman, Cornelis J. Elferink, Judith Varady Hobrath, Anton M. Jetten, Russel J Reiter. Melatonin and its metabolites can serve as agonists on the AhR and PPAR γ . *Journal of Pineal Research*, under review, 2023.
3. Steve Zaharias, Talia Fargason, Rory Greer, **Yuhua Song**, Jun Zhang. Electronegative clusters modulate folding status and RNA binding of unstructured RNA-binding proteins. *Protein Science*. 2023 Apr 15:e4643. <https://doi.org/10.1002/pro.4643>. Online ahead of print. (Impact Factor: 6.993)
4. Andrzej T. Slominski, Tae-Kang Kim, Radomir M. Slominski, Yuwei Song, Zorica Janjetovic, Ewa Podgorska, Sivani B. Reddy, **Yuhua Song**, Chander Raman, Edith Kang, Adrian Fabisiak, Pawel Brzeminski, Rafal R. Sicinski, Venkatram Atigadda, Anton M. Jetten, Michael F. Holick, Robert C. Tuckey. Metabolic activation of tachysterol₃ to biologically active hydroxyderivatives in the human system that act on VDR, AhR, LXRs and PPAR γ receptors. *The FASEB Journal*. 2022; 36(8): e22451. doi: <https://doi.org/10.1096/fj.202200578R>. (Impact Factor: 5.834)
5. Yuwei Song, Radomir M. Slominski, Shariq Qayyum, Tae-Kang Kim, Zorica Janjetovic, Chander Raman, Robert C. Tuckey, **Yuhua Song***, Andrzej T. Slominski*. Molecular and structural basis of interactions of vitamin D3 hydroxyderivatives with aryl hydrocarbon receptor (AhR): an integrated experimental and computational study. *International Journal of Biological Macromolecules*, 2022; 209:1111-23. doi: <https://doi.org/10.1016/j.ijbiomac.2022.04.048> PMID: 35421413 (Impact Factor: 6.953)
6. Brzeminski, Pawel; Fabisiak, Adrian; Slominski, Radomir; Kim, Tae-Kang; Janjetovic, Zorica; Podgorska, Ewa; Song, Yuwei; Saleem, Mohammad; Reddy, Sivani; Qayyum, Shariq; **Song, Yuhua**; Tuckey, Robert C. ; Atigadda, Venkatram; Jetten, Anton; Sicinski, Rafal; Raman, Chander; Slominski, Andrzej. Chemical synthesis, biological activities and action on nuclear receptors of 20S(OH)D₃, 20S,25(OH)2D₃, 20S,23S(OH)2D₃ and 20S,23R(OH)2D₃. *Bioorganic Chemistry*. 2022;121:105660. doi: <https://doi.org/10.1016/j.bioorg.2022.105660>. PMID: 35168121 PMCID: PMC8923993 (Impact Factor: 5.04)
7. Yuwei Song, Shariq Qayyum, Rory A Greer, Radomir M Slominski, Chander Raman, Andrzej T Slominski*, **Yuhua Song***. Vitamin D3 and its Hydroxyderivatives as Promising Drugs to Disrupt SARS-CoV-2 Entry against COVID-19: A Computational Study. *Journal of Biomolecular Structure and Dynamics*, 2021:1-17. Epub 2021/08/21. doi: 10.1080/07391102.2021.1964601. PubMed PMID: 344152182021 (Impact Factor: 3.549)
8. Aijun Qiao, Junlan Zhou, Shiyue Xu, Wenxia Ma, Chan Boriboun, Teayoun Kim, Baolong Yan, Jianxin Deng, Liu Yang, Eric Zhang, **Yuhua Song**, Yongchao Ma, Stéphane Richard, Chunxiang Zhang, Hongyu Qiu, Kirk Habegger, Jianyi Zhang, Marc Montminy, Gangjian Qin. Sam68 promotes hepatic gluconeogenesis via CRT2. *Nature Communications*. 2021;12(1):3340. doi: 10.1038/s41467-021-23624-9. PMID: 34099657 PMCID: PMC8185084 (Impact Factor: 12.1)
9. Andrzej T Slominski*, Tae-Kang Kim, Shariq Qayyum, Yuwei Song, Zorica Janjetovic, Allen SW Oak, Radomir M Slominski, Chander Raman, Joanna Stefan, Venkatram Atigadda, David K Crossman, Yaroslav

- Bilokin, Robert C Tuckey, Anton Jetten, **Yuhua Song***. Biologically Active Vitamin D and Lumisterol Derivatives Act on Liver X Receptors (LXRs). *Scientific Reports*. 2021; 11: 8002, doi:10.1038/s41598-021-87061-w. PMID: 33850196 PMCID: PMC8044163 (Impact Factor: 4.120)
10. Yiming Zhang, Rory A Greer, Yuwei Song, Hrithik Praveen, and **Yuhua Song***. In silico identification of available drugs targeting cell surface BiP to disrupt SARS-CoV-2 binding and replication: Drug repurposing approach. *European Journal of Pharmaceutical Sciences*. 2021; 160:105771. PMID: 33617948 PMCID: PMC7894100 PMID: 33617948 <https://doi.org/10.1016/j.ejps.2021.105771> (Impact Factor: 3.616)
