

## **EDUCATION**

- 2011 – 2017 **Ph.D.** in Biochemistry, Nencki Institute of Experimental Biology, Warsaw, Poland  
2005 – 2011 **M.Sc.** in Applied Biotechnology, University of Agriculture, Krakow, Poland  
2010 – 2011 **Summer school**, Institute of Genetics and Animal Breeding, Jastrzebiec, Poland  
2009 – 2010 **International student exchange**, Ghent University, Ghent, Belgium

## **RESEARCH EXPERIENCE**

- 2022 – present **Assistant Professor**  
Department of Nutrition and Health Sciences, College of Education and Human Sciences, University of Nebraska – Lincoln, NE

- Determine the role of aberrant polyunsaturated fatty acid metabolism in development of lipotoxic cardiomyopathy.
- Identify the lipid metabolism pathways associated with diabetic cardiomyopathy pathogenesis.
- Describe the role of pyruvate metabolism in the development of non-alcoholic fatty liver disease.
- Establish the role of calcium flux and endoplasmic reticulum stress in pancreatic dysfunction and diabetes development.
- Harnesses the potential of epigenetics to uncover the mechanism behind "healthy obesity" using hibernating 13-lined ground squirrels as a model.

- 2017 – 2022 **Postdoctoral Fellow**, Prof. Jamey D. Young lab  
Department of Chemical and Biomolecular Engineering, School of Engineering, Vanderbilt University, Nashville, TN

- Applied *in vivo*  $^2\text{H}/^{13}\text{C}$  metabolic flux analysis (MFA) and metabolomics profiling to identify liver phenotypes that accelerate the transition from NAFLD to NASH.
- Discovered that pharmacologic activation of SERCA calcium pump inhibits this transition *in vivo* by: 1) increasing polyunsaturated fatty acids contribution in hepatocytes by downregulation of *de novo* lipogenesis, while specifically promoting  $\omega$ -3 fatty acids synthesis and transport; 2) alleviating redox imbalances between liver and peripheral tissues by normalizing pyruvate cycling, tryptophan-kynurenine pathway activity, and pyruvate transporters expression; 3) mitigating the inflammatory response and ER stress of steatotic hepatocytes.
- Participated in the development of *in vivo*  $^2\text{H}/^{13}\text{C}$  MFA technique to evaluate whole body metabolism.

- 2011 – 2017 **Ph.D. Student**, Laboratory of Molecular Medical Biochemistry  
Center for Basic and Translational Research in the Field of Biology and Biomedical Sciences, Nencki Institute of Experimental Biology, Warsaw, Poland

- Showed that dietary oleate contributes to the development of left ventricular hypertrophy caused by activation of PKC $\alpha$ -dependent pathway, NCX protein-regulated change in calcium homeostasis, and increased level of  $\beta$ -myosin heavy chain in cardiomyocytes.
- Demonstrated that oleate-mediated cardiac steatosis is induced by the increased expression of triacylglycerol synthesis proteins and the inhibition of ATGL-mediated lipolysis.
- Revealed that downregulation of SCD1 expression/activity decreases lipid accumulation in cardiomyocytes through inhibition of lipogenesis and activation of lipolysis, independently of the PPAR $\alpha$  transcription factor.
- Determined that upregulated lipogenesis, and the activation of PPAR $\alpha$ -dependent  $\beta$ -oxidation pathway in cardiac muscle relate to the development of physiological left ventricular hypertrophy and may be one of the adaptive mechanisms to endurance training.
- established that pathological hypertrophy relates to extensive triacylglycerol accumulation in cardiomyocytes generated by the impairment of lipolytic and lack of lipogenesis activation.

2005 – 2011 **M.Sc. Student**, Biotechnology – Interdepartmental Studies  
Department of Biotechnology and General Food Technology, University of Agriculture,  
Krakow, Poland

- investigated the effects of phytase B on the baking characteristics and texture stability of rye bread.
- concluded that phytase B can be used as a food additive to reduce phytic acid content in rye breads and to improve its bioavailability.

