

CURRICULUM VITAE

Jacek M. Zielonka PhD

**Assistant Professor
Department of Biophysics**

OFFICE ADDRESS:

Translational and Biomedical Research Center
8701 Watertown Plank Rd
Milwaukee, WI 53226

EDUCATION:

10/01/1993 - 09/17/1998 M.Sc., Technical University of Lodz, Lodz, Poland
10/01/1998 - 09/15/2002 Ph.D., Technical University of Lodz, Lodz, Poland
2015 D.Sc., Chemistry Sciences, Lodz University of Technology, Lodz, Poland

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

04/01/2004 - 02/28/2007 Postdoctoral Fellow, Biophysics, Medical College of Wisconsin, 8701 Watertown Plank Rd, Milwaukee, WI 53226

FACULTY APPOINTMENTS:

07/01/2018 - Present Assistant Professor, Biophysics, Medical College of Wisconsin, 8701 Watertown Plank Rd, Milwaukee, WI 53226

RESEARCH ADMINISTRATIVE APPOINTMENTS:

03/01/2007 - 01/31/2011 Research Scientist I, Biophysics, Medical College of Wisconsin, 8701 Watertown Plank Rd, Milwaukee, WI 53226
09/01/2010 - 08/31/2015 Project Consultant, Institute of Applied Radiation Chemistry, Lodz University of Technology, Zeromskiego 116, Lodz, Poland
02/01/2011 - 06/30/2015 Facility Manager, Free Radical Research Center, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, WI 53226
02/01/2011 - 06/30/2015 Research Scientist II, Biophysics, Medical College of Wisconsin, 8701 Watertown Plank Rd, Milwaukee, WI 53226
07/01/2015 - 06/30/2018 Research Director, Biophysics, Medical College of Wisconsin, 8701 Watertown Plank Rd, Milwaukee, WI 53226

AWARDS AND HONORS:

2004 Award for the co-authorship of the series of papers on the photochemical and radiolytic generation of unstable chemical species of significant cognitive importance., the Polish Radiation Research Society
2004 Best Teaching Assistant, Student Association of the Faculty of Chemistry, Lodz University of Technology, Poland
2004 Award for the co-authorship of the series of papers concerning the discovery of the therapeutic function of selected analogs of NAD coenzyme., Polish Ministry of Education and Sport
2012 Top Reviewer Award , journal Free Radical Biology & Medicine
2018 Outstanding Reviewer Award, journal Free Radical Biology & Medicine
2019 First degree team award for co-authorship of the paper, "Mechanism of oxidative conversion of Amplex® Red to resorufin: Pulse radiolysis and enzymatic studies", the Polish Radiation Research Society

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

10/2008 - Present Society for Redox Biology and Medicine (Member)

03/2013 - Present American Association for Cancer Research (Member)

05/2014 - Present American Chemical Society (Member)

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorial Board

01/2012 - 01/2020 Free Radical Biology & Medicine

12/2014 - 01/2019 Oxidative Medicine and Cellular Longevity

02/2016 - 01/2020 Reactive Oxygen Species

Journal Review

2007 - Present Free Radical Biology & Medicine

Ad-Hoc Reviewer

2005 - Present Journal of Physical Chemistry

06/2006 - Present Biochimica & Biophysica Acta

11/2007 - Present Nature Protocols

06/2008 - Present American Journal of Physiology - Heart and Circulatory Physiology

03/2009 - Present Journal of Photochemistry and Photobiology

04/2009 - Present Redox Reports

08/2009 - Present Radiation Research

02/2010 - Present Journal of Applied Physiology

03/2012 - Present Free Radical Research

07/2012 - Present Nitric Oxide

09/2012 - Present FEBS Letters

11/2012 - Present PLoS One

04/2013 - Present Sensors and Actuators B: Chemical

12/2013 - Present Radiation Physics and Chemistry

01/2014 - Present Chemical Science

07/2014 - Present Nature Communications

08/2014 - Present Chemical Research in Toxicology

08/2014 - Present Laboratory Investigation

12/2014 - Present Oxidative Medicine and Cellular Longevity

12/2014 - Present Present American Journal of Physiology – Regulatory, Integrative and Comparative Physiology