 11. Daniel L. Kober, Melissa Brereton, Colin E. Kluender, Hunter B. Dean, Deborah F. Steinberg, Samantha Nelson, Berevan Baban, Carl Frieden, Jennifer Alexander-Brett, Erik D. Roberson, **Yuhua Song**, and Tom J. Brett. Functional insights from biophysical study of TREM2 interactions with ApoE and A β ₁₋₄₂. *Alzheimer's & Dementia. Featured Article*, 2021;17(3):475-88. PMID: 33090700 PMCID: PMC8026773 <https://doi.org/10.1002/alz.12194> (Impact Factor: 21.566)
 12. Andrzej Slominski, MD, PhD; Anyamanee Chairprasongsuk; Zorica Janjetovic; Tae kim; Joanna Stefan; Radomir Slominski; Vidya Hanumanthu; Chander Raman; Shariq Qayyum; Yuwei Song; **Yuhua Song**; Uraivan Panich; David Crossman; Mohammad Athar; Michael Holick; Anton Jetten; Michal Zmijewski; Jaroslaw Zmijewski; Robert Tuckey. Photoprotective properties of vitamin D and lumisterol hydroxyderivatives. *Cell Biochemistry and Biophysics*, 2020. **78**(2): p. 165-180, PMID: 32441029 PMCID: PMC7347247 <http://link.springer.com/article/10.1007/s12013-020-00913-6> (Impact Factor: 2.350)
 13. Hongyi Yang, Zainab Ameer Ahmad, **Yuhua Song***. Molecular Insight for the Role of Key Residues of Calreticulin in its Binding Activities: A Computational Study, *Computational Biology and Chemistry*. 2020;85:107228, PMID: 32062378, <https://doi.org/10.1016/j.compbiolchem.2020.107228> (Impact Factor: 1.850)
 14. Lingyun Wang, **Yuhua Song***. Molecular insights into the effect of an apoptotic raft-like bilayer on the conformation and dynamics of calreticulin. *Biochimica et Biophysica Acta (BBA) – Biomembranes*. 2020,1862(2): p. 183146 <https://doi.org/10.1016/j.bbamem.2019.183146>. PMID: 31816323 (Impact Factor: 3.79)
 15. Hunter B Dean, Erik D Roberson*, **Yuhua Song***. Neurodegenerative Disease–Associated Variants in TREM2 Destabilize the Apical Ligand-Binding Region of the Immunoglobulin Domain. *Frontiers in Neurology*, 2019, 10(1252). PMID: 32021611 PMCID: PMC6985895 <https://doi.org/10.3389/fneur.2019.01252> (Impact Factor: 3.508)
 16. Lingyun Wang, Joanne E, Murphy-Ullrich, **Yuhua Song***. Multiscale Simulation of the Interaction of Calreticulin-Thrombospondin-1 Complex with a Model Membrane Microdomain. *J Biomol Struct Dyn*. 2019, 37(3):811-822. doi: 10.1080/07391102.2018.1433065. Published online: 15 Feb 2018. PMID: 29380675 (Impact Factor: 3.107)
 17. Romone M. Fancy, Harrison Kim, Tiara Napier, Donald J. Buchsbaum, Kurt R. Zinn. **Yuhua Song***. Calmodulin antagonist enhances DR5-mediated apoptotic signaling in TRA-8 resistant triple negative breast cancer cells. *J Cell Biochem*. 2018, 119(7):6216-6230. doi: 10.1002/jcb.26848. PMID: 29663486 PMCID: PMC5993614 (Impact Factor: 3.446)
 18. Lingyun Wang, Di Pan, Qi Yan, **Yuhua Song***. Activation Mechanisms of α V β 3 Integrin by Binding to Fibronectin: A Computational Study. *Protein Science*, 2017, June; 26(6):1124-1137. doi: 10.1002/pro.3163. PMID: 28340512 PMCID: PMC5441423 (Impact Factor: 3.039)
 19. Romone M. Fancy, Harrison Kim, Tong Zhou, Kurt R. Zinn, Donald J. Buchsbaum, **Yuhua Song***. Calmodulin Binding to Death Receptor 5-mediated Death-inducing Signaling Complex in Breast Cancer Cells. *J Cell Biochem*. 2017 Aug;118(8):2285-2294. doi: 10.1002/jcb.25882. Epub 2017 Apr 12. PMID: 28092099 PMCID: PMC5462859 (Impact Factor: 3.446)
 20. Romone M. Fancy, Lingyun Wang, Thomas Schmid, Qinghua Zeng, Hong Wang, Tong Zhou, Donald J. Buchsbaum, and **Yuhua Song***. Characterization of the Interactions between Calmodulin and Death Receptor 5 in Triple-Negative and Estrogen Receptor Positive Breast Cancer Cells: An Integrated Experimental and Computational Study. *The Journal of Biological Chemistry*, 2016, 291(24):12862-70. PMCID: PMC5095404 (Impact Factor: 4.573)
 21. Hongyi Yang, **Yuhua Song***. Structural insight for roles of DR5 death domain mutations on oligomerization of DR5 death domain – FADD complex in the death-inducing signaling complex formation: a computational study. *Journal of Molecular Modeling*, 2016, 22 (4): 89, page 1-12. (Impact Factor: 1.736) PMID: 26995783 (Impact Factor: 1.989)

22. Lingyun Wang, Joanne E. Murphy-Ullrich, **Yuhua Song***. Molecular insight for the effect of lipid bilayer environments on thrombospondin-1 and calreticulin interactions. *Biochemistry*, 2014, 53 (40), pp 6309–6322. PMID: 25260145 (Impact Factor: 3.377)