### **SUPERVISORY AND MENTORING EXPERIENCE**

May 2024 – present **Supervisor of undergraduate students**, Laila Doyle, Josh Miller, Ved Patel  
Aug 2023 – present **Supervisor of graduate research assistant**, Yousuf Al Farqani  
Mar 2023 – present **Supervisor of postdoctoral fellow**, Adam Olichwier  
May – Aug 2022 **Mentor of high school student**, Coston Autry  
Jul 2021 – Sep 2022 **Mentor of medical university student**, Noah Whittenbarger  
Jan – Aug 2021 **Mentor of undergraduate student**, Maxwell T. Byram, **and graduate student**, Zhirou Yue  
Jul – Aug 2018 **Mentor of high school student**, Maxwell T. Byram, **and undergraduate student**, Allison G. Albright  
Jun – Aug 2015 **Tutor of graduate students**, Agnieszka Kielan and Agnieszka Łyżwa, during EU Human Capital Operational Program: "*Preparation for a career of students from the Faculty of Agriculture and Biology of the University of Life Sciences in Warsaw*"  
2014 and 2015 **Re-elected chairperson of PhD Student Council** of Nencki Institute of Experimental Biology, Warsaw, Poland

### **FELLOWSHIPS AND GRANTS**

2024 – present **CEHS Kutscher Technology Innovation Grant**  
"Thin Layer Chromatography - old methodology perfect for new students"  
Amount: \$4,600  
Role: PI

2024 – present **CEHS Grand Visions Faculty Seed Grant**  
"*Analyzing the impact of steatosis and aberrant lipolysis on epigenetic modifications in cardiomyocytes*"  
Amount: \$10,000  
Role: PI

2024 – present **University of Nebraska Agricultural Research Division Strategic Funding**  
"*The impact of Maca (*Lepidium meyenii*) supplementation on hypothyroidism pathogenesis in vivo*"  
Amount: \$16,900  
Role: PI

2023 – 2024 **University of Nebraska Foundation Layman Seed Grant**  
"*The effect of LPCAT3 activation on cardiomyocyte metabolism during acute lipotoxicity*"  
Amount: \$10,000  
Role: PI

2023 – 2024 **NPOD Project Leader 2023**  
"*The role of LPCAT3 in pathogenesis of diabetic cardiomyopathy*"  
Amount: \$150,000  
Role: PI

2022 – 2023 **NPOD Program Seed Grant 2022**  
"*The impact of obesity on satellite cells action in the skeletal muscle*"  
Amount: \$40,000  
Role: PI

2021 – 2022 **Vanderbilt Diabetes Center Discovery Program Grant**  
"*In vivo 2H/13C flux analysis to assess LXR activation as a strategy to inhibit NASH pathogenesis*"

Amount: \$90,000  
Role: Co-I  
2015 – 2016 **Grant PRELUDIUM 8 from National Science Centre in Poland**  
*“Role of stearyl-CoA desaturase 1 (SCD1) in regulation of adipose triglyceride lipase (ATGL) and lipolysis in cardiomyocytes”*  
Amount: 50,000 PLN  
Role: PI

### **Fellowships**

2015 – 2017 **Stipend** from Nencki Institute of Experimental Biology  
*Best doctoral student of the year in academic years 2015-2016 and 2016-2017*  
2013 – 2014 **Scholarship** from Mazovian Voivodeship  
*“Development of science - the development of the region - supporting scholarships and support for Mazovia doctoral students.”*  
2011 – 2012 **Scholarship** from Academic Business Incubator  
*“Scientific PhD Scholarships as an opportunity for the development of Swietokrzyskie Voivodeship.”*

### **AWARDS AND HONORS**

2020 ASBMB Graduate/Postdoctoral **Travel Award**  
2015 **Main prize** in the competition *“Polish Digital 2020+”*  
Awarded by the Polish Chamber of Commerce in the category of Economics.  
2015 FEBS Young Scientists' Forum (YSF) **Travel Award**  
2015 **Representative** to 4th IRB Barcelona PhD Students Symposium *“Science fights back: Tackling disease to recover homeostasis.”*