04/2015 - Present Acta Biochimica Polonica

07/2015 - Present Analytical Biochemistry: Methods in the Biological Sciences

04/2016 - Present Methods

04/2016 - Present British Journal of Pharmacology

04/2016 - Present Biomaterials

11/2016 - Present Interface Focus

11/2016 - Present Molecules

12/2016 - Present Archives of Biochemistry and Biophysics

04/2017 - Present Expert Opinion on Drug Discovery

09/2017 - Present Chemosensors

09/2017 - Present Scientific Reports

06/2018 - Present Biological Chemistry

12/2018 - Present Journal of Environmental Management

02/2019 - Present Cancers

09/2019 - Present ACS Chemical Biology

10/2019 - Present Redox Biology

11/2019 - Present Cell Biology and Toxicology

12/2019 - Present RSC Medicinal Chemistry

12/2019 - Present Biomolecules

02/2020 - Present Journal of Translational Genetics and Genomics

03/2020 - Present Dyes & Pigments

03/2020 - Present Chemical Communications

04/2020 - Present ACS Omega

05/2020 - Present Journal of the American Chemical Society

05/2020 - Present MedComm

06/2020 - Present Spectrochimica Acta
06/2020 - Present Antioxidants
08/2020 - Present Critical Reviews in Biochemistry & Molecular Biology
08/2020 - Present ACS Sensors

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

- 11/2010 Reviewer of the oral presentations and posters for the Young Investigator Award competition, 8. Society for Free Radical Biology and Medicine 17th Annual Meeting, Orlando, FL, USA
- 11/2016 Workshop Co-chair, Society for Free Radical Biology and Medicine 23rd Annual Meeting, Fundamentals in Redox Biology pre-meeting workshop, San Francisco, CA, USA
- 02/2014 Session Chair, Oxygen Radicals Gordon Conference, Ventura, CA, USA
- 02/2016 Session Co-chair, Oxygen Radicals Gordon Conference, Ventura, CA, USA

INTERNATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

- 06/2012 Session Chair, IARC Workshop on Reactive Intermediates for Graduate Students and Young Scholars, Spa?a, Poland
- 04/2016 Session Chair, ROS in Drug Discovery: From Target Identification to Redox-Based Therapeutics, COST Action BM1203 Working Groups Meeting, Lisbon, Portugal
- 10/2016 Session Co-Chair, X International Workshop on EPR in Biology and Medicine, Kraków, Poland
- 09/2017 Session Co-Chair, Second Adriatic Symposium on Biophysical Approaches in Biomedical Studies, Split, Croatia
- 10/2019 Session Co-Chair, XI International Workshop on EPR in Biology and Medicine, Kraków, Poland

RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS:

Active

Peer Review

Title:	Chemoprevention of Lung Cancer with Mitochondria-Targeted Honokiol
Source:	NIH/NCI (R01CA208648)
Role:	Research Director
PI:	Ming You
Dates:	03/01/2017 - 02/28/2022
Direct Funds:	\$1,646,857 (total costs for all years)

Title:	Small volume multi-well plate dispensers for screening drug combinations
Source:	AHW
Role:	PI
PI:	Jacek Zielonka
Dates:	10/01/2020 - 03/31/2022
Direct Funds:	\$30,000

Prior

Peer Review

Title:	eNOS & the Radical Mechanism of Antitumor Anthracyclines
Source:	NIH/NCI (R01 CA077822)
Role:	Investigator
PI:	Balaraman Kalyanaraman
Dates:	1999 - 2008
Direct Funds:	\$1,852,110 (total for all years)

