

## *Curriculum vitae*

**Date Prepared:** 11/21/2024  
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### **Education**

Year	Degree (Honors)	Field of Study (Thesis advisor for PhDs)	Institution
2010-2014	Ph.D.	Field: Chemistry Advisor: Piotr Wiczorek, Co- advisor: Piotr Mlynarz; Thesis: "Metabolomic profiling with utilization of NMR spectroscopy in biological research and medical diagnostics"	Opole University, Division of Analytical and Ecological Chemistry, Poland
2005-2010	M.Sc. & B.Eng	Field: Biotechnology Advisor: Piotr Mlynarz; Thesis: "Utilization of NMR spectroscopy in diagnostic of autoimmune diseases. Metabolomics studies.	Wroclaw University of Technology, Division of Bioorganic Chemistry, Poland

### **Postdoctoral Training**

Year(s)	Titles	Specialty/Discipline (Lab PI for postdoc research)	Institution
2017 - 2018	Postdoc	Chemistry/Physiology/Metabolism (Shawn Burgess)	UT Southwestern Medical Center, Center for Human Nutrition
2014-2017	Postdoc	Chemistry/Physiology/Metabolism (Shawn Burgess)	UT Southwestern Medical Center, Advanced Imaging Research Center

2011	PhD student (internship)	Chemistry /Metabolomics GC-MS and LC-MS metabolomics and chemometric analysis (Coral Barbas)	Center for Metabolomics and Bioanalysis (CEMBIO), Spain, Madrid
2009	MSc student (internship)	Chemistry Biological NMR with application for metabolomics (Nicola D'Amelio)	Cluster in Biomedicine, Bracco Company, Italy, Trieste

### **Current Licensure and Certification**

#### Licensure

#### Board and Other Certification

Year	Name of Honor/Award	Awarding Organization
2024	Articulating your Mentoring Philosophy Workshop	UT Southwestern Medical Center, Facilitators: Alyssa Hasty, PhD and Joyce Repa, PhD
2024	4-hours CIMER Research Mentor Training Workshops	UT Southwestern Medical Center, Facilitators: Alyssa Hasty, PhD and Joyce Repa, PhD
2015	Isotope Tracers in Metabolic Research course	National Mouse Metabolic Phenotyping Centers, Cleveland
2012	Metabolic Phenotyping in Disease Diagnosis & Personalized Health Care	Imperial Collage London, London

### **Honors and Awards**

Year	Name of Honor/Award	Awarding Organization
2020	Outstanding Reviewer Award	Selected by the Metabolites Editorial Board for high quality and timely peer-review of manuscripts.
2017	Best Poster Award	Mayo Clinic Metabolomics Symposium 2017. Rochester, MN.

### **Faculty Academic Appointments**

Year(s)	Academic Title	Department	Academic Institution
2018-present	Assistant Professor	Center for Human Nutrition	UT Southwestern Medical Center

### **Editorial Activities**

Year(s)	Journal Name
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#### Editor/Associate Editor

2019-present	Guest Editor - Metabolites
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#### Ad Hoc Reviewer

Nature Chemical Biology,  
Cell Reports,  
Molecular Nutrition and Food Research,  
Magnetic Resonance in Medicine,  
Metabolites,  
Metabolomics,  
Molecules,  
Journal of Diabetes Research,  
Process Biochemistry,  
JCI Insight,  
NMR in Biomedicine,  
International Journal of Molecular Sciences,  
The Journal of Clinical Endocrinology and Metabolism  
Cancers  
Cells  
AJPGI  
Diagnostics  
PNAS  
AJP  
Cardiovascular Diabetology  
Cellular & Molecular Biology Letters  
Diagnostics  
Life Sciences

Archives of Biochemistry and Biophysics  
Trends in Endocrinology and Metabolism  
iScience

## **Grant Support**

### **Present**

**NIH/NIDDK; K01 DK133630 (PI:Deja)**

Sympathetic regulation of liver metabolism in obesity and exercise.

Principal Investigator

07/07/2022-05/31/2027

**NIH/NIDDK; P30 DK127984; (PI: Horton)**

UT Southwestern NORC

Researcher

04/2022-03/2027

**National High Magnetic Field Laboratory (NHMFL); Facility Requested: AMRIS**

<sup>13</sup>C NMR measurements of liver samples for development of unified model of hepatic metabolism;

PI:Deja, writing of the proposal, conducting research

No direct costs, funds for use in AMRIS Facility for NMR measurements

04/27/20 - 04/27/23

### **Past**

**NIH; P41-EB015908; (PI:Burgess)**

National Center for In Vivo Metabolism - TR&D 2: Integrated Metabolomics

Goal: To develop novel techniques to examine metabolic flux - Project 2

Role: Major Researcher and key personnel (50%), participated in the scientific writing of the proposal (PI:Burgess)

04/01/17 - 03/21/22

**NIH/NIDDK; 5 RO1 DK078184-09; (PI:Burgess)**

Factors Controlling Metabolic Flux in Liver

Major Researcher and key personnel (50%), participated in the scientific writing of the proposal (PI:Burgess)

04/01/18 - 03/30/23

### **Robert A. Welch Foundation**

Postdoctoral Fellowship (I-1804) (Mentor: Shawn Burgess)

### **European Union Human Capital 2007 – 2013**

PhD Fellowship (Mentor: Piotr Wieczorek)