### **ACADEMIC SERVICE**

- Member of UNL's Department of Nutrition and Health Sciences Chair's Advisory Council
- Member of UNL's Agricultural Research Division (ARD) Advisory Council
- Member of UNL's Faculty Senate
- Member of UNL's Research Council
- Judge 2023, 2024 Student Research Days Competition
- Reviewer 2023, 2024 Student Research Days Competition
- Presenter at UNL's Women in Science Expo 2023

### **Reviewing and Editorial Service**

- Metabolism
- Liver International
- The Journal of Lipid Research
- Mitochondrion
- Cells
- Journal of Personalized Medicine

### **Scientific Outreach**

- **Co-organizer** of 13th Annual Vanderbilt Postdoctoral Association Symposium
- **Main organizer** of *“2nd Nencki Institute PhD Student Conference 2015”* and *“Do Science!” Opening of Academic Year 2013-2014 in Ochota Biocenter”*
- **Co-organizer** of science popularization events: 16th, 17th, 18th, and 19th Science Festival in Warsaw; 16th, 17th, 18th, and 19th Scientific Picnic in Warsaw, Brain Awareness Week 2012, 2013, 2014, and 2015; Researchers' Night 2012, 2014, and 2015; Scientific Kindergarten 2012, 2013, 2014, and 2015.

### **Invited Talks and Seminars**

- **Biomedical Engineering and Biotechnology Graduate Student Association**, "From fluxomics in steatotic liver disease to epigenetics in hibernating squirrels – a scientific journey", October 23, 2024, University of Nebraska – Lincoln, NE
- **School of Veterinary Medicine and Biomedical Sciences Seminar Series**, "*Metabolic reprogramming in cardiac and hepatic manifestations of metabolic syndrome*", March 4, 2024, University of Nebraska – Lincoln, NE
- **MITO CLUB Seminar**, "*Metabolic reprogramming in cardiac and hepatic disorders*", February 21, 2024, University of Nebraska – Lincoln, NE
- **Metabolism Interest Group**, "*The effect of SERCA activation on liver metabolism during acute lipotoxicity in vivo*," January 18, 2022, Vanderbilt University, Nashville, TN
- **Vanderbilt-Ingram Cancer Center**, "*The effect of ER stress inhibition on liver metabolism and diet-induced steatohepatitis in mice*," December 6, 2021, Vanderbilt University, Nashville, TN
- **Metabolism Interest Group**, "*The effect of SERCA2 activation on liver metabolism and diet-induced steatohepatitis in mice*", March 2, 2021, Vanderbilt University, Nashville, TN
- **Metabolism Interest Group**, "*The role of lipid metabolism signaling pathways in development of left ventricular hypertrophy*," February 20, 2018, Vanderbilt University, Nashville, TN

## PATENTS

- Dobrzyn P, Dobrzyn A, Kozinski K, **Bednarski T**. *Method for the early diagnosis of a pre-diabetic state and type 2 diabetes*. US 10,222,384 B2