Title:	Nitric Oxide-Mediated Oxidation/Nitration in Membranes
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Source:	NIH/NHLBI (R01 HL063119)
Role:	Investigator
PI:	Balaraman Kalyanaraman
Dates:	1999 - 2012
Direct Funds:	\$3,527,428 (total costs for all years)
Title:	Neuroprotection by Mitochondria-targeted Antioxidants
Source:	NIH/NINDS (R01 NS039958)
Role:	Investigator
PI:	Balaraman Kalyanaraman & Anumantha Kanthasamy
Dates:	2000 - 2014
Direct Funds:	\$5,043,459 (total costs for all years)
Title:	Bicarbonate Enhances Peroxidation of Sod/ALS Mutants
Source:	NIH/NINDS (R01 NS040494)
Role:	Investigator
PI:	Balaraman Kalyanaraman
Dates:	2000 - 2010
Direct Funds:	\$1,919,619 (total costs for all years)
Title:	Vascular Signaling by Free Radicals
Source:	NIH/NHLBI (P01HL068769)
Role:	Investigator
PI:	David R. Harder
Dates:	2002 - 2007
Direct Funds:	\$7,229,771 (total costs for all years)
Title:	Peroxide, NO and Iron Signaling in Endothelial Damage
Source:	NIH/NHLBI (R01 HL073056)
Role:	Investigator
PI:	Balaraman Kalyanaraman
Dates:	2003 - 2009
Direct Funds:	\$1,464,904 (total costs for all years)
Title:	Protein Misfolding Diseases and Oxidoreductive Pathways
Source:	NIH/Director's Pioneer Award Grant (DP1 HL117650)
Role:	Investigator
PI:	Ivor J. Benjamin
Dates:	2009 - 2015
Direct Funds:	\$3,705,424 (total costs for all years)
Title:	Mitochondria-Targeted Agents in Breast Cancer
Source:	NIH/NCI (R01 CA152810)
Role:	Investigator
PI:	Balaraman Kalyanaraman
Dates:	2010 - 2015
Direct Funds:	\$1,240,400 (total for all years)
Title:	Vascular Endothelium in Life-Style Diseases: From Basic Research to the

Source:	Offer of an Innovative Endothelium-Targeted Therapeutic ERDF (JCET, No. POIG.01.01.02-00-069/09)
Role:	Project consultant
PI:	Stefan Chlopicki
Dates:	2010 - 2015
Direct Funds:	\$62,606,924 (PLN)
Title:	Targeting Pancreatic Cancer Energy Metabolism, Tumor Growth, and Metastasis
Source:	NIH/NCI (U01 CA178960)
Role:	Investigator
PI:	Michael Dwinell & Balaraman Kalyanaraman
Dates:	07/01/2014 - 05/31/2019
Direct Funds:	\$1,698,407 (total for all years)
Title:	Hydrogen Sulfide (H2S) Intoxication in Brain Abscesses
Source:	Healthy Wisconsin
Role:	Investigator
PI:	Rodney Willoughby
Dates:	2014 - 2015
Title:	CYP2E1 Mediated Mitochondrial Injury and Cell Damage in Alcoholic Liver Disease
Source:	NIH/NIAAA (R01AA022986)
Role:	Research Director
PI:	Narayan Avadhani & Balaraman Kalyanaraman
Dates:	02/05/2015 - 12/31/2019
Direct Funds:	\$706,709 (total for all years)
Title:	Role of Nrf2 in Vascular Antioxidant Defenses
Source:	NIH/NHLBI (R01HL128242)
Role:	Research Scientist II
PI:	Julian Lombard
Dates:	08/17/2016 - 10/31/2020
Direct Funds:	\$1,152,868 (total costs for all years)
Title:	Development of MAS Receptor Knockout Rat Resource
Source:	NIH/Office of Director (R21OD024781)
Role:	Research Director
PI:	Julian Lombard
Dates:	08/01/2017 - 12/31/2019
Direct Funds:	\$261,250 (total for all years)
Title:	Targeting Mitochondria with Redox Cycling Agents to Overcome Drug Resistance in Human Colon Cancer Cells
Source:	ASC/MCW

Role:	PI
PI:	Jacek Zielonka
Dates:	12/01/2018 - 11/30/2020
Direct Funds:	\$50,000 (total for all years)