23. Romone Fancy, Lingyun Wang, Tiara Napier, Jiabei Lin, Gu Jing, Aaron Lucius, Jay M McDonald, Tong Zhou, **Yuhua Song***. Characterization of calmodulin and Fas death domain interaction: an integrated experimental and computational study. *Biochemistry*, 2014, 53 (16), pp 2680–2688. PMID: PMC4007977 (Impact Factor: 3.377)
24. Qi Yan, Jay M McDonald, Tong Zhou, **Yuhua Song***. Structural Insight for the Roles of Fas Death Domain Binding to FADD and Oligomerization Degree of the Fas - FADD complex in the Death Inducing Signaling Complex Formation: A Computational Study. *Proteins: Structure, Function, and Bioinformatics*, 2013, 81(3):377-85. PMID: PMC3556372 (Impact Factor: 3.181)
25. Di Pan, **Yuhua Song***. Effects of altered restraints in $\beta 1$ integrin on the force-regulated interaction between the glycosylated I-like domain of $\beta 1$ integrin and fibronectin III9-10: a steered molecular dynamic study. *Mol Cell Biomech*, 2011, 8(3): 233-52. PMID: 21977518. (Impact Factor: 0.48)
26. Di Pan, Qi Yan, Yabing Chen, Jay M McDonald, **Yuhua Song***. Trifluoperazine Regulation of Calmodulin Binding to Fas: A Computational Study. *Proteins: Structure, Function, and Bioinformatics*, 2011, 79(8): 2543-2556. PMID: PMC3132223 (Impact Factor: 3.181)
27. John T. Wilson, Wanxing Cui, Veronika Kozlovskaya, Eugenia Kharlampieva, Di Pan, Zheng Qu, Venkata R. Krishnamurthy, Joseph Mets1, Vivek Kumar1, Jing Wen, **Yuhua Song**, Vladimir V. Tsukruk, and Elliot L. Chaikof. Cell Surface Engineering with Polyelectrolyte Multilayer Thin Films. *J Am Chem Soc*, 2011, 133(18): 7054-7064. PMID: 21491937 (Impact Factor: 8.981)
28. Qi Yan, Joanne E. Murphy-Ullrich, **Yuhua Song***. Molecular and Structural Insight for the Role of Key Residues of Thrombospondin-1 and Calreticulin in Thrombospondin-1- Calreticulin Binding. *Biochemistry*, 2011, 50(4): 566-573. PMID: PMC3037594 (Impact Factor: 3.377)
29. Di Pan, **Yuhua Song***. Role of Altered Sialylation of the I-like Domain of $\beta 1$ Integrin in the Binding of Fibronectin to $\beta 1$ Integrin: Thermodynamics and Conformational Analyses. *Biophys J*, 2010, 99 (1): 208-217. PMID: PMC2895365 (Impact Factor: 4.692)
30. Qi Yan, Joanne E. Murphy-Ullrich, **Yuhua Song***. Structural Insight for the Role of Thrombospondin-1 Binding to Calreticulin in Calreticulin-Induced Focal Adhesion Disassembly. *Biochemistry*, 2010, 49(17): 3685-3694. PMID: PMC2943676 (Impact Factor: 3.377)
31. Yawar J. Qadri, **Yuhua Song**, Catherine M. Fuller and Dale J. Benos. Amiloride Docking to Acid-sensing Ion Channel-1. *J Biol Chem*, 2010, 285(13): 9627-9635. PMID: PMC2843212 (Impact Factor: 5.498)
32. Yawar J. Qadri, Bakhrom K. Berdiev, **Yuhua Song**, Howard L. Lipton, Catherine M. Fuller, and Dale J. Benos. Psalmitoxin-1 docking to human acid sensing ion channel-1. *Journal of Biological Chemistry*, 2009, 284(26): 17625-17633. PMID: PMC2719401 (Impact Factor: 5.498)
33. Anthony N. Vomund, Sarah Stuhsatz-Krouper, **Yuhua Song** and William A. Frazier. Breaking an Extracellular α - β Clasp Activates $\beta 3$ Integrins. *Biochemistry*, 2008, 47 (44): 11616-11624. PMID: 18841997 (Impact Factor: 3.377)
34. Jonathan Suever, Yabing Chen, Jay M McDonald, **Yuhua Song***. Conformation and Free Energy Analyses of the Complex of Ca²⁺-Bound Calmodulin and the Fas Death Domain. *Biophys. J.* 2008, 95(12): 5913-5921. PMID: PMC2599819 (Impact Factor: 4.692)
35. Yuemin Liu, Di Pan, Susan L. Bellis, **Yuhua Song***. Effect of Altered Glycosylation on the Structure of the I-like Domain of beta1 Integrin: A Molecular Dynamics Study. *Proteins: Structure, Function, and Bioinformatics*, 2008, 73(4): 989-1000. PMID: 18536010 (Impact Factor: 3.181)
36. Sun Joo Lee, **Yuhua Song**, Nathan A. Baker. Molecular dynamics simulations of asymmetric NaCl and KCl solutions separated by phosphatidylcholine bilayers: potential drops and structural changes induced by strong Na⁺-lipid interactions and finite size effects. *Biophys. J.* 2008, 94(9): 3565-3576. PMID: PMC2292386 (Impact Factor: 4.692)