## PUBLICATIONS

### Peer-review articles

- Rahim M, **Bednarski TK**, Hasenour CM, Banerjee DR, Trenary IA, Young JD. *Simultaneous in vivo multi-organ fluxomics reveals divergent metabolic adaptations in liver, heart, and skeletal muscle during obesity*. Cell Rep. in press.
- **Bednarski TK**, Rahim M, Hasenour CM, Banerjee DR, Trenary IA, Wasserman DH, Young JD. *Pharmacological SERCA activation limits diet-induced steatohepatitis and restores liver metabolic function in mice*. J Lipid Res. 2024; 65 (6): 100558.
- **Bednarski TK**, Duda M, Dobrzyn P. *Alterations of lipid metabolism in the heart in spontaneously hypertensive rats precedes left ventricular hypertrophy and cardiac dysfunction*. Cells. 2022; 11 (19): 3032.
- Rahim M, Hasenour CM, **Bednarski TK**, Hughey CC, Wasserman DH, Young JD. *Multitissue <sup>2</sup>H/<sup>13</sup>C flux analysis reveals reciprocal upregulation of renal gluconeogenesis in hepatic PEPCK-C-knockout mice*. JCI Insight. 2021; 6 (12): 149278.
- Hasenour CM, Kennedy AJ, **Bednarski T**, Trenary IA, Eudy BJ, da Silva RP, Boyd KL, Young JD. *Vitamin E does not prevent Western diet-induced NASH progression and increases metabolic flux dysregulation in mice*. J Lipid Res. 2020; 61 (5): 707-721.
- **Bednarski T**, Olichwier A, Opasinska A, Pyrkowska A, Gan AM, Ntambi JM, Dobrzyn P. *Stearoyl-CoA desaturase 1 deficiency reduces lipid accumulation in the heart by activating lipolysis independently of peroxisome proliferator-activated receptor alpha*. Biochim Biophys Acta. 2016; 1861 (12 Pt A): 2029-2037.
- Dobrzyn P, Pyrkowska A, Duda MK, **Bednarski T**, Maczewski M, Langfort J, Dobrzyn A. *Expression of lipogenic genes is upregulated in the heart with exercise training induced but not pressure overload-induced left ventricular hypertrophy*. Am J Physiol Endocrinol Metab, 2013; 304 (12): E1348-E1358.

### Review articles

- **Bednarski TK**, Rahim M, Young JD. *In vivo <sup>2</sup>H/<sup>13</sup>C flux analysis in metabolism research*. Curr Opin Biotechnol. 2021; 71: 1-8.
- **Bednarski T**, Pyrkowska A, Opasińska A, Dobrzyn P. *Regulation of cardiac metabolism and function by lipogenic factors*. Postepy Hig Med Dosw. 2016; 70: 644-653.
- Dobrzyn P, **Bednarski T**, Dobrzyn A. *Metabolic reprogramming of the heart through stearoyl-CoA desaturase*. Prog Lipid Res. 2015; 57: 1-12.

## In preparation

- **Bednarski TK**, Whittenbarger N, Rahim M, Trenary IA, Young JD. *Investigating the ability of LXR activation to mitigate NASH pathogenesis in vivo.*
- **Bednarski TK**, Byram MT, Yue Z, Hasenour CM, Rahim M, Trenary IA, Young JD. *The effect of SERCA2 activation on liver metabolism during acute lipotoxicity in vivo.*