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

Local

- Zielonka J., Zielonka M., VerPlank L., Ganesh T., Sun A., Cheng G., Communal C., O'Brien W., Lambeth D., Kalyanaraman B., Targeting NADPH oxidases in cardiovascular diseases: Development of assays for high throughput screening of Nox2 inhibitors, Cardiovascular Redox Signaling Symposium, Milwaukee, WI, USA, 11/2014
- Zielonka J., Foolproof detection of superoxide - Are we there yet?, Biophysics Graduate Seminar Series, Medical College of Wisconsin, Milwaukee, WI, USA, 03/2018
- Zielonka J., Development of a specific assay for peroxynitrite detection, Second MCW Redox Biology Symposium, Milwaukee, WI, USA, 04/2018

National

- Zielonka J., Measuring Cellular Oxidizing Species with Small Molecule Luminescent Probes, Society for Free Radical Biology and Medicine 21st Annual Meeting (pre-meeting workshop), Seattle, WA, USA, 11/2014
- Zielonka J., Superoxide and Hydrogen Peroxide Detection in Biological systems: From Theory to Practice, NADPH Oxidases Gordon Seminar, Waterville Valley Resort, Waterville Valley, NH, USA, 06/2016
- Zielonka J., Zielonka M., Cheng G., Lambeth D., Kalyanaraman B., Development of new assays for high-throughput screening of NADPH oxidase inhibitors, NADPH Oxidases Gordon Conference, Waterville Valley Resort, Waterville Valley, NH, USA, 06/2016
- Zielonka J., Measurement of Cellular Oxidants with Small Molecule Probes, Society for Free Radical Biology and Medicine 23rd Annual Meeting (pre-meeting workshop), San Francisco, CA, USA, 11/2016
- Zielonka J., Recent Advances in Specific Detection of Superoxide, Oxygen Radicals Gordon Conference, Ventura, CA, USA, 02/2018
- Zielonka J., Detection of ONOO⁻ by boronates - selectivity, specificity and mechanism, Nitric Oxide Gordon Conference, Ventura, CA, USA, 02/2019

International

- Zielonka J., Sarna T., Kalyanaraman B., Superoxide reaction with hydroethidine and mito-hydroethidine. EPR, UV-Vis absorption, fluorescence and HPLC studies, VII International Workshop on EPR in Biology and Medicine, Kraków, Poland, 10/2007
- Zielonka J., Sikora A., Lopez M., Hardy M., Zielonka M., Joseph J., Kalyanaraman B., Detection of peroxynitrite by boronate-based probes: EPR, fluorescence and HPLC studies, EPR 2010 Conference, San Juan, Puerto Rico, 05/2010
- Zielonka J., Sikora A., Joseph J., Hardy M., Ouari O., Adamus J., Kalyanaraman B., Detection of peroxynitrite and its precursors, nitric oxide and superoxide radical anion in cell-free and cellular systems, VIII International Workshop on EPR in Biology and Medicine, Kraków, Poland, 10/2010
- Zielonka J., Kielar F., Zielonka M., Sikora A., Franz K.J., Kalyanaraman B., Kinetic aspects of activation of boronate-based iron prochelators in cell-free and cellular systems, IARC Workshop on Reactive Intermediates for Graduate Students and Young Scholars, Spa?a, Poland, 06/2012
- Zielonka J., Sikora A., Michalski R., Hardy M., Dranka B., Joseph J., Adamus J., Kalyanaraman B., New methods of detection of reactive oxygen and nitrogen species: from mechanistic studies to biological applications, The 6th European Young Investigator Conference, S?ubice, Poland, 06/2013
- Zielonka J., Cheng G., Zielonka M., Ganesh T., Sun A., Joseph J., Michalski R., O'Brien W., Lambeth D., Kalyanaraman B., High throughput screening of inhibitors of NADPH oxidases (Nox) - a combination of fluorescence, HPLC and EPR assays for reliable identification of novel Nox inhibitors, IX International Workshop on EPR in Biology and Medicine, Kraków, Poland, 10/2013
- Zielonka J., Free radical metabolism and bioenergetic changes in cardiovascular diseases and cancer, First Adriatic Symposium on Biophysical Approaches in Biomedical Studies, Split, Croatia, 08/2014
- Zielonka J., Targeting NADPH oxidases: New assays for high throughput screening of Nox2 inhibitors, First International Munich ROS Meeting of COST Action BM1203, Munich, Germany, 04/2015