37. Shyam Rele, **Yuhua Song**, Robert P. Apkarian, Zheng Qu, Vincent P. Conticello and Elliot L. Chaikof. D-Periodic Collagen-Mimetic Microfibers. *J Am Chem Soc.* 2007, 129(47): 14780-14787. PMID: 17985903 (Impact Factor: 8.981)
38. Yuhui Cheng, Jason K. Suen, Deqiang Zhang, Stephen D. Bond, Yongjie Zhang, **Yuhua Song**, Nathan A. Baker, Chandrajit L. Bajaj, Michael J. Holst and J. Andrew McCammon. Finite element analysis of the time-dependent Smoluchowski equation for acetylcholinesterase reaction rate calculations. *Biophys J*, 2007, 92(10): 3397-406. PMID: PMC1853150 (Impact Factor: 4.692)

39. **Yuhua Song**, Victor Guallar, Nathan A. Baker. Molecular dynamics simulation of salicylate effects on the micro- and mesoscopic properties of a dipalmitoylphosphatidylcholine bilayer. *Biochemistry*, 2005, 44(41), 13425-13438. PMID: PMC2435121 (Impact Factor: 3.377)
40. Deqiang Zhang, Jason Suen, Yongjie Zhang, **Yuhua Song**, Zoran Radic, Palmer Taylor, Michael J. Holst, Chandrajit Bajaj, Nathan A. Baker, J. Andrew McCammon. Tetrameric mouse acetylcholinesterase: continuum diffusion rate calculations by solving the steady-state smoluchowski equation using finite element methods. *Biophys J*, 2005, 88(3):1659-1665. PMID: PMC1305222 (Impact Factor: 4.692)
41. **Yuhua Song**, Yongjie Zhang, Chandrajit L. Bajaj, Nathan A. Baker. Continuum diffusion reaction rate calculations of wild type and mutant mouse acetylcholinesterase: adaptive finite element analysis. *Biophys J*. 2004, 87(3):1558-1566. PMID: PMC1304562 (Impact Factor: 4.692)
42. **Yuhua Song**, Yongjie Zhang, Tongye Shen, Chandrajit L. Bajaj, J. Andrew McCammon and Nathan A. Baker. Finite element solution of the steady-state Smoluchowski equation for rate constant calculations. *Biophys J*. 2004, 86(4):2017-2029. PMID: PMC1304055 (Impact Factor: 4.692)
43. **Yuhua Song**, Richard E. Debski, Volker Musahl, Maribeth Thomas, Savio L-Y. Woo. A three dimensional finite element model of the human anterior cruciate ligament – a computational analysis with experimental validation. *J Biomech*. 2004, 37(3):383-390. PMID: PMC1304055 (Impact Factor: 3.252)
44. **Yuhua Song**, Yongnian Yan, Renji Zhang. Finite element analysis of the prestress wire-winding press. *Journal of materials processing technology*, 2004. **151**(1-3): p. 255-257. (Impact Factor: 4.669)
45. **Yuhua Song**, Yongnian Yan, Renji Zhang. Manufacture of the die of auto-mobile deck part based on rapid prototyping and rapid tooling technology. *Journal of Materials Processing Technology*, 2002, 20(1-3):237-242 (Impact Factor: 4.669)
46. **Yuhua Song**, Yongnian Yan, Renji Zhang, Qingping Lu, Da Xu. Boundary model between casting and matrix and its influence on the dimensional accuracy analysis of rapid tooling. *Proceeding of the institution of mechanical engineers Part B - Journal of Engineering Manufacture*, 2002, 216 (8):1123-1134 (Impact Factor: 1.982)
47. **Yuhua Song**, Yongnian Yan, Renji Zhang Qingping Lu, Da Xu. 3-D nonlinear coupled thermomechanical finite element analysis of the dimensional accuracy for casting dies in rapid tooling. *Finite Elements in Analysis and Design*, 2001, 38 (1):79-91. (Impact Factor: 2.949)
48. **Yuhua Song**, Kaifeng Zhang, Zongren Wang, Faxi Dao, Yongnian Yan, Renji Zhang. Coupled thermo-mechanical analysis of plastics thermoforming. *Polymer Engineering and Science*, 2000, 40(8):1736-1746. (Impact Factor: 1.760)
49. **Yuhua Song**, Kaifeng Zhang, Zongren Wang, Faxi Diao. 3-D FEM analysis of temperature field and thermal stress for plastics thermoforming. *Journal of Materials Processing Technology*, 2000, 97(1):35-43. (Impact Factor: 4.669)
50. **Yuhua Song**, Kaifeng Zhang, Zongren Wang, Faxi Diao. Study on the warpage of plastics vacuum-forming process. *Journal of Reinforced Plastics and Composites*, 1999, 18(10): 931-941. (Impact Factor: 1.188)
51. **Yuhua Song**, Yongnian Yan, Renji Zhang. Coupled thermo-mechanical FEM analysis of laminated object manufacturing. *China Mechanical Engineering*. 2000, 11(Suppl):37-40.