## CONFERENCES

- **The Obesity Society ObesityWeek**, November 3 – 6, 2024, San Antonio, TX  
Poster presentation: *“LXR activation mitigates inflammation, ER, oxidative stress while failing to improve liver steatosis”*
- **American Thyroid Association Annual Meeting**, October 30 – November 3, 2024, Chicago, IL  
Poster presentation: *“Adiponectin receptors agonist, AdipoRon, regulates cardiac lipid metabolism via thyroid hormone dependent mechanism.”*
- **International Hibernation Symposium 2024**, July 21 – 25, 2024, Mont-Tremblant, Canada  
Oral presentation: *“Histones acetylation as an epigenetic regulatory mechanism involved in heart-related gene expression in thirteen-lined ground squirrels’ cardiac muscle during hibernation”*
- **Kern Lipid Conference: Lipids and Mitochondria in Metabolic Disease**, August 12 – 14, 2024, Snowmass, CO  
Poster presentation: *“The effect of LXR activation on liver metabolism and diet-induced steatohepatitis in mice”*
- **American Diabetes Association (ADA) 84th Scientific Sessions**, June 21 – 24, 2024, Orlando, FL  
Poster presentation: *“The effect of pharmacological activation of Liver X Receptor (LXR) in the heart of obese mice”*
- **Summer Liver Academy Meeting (SLAM)**, June 16 – 20, 2024, Cape Coral, FL  
Poster presentation: *“Copper deficiency causes lipid metabolism disorder and diet-induced steatotic liver disease in mice”*
- **Nencki Conference for Life Sciences: Focus on Lipid Metabolism**, May 23 – 24, 2024, Warsaw, Poland  
Poster presentation: *“The effect of LXR or SERCA2 activation on liver metabolism and diet-induced steatohepatitis in mice”*
- **American Society for Biochemistry and Molecular Biology: Discover BMB 2024**, March 23 – 26, 2024, San Antonio, TX  
Poster presentation: *“Alterations of DNA methylation as an epigenetic regulatory mechanism in thirteen-lined ground squirrels’ cardiac muscle during hibernation”*
- **American Diabetes Association (ADA) 83<sup>rd</sup> Scientific Sessions**, June 23 – 26, 2023, San Diego, CA  
Poster presentation: *“The effect of LXR activation on liver metabolism and diet-induced steatohepatitis in mice”*
- **2023 ASBMB Deuel Conference on Lipids**, March 7 – 10, 2023, Dana Point, CA.
- **14<sup>th</sup> Annual International Conference on Systems Biology of Human Disease**, June 19 – 22, 2022, Nashville, TN  
Oral presentation: *“Effects of SERCA activation on in vivo liver metabolism during acute and chronic lipotoxicity”*
- **Vanderbilt Diabetes Day**, May 9, 2022, Nashville, TN  
Poster presentation: *“The effect of LXR activation on liver metabolism and diet-induced steatohepatitis in mice”*
- **Vanderbilt Digestive Disease Research Center (VDDRC) Retreat: Obesity, Metabolism, and Nutrition**, April 27, 2022, Nashville, TN  
Poster presentation: *“SERCA2 activation reduces liver inflammation, ER, and oxidative stress while normalizing pyruvate cycling in obese mice”*
- **American Association for the Study of Liver Diseases: The Liver Meeting**, November 12 – 15, 2021  
Poster presentation: *“SERCA2 activation reduces liver inflammation and partially normalizes liver lipid composition in obese mice”*
- **15<sup>th</sup> Annual VPA Symposium**, November 1, 2021, Nashville, TN