- Zielonka J., Fluorescence spin trapping - a new method for sensitive detection of superoxide, ROS in drug discovery: from target identification to redox-based therapeutics, COST Action BM1203 Working Groups Meeting, Lisbon, Portugal, 04/2016
- Zielonka J., Novel Inhibitors of NADPH Oxidase (Nox) enzymes, X International Workshop on EPR in Biology and Medicine, Kraków, Poland, 10/2016
- Zielonka J., Sikora A., Hardy M., Pięta J., Cheng G., Zielonka M., Kalyanaraman B., Modulation of mitochondrial redox status as a new strategy to selectively block the proliferation of cancer cells, Signaling Molecules and Biological Oxidants seminar, Konopnica, Poland, 09/2018
- Zielonka J., Sikora A., Hardy M., Podsiadły R., Michalski R., Zielonka M., Kalyanaraman B., Kinetic aspects of the detection of reactive oxygen and nitrogen species in cellular and cell-free systems, 9th PULS Conference on Pulse Investigations in Chemistry, Physics and Biology, Lodz, Poland, 09/2018
- Stauder E., Zielonka M., Sikora A., Hardy M., Kalyanaraman B., Zielonka J., Mitochondria-targeted pyridinium cations as redox cyclers mitochondrial inhibitors and antiproliferative agents against pancreatic cancer cells, XI International Workshop on EPR in Biology and Medicine, Kraków, Poland, 10/2019

PEER REVIEWED WORKSHOPS/PRESENTATIONS:

Regional

- Zielonka J., Sikora A., Pięta J., Zielonka M., Cheng G., Kalyanaraman B., Targeting redox-active pyridinium cations to mitochondria to inhibit proliferation of colon cancer cells (poster), Society for Free Radical Biology and Medicine 25th Annual Meeting, Chicago, IL, USA, 11/2018

National

- Zielonka J., Sarna T., Roberts J.E., Wishart J.F., Kalyanaraman B., The reaction of superoxide with hydroethidine and its mitochondria-targeted analog: pulse radiolysis and steady-state analyses (poster), Society for Free Radical Biology and Medicine 13th Annual Meeting, Denver, CO, USA, 11/2006
- Zielonka J., Sikora A., Zielonka M., Joseph J., Hardy M., Kalyanaraman B., Monitoring of peroxynitrite release from activated macrophages: The use of novel boronate-based fluorogenic probes (poster), Society for Free Radical Biology and Medicine 16th Annual Meeting, San Francisco, CA, USA, 11/2009
- Zielonka J., Sikora A., Lopez M., Joseph J., Kalyanaraman B., Mechanistic analysis of the reaction of ONOO⁻ with boronate-based probes (poster), Oxygen Radicals Gordon Conference, Ventura, CA, 02/2010
- Zielonka J., Zielonka M., Sikora A., Adamus J., Joseph J., Hardy M., Ouari O., Kalyanaraman B., Global profiling of reactive oxygen and nitrogen species in cell-free and model cellular systems – real time fluorescence monitoring and HPLC measurements (poster), Society for Free Radical Biology and Medicine 17th Annual Meeting, Orlando, FL, USA, 11/2010
- Zielonka J., Dranka B.P., Zielonka M., Joseph J., Hardy M., Sikora A., Kalyanaraman B., Reduction of mitochondrial reserve capacity in endothelial cells by nitric oxide and superoxide – detection and quantitation of peroxynitrite formed from co-generated •NO and O₂•⁻ (poster), Society for Free Radical Biology and Medicine 17th Annual Meeting, Orlando, FL, USA, 11/2010
- Zielonka J., Zielonka M., Ganesh T., Sun A., Lambeth D., Kalyanaraman B., Inhibitors of NADPH oxidase decrease peroxynitrite formation in activated macrophages (poster), Society for Free Radical Biology and Medicine 18th Annual Meeting, Atlanta, GA, USA, 11/2011
- Zielonka J., Kielar F., Sikora A., Franz K.J., Kalyanaraman B., Dual antioxidant activity of boronate-based prochelators: scavenging peroxynitrite and metal ion chelation (poster), Society for Free Radical Biology and Medicine 18th Annual Meeting, Atlanta, GA, USA, 11/2011
- Zielonka J., Kielar F., Zielonka M., Sikora A., Franz K.J., Kalyanaraman B., Kinetic aspects of activation of boronate-based iron prochelators in cell-free and cellular systems (poster), Oxygen Radicals Gordon Conference, Ventura, CA, USA, 02/2012
- Zielonka J., Zielonka M., Ganesh T., Sun A., Joseph J., Cheng G., O'Brien W., Lambeth D., Kalyanaraman B., Development of new assays for high-throughput screening of NADPH oxidase inhibitors (selected oral presentation), NADPH Oxidases Gordon Conference, Waterville Valley Resort, Waterville Valley, NH, USA, 06/2012
- Zielonka J., Zielonka M., Ganesh T., Sun A., Joseph J., Cheng G., O'Brien W., Lambeth D., Kalyanaraman B., In search for inhibitors of NADPH oxidases: New assays for superoxide and hydrogen peroxide as