52. **Yuhua Song**, Kaifeng Zhang, Zongren Wang. 3-D FEM analysis of temperature field for plastic sheet thermoforming. *Journal of Plasticity Engineering*, 1998, 5(4):33-41
53. Kaifeng Zhang, **Yuhua Song**, Zongren Wang. Study of latent heat disposal during FEM analysis of 3-D temperature field of plastic thermoforming. *Material Science and Tech*, 1998, 6(2):83-87
54. **Yuhua Song**, Shanzhi Ren, Fengyu Qing. The experimental research and realization on computer about 3-Dimensional shrinkage prediction of ductile iron casting. *Materials Science & Technology*, 1997, 5(1):114-116
55. Kaifeng Zhang, **Yuhua Song**. Analysis of thickness distribution control process of vacuum forming part by rigid visco-plastic shell FEM. *Journal of Plasticity Engineering*, 1997, 4(3):38-42

Invited Talks and Peer-reviewed Abstracts for Conference Presentation

1. Andrzej T. Slominski, Tae-Kang Kim, Ewa Podgorska, Zorica Janjetovic, Joanna Stefan, Senthilkumar Ravichandran, Radomir M. Slominski, Yuwei Song, **Yuhua Song**, Chander Raman, Edith Kang, Anton M. Jetten, Michael F. Holick, Robert C. Tuckey. Biological activity of lumisterol hydroxymetabolites and their mechanism of action. *2023 Endocrine Society Annual Meeting*, June 15-18, 2023
2. Rory A Greer, Hunter B Dean, Jessica A Greven, Thomas J Brett, Erik D Roberson, **Yuhua Song**. Identification of a Validated TREM2-apoE Complex for Alzheimer's Disease Study Using Combined

- Unbiased Protein-Protein Docking and Experimental Approaches. *Alzheimer's Association International Conference (AAIC) Advancements: APOE conference*, March 6-7, 2023
3. Ryan A. Tuckey, Rory A. Greer, Hunter B. Dean, Erik D. Roberson, **Yuhua Song**. Structural insight into risk-modifying, Alzheimer's disease-associated ApoE variants by comparison of common and rare ApoE isoforms. *Alzheimer's Association International Conference (AAIC) Advancements: APOE conference*, March 6-7, 2023
 4. Rory A Greer, Ryan A. Tuckey, Hunter B Dean, Erik D Roberson, **Yuhua Song**. Molecular and structural insight into the differences among common and rare Alzheimer's Disease-associated APOE variants. *67th Biophysical Society Annual Meeting*, Feb 18-22, 2023
 5. Hunter B Dean, Rory A Greer, Jessica A Greven, Gunnar N Eastep, Daniel S Elston, Thomas J Brett, **Yuhua Song**, Erik D Roberson. Identification of novel small-molecule, endogenous ligands of the AD-associated microglial receptor TREM2 that increase its affinity for ApoE and induce cytoprotective immune activation. *Society for Neuroscience meeting 2022*. November 12-16, 2022
 6. Rory A Greer, Hunter B Dean, Thomas J Brett, Erik D Roberson, **Yuhua Song**. Identification of Endogenous Ligands for TREM2 through Unbiased Virtual Screening, *Biomedical Engineering Society Annual Meeting*, Oct 12-15, 2022
 7. Hunter B Dean, Rory A Greer, Erik D Roberson, Thomas J Brett, **Yuhua Song**. AD-Associated TREM2 Variants Directly Impair Surface Interactions between the Hydrophobic Site of TREM2 and the Hinge Region of ApoE. *Alzheimer's Association International Conference*, July 31 – August 4, 2022
 8. Andrzej T. Slominski, Tae-Kang Kim, Radomir M. Slominski, Yuwei Song, Zorica Janjetovic, Ewa Podgorska, Sivani B. Reddy, **Yuhua Song**, Chander Raman, Edith Kang, Adrian Fabisiak, Pawel Brzemiński, Rafal R. Siciński, Venkatram Atigadda, Anton M. Jetten, Michael F. Holick, Robert C. Tuckey. Metabolic activation of tachysterol3 to biologically active hydroxyderivatives in the human system that act on VDR, AhR, LXRs and PPAR γ receptors. *2022 Endocrine Society Annual Meeting*, June 11-14, 2022
 9. Hunter B. Dean, Yuwei Song, Erik D. Roberson, **Yuhua Song**. Effects of Self-Multimerization on Conformation and Ligand Binding in the Alzheimer's Disease Associated Protein TREM2. *2022 Keystone Symposium - Neuro-Immune Interactions in the Central Nervous System*, June 5-9, 2022
 10. Rory Greer, Gangjian Qin, **Yuhua Song**. Effect of Sam68 key residue mutations on its conformation and structure that may affect Sam68-mediated ECE-1b transcription. *66th Biophysical Society Annual Meeting*, Feb 19-23, 2022