- Oral presentation: *“The effect of LXR activation on liver metabolism and diet-induced steatohepatitis in mice”*
- **9<sup>th</sup> Annual Oak Ridge Postdoctoral Association (ORPA) Research Symposium**, July 28 – 29, 2021  
Oral presentation: *“Investigating the ability of SERCA2b activation to mitigate hepatic lipotoxicity”*
  - **FASEB, The Liver Biology Conference: Fundamental Mechanisms and Translational Applications**, June 16 – 17, 2021  
Oral presentation: *“The effect of SERCA2 activation on liver metabolism during acute lipotoxicity in vivo”*
  - **Vanderbilt Virtual Diabetes Day**, November 13 and 20, 2020, Nashville, TN  
Poster presentation: *“Acute effect of lard, olive, and coconut oil on hepatic energy metabolism”*
  - **14<sup>th</sup> Annual VPA Symposium**, October 29, 2020, Nashville, TN  
Poster presentation: *“Acute effect of lard, olive, and coconut oil on hepatic energy metabolism”*
  - **Virtual American Diabetes Association (ADA) 80<sup>th</sup> Scientific Sessions**  
Oral presentation: *“The effect of SERCA2 activation on liver metabolism and diet-induced steatohepatitis in mice”*
  - **Virtual 2020 ASBMB Annual Meeting**  
Oral presentation: *“The effect of SERCA2 activation on liver metabolism during acute lipotoxicity in vivo”*
  - **2020 Deuel Conference on Lipids: Fat in Liver and Beyond**, March 3 – 6, 2020, Coronado, CA.  
Poster presentation: *“Acute effect of long-chain and medium-chain saturated fatty acids on hepatic energy metabolism”*
  - **Vanderbilt Diabetes Day**, November 15, 2019, Nashville, TN  
Poster presentation: *“The effect of SERCA2 activation on liver metabolism during acute lipotoxicity”*
  - **American Diabetes Association (ADA) 79<sup>th</sup> Scientific Sessions**, June 7 – 11, 2019, San Francisco, CA.  
Poster presentation: *“Short-term effect of saturated and monounsaturated fatty acids on hepatic energy metabolism”*
  - **13<sup>th</sup> Annual VPA Symposium**, April 9, 2019, Nashville, TN  
Poster presentation: *“Hepatic energy metabolism is acutely affected by monounsaturated fatty acids”*
  - **2018 Southeast Lipid Research Conference: “Obesity and Diabetes-Associated Dyslipidemia”**, November 1 – 3, 2018, Nashville, TN  
Poster presentation: *“Acute effect of saturated fatty acids on hepatic energy metabolism”*
  - **19<sup>th</sup> European Bioenergetics Conference (EBEC 2016)**, July 2 – 7, 2016, Riva del Garda, Italy.  
Poster presentation: *“Stearoyl-CoA desaturase 1 regulates rate of triglyceride lipolysis in cardiomyocytes”*
  - **4<sup>th</sup> IRB Barcelona PhD Students Symposium**, November 12 – 13, 2015, Barcelona, Spain.  
Poster presentation: *“Lipid metabolism pathways are involved in development of obesity and hypertension related left ventricular hypertrophy”*
  - **2<sup>nd</sup> Nencki Institute PhD Student Conference**, October 27 – 29, 2015, Warsaw, Poland.  
Oral presentation: *“The role of fatty acids in cardiac metabolism and pathogenesis of left ventricular hypertrophy”*
  - **44<sup>th</sup> European Muscle Conference (EMC 2015)**, September 21 – 25, 2015, Warsaw, Poland.  
Poster presentation: *“Development of hypertension-induced left ventricular hypertrophy is associated with impairment of lipolysis in cardiomyocytes”*
  - **15<sup>th</sup> annual FEBS Young Scientists' Forum (YSF 2015) and 40<sup>th</sup> Congress of The Federation of European Biochemical Societies (FEBS 2015)**, July 2 – 9, 2015, Berlin, Germany.  
Poster presentation: *“Activity of Akt/mTOR pathway depends on type and time of hypertensive stimuli in the heart”*
  - **1<sup>st</sup> Congress BIO 2014**, September 9 – 12, 2014, Warsaw, Poland.  
Poster presentation: *“Hypertension-induced heart steatosis is not associated with increased cardiac lipogenesis”*
  - **11<sup>th</sup> Congress of the International Society for the Study of Fatty Acids and Lipids**, June 28 – July 2, 2014, Stockholm, Sweden.  
Poster presentation: *“Lipid-induced cardiac remodeling and left ventricle steatosis depend on the degree of saturation of fatty acids in dietary fats”*

- **48<sup>th</sup> Annual Scientific Meeting of the European Society for Clinical Investigation**, April 30 –May 3, 2014, Utrecht, The Netherlands.  
Poster presentation: “*Monounsaturated fatty acids activate lipogenic pathways in the heart leading to cardiac steatosis and left ventricular remodelling*”
- **1<sup>st</sup> Nencki Institute PhD Student Conference**, October 16 – 18, 2013, Warsaw, Poland.  
Oral presentation: “*Lipid metabolism in obesity-induced and endurance training-induced left ventricular hypertrophy*”
- **54<sup>th</sup> International Conference on the Biosciences of Lipids: Linking Transcription to Physiology in Lipidomics**, September 17 – 21, 2013, Bari, Italy.  
Poster presentation: “*Lipid metabolism in different types of left ventricular hypertrophy*”
- **10<sup>th</sup> Euro Fed Lipid Congress Fats, Oils and Lipids: From Science and Technology to Health**, September 23 – 26, 2012, Krakow, Poland.  
Poster presentation: “*Effect of dietary stearate and oleate on expression of fatty acid desaturases and elongases in the heart*”