### **Teaching Activities**

Year(s)	Activity
<u>Medical and graduate school didactic and small group teaching</u>	
2023	Discussion Leader Guide – Mentor Relationships, Responsible Conduct of Research
2018-2021	BME 5375, Metabolic Imaging of Disease, UT Southwestern Two Classes: Computational Models of Metabolism
2017	BME 5375, Metabolic Imaging of Disease, UT Southwestern Two Classes: Integrated Metabolism

### Graduate and Undergraduate student rotations

2024	Natalia Pudelko-Malik – Graduate student - Wroclaw University of Technology, Poland Visiting in the UT Southwestern lab for 6 months
2024	Christin Merrel – College student Visiting in the UT Southwestern lab for 2 months
2023	Christin Merrel – High School student Visiting in the UT Southwestern lab for 2 months
2022	Natalia Pudelko-Malik – Graduate student - Wroclaw University of Technology, Poland Visiting in the UT Southwestern lab for 3 months
2021-2022	Ava Ecklin – Graduate student - Texas Woman's University Currently an Administrative Support Supervisor at Milestone Therapy

### Graduate and Medical Student Trainees

2023	Cameron Menezes Graduate student in Mishra Lab at UTSW
2020-present	Victor Blais – Graduate student - Health Professions ACPHD Health Professions – UT Southwestern
2012-2014	Ewa Jawień – Graduate student – Wroclaw University of Technology, Poland
2011-2014	Adam Ząbek – Graduate student – Wroclaw University of Technology, Poland

### Postdoctoral trainees

2023-present	Marc McLeod - postdoctoral researcher in Burgess Lab at UTSW
2023-present	Haidi Pak - postdoctoral researcher in Takahashi Lab at UTSW
2022-2023	Toshiharu Onodera - postdoctoral researcher in Scherer Lab at UTSW
2022	Keisha Hardeman - postdoctoral researcher in Burgess Lab at UTSW
2019	Alexandre Caron - postdoctoral researcher in Burgess Lab at UTSW Currently a Principal Investigator at Université du Québec
2018-present	Melissa Inigo - postdoctoral researcher in Burgess Lab at UTSW
2014-2018	David Cappel - postdoctoral researcher in Burgess Lab at UTSW
2014-2018	Justin Fletcher - postdoctoral researcher in Burgess Lab at UTSW

### **Invited Lectures**

Year(s)	Title	Location
<u>International</u>		
2024	“In vivo metabolic flux analysis using multiple stable isotope tracers” Université Laval Seminar	Quebec, Canada
2021	“Understanding metabolism using metabolic flux analysis (MFA) and metabolomics – a case of non-alcoholic fatty liver disease (NAFLD)” Wroclaw University of Technology – Department of Chemistry talk	Wroclaw, Poland
2020	“UnACcceptable? - the interplay between fat oxidation and gluconeogenesis” VII Metabolomics Circle	Bialystok, Poland
2020	Invited expert at the discussion panel “Metabolomics, metadata and other omics” VII Metabolomics Circle	Bialystok, Poland
2017	“Metabolic flux analysis with utilization of stable isotopes– beyond static metabolite concentrations” IV Metabolomics Circle	Wroclaw, Poland
<u>National</u>		
2024	“Technical challenges and solutions for <i>in vivo</i> metabolic flux analysis using stable isotope tracers”	University of Florida, Gainesville
2023	“UnACcceptable? Malonyl-CoA Moderates Hepatic Gluconeogenesis, Growth, and Autophagy by Altering TCA Cycle” Metabolic Obesity Diabetes (MOD) Chalk Talk	Kansas City, KU Medical Center

2018	“Analytical and Computational Approaches for Metabolic Flux Analysis in Liver” CPSA Metabolomics	University of Florida, Gainesville
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International Promotion of UTSW as Science Engagement Ambassador

2024	“ <i>Memento unde venis et quo vadis</i> ” “Remember where you came from and where you are going” 11/14/2024	Meeting of young scientists as part of the Metabolomics Circle (MetCircle2024) and Advances in Pharmaceutical Analysis (APA2024) Lodz University of Technology, Lodz, Poland
2024	“International Postdoctoral candidate recruitment” 07/19/2024	Wroclaw University of Science and Technology, Wroclaw, Poland
2024	“International Postdoctoral candidate recruitment” 07/10/2024	Medical University of Bialystok, Bialystok, Poland

Service to the Community

Year(s)	Role	Organization or institution
2024-present	Science Engagement Ambassador	UTSW
2020-present	Reviewer Board Member - Metabolites	MDPI - Metabolites
2018-present	Organizing Committee: Program Co-Chair	CPSA metabolomics
2018	Judge: contest for best Doctoral and for best Postdoctoral Poster	The 26th AIRC Annual Symposium. Dallas, TX
2017	Session Chair: E-Posters Session - Oral Presentations	IV Metabolomics Circle. Wroclaw, Poland