- a platform for high throughput screening (HTS) of inhibitors of NADPH oxidases (poster), Society for Free Radical Biology and Medicine 19th Annual Meeting, San Diego, CA, USA, 11/2012
- Zielonka J., Cheng G., McAllister D.M., Craig Mackinnon Jr. A., Joseph J., Dwinell M.B., Kalyanaraman B., Mitochondria-targeted chromanol inhibits breast cancer cell energy metabolism and promotes cell death (poster), Target Cancer Metabolism, Boston, MA, USA, 01/2013
- Cheng G., Zielonka J., Joseph J., Kalyanaraman B., Bioenergetic changes in glycolysis, Krebs cycle, and glutaminolysis in pancreatic cells treated with mitochondria-targeted cationic drugs (poster), American Association for Cancer Research Annual Meeting, Washington D.C., USA, 04/2013
- Zielonka J., Lambeth D., Kalyanaraman B., On the chemiluminescent probes for superoxide: Is L-012 probe a reliable tool for detection and quantification of $O_2^{\bullet-}$? (poster), Society for Free Radical Biology and Medicine 20th Annual Meeting, San Antonio, TX, USA, 11/2013
- Zielonka J., VerPlank L., Zielonka M., Cheng G., Communal C., Kalyanaraman B., In search for new inhibitors of NADPH oxidases: high throughput screening of bioactive compounds libraries (poster), Oxygen Radicals Gordon Conference, Ventura, CA, USA, 02/2014
- Zielonka J., Spin trapping with fluorescence detection: Novel method for specific and sensitive fluorimetric detection of superoxide radical anion (selected oral presentation), Society for Free Radical Biology and Medicine 22nd Annual Meeting, Boston, MA, USA, 11/2015
- Zielonka J., Podsiadły R., Hardy M., Kalyanaraman B., Bioluminescent detection of cellular oxidants using Peroxy-Caged Luciferin-1 (PCL-1): Identification of reaction intermediates and oxidant-specific minor products (poster), Oxygen Radicals Gordon Conference, Ventura, CA, USA, 02/2016
- Zielonka J., Rios N., Radi R., Kalyanaraman B., Following oxygen atoms during oxidation of boronate probes by hydrogen peroxide and peroxyxynitrite – isotope labeling study (poster), Nitric Oxide Gordon Conference, Ventura, CA, USA, 02/2019
- Stauder E., Juric M., Sikora A., Hardy M., Zielonka M., Kalyanaraman B., Zielonka J., Simultaneous induction of bioenergetic and redox stress as a strategy to inhibit proliferation and induce death of pancreatic cancer cells (poster), Society for Free Radical Biology and Medicine 26th Annual Meeting, Las Vegas, NV, USA, 11/2019
- Juric M., Sikora A., Pieta J., Hardy M., Zielonka M., Kalyanaraman B., Zielonka J., Novel mitochondria-targeted redox cycling agent based on nitropyridinium cation (poster), Oxygen Radicals Gordon Conference, Ventura, CA, USA, 02/2020