 11. Andrzej T Slominski*, Tae-Kang Kim, Shariq Qayyum, Yuwei Song, Zorica Janjetovic, Allen SW Oak, Radomir M Slominski, Chander Raman, Joanna Stefan, Carlos A Mier-Aguilar, Venkatram Atigadda, David K Crossman, Andriy Golub, Yaroslav Bilokin, Edith K Y Tang, Robert C Tuckey, Anton M Jetten, **Yuhua Song***. Vitamin D and lumisterol hydroxyderivatives can act on liver X receptors (LXRs). *2021 Endocrine Society Virtual Annual Meeting*, March 20-23, 2021
 12. Andrzej T. Slominski, Tae-Kang Kim, Shariq Qayyum, Radomir M. Slominski, Yuwei Song, Zorica Janjetovic, Ewa Podgorska, Edith K. Y. Tang, Yaroslav Bilokin, **Yuhua Song**, Chander Raman, Robert C. Tuckey, Michael F. Holick. Enzymatically-derived hydroxy-lumisterols regulate epidermal keratinocytes and act as agonists on aryl hydrocarbon receptor (AhR). *2021 Society for Investigative Dermatology (SID) Virtual Annual Meeting*, May 3-8, 2021
 13. Andrzej T. Slominski, Tae-Kang Kim, Radomir M. Slominski, Shariq Qayyum, Yuwei Song, Zorica Janjetovic, Ewa Podgorska, Sivani Reddy, **Yuhua Song**, Chander Raman, Robert C. Tuckey, Venkatram Atigadda, Michael F. Holic. 20-hydroxytachysterol: synthesis and biological activity. *2021 Society for Investigative Dermatology Virtual Annual Meeting*, May 3-8, 2021
 14. Rory Greer, Yuwei Song, Michael J. Patton, Matthew Might, Kevin S. Harrod, Chad M. Petit, **Yuhua Song***. Identification of FDA approved antiviral drugs for COVID-19 treatment using unbiased virtual screening. *65th Biophysical Society Annual Meeting*, Feb 22-26, 2021
 15. Yuwei Song, Shariq Qayyum, Radomir M Slominski, Chander Raman, Andrzej T Slominski*, **Yuhua Song***. Vitamin D and its Derivatives as Promising Drugs against COVID-19 - A Computational Study. *65th Biophysical Society Annual Meeting*, Feb 22-26, 2021
 16. Hunter Dean, Thomas Brett, Erik Roberson*, **Yuhua Song***. Developing a Functionally Valid Model of the TREM2-ApoE Complex to Better Understand its Role in Alzheimer's Disease. *65th Biophysical Society Annual Meeting*, Feb 22-26, 2021

17. Yiming Zhang, Yuwei Song, Hrithik Praveen, **Yuhua Song***. *In Silico* Identification of Drugs that Could Neutralize SARS-CoV-2 Binding and Falter Viral Replication through Cell Surface BiP. *BMES 2020 Virtual Annual Meeting*, October 14-17, 2020
18. Shariq Qayyum, Tae-Kang Kim, Radomir M. Slominski, Zorica Janjetovic, Yuwei Song, Allen C. Oak, Hanumanthu V. Sagar, Raman Chandar, Purushotham Guroji, Yaroslav Bilokin, **Yuhua Song**, Anton Jetten, Robert C. Tuckey and Andrzej T. Slominski. CYP11A1-derived hydroxy-lumisterols act as agonists on LXR α and β . Presented in 2020 Society for Investigative Dermatology (SID) Virtual Annual Meeting, May 13-16, 2020
19. Dean HB, Roberson ED, **Song Y***. Frontotemporal Dementia–Associated Variants Destabilize the Apical Ligand-Binding Region of the TREM2 Immunoglobulin Domain. *BMES 2019 Annual Meeting*, October 16-19, 2019; Philadelphia, PA
20. Romone Fancy, Tiara S. Napier, Qinghua Zeng, Donald J. Buchsbaum, Catherine C. Parker, **Yuhua Song***. Potential mechanism for synergistic cytotoxicity of TRA-8 and tamoxifen in ER-positive MCF-7 breast cancer cells. *BMES 2018 Annual Meeting*, October 17-20, 2018; Atlanta, GA
21. Dean HB, Roberson ED, **Song Y***. The Effects of Common Disease-Causing Variations on the Structure and Stability of TREM2: An *In Silico* Examination. 1st Annual Southeastern Neurodegenerative Disease Conference; 2018 Sept 27-29; Orlando, FL.
22. **Yuhua Song**. Integrated computational and experimental study of death receptor-mediated apoptotic signaling in breast cancer. *Shandong University-Qingdao campus, Qingdao, China, July, 2018* (Invited Talk).
23. Romone M. Fancy, Jun Li, Huixian Hong, John D. Mountz, Joanne E. Murphy-Ullrich, Santosh K. Katiyar, Jianyi Zhang, **Yuhua Song***. Cell surface calreticulin-LRP1 binding and its role in apoptotic cell engulfment. *Biophysical Society 62th Annual meeting*, Feb 17-21, 2018, San Francisco, CA.
24. Lingyun Wang, Joanne Murphy-Ullrich, Jianyi Zhang, **Yuhua Song***. Multiscale Modeling of Dynamic Interactions between Calreticulin and a Model Membrane Microdomain. *BMES 2017 Annual Meeting*, October 11-14, 2017, Phoenix, AZ.