Bibliography

**Peer-Reviewed Publications**

Original Research Articles

1. Rauckhorst AJ, Sheldon RD, Pape DJ, Ahmed A, Falls-Hubert KC, Merrill RA, Brown RF, Deshmukh K, Vallim TA, **Deja S**, Burgess SC, Taylor EB. *A hierarchical hepatic de novo lipogenesis substrate supply network utilizing pyruvate, acetate, and ketones*. Cell Metab. 2024 DOI: 10.1016/j.cmet.2024.10.013 (2022 Journal Impact Factor: 29.0)
2. **Deja S**, Fletcher JA, Kim CW, Kucejova B, Fu X, Mizerska M, Pudenko-Malik N, Berglund E, Browning JD, Thyfault JP, Young JD, Horton JD, Burgess SC. *Hepatic Malonyl-CoA Synthesis Restrains Gluconeogenesis by Suppressing Fat Oxidation, Pyruvate Carboxylation,*

- and Amino Acid Availability*. Cell Metab. 2024 DOI: 10.1016/j.cmet.2024.02.004 (2022 Journal Impact Factor: 29.0)
3. Onodera T, Wang MY, Rutkowski JM, **Deja S**, Chen S, Balzer MS, Kim D, Sun X, An Y, Field BC, Lee C, Matsuo E, Mizerska M, Sanjana I, Fujiwara N, Kusminski CM, Gordillo R, Gautron L, Marciano DK, Hu MC, Burgess SC, Susztak K, Moe O, Scherer PE. *Endogenous renal adiponectin drives gluconeogenesis through enhancing pyruvate and fatty acid utilization*. Nat Commun. 2023 DOI: 10.1038/s41467-023-42188-4. (2022 Journal Impact Factor: 16.6)
  4. Yiew NKH, **Deja S**, Ferguson D, Cho K, Jarasvaraparn C, Jacome-Sosa M., Lutkewitte AJ, Mukherjee S, Fu X, Singer JM, Patti GJ, Burgess SC, Finck BN. *Effects of hepatic mitochondrial pyruvate carrier deficiency on de novo lipogenesis and glycerol-mediated gluconeogenesis in mice*. iScience. 2023 DOI: 10.1016/j.isci.2023.108196. (2022 Journal Impact Factor: 5.8)
  5. Fu X, Fletcher JA, **Deja S**, Inigo-Vollmer M, Burgess SC, Browning JD. *Persistent fasting lipogenesis links impaired ketogenesis with citrate synthesis in humans with non-alcoholic fatty liver*. J Clin Invest. 2023, DOI: 10.1172/JCI167442. (2021 Journal Impact Factor: 19.5)
  6. **Deja S**, Crawford PA, Burgess SC. *Krebs takes a turn at cell differentiation*. Cell Metab. 2022 DOI: 10.1016/j.cmet.2022.04.005. (2021 Journal Impact Factor: 31.4)
  7. Rahim M, Ragavan M, **Deja S**, Merritt ME, Burgess SC, Young JD. INCA 2.0: A tool for integrated, dynamic modeling of NMR- and MS-based isotopomer measurements and rigorous metabolic flux analysis. Metab Eng. DOI: 10.1016/j.ymben.2021.12.009. (2021 Journal Impact Factor: 8.8)
  8. **Deja S\***, Litarski A, Mielko KA, Pudełko-Malik N, Wojtowicz W, Zabek A, Szydełko T, Młynarz P. *Gender-Specific Metabolomics Approach to Kidney Cancer*. Metabolites 2021 DOI: 10.3390/metabo11110767. (2021 Journal Impact Factor: 5.6) (\* **co-corresponding author**)
  9. Inigo M, **Deja S**, Burgess S. *Ins and Outs of the TCA Cycle: The Central Role of Anaplerosis*. Annu Rev Nutr. 2021, DOI: 10.1146/annurev-nutr-120420-025558 (2020 Journal Impact Factor: 11.8)
  10. Fu X, **Deja S**, Fletcher J, Anderson N, Mizerska M, Vale G, Browning J, Horton J, McDonald J, Mitsche M, Burgess S. *Measurement of lipogenic flux by deuterium resolved mass spectrometry*. Nat Commun. 2021, 12(1):3756 (2019 Journal Impact Factor: 12.1)
  11. **Deja S\***, Kucejova B, Fu X, Browning J, Young J, Burgess S. *In Vivo Estimation of Ketogenesis Using Metabolic Flux Analysis—Technical Aspects and Model Interpretation*. Metabolites 2021, 11(5):279 (2020 Journal Impact Factor: 4.9) (\* **corresponding author**)
  12. Teul J, **Deja S**, Celińska-Janowicz K, Zabek A, Młynarz P, Barć P, Junka A, Smutnicka D, Bartoszewicz M, Pałka J, Milyk W. *LC-QTOF-MS and 1H NMR Metabolomics Verifies Potential Use of Greater Omentum for Klebsiella pneumoniae Biofilm Eradication in Rats*. Pathogens 2020, 9, 399 (2018 Journal Impact Factor: 3.4)
  13. **Deja S**, Fu X, Fletcher JA, Kucejova B, Browning JD, Young JD, Burgess SC. *Simultaneous tracers and a unified model of positional and mass isotopomers for quantification of metabolic flux in liver*. Metab Eng 2020, 59:1-14. (2018 Journal Impact Factor: 7.8)