International

- Zielonka J., Adamus J., Marcinek A., Gębicki J., Reactive Intermediates Generated by One-electron Oxidation of NADH (poster), International Workshop on Reactive Intermediates IWRI'99, Szczyrk, Poland, 08/1999
- Zielonka J., Marcinek A., Gębicki J., Gordon C.M., Dunkin I.R., Ionic Liquids as a Novel Glassy Medium for Direct Characterization of Radical Ions (poster), The Chemistry and Physics of Matrix Isolated Species, Szklarska Poręba, Poland, 07/2001
- Zielonka J., Gębicki J., Molecular mechanisms of pyridinium salts cytotoxicity: reactivity of pyridinyl radicals against oxygen (poster), NATO Advanced Study Institute on Free Radicals, Nitric Oxide, and Inflammation: Molecular, Biochemical, and Clinical Aspects, Antalya, Turkey, 09/2001
- Zielonka J., Gębicki J., Pyridinyl radicals as electron donors (poster), International Conference on Reactive Intermediates and Reaction Mechanisms, Ascona, Switzerland, 07/2002
- Zielonka J., Adamus J., Marcinek A., Gębicki J., Reactive Intermediates Generated by One-electron Oxidation of NADH (poster), EPA Graduate Student Symposium in Photochemistry, Fribourg, Switzerland, 02/2010
- Zielonka J., Marcinek A., Gębicki J., Gordon C.M., Dunkin I.R., Generation of Radical Cations in Frozen Ionic Liquids (poster), EPA Graduate Student Symposium in Photochemistry, Fribourg, Switzerland, 02/2010
- Zielonka J., Adamus J., Marcinek A., Gębicki J., Photochemically Induced Dehydration of 1-Benzyl-3-acetyl-6-hydroxy-1,4,5,6-tetrahydropyridine (poster), EPA Graduate Student Symposium in Photochemistry, Fribourg, Switzerland, 02/2010

MEDICAL COLLEGE TEACHING ACTIVITIES:

Graduate Student Education

02/2018 Taught “Fundamentals of Bioenergetics in Cancer Metabolism” within the course Current

EXTRAMURAL TEACHING:

Graduate Student Education

1998 - 1992 Faculty of Chemistry, Technical University of Lodz, Poland, Taught during Ph.D. studies

2002 - 2004 Faculty of Chemistry, Technical University of Lodz, Poland, Lecturer

11/2014 - 12/2014 Aix-Marseille Universite, Marseille, France, Visiting professor, Gave two lectures on the experimental methods in the research on reactive oxygen and nitrogen species in biological systems, consultations, development of collaborative projects

MCW STUDENTS, FACULTY, RESIDENTS AND CLINICAL/RESEARCH FELLOWS MENTORED:

High School Students

Mackenzie Joranlien, Medical College of Wisconsin, 2019 Students Understanding Principles of Research Education through Medicine, Engineering, and Science (SUPREMES), Redox cycling activity of mitonitropyridine in a cell-free system

Katherine Schoenbeck, Medical College of Wisconsin, 2019 Students Understanding Principles of Research Education through Medicine, Engineering, and Science (SUPREMES), Kinetics and equilibrium of the formation of boronate-based prochelators – boronate-assisted click chemistry

Ashley Tarcin, Medical College of Wisconsin, 2020 Students Understanding Principles of Research Education through Medicine, Engineering, and Science (SUPREMES), Phenazine methosulfate as a NAD(P)H oxidase mimetic and potential anticancer agent

Undergraduate Students

Asha Bailey, Medical College of Wisconsin, 2015 Diversity Summer Health-related Research Education Program (DSHREP) Students, Application of red-fluorescent boronates towards peroxynitrite and other oxidants *Helped mentor

Marisol Madrigal, Medical College of Wisconsin, 2016 Diversity Summer Health-related Research Education Program (DSHREP) Students, Redox signaling induction in pancreatic cancer cells by mitochondria targeted metformin *Helped mentor