25. Hongyi Yang, Joanne E. Murphy-Ullrich, **Yuhua Song***. Molecular Insights for the Role of Key Residues of Calreticulin in its Binding Activities. *Biophysical Society 60th Annual meeting*, 2016.
26. **Yuhua Song**, Protein interactions underlying death receptor 5-mediated death inducing signaling complex in apoptosis, UAB Research Computing Day, September, 2016 (Invited Talk).
27. Romone Fancy, Donald J. Buchsbaum, Tong Zhou, **Yuhua Song***. Calmodulin-DR5 binding in breast cancer: Independent of TRA-8 sensitivity. [abstract]. In: *Proceedings of the 106th Annual Meeting of the American Association for Cancer Research*; 2015 Apr 18-22; Philadelphia, PA. Philadelphia (PA): AACR; *Cancer Res* 2015;75 (15 Suppl):Abstract nr 2931. doi:10.1158/1538-7445.AM2015-2931
28. Lingyun Wang, Joanne E. Murphy-Ullrich, **Yuhua Song***. Effect of an apoptotic membrane raft on the conformational and dynamical changes of calreticulin. *Biophysical Society 59th Annual meeting*, February, 2015.
29. Romone Fancy, Hong Wang, Tong Zhou, **Yuhua Song***. Calmodulin binding to DR-5 and the role of CaM-DR-5 binding in DR-5-mediated DISC formation in breast cancer. [abstract]. In: *Proceedings of the 105th Annual Meeting of the American Association for Cancer Research*; 2014 Apr 5-9; San Diego, CA. Philadelphia (PA): AACR; *Cancer Res* 2014;74 (19 Suppl):Abstract nr 2282. doi:10.1158/1538-7445.AM2014-2282
30. Lingyun Wang, Joanne E, Murphy-Ullrich, **Yuhua Song***. Molecular insight for the effect of lipid raft on thrombospondin-1 and calreticulin interactions. *Biophysical Society 58th Annual meeting*, February, 2014
31. **Yuhua Song**. Protein interactions underlying death receptor-mediated death inducing signaling complex in apoptosis. *International Conference on Oncology and Therapy, Beijing, July, 2013* (Invited Talk).
32. **Yuhua Song**. The Role of Thrombospondin-1 Binding to Calreticulin in Focal Adhesion Disassembly – A Computational Study. *International Conference on Biomedical Engineering, Beijing, June, 2013* (Invited Talk).
33. Tiara Napier, Romone Fancy, Tong Zhou, John Mountz, **Yuhua Song***. Effect of the combined treatment of TRA-8, an agonistic DR5 antibody, and tamoxifen on breast cancer cells. [abstract]. In: *Proceedings of the 104th Annual Meeting of the American Association for Cancer Research*; 2013 Apr 6-10; Washington, DC. Philadelphia (PA): AACR; *Cancer Res* 2013;73 (8 Suppl):Abstract nr 2955. doi:10.1158/1538-7445.AM2013-2955.

34. Lingyun Wang, **Yuhua Song***. Structural and dynamical changes for different types of lipid bilayer by different length of poly-L-lysine: MD simulations. *Biophysical Society 57th Annual meeting*, February, 2013
35. Romone Fancy, Tiara Napier, Lingyun Wang, Gu Jing, Jay M McDonald, Tong Zhou, **Yuhua Song***. Characterize calmodulin/Fas death domain interaction with combined ITC, CD and computational studies. *BMES 2012 Annual Meeting*, October 2012.
36. Romone Fancy, Tiara Napier, Gu Jing, Jay M McDonald, Tong Zhou, **Yuhua Song***. Quantitative characterization of calmodulin and Fas death domain interactions. [abstract]. In: *Proceedings of the 103rd Annual Meeting of the American Association for Cancer Research*; 2012 Mar 31-Apr 4; Chicago, IL. Philadelphia (PA): AACR; *Cancer Res* 2012;72(8 Suppl):Abstract nr 4754. doi:1538-7445.AM2012-4754
37. Lingyun Wang, Di Pan, Qi Yan, Russell Green, **Yuhua Song***. Activation mechanisms of $\alpha V\beta 3$ integrin by binding to fibronectin: a computational study. *Biophysical Society 56th Annual meeting*, February 2012.
38. Qi Yan, Jay M McDonald, **Yuhua Song***. Structural insight for the role of Fas binding to FADD and oligomerization degree of Fas/FADD complex in death inducing signaling complex formation. [abstract]. In: *Proceedings of the 102nd Annual Meeting of the American Association for Cancer Research*; 2011 Apr 2-6; Orlando, FL. Philadelphia (PA): AACR; *Cancer Res* 2011;71(8 Suppl):Abstract nr 19. doi:10.1158/1538-7445.AM2011-19.
39. Qi Yan, Joanne E, Murphy-Ullrich, **Yuhua Song***. Molecular and structural insight for the role of key residues of thrombospondin-1 and calreticulin in thrombospondin-1- calreticulin binding. *Biophysical Society 55th Annual meeting*, March 2011.