14. Fletcher JA\*, **Deja S\***, Satapati S, Fu X, Burgess SC, Browning JD. *Impaired ketogenesis and increased acetyl-CoA oxidation promote hyperglycemia in human fatty liver*. JCI Insight, 5. pii: 1277372019, 2019 (2018 Journal Impact Factor: 6.0) (\* **equal contribution**)
15. Cappel D\*, **Deja S\***, Duarte JAG, Kucejova B, Iñigo M, Fletcher JD, Fu X, Berglund E, Liu T, Elmquist J, Hammer S, Mishra P, Browning J, Burgess SC. *Pyruvate carboxylase mediated anaplerosis promotes antioxidant capacity by sustaining TCA cycle and redox metabolism in liver*. Cell Metab, 29(6):1291-1305.e8, 2019 (2018 Journal Impact Factor: 20.6) (\* **equal contribution**)
16. Fu X, **Deja S**, Kucejova B, Duarte JAG, McDonald JG, Burgess SC. *Targeted Determination of Tissue Energy Status by LC-MS/MS*. Anal Chem, 91(9):5881-5887, 2019 (2018 Journal Impact Factor: 6.4)
17. Potts A, Uchida A, **Deja S**, Berglund ED, Kucejova B, Duarte JAG, Fu X, Browning JD, Magnuson MA, Burgess SC. Cytosolic Phosphoenolpyruvate Carboxykinase as a Cataplerotic Pathway in the Small Intestine. *Am J Physiol Gastrointest Liver Physiol*, 2018 (2018 Journal Impact Factor: 3.7)
18. Silvers MA\*, **Deja S\***, Singh N, Egnatchik RA, Sudderth J, Luo X, Beg MS, Burgess SC, DeBerardinis RJ, Boothman DA, Merritt ME. The NQO1 bioactivatable drug,  $\beta$ -Lapachone, alters the redox state of NQO1+ pancreatic cancer cells, causing perturbation in central carbon metabolism. *J Biol Chem*, pii: jbc.M117.813923, 2017 (2017 Journal Impact Factor: 4.1) (\* **equal contribution**) **Publication selected for a special virtual issue on “Drug metabolism, transport, and toxicity” at JBC.**
19. Wojtowicz W, Zabek A, **Deja S**, Dawiskiba T, Pawelka D, Glod M, Balcerzak W, Mlynarz P. Serum and urine  $^1\text{H}$  NMR-based metabolomics in the diagnosis of selected thyroid diseases. *Sci Rep*, 7(1): 9108, 2017 (2017 Journal Impact Factor: 4.3)
20. Kim CW, Addy C, Kusunoki J, Anderson NN, **Deja S**, Fu X, Burgess SC, Li C, Ruddy M, Chakravarthy M, Previs S, Milstein S, Fitzgerald K, Kelley DE, Horton JD. Acetyl CoA Carboxylase inhibition reduces hepatic steatosis but elevates plasma triglycerides in mice and humans: a bedside to bench investigation. *Cell Metab*, 26(2): 394-406, 2017 (2017 Journal Impact Factor: 18.2)
21. Orczyk-Pawilowicz M, Jawien E, **Deja S\***, Hirnle L, Zabek A, Mlynarz P. Metabolomics of Human Amniotic Fluid and Maternal Plasma during Normal Pregnancy. *PLoS One*, 11(4): e0152740, 2016 (2016 Journal Impact Factor: 2.8) (\* **co-corresponding author**)
22. Zabek A, Swierkot J, Malak A, Zawadzka I, **Deja S**, Bogunia-Kubik K, Mlynarz P. Application of  $^1\text{H}$  NMR-based serum metabolomic studies for monitoring female patients with rheumatoid arthritis. *J Pharm Biomed Anal*, 117: 544-550, 2016 (2016 Journal Impact Factor: 3.3)
23. Jawień E, Ząbek A, **Deja S**, Łukaszewicz M, Mlynarz P.  $^1\text{H}$  NMR-based metabolic profiling for evaluating poppy seed rancidity and brewing. *Cell Mol Biol Lett*, 20(5): 757-772, 2015 (2015 Journal Impact Factor: 1.8)
24. Ząbek A, Stanimirova I, **Deja S**, Barg W, Kowal A, Korzeniewska A, Orczyk-Pawilowicz M, Baranowski D, Gdaniec Z, Jankowska R, Mlynarz P. Fusion of the  $^1\text{H}$  NMR data of serum, urine and exhaled breath condensate in order to discriminate chronic obstructive pulmonary disease and obstructive sleep apnea syndrome. *Metabolomics*, 11(6): 1563-1574, 2015 (2015 Journal Impact Factor: 3.7)