## CONFERENCE PROCEEDINGS

- Olichwier AJ, Heinis F, Andrews M, **Bednarski TK**. *Alterations of DNA methylation as an epigenetic regulatory mechanism in thirteen-lined ground squirrels' cardiac muscle during hibernation*. J Biol Chem. 2024; 300 (3) Suppl.: 106554.
- Banerjee DR, Rahim M, Hasenour CM, **Bednarski TK**, Young JD. *Pharmacological SERCA Activation Shifts Cardiac Fuel Preference Without Impairing Function in Obese Mice*. Circulation. 2023; 148 (Suppl. 1): 17088.
- **Bednarski TK**, Rahim M, Whittenbarger N, Olichwier AJ, Young JD. *The Effect of LXR Activation on Liver Metabolism and Diet-Induced Steatohepatitis in Mice*. Diabetes. 2023; 72 (Suppl. 1): 260-LB.
- Hasenour CM, Rahim M, **Bednarski TK**, Banerjee DR, Young JD. *Cardiac and Skeletal Muscles Exhibit Discordant Flux Adaptations as a Result of Western Diet-Induced Obesity*. Diabetes. 2022; 71 (Suppl. 1): 1393-P.
- Rahim M, Hasenour CM, **Bednarski TK**, Hughey CC, Wasserman DH, Young JD. *Simultaneous 2H/13C Assessment of Liver and Kidney Metabolic Fluxes Reveals Reciprocal Upregulation of Renal Gluconeogenesis in Hepatic PEPCCK-C Knockout Mice*. Diabetes. 2021; 70 (Suppl. 1): 207-LB.
- **Bednarski TK**, Rahim M, Trenary IA, Young JD. *The Effect of SERCA2 Activation on Liver Metabolism and Diet-Induced Steatohepatitis in Mice*. Diabetes. 2020; 69 (Suppl. 1): 74-OR.
- **Bednarski TK**, Rahim M, Trenary IA, Young JD. *The effect of SERCA2 activation on liver metabolism during acute lipotoxicity in vivo*. The FASEB Journal. 2020; 34 (S1): 1-1.
- **Bednarski TK**, Rahim M, Young JD. *Short-Term Effect of Saturated and Monounsaturated Fatty Acids on Hepatic Energy Metabolism*. Diabetes. 2019; 68 (Suppl. 1): 285-LB.
- **Bednarski T**, Dobrzyn P. *Stearoyl-CoA desaturase 1 regulates rate of triglyceride lipolysis in cardiomyocytes*. BBA – Bioenergetics. 2016; 1857 Suppl.: e74.
- **Bednarski T**, Duda M, Dobrzyn P. *Lipid metabolism pathways are involved in the development of obesity and hypertension related left ventricular hypertrophy*. 4th IRB Barcelona PhD Students Symposium: Science fights back: Tackling disease to recover homeostasis Abstract Book. 2015; 58.
- **Bednarski T**, Duda M, Dobrzyn P. *Development of hypertension-induced left ventricular hypertrophy is associated with impairment of lipolysis in cardiomyocytes*. J Muscle Res Cell Motil 36: 580–581, 2015.
- **Bednarski T**, Duda M, Dobrzyn P. *Activity of Akt/mTOR pathway depends on type and time of hypertensive stimuli in the heart*. FEBS J. 2015; 282, (Suppl. 1): 222.
- **Bednarski T**, Olichwier A, Opasinska A, Dobrzyn P. *Hypertension-induced heart steatosis is not associated with increased cardiac lipogenesis*. Acta Biochimica Polonica Vol. 61 (3), Suppl. 1: 229, 2014.
- **Bednarski T**, Opasinska A, Olichwier A, Dobrzyn P. *Role of cardiac lipid metabolism in the development of hypertension-induced heart steatosis*. FEBS J. 2014; 281 (Suppl. 1): 597.
- **Bednarski T**, Pyrkowska A, Dobrzyn A, Duda M, Dobrzyn P. *Lipid-induced cardiac remodeling and left ventricle steatosis depend on the degree of saturation of fatty acids in dietary fats*. ISSFAL Congress Abstract Book, 2014; S5.01.