40. Di Pan, Qi Yan, Yabing Chen, Jay M McDonald, **Yuhua Song***. Conformational and thermodynamics analyses of the regulation of trifluoperazine in camodulin binding to Fas: Implications for cancer chemotherapy. [abstract]. In: *Proceedings of the 101st Annual Meeting of the American Association for Cancer Research*; 2010 Apr 17-21; Washington, DC. Philadelphia (PA): AACR; *Cancer Res* 2010;70 (8 Suppl):Abstract nr 96.
41. Di Pan, **Yuhua Song***. Effect of the conjugation of PEG to the PLL on the micro- and mesoscopic properties of a POPC bilayer. *Biophysical Society 54th Annual meeting*, February 2010.
42. Qi Yan, Joanne E, Murphy-Ullrich, **Yuhua Song***. Modeling of the structural basis of thrombospondin-1 and calreticulin interactions. *Biophysical Society 53th Annual meeting*, March 2009.
43. Di Pan, Qi Yan, **Yuhua Song***. Effect of Trifluoperazine on Ca^{2+} -Bound Calmodulin binding to Fas Death Domain for DISC Formation. *Biophysical Society 53th Annual meeting*, March 2009.
44. Jonathan Suever, Yabing Chen, Jay M. McDonald, **Yuhua Song***. Conformation and Free Energy Analyses of the Complex of Ca^{2+} -Bound Calmodulin and the Fas Death Domain. Southeastern Meeting of the American Society for Biomechanics, April 2008.
45. Di Pan, **Yuhua Song***. Effect of Altered Glycosylation on Binding Affinity of Beta1 I-Like Domain with Fibronectin. Southeastern Meeting of the American Society for Biomechanics, April 2008.
46. Yuemin Liu, Susan L. Bellis, **Yuhua Song***. Effect of Altered Glycosylation on the Structure of the I-like Domain of $\beta 1$ Integrin: A Molecular Dynamics Study. *Biophysical Society 52th Annual meeting*, Feb. 2008.
47. **Yuhua Song**. Multiscale Modeling in Biomechanics and Biology: Molecular to Continuum. *Symposium Frontiers in Biological Sciences*, July 2007.
48. **Yuhua Song**, Nathan A. Baker. Molecular dynamics simulation of the asymmetric salicylate and monovalent ion solution around model lipid bilayers. *Biophysical Society 51th Annual meeting*, March 2007.
49. **Yuhua Song**, Nathan A. Baker. Effect of salicylate on electromechanical properties of a model biomembrane. *Huntsville Simulation Conference sponsored by The Society for Modeling & Simulation International*, Oct. 2006
50. **Yuhua Song**, Nathan A. Baker. Effect of salicylate on ion distributions in a model biomembrane: molecular dynamics simulations. *Biophysical Society 50th Annual meeting*, Feb. 2006.
51. **Yuhua Song**, Victor Guallar, Nathan A. Baker. Molecular dynamics simulation of salicylate effects on the micro- and mesoscopic properties of a dipalmitoylphosphatidylcholine bilayer. *Gibbs Conference on Biothermodynamics*. Oct. 2005.
52. **Yuhua Song**, Nathan A. Baker. Effect of salicylate on lipid bilayer mechanics and electrostatics. *Biophysical Society 49th Annual meeting*, Feb. 2005.
53. **Yuhua Song**, Yongjie Zhang , Tongye Shen , Chandrajit L. Bajaj , J. Andrew McCammon and Nathan A. Baker. Finite element solution of the steady-state diffusion equation for rate constant calculations. *Biophysical Society Meeting*. Feb. 2004.

-
54. **Yuhua Song**, Yongjie Zhang , Tongye Shen , Chandrajit L. Bajaj , J. Andrew McCammon and Nathan A. Baker. Computational modeling of biomolecular diffusion. *17th Annual Gibbs Conference on Biothermodynamics*. Sep. 2003.
 55. **Yuhua Song**, Richard E. Debski, Maribeth Thomas, Savio L-Y. Woo. Force and stress distribution of the ACL is affected by the ACL wrapping around the femoral condyle under anterior tibial load, *Orthopedic Research Society Meeting*, Feb. 2003 in New Orleans, LA.
 56. **Yuhua Song**, Richard E. Debski, Jorge Gil, Savio L-Y. Woo. Development of a 3-D non-linear finite element model of human knee joint. BED-9C, Joint Biomechanics I, Advances in Bioengineering, *American Society of Mechanical Engineers Meeting*, New Orleans, Nov. 2002.
 57. **Yuhua Song**, Richard E. Debski et al. Stress distribution within the anteromedial and posterolateral bundles of ACL under anterior tibial load. *10th Annual symposium on computational methods in orthopaedic biomechanics*, Dallas, TX, Feb. 9, 2002.
 58. **Yuhua Song**, Yongnian Yan, Da Xu, Renji Zhang and Qingping Lu. Application of the dimensional accuracy analysis in rapid tooling. *The 8th International Conference on Rapid Prototyping*, June, 2000, TOKYO, Japan, pp364-370.
 59. **Yuhua Song**, S. P. Wu, F. Y. Qing, S. Z. Ren. Study on searching for isolated region during casting solidification process and predicting second shrinkage of ductile iron casting. *3rd Pacific Rim International Conference on Modeling of Casting and Solidification Processes*, 1996, Beijing.