25. **Deja S**, Wieczorek P, Halama M, Jasicka-Misiak I, Kafarski P, Poliwoda A, Młynarz P. Do Differences in chemical composition of stem and cap of *Amanita muscaria* fruiting bodies correlate with topsoil type? *PLoS One*, 9(12): e104084, 2014 (2014 Journal Impact Factor: 3.2)
26. **Deja S**, Porebska I, Kowal A, Zabek A, Barg W, Pawelczyk K, Stanimirova I, Daszykowski M, Korzeniewska A, Jankowska R, Młynarz P. Metabolomics provide new insights on lung cancer staging and discrimination from chronic obstructive pulmonary disease. *Journal of pharmaceutical and biomedical analysis*. *J Pharm Biomed Anal*, 100: 369-380, 2014 (2014 Journal Impact Factor: 3.0)
27. **Deja S**, Jawień E, Jasicka-Misiak I, Halama M, Wieczorek P, Kafarski P, Młynarz P. Rapid determination of ibotenic acid and muscimol in human urine. *Magn Reson Chem*, 52(11): 711-714, 2014 (2014 Journal Impact Factor: 1.2)
28. Zieliński Ł, **Deja S**, Jasicka-Misiak I, Kafarski P. Chemometrics as a Tool of Origin Determination of Polish Monofloral and Multifloral Honey. *J Agric Food Chem*, 62(13): 2973-2981, 2014 (2014 Journal Impact Factor: 2.9)
29. Dawiskiba T, **Deja S**, Mulak A, Zabek A, Jawień E, Pawełka D, Banasik M, Mastalerz-Migas A, Balcerzak W, Kaliszewski K, Skóra J, Barć P, Korta K, Pormańczuk K, Szyber P, Litarski A, Młynarz P. Serum and urine metabolomic fingerprinting in diagnostics of inflammatory bowel diseases. *World J Gastroenterol*, 20(1): 163-174, 2014 (2014 Journal Impact Factor: 2.4)
30. **Deja S**, Dawiskiba T, Balcerzak W, Orczyk-Pawilowicz M, Głód M, Pawełka D, Młynarz P. Follicular adenomas exhibit a unique metabolic profile. <sup>1</sup>H NMR studies of thyroid lesions. *PLoS One*, 8(12): e84637, 2013 (2013 Journal Impact Factor: 3.5)
31. Junka AF, **Deja S**, Smutnicka D, Szymczyk P, Ziółkowski G, Bartoszewicz M, Młynarz P. Differences in metabolic profiles of planktonic and biofilm cells in *Staphylococcus aureus* - <sup>1</sup>H Nuclear Magnetic Resonance search for candidate biomarkers. *Acta Biochim Pol*, 60(4): 701-706, 2013 (2013 Journal Impact Factor: 1.4)
32. **Deja S**, Barg E, Młynarz P, Basiak A, Willak-Janc E. <sup>1</sup>H NMR-based metabolomics studies of urine reveal differences between type 1 diabetic patients with high and low HbA<sub>1c</sub> values. *J Pharm Biomed Anal*, 83:43-48, 2013 (2013 Journal Impact Factor: 2.8)
33. Młynarz P, Barg W, **Deja S**, Jankowska R. Application of metabolomic in COPD diagnosing. *Pol Merkur Lekarski*, 33(196): 207-12, 2012 (2012 Journal Impact Factor: N/A)

#### Reviews, Chapters, Monographs and Editorials

1. Bey EA, Meade JC, Silvers MA, Motea EA, Patidar PL, Brekken R, **Deja S**, Merritt ME, Kilgore JA, Liu Y, Huang X, Li L, Yordy J, Williams NS, Gao J, Boothman DA. NQO1 Bioactivatable Drugs Enhance Radiation Responses. *Strategies to Enhance the Therapeutic Ratio of Radiation as a Cancer Treatment*, 225-252, 2016 [**book chapter**]

#### Letters to the Editor

1. Mlynarz P, **Deja S**, Stanimirova I, Zabek A, Barg W, Jankowska R. Metabolomics of chronic obstructive pulmonary disease and obstructive sleep apnea syndrome: response to Maniscalco and Motta. *Metabolomics*, 12:33, 2016 (2016 Journal Impact Factor: 3.7)

## Proceedings of Meetings

### **Presentations from research at UT Southwestern Medical Center**

1. 84th ADA. Scientific Sessions. 06.2024 (**Expert Panel Discussion**) **Invited Speaker**  
*Technical Challenges and Solutions in Metabolomics:*  
Trefely S. *Subcellular Metabolomics for Mapping Nutrient Responses*  
**Deja S.** *Nuclear Magnetic Resonance-Based Metabolism*  
TeSlaa T. *Stable Isotope Tracing In Vivo and Imaging Mass Spec*  
Chidley C. *New Metabolite ID in Metabolomics*
2. 2nd SESMET Conference. 06.2024 (**Oral Presentation**) **O11**  
**Deja S**, Kucejova B, Fu X, Britton S, Koch L, Thyfault J, Burgess S. *Adaptation of Liver Metabolism to Exercise With and Without Food Restriction – In Vivo Metabolic Flux Analysis Using Multiple Stable Isotope Tracers*
3. 2nd SESMET Conference. 06.2024 (**Poster Presentation**) **P29**  
**Deja S**, Kucejova B, Fu X, Britton S, Koch L, Thyfault J, Burgess S. *In Vivo Metabolic Flux Analysis-Effect of Exercise and Aerobic Capacity on Liver Metabolism*
4. 41st Obesity Society Meeting at Obesity Week. 10.2023 (**Poster Presentation**) **Poster-124**  
**Deja S**, Kucejova B, Fu X, Mizerska M, Britton SL, Koch LG, Thyfault J, Burgess SC. *Genetic Selection for Aerobic Capacity in Rats Upregulates Hepatic Anaplerosis and TCA cycle*
5. 41st Obesity Society Meeting at Obesity Week. 10.2023 (**Poster Presentation**) **Poster-160**  
Mercado LL, **Deja S**, Tinajero A, Chen B, Lee J, Lee S, Burgess S, Elmquist J. *Differential Control of Glucose Metabolism by Sensory and Motor Vagal Neurons*
6. 83<sup>rd</sup> ADA. Scientific Sessions. 06.2023 (**Poster Presentation**) **1575-P**  
Yiew N, Ferguson D, Cho K, **Deja S**, Jarasvaraparn C, Fu X, Lutkewitte AJ, Mukherjee S, Singer JM, Patti GJ, Burgess SC, Finck BN. *Glycerol Metabolism and Gluconeogenesis in Mice Lacking the Mitochondrial Pyruvate Carrier in Hepatocytes*
7. 83<sup>rd</sup> ADA. Scientific Sessions. 06.2023 (**Poster Presentation**) **259-LB**  
Fletcher JA, **Deja S**, Burgess SC, Fu X, Inigo MMR, Browning J, Kucejova B. *Loss of AMPK Induces Elongation of Preexisting Hepatic Fatty Acids, without Affecting DNL, during Fasting–Refeeding*
8. Metabolomics 2023. 06.2023 (**Poster Presentation**) **1417**  
**Deja S**, Kucejova B, Fu X, Burgess SC. *Simultaneous Quantification of Isotopologue Distribution and Metabolite Concentration in a Single Biological Sample*
9. 43<sup>rd</sup> ISHLT Annual Meeting and Scientific Sessions 04.2023 (**Poster Presentation**) **870**  
Sharma G, Vela R, Powell L, Mizerska M, **Deja S**, Burgess S, Malloy CR, Jessen ME, Peltz M. *Metabolic Indicators in Donor Hearts Following Conventional and Temperature Controlled Storage*
10. 82<sup>nd</sup> ADA. Scientific Sessions. 06.2022 (**Poster Presentation**) **532-P**