- **Bednarski T**, Pyrkowska A, Dobrzyn A, Duda M, Dobrzyn P. *Monounsaturated fatty acids activate lipogenic pathways in the heart leading to cardiac steatosis and left ventricular remodeling*. Eur J Clin Invest. 2014; 44 (Suppl. 1): 7.
- Dobrzyn P, Pyrkowska A, Duda M, Maczewski M, **Bednarski T**, Langfort J, Dobrzyn A. *Overexpression of lipogenic genes in the heart distinguishes physiologic from pathologic left ventricle hypertrophy*. FASEB J. 2013; 27: 813.2.
- **Bednarski T**, Pyrkowska A, Ochalek A, Duda M, Dobrzyn A, Langfort J, Dobrzyn P. *Lipid metabolism in different types of left ventricular hypertrophy*. 54th International Conference on the Biosciences of Lipids: Linking Transcription to Physiology in Lipidomics Abstract Book. 2013; 5.
- **Bednarski T**, Pyrkowska A, Ochalek A, Duda M, Dobrzyn A, Langfort J, Dobrzyn P. *Lipogenesis and Fatty Acid Utilization in Different Models of Left Ventricular Hypertrophy*. FEBS workshop Translating Epigenomes into Function: a Next-Generation Challenge for Human Disease Workshop Booklet. 2013; 53.
- Dobrzyn P, Pyrkowska A, **Bednarski T**, Ochalek A, Duda M, Langfort J, Dobrzyn A. *Stearoyl-CoA desaturase expression is upregulated in exercise training-induced left ventricular hypertrophy*. FEBS J. 2013; 280, (Suppl. 1): 182.
- **Bednarski T**, Pyrkowska A, Dobrzyn P. *Lipid metabolism in obesity-induced and endurance training-induced left ventricular hypertrophy*. 1st Nencki Institute PhD Student Conference Abstract Book. 2013; S7.5.
- **Bednarski T**, Pyrkowska A, Dobrzyn P. *Lipogenesis and fatty acid utilization in obesity-induced and endurance training-induced left ventricular hypertrophy*. Do Science! Opening of the Academic Year 2013/2014 at Biocentrum Ochota Programme and Abstract book. 2013; 1.
- **Bednarski T**, Jazurek M, Dobrzyn A, Małodobra-Mazur M, Dobrzyn P. *Effect of dietary stearate and oleate on expression of fatty acid desaturases and elongases in the heart*. EJLST. 2012; 114, (Suppl. 1): 367.

## **WORKSHOPS**

- Faculty-led Inquiry into Reflective and Scholarly Teaching Project (**FIRST**), August 2024 – May 2025, Lincoln, NE
- Office of Research and Economic Development's **InterFACE: NIH R01**, April 2024 – February 2025, Lincoln, NE
- Office of Research and Economic Development's **NSF CAREER Club**, January – July 2024, Lincoln, NE
- College of Education and Human Sciences **Scholarly Enhancement Program: Grant-writing for Grand Visions (GWGV)**, September 2023 – May 2024, Lincoln, NE
- **Center for Transformative Research in Metabolism: Hibernation Science Workshop**, August 6 – 18, 2023, Fairbanks, AK.
- **Alcoholic and Nonalcoholic Steatohepatitis: Pathogenesis and Mechanisms of Liver Injury Joint NIAAA-NIDDK Research Workshop**, September 16 – 17, 2019, Bethesda, MD.
- **10th Annual Course on Isotope Tracers in Metabolic Research: Principles and Practice of Kinetic Analysis**, October 30 – November 3, 2017, Nashville, TN.
- **Translating Epigenomes into Function: A Next-Generation Challenge for Human Disease**, October 13 – 16, 2013, Capri, Italy.
- **Mitochondria, apoptosis and cancer 2013 (MAC-2013)**, October 10 – 12, 2013, Stockholm, Sweden.
- **qPCR Experience Boot Camp**, September 11 – 14, 2012, Piran, Slovenia.