Jayla Watkins, Medical College of Wisconsin, 2017 Diversity Summer Health-related Research Education Program (DSHREP) Students, Inhibitory effects of mitochondria-targeted agents on the production of peroxynitrite by activated macrophages *Helped mentor

Esther Severe, Medical College of Wisconsin, 2019 Diversity Summer Health-related Research Education Program (DSHREP) Students, Redox cycling activity of mitochondria-targeted naphthoquinone

Postdoctoral Students

Adam Sikora, Medical College of Wisconsin, 2008 - 2009, Chemistry of the reaction of boronates towards peroxynitrite and other oxidants *Helped mentor

Radoslaw Michalski, Medical College of Wisconsin, 2011 - 2012, (1) Development of a cell-impermeable probe for superoxide radical anion, (2) Development of a new assay for amino acid and protein hydroperoxides *Helped mentor

Teruaki Koto, Medical College of Wisconsin, 2012 - 2013, Detection and identification of oxidants formed during •NO/O₂•– reaction *Helped mentor

Radoslaw Podsiadly, Medical college of Wisconsin, 2014 - 2015, Mechanistic aspects of the detection of biologically-relevant oxidants by peroxy-caged luciferin (PCL-1) probe *Helped mentor

Aleksandra Grzelakowska, Medical College of Wisconsin, 2019, In vivo-compatible boronate-based probes for inflammatory oxidants

TRAINING ACTIVITIES :

2007 - 2018 Trained numerous internal and external researchers in the field of free radical research and in the services provided by the Free Radical Research Center

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

1. Marcinek A, **Zielonka J**, Adamus J, G?bicki J, Platz MS. Direct characterization of radical species generated on one-electron oxidation of 3,6-diamino-10-methylacridan. *J Phys Chem A*. 2001;105(5):875-9.
2. Marcinek A, **Zielonka J**, G?bicki J, Gordon CM, Dunkin IR. Ionic liquids: Novel media for characterization of radical ions. *Journal of Physical Chemistry A*. 2001;105(40):9305-9.
3. G?bicki J, Adamus J, Marcinek A, **Zielonka J**, Sysa-J?drzejowska A, Wo?niacka A, Denys A, Ciebiada I, Szmigiero L, Ciesielska E, Wieczorkowska M. In search for new drugs: From basic research to market product. *Przemysl Chemiczny*. 2003;82(8-9):507-10.
4. Gebicki J, Sysa-Jedrzejska A, Adamus J, Wo?niacka A, Rybak M, **Zielonka J**. 1-Methylnicotinamide: a potent anti-inflammatory agent of vitamin origin. *Pol J Pharmacol*. 2003;55(1):109-12.
5. Podsiady R, Sokoowska J, Marcinek A, **Zielonka J**, Chre?cija?ska E, Socha A. Electrochemical and photochemical reduction of a series of azobenzene dyes in protic and aprotic solvents. *Coloration Technology*. 2003;119(5):269-74.
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Patents

1. Pending / MCW Tech ID: C1788 "Modified mito-metformin compounds and methods of synthesis and use thereof" Inventors: Micael Hardy, Balaraman Kalyanaraman, Marcos Lopez, Olivier Ouari, Jacek Zielonka
2. Pending (filed June 10, 2016) / MCW Tech ID: C1820 "Mito-honokiol compounds and methods of synthesis and use thereof" Inventors: Balaraman Kalyanaraman, Jacek M. Zielonka, Micael J. Hardy, Olivier Ouari, Ming You

3. Pending / MCW Tech ID: C1999 "Mito-magnolol compounds and methods of synthesis and use thereof"
Inventors: Balaraman Kalyanaraman, Jacek M. Zielonka, Gang Cheng, Micael J. Hardy, Olivier Ouari
4. Pending / MCW Tech ID: C2049 "Targeting redox-active pyridinium cations to mitochondria to inhibit proliferation of drug-resistant cancer cells" Inventors: Jacek M. Zielonka, Adam B. Sikora, Balaraman Kalyanaraman