- Deja S**, Kucejova B, Maurer A, Mizerska MN, Fu X, Thyfault JP, Burgess SC. *Voluntary Exercise during Food Restriction Promotes a Sustained Increase in Hepatic Oxidative Metabolism*
11. 82<sup>nd</sup> ADA. Scientific Sessions. 06.2022 (**Oral Presentation**) **274-OR**  
Inigo MMR, Fletcher, JA, Kucejova B, Sharma G, **Deja S**, Fu X, Burgess SC. *The Malic Enzyme-1 Links Pyruvate Carboxylase–Mediated Anaplerosis to Redox State in Liver*
  12. 82<sup>nd</sup> ADA. Scientific Sessions. 06.2022 (**Oral Presentation**) **275-OR**  
**Deja S**, Fletcher JA, Kucejova B, Mizerska MN, Fu X, Kim CW, Browning J, Young J, Horton JD, Burgess SC. *Inhibition of Hepatic ACC Decreases Ketogenesis during Fasting due to Elevated Amino Acid Availability*
  13. Metabolomics 2021 Online. 06.2021 (**Oral Presentation**) **225 (6.1)**  
**Deja S**, Kucejova B, Fu X, Browning J, Young J, Burgess S. *In vivo estimation of ketogenesis using metabolic flux analysis framework and double tracer method - technical challenges and model interpretation*
  14. 80<sup>th</sup> ADA. A Virtual Experience. 06.2020 (**Oral Presentation**) **204-OR**  
**Deja S**, Fletcher J, Kucejova B, Fu X, Kim CW, Browning J, Horton J, Burgess S. *Inhibition Of Hepatic ACC On High Fat Diet Results In Hyperglycemia Due To Excess Lipid Oxidation And High Energy Generation*
  15. 80<sup>th</sup> ADA. A Virtual Experience. 06.2020 (**Oral Presentation**) **368-OR**  
**Deja S**, Duarte J, Fletcher J, Kucejova B, Fu X, Vale G, Browning J, S. Burgess S. *Activation of hepatic gluconeogenesis is required to suppress DNL and stimulate ketogenesis during fasting*
  16. 80<sup>th</sup> ADA. A Virtual Experience. 06.2020 (**Poster Presentation**) **1721-P**  
Kucejova B, **Deja S**, Duarte J, Fu X, Burgess S. *In vivo effect of Perturbations in Hepatic Insulin Signaling on the Synthesis and Export of De Novo Synthesized Fatty Acids and Triglycerides*
  17. 80<sup>th</sup> ADA. A Virtual Experience. 06.2020 (**Poster Presentation**) **1809-P**  
Melissa Inigo, **Deja S**, Burgess S. *Liver Pyruvate Carboxylase Knockout Mice Suggest Noncanonical Sources of Acetyl-CoA for Hepatic Lipid Synthesis*
  18. 68<sup>th</sup> ASMS. Virtual gathering. 06.2020 (**Oral Presentation**)  
Fu X, **Deja S**, Fletcher J, Anderson N, Mitsche M, Vale G, McDonald J, Horton J, Burgess S. *Detection of Lipogenesis at Very High Sensitivity Using Gas Chromatography Orbitrap High-resolution Mass Spectrometry*
  19. 78<sup>th</sup> ADA. Orlando, FL. 06.2018 (**Poster Presentation**)  
**Deja S**, Fletcher J, Kucejova B, Fu X, Young J, Burgess S. *Simultaneous <sup>2</sup>H and <sup>13</sup>C Metabolic Flux Analysis of Liver Metabolism Using NMR and GC-MS—Methods Validation and New Applications.*
  20. 78<sup>th</sup> ADA. Orlando, FL. 06.2018 (**Poster Presentation**)  
Cappel D, **Deja S**, Fu X, Burgess S. *Pyruvate Carboxylase Is Required for Hepatic Gluconeogenesis and TCA Cycle Function.*
  21. 78<sup>th</sup> ADA. Orlando, FL. 06.2018 (**Oral Presentation**)  
Fletcher J, **Deja S**, Burgess S, Browning J. *Effects of NAFLD on Acetyl-CoA Partitioning and Ketone Kinetics in Response to a 24-Hour Fast.*

22. The 25th AIRC Annual Symposium. Dallas, TX. 01.2018 (**Poster Presentation**)  
**Deja S**, Fletcher J, Kucejova B, Fu X, Young J, Burgess S. *Metabolic flux analysis in liver using NMR and GC-MS: Methods validation and new applications.*
23. Mayo Clinic Metabolomics Symposium 2017. Rochester, MN. 11.2017 (**Poster Presentation**)  
**Deja S**, Fletcher J, Kucejova B, Fu X, Young J, Burgess S. *Metabolic flux analysis in liver using NMR and GC-MS: Methods validation and new applications. (Awarded 1<sup>st</sup> place for the best poster)*
24. 76<sup>th</sup> ADA. New Orleans, LA. 06.2016 (**Poster Presentation**)  
Cappel D, **Deja S**, Fu X, Duarte J, Burgess S. *Anaplerotic Regulation of Hepatic Gluconeogenesis.*
25. Metabolomics 2015, San Francisco, CA. 06. 2015 (**Poster Presentation**)  
**Deja S**, Cappel D, Fletcher J, Duarte J, Merritt M, Burgess S, *The effect of TCA cycle loss of function on the metabolic profiles of liver specific knockout.*

#### **Presentations from research at Opole University**

26. Pomiedzy naukami. Zjazd Fizyków i Chemików. II Ogólnopolska Konferencja dla Studentów i Doktorantów. Chorzów, Poland. 09.2013. (**Oral Presentation**)  
**Deja S**, Porębska I, Kowal A, Daszykowski M, Ząbek A, Młynarz P. *Metabolomika: czy może być użyteczna w diagnostyce i stopniowaniu nowotworów płuc? [presentation in Polish]*
27. 9th Annual Conference of the Metabolomics Society, Glasgow, Scotland. 07.2013 (**Poster Presentation**)  
**Deja S**, Wieczorek P, Halama M, Jasicka-Misiak I, Kafarski P, Poliwoda A, Młynarz P. *NMR based taxonomical identification of hallucinogenic and potentially hallucinogenic mushrooms.*
28. 17th International Conference on Prenatal Diagnosis and Therapy, Lisbon, Portugal. 06.2013 (**Poster Presentation**)  
Orczyk-Pawilowicz M, **Deja S**, Hirnle L, Młynarz P. *Metabolomics approach to identify post-term pregnancy - a preliminary report.*
29. 39th International Symposium on High Performance Liquid Phase Separations and Related Techniques. Amsterdam, Netherlands. 06.2013 (**Oral Presentation**)  
B. Buszewski, M. Szultka, **S. Deja**, P. Wieczorek. *LC-MSn Study of Biomarkers Metabolites of Human Diseases.*
30. 23rd Conference of the European Wound Management Association, Copenhagen, Denmark. 05.2013 (**Poster Presentation**)  
Junka A, **Deja S**, Bartoszowicz M, Młynarz P, Smutnicka D, Mączyńska B, Szymczyk P. *NMR-based metabolomics as a novel approach to diagnostics of biofilm presence in chronic wounds – the pilot study.*
31. 4th Congress of the Polish Thyroid Association. Łódź, Poland. 04.2013 (**Oral Presentation**)  
Balcerzak W, **Deja S**, Młynarz P, Ząbek A, Orczyk-Pawilowicz M, Głód M, Dawiskiba T, Pawełka D. *Metabolomics provides new information on the changes occurring in thyroid tumors.*
32. International Conference Advances in Pneumology. Wrocław, Poland. 10.2012 (**Oral Presentation**)

- Młynarz P, **Deja S**, Ząbek A, Barg W, Korzeniewska A, Kowal A, Porębska I, Jankowska R, Pupek M. *Is Metabolomics in the diagnosis of chronic obstructive pulmonary disease: a preliminary report.*
33. International Conference Advances in Pneumology. Wrocław, Poland. 10.2012 (**Oral Presentation**)
- Młynarz P, **Deja S**, Ząbek A, Barg W, Korzeniewska A, Kowal A, Porębska I, Jankowska R, Pupek M. *Is Metabolomics in the diagnosis of lung cancer: A preliminary report?*
34. The 1st Multidisciplinary Symposium "Molecular oncology: from laboratory bench to medicine". Kyiv, Ukraine. 09.2012 (**Oral Presentation**)
- Pupek M, Młynarz P, Pawłowicz R, Porębska I, **Deja S**, Ząbek A, Panaszek B. *Metabolomics approach in diagnostics of cancer accompanied with multimorbidity.*
35. VII Symposium on: Nuclear Magnetic Resonance In Chemistry, Physics And Biological Science. Warsaw, Poland. 09.2012 (**Oral Presentation**)
- Deja S**, Młynarz P, Ząbek A, Orczyk-Pawłowicz M, Głód M, Dawiskiba T, Pawełka D, Balcerzak W. *<sup>1</sup>H NMR based metabolomics gives insight into disturbed metabolic pathways in various thyroid tumors.*
36. VII Symposium on: Nuclear Magnetic Resonance In Chemistry, Physics And Biological Science. Warsaw, Poland. 09.2012 (**Oral Presentation**)
- Młynarz P, **Deja S**, Ząbek A, Barg W, Korzeniewska A, Kowal A, I. Porębska, R. Jankowska, M. Pupek. *Is NMR spectroscopy-based metabolomics a future diagnostic tool for lung diseases?*
37. 55 Zjazd PTChem i SITPChem, Białystok, Poland. 09.2012 (**Oral Presentation**)
- Deja S**, Litarski A, Młynarz P, Szydełko T, Misiuk-Hojło M. *Metabolomika raka pęcherza moczowego. [presentation in Polish]*
38. 55 Zjazd PTChem i SITPChem, Białystok, Poland. 09.2012 (**Oral Presentation**)
- Młynarz P, **Deja S**, Barg W, Ząbek A, Korzeniewska A, Kowal A, Jankowska R, Orczyk-Pawłowicz M, Daszykowski M, Walczak B. *Wykorzystanie metod metabolomicznych w medycynie. Diagnostyka obturacyjnej choroby płuc oraz bezdechu nocnego za pomocą badań NMR. [presentation in Polish]*
39. 55 Zjazd PTChem i SITPChem, Białystok, Poland. 09.2012 (**Poster Presentation**)
- Jawień E, **Deja S**, Ząbek A, Młynarz P. *Badanie profilu metabolomicznego tanich piw za pomocą metody <sup>1</sup>H NMR. [presentation in Polish]*
40. 55 Zjazd PTChem i SITPChem, Białystok, Poland. 09.2012 (**Poster Presentation**)
- Zieliński Ł, **Deja S**, Jasicka-Misiak I, Kafarski P. *Badania metabolomiczne jako metoda określania botanicznego pochodzenia miodów nektarowych. [presentation in Polish]*
41. VII Symposium on: Nuclear Magnetic Resonance In Chemistry, Physics And Biological Science, Warsaw, Poland. 09.2012 (Poster Presentation)
- Deja S**, Młynarz P, Ząbek A, Litarski A, Szydełko T, Adamiec J, Misiuk-Hojło M. *Analysis of human bladder cancer patient's metabolome using <sup>1</sup>H NMR.*
42. VII Symposium on: Nuclear Magnetic Resonance In Chemistry, Physics And Biological Science, Warsaw, Poland. 09.2012 (**Poster Presentation**)
- Ząbek A, **Deja S**, Klimek-Ochab M, Młynarz P. *Application of <sup>1</sup>H NMR metabolomics study in the differentiation of fungal pathogens of the respiratory system.*
43. EUROMAR 2012, Dublin, Ireland. 07.2012 (**Poster Presentation**)

- Młynarz P, **Deja S**, Barg W, Ząbek A, Korzeniewska A, Kowal A, Jankowska R, Orczyk-Pawiłowicz M, Walczak B, Daszykowski M. *<sup>1</sup>H NMR metabolomics analysis of exhaled breath condensate, serum and urine allow to differentiate sleep apnea from obstructive lung disease.*
44. EUROMAR 2012, Dublin, Ireland. 07.2012 (**Poster Presentation**)  
**Deja S**, Młynarz P, Ząbek A, Orczyk-Pawiłowicz M, Balcerzak W, Głód M, Dawiskiba T. *Metabolomics profiling and fingerprinting of: urine, serum and tissue homogenates provides global metabolome for thyroid cancer patients*
45. X Ogólnopolskie Seminarium Doktorantów: Na Pograniczu Biologii i Chemii. Ustroń, Poland. 05.2012 (**Oral Presentation**)  
**Deja S**, Młynarz P, Wieczorek P. *New trends in diagnosis and studies of cancer – metabolomics approach.*
46. III Sympozjum Współczesna Myśl Techniczna w Naukach Medycznych i Biologicznych. Wrocław, Poland. 05.2012 (**Oral Presentation**)  
Młynarz P, **Deja S**, Barg W, Jankowska R. *Metabolomika jako przyszłe narzędzie diagnostyczne w medycynie, diagnostyka chorób płuc. [presentation in Polish]*
47. III Spotkanie użytkowników firmy Bruker, Poznań, Poland. 09.2011 (**Oral Presentation**)  
Młynarz P, **Deja S**, Barg E, Barg W, Kowal A, Korzeniewska A, Piesiak P, Dyła T, Willak-Janc E, Dulko J, Jawień E. *Zastosowanie spektroskopii NMR w badaniach metabolomicznych. [presentation in Polish]*
48. III Spotkanie użytkowników firmy Bruker, Poznań, Poland. 09.2011 (**Poster Presentation**)  
Młynarz P, **Deja S**, Dulko J, Jawień E. *Badania metaboliczne piwa za pomocą spektroskopii NMR. [presentation in Polish]*
49. 54 Zjazd Zjazd PTChem i SITPChem, Lublin, Poland. 09.2011 (**Poster Presentation**)  
Młynarz P, **Deja S**, Dulko J, Jawień E. *Badania metaboliczne piwa za pomocą spektroskopii NMR. [presentation in Polish]*

#### **Presentations from research at Wroclaw University of Technology**

50. Joint EUROMAR 2010 and 17th ISMAR Conference, Florence, Italy. 07.2010 (**Poster Presentation**)  
Młynarz P, **Deja S**, Barg E, Willak-Janc E, Kafarski P. *<sup>1</sup>H NMR monitoring of urine of children with type 1 diabetes. Differentiation and search for pathological stage markers.*